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Primary Four Examination Papers

2015

Science

1	Anglo Chinese School	CA1	SA1		SA2
2	Methodist Girls School	CA1	SA1		SA2
3	Rosyth School	CA1	SA1		SA2
4	Chij St Nicholas Girls School		SA1		SA2
5	Henery Park Primary School		SA1		SA2
6	Maha Bodhi School		SA1		SA2
7	Maris Stella High School		SA1		SA2
8	Nan Hua Primary School		SA1	CA2	SA2
9	Nanyang Primary School		SA1		SA2
10	Pie Hwa Presbyterian Primary School		SA1		SA2
11	Raffles Girls Primary School		SA1		SA2
12	Red Swastika School		SA1		SA2
13	Rulang Primary School		SA1		SA2
14	Singapore Chinese Girls School		SA1		SA2
15	Tao Nan School		SA1		SA2

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ANGLO-CHINESE SCHOOL
(JUNIOR)

CONTINUAL ASSESSMENT 1 (2015)
PRIMARY 4

SCIENCE

BOOKLET A

Thursday **5 March 2015** **1 HOUR**

Name : _____ ( )

Class : P4 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 15 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

The total marks for this booklet is 30.

The total time for Booklets A and B is 1 hour.

This question paper consists of 7 printed pages (inclusive of cover page).

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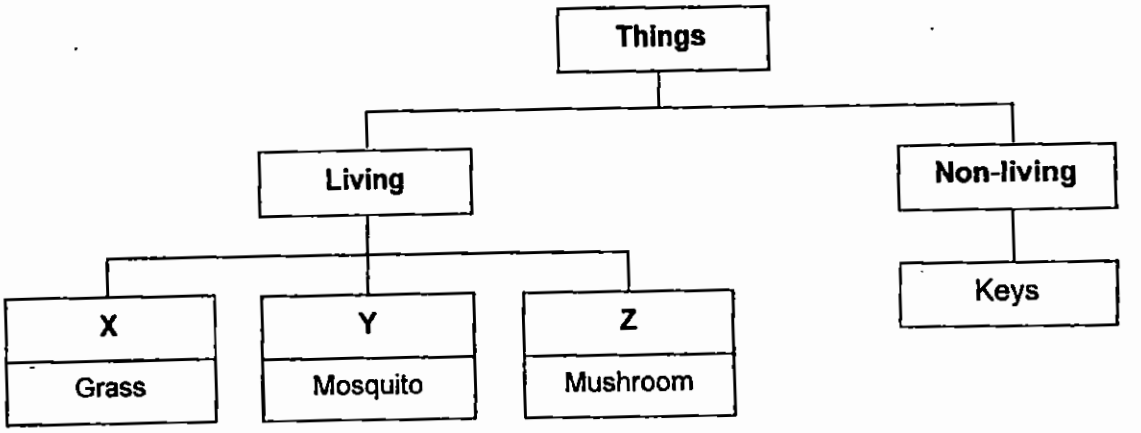
Booklet A (30 marks)

For each question from 1 to 15, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. (15 x 2 marks)

1. The classification table shows how things are grouped according to their characteristics.



What are the suitable headings for X, Y and Z?

	X	Y	Z
(1)	Micro-organisms	Insects	Plants
(2)	Plants	Animals	Fungi
(3)	Micro-organisms	Plants	Insects
(4)	Plants	Animals	Bacteria

2. The picture below shows a Bird's Nest Fern.

The Bird's Nest Fern reproduces by _____.

(1) roots

(2) seeds

(3) spores

(4) getting nutrients from another plant

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3. Study the table below carefully.
The animals have been classified according to _____.

Group A	Group B	Group C
Lion Walrus	Salamander Frog	Grass Snake Guppy

(1) their habitat
(2) the way they move
(3) their outer covering
(4) the way they reproduce

4. Which of the following food is produced using a type of bacteria?

(1) bread
(2) yoghurt
(3) peanuts
(4) seaweed

5. Adam wants to build a bookshelf. It is most important that the material he chooses to build it is _____.

(1) soft
(2) strong
(3) flexible
(4) waterproof

6. Theodore passed by a rubbish chute on his way home. Which of the following shows the movement of air into Theodore's body when he took a deep breath?

(1) windpipe → lungs → nose
(2) nose → lungs → windpipe
(3) nose → windpipe → lungs
(4) mouth → nose → windpipe

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7. Plants make their own food and store their food in their plant parts. In the carrot plant, the food is stored in its _____.

(1) fruit
(2) stem
(3) roots
(4) leaves

8. Water and ice are similar because they both _____.

(1) have a definite shape and occupy space
(2) have a definite mass, volume and shape
(3) have a definite mass, volume and occupy space
(4) have a definite mass, volume, shape and occupy space

9. Matter is anything that can occupy space and has a mass. Which of the following is **not** matter?

(1) Coin
(2) Sand
(3) Light
(4) Carbon dioxide

10. Four pupils, Amy, Ben, Chris and Dennis were told to compare the life cycles of a beetle and a chicken. They then made a statement each about the two life cycles.

Amy: Both animals lay eggs.
Ben: Both animals have 3 stages in their life cycle.
Chris: The young of the beetle and the chicken move differently.
Dennis: The young of the beetle and the chicken resemble their adults.

Whose statements were correct?

(1) Amy and Ben
(2) Amy and Chris
(3) Ben and Dennis
(4) Chris and Dennis

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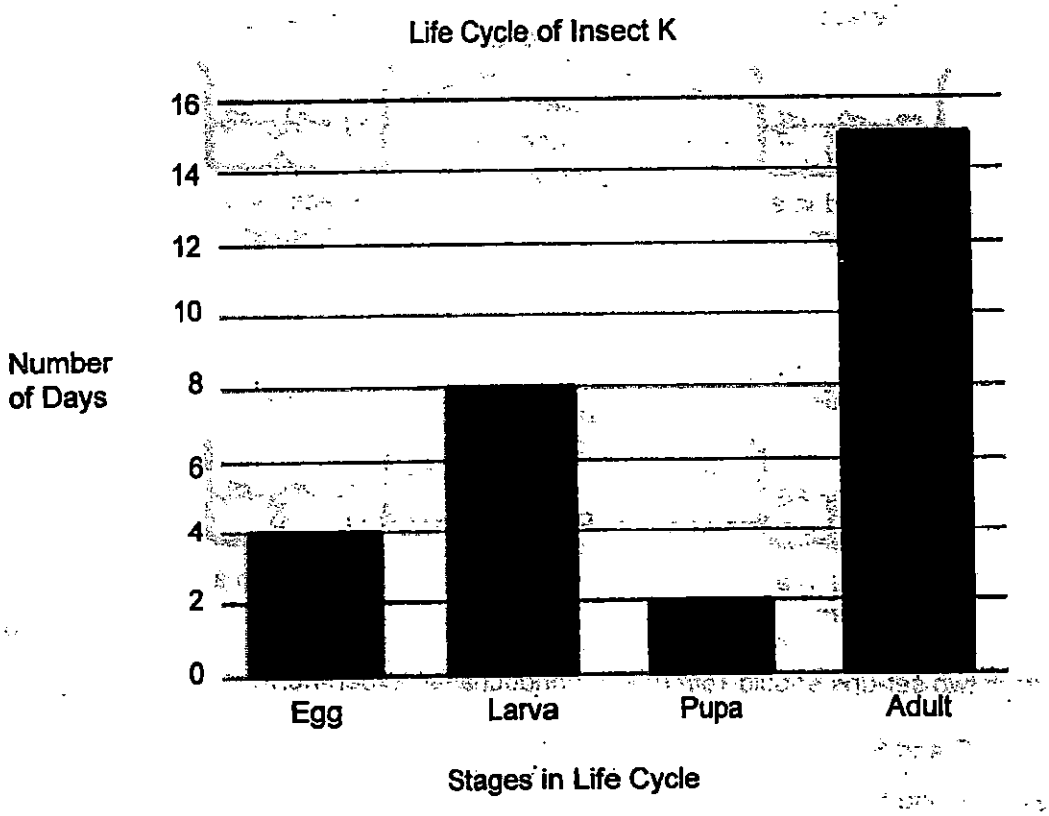
11. The graph below shows the life cycle of Insect K. The bars at each stage of the life cycle represent the number of days Insect K remains at that stage of the life cycle.



Based on the graph above, how many days does Insect K take to transform from an egg to a larva?

(1) 2 days

(2) 4 days

(3) 10 days

(4) 12 days

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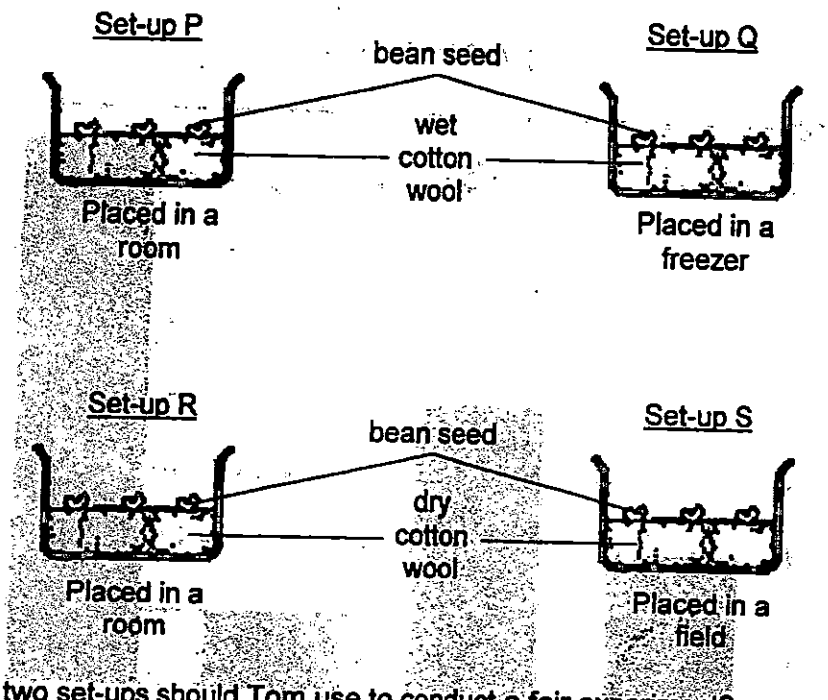
12. Tom wanted to find out if water is needed for germination to take place. He prepared four set-ups as shown below.



Which two set-ups should Tom use to conduct a fair experiment?

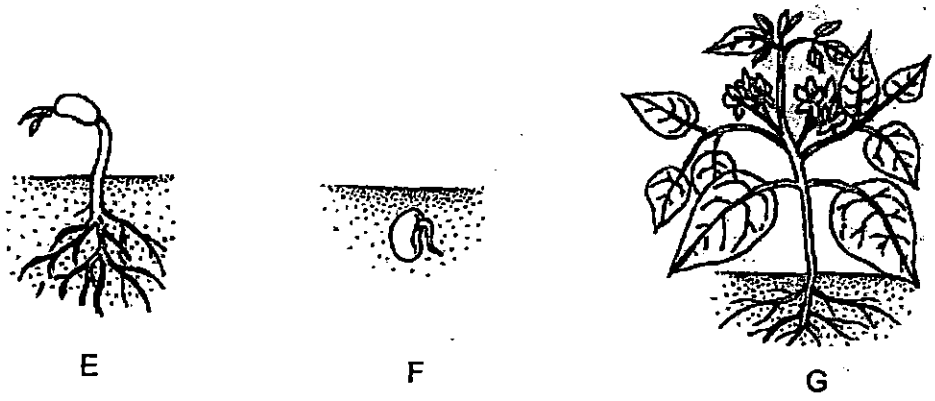
(1) Q and R

(2) R and S

(3) P and R

(4) P and S

13. The diagram below shows the stages in the life cycle of Plant X.



Rearrange the stages of the life cycle of Plant X, starting from the adult plant.

(1) F → E → G

(2) E → G → F

(3) G → F → E

(4) E → F → G

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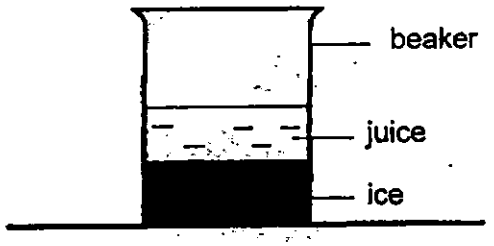
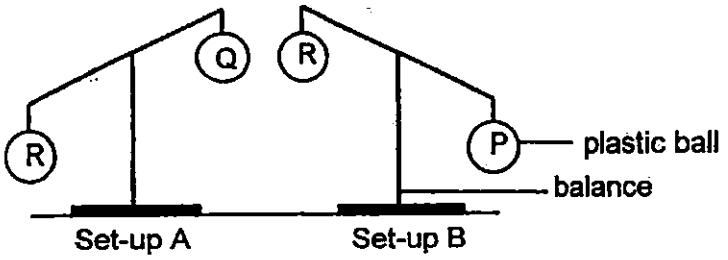
14. Arjun removed a beaker of ice from the freezer and immediately poured some juice into the beaker, as shown below.



Which of the following statements correctly describe the level of the ice and juice if Arjun tilts the beaker?

(1) Both the ice and the juice will tilt.
(2) Neither the juice nor the ice will tilt.
(3) Only the ice will tilt, and the juice will remain the same.
(4) Only the juice will tilt, and the ice will remain the same.

15. David set up two balances using three similar looking plastic balls, P, Q and R, filled with air. He hung two balls at the same time at each end of the balance, as shown below.



Which of the following statement(s) made by David about the set-ups is/are correct?

A R is as heavy as P.
B P has the least mass.
C P is heavier than R but lighter than Q.
D R is heavier than Q but lighter than P.

(1) B only
(2) D only
(3) B and D only
(4) A and C only

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ANGLO-CHINESE SCHOOL
(JUNIOR)

CONTINUAL ASSESSMENT 1 (2015)
PRIMARY 4

SCIENCE

BOOKLET B

Thursday **5 March 2015** **1 HOUR**

Name : _____ ( )

Class : P4 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 7 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

The number of marks is given in brackets [ ] at the end of each question or part question.

The total marks for this booklet is 20.

The total time for Booklets A and B is 1 hour.

This question paper consists of 8 printed pages (inclusive of cover page).

BOOKLET A	**/ 30**
BOOKLET B	**/ 20**
TOTAL	**/ 50**
Parent's signature/ Date:	

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Booklet B (20 marks)

For questions 16 to 22, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

16. Study the two living things shown below.

Toadstool

Fern

(a) State one similarity between the toadstool and the fern. [1]
(Do not compare shape or size)

_____

_____

(b) State one difference between the toadstool and the fern. [1]
(Do not compare shape or size)

_____

_____

(c) Draw an arrow (➔) touching the part of the toadstool where the spores can be found. [1]

(Go on to the next page)

SCORE	/ 3

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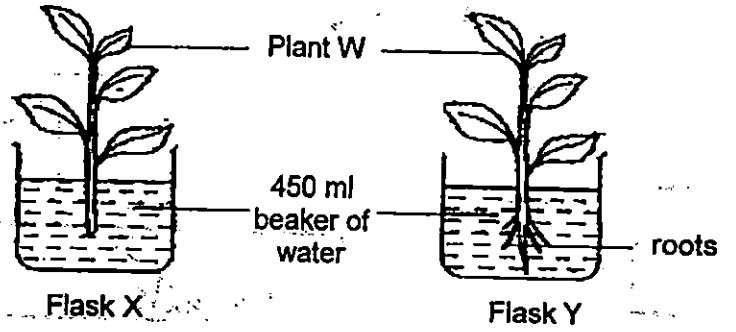
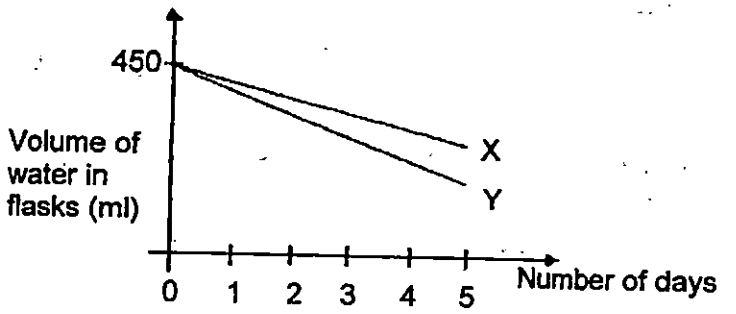
17. Weiming set up the experiment below.



The two identical Flasks, X and Y, were put at the same sunny location and the volume of water in each flask was measured at the end of each day for 5 days. The graph below shows the changes in the volume of water in both flasks over a period of 5 days.



(a) Based on the graph, which Flask, X or Y, had a lesser amount of water left after 5 days? Give a reason for your answer. [1]

_____

_____

(b) Name one variable that Weiming has to keep constant other than those already mentioned to ensure a fair test. [1]

_____

_____

(c) Weiming wanted to find out if sunlight affects the growth of a plant. Which variable must now be changed to conduct this test in a fair manner? [1]

_____

_____

(Go on to the next page)

SCORE	
	3

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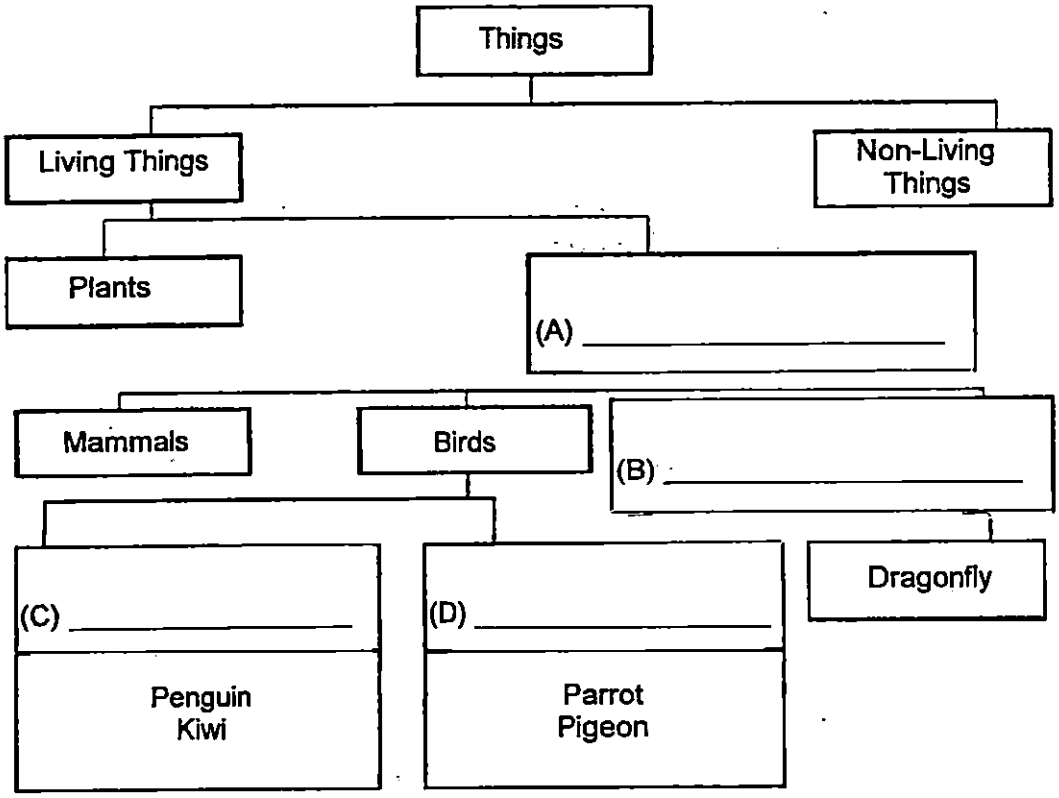
18. Study the classification chart below.



(a) Fill in the blanks (A), (B), (C) and (D) with the most suitable headings. [2]

(b) A chair is different from a dragonfly because it is a non-living thing.
Give another characteristic that a chair <u>does not share</u> with a dragonfly. [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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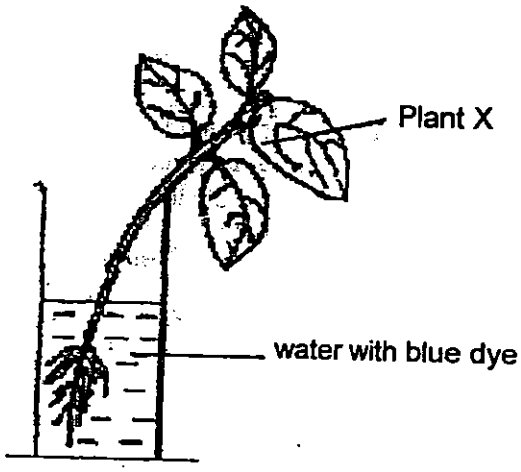
19. The diagram below shows Plant X that has been placed in a container of water with blue dye.



(a) After a few days, the leaves and the stem of the plant turned blue. Explain why. [2]

_____

_____

(b) What is the function of leaves? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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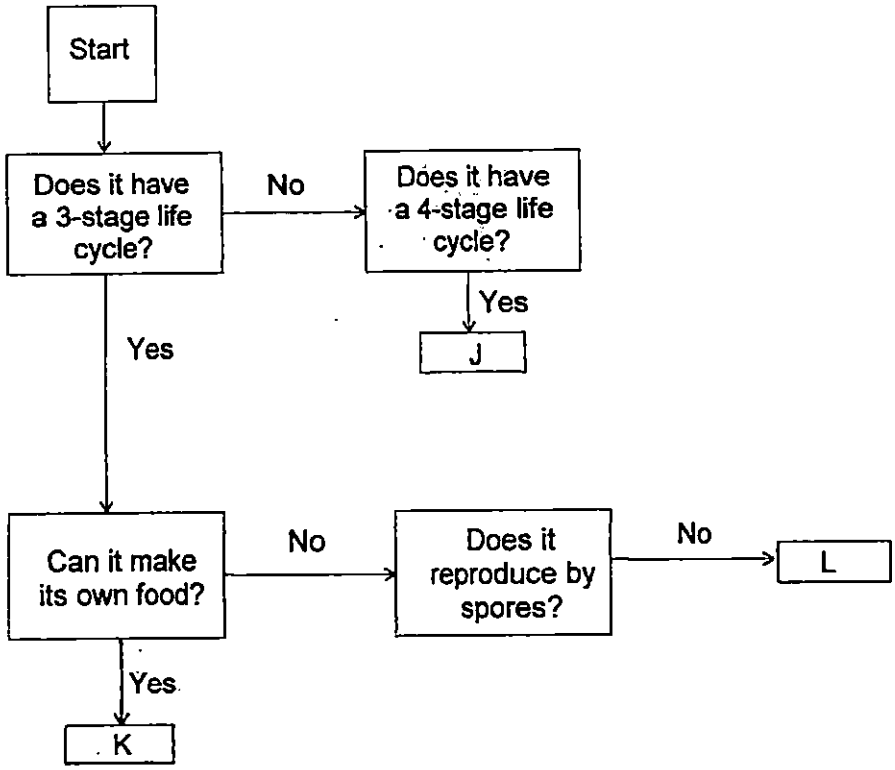

(a) Based on the flowchart, state all the characteristics of Organism L. [1]

_____

_____

(b) Based on the flowchart, state one similarity and difference between Organism K and Organism L. [1]

Similarity: _____

Difference: _____

_____

(c) Give an example of Organism J. [1]

_____

_____

(Go on to the next page)

SCORE	
–	/ 3

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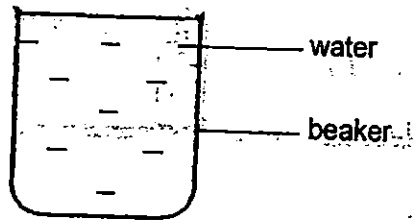
21. Matthew filled a beaker with water to the brim, as shown in the diagram below.



He then dropped three identical marbles into the beaker, one at a time.

(a) State one observation that Matthew could have made, after dropping the marbles into the beaker. [1]

_____

_____

(b) Based on the results of the experiment, which characteristic of matter is being shown? [1]

_____

_____

(c) State the other characteristic of matter that is not mentioned in part (b). [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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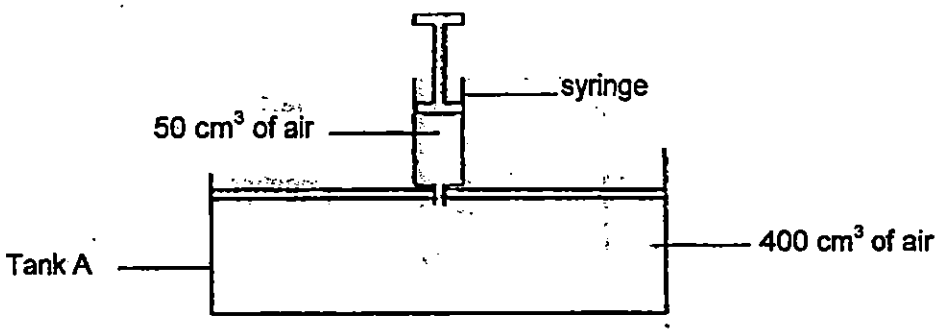
22. Study the set-up below carefully. The capacity of Tank A is 400 cm^3. Jane used a syringe to push in 50 cm^3 of air.



(a) The plunger of the syringe is pushed down into Tank A completely. What happens to the volume of air in Tank A? [1]

_____

_____

(b) Explain your answer in part (a). [1]

_____

_____

End of Paper

SCORE	/ 2

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)
SUBJECT : SCIENCE
TERM : CA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
2	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**2**
Q 11	Q 12	Q 13	Q 14	Q 15					
2	3	3	4	2					

Q16a. Both the toadstool and Fern reproduce by spores.

Q16b. The Toadstool does not make its won food but the fern makes its own food.
Q16c. See picture - Next page.
Q17a. Y had a lesser amount of water left after 5 days because Y had roots to take in water.

Q17b. Weiming has to make sure that the plants are the same.

Q17c. The amount of sunlight given to the plant.

Q18a. **SEE PICTRUE - Next Page .**
Q18b. The chair does not need food but the dragonfly needs food.

Q19a. The roots of the plant absorbed the blue dye and transported it to the stem.

Q19b. The function of the leaves is to make food for the plant.

Q20a. Organism L has a three stages life cycle, cannot make its own food and does not reproduce by spores.

Q20b. Similarity : Organism K and organism L both have a three stages life cycle.

Q20b. Difference : Organism K can make its own food but organism L cannot make its own food.

Q20c. Organism J can be a mealworm beetle.

Q21a. Some water will overflow.

Q21b. Matter has volume.

Q21c. Matter has mass.

Q22a. The volume of air in Tank A will not change.

Q22b. Air does not have a definite volume so the air from the syringe can be compressed and not change.

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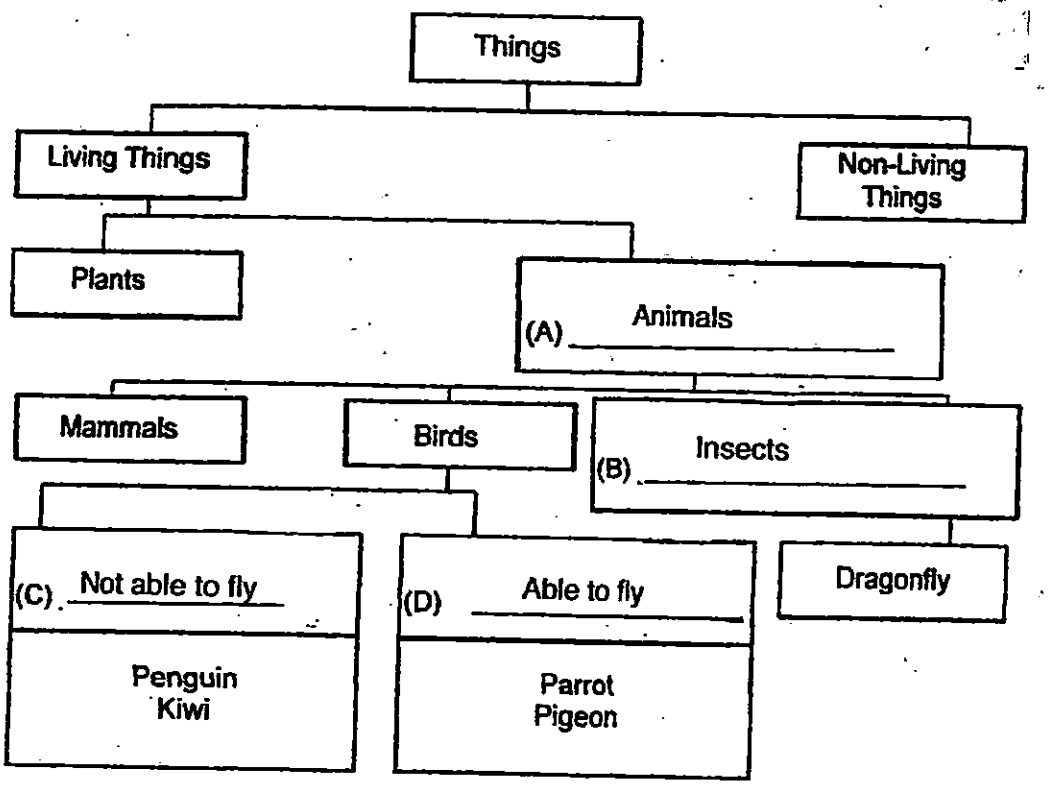
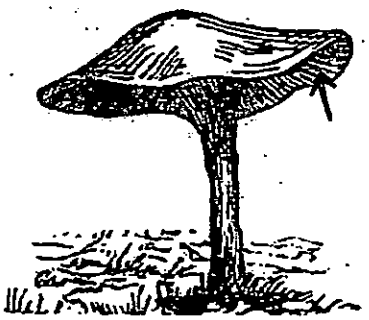
18. Study the classification chart below.



Q16c.



Toadstool

Fern

THE END

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METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

CONTINUAL ASSESSMENT 2015
PRIMARY 4
SCIENCE

(BOOKLET A)

Total Time for Booklets A and B: 1 hour

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 4._____

Date: 5 March 2015

This booklet consists of 10 printed pages including this page.

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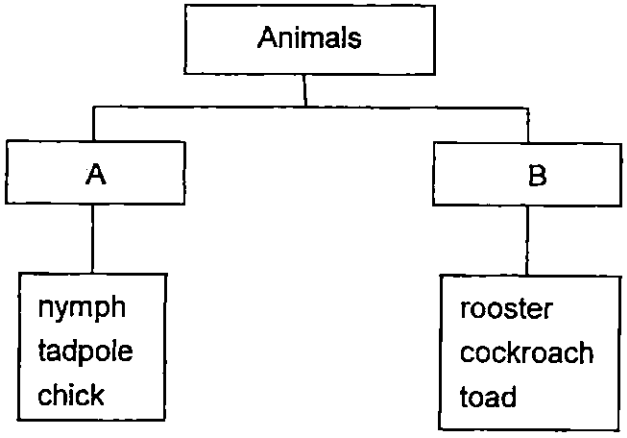
For each question from 1 to 15, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

[30 marks]

---

1. Study the classification chart below.



Which one of the following pairs of headings best represents A and B?

	A	B
(1)	Useful	Harmful
(2)	Young	Adult
(3)	Has no wings	Has wings
(4)	Has no body covering	Has body covering

2. Fungi and bacteria are similar in that they both _____.

A : are micro-organisms
B : reproduce from spores
C : are neither animals nor plants
D : can be harmful and useful to human

(1) A and B only
(2) C and D only
(3) A, C and D only
(4) B, C and D only

(Go to the next page)

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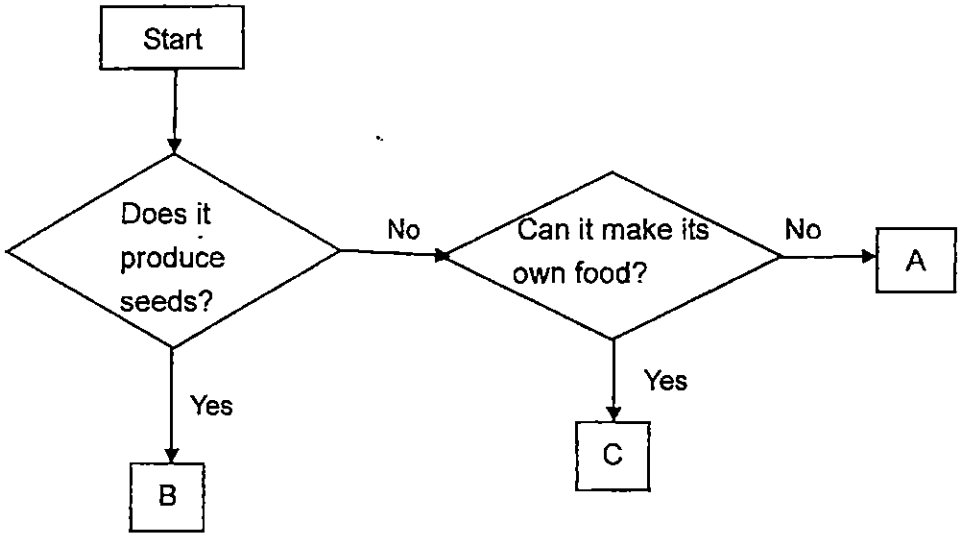
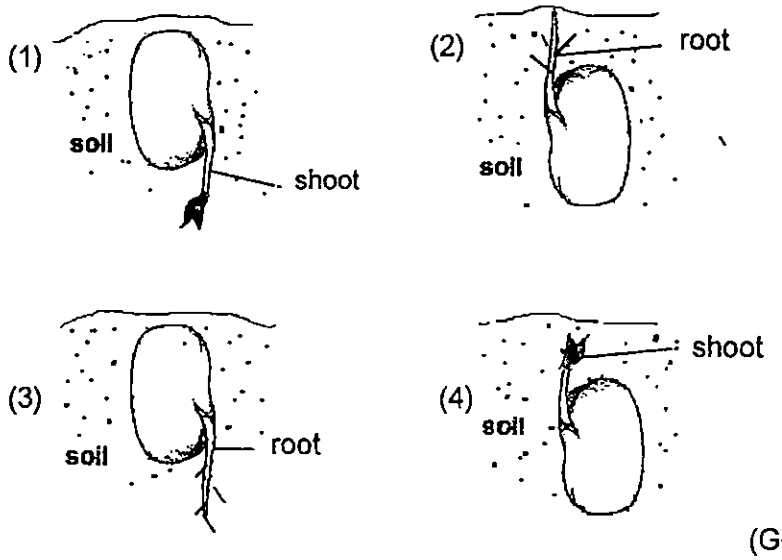
3. Study the flow chart below.



Which one of the following options best represents Organisms A, B, and C in the above flow chart?

	A	B	C
(1)	Bamboo	Lotus	String bean
(2)	Bird's Nest fern	Bamboo	bacteria
(3)	mould	Tomato	Bird's Nest Fern
(4)	mushroom	Chilli	bacteria

4. Alison was germinating some green bean seeds. Which one of the following shows what she would first observe?



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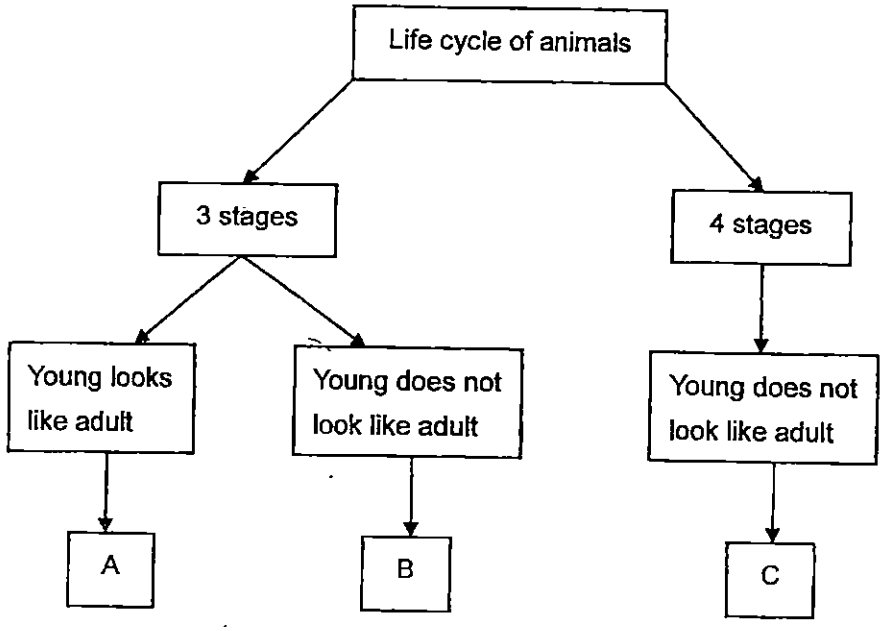
5. Study the classification chart below carefully.



Which one of the following options represents animals A, B and C?

	A	B	C
(1)	moth	cockroach	toad
(2)	cockroach	toad	moth
(3)	toad	cockroach	moth
(4)	cockroach	moth	toad

(Go to the next page)

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6. Lina set up an experiment to find out the effect of different amount of light on an indoor plant. She placed four pots of similar plants under different conditions and recorded the results in the table below.

Plant	Amount of light (hours)	Average growth per week (cm)
	4	1
	6	4
	8	6
	10	3

Which variables must Lina keep constant to ensure a fair experiment?

A : Amount of soil
B : Amount of light
C : Amount of water
D : Amount of fertilizer

(1) A and D only
(2) B and C only
(3) A, B and C only
(4) A, C and D only

(Go to the next page)

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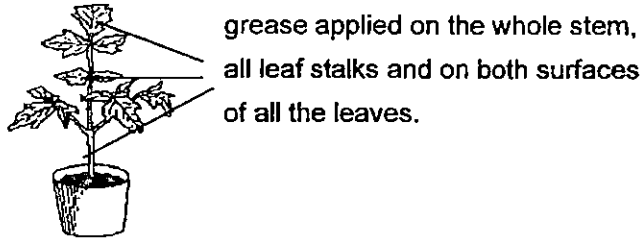
7. Bala applied grease on a plant as shown below. He then placed the plant near an open window and watered it daily. (Grease is a thick type of oil that is not clear.)

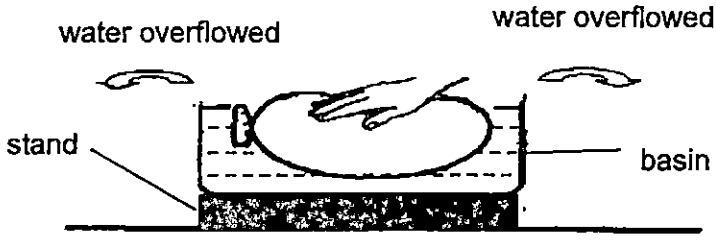


After a week, he noticed that the plant wilted.
The plant had wilted because the layer of grease prevented _____.

A : the exchange of gases.
B : water from reaching the leaves.
C : the leaves from trapping the sunlight.
D : the food made in the stem from reaching the leaves.

(1) A and B only
(2) A and C only
(3) B and D only
(4) B and C only

8. Alice filled a balloon with air. She then pushed the balloon into a basin of water as shown in the diagram below and noticed that some water overflowed the basin.



The demonstration shows that air _____.

(1) has mass
(2) occupies space
(3) has no definite shape
(4) has no definite volume

(Go to the next page)

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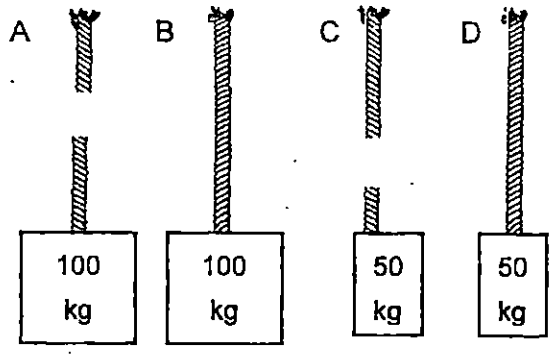
9. Alice placed four different types of materials, P, Q, R, and S of similar size and thickness into four beakers containing the same volume of water. The materials were weighed individually before they were placed into the beakers. After 15 minutes, the materials were weighed again and the results were recorded in the table below.

Material	Mass at the beginning	Mass after 15 minutes
P	10g	15g
Q	9g	13g
R	7g	10g
S	8g	9g

Which material is most suitable for use in making Part X of the tent shown below?

(1) P
(2) Q
(3) R
(4) S

10. Ravi took four types of materials, A, B, C and D and made them into ropes. He tied them to heavy objects and lifted them. Rope A and C snapped as shown in the diagram below.



Which one of the following statements about the materials that were used to lift the objects is correct?

(1) Material A is stronger than Material B
(2) Material B is stronger than Material D.
(3) Material C is stronger than Material A.
(4) Material D is stronger than Material B.

(Go to the next page)

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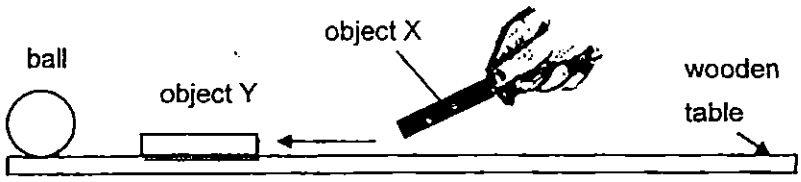
11. Jerry placed a ball and object Y on a table. He then brought object X near to object Y. When he did that, he noticed that Object Y moved away from object X and pushed the ball off the table.



What are Objects X and Object Y likely to be?

	X	Y
(1)	magnet	magnet
(2)	plastic	steel
(3)	magnet	aluminum
(4)	nickel	magnet

12. Zoe and Pat investigated the properties of Matter A and B and recorded their results in the table below.

Property	Matter	
	A	B
Definite volume	No	Yes
Definite shape	No	No
Has mass	Yes	Yes

What could Matter A and B represent?

	A	B
(1)	oxygen	water
(2)	water	air
(3)	oil	oxygen
(4)	air	eraser

(Go to the next page)

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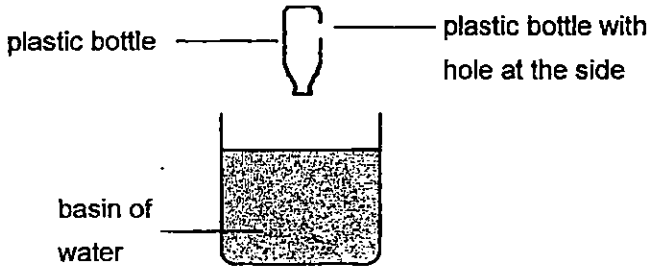
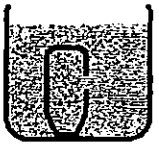
13. A basketball has a capacity of 500cm³. Ameena pumped in 400 cm³ of air into the ball at first. As she found that the ball could not bounce high, she pumped in another 300cm³ of air.
What is the volume of air in the basketball now?

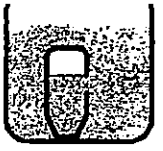
(1) 400 cm³
(2) 500 cm³
(3) 700 cm³
(4) 900cm³

14. Rajoo has a plastic bottle and he made a hole at the side of the plastic bottle.

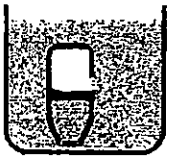


He then pushed the bottle into a basin of water slowly until the whole bottle is submerged in the water.
Which one of the diagrams below shows the water level in the bottle correctly?

(1)


(2)


(3)

(4)


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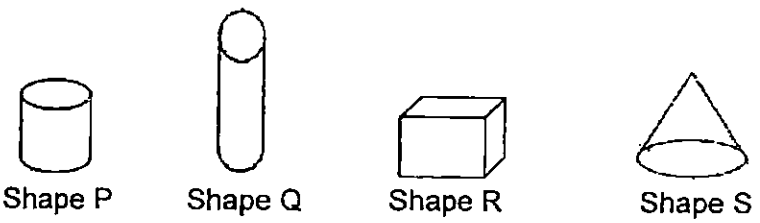
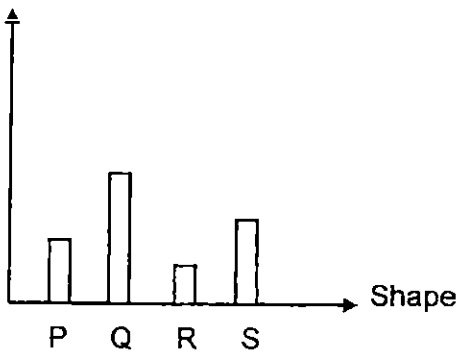
15. Sally took a piece of plasticine of mass 120g and moulded it into a different shape one at a time as shown in the diagram below.

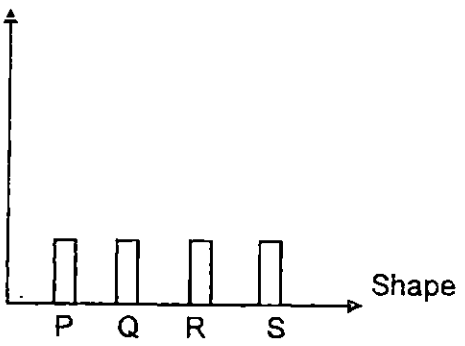


Which one of the following graphs correctly shows the mass of the plasticine for each shape that was moulded?

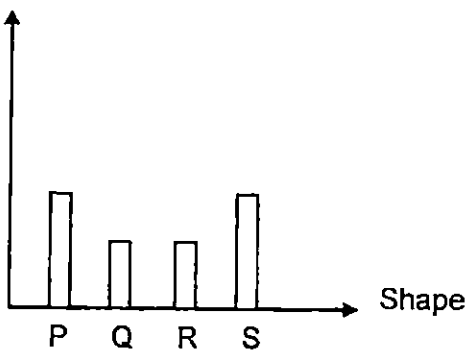
(1) Mass of plasticine (g)



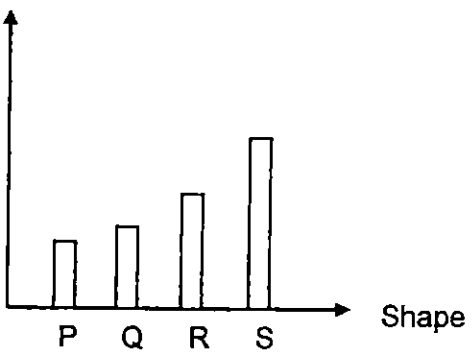
(2) Mass of plasticine (g)



(3) Mass of plasticine (g)



(4) Mass of plasticine (g)



End of booklet A

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METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887

CONTINUAL ASSESSMENT 2015
PRIMARY 4
SCIENCE

(BOOKLET B)

Total Time for Booklets A and B: 1 hour

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 4._____

Date: 5 March 2015

Booklet A	30
Booklet B	20
Total	50
Parent's Signature	

This booklet consists of 8 printed pages including this page.

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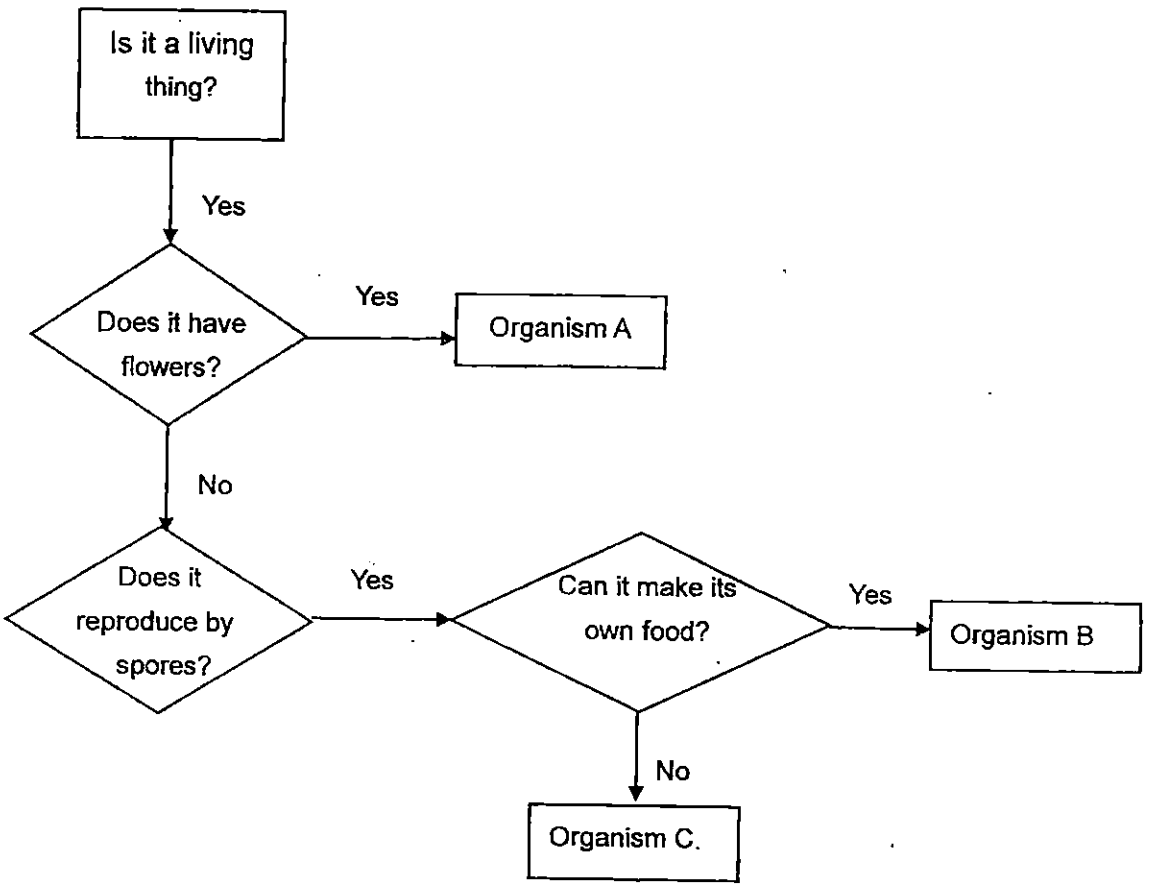
For questions 16 to 22, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[20 marks]

16. Study the flowchart as shown below.



(a) Which organism, A, B or C might be a bracket fungus? Give a reason for your answer. [1]

(b) Based on the flowchart, state one similarity between Organisms B and C. [1]

2

(Go to the next page)

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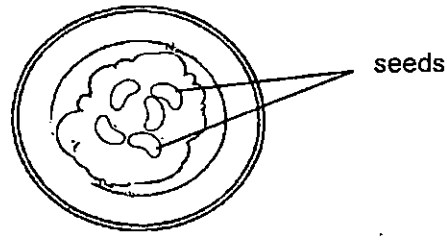
17. Alison wanted to investigate how temperature would affect the germination of seeds. She placed five beans on some moist cotton wool as shown in the diagram below, and put them in five different locations.



Set-up	**A**	**B**	**C**	**D**	**E**
Place	freezer	fridge	room	cupboard	oven
Temperature	4 °C	10° C	29° C	28° C	60°C

(a) What are 2 important variables that Alison must control to ensure a fair experiment? [1]

Variable 1 : _____

Variable 2 : _____

(b) In which set-ups did the seeds germinate into seedlings? Explain why. [2]

_____

_____

3

(Go to the next page)

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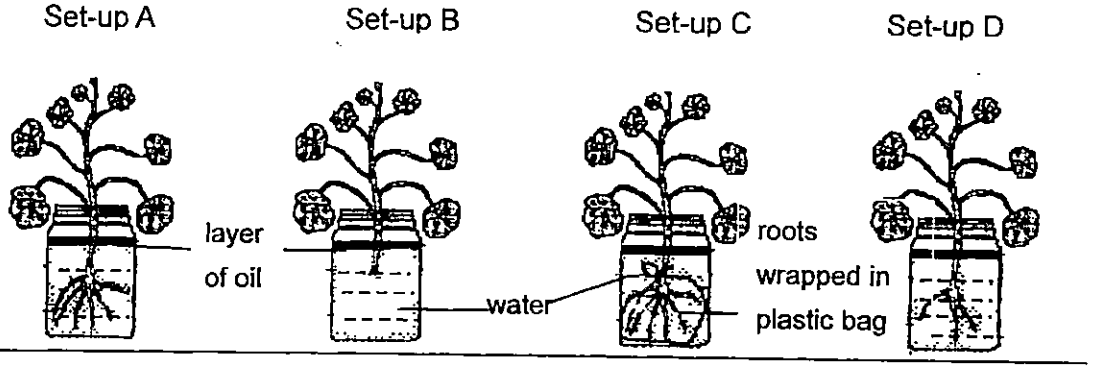
18. Jean placed ~~three~~ four similar plants into identical jars containing 200ml of water. She also poured a layer of oil on the water surface in each jar as shown in the diagram below. Next, she placed the set-ups near the window for half a day.



(a) At the end of the experiment, she measured the amount of water left in the jar and recorded the result in the table below. Complete the table to show the correct results of the experiment. [2]

Amount of water	Set-up
200 ml	
198 ml	
190ml	
180ml	

(b) Jean compared the results between Set-up A and Set-up C.
What was Jean trying to find out? [1]

_____

_____

3

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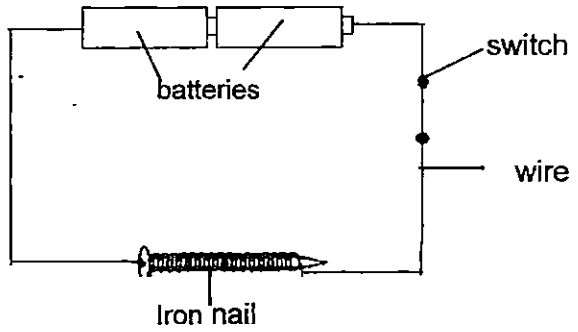
19. Samy constructed an electrical circuit using two batteries as shown in the diagram below.



(a) Samy switched on the circuit and put some steel paper clips close to the nail. He observed that the electromagnet could attract only a few steel paper clips. Describe two methods how Samy could make the electromagnet stronger. [2]

Method 1 : _____

_____

Method 2 : _____

_____

(b) Samy later replaced the iron nail with a copper nail. What would Samy observe about the steel paper clips? Give a reason for your answer. [1]

_____

_____

3

(Go to the next page)

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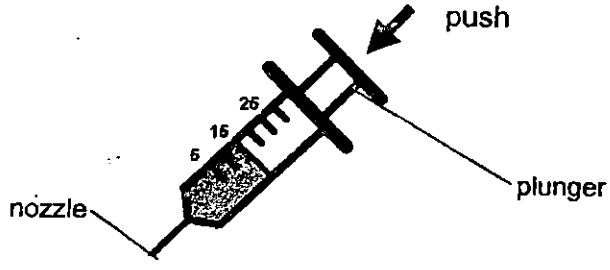
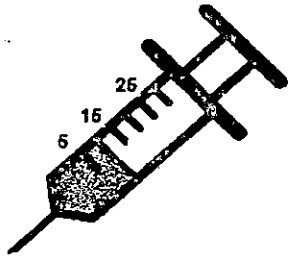
20. Kelly put 15 ml of water into a 30 ml syringe. She blocked the nozzle with her finger and tried to push the plunger in as shown in the diagram below.



(a) Would Kelly be able to push the plunger in? Explain your answer. [1]

Kelly then removed her finger from the nozzle and pushed in the plunger. She observed that the water level in the syringe is lowered as shown below.



(b) What is the volume of air in the syringe? [1]

(c) ~~Why~~ Is there a difference in the volume of air after she pushed in the plunger? [1]

3

(Go to the next page)

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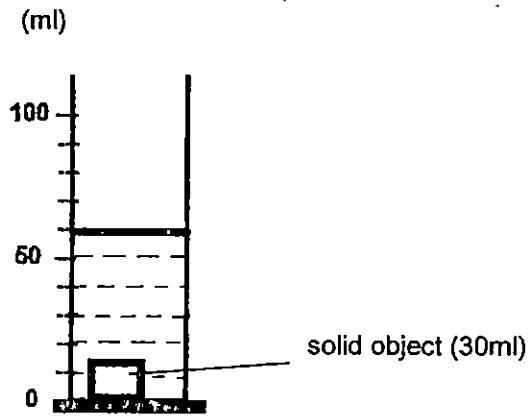
21. Jamal was trying to set up an experiment to find the volume of matter. He attached an object of volume 30 ml to its base. Then he poured 50 ml of water into the measuring cylinder.

However, when he looked at the measuring cylinder, he observed that the water level was at 60ml as shown in the diagram below.



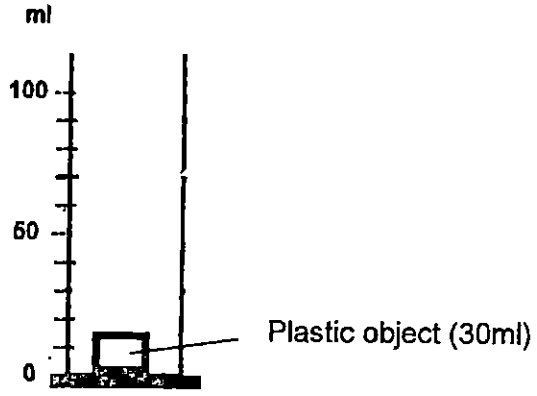
(a) Based on Jamal's observation, what could the solid object be? [1]

_____

(b) Give a reason for your answer in (a).

_____

(c) If the solid object is made of hard plastic, where would the water level be after 40 ml of water was added into the measuring cylinder?
Draw the water level in the diagram below. [1]



3

(Go to the next page)

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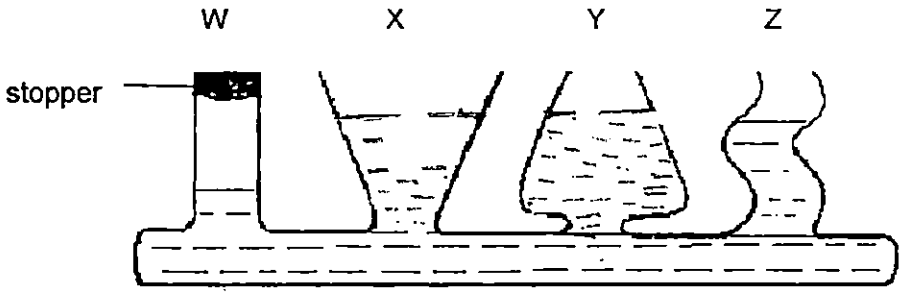
22. The diagram below shows a transparent container filled with water. There is a stopper at the opening of Part W. The water levels at Parts W and Z are given.



(a) Use a ruler and pencil to **draw** in the water levels at Parts X and Y. [1]

(b) Based on the above observations, state two properties of water. [2]

Property 1 : _____

_____

Property 2 : _____

_____

3

End of booklet B

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : METHODIST GIRLS' SCHOOL (PRIMARY)
SUBJECT : SCIENCE
TERM : CA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
2	2	3	3	2	4	2	2	4	2
Q 11	Q 12	Q 13	Q 14	Q 15					
1	1	2	2	2					

Q16a. Organism C. A Bracket – fungus does not have flowers , reproduces by spores and does not make its own food as it is not a plant.

Q16b. They both reproduce by spores.

Q17a. Variable 1 : The number of days put in the location.
Q17a. Variable 2 : The type of seeds he uses.

Q17b. There is enough warmth in Set up C and D for beans to germinate.

Q18a. C / B / D / A

Q18b. To find out if the presence of roots affects the amount of water left in the jar .

Q19a. Method 1 : Coil the wire around the iron nail more times.

Q19a. Method 2: Add more batteries to the electrical circuit.

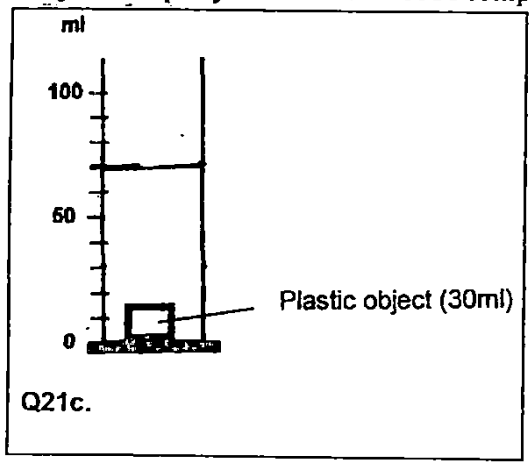
Q19b. No steel paper clips would be attracted. As copper is not a magnetic material. So, no matter how you try, no paper clips would be attracted to the copper iron nail.

Q20a. No. Water is a liquid and all liquids cannot be compressed.

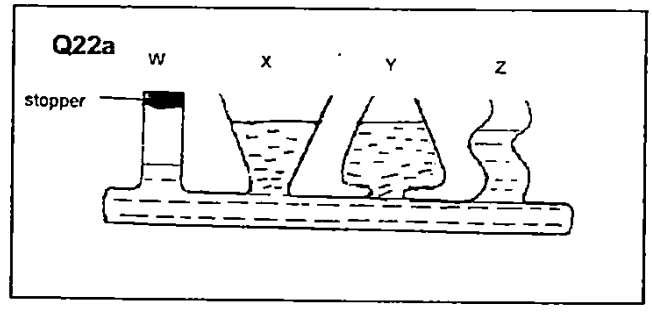
Q20b. 0 ml Q20c. There is no change in the volume in both cases.

Q21a. A sponge Q21b. The solid has air spaces so water fill up the air pocket instead

Q21c. **SEE PICTURE** Q22a. **SEE PICTURE** Q22b. Property 1 : Water has no definite shape.
Q22b. Property 2: Water cannot be compressed.



Q21c.



THE END

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Rosyth School
Topical Test 2015
SCIENCE
Primary 4

Name: _____

Total Marks: 40

Class: Pr 4 _____ Register No. _____ Duration: 1 hour

Date: 2 March 2015 Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 parts, Part I and Part II.
4. For questions 1 to 10, write the correct answer in the brackets provided.
5. For questions 11 and 17, give your answers in the spaces provided in Part II.

	Maximum	Marks Obtained
Part I	20 marks	
Part II	20 marks	
Total	40 marks	

* This booklet consists of 12 pages.

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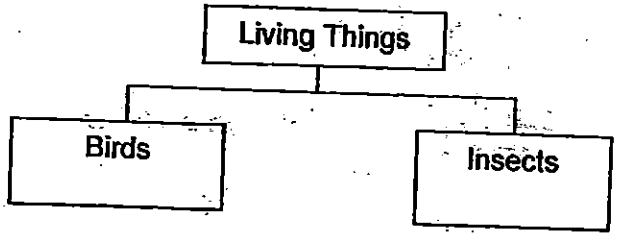
Part I (20 Marks)

For each question from 1 to 10, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write your answer in the bracket provided.

1. Study the classification chart.



Which one of the following characteristic was used to classify the living things?

(1) The way they move
(2) The way they reproduce
(3) The type of body covering they have
(4) The number of stages in their life cycle ( )

2. Which of the following statement(s) is/are true of a cockroach and a mealworm beetle?

A: Both lay eggs in water.
B: Both the youngs resemble the adults.
C: Both the youngs do not have wings.
D: Both have 4 stages in their life cycles.

(1) A only
(2) A and B only
(3) C only
(4) C and D only ( )

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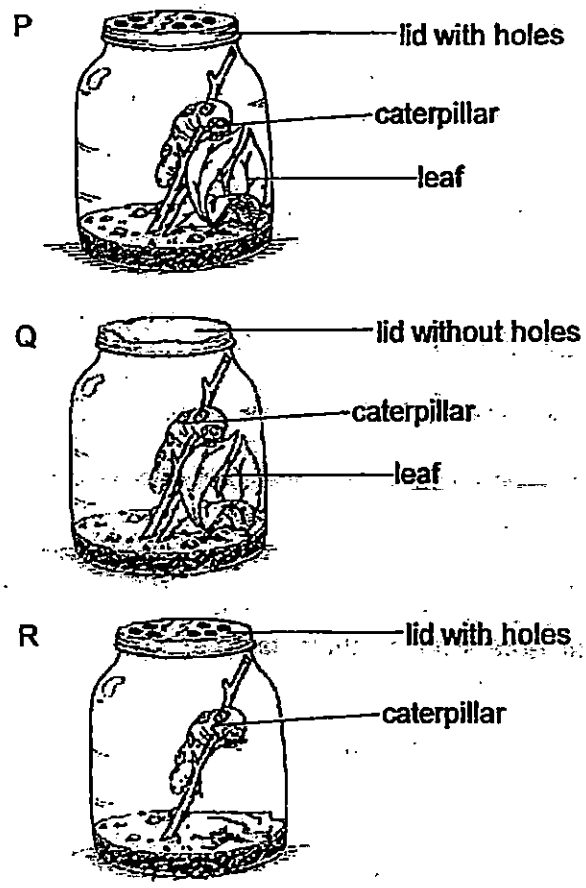
3. Arun observed some caterpillars kept in three different containers in the dark as shown below.



Only the caterpillar in container P survived while the other caterpillars in Q and R died. Which of the following is/are possible reason(s) that the caterpillars died?

A: Lack of air
B: Lack of food
C: Lack of sunlight

(1) A only
(2) B only
(3) A and B only
(4) B and C only

( )

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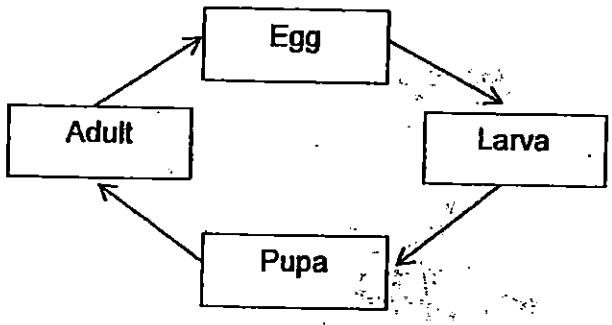
4. Study the life cycle as shown below.



Which of the statement(s) below is/are correct?

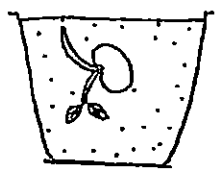
A. Some insects have the above life cycle.
B. All insects and mammals have the above life cycle.
C. Birds, fish and mammals have the above life cycle.

(1) A only
(2) B only
(3) C only
(4) A and B only

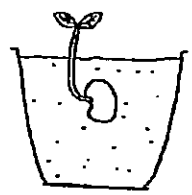
( )

5. Lincoln was observing the germination of a seed. Which one of the following would he observe?

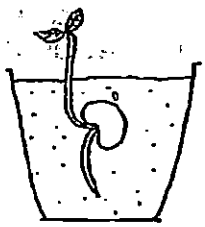
(1)



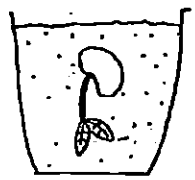
(2)



(3)



(4)



( )

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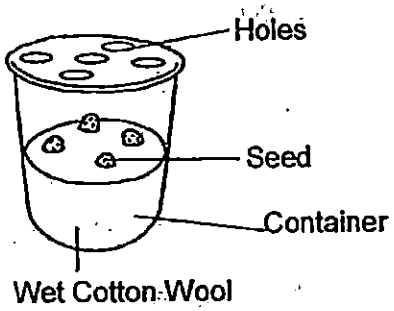
6. Wei Hao placed the set-up as shown below near the window.

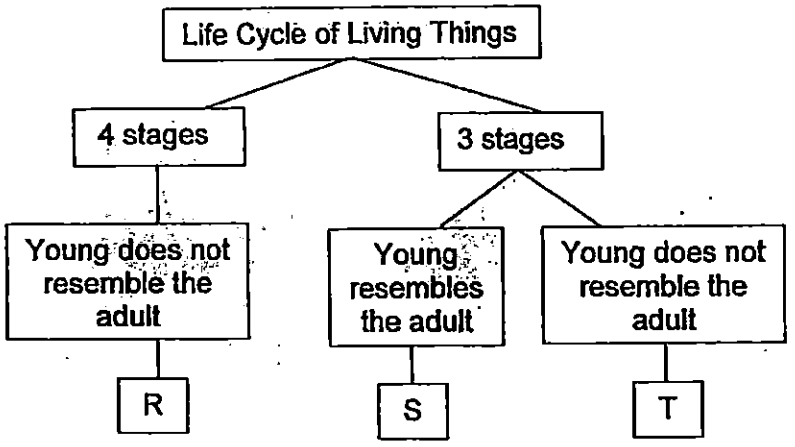


After a few days, the seeds germinated. Which of the following caused the seeds to germinate?

A: Presence of air
B: Presence of light
C: Presence of water
D: Presence of warmth

(1) A and B only
(2) C and D only
(3) A, C and D only
(4) A, B and C only ( )

7. Study the diagram below.



Which one of the following represents R, S and T?

	R	S	T
(1)	Frog	Rose plant	Mealworm Beetle
(2)	Rose plant	Mealworm Beetle	Frog
(3)	Mealworm Beetle	Rose plant	Frog
(4)	Mealworm Beetle	Frog	Rose plant

( )

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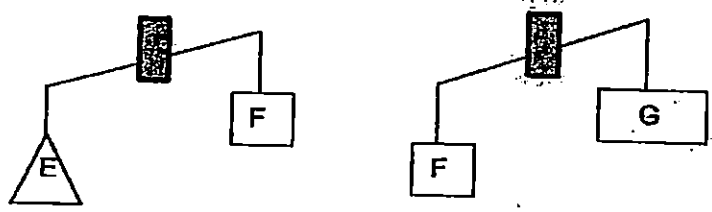
8. The diagram below shows two lever balance with objects E, F and G.



Arrange E, F and G according to their masses beginning with the lightest.

	Lightest →		Heaviest
(1)	F	G	E
(2)	E	F	G
(3)	G	F	E
(4)	G	E	F

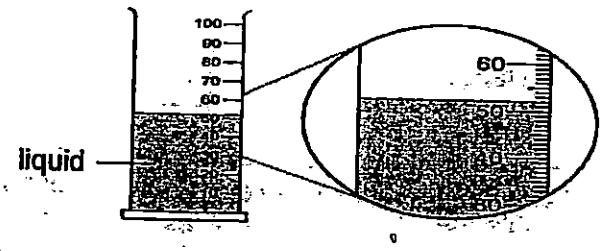
( )

9. Which of the following cannot be classified as a matter?

(1) iron
(2) rain
(3) smoke
(4) sound

( )

10. What is the volume of the liquid shown below?



(1) 40ml
(2) 50ml
(3) 52ml
(4) 55ml

( )

End of Part I

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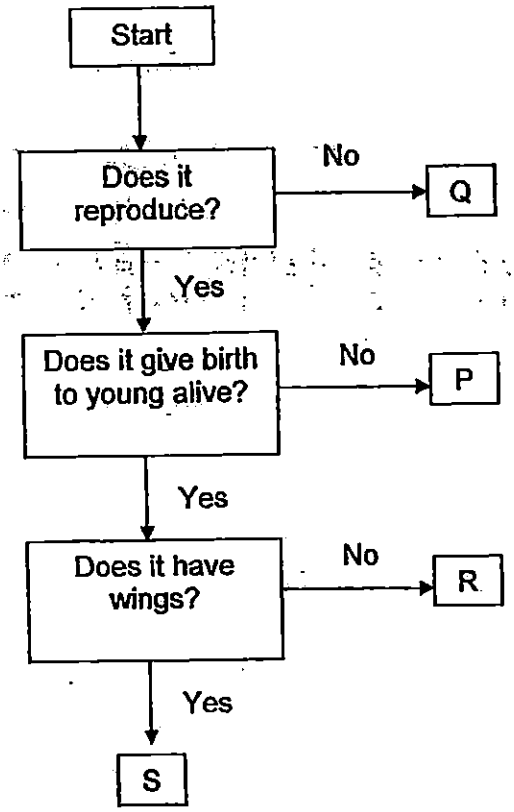
Part II (20 Marks)

For questions 11 to 17, write your answers in the space provided.

11. Study the flow chart below.



(a) Based on the flow chart, state two similarities between R and S. [2m]

_____

_____

(b) In the above chart, which letter would represent a cat? Support your answer. [1m]

_____

_____

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12. Gopal kept some fish in a tank and recorded his observation in the following table.

Week	Water	Food	Number of fish in the tank
1	√	√	10
2	√	√	16

(a) Based on the table above, state two characteristic of living things. [2m]

_____

_____

(b) At the end of week 2, Gopal noticed some fish swimming towards the surface of the water. He added some water plants into the tank. Explain how the water plants would help the fish. [1m]

_____

_____

(c) Why does fish lay many eggs at one time? [1m]

_____

_____

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13. The table below describes the development of a bee.

Order	Development of a bee
1	Queen bee lays egg
2	Worker bee feeds hatched larva
3	Larva reaches full growth
4	Larva becomes a pupa
5	Adult bee leaves

a) Draw the life cycle of a bee in the box below and name each stage. [1m]

b) Why is the life cycle important to the bee? [1m]

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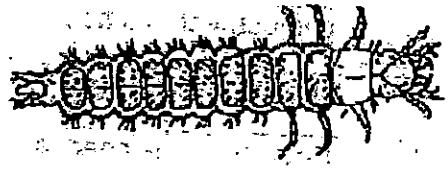
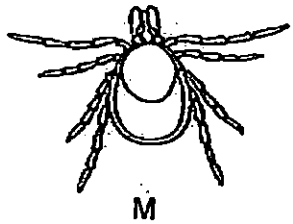
14. The diagram below shows the young of an organism P.



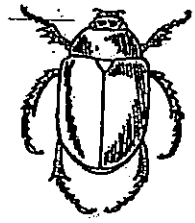
(a) Based on the diagram above, which of the two organism below, M or N, is most likely the adult stage of organism P? Support your choice. [1m]

_____

_____



M



N

(b) Peter observed organism P over 2 weeks till it changed to an adult. He counted the leaves that were eaten by organism P as shown in the table below.

Day	Number of leaves eaten
1	2
3	4
5	5
7	3
9	1
12	0

On which day was organism P a pupa? Support your answer. [1m]

_____

_____

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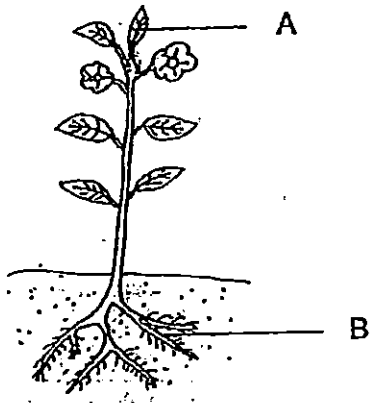
15. Jack saw a plant in his garden as shown below.



(a) State the function of the parts of the plant in the table below. [2m]

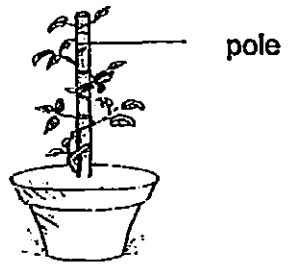
Part	Function
A	
B	

(b) Is the plant above an adult plant? Support your answer. [1m]

_____

_____

Jack saw another plant in his garden as shown below.



(c) Why does this plant need a pole? [1m]

_____

_____

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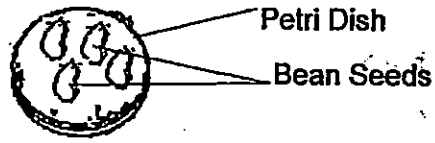
16. Hasan prepared four set-ups similar to the one shown below.



He prepared the four set-ups according to the table shown below.

Set-up	Presence of Water	Place
E	√	Refrigerator
F	√	Cupboard
G	√	Near Window
H	X	Kitchen Table

(a) In which two set-ups would the seeds most likely germinate? ___ [1m]

_____

(b) Explain your answer in (a). [1m]

_____

_____

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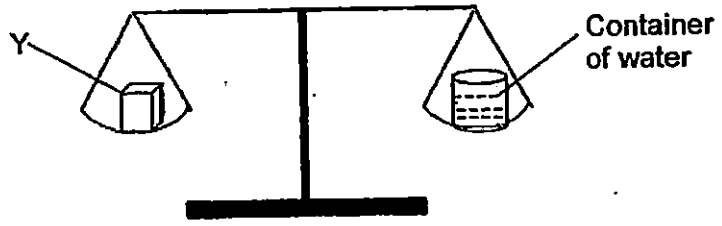
17. Hari placed an object Y on a beam balance as shown below.



(a) Based on the above observation, what can we infer about the masses of object Y and the container of water? [1m]

_____

_____

(b) Using only the materials above, describe how you would show that water is a matter. [1m]

_____

_____

(c) What observation would you make in (b) to show that water is a matter? [1m]

_____

_____

End of Paper

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : ROSYTH SCHOOL
SUBJECT : SCIENCE
TERM : CA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	3	3	1	3	3	3	3	4	3

Q11a. They reproduce and give birth to young alive.
Q11b. R, it gives birth to young alive and does not have wings.

Q12a. All living things need water and food to survive, living things reproduce.
Q12b. The water plants produce oxygen.
Q12c. So that predators will not eat all the eggs and some eggs will hatch.

Q13a. egg → larva (young) → pupa → adult (bee)
Q13b. To ensure its species will continue to live on earth.

Q14a. N, because organism P has six legs and N has six legs.
Q14b. Day 12, when an insect becomes a pupa, it will stop eating.

Q15a. A – To make food, B - To support the plant and absorb water.
Q15b. Yes, It has flowers.
Q15c. It has a weak stem so the plant needs the pole to support the plant upright.

Q16a. G and F
Q16b. Both have air, water and warmth.

Q17a. They have the same mass.
Q17b. Pour away the water in the container and place the empty container on the beam balance.
Q17c. The lever balance will tilt towards the object Y.

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Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2015
SCIENCE
PRIMARY FOUR
BOOKLET A

Name: _____ .( ) **Class: Primary 4** ___

Date: 6 May 2015 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTION TO CANDIDATES

1. This question paper consists of 18 printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

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For each of the following questions from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

[60 marks]

1 Kingsley observed two animals, P and Q, and recorded his observations in the table below.

Characteristics	Animal P	Animal Q
Has gills?	No	Yes
Has legs?	Yes	No
Has wings?	Yes	No
Gives birth to its young alive?	No	No

Which one of the following best represents animals P and Q?

	Animal P	Animal Q
1)	Mammal	Fish
2)	Insect	Bird
3)	Bird	Fish
4)	Mammal	Insect

2 Olivia saw an organism. She wanted to find out whether it is an insect. Which of the following actions would enable her to do so?

A Measure its length.

B Count the number of legs.

C Find out whether it has wings.

D Find out whether it has three body parts.

1) A and B only

2) B and C only

3) A and C only

4) B and D only

(Go on to the next page)

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3 Kenneth wants to find out if the amount of light would affect the growth of fungi. He prepared two set-ups and listed the following variables that may affect the results of his experiment.

A The amount of air present in the surroundings

B The amount of light present in the surroundings

C The amount of moisture present in the surroundings

Which of the above variable(s) must Kenneth keep the **same for the two set-ups** to ensure a fair test?

1) A only

2) B only

3) A and C only

4) B and C only

4 Mrs Loo has some flowering plants in her garden. She is able to tell that the plants are flowering because they have _____.

(1) fruits

(2) woody stems

(3) spore bags on their leaves

(4) different leaf shapes and veins

(Go on to the next page)

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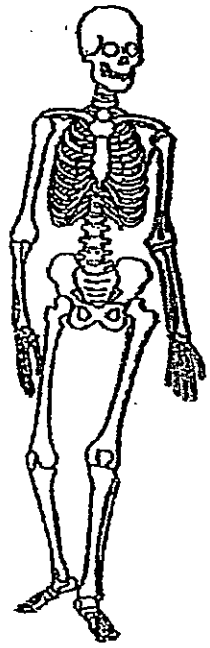
5 Study the human body system below.



Which one of the following statements is **not** true about the above human body system?

1) It supports the body.

2) It gives the body shape.

3) It takes oxygen into the body.

4) It protects the heart and lungs.

6 Which one of the following statements describes the main function of the large intestine in our body?

(1) It breaks down food into simpler forms.

(2) It passes the digested food to the blood.

(3) It absorbs water from the undigested food.

(4) It passes the undigested food out of the body.

(Go on to the next page)

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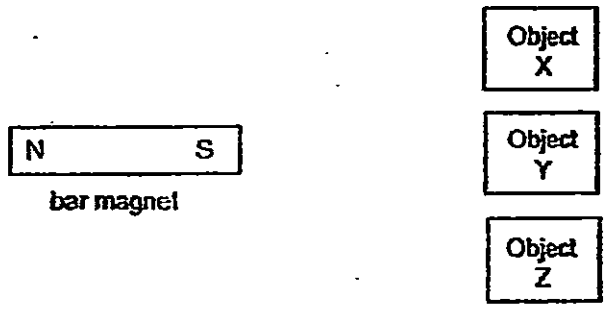
7 Michael brought one end of a bar magnet near objects X, Y and Z one at a time.



He recorded his observations below.

A Object X was repelled by the bar magnet.

B Object Y was attracted by the bar magnet.

C Object Z did not move when it was brought near the bar magnet.

Based on his observations, which of the following is(are) definitely a magnet(s)?

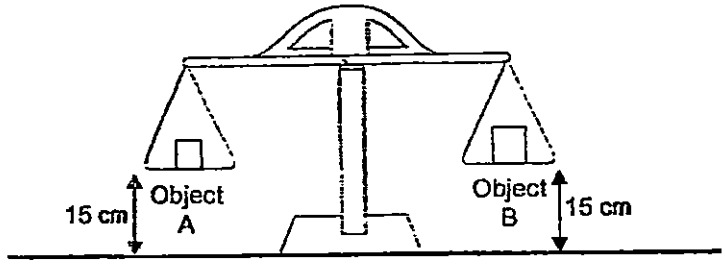
(1) Object X only

(2) Object Z only

(3) Objects X and Y only

(4) Objects Y and Z only

8 The diagram shown below illustrates a lever balance. Both Object A and Object B are the same distance away from the ground.



Which one of the following statements is true?

(1) Object A has a greater mass than Object B.

(2) Object B has a greater mass than Object A.

(3) Objects A and B have the same volume.

(4) Objects A and B have the same mass.

(Go on to the next page)

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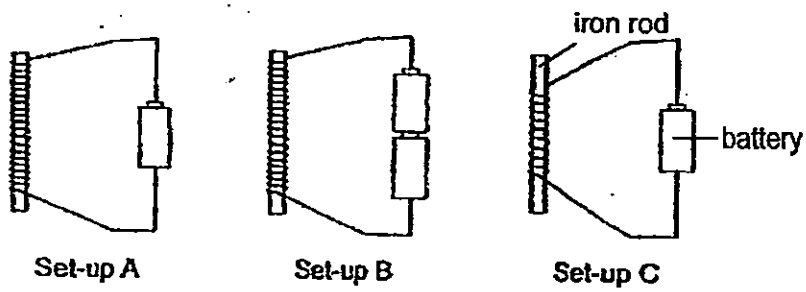
9 Janet made electromagnets using set-ups A, B and C as shown below. The batteries, iron rods and wires used were identical and in working conditions.



She then arranged the set-ups A, B and C from the one that attracts the most number of paper clips to the one that attracts the least number of paper clips.

Which one of the following shows the correct order?

	Attracts the most number of paper clips →		Attracts the least number of paper clips
(1)	A	B	C
(2)	B	A	C
(3)	C	A	B
(4)	C	B	A

10 Which one of the following pair of items has been grouped correctly?

	Matter	Non-matter
1)	Heat	Stone
2)	Oxygen	Sound
3)	Rainbow	Shadow
4)	Water vapour	Milk

(Go on to the next page)

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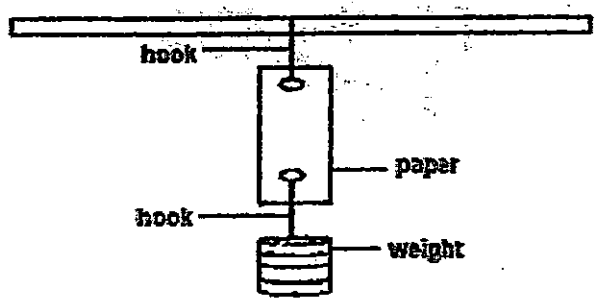
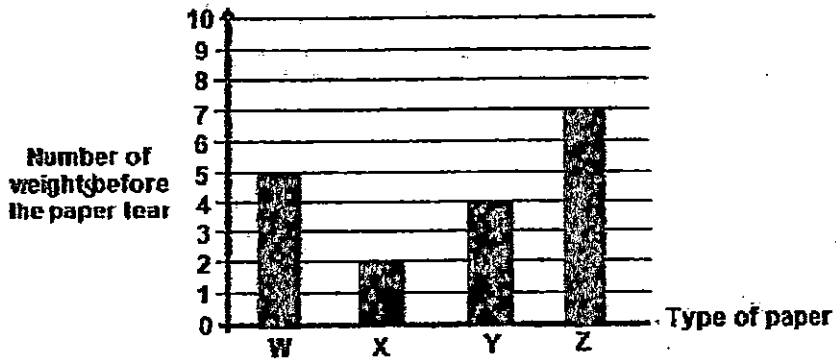
11 Ravi wanted to find out the strength of four different types of paper, W, X, Y and Z. They were all of the same size and thickness. He hung each piece of paper, one at a time, using the following set-up as shown below.



He placed one weight at a time to the lower hook until the paper started to tear and recorded his results as shown in the graph below.



Based on the information above, which of the following statement(s) is/are correct?

A Y is stronger than Z.

B Z is the strongest paper.

C W is stronger than X and Y.

D X is stronger than W and Y.

1) B only

2) B and C only

3) A and D only

4) A and C only

(Go on to the next page)

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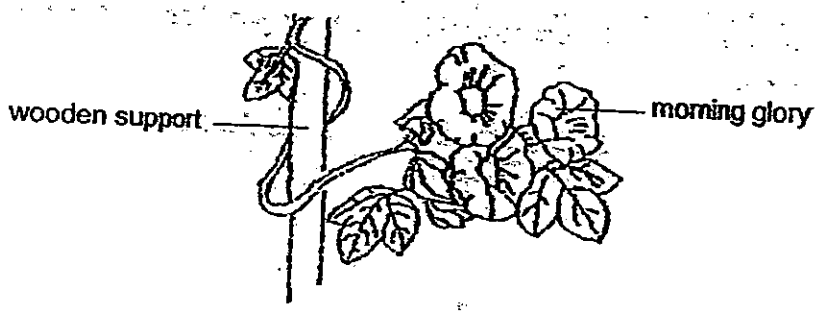
12 Study the diagram below.



Based on the diagram above, which one of the following statements describes the morning glory?

1) The morning glory has a weak stem and is a flowering plant.

2) The morning glory has a strong stem and is a flowering plant.

3) The morning glory has a weak stem and is a non-flowering plant.

4) The morning glory has a strong stem and is a non-flowering plant.

13 Study the diagram below.

Based on the diagram above, which of the following describes the leaves?

	Leaf edge	Vein pattern
(1)	Jagged	Parallel
(2)	Entire	Network
(3)	Jagged	Network
(4)	Entire	Parallel

(Go on to the next page)

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14 Eric conducted several tests on a material, Q. He recorded his observation in the table below.

Observation	Material Q
Bends easily?	Yes
Absorbs water?	Yes
Breaks when dropped?	No

Which one of the following is material Q likely to be?

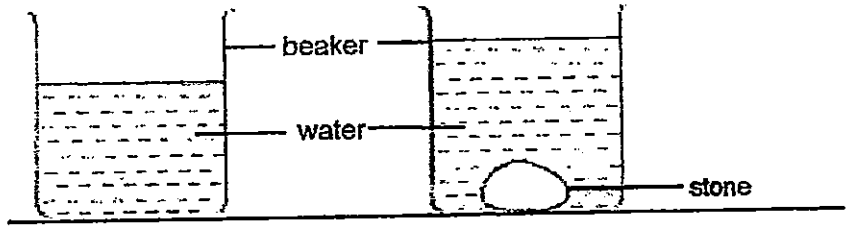
(1) Rubber

(2) Metal

(3) Ceramic

(4) Fabric

15 A stone was dropped into a beaker of water as shown in the diagram below. It was observed that the level of water rose.



What can be concluded from the experiment above?

1) The stone has mass.

2) The stone has no volume.

3) The stone occupies space.

4) The stone has the same volume as the water in the beaker.

(Go on to the next page)

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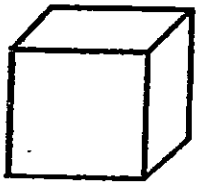
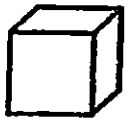
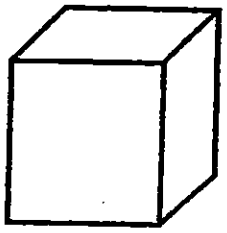
16 Study the information provided below.

 Box P	 Box Q	 Box R
Mass: 240 g Volume: 110 cm^3	Mass: 360 g Volume: 60 cm^3	Mass: 180 g Volume: 200cm^3

Based on the information given above, which of the following statements are true?

A Box R has less mass than Box Q.

B Box R has the most mass as it is the biggest box.

C Box P occupies more space than Box Q.

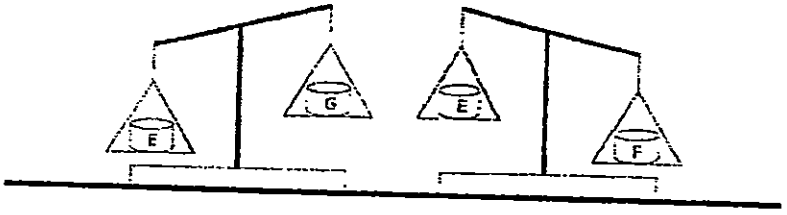
1) A and B only

2) A and C only

3) B and C only

4) A, B and C

17 Darryl placed three different objects, E, F and G, two at a time, using a lever balance. The results are as shown below.



Arrange the objects, E, F and G, in descending order, according to their masses.

(1) F, G, E

(2) F, E, G

(3) G, E, F

(4) G, F, E

(Go on to the next page)

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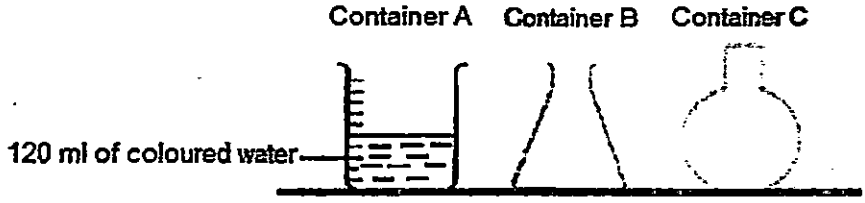
18 120 ml of coloured water from Container A was poured into Container B. The coloured water was then poured from Container B to Container C. There was no spillage.



What can be concluded from the above experiment?

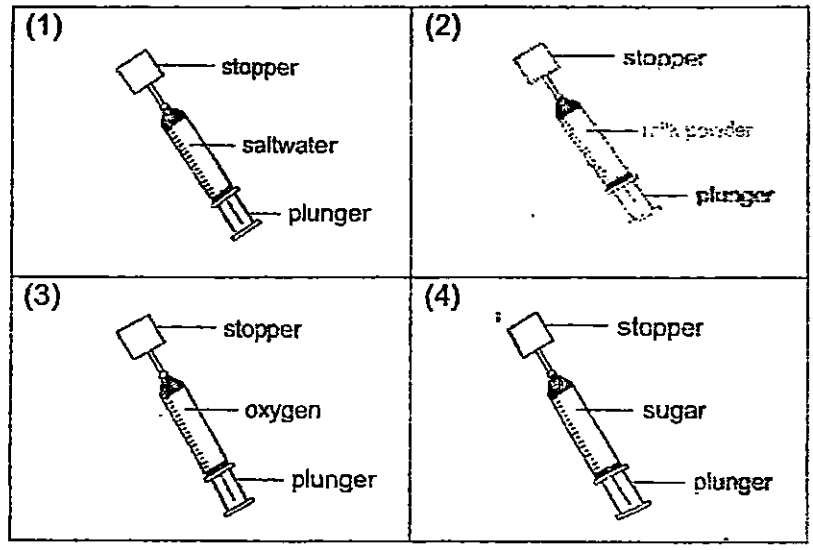
(1) The volume of the coloured water changed but not the mass.

(2) The mass of the coloured water changed but not the volume.

(3) The shape of the coloured water changed but not the volume.

(4) The shape and volume of the coloured water remained the same.

19 Four syringes of the same size were filled with different substances of the same volume. A stopper was inserted at the nozzle of each syringe. Which plunger can be pushed in?



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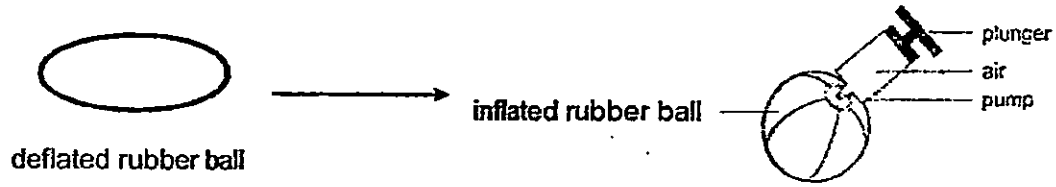
20 The capacity of a rubber ball is 500 cm^3. The rubber ball was first deflated. An air pump was then used to inflate the rubber ball. Each push of the pump forced 110 cm^3 of air into the ball. What was the volume of air in the rubber ball if the pump was pushed five times?



(1) 110 cm^3

(2) 390 cm^3

(3) 500 cm^3

(4) 550 cm^3

21 Fred conducted an experiment to find out the properties of an object. He then recorded his findings in a table as shown below.

Properties	Yes / No
Does the object have a definite volume?	Yes
Does the object have a definite shape?	No
Can the object be compressed?	No

What was most likely the object that Fred was experimenting with?

(1) salt

(2) jelly

(3) paper cup

(4) sugar syrup

(Go on to the next page)

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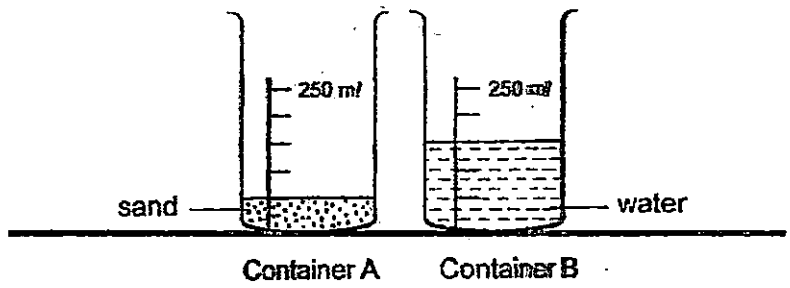
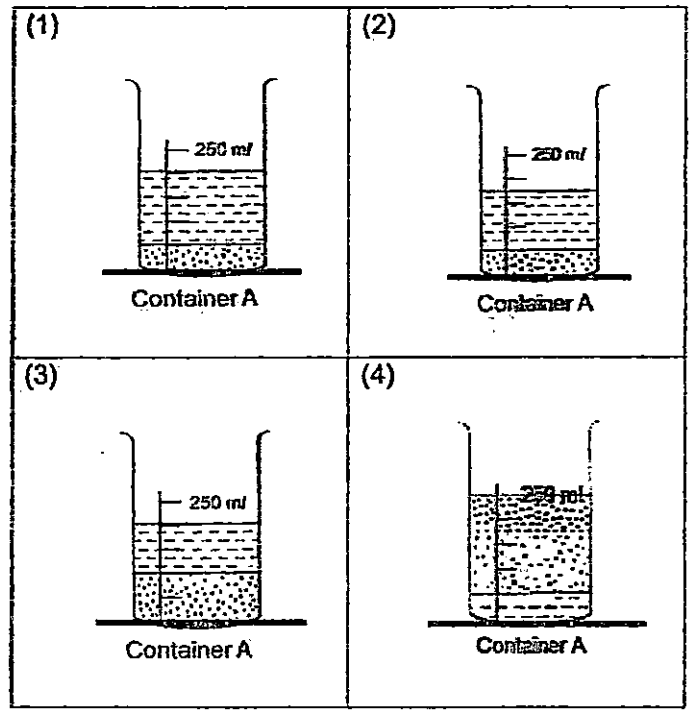
22 James set up an experiment as shown below.



He poured all the water from Container B into Container A. Which one of the following diagrams shows the results of his experiment?



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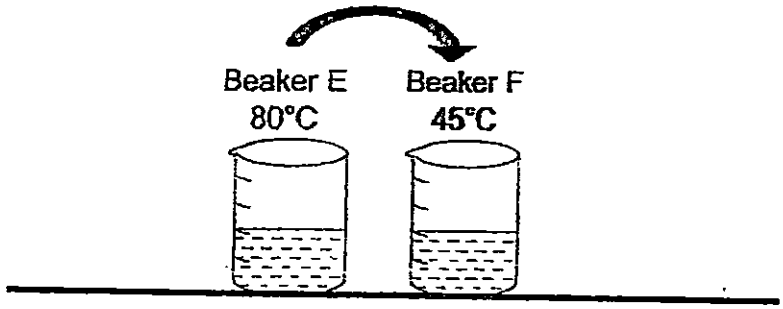
23 An equal amount of water of different temperatures was poured into two identical beakers as shown below. Water from Beaker E was then poured into Beaker F.



What is the most likely final temperature of the water in Beaker F?

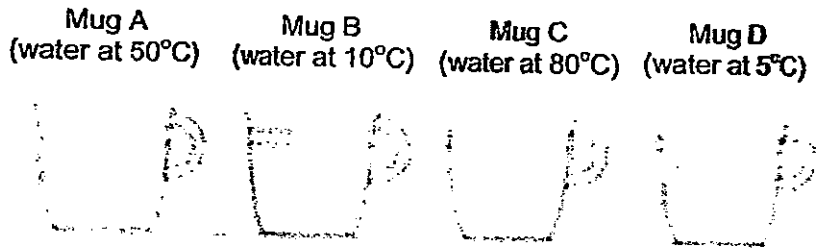
(1) 45°C

(2) 70°C

(3) 80°C

(4) 100°C

24 Four identical mugs of water were left on a table at room temperature as shown below.



Which mugs lost heat to the surrounding air?

(1) A and B only

(2) A and C only

(3) B and C only

(4) B and D only

(Go on to the next page)

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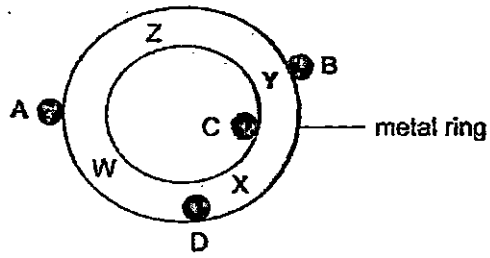
25 Four metal buttons, A, B, C and D, were attached to the metal ring with the same amount of wax as shown in the diagram below.



When the metal ring was heated by a lit candle at one part, the metal buttons dropped in the order of B, C, D and A. At which position, W, X, Y or Z, was the lit candle heating the metal ring?

(1) W

(2) X

(3) Y

(4) Z

26 A company wants to produce frying pans. It conducted a test on four different metals, S, T, U and V. The metals were heated for 10 minutes. The temperatures of the pans, before and after heating, were recorded. The results of the test are shown in the table below.

Metal	Temperature before heating (^{o}C)	Temperature after heating (^{o}C)
S	25	59
T	25	62
U	25	55
V	25	70

Based on the results above, which metal, S, T, U or V, is the most suitable material for making the base of a frying pan?

(1) S

(2) T

(3) U

(4) V

(Go on to the next page)

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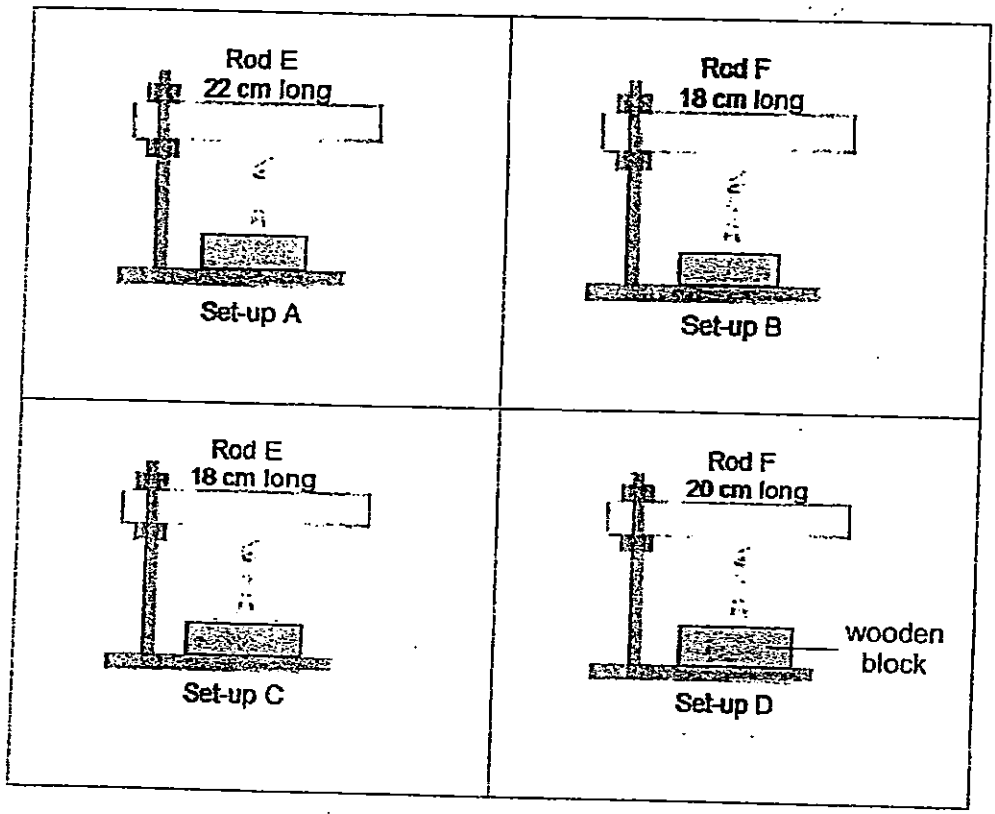
27 Asher wants to find out which metal bar, E or F, will expand more when heated. Which two set-ups should he use in order to carry out a fair test?



(1) A and B only

(2) B and C only

(3) C and D only

(4) A and D only

(Go on to the next page)

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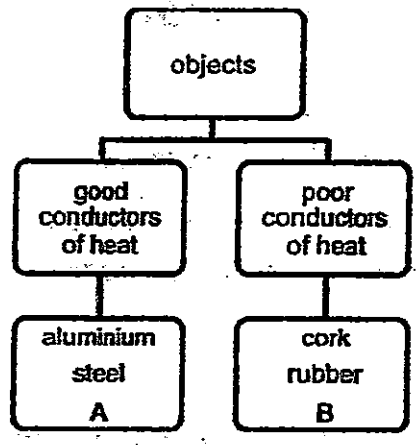
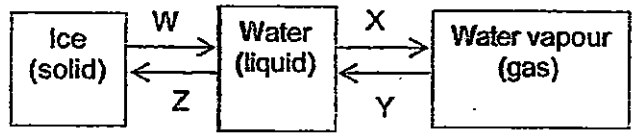
28 Study the classification diagram below.



What are objects A and B most likely to be?

	A	B
1)	Wood	Copper
2)	Wood	Air
3)	Air	Copper
4)	Copper	Air

29 Study the diagram below that represents the process of how water can change into its three different states.



Which of the following shows the correct heat transfer among the three states of matter?

	Heat Gain	Heat Loss
(1)	W and Z	X and Y
(2)	X and Y	W and Z
(3)	W and X	Y and Z
(4)	Y and Z	W and X

(Go on to the next page)

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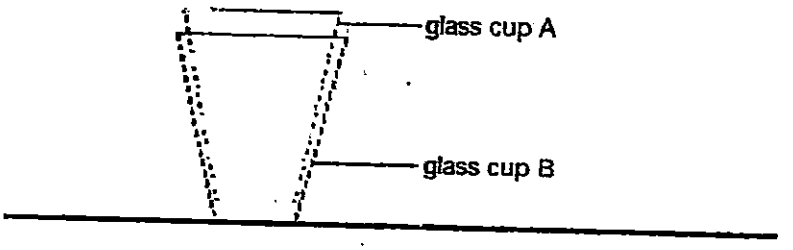
30 Ali had difficulty separating two glass cups, A and B, which were stuck together as shown in the diagram below.



Which one of the following statements is the best solution to separate the two glass cups?

(1) Put glass cup B in a basin of hot water and put ice cubes into glass cup A.

(2) Put glass cup B in a basin of cold water and put ice cubes into glass cup A.

(3) Put glass cup B in a basin of hot water and pour hot water into glass cup A.

(4) Put glass cup B in a basin of cold water and pour hot water into glass cup A.

END OF BOOKLET A

Please go on to Booklet B

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Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2015
SCIENCE
PRIMARY FOUR
BOOKLET B

Name: _____ ( ) **Class: Primary 4** ___

Date: 6 May 2015 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 13 printed pages including this cover page.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

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For questions 31 to 44, write your answers in the spaces provided in this booklet.

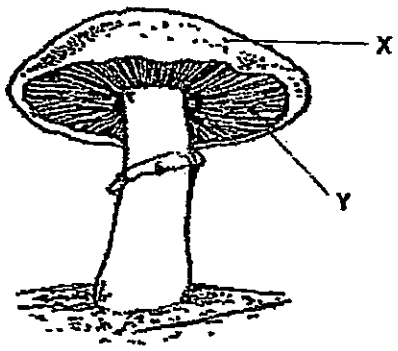
The number of marks available is shown in the brackets [ ] at the end of each question or part question.

(40 marks)

31 Put a tick (✔) in the appropriate boxes to indicate if each statement about fungi is true or false. [2]

Statements	True	False
Fungi cannot make their own food.		
Fungi exist as micro-organism only.		
Fungi produce spores for reproduction.		
Fungi have true roots to help them absorb water.		

32 The diagram below shows a mushroom.



Identify parts X and Y.

(a) X : _____ [1]

(b) Y : _____ [1]

(Go on to the next page)

Score	/ 4

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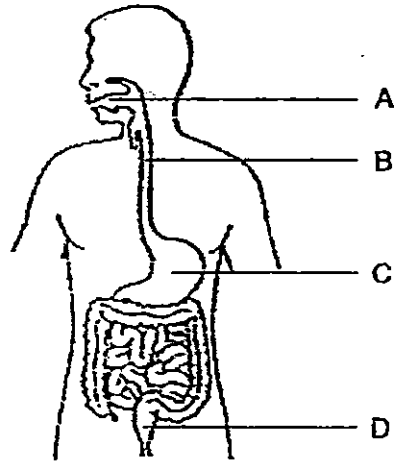
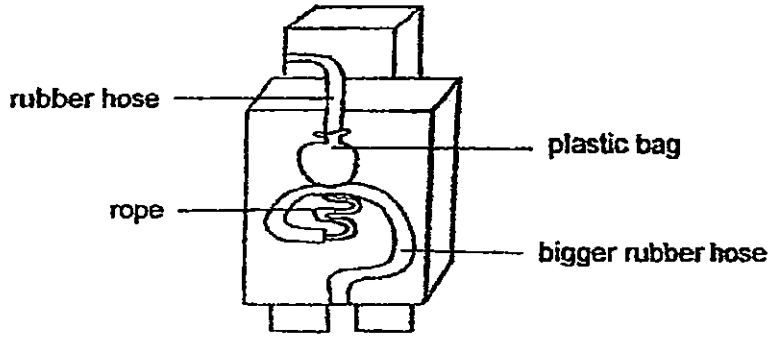
33 The diagram below shows the human digestive system.



(a) State two of the parts (A, B, C, D) where digestion take place [2]

_____

Kumar used some scrap materials to make a model of the digestive system as shown below.



(b) Name the parts of the digestive system represented by each of the scrap materials used. [2]

(i) rubber hose: _____

(ii) plastic bag: _____

(Go on to the next page)

Score	/ 4

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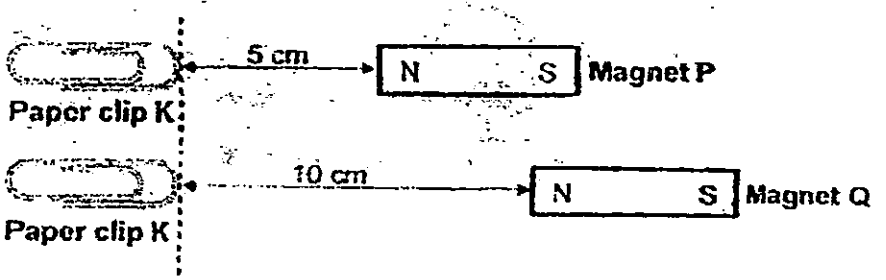
34 The diagram below shows the greatest distance from which the different magnets, P and Q, will be able to attract the paper clip K.



(a) What can you conclude from the above experiment? [1]

_____

_____

(b) Put a tick (✓) in the appropriate boxes to indicate which variable(s) to change or keep the same to ensure a fair test in the experiment above. [1]

Variable	Change	Keep the same
Size of paper clip		
Type of magnet		
Size of magnet		
Position where the paper clip is placed		

(c) State one way to make a magnet weakens or loses its magnetism. [1]

_____

(Go on to the next page)

Score	2 / 3

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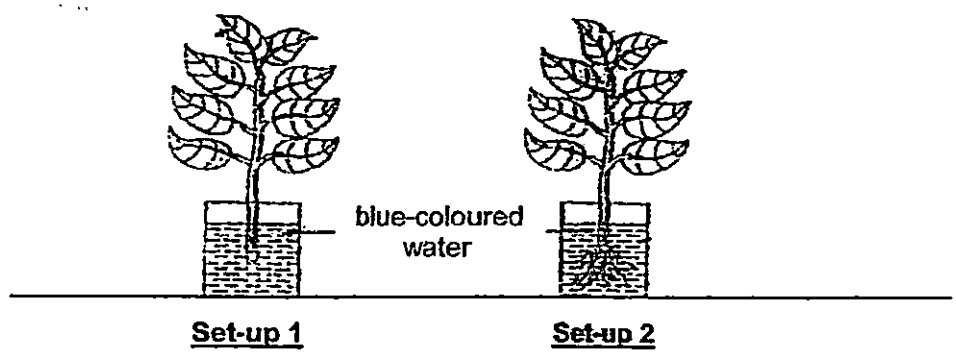
35 Aaron used two similar plants to conduct an experiment as shown below. He removed the roots of the plant in Set-up 1, and left both plants in a room in the same location.



After eight hours, he measured the amount of water left in each set-up, and recorded his results in table below.

Set-up	Amount of water at the start of the experiment	Amount of water at the end of the experiment
1	500 ml	420 ml
2	500 ml	340 ml

(a) What was the aim of Aaron's experiment? [1]

_____

_____

(b) State the two main functions of the **stem** in a plant [2]

(i) _____

(ii) _____

(Go on to the next page)

Score	/ 3

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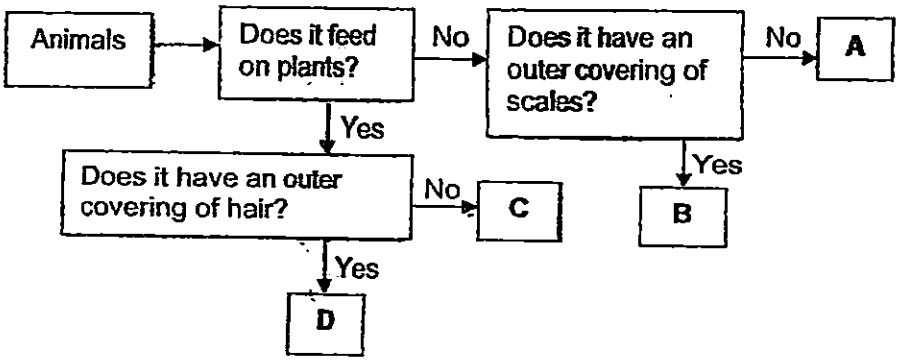
36 Study the flowchart below.



(a) Lucas was given a pet animal with hairs on its body and it feeds on plants. Based on the classification diagram, which one of the animals, A, B, C or D, represents Lucas's pet animal? [1]

_____

(b) Based on the flowchart above, which letter, A, B, C and D, correctly represents each of the animals below. [2]

	Animal	Letter
(i)	tiger	
(ii)	horse	
(iii)	crocodile	
(iv)	grasshopper	

(Go on to the next page)

Score	/ 3

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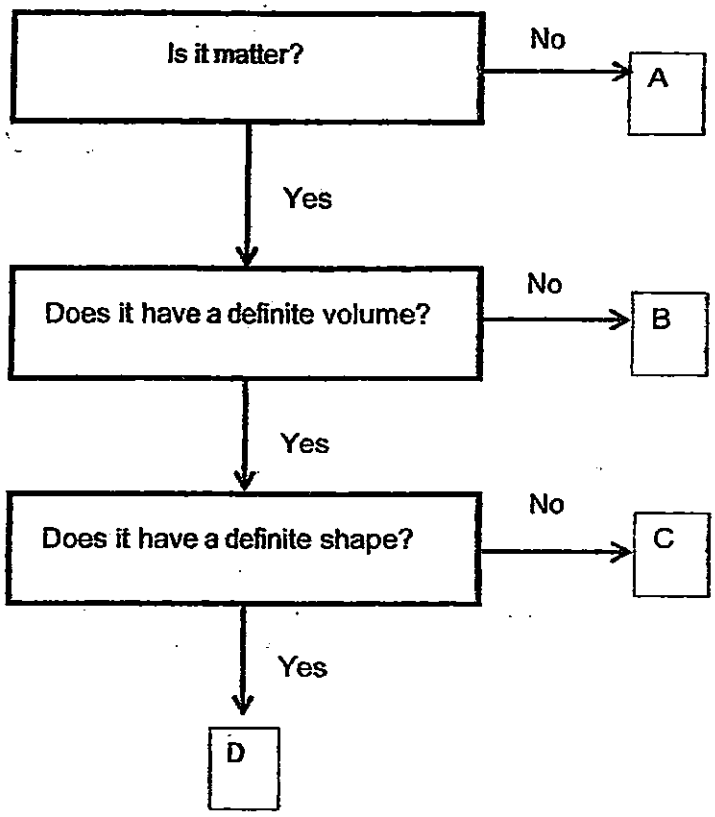
37 Study the flowchart below carefully.



Using the flowchart above, which letter best represents the following items? [2]

Item	Letter
Air	
Heat	
Bottle	
Orange juice	

(Go on to the next page)

Score	/ 2

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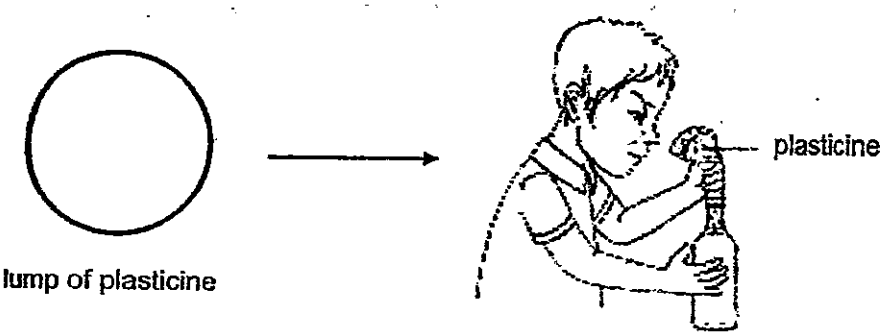
38 Zachary squeezed a lump of plasticine into a bottle as shown below. He managed to squeeze it in.



(a) Which state of matter is plasticine in? [1]

_____

(b) Zachary then moulded the plasticine into different shapes, one at a time. He made sure that all the plasticine was used every time. State the mass and volume for each shape of plasticine that he has moulded. [2]

Shape	Mass (g)	Volume (cm^3)
Lump of plasticine	25	35
cylinder		
box		

(Go on to the next page)

Score	/ 3

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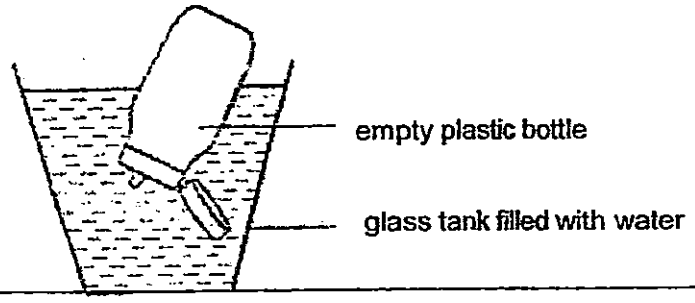
39 An empty plastic bottle was inverted into a glass tank filled with water. The bottle was then given a tight squeeze and released.



(a) What was observed at the mouth of the plastic bottle when it was squeezed? [1]

_____

(b) Explain your answer to **(a)**. [1]

_____

(c) What was observed about the level of water in the plastic bottle when it was released? [1]

_____

(Go on to the next page)

Score	/ 3

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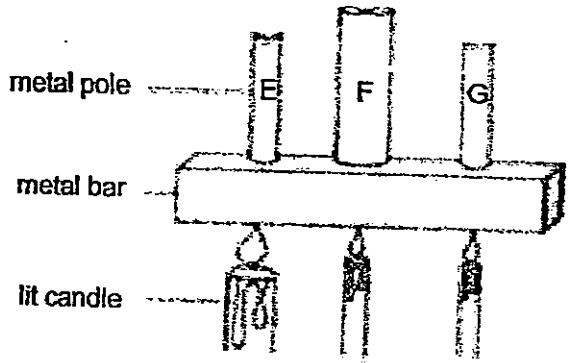
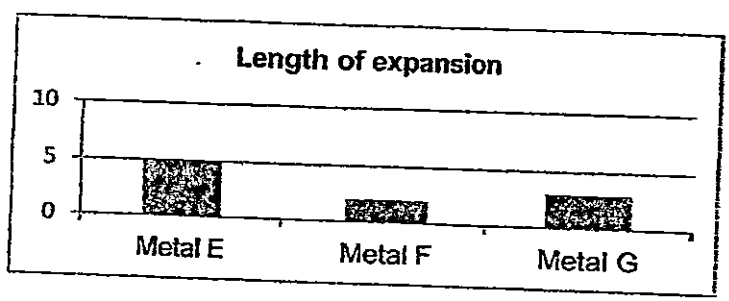
40 Two boys, Mark and Tom, conducted two experiments with the same aim. Mark set up an experiment as shown in the diagram below to find out which metal pole, E, F or G, expands the most when heated. However, he did not carry out a fair test.



(a) Which variable(s) should Mark have kept constant in order to conduct a fair experiment? Put a tick (✔) next to the variable(s). [1]

Variable	To be kept constant
Size of metal poles	
Type of metals	
Size of candles	

The other boy, Tom, conducted the experiment correctly. The results of his test are illustrated in the graph below.



(b) A company wants to make railway tracks. Based on this experiment, which metal, E, F or G, should the company use to make the railway tracks so that it doesn't buckle on a hot day? [1]

_____

(c) Explain your answer to part (b). [1]

_____

_____

(Go on to the next page)

Score	/ 3

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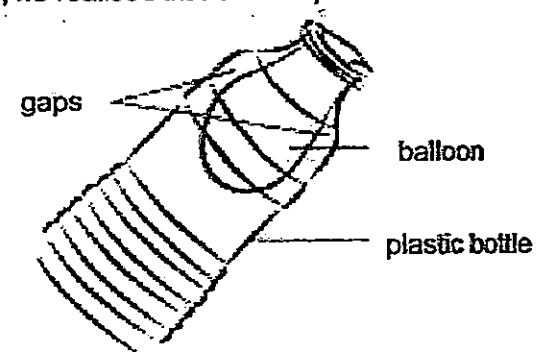
41 Martin secured a deflated balloon over the mouth of a plastic bottle. He then blew air into the balloon. However, he realised that it was impossible to inflate the balloon.



(a) Why was it not possible to inflate the balloon? [1]

_____

(b) After Martin poked a hole on the bottom of the plastic bottle, the balloon could be inflated. Why was this so? [2]

_____

_____

42 Ethan wanted to find out the volume of a pebble. He conducted the experiment and the steps he took were listed below.

(a) Number the steps taken accordingly. Step 1 has been stated. [2]

Procedure	Step
Fill the measuring cylinder with 20 ml of water.	1
Record the total volume of the water and the pebble in the measuring cylinder.	
Repeat the procedure for two more times.	
Place the pebble in the measuring cylinder carefully, ensuring that the water doesn't splash out, and the pebble is fully submerged.	
Find the difference between the volume of the water and the pebble, and the original volume of water in the measuring cylinder.	

(b) Why is there a need to repeat the procedure more than once? [1]

_____

(Go on to the next page)

Score	/ 6

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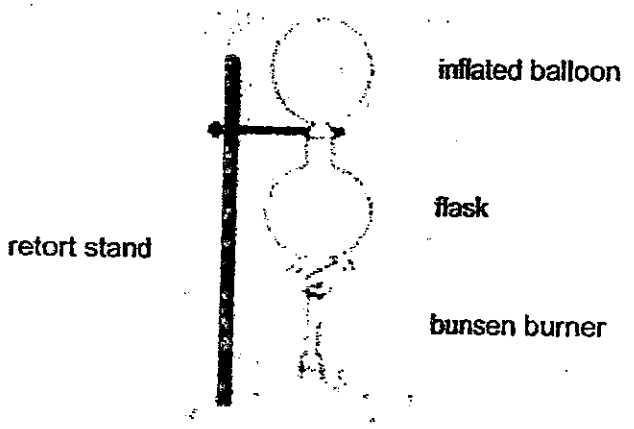
43 A balloon was attached to the mouth of an empty flask and suspended on a retort stand as shown below. The flask was placed above a bunsen burner and heated for a few minutes. It was observed that the balloon became inflated.



(a) What was the aim of the experiment? [1]

_____

_____

(b) A hot air balloon requires its material to stretch fairly well when it is heated. Explain why such a material is needed to create the hot air balloon. [1]

_____

_____

A test was conducted on three different materials to determine their ability to stretch. The results are shown in the table below.

Material	Total length of stretch made (cm)
Cotton	2
Leather	4
Nylon	8

(c) Based on the above results, which one of the materials, cotton, leather or nylon, is best suited to create the hot air balloon? [1]

_____

(Go on to the next page)

Score	/ 3

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44 Classify the list of items below into two groups according to whether they are good conductors of heat or poor conductors of heat. [3]

Aluminium	**Steel**	**Rubber**
Plastic	Styrofoam	Iron

Good conductors of heat	Poor conductors of heat

END OF BOOKLET B

Please check all your answers carefully

Score	/ 3

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : ANGLO CHINESE SCHOOL PRIMARY (BAKER ROAD)
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	4	3	1	3	3	1	4	2	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
2	1	3	4	3	2	2	3	3	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	2	2	2	3	4	2	4	3	1

Q31. TRUE , FALSE , TRUE , FALSE
Q32. X: Spore caps Y: Gills
Q33a. A & C
Q33bi) rubber hose : gullet Q33bii) plastic bag: stomach
Q34a. Magnet Q has a stronger magnetic force than magnet P.
Q34b.

Variable	change	Keep the same
Size of paper clip		✔
Type of magnet	✔	
Size of magnet		✔
Position where the paper clip is placed		✔

Q34c. Heating can make a magnet weakens or loses its magnetism.
Q35a. To find out if the plant with roots take in more water.
Q35bi) To support the plant. Q35bii) To transports food and minerals to the rest of the plants.
Q36a. D Q36bi) A Q36bii) D Q36biii) B Q36biv) C
Q37. Air – B , Heat – A , Bottle – D , Orange juice – C
Q38a. Solid
Q38b. Cylinder – mass 25g Volume – 35cm^3
Q38b. Box – 25g Volume – 35cm^3
Q39a. Air bubbles were forced out of the water.
Q39b. When the person squeezed the bubbles out of the bottle.
Q39c. The level of water increased.
Q40a

Variable	To be kept constant
Size of metal poles	✔
Type of metals	
Size f candles	✔

Q40b. Metals
Q40c. Metal F expanded the least.
Q41a. The air in the plastic bottle occupied space
Q41b. As the balloon occupied more space, the air in the bottle can escape.
Q42a. 1, 3, 5 , 2, 4
Q42b. To reduce experimental error.
Q43a. To find out if air expands when it is heated. Q43b. The material must be able to stretch as it will expand when the material gains heat from the hot air. Otherwise, the material will tear.
Q43c. Nylon
Q44.

Good conductors of heat	Poor conductors of heat
Iron	plastic
nickel	styrofoam
silver	wool

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ANGLO-CHINESE SCHOOL
(JUNIOR)

SEMESTRAL ASSESSMENT 1 (2015)
PRIMARY 4

SCIENCE

BOOKLET A

FRIDAY **8 MAY** **1 hour 30 minutes**

Name : _( )

Class : P4 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 25 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

The total marks for this booklet is 50.

The total time for Booklets A and B is 1 hour 30 minutes.

This question paper consists of 19 printed pages (inclusive of cover page).

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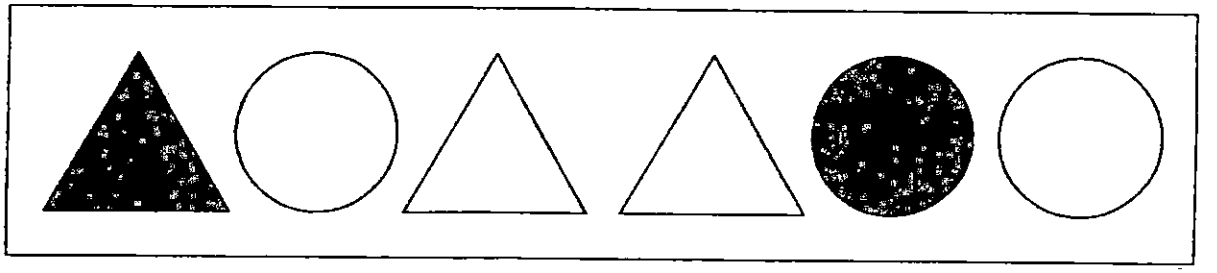
Booklet A (50 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet.
(25 x 2 marks)

1. Study the things in the box below.

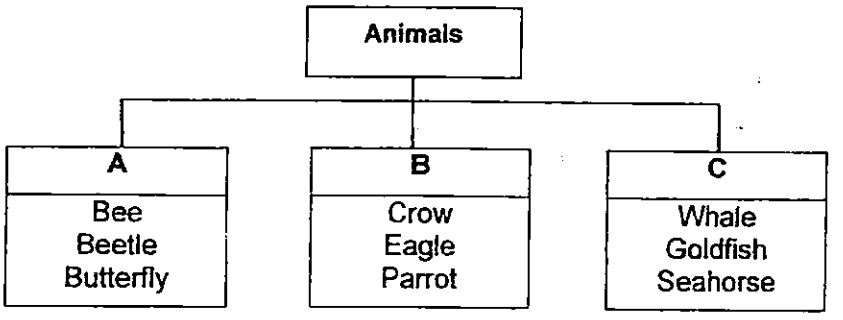


Which of the following classifications can be used to classify the things into **two** groups?

A According to size
B According to shape
C According to colour

(1) B only
(2) A and C only
(3) B and C only
(4) All of the above

2. Study the classification below.



Which of the animals above is **incorrectly** classified?

(1) Crow
(2) Whale
(3) Beetle
(4) Seahorse

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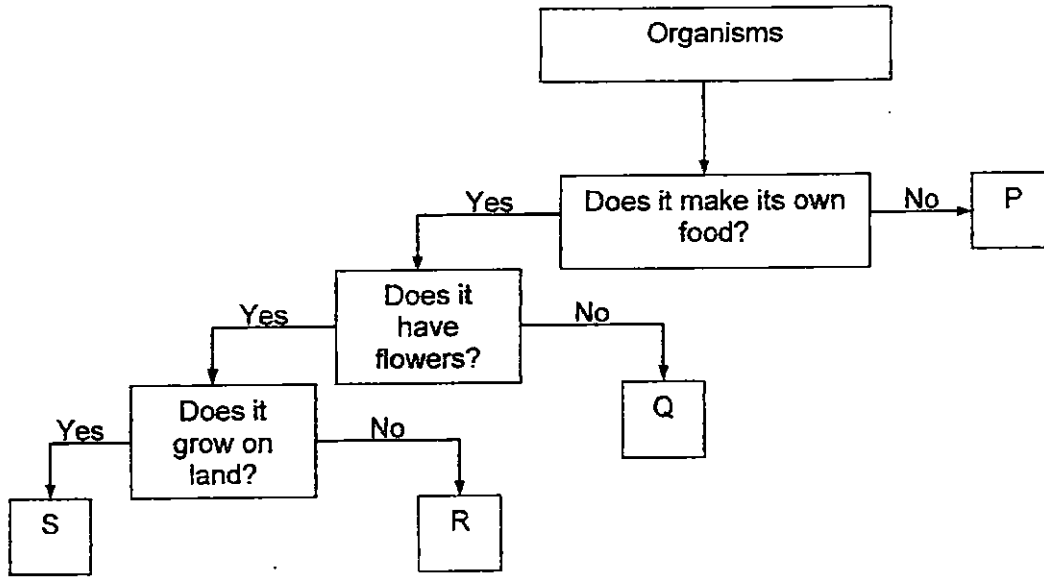
3. The chart below shows how some organisms are classified.



Which of the following best represent P, Q, R and S as shown in the chart above?

	P	Q	R	S
(1)	papaya plant	ladder fern	water hyacinth	sunflower
(2)	mushroom	banana	water lily	balsam
(3)	bracket fungus	moss	balsam	water lily
(4)	toadstool	staghorn fern	lotus	ixora

4. Some pupils made the following statements on fungi and bacteria.

Pupil A: Both fungi and bacteria can be useful to humans.
Pupil B: Both fungi and bacteria do not make their own food.
Pupil C: All fungi and bacteria cannot be seen with our naked eyes.
Pupil D: Fungi feed on dead and living organisms but bacteria feed on living organisms.

Who made the correct statements on fungi and bacteria?

(1) Pupils A and B
(2) Pupils C and D
(3) Pupils A, B and C
(4) Pupils A, B, C and D

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5. Mike carried out an experiment on 4 different types of materials Q, R, S and T. He placed a few drops of water on each material and observed the material.

Material	Observation
Q	The water slowly seeped into the material.
R	The water flowed off the sides of the material.
S	The water was absorbed into the material immediately.
T	The water was absorbed into the material after 5 minutes.

Based on the information above, which of the 4 materials, Q, R, S and T is most suitable to make a raincoat?

(1) Q
(2) R
(3) S
(4) T

6. Which two body systems work together to supply oxygen to the body?

(1) Muscular and Skeletal System
(2) Digestive and Circulatory System
(3) Digestive and Respiratory System
(4) Respiratory and Circulatory System

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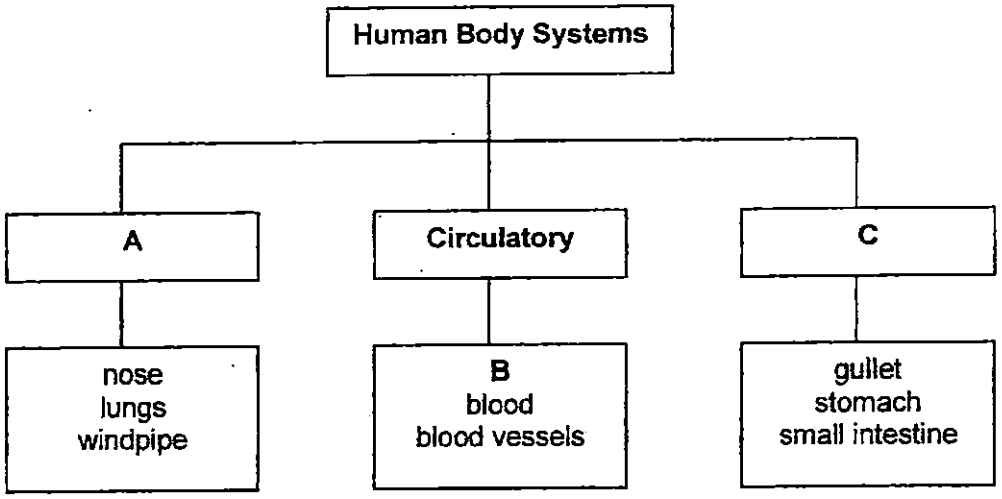
7. Study the classification table below.



Which one of the following sets matches A, B and C?

	A	B	C
(1)	respiratory system	heart	digestive system
(2)	digestive system	brain	muscular system
(3)	skeletal system	heart	muscular system
(4)	respiratory system	brain	digestive system

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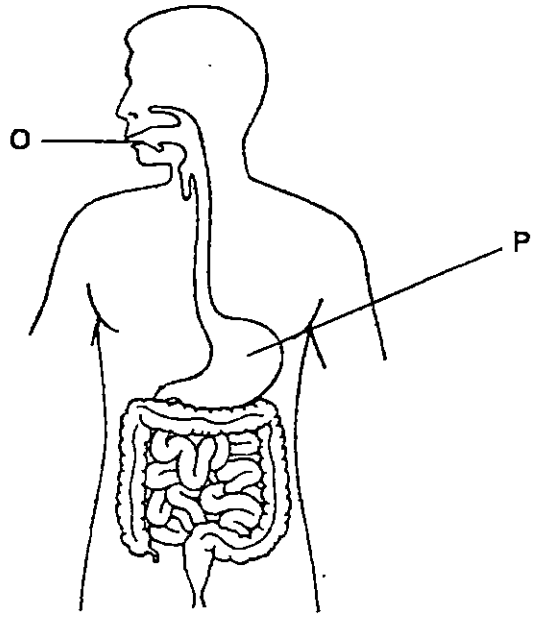
8. Study the diagram below.



Which of the following correctly describes the functions of parts O and P of the human digestive system?

	Part O	Part P
(1)	Saliva softens and digests the food.	Digested food is absorbed into the blood.
(2)	Food is digested further and mixed with other digestive juices.	Digestion begins here.
(3)	Digested food is absorbed into the blood.	Chewed food is delivered to other parts of the digestive system.
(4)	Food is chewed and ground into smaller pieces.	Food is digested further and mixed with other digestive juices.

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9. Aloysius cut off part(s) of a potted plant. He left the plant near the window and watered it daily. One week later, the potted plant died. Which part(s) of the plant did Aloysius cut?

A Fruits

B Leaves

C Flowers

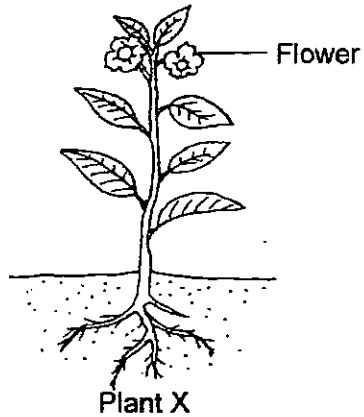
(1) A only

(2) B only

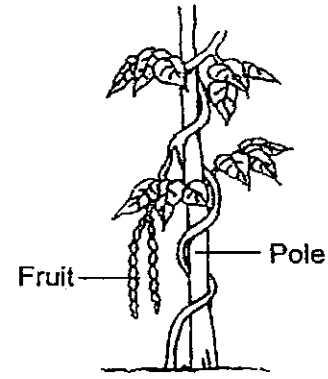
(3) C only

(4) A and C

10. The diagram below shows two plants.



Plant X



Plant Y

Based on the information given in the diagrams above, which of the following statement(s) is/are true for both plants?

A They have weak stems.

B They are flowering plants.

C They make their own food.

(1) B only

(2) A and C only

(3) B and C only

(4) A, B and C

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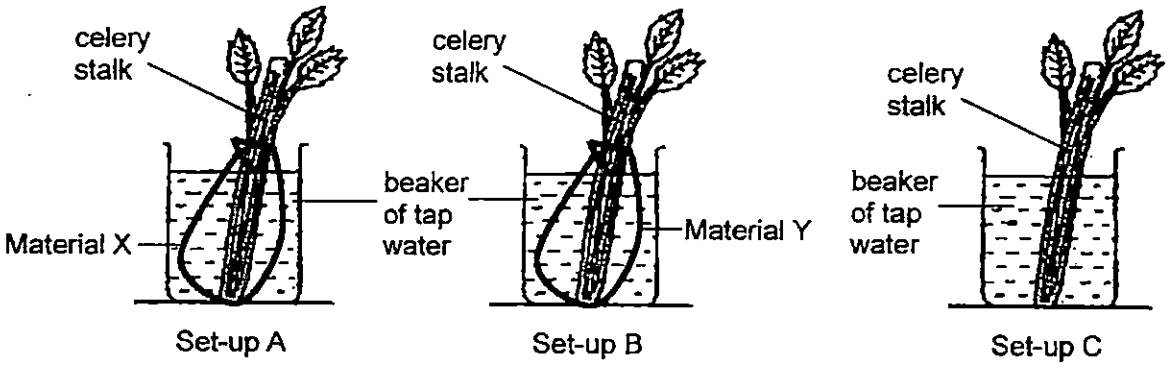
11. Amy set up the experiment as shown below.



The bases of the celery stalks in set-ups A and B were wrapped with 2 different materials X and Y. Three days later, Amy recorded her observations of the celery stalk in the table below.

	Set-up A	Set-up B	Set-up C
Observation	Leaves are green and firm	Leaves are yellowish and droopy	Leaves are green and firm.

Which of the following statements show the correct conclusion of Amy's experiment?

A Water can pass through material X.

B More water passed through material Y than material X.

C The leaves of the celery stalk in set-up B is likely to be firm if the base of the celery stalk was not wrapped with material Y.

(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

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12. John made some observations of the life cycles of a butterfly and a mosquito. He recorded his observation in the table below. He placed a tick (✓) to represent the characteristic that the insect has and a cross (X) to represent the characteristic that the insect does not have.

		Butterfly	Mosquito
A	4 stages in life cycle	✓	X
B	Lays eggs in water	✓	✓
C	The young resembles the adult	X	X
D	It is a pest during the larval stage	✓	X

Which of his observations did John record correctly?

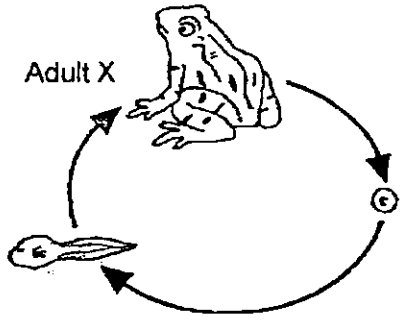
(1) A and B only

(2) A and D only

(3) B and C only

(4) C and D only

13. The diagram below shows the life cycle of animal X.



Based on the diagram above, which of the following statements is **not true** about animal X?

A It gives birth to its young alive.

B It has three stages in its life cycle.

C Its young closely resembles its parent.

(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

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14. Ahmad found a young of animal R and observed it over a few days. He recorded his observations in the table below.

It moults.
It eats a lot.
It resembles its adult.
It does not have wings.
It moves around quickly.

Which one of the following animals could the young of animal R most likely be?

(1) Housefly

(2) Mosquito

(3) Cockroach

(4) Mealworm Beetle

15. Alvin prepared four set-ups, A, B, C and D, using similar types of seeds with different conditions as shown in the table below.

Set- Up	Type of cotton wool	Location
A	moist	in the freezer
B	moist	near a window
C	dry	near a window
D	dry	in the freezer

Which set-ups should Alvin use if he wants to test if seeds need warmth to germinate?

(1) A and B

(2) A and C

(3) A and D

(4) B and C

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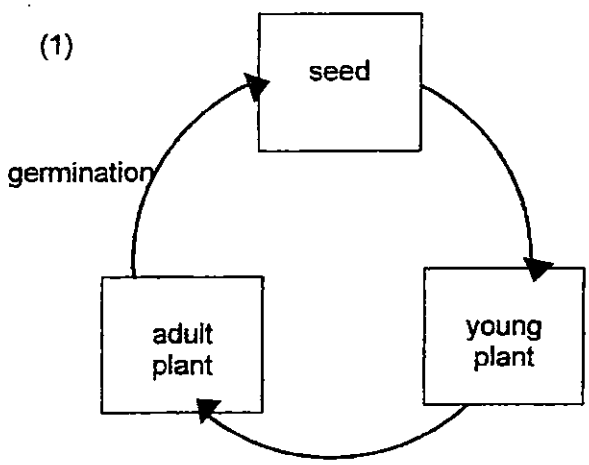
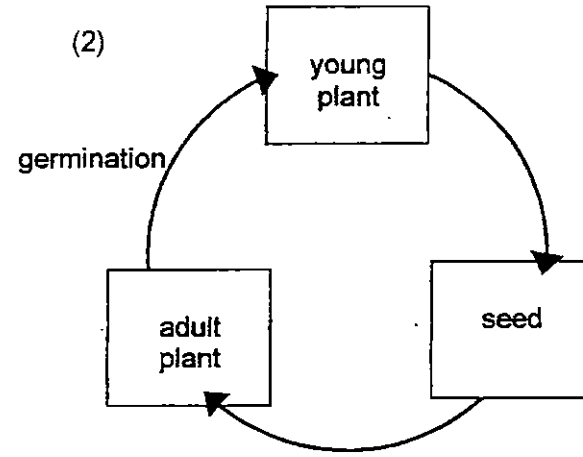
16. Which of the following shows the correct order of the stages and process in the life cycle of a flowering plant?

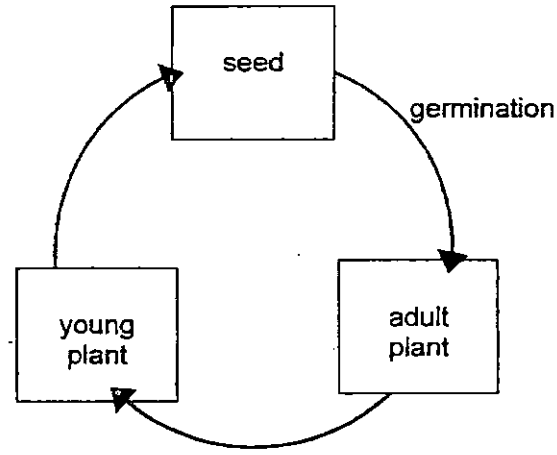
(1)



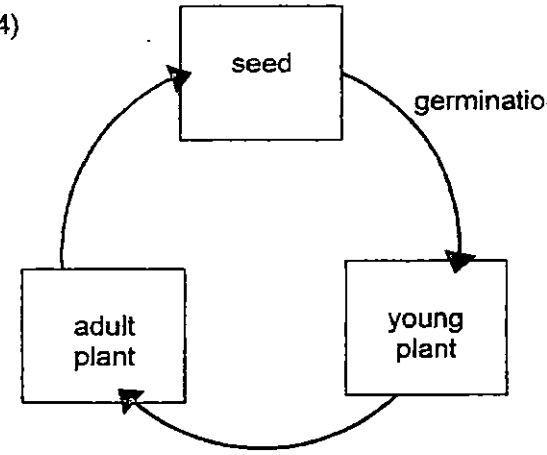
(2)



(3)



(4)



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17. Susan observed some green bean seeds germinate and recorded her observations in the table shown below.

Day	Observation
2	The seeds swell
3	The ~~coat~~ seed coat breaks
4	The roots start to appear
7	The shoots start to appear
14	The shriveled seed leaves have dropped off

From which day onwards will the seedling most likely be able to start to make its own food?

(1) Day 2

(2) Day 4

(3) Day 7

(4) Day 10

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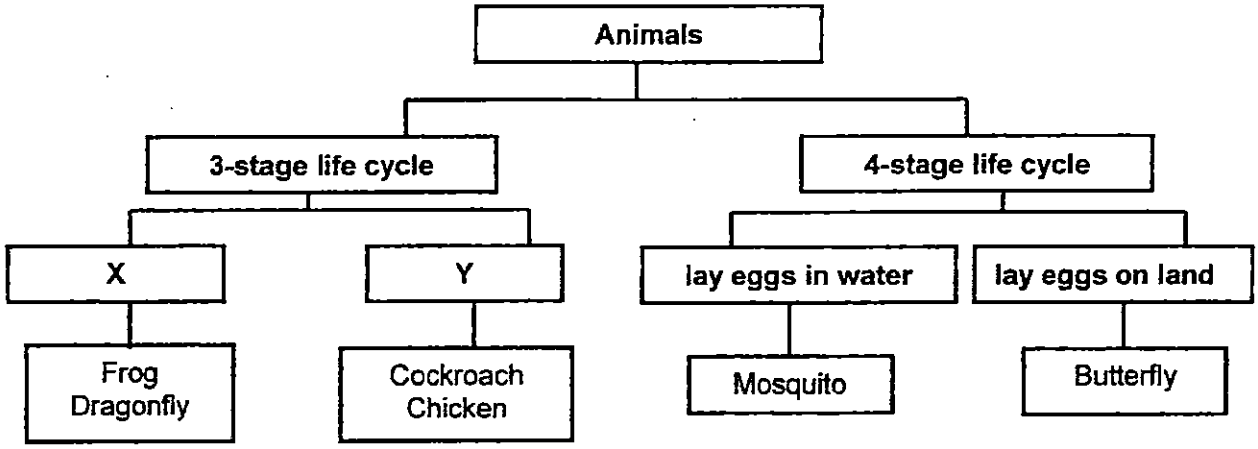
18. Study the classification table below.



Give a suitable sub-heading for X and Y.

	X	Y
(1)	Lay eggs	Do not lay eggs
(2)	Can fly	Cannot fly
(3)	Breathe through gills	Breathe through lungs
(4)	Spends some parts of its life cycle in water	Spends all its life cycle on land

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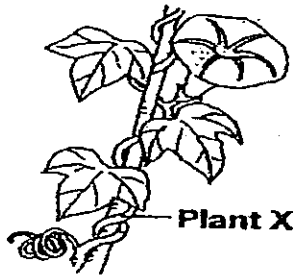
19. Monica found Plant X, growing in her school garden. She recorded some of her observations below.



P The plant has a weak stem.
Q The plant cannot bear fruits.
R The plant grows towards sunlight.
S The stem of the plant holds the plant firmly to the ground.

Which of her observations are correct?

(1) P and S only
(2) P and R only
(3) Q and R only
(4) Q and S only

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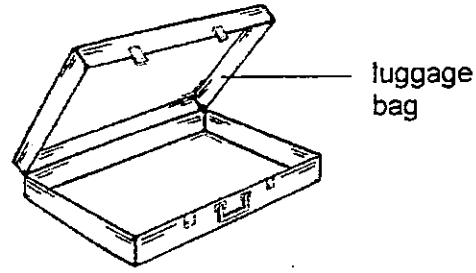
20. Mr Raju wanted to pack eight sets of clothing into his luggage bag. However, he found that he can only put in five sets of clothing inside the bag.



Which of the following best explains why was he unable to pack the remaining three sets of clothing?

A The clothes are too colorful.
B The clothes cannot be compressed.
C The clothes do not have a definite volume.
D The clothes take up space in the luggage bag.

(1) A and B

(2) A and C

(3) B and D

(4) C and D

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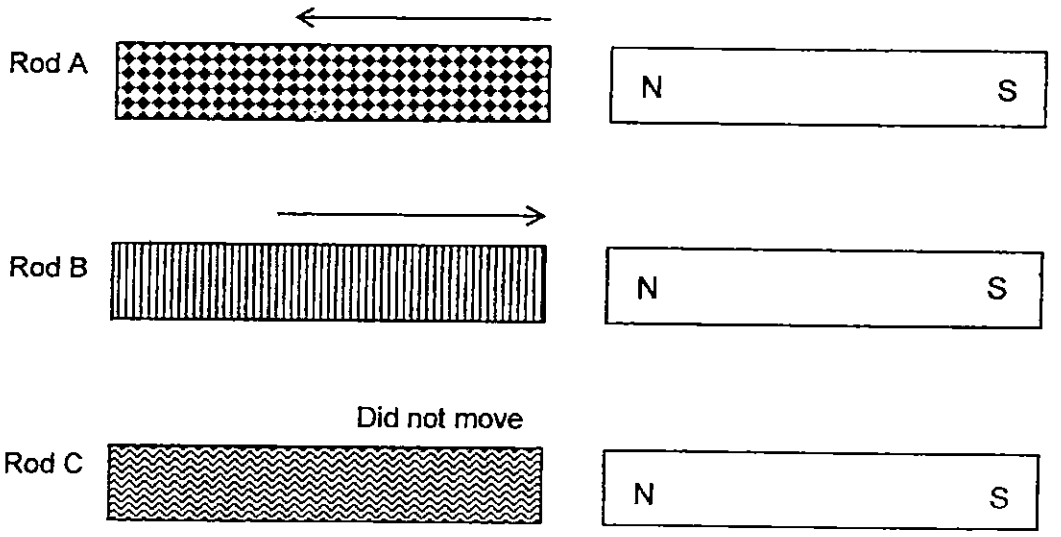
21. Wilfred placed three rods on the floor. When he placed a magnet next to the three rods, Rod A and B moved in the direction of the arrow shown in the diagram below. Rod C did not move.



Which of the following rods is/are definitely magnets?

(1) Rod A only

(2) Rod B only

(3) Rod A and Rod C

(4) Rod B and Rod C

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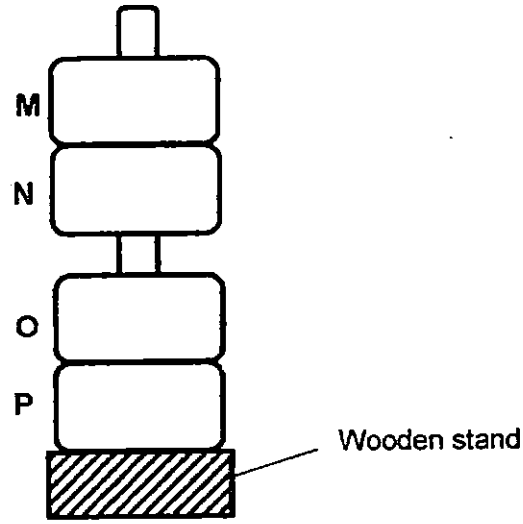
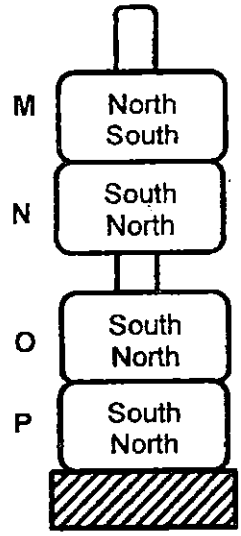
22. The set-up below show 4 ring magnets M, N, O and P placed on a wooden stand

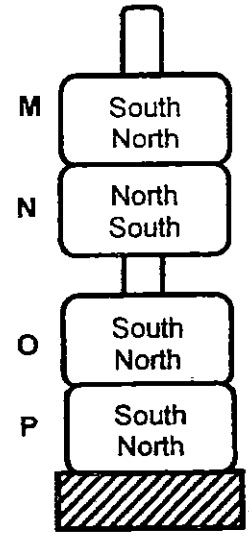


Which of the following shows the correct arrangements of the poles of the magnets?

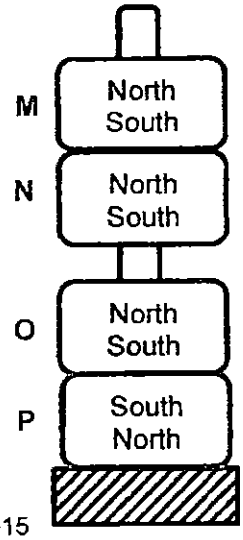
(1)



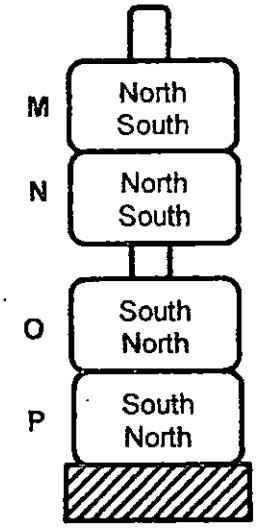
(2)



(3)



(4)



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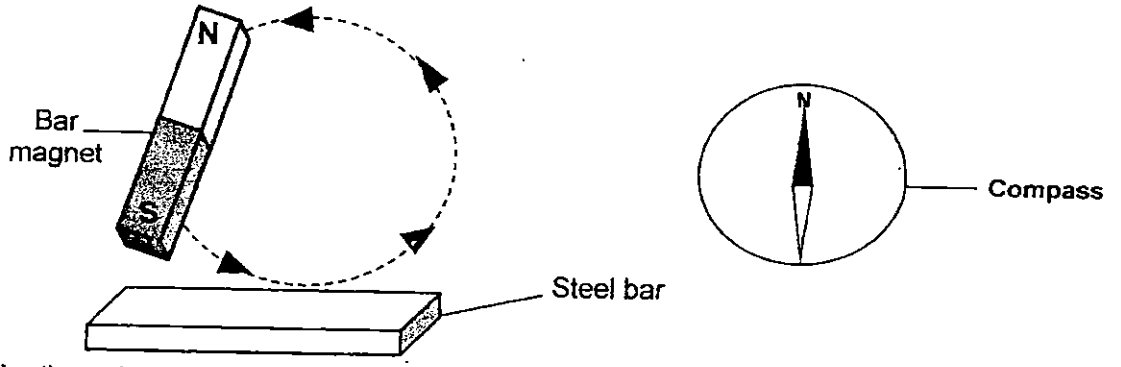
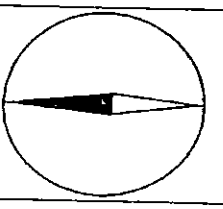
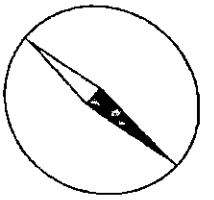
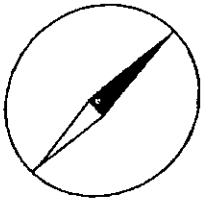
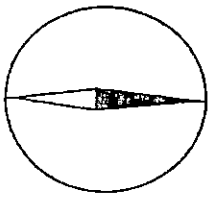
23. Lizzy used a bar magnet to repeatedly stroke a steel bar as shown below.



She then placed the steel bar next to a compass. Which of the following arrangement is a possible observation?

	Set-up
A	N S 
B	S N 
C	N S 
D	S N 

(1) A and D only

(2) A and B only

(3) B and C only

(4) C and D only

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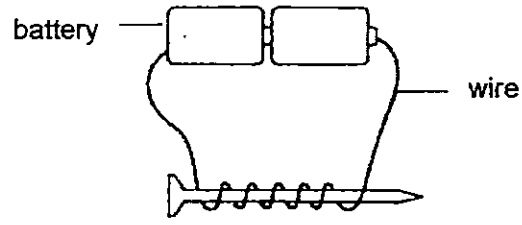
24. Dora conducted an experiment to find out if the number of coils around an iron nail affects the strength of the electromagnet. She recorded her results in the table below.

Number of coils	Number of iron paper clips attracted to the electromagnet
3	7
4	10
5	13
6	16

How does the number of coils around the iron nail affect the strength of the electromagnet?

	Number of coils	Strength of the electromagnet
(1)	Increase	Stronger
(2)	Decrease	Stronger
(3)	Increase	Weaker
(4)	Decrease	Remains the same

25. Darryl wanted to find out whether the number of batteries affects the strength of an electromagnet.



Which of the following variables should he change to ensure a fair experiment?

(1) Size of the nail

(2) Size of the batteries

(3) Number of batteries used

(4) Number of coils around the nail

End of Booklet A

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ANGLO-CHINESE SCHOOL
(JUNIOR)

SEMESTRAL ASSESSMENT 1 (2015)
PRIMARY 4

SCIENCE

BOOKLET B

FRIDAY **8 MAY** **1 hour 30 minutes**

Name : _____ ( )

Class : P4 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 14 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

The number of marks is given in brackets [ ] at the end of each question or part question.

The total marks for this booklet is 40.

The total time for Booklets A and B is 1 hour 30 minutes.

This question paper consists of 17 printed pages (inclusive of cover page).

BOOKLET A	/ 50
BOOKLET B	/ 40
TOTAL	/ 90
Parent's signature/ Date:	

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Booklet B (40 marks)

For questions 26 to 39, write your answers in this booklet.
The number of marks available is shown in the brackets [ ] at the end of each question or part question.

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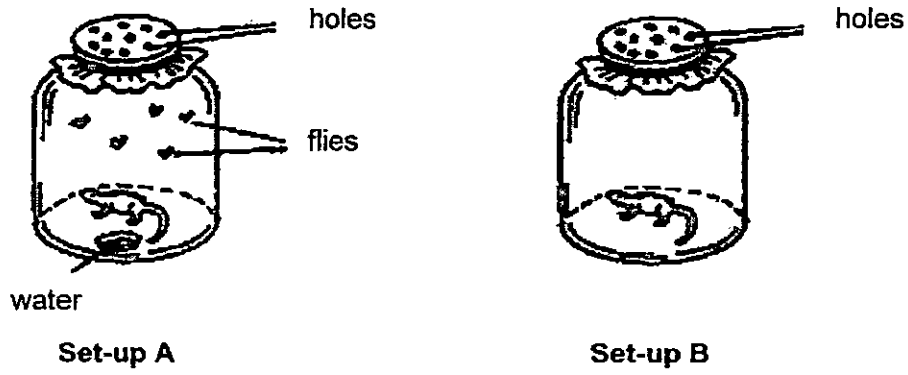
26. Lucas set up an experiment as shown below to find out whether living things need water to survive. He used similar bottles with holes and lizards.



Set-up A **Set-up B**

(a) His father saw the set-ups and said that the experiment was not a fair test. Explain why. [1]

_____

_____

_____

(b) Predict what would happen to the lizards in set-up A and set-up B after 1 week? [1]

Set-up A: _____

Set-up B: _____

(c) What should Lucas add to set-up B to make the experiment a fair test? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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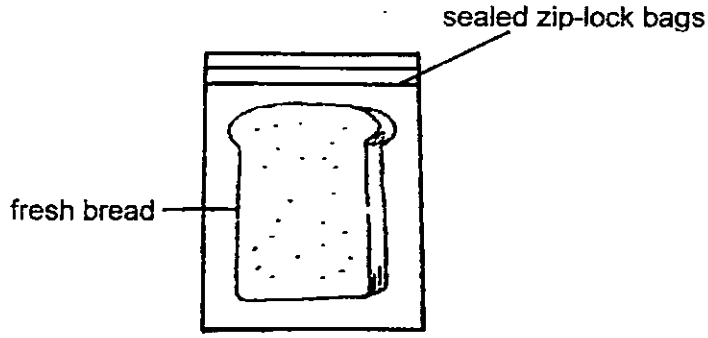
27. Sharon placed a slice of fresh bread each into 3 zip-lock bags, A, B and C, and placed each bag at different locations in her house for 2 weeks.



Bag A: Placed at the window sill.

Bag B: Placed in the refrigerator.

Bag C: Placed in the cupboard.

(a) After 2 weeks, Sharon spotted a type of organism growing on all 3 slices of bread. Name the organism. [1]

_____

(b) Arrange the bags A, B and C according to the rate at which the organisms would grow on the bread placed in the 3 different locations, starting from the fastest to the slowest. [1]

_____

(c) What should Sharon do to a new slice of bread if she wants to prevent the organism stated in (a) from growing? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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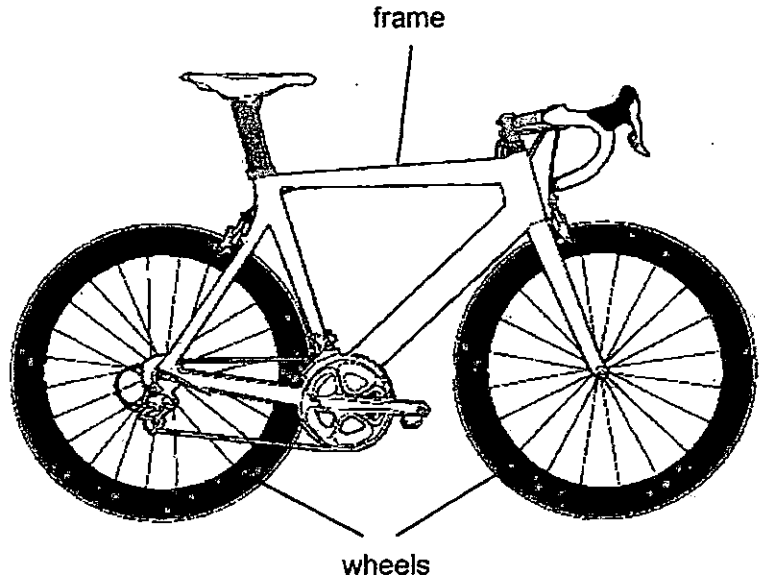
28. The diagram below shows a bicycle. A bicycle transports a person from one place to another.



(a) The bicycle is similar to a human. Name the human system(s) that the bicycle resembles which allows a human to move from one place to another. [1]

_____

_____

(b) The frame of the bicycle is similar to a human organ/part in terms of its function. Identify the human organ/part and explain how the functions of the frame and the human organ/part that you have identified are similar. [1]

_____

_____

_____

(Go on to the next page)

SCORE	/ 2

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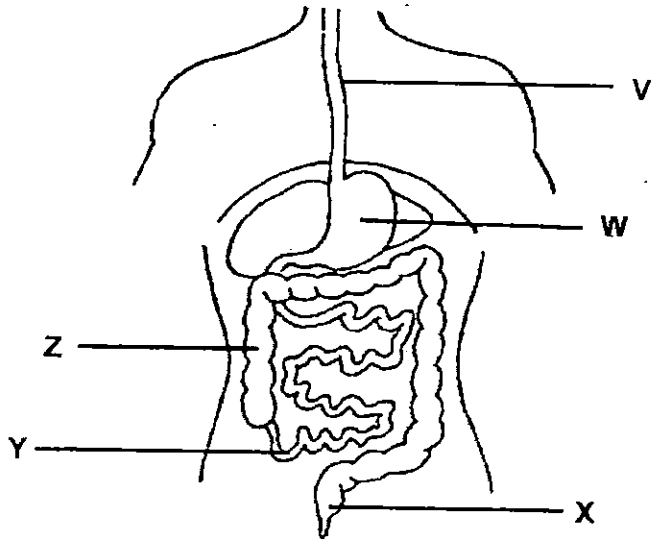
29. The diagram below shows parts of the digestive system.



(a) Based on the diagram above, in which of the 5 labelled parts of the digestive system (V, W, X, Y and Z) is digestive juices produced? [1]

_____

(b) What is the function of part V? [1]

_____

_____

(c) Explain what will happen to the undigested food in part Z. [1]

_____

_____

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SCORE	/ 3

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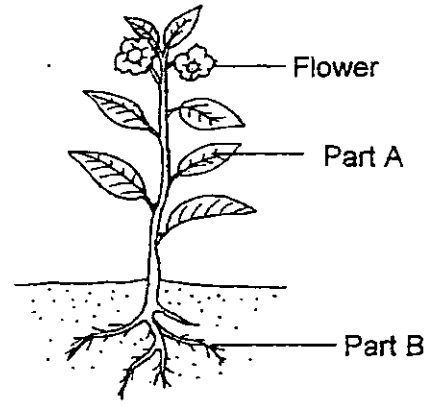
30. The diagram below shows a flowering plant.



(a) What do the flowers of the plant develop into? [1]

_____

(b) State a function of part A. [1]

_____

_____

(c) State how part B is useful to the plant. [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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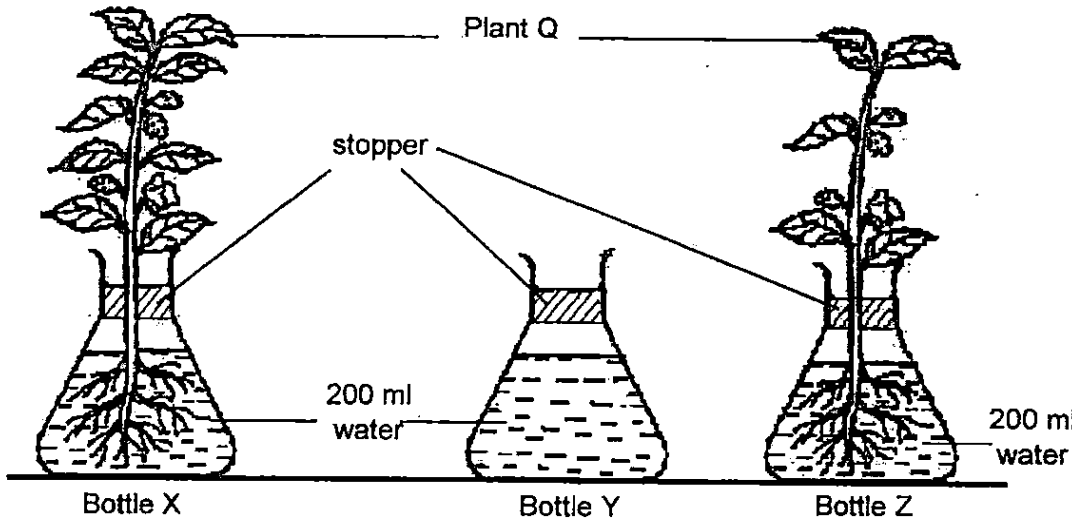
31. Mei Lee carried out an experiment using the set-ups shown below. She used identical bottles and placed them at the same location. Each bottle was filled with 200 ml of water and fitted with a stopper. Bottles X and Z contain similar plants Q but with different number of leaves.



The table below shows the results of the experiment after 3 days.

	Bottle X	Bottle Y	Bottle Z
Number of leaves	9	0	5
Volume of water(ml) left	160	?	185

(a) What would be the volume of water left in Bottle Y after 3 days? [1]

_____

(b) Why did the volume of water in Bottles X and Z change over time? [1]

_____

_____

(c) What is the relationship between the number of leaves and the volume of water left after 3 days? [1]

_____

_____

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SCORE	/ 3

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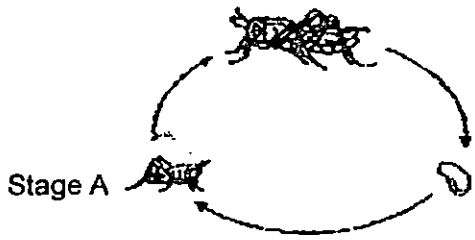
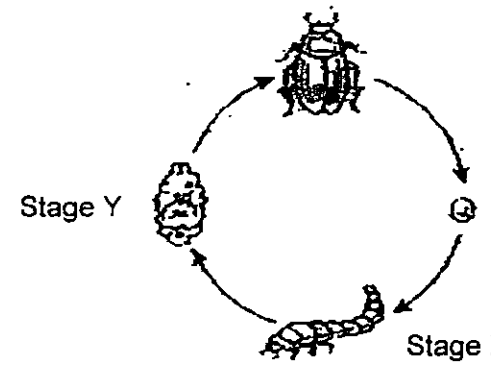
32. Study the life cycles of the grasshopper and mealworm beetle shown below.



Life cycle of grasshopper



Life cycle of mealworm beetle

(a) State one difference between stage X and Y of the life cycle of the mealworm beetle. (Do not mention shape or size) [1]

_____

_____

(b) State one difference between stage A of the life cycle of the grasshopper and stage X of the life cycle of the mealworm beetle.
(Do not mention shape or size) [1]

_____

_____

(Go on to the next page)

SCORE	/ 2

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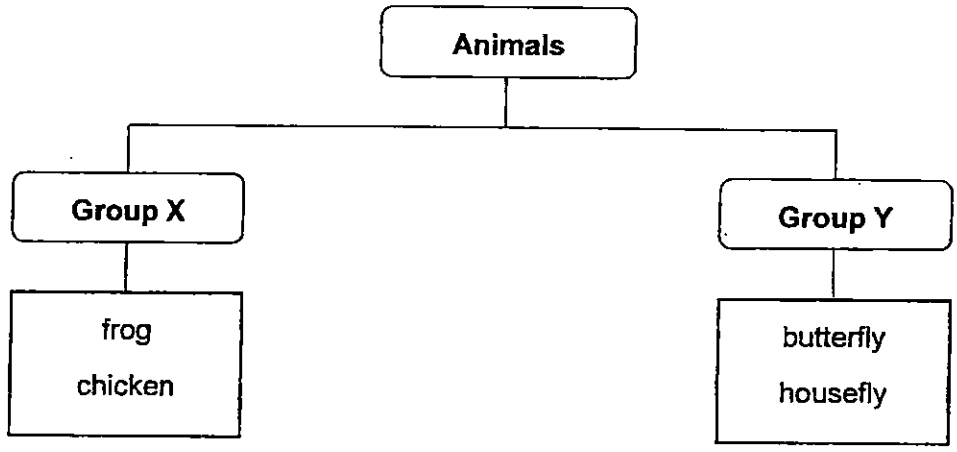
33. Study the classification chart below.



(a) Suggest an appropriate heading for Group X and Group Y. [1]

Group X : _____

Group Y : _____

Zach found a nymph of an insect and kept it for observation. He noticed that it moulted several times before becoming an adult.

(b) How many stages are there likely to be in the life cycle of the insect that Zach observed? [1]

_____

(c) Why did the nymph moult? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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34. Steven observed a seed as it grew into a seedling. He recorded the mass of the seed leaves and shoot of the seedling in the table below.

Results	Day 0	Day 2	Day 4	Day 6	Day 8	Day 10
X	25g	20g	15g	11g	6g	6g
Y	5g	6g	9g	16g	20g	24g

(a) Which result, X or Y, correctly shows how the mass of the seed leaves change during the period of Steven's observation? Explain your answer. [1]

_____

_____

(b) After Day 14, the seed leaves dropped off. Explain why. [1]

_____

_____

(c) State all the conditions needed for a seed to germinate. [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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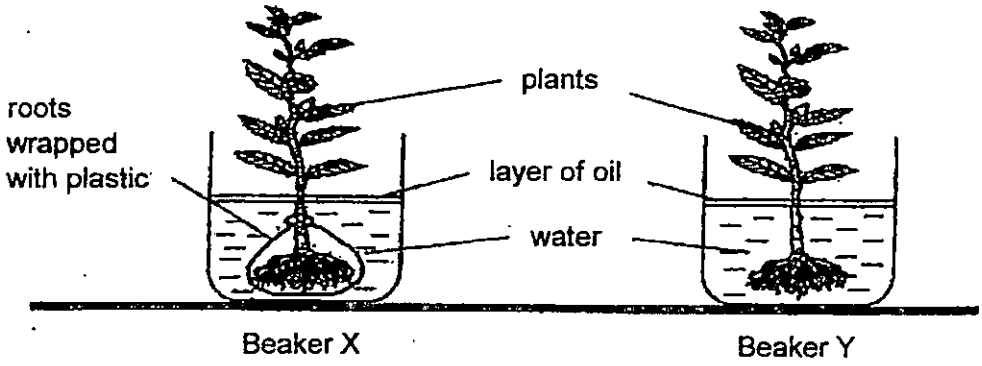
35. Mandy carried out an experiment below for her school Science project. She poured 80ml of water into each of the two beakers, X and Y. Then, she placed two similar plants into each beaker, followed by a layer of oil to prevent water from evaporating.



She observed the plants and recorded the amount of water left in the beakers after three days in the table below.

	Volume of water left in beaker (ml)	
	Beaker X	**Beaker Y**
End of Day 1	80	77
End of Day 2	80	75
End of Day 3	80	70
End of Day 4	80	60

(a) What is the aim of Mandy's experiment? [1]

_____

_____

(b) State another variable that she must keep constant to ensure a fair experiment. (Do not repeat those already mentioned) [1]

_____

_____

(c) How will the results of water left in Beaker Y be affected for the 3 days if Mandy removed most of the leaves from the plant in beaker Y at the start of the experiment? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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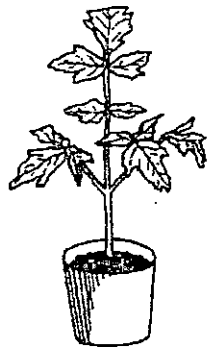
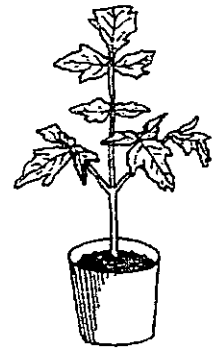
36. Joash wanted to find out how the amount of sunlight a plant received would affect its growth. He put the identical plants at different places as shown in the diagram below.

		
Plant J Placed in the school field	Plant K Placed in the cupboard	Plant L Placed in the living room

After 3 weeks, he observed that all the plants had grown taller. He then recorded the height of the plants.

(a) Which plant, J, K or L, would most likely have the greatest height? Explain your answer. [1]

_____

_____

(b) During the 4th week of his experiment, Joash noticed that Plant L was growing towards one direction. Explain why the plant was growing in this way. [1]

_____

_____

(c) Joash wrote some notes inside his Science textbook about plants. Read the following statements and put a tick (✓) in the true or false column. [1]

	Statements	True	False
(i)	Mosses are not plants		
(ii)	Only flowering plants can bear fruits		
(iii)	Plants need air, water and food to survive		
(iv)	Sunlight is not needed for germination		

(Go on to the next page)

SCORE	/ 3

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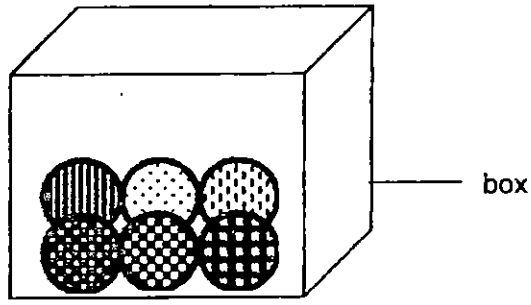
37. Nancy found a box containing six balls of identical size. The balls are made of different materials as stated below.

Rubber	Aluminium	Wood	Steel	Plastic	Ceramic

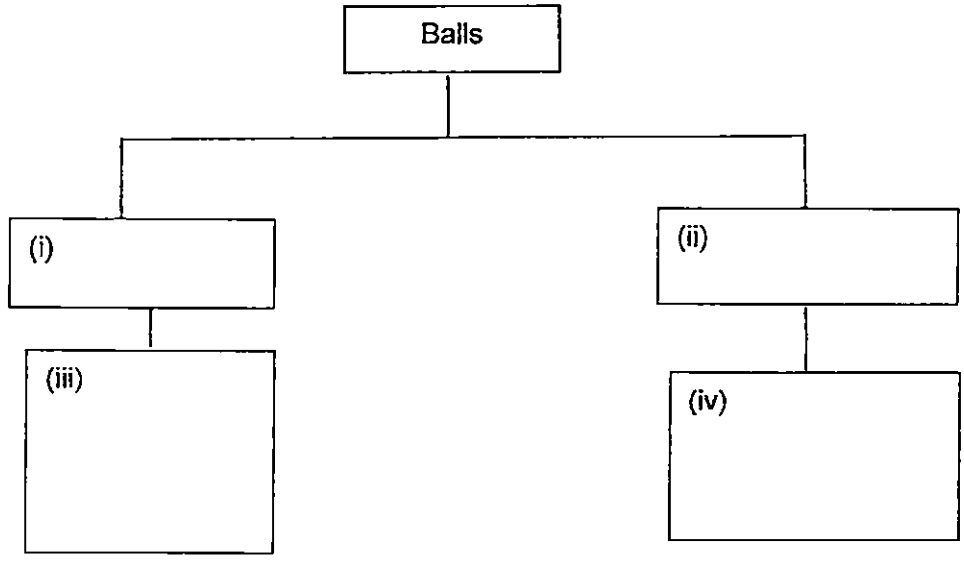


(a) Nancy found a magnet, cotton wool, a compass and some iron filings on the table. Explain how she may use one or more of these materials to get only the steel ball out from the ~~tank~~. [1]

_____

_____

(b) Classify the six balls into two groups with suitable headings. [2]



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SCORE	
	3

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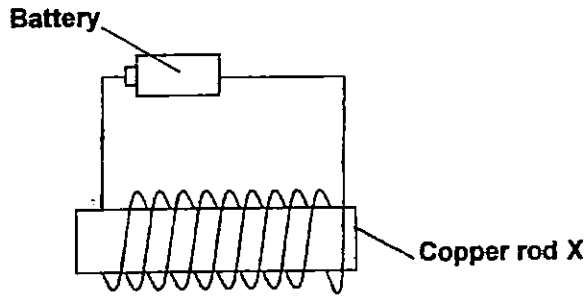
38. John conducted an experiment using a Copper Rod X as shown in the set-up below. The battery is connected to the wires and is working well.



He closed the switch and brought Rod X near some iron paper clips. But none of the paper clips were attracted to it.

(a) Based on the set-up above, give a reason why the paper clips were not attracted to the Copper Rod X. [1]

_____

_____

(b) Suggest a change that John can make to the above set-up, in order to make the electromagnet work. [1]

_____

_____

(c) After John has made the change in (b), suggest 2 other things that he can do to increase the strength of the electromagnet. [1]

_____

_____

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SCORE	/ 3

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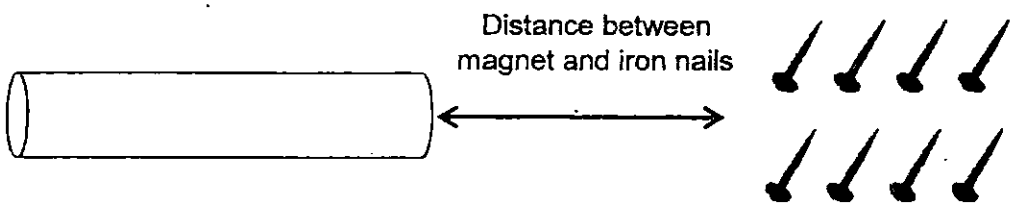
(d) John brought the new and working magnet near a box of iron nails as shown below.



Distance between magnet and the iron nails (cm)	Number of iron nails attracted to the magnet
5	17
8	9
9	7
12	3

Based on the above table, what is the relationship between the distance between the magnet and the iron nails and the number of iron nails attracted to it? [1]

_____

_____

(Go on to the next page)

SCORE	/ 1

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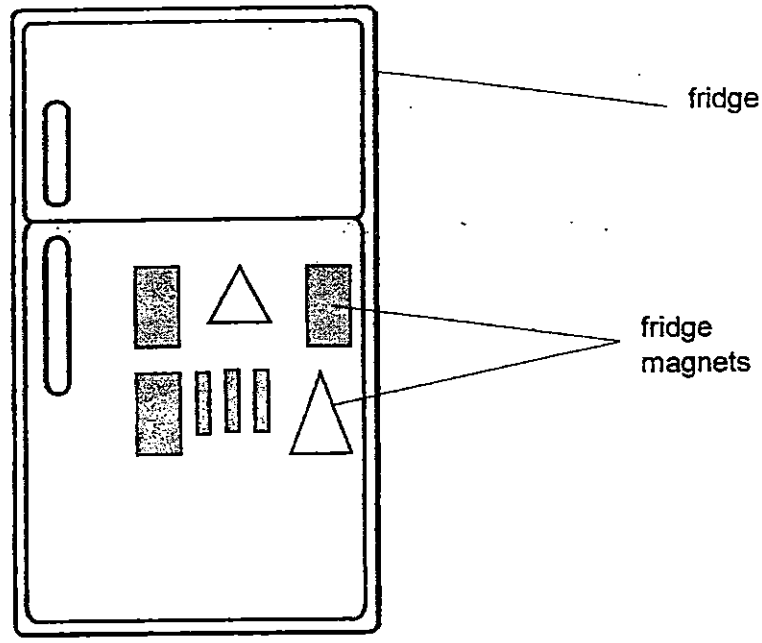
39. Rosy pasted a lot of magnets on her fridge as decorations. However, her two-year old son loves to touch them and would accidentally drop them many times on the floor due to his poor grip. After some time, Rosy noticed that some of her fridge magnets kept falling off.



(a) Explain why the magnets kept falling off the fridge. [1]

_____

_____

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SCORE	/ 1

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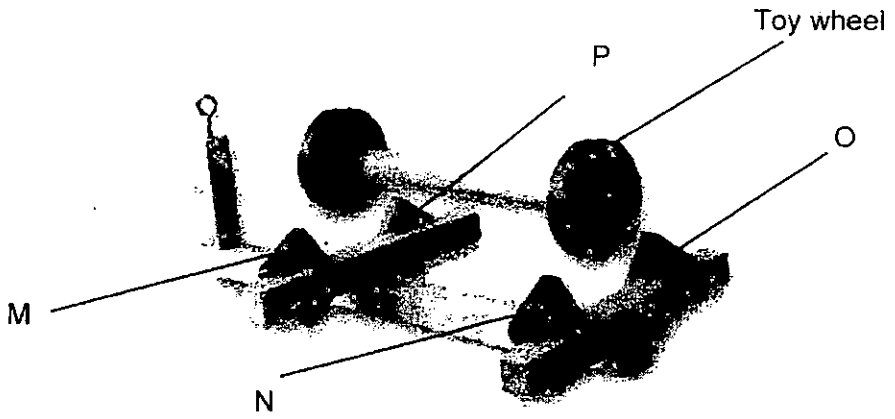
The diagram below shows a pair of floating toy wheels which uses the properties of magnetism to work. There are four bar magnets below the toy wheels, labelled M, N, O and P.



(b) What is the property of magnets that caused the toy wheels to remain floating above the four bar magnets? [1]

_____

_____

End of Paper

SCORE	/ 1

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : ANGLO CHINESE SCHOOL (JUNIOR)
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	2	4	1	2	4	1	4	2	3
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
2	4	2	3	1	4	4	4	2	3
Q21	Q22	Q23	Q24	Q25					
1	4	1	1	3					

Q26a. There were no flies in set – up B for the lizard in set up B to eat.

Q26b. Set up A : The lizard would survive.
Q26b. Set up B : The lizard would die.

Q26c. Lucas should add the same number of flies in set up A to set up B.

Q27a. The organism is mould.

Q27b. Bag C, Bag A, Bag B.

Q27c. Sharon should toast the new slice of bread to prevent the organism stated in (a) from growing.

Q28a. The systems are the muscular system and skeletal system.

Q28b. The organ is the spine. The bicycle frame supports the bicycle like how the spine supports the human body.

Q29a. They are W and Y.

Q29b. The function of part V is to push the food to part W.

Q29c. Water will be removed from the undigested food.

Q30a. The flowers will develop into fruits.

Q30b. Part A is used to make food for the plant.

Q30c. Part B is useful to the plant because it helps absorb water and minerals.

Q31a. The volume will remains as 200ml of water.

Q31b. The roots take in water.

Q31c. The relationship is that the more leaves the less water will e left after 3 days.

Q32a. At stage X the mealworm larva eats a lot but at stage Y it does not eat at all.

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Q32b. Stage A of the lift cycle of a grasshopper , the grasshopper looks like its adult but stage X of the life cycle of a mealworm beetle does not look like the adult.

Q33a. Group X: Has 3 stages in the life cycle.
Q33a. Group Y : Has 4 stages in the life cycle.

Q33b. There should be 3 stages in the life cycle of the insect Zack observed.

Q33c. The nymph molted because its exoskeleton is too small for it.

Q34a. X correctly shows how the seed leaves change during this period. The seed leaves get lighter as it's food supply is being used up.

Q34b. After Day 14, the seed leaves have no more food and is not needed anymore.

Q34c. The seed needs water, air and warmth to germinate.

Q35a. Mandy's aim is to see it plants roots absorb water.

Q35b. The same location.

Q35c. The plant will not absorb a lot of water.

Q36a. J. The school field has the most sunlight.

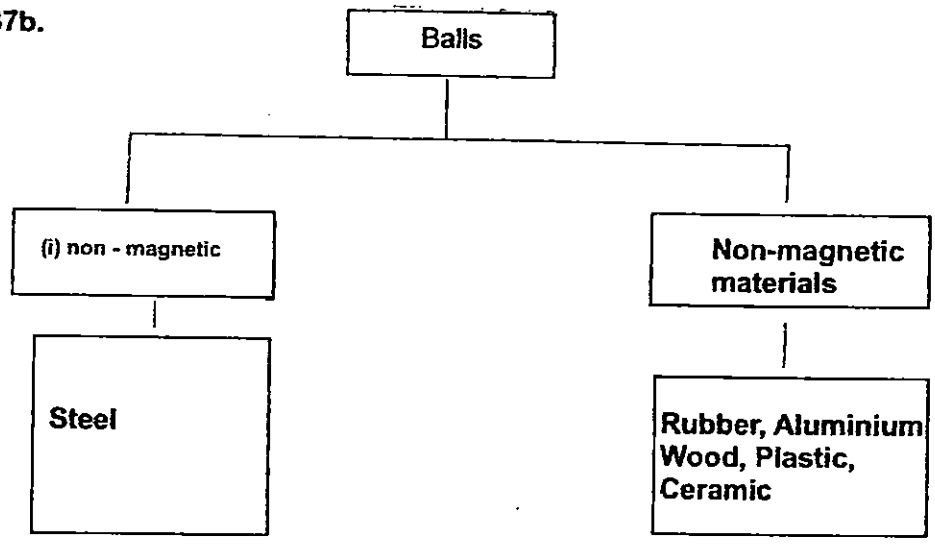
Q36b. It needs to get more sunlight.

Q36c. **SEE PICTURE**

Q37a. The magnet can attract the steel ball.

	Q36c. Statements	True	False
(i)	Mosses are not plants		✓
(ii)	Only flowering plants can bear fruits	✓	
(iii)	Plants need air, water and food to survive	✓	
(iv)	Sunlight is not needed for germination	✓	

Q37b.



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Q38a. Copper is not a magnetic material.

Q38b. Use a magnetic material item to replace rod X.

Q38c. Add the number of coils and batteries.

Q38d. The further the distance between the magnet and iron nails the less iron nails are attracted.

Q39a. When the magnets drop on the floor the magnet will lose its magnetism.

Q39b. Like poles repel, this cause the toy wheel to remain floating in the air.

THE END

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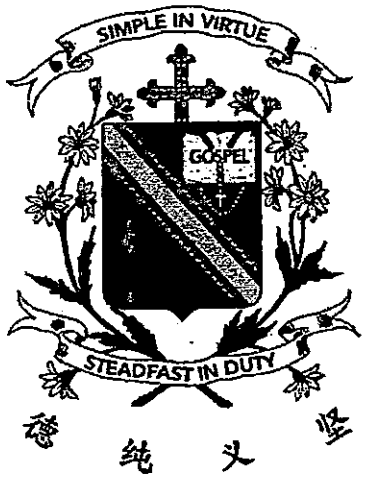
Name : _____ ( )

Class : Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4

Semestral Assessment 1

SCIENCE

BOOKLET A

14 May 2015

Total Time for Booklets A and B: 1 hour 45 minutes

30
~~40~~ questions
60 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This paper consists of 18 printed pages.

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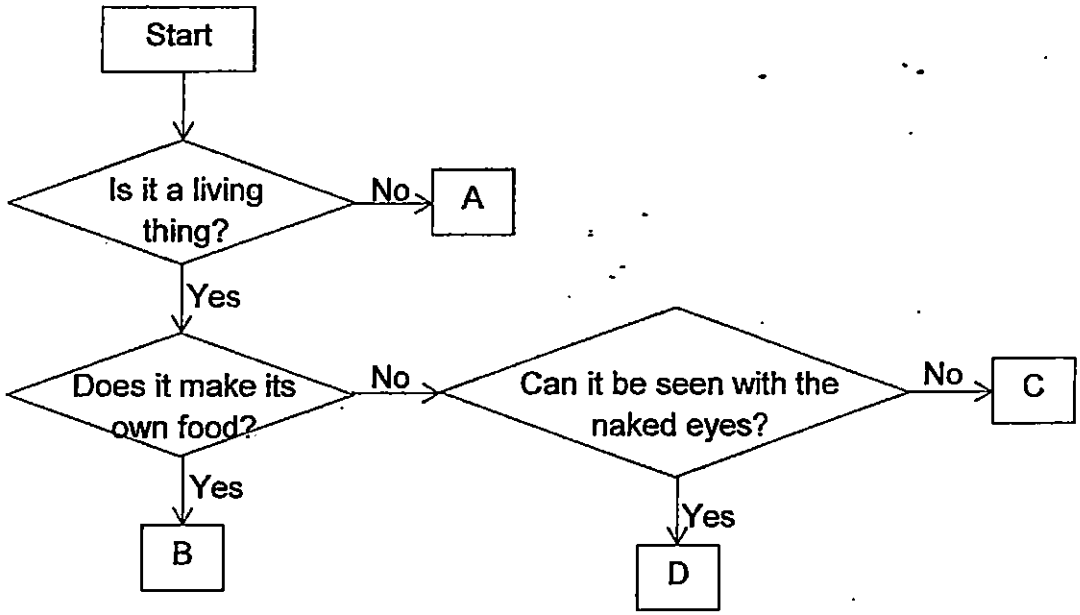
Section A **(30 x 2 marks = 60 marks)**

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

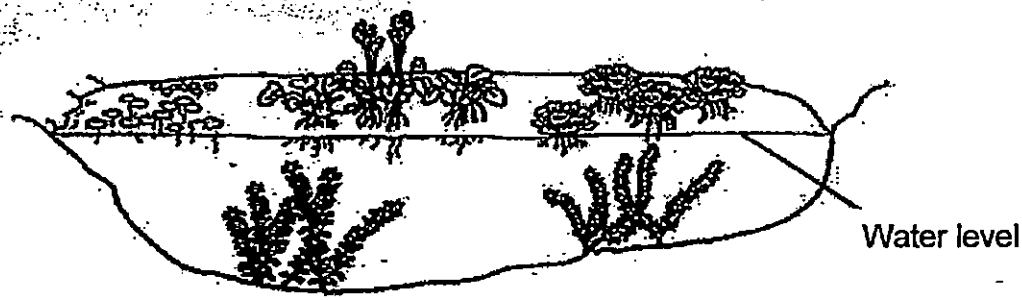
1. Study the flowchart below.



Which letter, A, B, C or D, of the flowchart best represents yeast?

(1) A
(2) B
(3) C
(4) D

2. The diagram below shows plants that can be found in a pond.



How can these plants be classified into two groups?

(1) Ferns and Mosses
(2) Water plants and land plants.
(3) Floating plants and underwater plants
(4) Plants with roots and plants without roots.

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3. Which one of the following statements about living things is true?

(1) All living things need food to survive.
(2) All living things can survive without water.
(3) All living things are made up of plants and animals only.
(4) All living things reproduce by giving birth to their young.

4. Amy placed 2 pots of similar plants, Pot A in the sun, and Pot B in the shade. She watered them with the same amount of water daily. After a few days, she observed that the plant in Pot B started to wither. Amy repeated the experiment and observed the same result.

What can Amy conclude from her experiment?

(1) Plants can grow.
(2) Plants need air to survive.
(3) Plants need water to survive.
(4) Plants need light to survive.

5. Water enters a plant through its roots. Where does the water go to after entering the plant?

A Fruits
B Stems
C Leaves
D Flowers

(1) C only
(2) A and D only
(3) B and C only
(4) A, B, C and D

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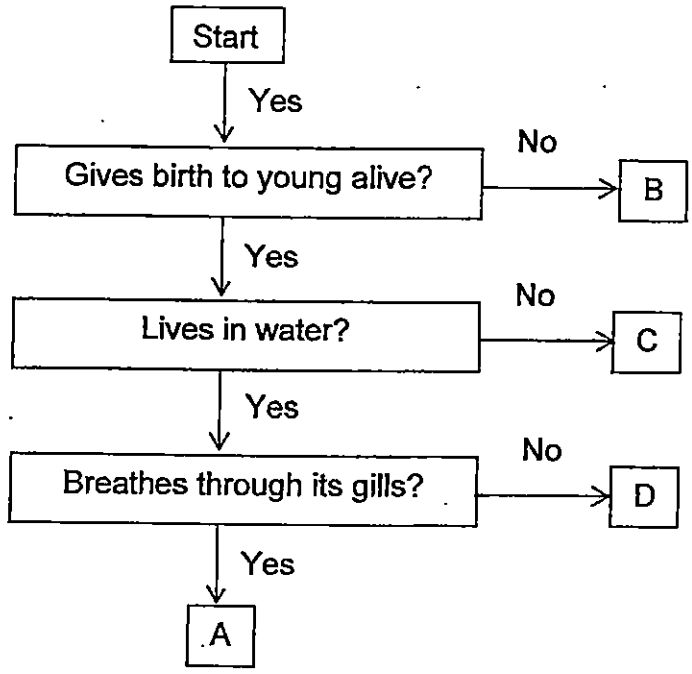
6. The flowchart below shows some characteristics of 4 animals.



Which letter, A, B, C or D, represents the dolphin?

(1) A
(2) B
(3) C
(4) D

7. Tricia carried out an experiment to observe the stages of growth of a plant from a seed to an adult. She recorded her observations over a period of time as shown below.

A White flowers bloom
B Shoot grows upwards
C Leaves start to develop
D Root grows downwards
E Fruits starts to appear

Which of the following correctly shows the order in which the seed develops into an adult plant?

(1) B, D, C, A, E
(2) B, D, C, E, A
(3) D, B, C, E, A
(4) D, B, C, A, E

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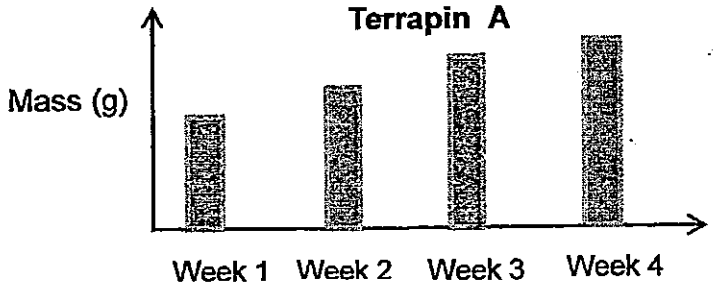
8. Study the diagrams below. Kenny placed a baby terrapin of the same size into each bowl of water and placed them in his room. He fed the terrapins with the same amount of food daily.

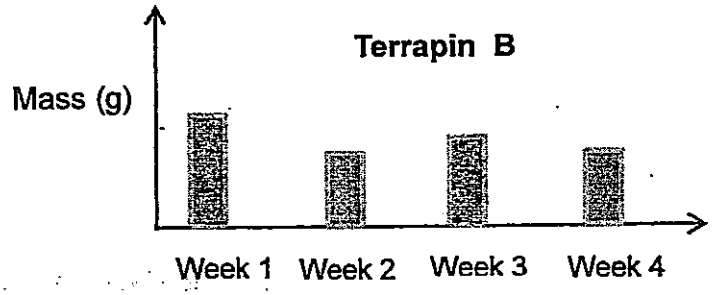
Terrapin A **Terrapin B** **Terrapin C** **Terrapin D**

Kenny recorded the mass of the 4 terrapins daily for 4 weeks. He then plotted different graphs with the results as shown below.
Which terrapin is most likely to have been given the right food?

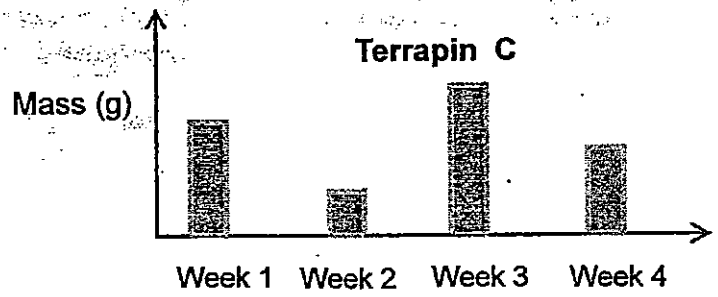
(1)



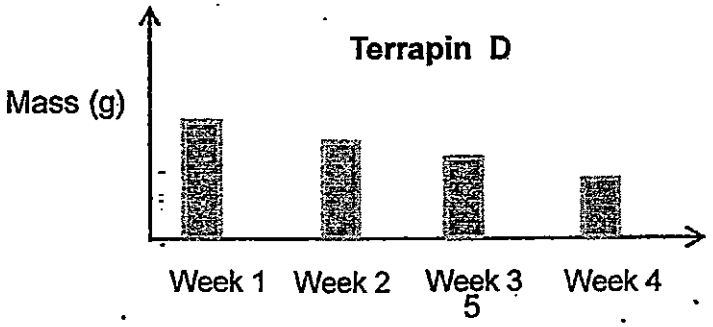
(2)



(3)



(4)



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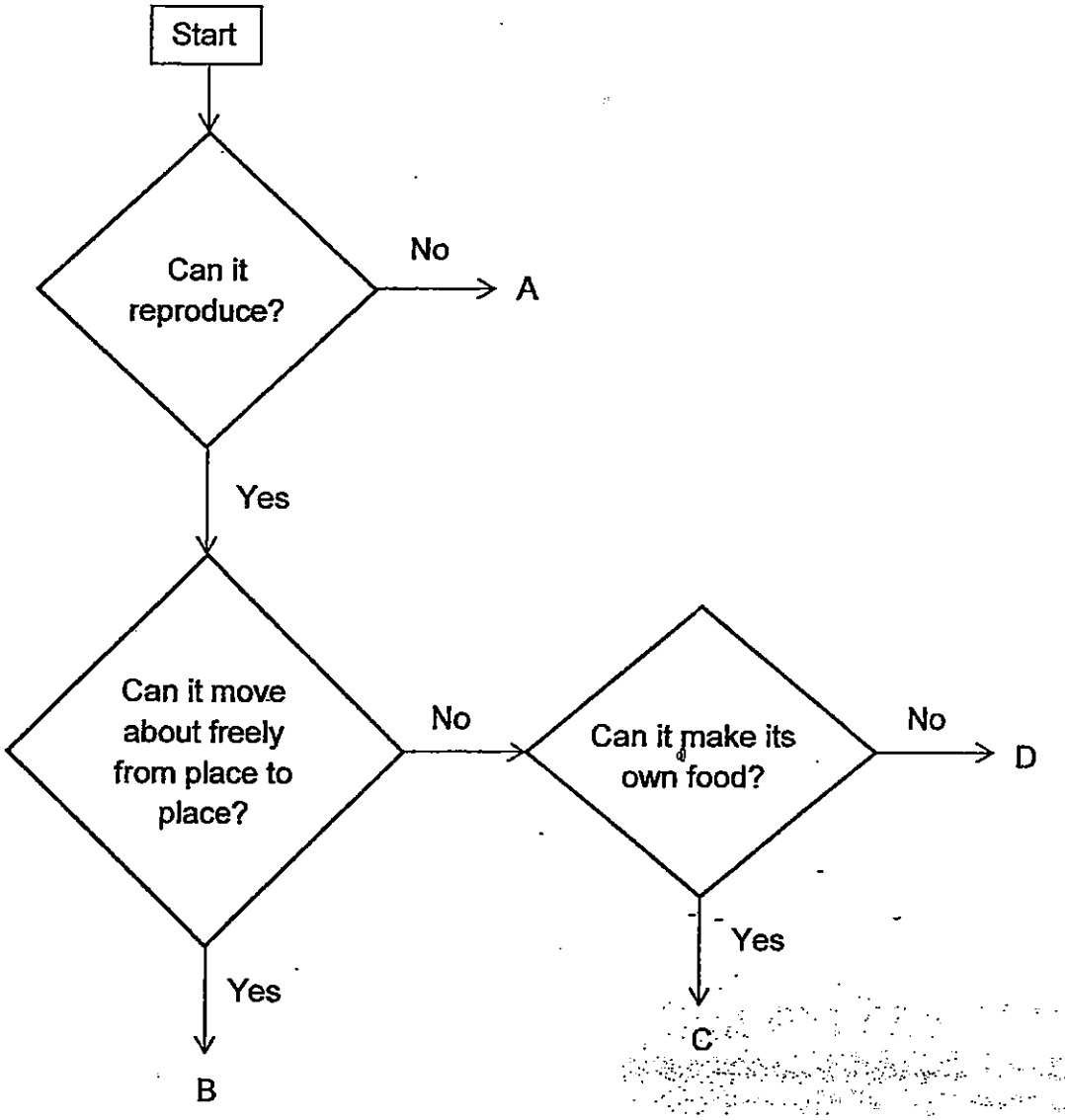
9. Study the flowchart below.



Which of the following, A, B, C and D, best represents a plant?

(1) A
(2) B
(3) C
(4) D

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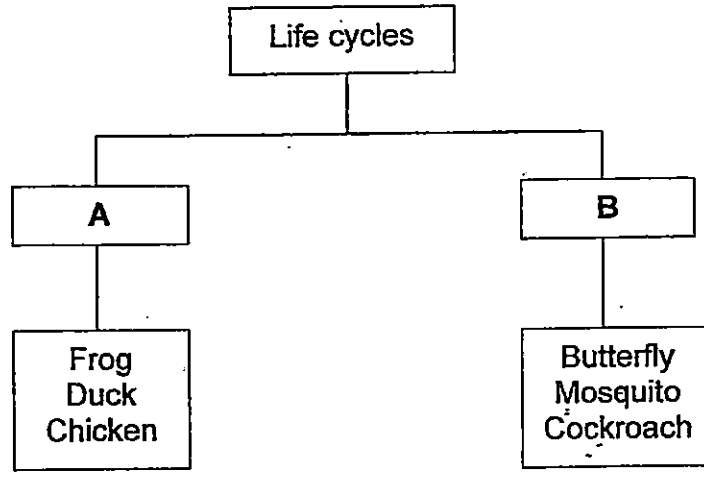
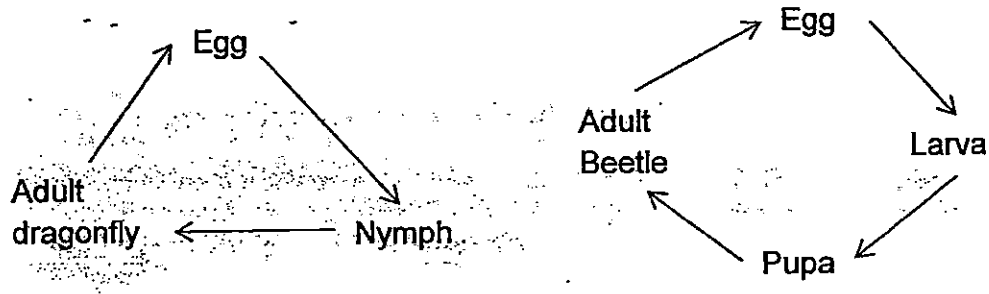
10. The chart below shows the classification of some animals according to their number of stages in their life cycles.



Which one of the animals above is in the wrong group?

(1) Duck
(2) Chicken
(3) Butterfly
(4) Cockroach

11. The diagram below shows the life cycles of a dragonfly and a beetle.



Based on the life cycles shown above, which one of the following statement about the dragonfly and beetle is **not** true?

(1) Both their young resemble the adult.
(2) Both their young moults several times in their life cycle.
(3) The adult dragonfly has feelers but the adult beetle does not.
(4) The young of the dragonfly spends part of its life cycle in water whereas the young of the beetle does not.

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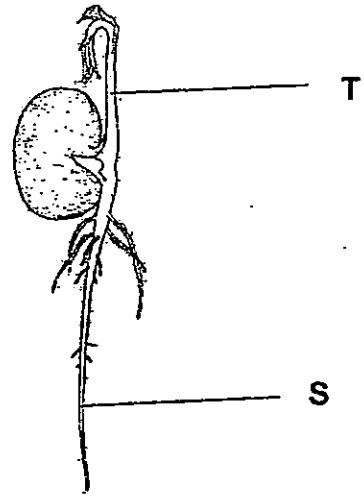
12. The diagram shows a seedling.



Which one of the following best represents the functions of parts, S and T, as it develops?

	Part S	Part T
(1)	Supports the plant	Absorbs water for the plant
(2)	Makes food for the plant	Helps the plant stand upright
(3)	Absorbs water for the plant	Supports the plant
(4)	Absorbs mineral salts for the plant	Makes food for the plant

13. The table below shows information of 4 animals, W, X, Y and Z.

Characteristics	W	X	Y	Z
4 stages	✓		✓	
Its young live on land	✓	✓		✓
Moults during one of its stages	✓		✓	✓

Which one of the following animals is most likely a housefly?

(1) W
(2) X
(3) Y
(4) Z

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14. Diana made 1 paper toy boat and 1 plastic toy boat for an experiment. She placed the 2 toy boats into a big tub of water at the same time. A short while later, the paper boat started to sink.

What property of materials was she investigating?

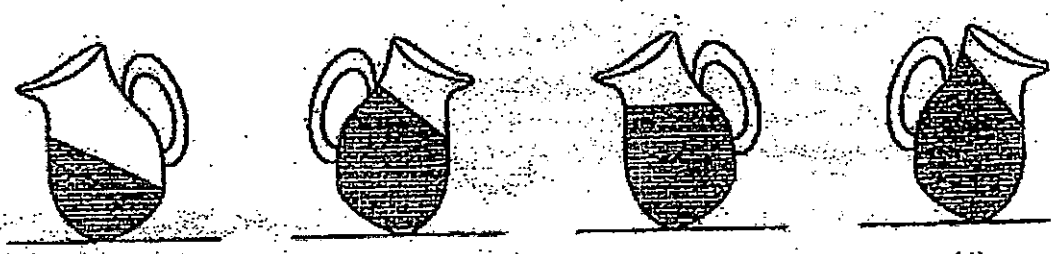
(1) Strength
(2) Waterproof
(3) Transparency
(4) Flexibility

15. Which one of the following objects will float on water?

A Glass marble
B Wooden ruler
C Ceramic spoon
D Plastic paper clip

(1) A and B only
(2) B and D only
(3) C and D only
(4) A, B and C only

16. Pauline poured 300 ml of water into 4 similar jugs and she tilted the jugs in various positions on the table.
Which one of the following diagrams correctly shows the water level in the jug after 1 min?



(1) (2) (3) (4)

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17. Figure 1 shows a measuring cylinder containing a certain amount of water. Figure 2 shows the same measuring cylinder when Object X is placed into it.

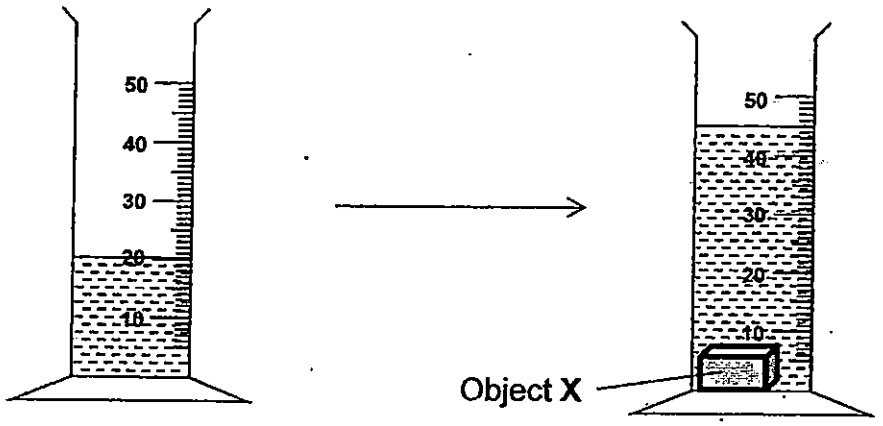

Figure 1 **Figure 2**

What is the volume of Object X?

(1) 15 cm^3
(2) 20 cm^3
(3) 25 cm^3
(4) 45 cm^3

18. Henry measured the volume and mass of a fully pumped basketball. He then continued to pump some more air into the ball and measured the volume and mass of the basketball again.

Which of the following statements would be true?

A The volume of air in the basketball was the same for both measurements.
B The volume of air in the basketball decreased at the second measurement.
C The mass of air in the basketball was the same for both measurements.
D The mass measured the second time was greater than the mass measured the first time.

(1) A and C only
(2) A and D only
(3) B and C only
(4) B and D only

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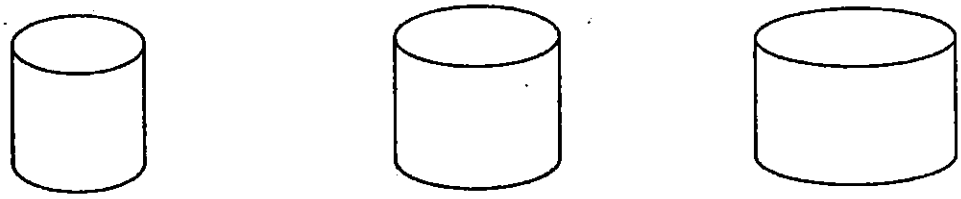
19. Kelly has 500 cm^3 of air and 500 cm^3 of orange juice. She wants to transfer all the air and orange juice into one sealed container. Which of the following containers would be able to hold all the air and orange juice?



Container A
Capacity : 500 cm^3

Container B
Capacity: 950 cm^3

Container C
Capacity: 1200 cm^3

(1) C only
(2) A and B only
(3) B and C only
(4) A, B and C

20. Sarah used the lever balance to compare the mass of a tennis ball, a book and a teddy bear.

Arrange the mass of the ball, book and bear in <u>ascending</u> order starting from the lightest to the heaviest.

(1) Book, Bear, Ball
(2) Ball, Book, Bear
(3) Ball, Bear, Book
(4) Bear, Book, Ball

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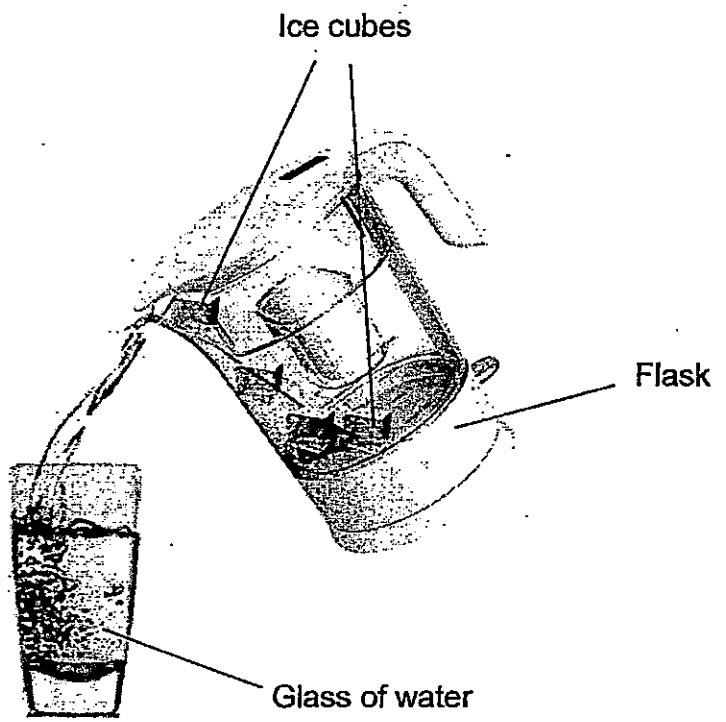
21. Jason wanted to transfer the iced water in his flask into a glass as shown below.



As he was pouring the water, an ice cube blocked some of the water from flowing out into the glass. What does this show?

A Water has a definite volume.
B The ice cube cannot be compressed.
C Water occupies space in the glass so the ice cubes could not flow out of the flask.
D The ice cubes have a definite shape and could not fit through the opening of the flask.

(1) A and C only
(2) B and D only
(3) A, B and D only
(4) A, B, C and D

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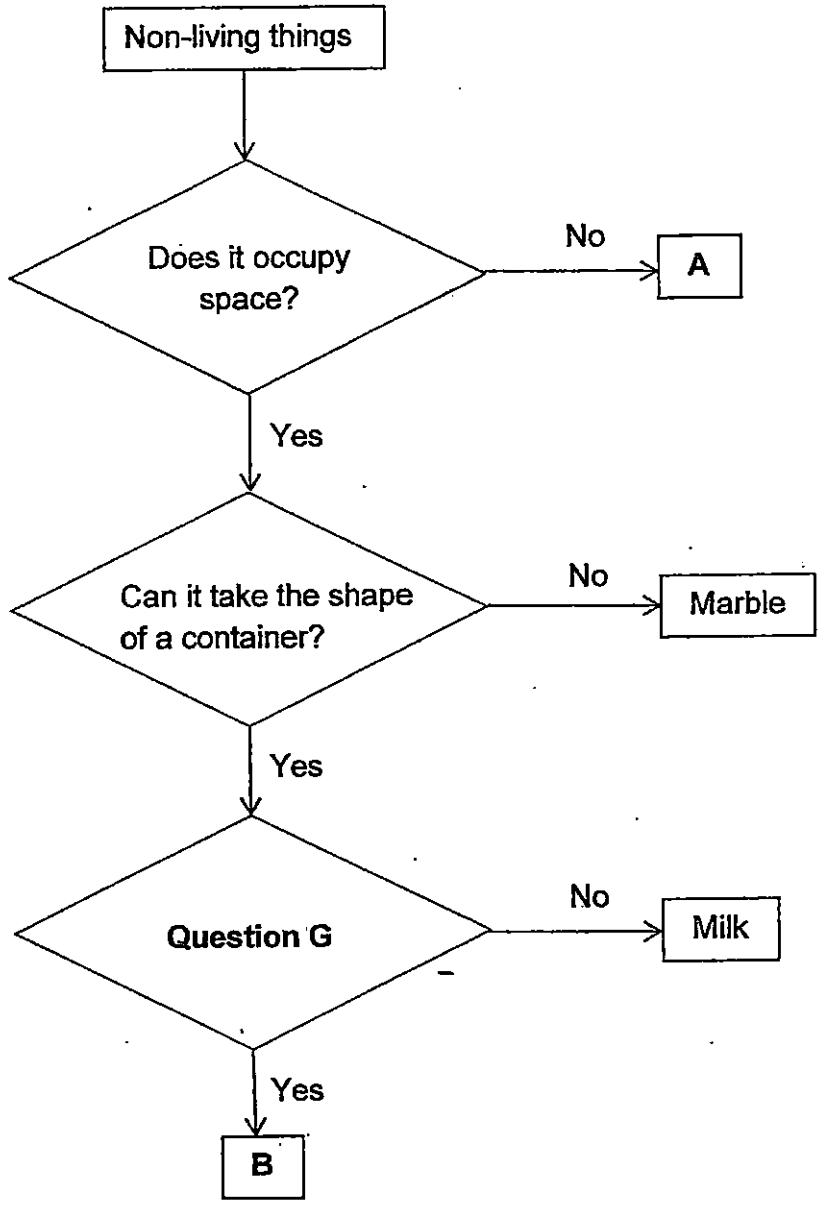
22. Study the flowchart below.



Which one of the following best represents, A, B and Question G?

	A	B	Question G
(1)	Steam	Smoke	Can it be compressed?
(2)	Shadow	Steam	Can it be compressed?
(3)	Sunlight	Oxygen	Does it have a definite volume?
(4)	Smoke	Sunlight	Does it have a definite volume?

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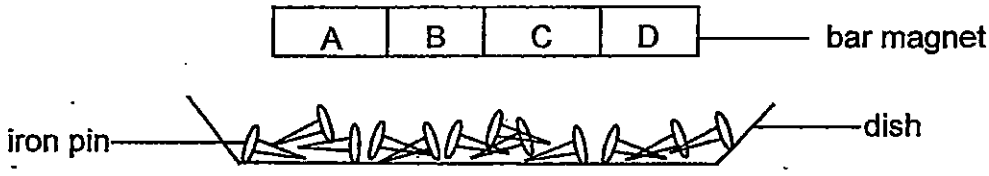
23. Michael classified the some materials according to their magnetic properties in the table below.

Magnetic Material	Non-magnetic Material
Copper	Wood
Steel	Glass

Which one of the following is **wrongly** classified?

(1) Copper
(2) Glass
(3) Steel
(4) Wood

24. Leah lowered a bar magnet into a dish of iron pins and recorded the number of pins attracted to the different parts of magnet, A, B, C and D, as shown below.



Which one of the following is most likely the aim of Leah's experiment?

(1) To find out which are the north and south poles of the magnet.
(2) To find out which part of the magnet attracts the most number of pins.
(3) To find out if the shape of a magnet affects the number of pins attracted.
(4) To find out if the distance between the magnet and the pins affects the number of pins attracted to the magnet.

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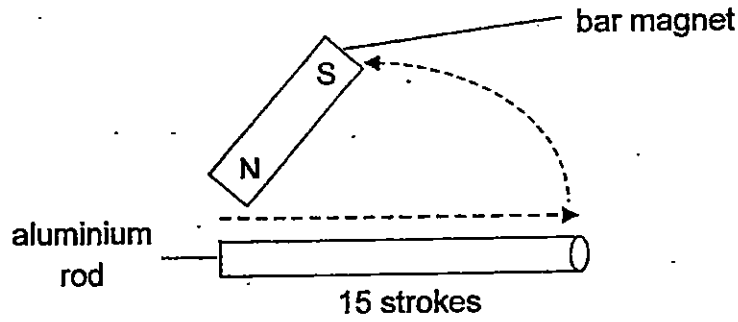
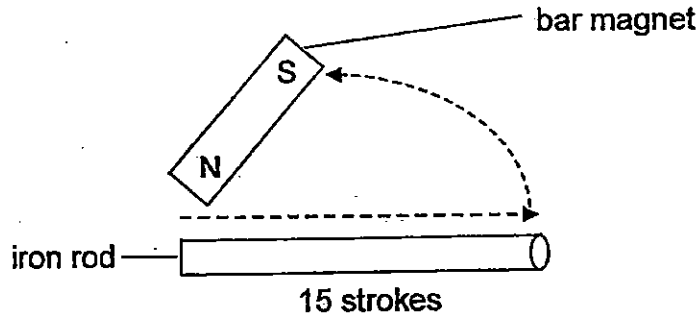
25. Joan wanted to make a temporary magnet by the 'Stroking method'. She wanted to find out if the number of strokes on the rod will affect the strength of the temporary magnet.

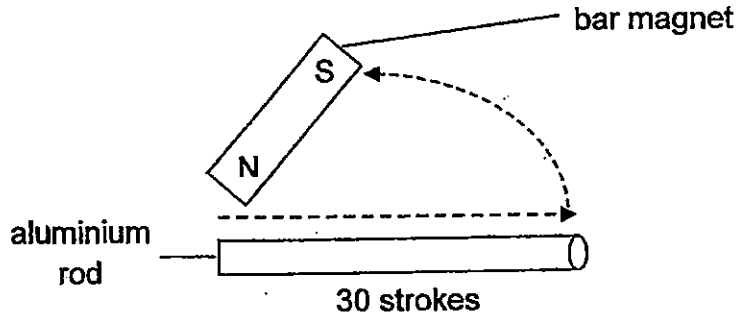
A



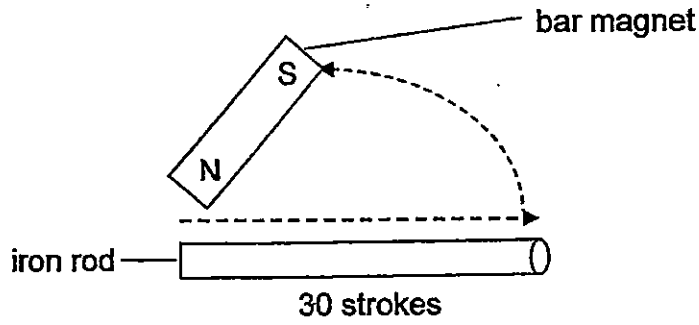
B



C



D



Which of the two set-ups should she use in order to conduct a fair experiment?

(1) A and B
(2) A and C
(3) B and D
(4) C and D

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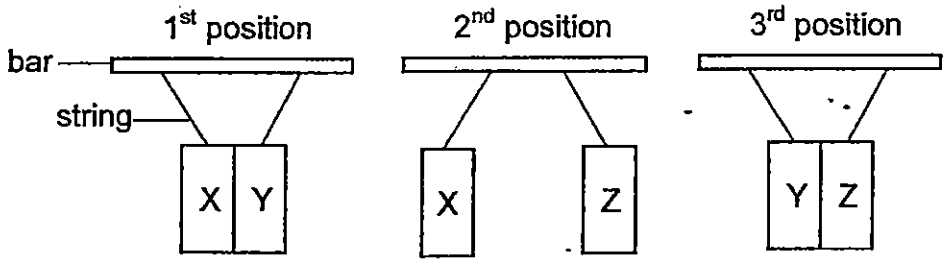
26. Chandra was given 3 objects, X, Y and Z, which consisted of magnets and magnetic objects.

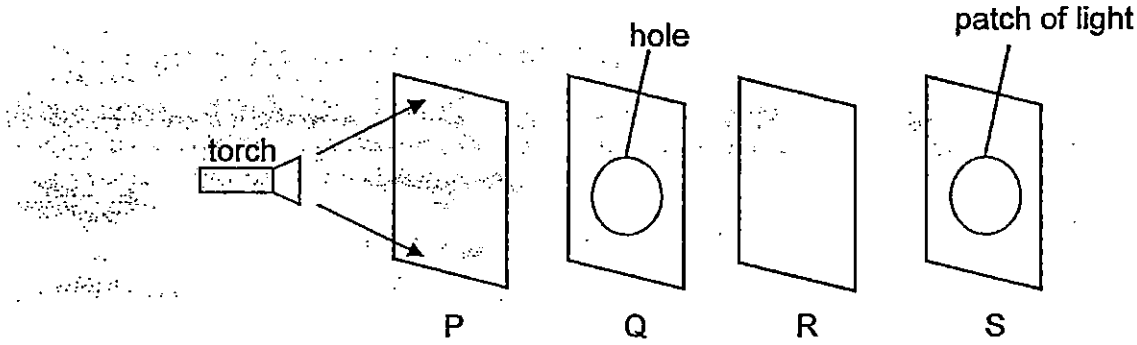
He hung the objects on a bar using strings and placed them in different positions as shown below.



Based on the results, which of the following materials is best represented by X, Y and Z?

	X	Y	Z
(1)	Magnet	Magnetic material	Magnetic material
(2)	Magnetic material	Magnet	Magnet
(3)	Magnetic material	Magnet	Magnetic material
(4)	Magnet	Magnetic material	Magnet

27. Kaey set up her experiment with sheets made of different materials, P, Q, R and S, as shown in the diagram below. She cut a hole on material Q and a patch of light can be seen on sheet S when the torch is switched on.



Which of the following materials are sheets, P, Q, R and S, most likely made of?

	P	Q	R	S
(1)	glass	frosted glass	wood	steel
(2)	glass	steel	frosted glass	wood
(3)	frosted glass	steel	frosted glass	glass
(4)	frosted glass	glass	wood	frosted glass

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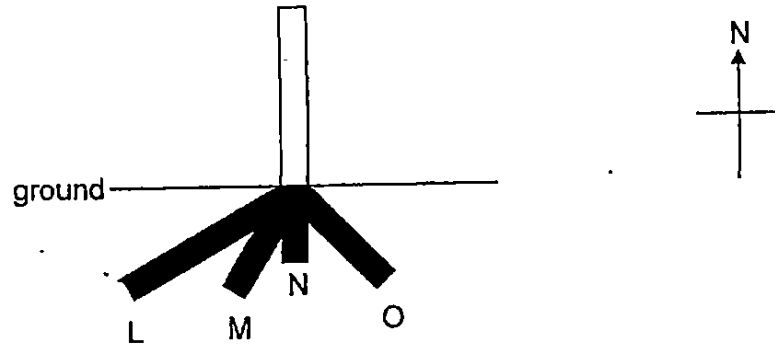
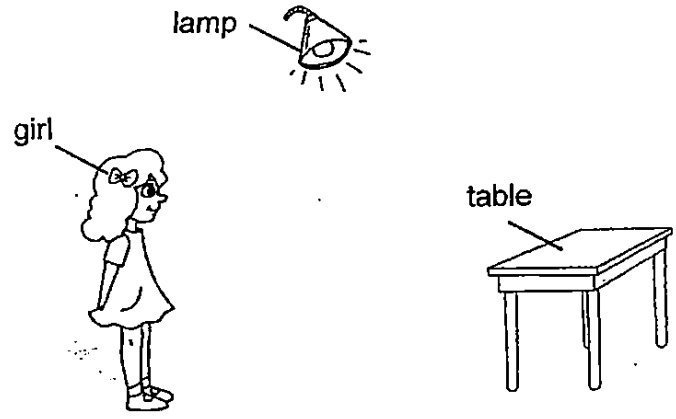
28. The diagram below shows shadows, L, M, N and O, cast by a pole at different times of the day.



Which one of the following best represents the shadow cast at 12 noon?

(1) L
(2) M
(3) N
(4) O

29. The diagram belows shows a girl looking at a table when the lamp is switched on.



Which one of the following shows the path that makes it possible for the girl to see the table?

(1) lamp → girl → table
(2) lamp → table → girl
(3) girl → table → lamp
(4) table → lamp → girl

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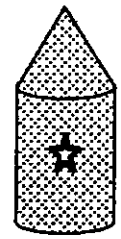
30. A wooden block had a cone-shaped top and a cylindrical bottom. A star-shaped mark was made on the surface of the block as shown in the diagram below.



If Elaine shines a torch at the wooden block from different directions, which one of the following shadows would **not** be formed by the block?

(1)

(3)

(2)

(4)

End of Booklet A

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Name : _____ ( )

Class : Primary 4

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 4
Semestral Assessment 1
SCIENCE

BOOKLET B

14 May 2015

Booklet A	60
Booklet B	40
Total	100

Total Time for Booklets A and B: 1 hour 45 minutes

14 questions
40 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This paper consists of 16 printed pages.

_____

Parent's Signature/Date

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Section B (40 marks)
For questions 31 to 44, write your answers in this booklet.

The number of marks available is shown in the brackets at the end of each question or part question.

31. Some organisms are grouped in the classification table below based on certain characteristics. [2]

A	B
Rose Plant Balsam Plant Grass	Moss Rabbit's foot fern Ladder fern

(a) Give a possible heading for A and B.

A:_____

B:_____

(b) Study the diagram of Organism Y below.

Organism Y

Based on the classification table above, in which group, A or B, could Organism Y be classified under? Explain your answer. [1]

_____

_____

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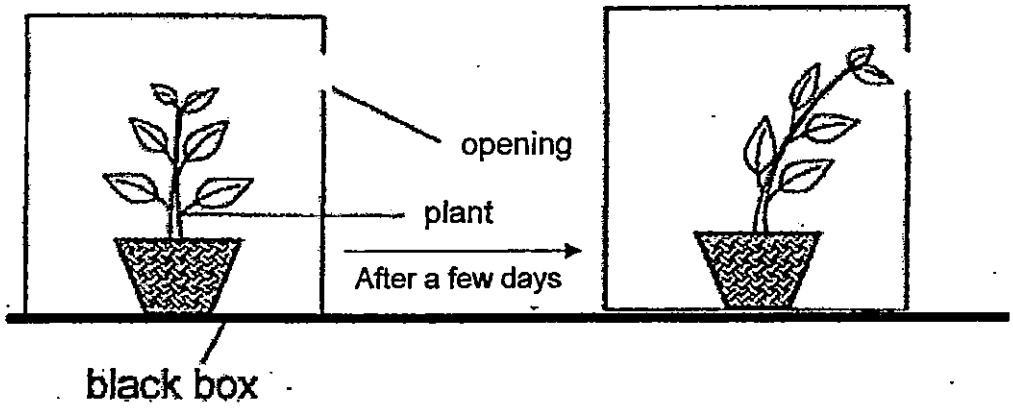
32. Lily placed a potted plant in a cardboard box with a small opening and left it in the garden for a week.



(a) After a week, Lily observed that the plant had grown towards the opening. State the characteristic of living things based on the above experiment. [1]

_____

_____

(b) Without removing the box, what can Lily do to make the plant grow upright naturally again? [1]

_____

_____

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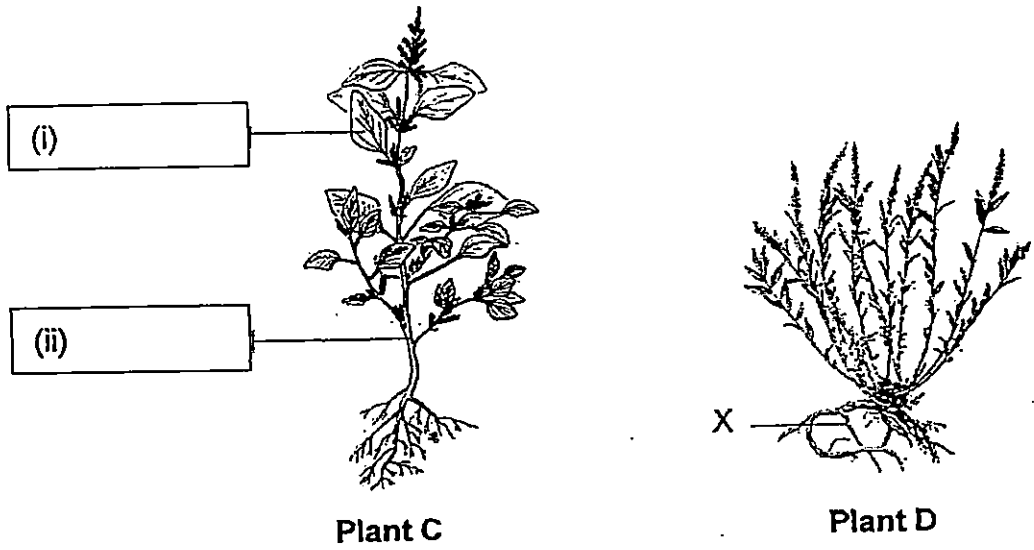
33. The diagram below shows two plants, C and D.



(a) Label the plant parts (i) and (ii) of plant C. [2]

(b) State the function of part X of plant D. [1]

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34. Refer to the table below.

Group W	Group X	Group Y	Group Z
Penguin	Zebra	Crocodile	Salamander
Chicken	Rabbit	Clownfish	Frog

(a) The animals have been grouped according to their type of body coverings. Write suitable headings for groups, W, X, Y and Z. [2]

Group W: _____

Group X: _____

Group Y: _____

Group Z: _____

(b) Based on the diagrams above, state one difference in the characteristics of the 2 animals in Group Y. [1]

_____

_____

(c) Based on the diagrams above, other than having the same body covering, state 1 other similarity in characteristics between the 2 animals in Group W. [1]

_____

_____

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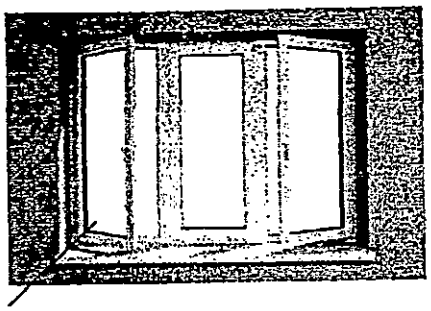
35. The National Environment Agency (NEA) has recently reported a rise in the number of dengue cases in Ang Mo Kio. Some of the potential mosquito breeding grounds at home are shown below.

(a) Put a **tick (✓)** in the correct box to indicate whether it is a potential mosquito breeding ground. [1]

Potential mosquito breeding grounds	**Yes (✓)**
(i) flower vase	
(ii)  windows	
(iii) waste paper bin	
(iv) roof gutter	

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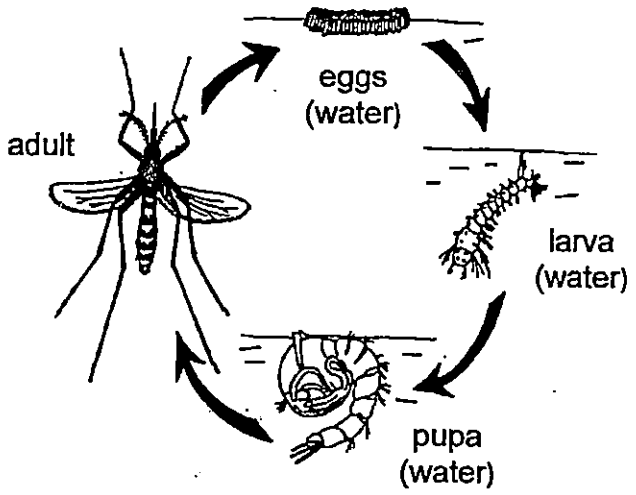
(b) The diagram below shows the life cycle of the mosquito.



Officers from NEA sprayed a layer of oil in the drains. At which stage(s) of the life cycle of a mosquito could the officers from NEA get rid of the mosquito easily through this method? [1]

_____

_____

(c) Explain your answer in part (b). [1]

_____

_____

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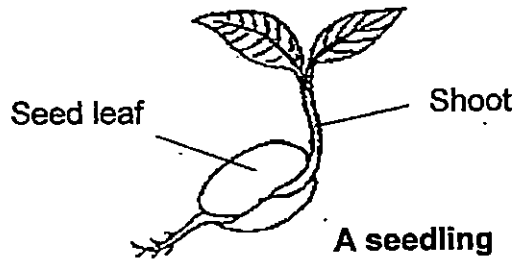
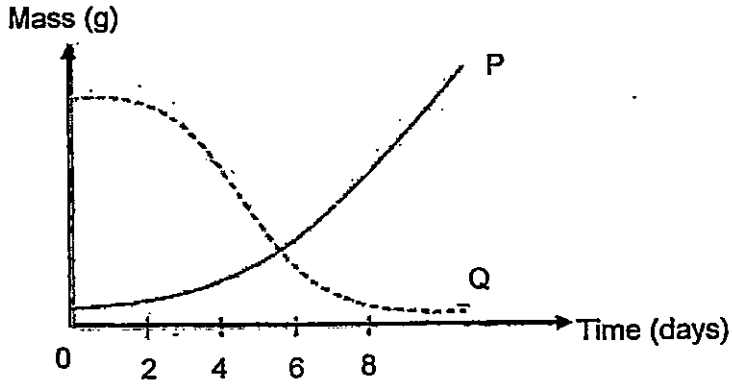
36. Joe carried out an experiment on the germination of a red bean plant as shown below.



He plotted a graph to show changes in the mass of the seed leaf and the shoot over a period of eight days as shown below.



(a) Which curve, P or Q, shows the changes in mass of the seed leaf during the experiment? Explain your answer. [1]

_____

_____

_____

(b) What would happen to the seed leaf after day 8? [1]

_____

(c) How did the seedling get its food from day 8 onwards? [1]

_____

_____

_____

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37. Perry wanted to keep some colourful guppies as pets. He wanted to bring them to school so that his friends can look at the guppies too. He went into a shop to look for a suitable tank for his guppies.

Based on what Perry wanted to do, suggest the best material for the tank he is looking for to keep his guppies. Explain your choice [2]

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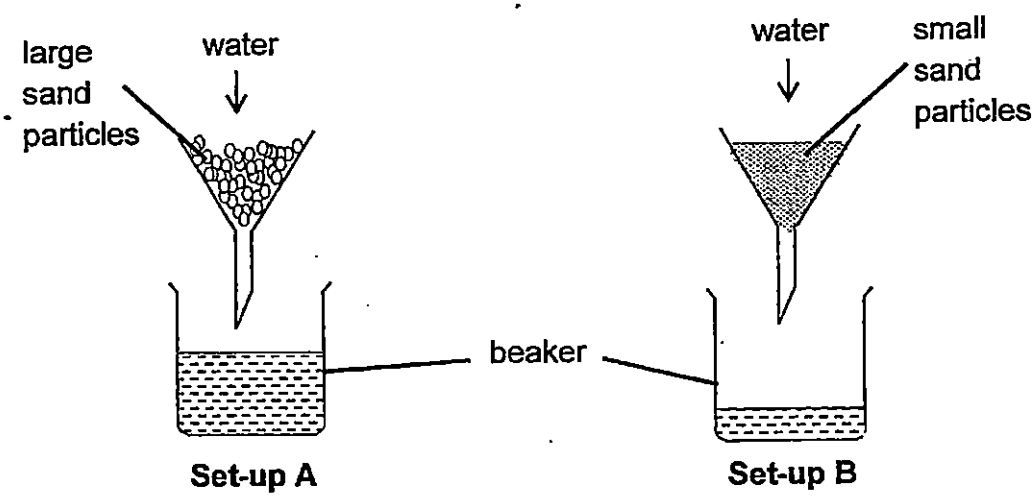
38. Amanda conducted an experiment to find out how fast water can flow through different types of sand as shown below. She poured an equal amount of water into each funnel which contained an equal amount of 2 different sand samples. She then observed the amount of water collected in each beaker after 5 mins.



(a) As Amanda poured the water into the funnels in both set-ups, she observed bubbles on the surface of the water before it passed through the sand samples in each of the funnel. Give a reason for her observation.

[1]

_____

_____

(b) She observed that after five minutes, the total volume of water collected in Set-up A was more than Set-up B. Explain why is this so. [1]

_____

_____

(c) What properties of a matter does this experiment show? [1]

_____

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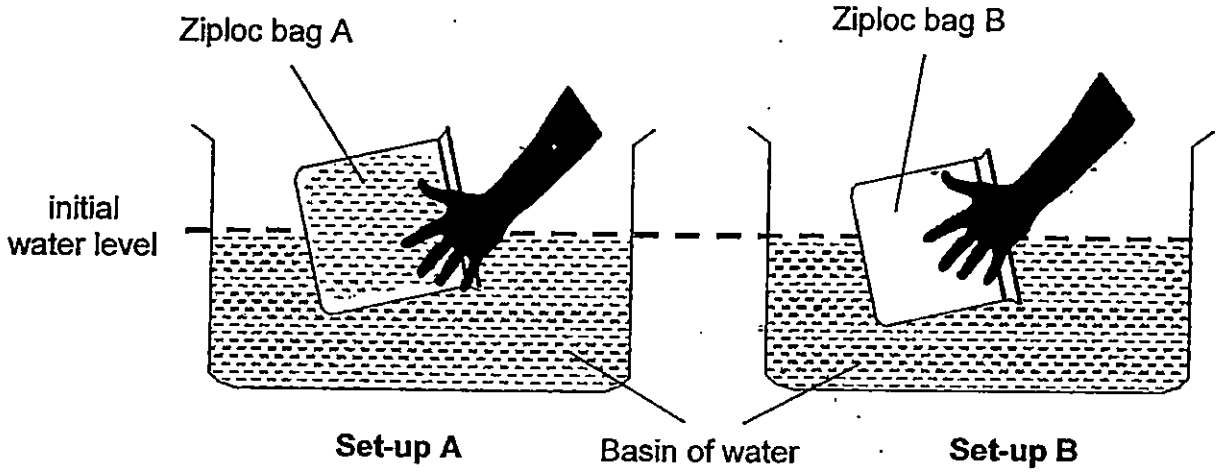
39. Russell filled up ziploc bag A with $30cm^3$ of water and ziploc bag B with $30cm^3$ of air. He sealed the two bags and pushed them into a basin of water in each of the set-ups, A and B, as shown below.



The table below shows the final height of the water levels in the basins for set-ups, A and B, when both bags were pushed to the bottom of the basins.

Set-ups	Initial height of water level in basin (cm)	Final height of water level in basin (cm)
A	20	26
B	20	23

(a) Explain why the initial height of water levels in the basins for both set-ups, A and B, has to be the same. [1]

_____

_____

(b) Based on the results shown in the table above, explain the difference in the final height of water levels in both set-ups, A and B. [2]

_____

_____

_____

_____

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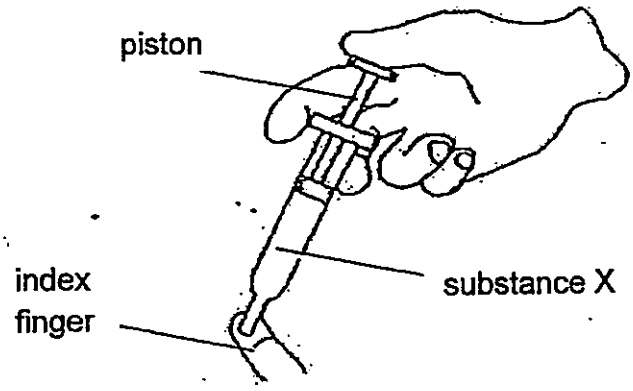
40. Renee prepared 2 identical syringes and filled 1 with substance X and the other with substance Y. She placed her index finger to cover the syringe and pushed the piston in as shown below.



She recorded the distance moved by the piston for each syringe in the table shown below.

Substance	X	Y
Distance moved by the piston (cm)	0.4	0

(a) Based on the table shown above, suggest what substances, X and Y, may be. [1]

Substance X: _____

Substance Y: _____

(b) Based on the results shown on the table above, write down 2 properties of substance Y [2]

Property 1: _____

Property 2: _____

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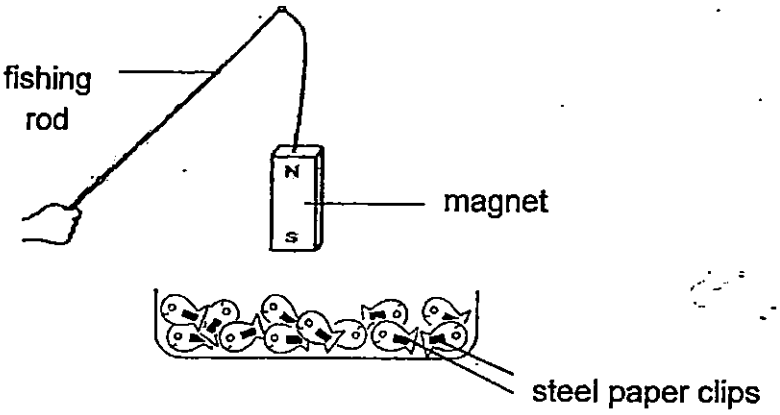
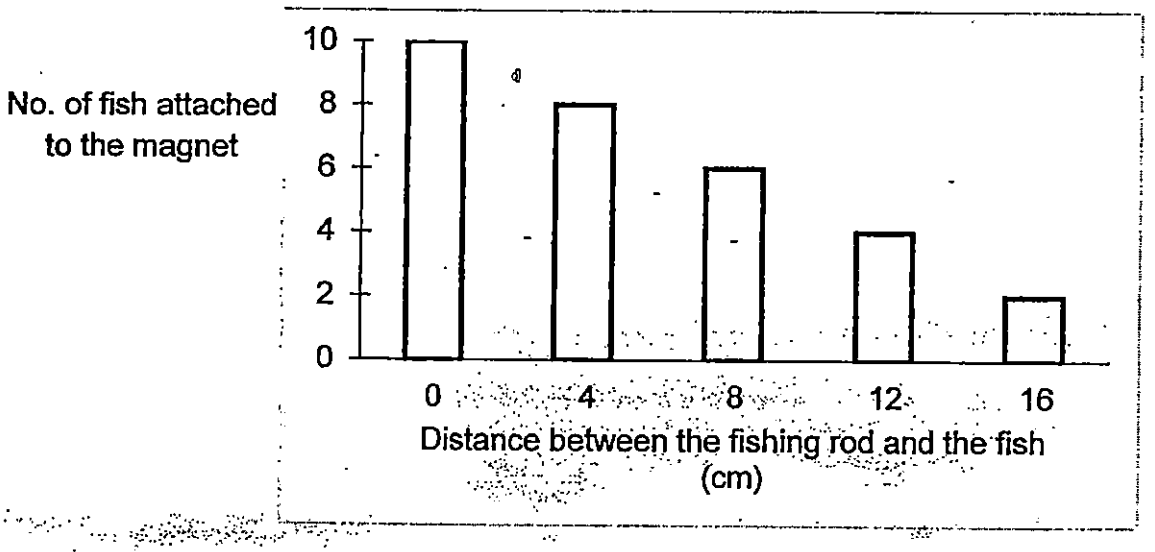
41. Jolene made a simple toy as shown in the diagram below. She made a fishing rod by tying a bar magnet to the end of a string. She cut out some cardboard fish and attached a steel paper clip to each of the fish.
The South pole of the magnet was facing the cardboard fish.



She recorded the number of fish that were attached to the magnet at different distances and drew a bar chart as shown below.



(a) Predict the number of fish that would be attracted to the magnet when the rod is 20 cm away from the fish. Give a reason for your prediction. [1]

_____

(b) Jolene turned the magnet around such that the North pole of the magnet was facing the fish. When the North pole of the magnet was 4 cm away from the fish, how many fish would most likely be attracted to the magnet? [1]

_____

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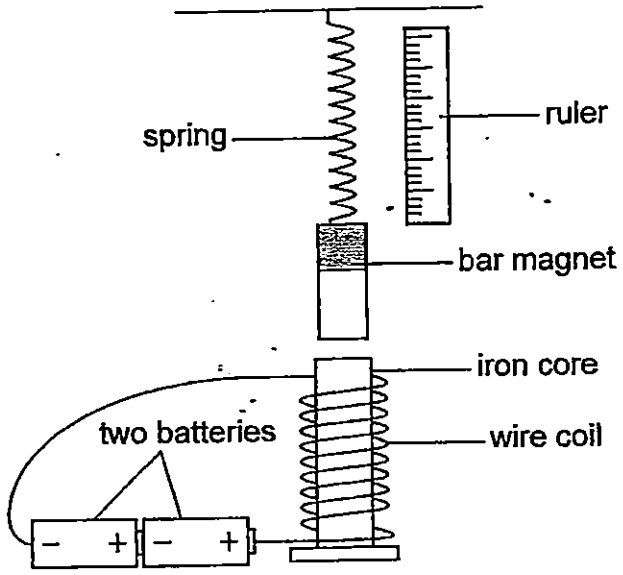
42. In the set-up below, the length of the spring changes when the batteries are connected to both ends of the wire.



(a) The spring becomes shorter when the batteries were connected to both ends of the wire. Give a reason for this observation. [1]

_____

_____

(b) One battery was removed from the set-up. Will the length of the spring remain the same, become longer or shorter? [1]

_____

_____

(c) Without removing the battery, and using the same items in the diagram above, state one other way you can change the set-up to get the same observation in (b). [1]

_____

_____

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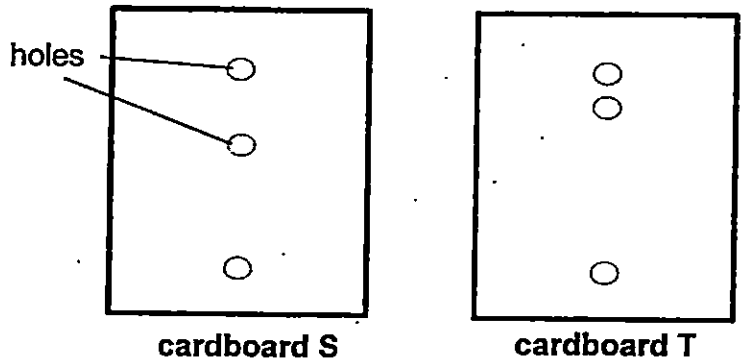
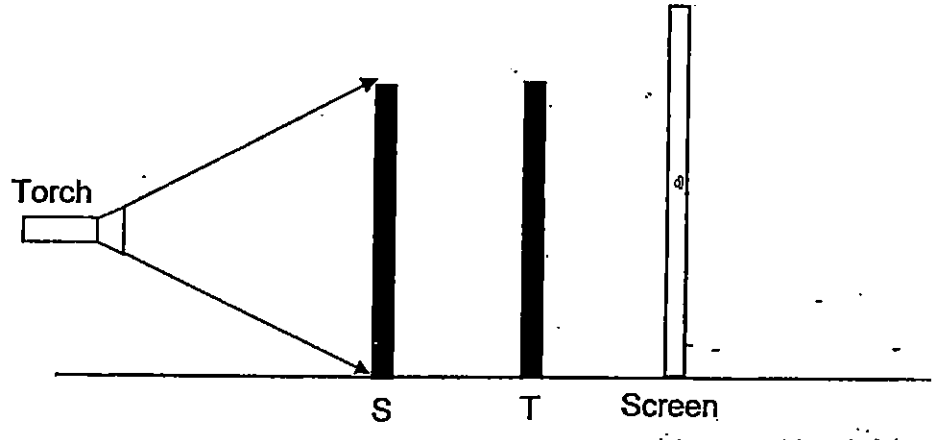
43. Rachel carried out the following experiment in a dark room. She had two similar size cardboards, S and T, with holes as shown below.



She placed cardboard S and T in a straight line between a torch and a screen as shown in the diagram below.



(a) How many circular spots of light would Rachel see on the screen? [1]

_____

(b) What is the aim of Rachel's experiment? [1]

_____

(c) If Rachel replaced cardboard S with a clear plastic sheet, how many circular spots of light would Rachel see on the screen? [1]

_____

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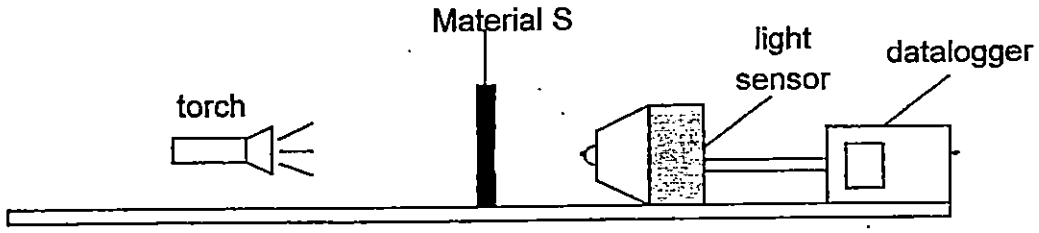
44. Study the experimental set-up shown below. Quinie wanted to find out the degree of transparency of materials, S, T, U and V. She set up her experiment in a dark room as shown below.



She recorded the amount of light that passed through material S and repeated the experiment with materials, T, U and V.
The table below shows the results of her experiment.

Material	Amount of light (lux)
S	110
T	150
U	50
V	90

(a) Give an example of a variable that Quinie should keep constant in her experiment. [1]

(b) Arrange the materials, **S, T, U, V,** according to their degree of transparency, starting with the most transparent to the least transparent in the table below.

Materials			
Most transparent →			Least transparent

(c) Based on Quinie's observation, which material could she use to make stage curtains? Give a reason for you answer. [2]

END

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LEVEL : PRIMARY 4
SCHOOL : CHIJ ST NICHOLAS GIRLS SCHOOL RED
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	3	1	4	4	4	4	1	3	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
1	3	1	2	2	3	3	2	3	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	2	1	2	3	4	2	3	2	4

Q31a. A: flowering Q31a. B: Non- flowering Q31b. B. Organism Y reproduces by spores.

Q32a. Living things respond to changes.
Q32b. She can make a bigger opening on the top of the black box.

Q33a i) Leaves Q33b ii) stem Q33b. Part X helps the plant to absorb water and mineral salt.

Q34a. Group W: Feathers, Group X: Hair, Group Y: Scales, Group Z: Moist Skin
Q34b. The clownfish lives in water but the crocodile lives both in water and on land.
Q34c. They both reproduce by laying eggs.

Q35ai) Flower Vase – YES Q35aiv) roof gutter – YES
Q35b. The larva and pupa stage.
Q35c. Larva and pupa of mosquito breathe through breathing tubes and oil will block the breathing tube and prevent it from breathing in air.

Q36a. Q. The mass of the seed leaf decrease as it provides food for seedling.
Q36b. The seed leaf will shrivel and drop off.
Q36c. The leaves of the seedling starts to develop and starts to make food for the seedling.

Q37. He should use glass. His friends are able to see his guppies, as the material of the tank is transparent.

Q38a. Air trapped between the sand particle escaped to the surface of the water.
Q38b. Large sand particles in setup A had more space in between, so water took a shorter time to flow into the beaker. Q38c. Matter occupies space.

Q39a. The experiment should be fair.
Q39b. A has higher water level than B as water in Ziploc A cannot be compressed but air in Ziploc B can be compressed. So Ziploc A occupies more space than B.

Q40a. Substance X: air Q40a. Substance Y: Water
Q40b. Property 1 : Y cannot be compressed. Q40b. Property 2: Y has no definite shape.

Q41a. O. The magnetic strength of the magnet is not strong enough to attract from 20cm.
Q41b. 8 fishes.

Q42a. The two magnets' like poles are facing each other, making both of the magnets to repel.
Q42b. Longer. As one battery was removed so the magnetic strength or electromagnet becomes weaker.
Q42c. She can uncoil some of the wire coils.

Q43a. Z. Q43b.To see if light travels in a straight line. Q43c. 3.

Q44a. The distance of the torch from the material should be kept constant.
Q44b. T→S→V→U
Q44c. V. V is the least transparent and a stage curtain has to least transparent.

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HENRY PARK PRIMARY SCHOOL
2015 SEMESTRAL EXAMINATION 1
SCIENCE
PRIMARY 4

Duration of Paper: 1 h 45 min

100

Name: _____

Parent's Signature

Class: Pr 4 _____

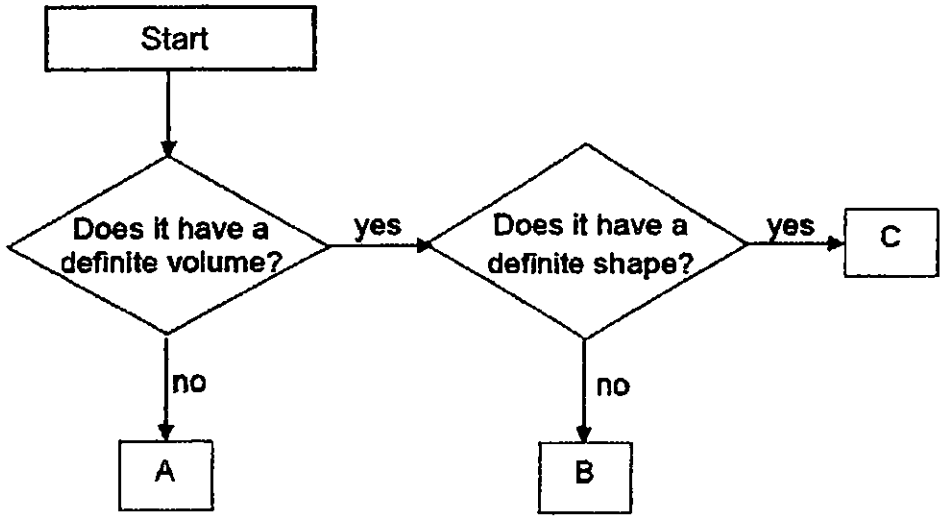
_____

Part A (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1,2, 3 or 4). Shade the correct oval (1,2,3 or 4) on the Optical Answer Sheet.

---

1. The flow chart below shows how some substances are classified.



Which one of the following correctly represents A, B and C?

	A	B	C
(1)	air	ruler	oil
(2)	oil	ruler	air
(3)	oil	air	ruler
(4)	air	oil	ruler

( )

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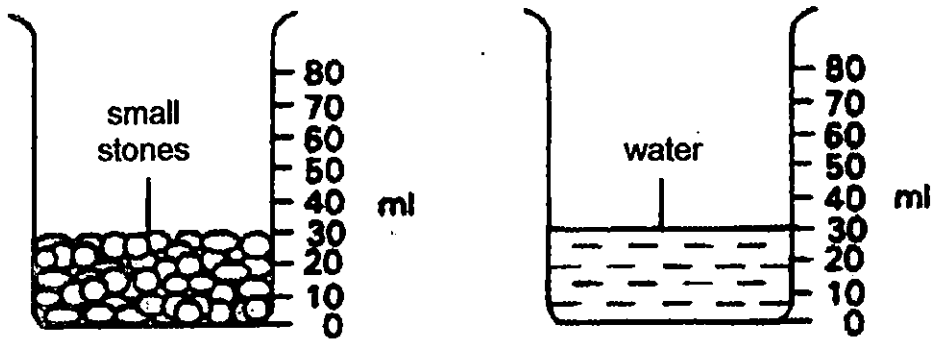
2. Which one of the following statements is <u>not</u> correct?

(1) Liquids have mass.
(2) Liquids occupy space.
(3) Liquids can be compressed.
(4) Liquids take on the shape of their container.

( )

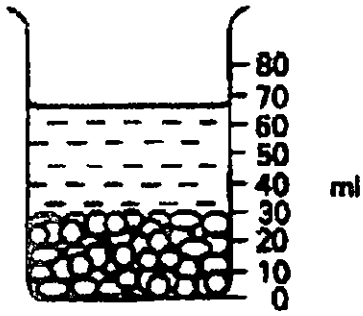
3. Jovan filled beaker A with small stones and beaker B with 30 ml of water.



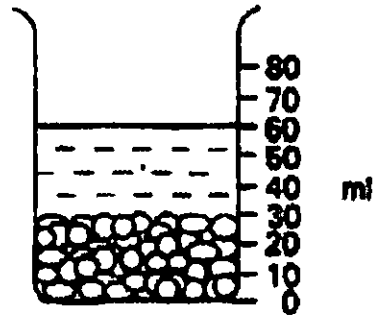
Beaker A Beaker B

Which one of the following diagrams most likely shows the water level in Beaker A after the water from Beaker B has been poured into it?

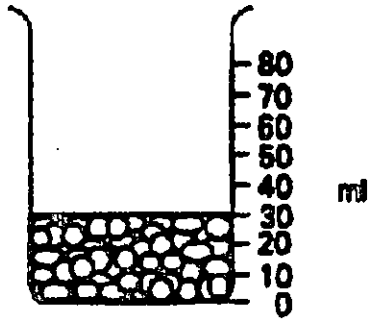
(1)



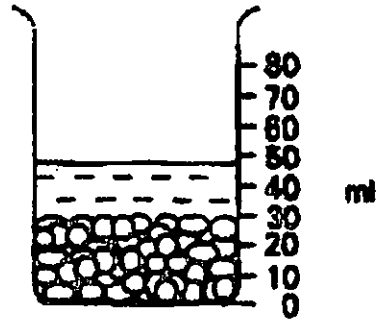
(2)



(3)



(4)



( )

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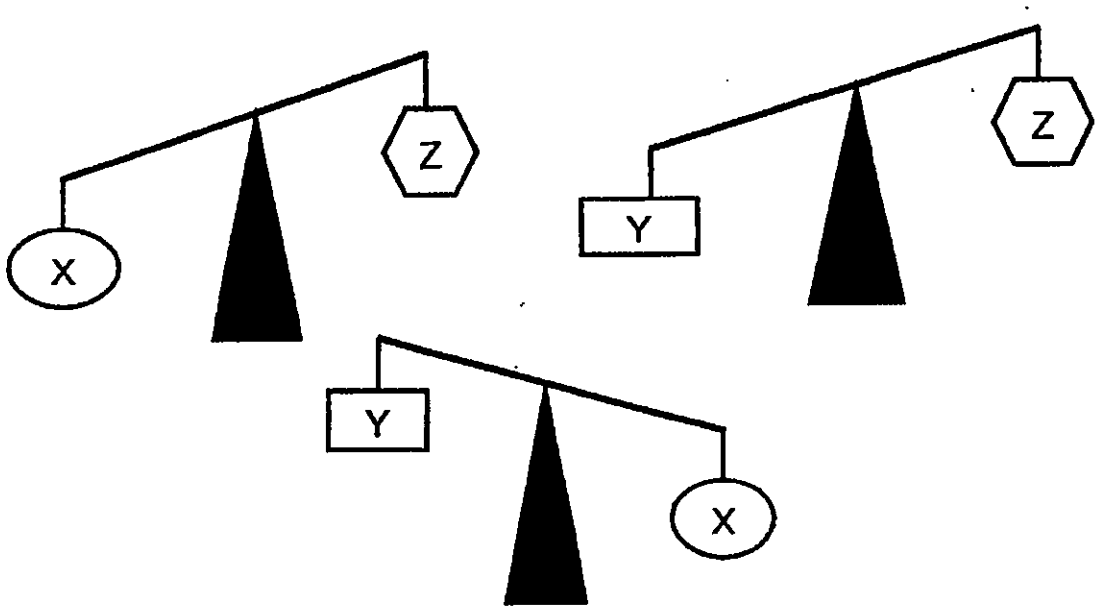
4. Objects X, Y and Z are placed on a balance at different times as shown in the diagrams below.



Arrange the objects, X, Y and Z, beginning with the least mass to the greatest mass.

Least Mass ⟶ Greatest Mass

(1) X, Y, Z
(2) Z, Y, X
(3) Y, X, Z
(4) Z, X, Y

( )

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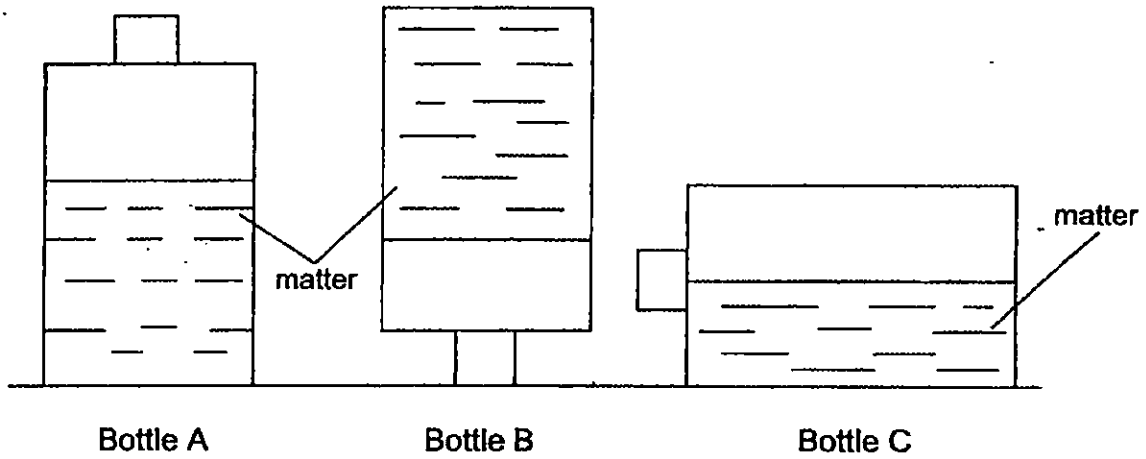
5. Jeremy, Bernard, Henry and Nelson each made a statement about the matter in the three identical bottles, A, B and C as shown below.



Jeremy : The matter in Bottle A and B are liquid.
Bernard : The matter in Bottle A, B and C are solid.
Henry : The matter in Bottle A and C are liquid.
Nelson : The matter in Bottle B is solid.

Whose statement(s) is/are **definitely** true?

(1) Nelson only
(2) Bernard only
(3) Nelson and Henry only
(4) Bernard and Jeremy only ( )

6. Which one of the following has a definite shape?

(1) Air
(2) Water
(3) Marble
(4) Orange juice

( )

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7. Janet rolls a lump of plasticine into a cylindrical shape as shown in Diagram A below.
She then cuts the plasticine into five equal pieces as shown in Diagram B.

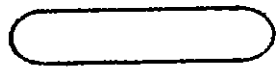


Diagram A

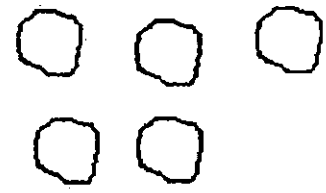


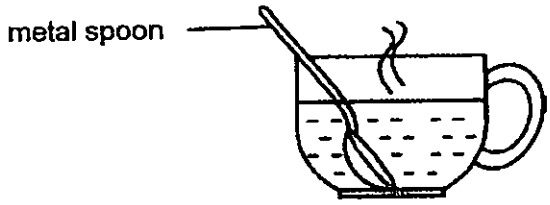
Diagram B

Which of the following shows correctly the **total mass** and **volume** of the five pieces of plasticine after Janet has cut it up?

	Total Mass	Total Volume
(1)	Increases	Decreases
(2)	Decreases	Remain the same
(3)	Remain the same	Increases
(4)	Remain the same	Remain the same

( )

8. Gary places a metal spoon in a cup of hot tea.



a cup of hot tea

The metal spoon becomes hot after a while.

Which one of the following explains this correctly?

(1) The cup loses heat to the hot tea.
(2) The spoon loses heat to the hot tea.
(3) The hot tea gains heat from the spoon.
(4) The spoon gains heat from the hot tea.

( )

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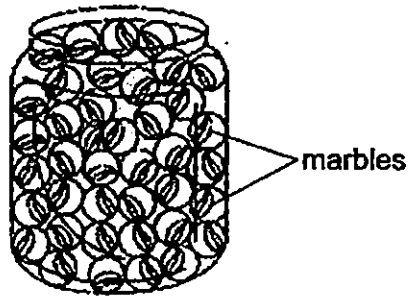
9. In an experiment, Jane filled a container with marbles until she could not put any more marbles into it.



Container

She said that there was no more space in the container for her to put anything into it.

However, her friend, Serene said that she was wrong.

Which of the following actions should Serene take to prove that Jane was wrong?

A: Pour rice into the container of marbles.
B: Heat the container of marbles with a flame.
C: Pour water into the container of marbles.

(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C ( )

10. Which of the following statements about heat are true?

A: Heat is matter.

B: Heat is a form of energy.

C: Our main source of heat is from the lamps.

D: Heat moves from a hotter place to a cooler place.

(1) A and C only
(2) B and D only
(3) B, C and D only
(4) A, B, C and D ( )

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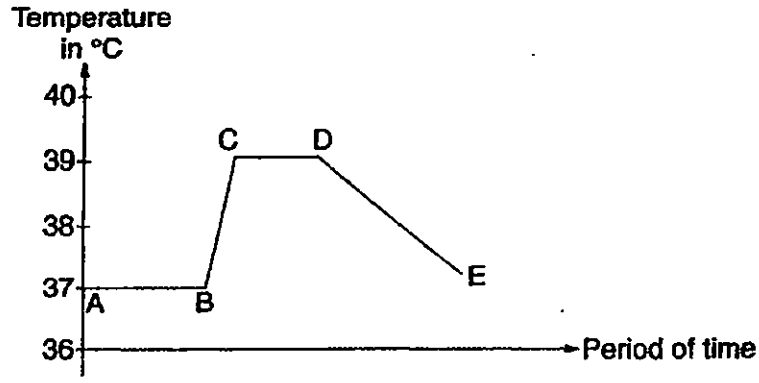
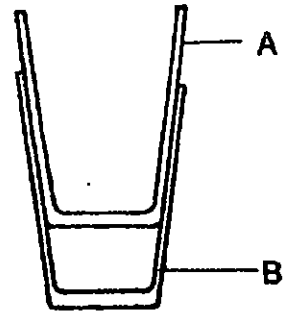
11. Raju's normal body temperature is 37^0C.
The graph below shows the changes in the body temperature of Raju when he was having a fever.



Which section of the graph shows that Raju is recovering from the fever?

(1) AB
(2) BC
(3) CD
(4) DE ( )

12. Janet wants to separate the two glasses, A and B, which are stuck together as shown below.



What should Janet do to separate the two glasses?

A: Pour hot water in A

B: Pour cold water in A

C: Place B in hot water

D: Place B in cold water

(1) A and C
(2) A and D
(3) B and C
(4) B and D ( )

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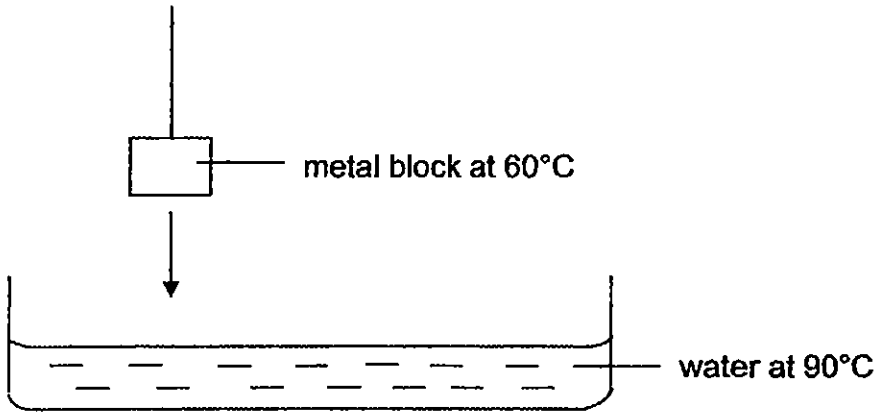
13. Alex lowered a metal block at 60°C into a container of water at 90°C as shown below.



Which of the following statements shows correctly what Alex would observe?

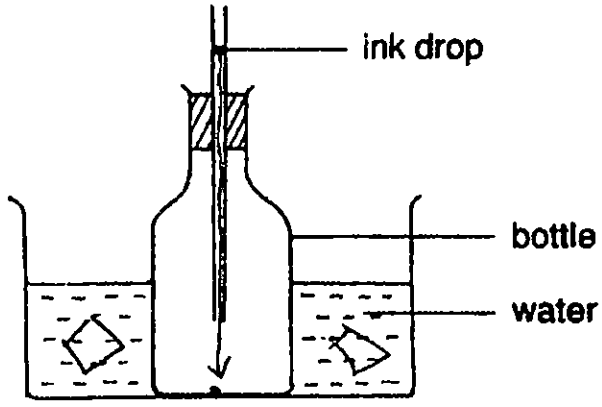
(1) The temperature of water decreased.

(2) The temperature of water increased.

(3) There was no change in the temperature of water.

(4) The temperature of water increased, then decreased. ( )

14. Ahmad set up an experiment as shown below.



If Ahmad puts ice-cubes into the water, which of the following would Ahmad observe?

(1) The ink drop moved up the tube.

(2) The ink drop moved down the tube.

(3) The ink drop moved up and down the tube.

(4) The ink drop remained in the same position. ( )

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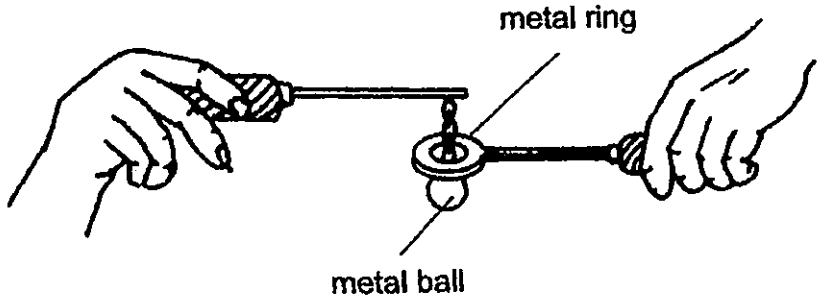
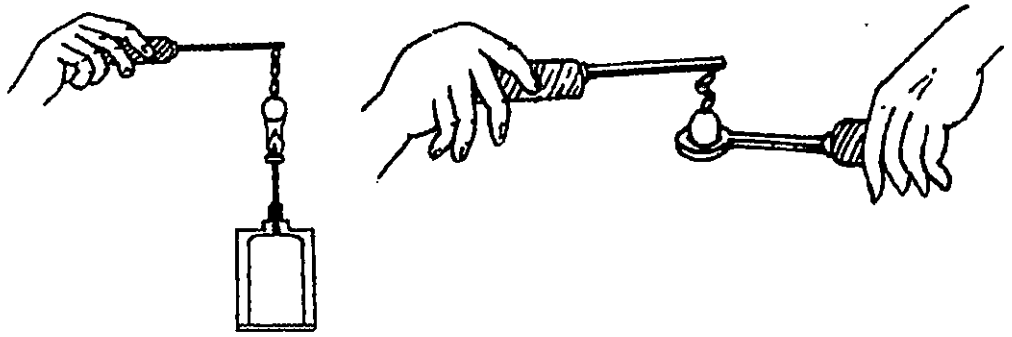
15. The diagram below shows Mrs Tan putting a metal ball through a metal ring.



After Mrs Tan had heated the metal ball for 5 minutes, she found that she was not able to put the ball through the ring as shown below.



The ball is heated The ball after being heated

Which of the following statements explains correctly why the ball was not able to go through the ring?

(1) The ball had expanded.
(2) The ring had contracted.
(3) The ball had expanded but the ring had contracted.
(4) The ring had expanded but the ball had contracted. ( )

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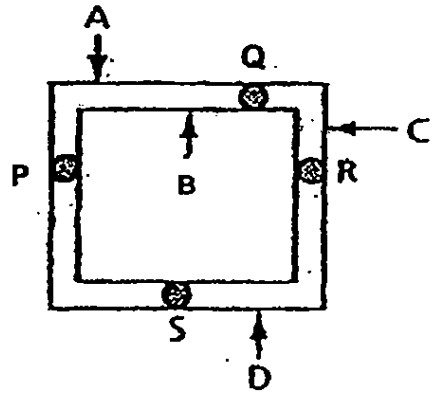
16. Siti had a square metal frame with four similar drops of wax attached at P, Q, R and S as shown below.



Siti heated the metal frame at one of the points, A, B, C or D and observed the order in which the wax melted completely.

She recorded her observation in the table shown below.

Order of wax completely melted	Wax at position
1st	S
2nd	R
3rd	Q
4th	P

At which point, A, B, C or D did Siti heat the metal frame?

(1) A
(2) B
(3) C
(4) D ( )

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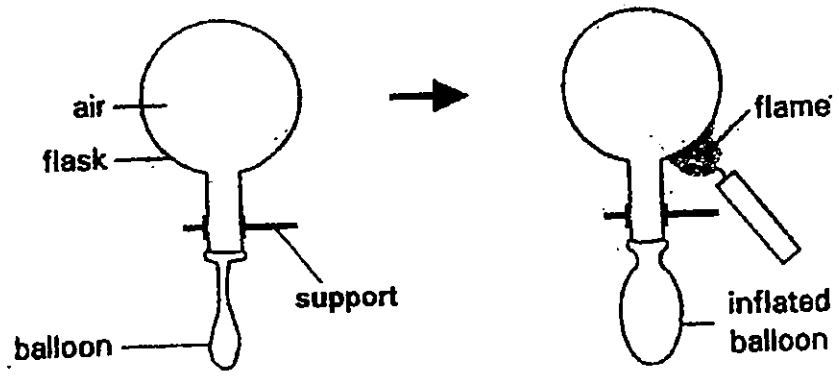
17. Study the experiment shown in the diagram below.



What does this experiment show us about the property of air?

(1) Air has mass.
(2) Air can be compressed.
(3) Air expands when heated.
(4) Air has no definite volume. ( )

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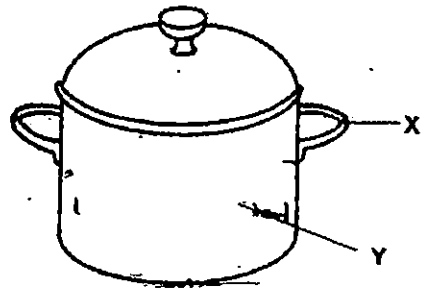
18. The diagram below shows a cooking pot.



Which of the following shows correctly the materials for making parts X and Y of the pot as well as the reasons for their choices?

	Part	Material	Reason
A:	X	metal	It is shiny, making it attractive to hold.
B:	X	wood	It is a poor conductor of heat. Fingers will not be burnt.
C:	Y	wood	It is a good conductor of heat. Food gets cooked quickly.
D:	Y	metal	It is a good conductor of heat. Food gets cooked quickly.

(1) A and C
(2) A and D
(3) B and C
(4) B and D ( )

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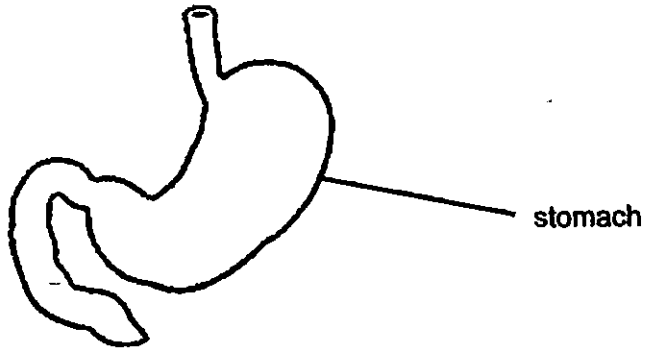
19. The diagram below shows the stomach in the human digestive system.



What is the function of the stomach?

(1) It absorbs water from the food.
(2) It rolls the food into small pieces to swallow.
(3) It breaks down the food with digestive juices.
(4) It makes the food soft and cut it into smaller chunks. ( )

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20. The classification chart below shows the functions of some organ systems.

Organ systems

W	X
• Takes air into the body • Removes air from the body	• Supports the body • Protects the organs in the body

Which one of the followings correctly represents **W** and **X**?

	W	X
(1)	Circulatory System	Muscular System
(2)	Respiratory System	Skeletal System
(3)	Respiratory System	Muscular System
(4)	Muscular System	Circulatory System

( )

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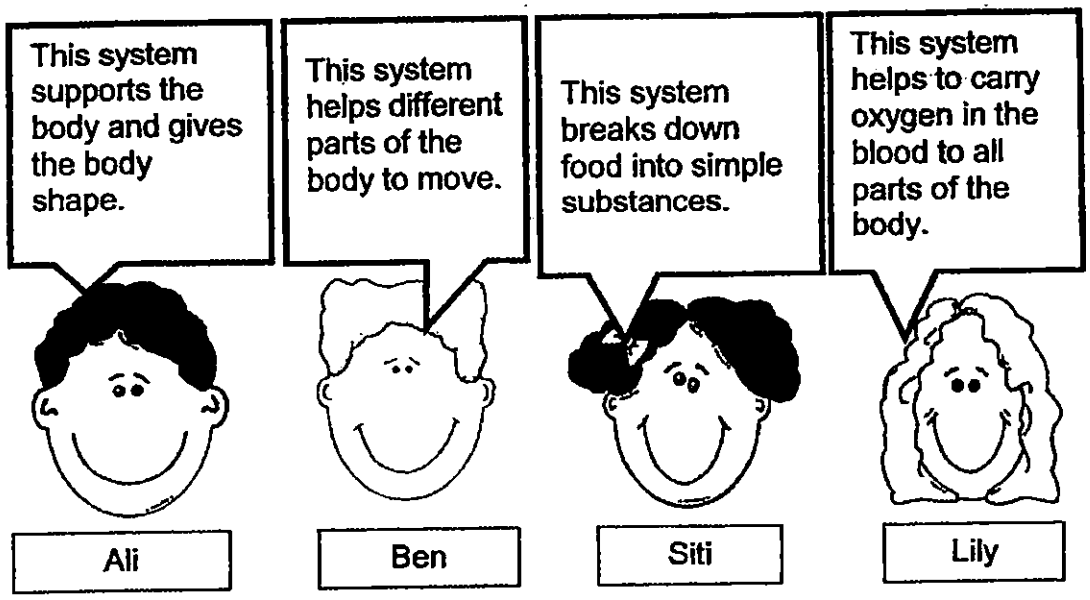
21. Four students, Ali, Ben, Siti and Lily shared what they have learnt about the organ system in the diagram below.



Whose statement describes the circulatory system?

(1) Ali
(2) Ben
(3) Siti
(4) Lily

( )

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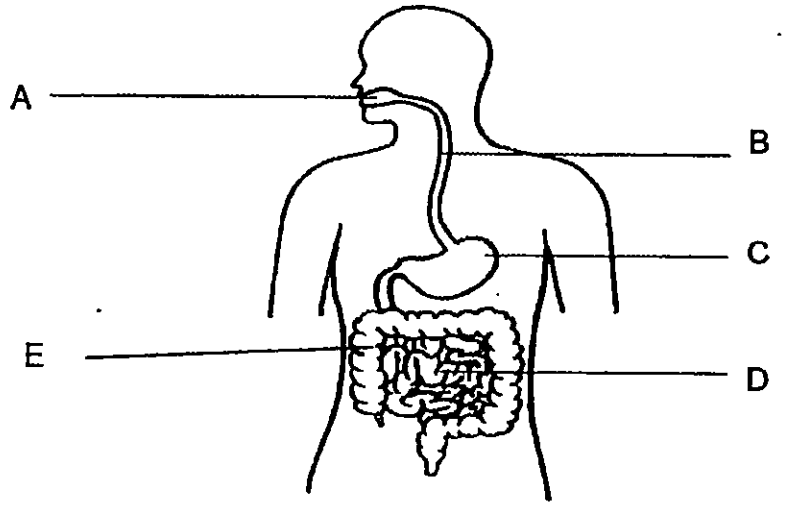
22. Which one of the organs is **NOT** part of the digestive system?

(1) heart
(2) gullet
(3) mouth
(4) stomach ( )

23. A, B, C, D and E in the diagram below are parts of the digestive system.



Identify the parts where digestive juices are **not** present.

(1) A and C
(2) B and E
(3) A, B and D
(4) B, C and E ( )

24. Which one of the following **pairs of the organ systems** work together to help us bend, stretch and move?

(1) circulatory system and muscular system
(2) muscular system and skeletal system
(3) respiratory system and circulatory system
(4) respiratory system and digestive system ( )

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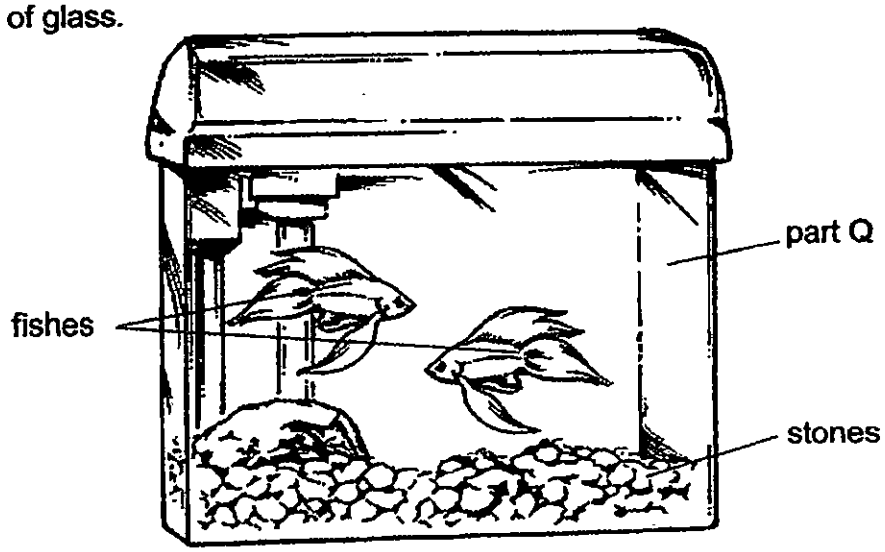
25. Which of the following characteristics do insects have in common?

A. They have six legs.
B. They have feelers.
C. They have three body parts.

(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

( )

26. Observe the diagram of a fish tank below. Part Q is usually made of thick pieces of glass.



Which one of the following is the most likely reason for choosing glass to make part Q?

(1) It is heavy.
(2) It breaks easily.
(3) It sinks in water.
(4) It allows light to pass through it.

( )

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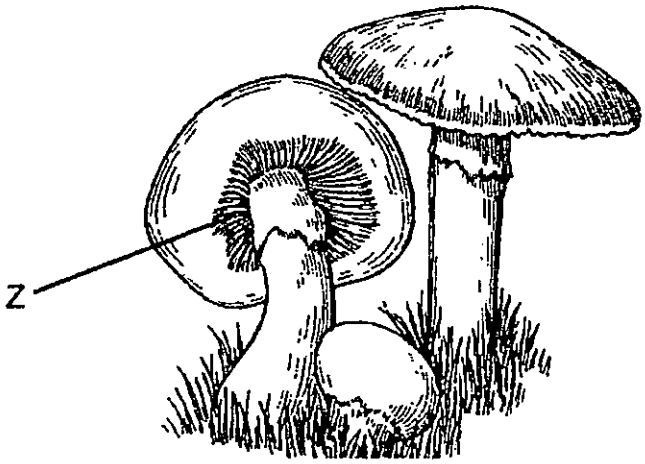
27. The diagram below shows some mushrooms.



What can be found in the part labelled 'Z'?

(1) Food
(2) Seeds
(3) Spores
(4) Bacteria ( )

28. Study the table below.

Organism	Reproduces by spores	Makes its own food
A		✓
B	✓	
C	✓	✓

Which organism is likely to be a flowering plant?
(1) A only
(2) B only
(3) A and C only
(4) B and C only

( )

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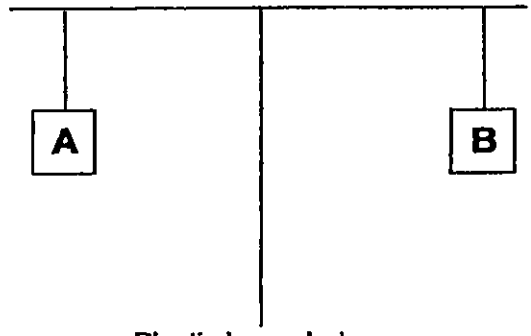
29. Diagram 1 below shows a plastic beam balance with Object A and B hanging from it. Object A and B are equally balanced.



Plastic beam balance

Diagram 1

When Object X is placed directly under Object B, the balance tilted as shown below in Diagram 2.

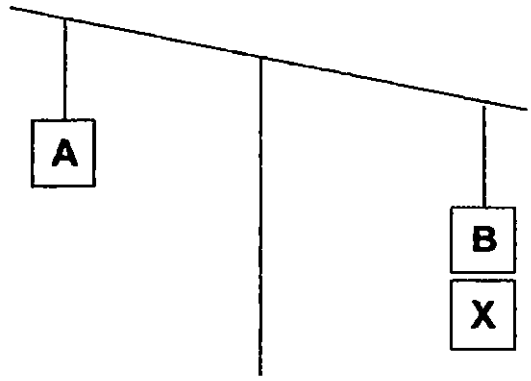


Diagram 2

Based on the observation in Diagram 2, what could object B and X be?

	Object B	Object X	
(1)	Wooden block	Magnet	
(2)	Steel Block	Magnet	
(3)	Steel Block	Wooden block	
(4)	Magnet	Wooden block	( )

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30. Which of the following are uses of magnets?

A : Magnets keep refrigerator doors tightly shut.

B : Magnets are used in compasses to tell directions.

C : Magnets are used in doorstoppers to keep doors open.

(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C ( )

End of Booklet A

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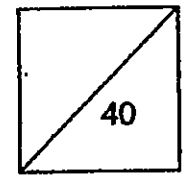
HENRY PARK PRIMARY SCHOOL
2015 SEMESTRAL EXAMINATION 1
SCIENCE
PRIMARY 4

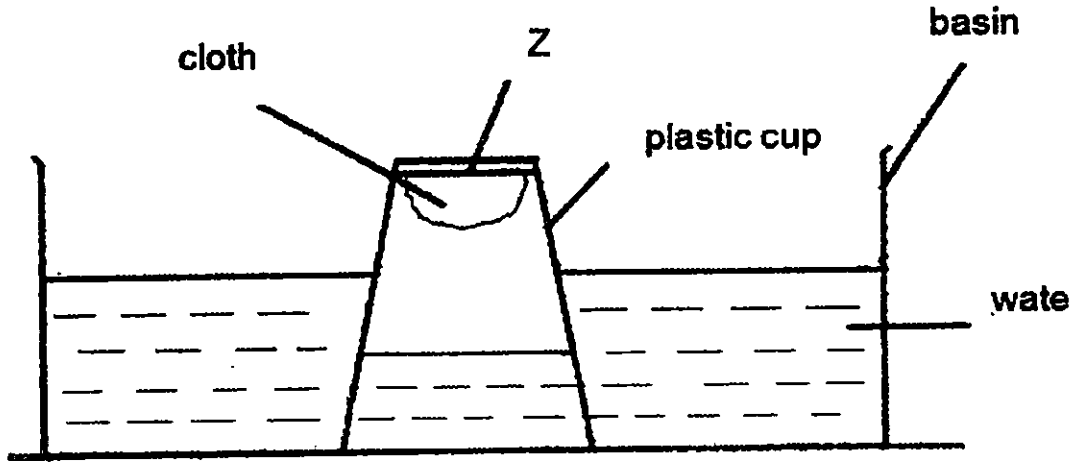


Name:_____

Class: Pr 4 _____

Part B (40 marks)
Write your answers to questions 31 to 44 in the spaces given.

31. A piece of cloth is stuck at the bottom of a plastic cup.
The plastic cup is then inverted into a basin of water as shown in the diagram below.



a) What will happen to the piece of cloth? *(1m)*

Tick (√) the correct answer below.

The piece of cloth will remain dry ☐

The piece of cloth will become wet ☐

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b) If a hole is made in the plastic cup at the part marked Z, what will happen to the piece of cloth? *(1m)*

_____

c) Explain your answer in (b). *(1m)*

_____

_____

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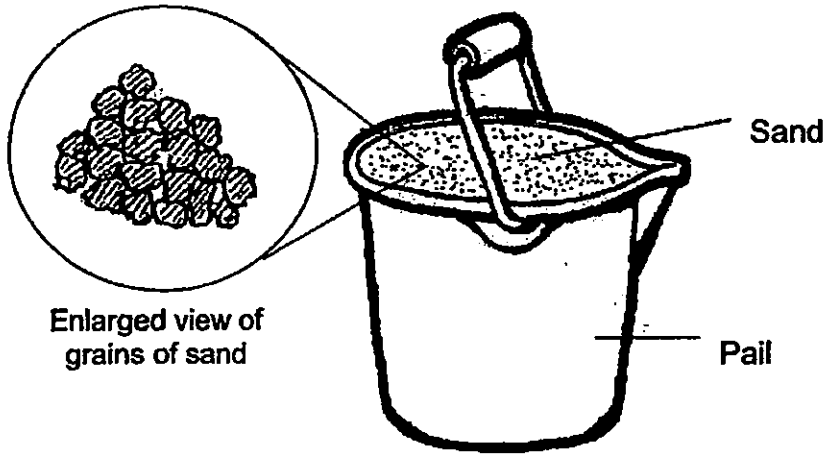
32. Colin was at the beach. He poured sand into a pail till it was full. He continued to force more sand into it but observed that the sand flowed out from the pail.



a) What can Colin conclude from his observation? *(1m)*

_____

_____

b) Colin tells his friend that sand is a liquid as it takes the shape of the pail when it is poured into the pail. *(1m)*
Do you agree with Colin? Give a reason for your answer.

_____

_____

_____

c) Put a tick (√) in the box that shows the correct statement. *(1m)*

a	Air has a definite volume.	
b	A fork has a definite shape.	
c	Chair has a definite volume.	
d	Oil has a definite shape.	

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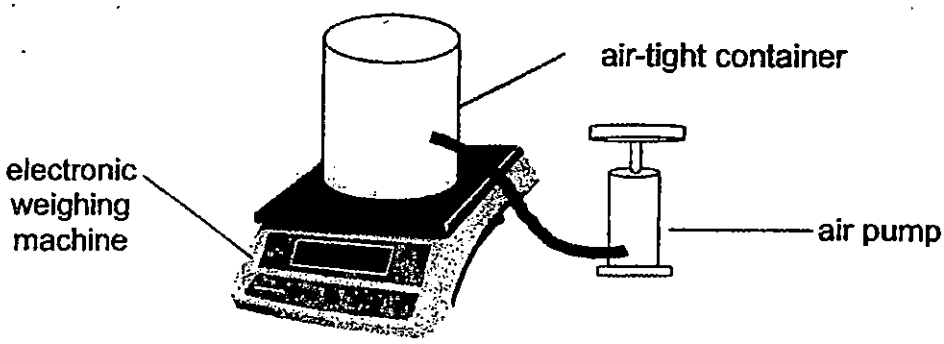
33. Richard filled up a 500 cm^3 air-tight container with air and placed it on an electronic weighing machine as shown in the diagram below.



Mass of the air-tight container with 500 cm^3 of air = 100.8g

a) Would the **mass** of the air in the container **increase, decrease** or **remain the same** if ~~Theresa~~ Richard pumped in another 100 cm^3 of air into the air-tight container? *(1m)*

_____

b) Would the **volume** of air in the container **increase, decrease** or **remain the same** after ~~Theresa~~ Richard had pumped in the 100cm^3 of air into the air-tight container in? *(1m)*

_____

c) Explain your answer in part (b). *(1m)*

_____

_____

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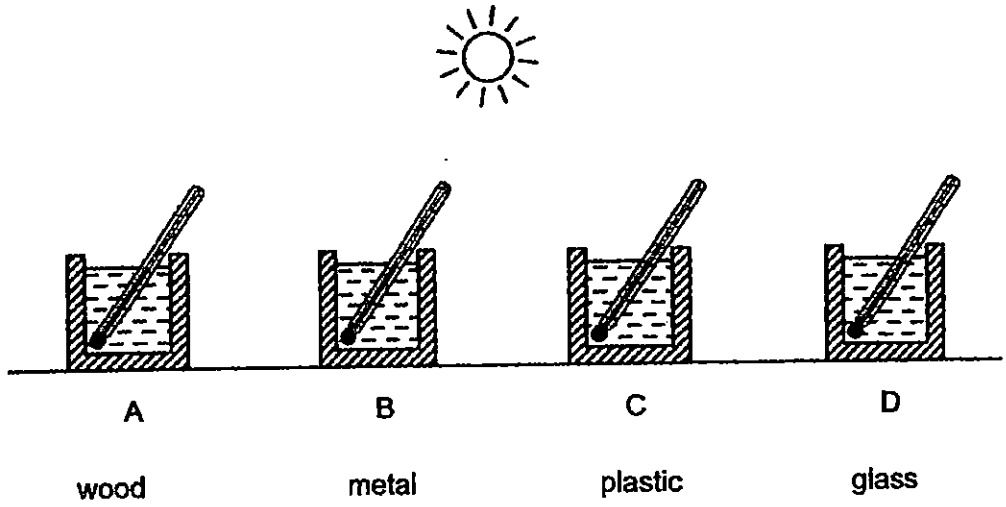
34. John conducted an experiment by placing four containers of water under the sun as shown below.



The containers are made of different materials but are of the same size and thickness. Each container has equal amount of water at 30°C.

(a) In which of the containers, A, B, C or D, will the thermometer show the highest temperature after 30 minutes? *(1m)*

_____

(b) Explain your answer in (a). *(2m)*

_____

_____

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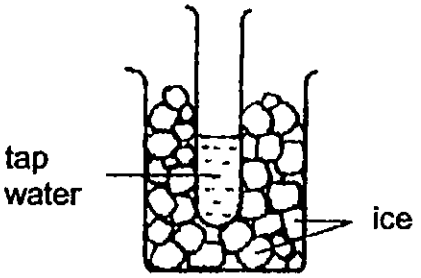
35. For each set-up shown below, write the name of the labelled item(s) that will gain heat or lose heat in the correct boxes. *(2m)*

Set-up	Item(s) that gain(s) heat	Item(s) that lose(s) heat
		

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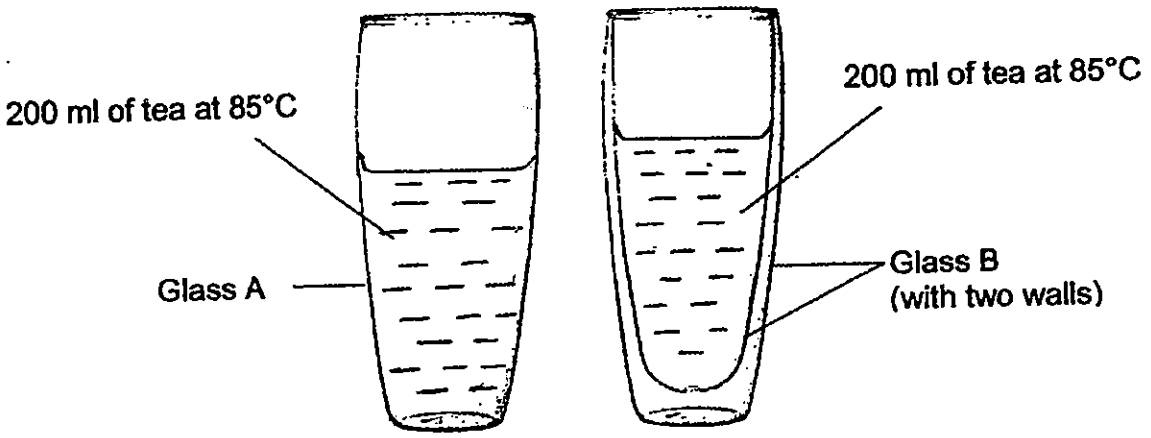
36. Ken poured the same amount of hot tea into two different glasses, A and B as shown in the diagram below and placed them at a room temperature of 30°C.



Glass B has two walls, with a layer of air in between.

He recorded the temperature of the tea after 20 minutes and recorded the results in the table below.

Glass	Temperature of tea (°C)	
	At the start of experiment	After 20 minutes
A	85°C	50°C
B	85°C	60°C

(a) Why did the temperature of the hot tea in both glasses decrease? *(1m)*

_____

(b) Study the table above carefully.
What effect does the layer of air in glass B have on the decrease in the temperature of the hot tea? *(1m)*

_____

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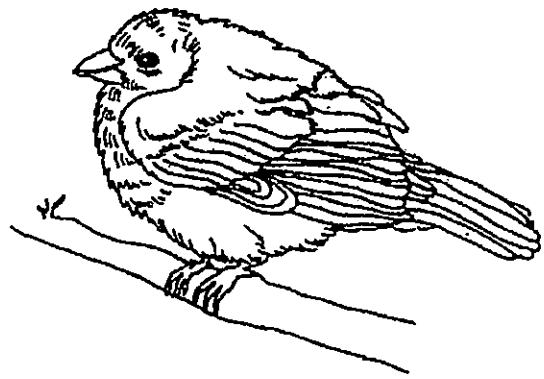
When birds feel cold, they fluff up their feathers as shown in the diagram below. This will trap a layer of air between the feathers to keep them warm.



(c) How does trapping a layer of air between the feathers keep the bird warm? *(2m)*

_____

_____

_____

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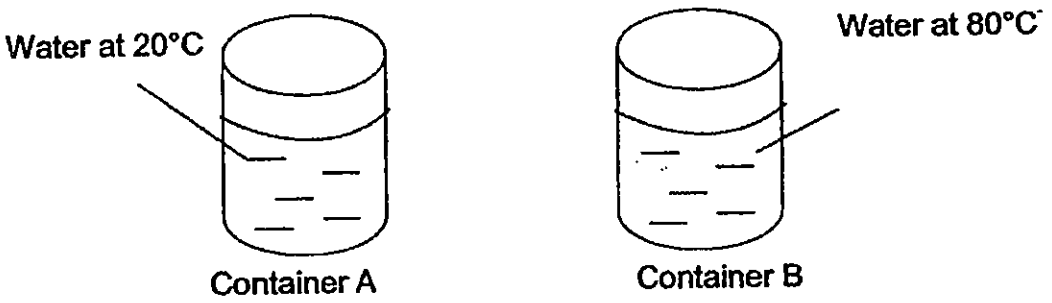
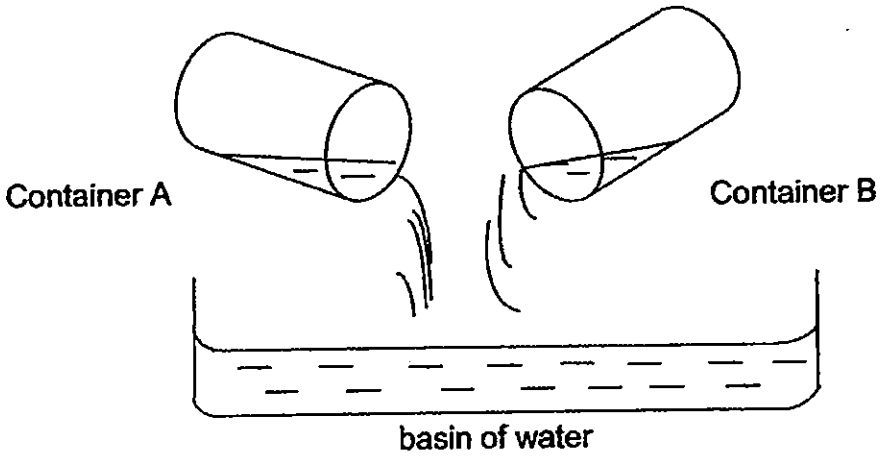
37. Ken filled two similar containers with equal amount of water but at different temperatures as shown below.



Ken then poured the water from both containers into a basin as shown below.



(a) What would the temperature of the water in the basin likely to be? *(1m)*
Circle the correct answer below.

25°C 55°C 85°C

(b) Name an instrument that would enable Ken to measure the temperature of water in the basin accurately. *(1m)*

_____

(c) If Ken left the basin of water in the science room of temperature 29°C, **predict** what the temperature of the water will be after six hours. *(1m)*

_____

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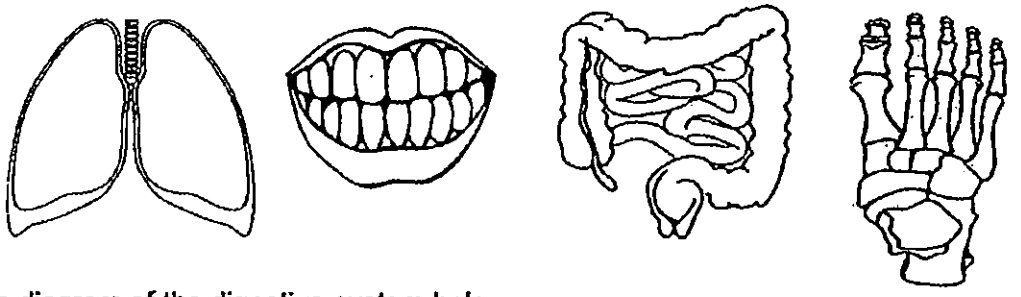
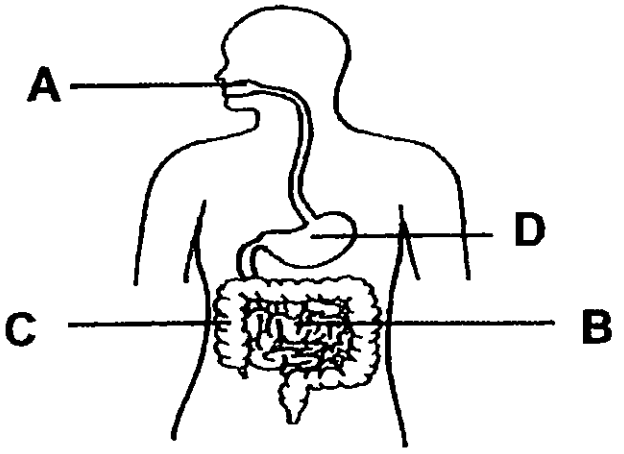
38. **Match** the four diagrams shown below to the correct organs system. *(2m)*

respiratory system	muscular system	digestive system	circulatory system	skeletal system
•	•	•	•	•
•	•	•	•	•



39. Study the diagram of the digestive system below.



(a) Name organ C. *(1m)*

_____

(b) State **one** function of organ C. *(1m)*

_____

_____

(c) State **two** functions of Organ B. *(2m)*

(i) _____

(ii) _____

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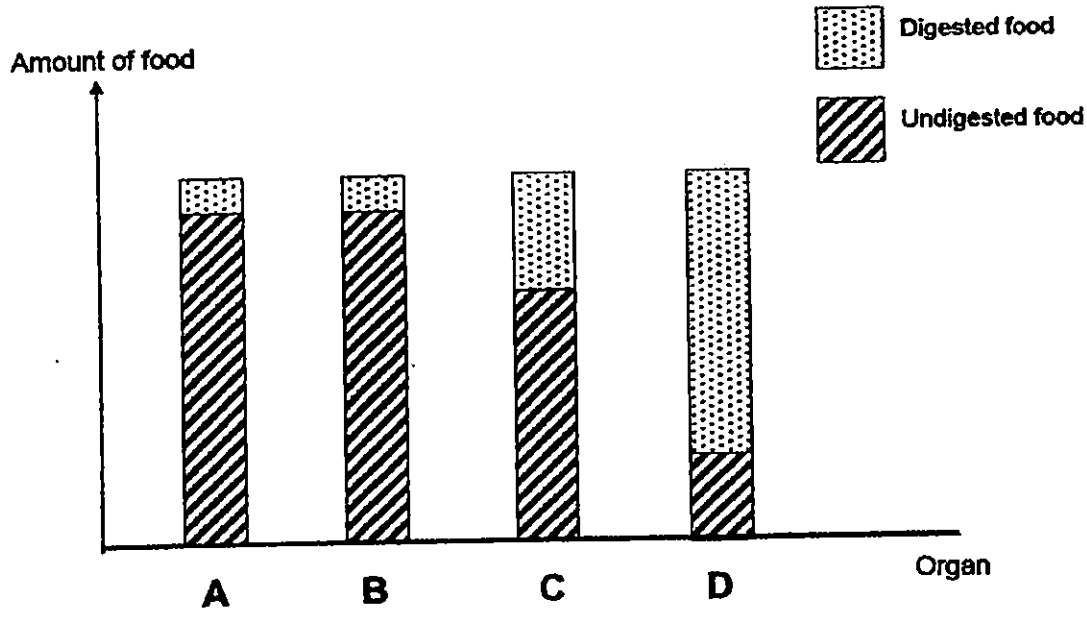
40. The graph below shows the amount of digested and undigested food at four different organs (A, B, C and D) of the human digestive system.

The digestion process begins with Organ A and ends at Organ D.



(a) As the food travels from Organ C to D, what happens to the amount of **digested** food? *(1m)*

_____

_____

(b) Identify Organs A and Organ D. *(1m)*

Organ A: _____

Organ D: _____

(c) Why is the amount of **undigested** food in Organ C different from that in Organ B? *(1m)*

_____

_____

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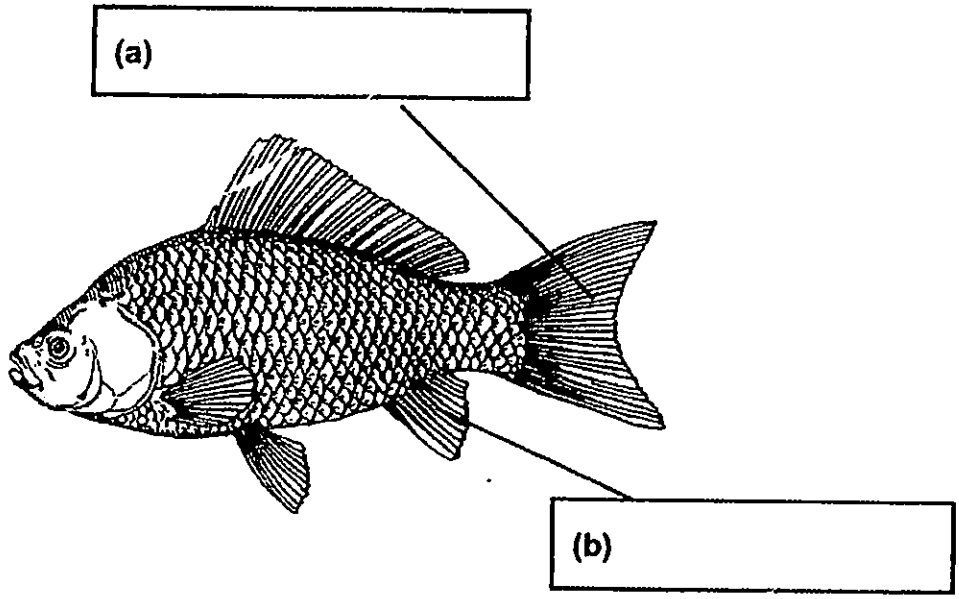
41. Study the animal show below.
Using the helping words given below, label parts (a) and (b) correctly. *(2m)*

fin **scale** **gill cover** **tail**



42. Jacob saw the advertisement, shown below, that described a table cloth.

a) Tick (√) the correct property of the table runner that is shown in the advertisement above. *(1m)*

☐ Waterproof ☐ Sinks in water ☐ Allows light to pass through

b) Name a material that the table runner could possibly be made of. *(1m)*

_____

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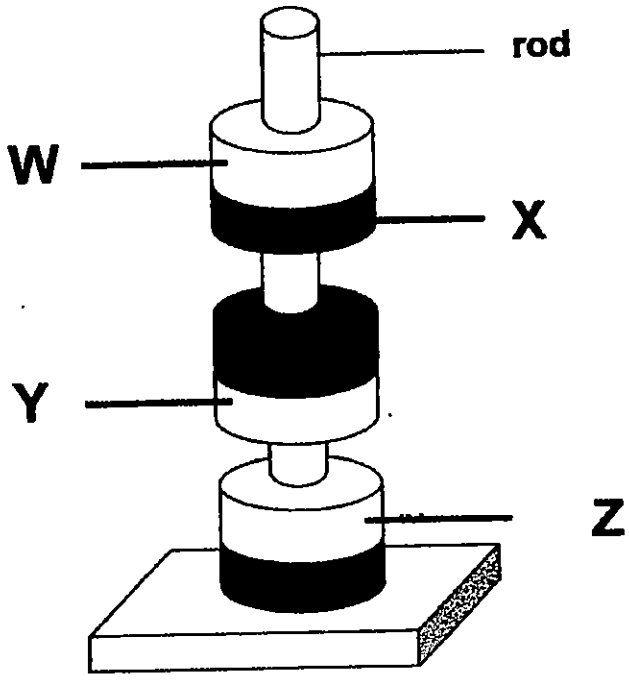
43. Study the diagram which shows three magnets on a rod.



(a) Identify the poles of the magnets with either **'North'** or **'South'**. *(2m)*

W: _____

X: _____

Y: _____

Z: _____

(b) The above set-up is made possible because of a property of magnets.
From the diagram above, which property of magnet is observed? *(1m)*

_____

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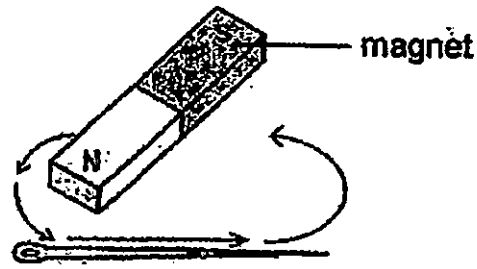
44. Jamilah used the stroking method to make a temporary magnet. She tested the temporary magnet. It attracted only one paperclip.



Needle P

(a) What should Jamilah do to increase the strength of the temporary magnet ? *(2m)*

(i) _____

_____

(ii) _____

_____

(b) Jamilah increased the strength of the temporary magnet through one of the ways she knew.

What can Jamilah do to find out if the strength of the temporary magnet is stronger than before? *(1m)*

_____

_____

End of Booklet B

Setters:
Ms Evelyn Tan
Mr Yuan Kee King
Mdm Nadia Abu Bakar

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : HENRY PARK PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
4	3	4	2	2	3	3	4	2	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
4	3	1	2	1	4	3	4	3	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	1	2	2	4	4	3	1	2	1

Q31a. The piece of cloth will remain dry ☑
Q31b. The cloth will be wet.
Q31c. The air can escape through the hole therefore the water can occupy the previously occupied space.

Q32a. Matter occupies space.
Q32b. No. A grain of sand has definite shape but liquids do not have definite shape.
Q32c. b) A fork has a definite shape ☑ c) Chair has a definite volume ☑

Q33a. It will increase
Q33b. It will remain the same
Q33c. Air can be compressed and it has no definite volume.

Q34a. B
Q34b. Metal is the best conductor of heat among all these containers , it conducts heat to water the fastest.

Q35.

Aluminum spoon	Hot coffee
ice	Tap water

Q36a. The hot tea losses heat to the surroundings
Q36b. The air prevents the heat to decrease in the temperature faster.
Q36c. Air is a poor conductor heat. It reduces heat loss.

Q37a. 55°c
Q37b. A data logger / thermometer
Q37c. The water would be 29°C, the room temperature..

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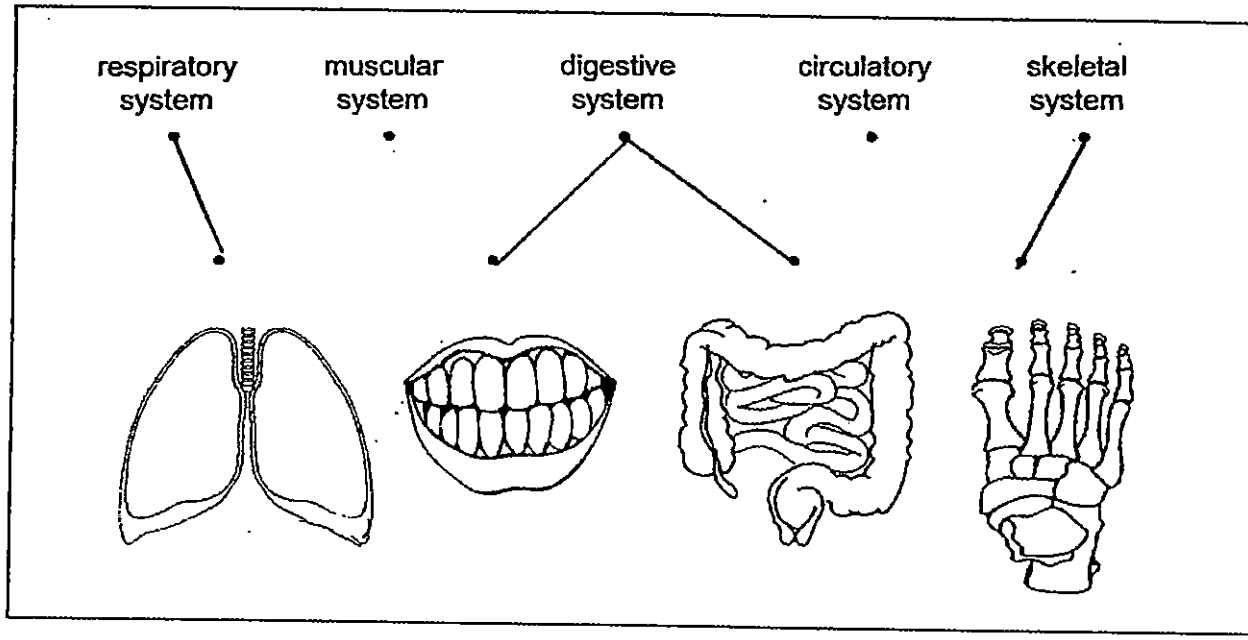
Q38. SEE PICTURE



Q39a. The large intestine
Q39b. It absorbs water and minerals from the undigested food into solid waste.
Q39c. i) It breaks down the food into simpler substances.
ii) Brings the digested food into the blood to be used by the body.

Q40a. It increases.
Q40b. Organ A: mouth Organ D : small intestine
Q40c. More digestion has taken place and food has been digested.

Q41. A: tail Q41 B : fin

Q42a. ☑ waterproof
Q42b. Plastic

Q43a. W: north X : south Y : north Z: north
Q43b. Like poles repel , unlike poles attract.

Q44a i) Stroke it more times ii) use a stronger magnet
Q44b. Place the temporary magnet near some paper clips.

THE END

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MAHA BODHI SCHOOL

2015 SEMESTRAL ASSESSMENT 1

PRIMARY FOUR SCIENCE

Name: _____ ( ) Date : 14 May 2015

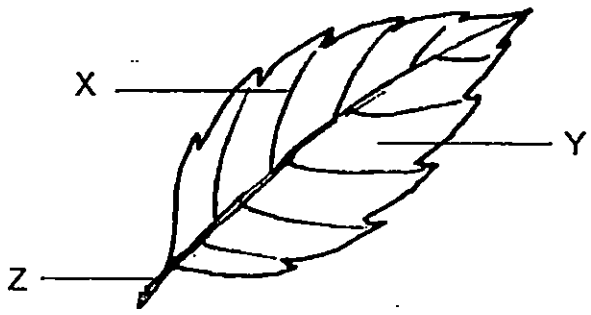
Class: Primary 4 ( )

Duration: 1 h 30 min (Booklets A and B)

BOOKLET A [24 x 2 marks = 48 marks]

For each question from 1 to 24, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade your answer on the Optical Answer Sheet.**

1. The diagram below shows a leaf.



Identify the parts of the leaf labelled X, Y and Z.

	X	Y	Z
(1)	blade	edge	stalk
(2)	blade	stalk	vein
(3)	vein	blade	stalk
(4)	edge	vein	blade

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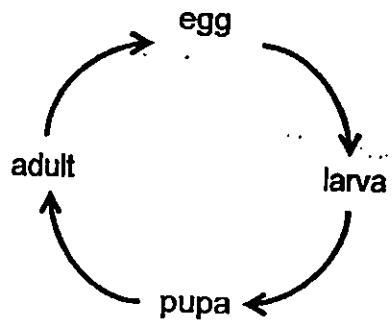
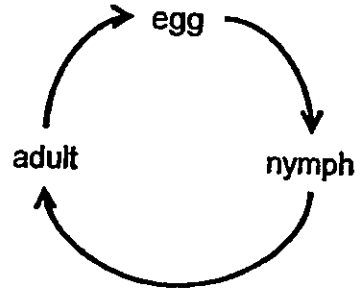
2. Which of the following shows the life cycle of a frog?

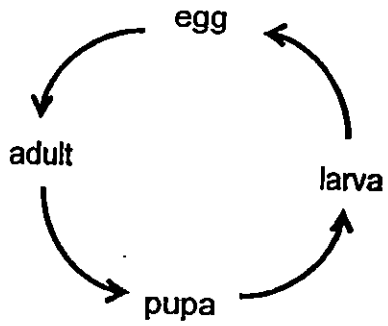
(1)



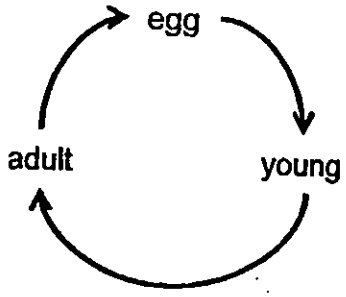
(2)



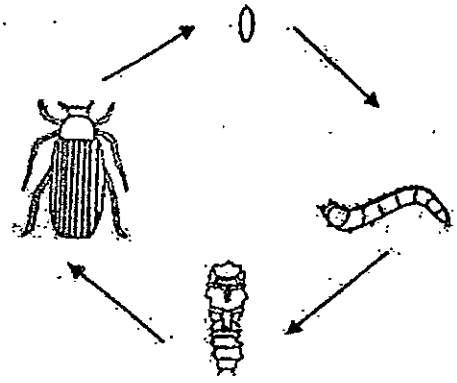
(3)



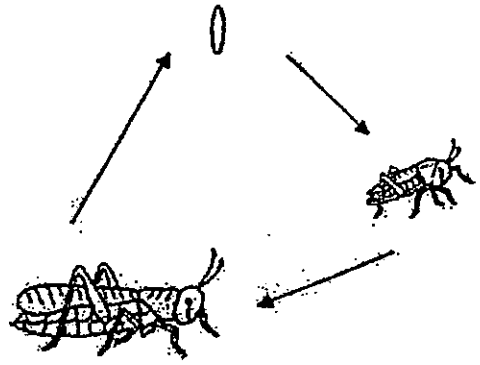
(4)



3. Study the two life-cycles shown below.



Animal P



Animal Q

Which of the following statements is correct based on the life cycles shown above?

(1) Animal P gives birth to young alive but Animal Q does not.
(2) Animal P has a larval stage in its life cycle but Animal Q does not.
(3) Animal P has an egg stage in its life cycle but Animal Q does not.
(4) Animal P has young that looks like the adult but Animal Q does not.

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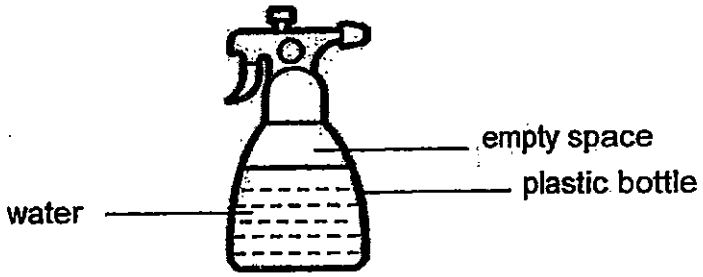
4. The diagram below shows a plastic bottle spray filled with some water.

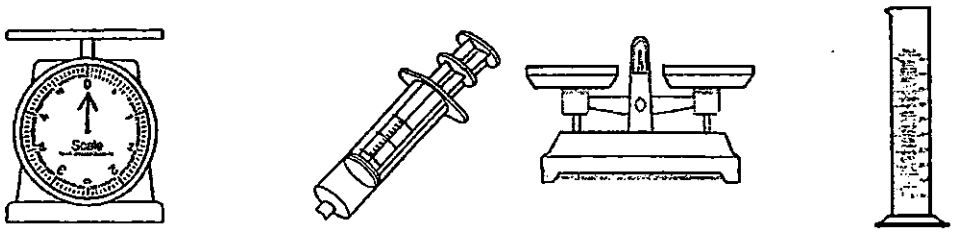


Which of the following correctly represents the state of matter of the empty space, plastic bottle and water?

	Empty space	Plastic bottle	Water
(1)	liquid	liquid	gas
(2)	gas	solid	liquid
(3)	liquid	solid	gas
(4)	gas	liquid	liquid

5. The diagrams below show some apparatus commonly used in Science experiment.

weighing scale syringe balance beam measuring cylinder



A B C D

Which of the following can be used to measure volume?

(1) D only
(2) A and C only
(3) B and D only
(4) A, C and D only

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6. Which of the following statements are correct about matter?

A. Matter has mass.
B. Matter occupies space.
C. Matter has a definite shape.
D. Matter has a definite volume.

(1) A and B only
(2) C and D only
(3) A, B and C only
(4) A, B and D only

7. John observed Animal X which lives on land and in water.
Animal X can breathe through its lungs and moist skin.
Animal X reproduces by laying eggs.

Which animal group is Animal X from?

(1) Fish
(2) Birds
(3) Reptiles
(4) Amphibians

8. Which of the following is true about both fungi and bacteria?

(1) They reproduce by spores.
(2) They can be useful or harmful to us.
(3) They make their own food to stay alive.
(4) They can only be seen under a microscope.

9. A raincoat is usually made of plastic.
Which of the following properties of plastic make it a suitable material for raincoats?

A. It is light.
B. It is flexible.
C. It is waterproof.
D. It can float on water.

(1) A and B only
(2) A and D only
(3) A, B and C only
(4) B, C and D only

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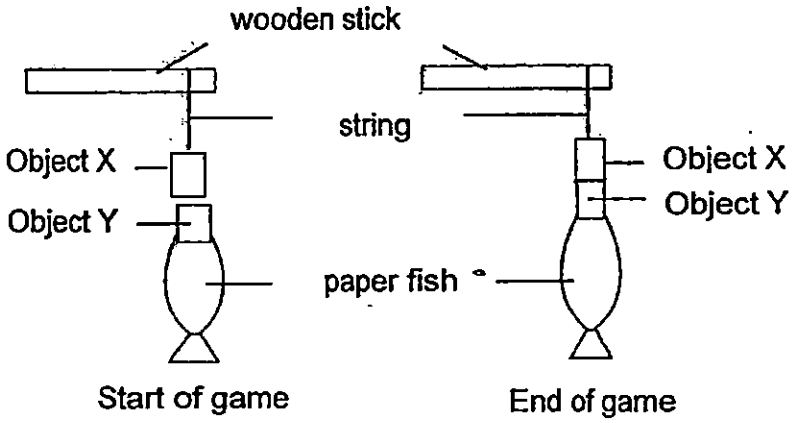
10. What is the function of the muscular system?

(1) It removes air from the body.
(2) It helps different parts of the body to move.
(3) It supports the body and gives the body shape.
(4) It carries waste materials away from different parts of the body.

11. Leslie designed a fishing game where he had to use Object X to pick up a paper fish. Object Y was attached to the paper fish as shown in the diagram below.



Which of the following correctly represents what Object X and Object Y could possibly be?

	Object X	Object Y
A	Magnet	Iron block
B	Iron block	Steel block
C	Magnet	Magnet

(1) A only
(2) A and C only
(3) B and C only
(4) A, B and C

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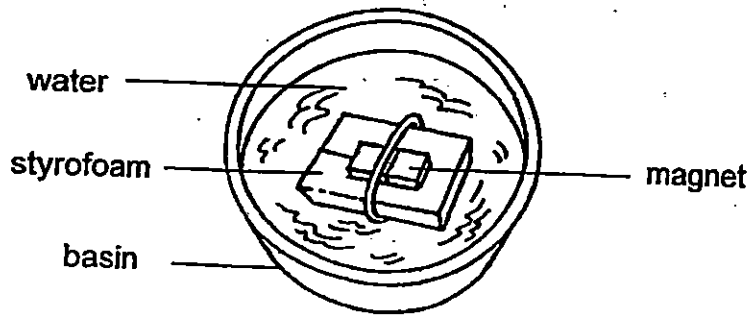
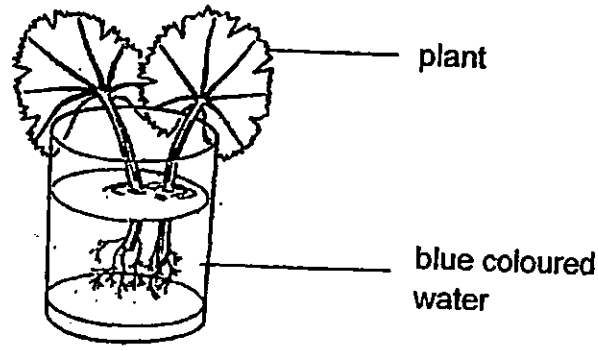
12. A magnet was secured onto a piece of styrofoam with a rubber band. It was then placed in a basin of water as shown below.



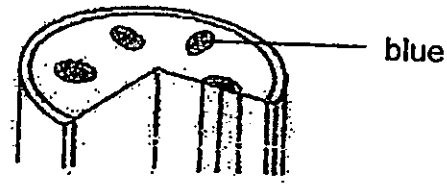
When the magnet came to rest, which direction was it pointing at?

(1) East-West direction
(2) South-East direction
(3) North-West direction
(4) North-South direction

13. Alex placed two plants into a container of blue coloured water.



After a week, he cut the stem of one of the plants and observed some parts of the stem have turned blue.



Which of the following statements explains why some parts turned blue?

(1) The stem absorbs water.
(2) The stem transports water.
(3) The stem holds the plant upright.
(4) The stem makes food for the plant.

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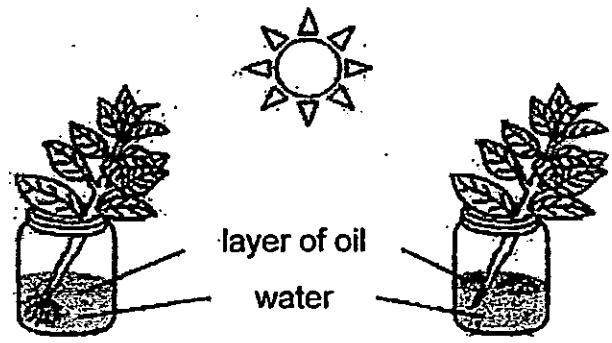
14. Sally carried out an experiment where she placed two similar plants in the set-ups as shown in the diagram below.

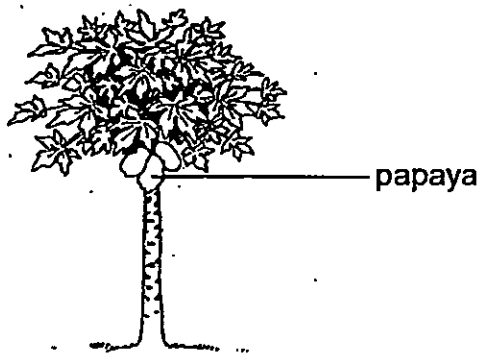


Set-up X Set-up Y

Based on the experiment, Sally was trying to find out if_____.

(1) plants need roots to take in water
(2) oil will help the plants to grow better
(3) sunlight is needed for plants to survive
(4) the number of leaves will affect the growth of the plants

15. The diagram below shows a papaya plant.



At which stage of its life cycle is the papaya plant at?

(1) seed
(2) adult
(3) shoot
(4) young

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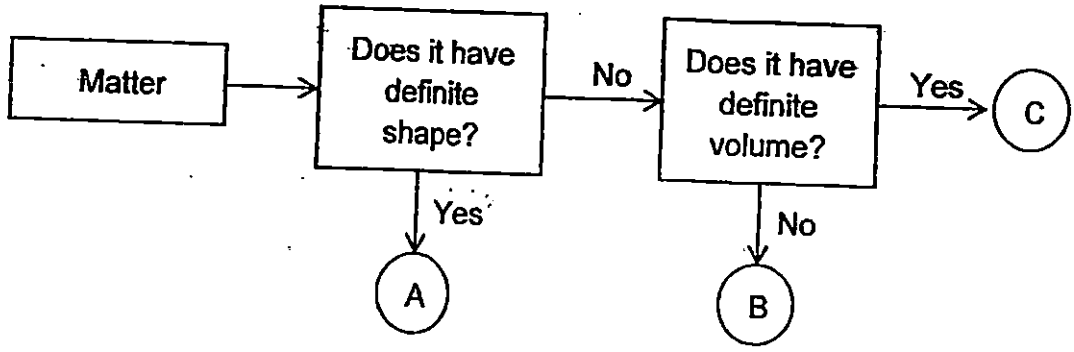
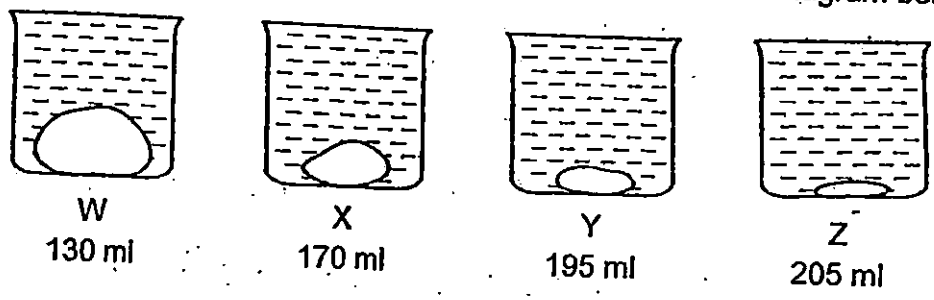
16. Study the flowchart below.



Which of the following best represents A, B and C?

	A	B	C
(1)	ice	air	water
(2)	water	air	ice
(3)	ice	water	ice
(4)	air	water	air

17. Andy placed four objects of similar mass but different sizes into four empty beakers W, X, Y and Z before filling up the beakers with water. The amount of water needed to fill the beakers completely was shown in the diagram below.



Based on his observation, what can Andy conclude about the objects?

A. They have mass.
B. They occupy space.
C. Objects that are bigger in size occupy more space.
D. Objects that have a greater mass occupy more space.

(1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

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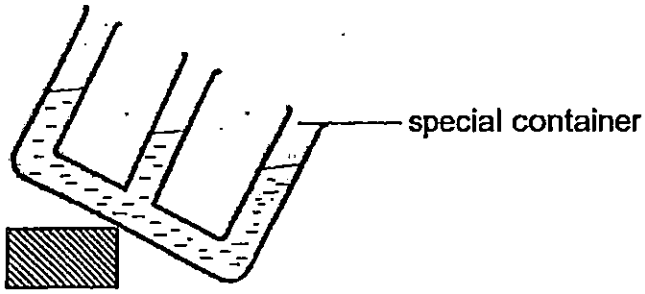
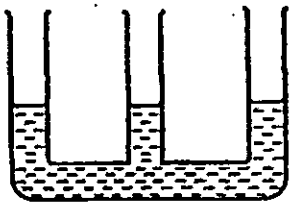
18. Peter poured some liquid into a special container and placed it in the freezer in the position as shown below.



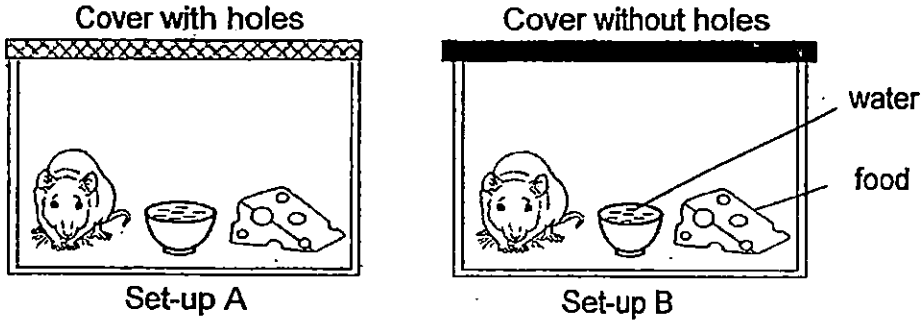
The next day, he took out the container and left it on the table for a few hours. He observed the container as shown in the diagram below.



Which of the following statement explains what Peter observed?

(1) Liquid has definite shape.
(2) Liquid has definite volume.
(3) Liquid does not have definite shape.
(4) Liquid does not have definite volume.

19. Jim conducted an experiment using the two set-ups as shown below.



After a few days, he observed that the animal in Set-up B had died while the animal in Set-up A was still alive.
What can Jim conclude from this experiment?

(1) Living things can reproduce.
(2) Living things need air to stay alive.
(3) Living things can move by themselves.
(4) Living things need food and water to stay alive.

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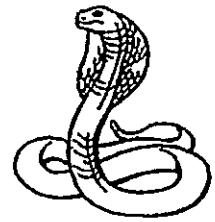
20. Study the classification table below.

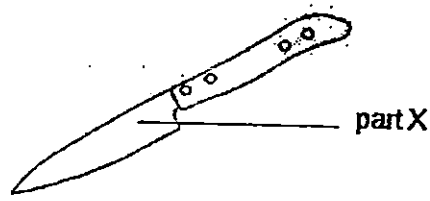
Group 1	Group 2
	

Which of the following shows the correct headings for Group 1 and Group 2?

	Group 1	Group 2
(1)	Have scales	Have hair
(2)	Live on land	Live in water
(3)	Breathe through lungs	Do not breathe through lungs
(4)	Reproduce by giving birth	Reproduce by laying eggs

21. The table below shows the properties of materials P, Q, R and S.

Properties	Materials			
	P	Q	R	S
It is flexible		✓	✓	✓
It is strong	✓	✓		
It is waterproof	✓	✓	✓	



Which material is most suitable for making part X of the knife to be used for cutting fruit?

(1) P
(2) Q
(3) R
(4) S

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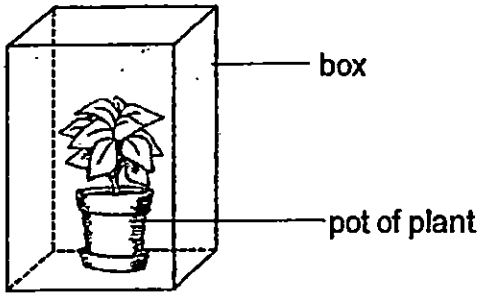
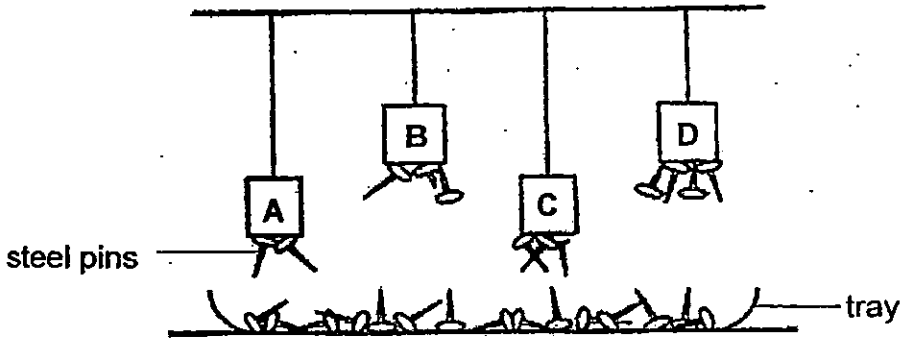
22. Kai En places a pot of plant in a box as shown below. He waters the plant every day. He carries the box to school to observe the growth of the plant with his friends every day. The table below shows the properties of materials used to make Boxes W, X, Y and Z.



Which box is most suitable for Kai En to keep the pot of plant in?

	Box	Is it waterproof?	Is it light?	Does it allow light to pass through?	Is it strong?
(1)	W	Yes	No	Yes	No
(2)	X	Yes	Yes	Yes	Yes
(3)	Y	No	Yes	Yes	No
(4)	Z	No	Yes	No	Yes

23. Kevin wanted to compare the magnetic strength of 4 magnets, A, B, C and D. He set up the experiment as shown below and observed the number of steel pins that were attracted by each magnet.



Which of the following correctly shows the arrangement of the strength of the magnets from the weakest to the strongest?

	Weakest →			Strongest
(1)	A	B	C	D
(2)	C	B	D	A
(3)	A	C	B	D
(4)	D	A	B	C

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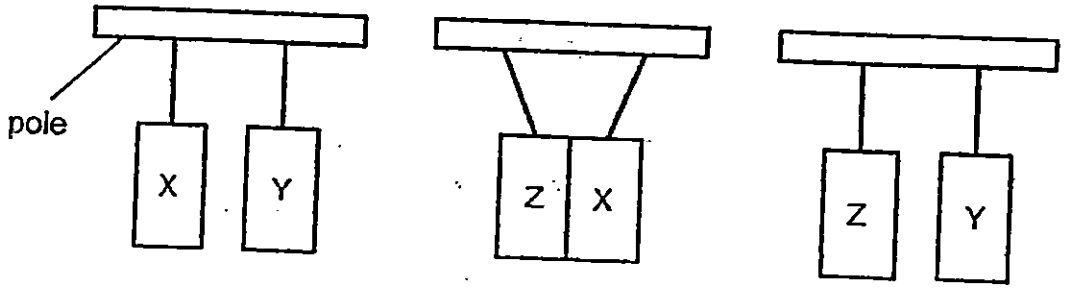
24. Raju hung 3 different bars X, Y and Z on a pole using strings as shown in the diagram below. He was told that the bars X, Y and Z were a magnet, a magnetic object and a non-magnetic object.



Based on the diagram, what can X, Y and Z possibly be?

	Magnet	Magnetic object	Non-magnetic object
(1)	X	Y	Z
(2)	Y	Z	X
(3)	X	Z	Y
(4)	Y	X	Z

END OF BOOKLET A

GO ON TO BOOKLET B

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MAHA BODHI SCHOOL

2015 SEMESTRAL ASSESSMENT 1

PRIMARY FOUR SCIENCE

Name : _____ ( )

Class : Primary 4 ( )

Duration : 1 h 30 min (Booklets A and B)

Date : 14 May 2015

Parent's signature: _____

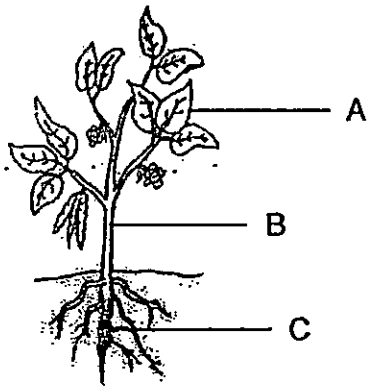
Booklet A	48
Booklet B	32
Total	80

BOOKLET B : [32 marks]

For questions 25 to 34, write your answers in this booklet.

The number of marks available is shown in the brackets [ ] at the end of each question or part-question.

25. The diagram below shows Plant Q with its parts.



(a) Identify the parts of the plant by writing A, B and C in the space given. [1½]

(i) Root : _____

(ii) Leaf : _____

(iii) Stem : _____

(b) Which part of the above plant helps it to take in and give out gases? [½]

_____

Marks : / 2

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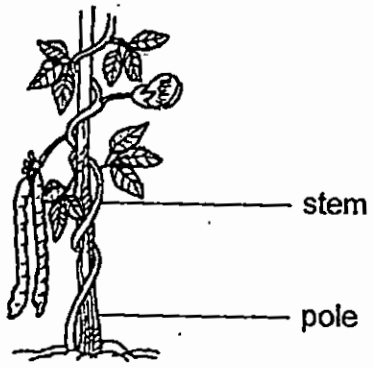
25 (c) The diagram below shows Plant T.



Based on the diagram, why does Plant T need to grow on the pole? [2]

_____

_____

_____

Marks : / 2

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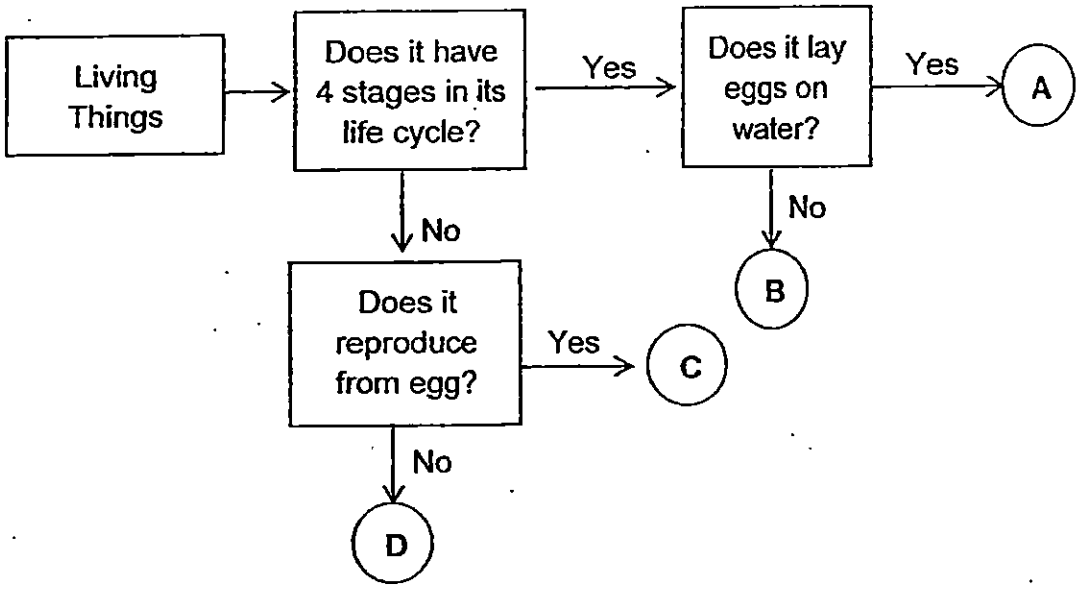
26. Study the flowchart below.



(a) Based on the flowchart above, which of the letters (A, B, C and D) represent the following living things? [2]

(i) Plant : _____

(ii) Cockroach : _____

(iii) Mosquito : _____

(iv) Butterfly : _____

(b) (i) State one difference between C and D. [1]

_____

_____

(ii) State one similarity between A and B. [1]

_____

_____

Marks: / 4

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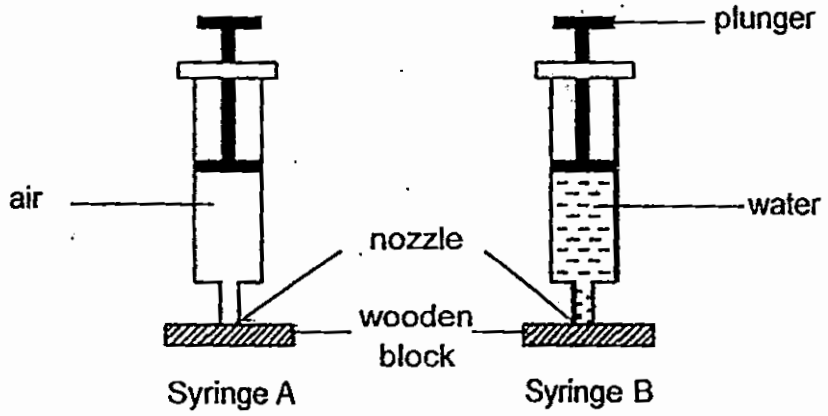
27. The diagram below shows two syringes A and B containing air and water. The nozzle in each syringe is blocked by a piece of wooden block.



The plunger in syringe B could not be pushed down but the plunger in syringe A could be pushed down. Explain why. [2]

_____

_____

_____

Marks : / 2

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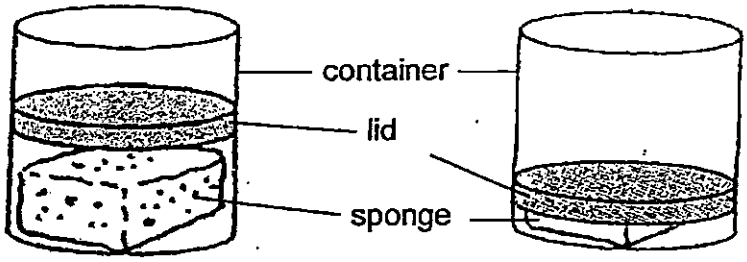
28. Gary placed a sponge and a moveable lid into a container. He pushed the lid downwards and observed the following as shown in the diagram below.



(a) State one property of air that was shown in the experiment. [1]

_____

_____

(b) Explain Gary's observations as shown in the above diagram. [1]

_____

_____

Marks : / 2

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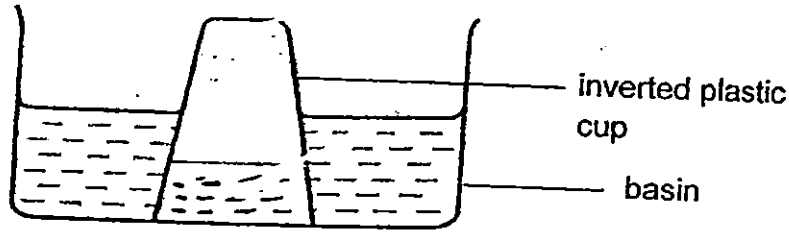
29. Mary placed an inverted plastic cup into a basin of water as shown below.



(a) Draw a straight line in the diagram above to show the water level that Mary is likely to observe in the inverted plastic cup. [1]

(b) Mary poked a hole on the inverted plastic cup to allow more water to enter the inverted plastic cup.

(i) In the above diagram, mark a 'X' to show where Mary should poke the hole. [1]

(ii) Explain why poking a hole will allow more water to enter the cup. [1]

_____

_____

(iii) What will Mary observe of the water level inside the inverted plastic cup as compared to the water level in the basin? [1]

_____

_____

Marks : /4

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30. Study Animal P below.

(a) (i) Base on your observations, which group of animals does Animal P belong to? [1]

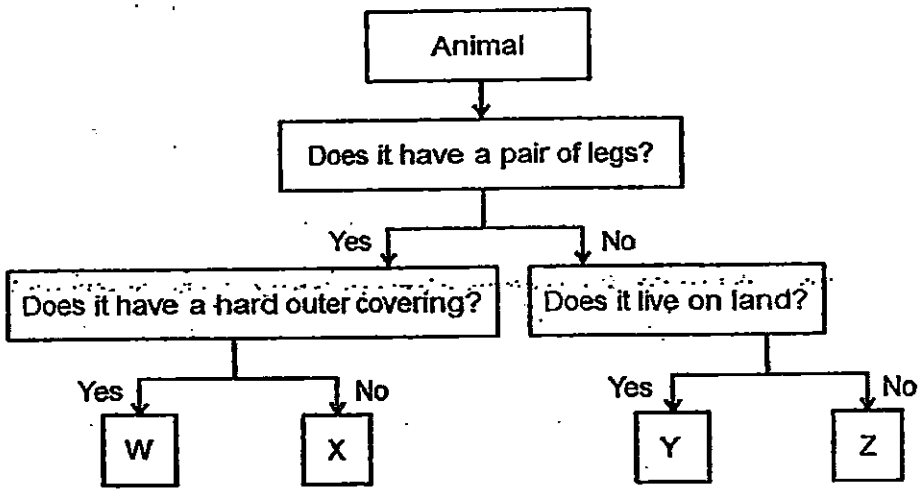
_____

(ii) Explain your answer. [1]

_____

_____

(b) Study the flowchart below.



(i) Animal P should be represented by the letter _____ [1]

(ii) A pupil said that an ant can be represented by the letter W. Explain why the pupil is wrong. [1]

_____

Marks : / 4

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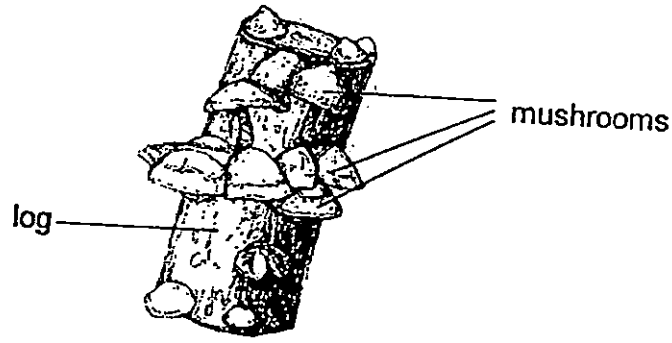
31. Study the diagram below.



(a) Based on the diagram, how do the mushrooms obtain food? [1]

_____

_____

(b) State a difference between a fern and a mushroom. [1]

_____

_____

Marks : /2

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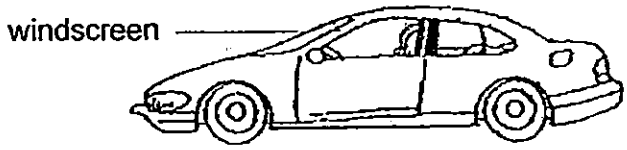
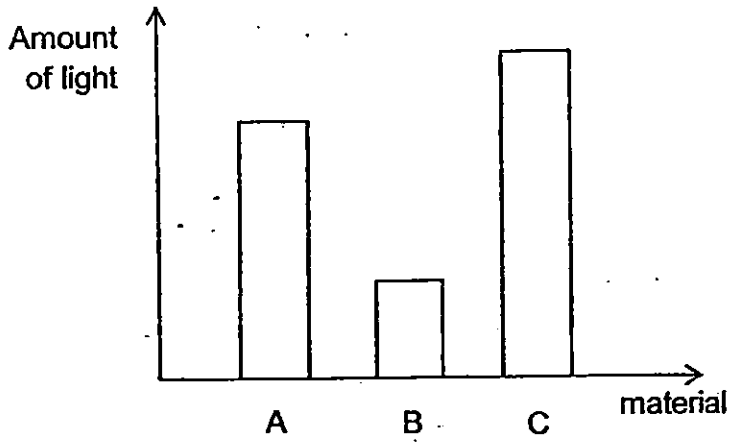
32. A car maker wants to choose the most suitable material to make the windscreen of a car.



He tested three different materials A, B and C, and recorded the amount of light that passes through the materials in the graph shown below.



(a) Which is the most suitable material to make the windscreen of a car? Explain why. [2]

_____

_____

(b) Other than the property stated in (a), state two other properties that the material of the windscreen should have. [2]

(i) Property 1: _____

(ii) Property 2: _____

Marks : / 4

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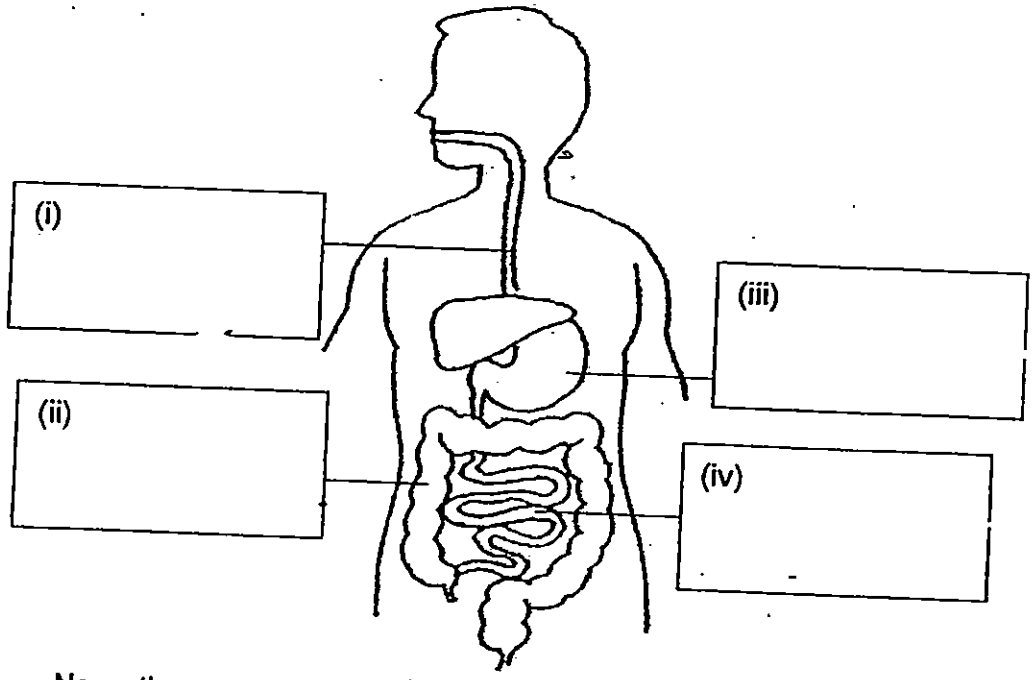
33. The diagram below shows the human digestive system.



(a) Name the parts of the digestive system in the diagram above. [2]

(b) Jay said that saliva is important to the digestion of food, but Zachary said that saliva is not important to the digestion of food.
Who is correct? Explain. [1]

_____

_____

Marks : / 3

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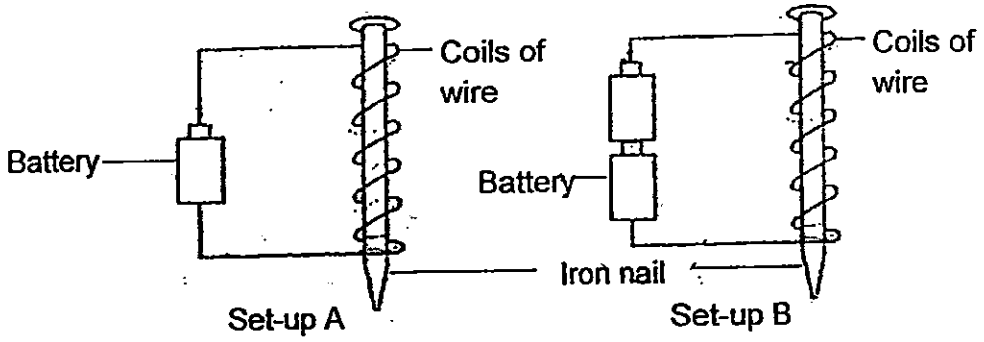
34. (a) Circle TRUE or FALSE for each statement below. [1]

(i) An electromagnet will work for a short while after the battery or source of electricity is disconnected from it. True / False

(ii) A temporary magnet will increase in strength with more strokes. True / False

(b) Joshua wanted to test which electromagnet is stronger. The diagram below shows his two set-ups A and B.



He used the electromagnet in Set-up A and B to pick up some paper clips. The table below shows his findings.

Electromagnet in	Number of paper clips picked up
Set-up A	5
Set-up B	8

(i) Explain why the electromagnet in Set-up B picked up more paper clips. [1]

_____

_____

(ii) What can be done to Set-up A to enable the electromagnet to pick up more paper clips than the electromagnet in Set-up B? [1]

_____

_____

Marks : / 3

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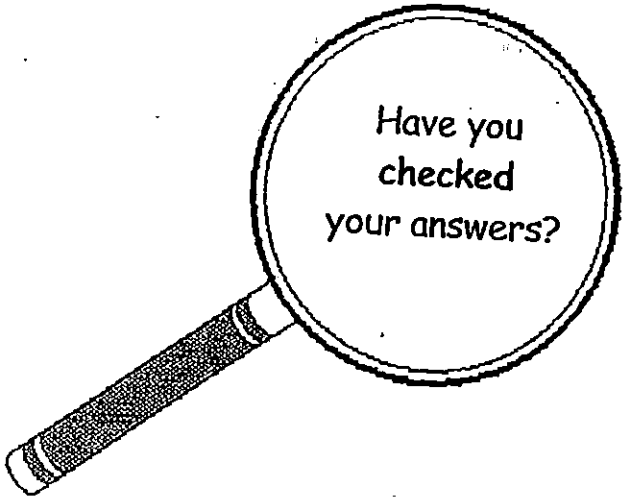

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : MAHA BODHI SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	4	2	2	3	1	4	2	3	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
2	4	2	1	2	1	3	3	2	1
Q21	Q22	Q23	Q24						
1	2	3	3						

Q25a (i) Root :C (ii) Leaf : A (iii) Stem : B

Q25b. Part A of the above plant helps to take in and give out gases.

Q25c. Plant T has a weak stem and it climbs up the pole for support and to reach out for more sunlight.

Q26a. (i) Plant : D (ii) Cockroach : C (iii) Mosquito : A (iv) Butterfly : B

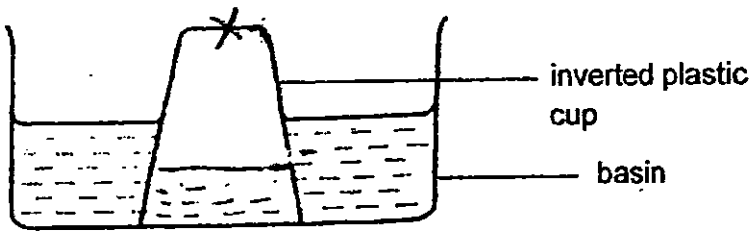
Q26b (i) C reproduces from an egg but D does not reproduce from an egg.

Q26b (ii) Both A and B have a four stage life cycle.

Q27. Water in syringe B has definite volume and it cannot be compressed. Air in syringe A has no definite volume and can be compressed.

Q28a. Air can be compressed.

Q28b. Air in the container had been compressed. Q29a. **SEE PICTURE**



Q29b(ii) Air has escaped through the hole. The water has occupied the space.

Q29b (iii) Mary would observe that the water level in the cup would be the same as the water in the basin.

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Q30a (i) Animal P belongs to the group called birds.
Q30a (ii) Animal P has feathers on its body and a beak. All birds have feathers and a beak.

Q30b (i) X Q30b (ii) An ant only has three pairs of legs and not a pair of leg.

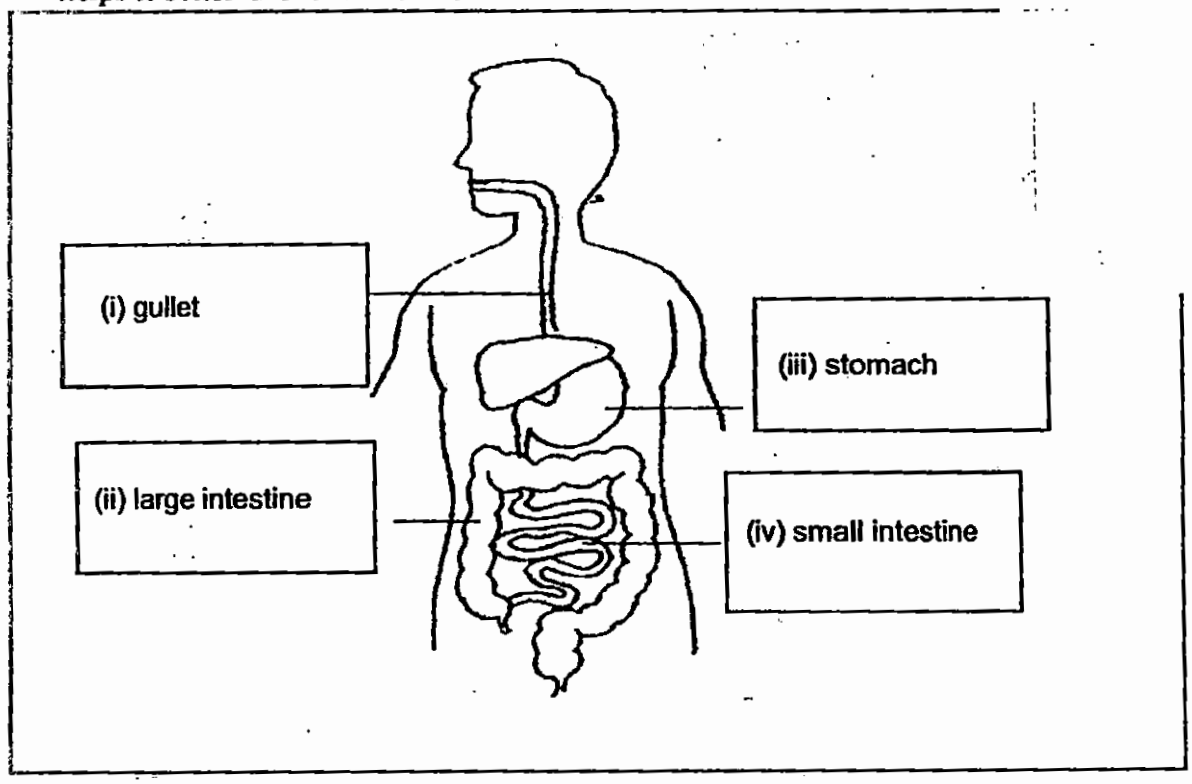
Q31a. Based on the diagram, the mushrooms obtain their food by breaking the log into smaller substances.

Q31b. A fern can make its own food but a mushroom cannot make its own food.

Q32a. Material C is the most suitable to make the windscreen of a car because material C allows most light to pass through it.

Q32b. (i) Property 1: Strong (ii) Property 2 : Waterproof

Q33a. **SEE PICTURE** Q33b. Jay is correct. The saliva is a digestive juice and it helps to soften the food to make it easier to chew.



Q34a (i)FALSE Q34a (ii) TRUE

Q34b(i) Electromagnet B is stronger as it has more batteries than the electromagnet in set up A.

Q34b(ii) He should add more batteries in set – up A an more coils around the iron nail.

THE END

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MARIS STELLA HIGH SCHOOL (PRIMARY)

SEMESTRAL ASSESSMENT 1

SCIENCE

13 MAY 2015

BOOKLET A

NAME: _____

CLASS: Primary 4 ( )

30 questions

60 marks

Total Time for Booklets A & B: 1 h 30 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

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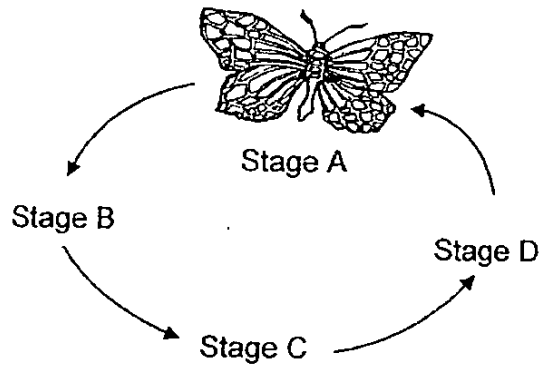
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS).

(30 x 2 marks)

---

1 Study the life cycle of a butterfly below.



At which stage does moulting of the butterfly take place?

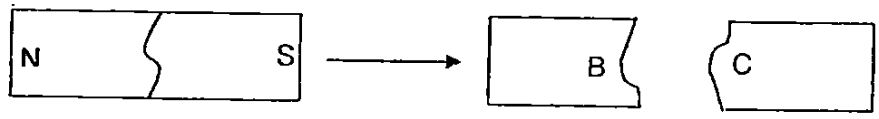
(1) A

(2) B

(3) C

(4) D

2 Sophie dropped a bar magnet and it broke into two pieces.



What are the poles of parts B and C on the two pieces of broken magnet?

	B	C
(1)	North	South
(2)	South	North
(3)	South	South
(4)	North	North

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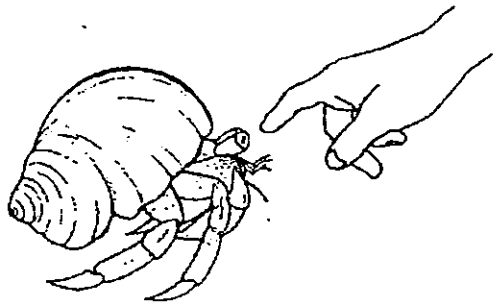
3 Justin observed that the hermit crab pulled its head into the shell when he touched it.



What could Justin learn about living things from his observation?

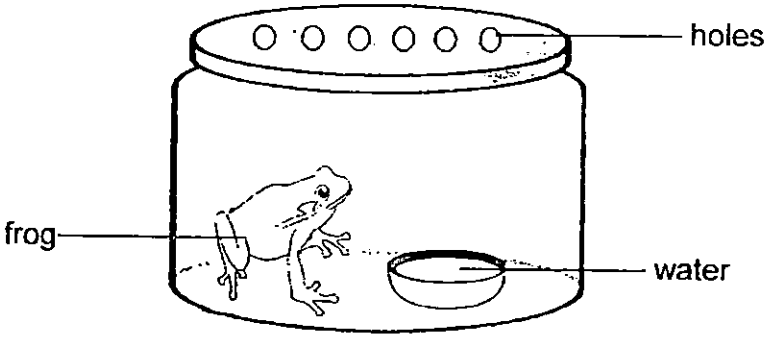
(1) A living thing can grow.

(2) A living thing can reproduce.

(3) A living thing needs air, food and water.

(4) A living thing responds to changes around it.

4 Kayden caught a frog from his school field and put it in a container as shown below. The frog died after some time.



What could Kayden have done to prevent the frog from dying?

(1) Use a bigger container

(2) Put some food in the container

(3) Remove the water in the container

(4) Cover up the holes on the container

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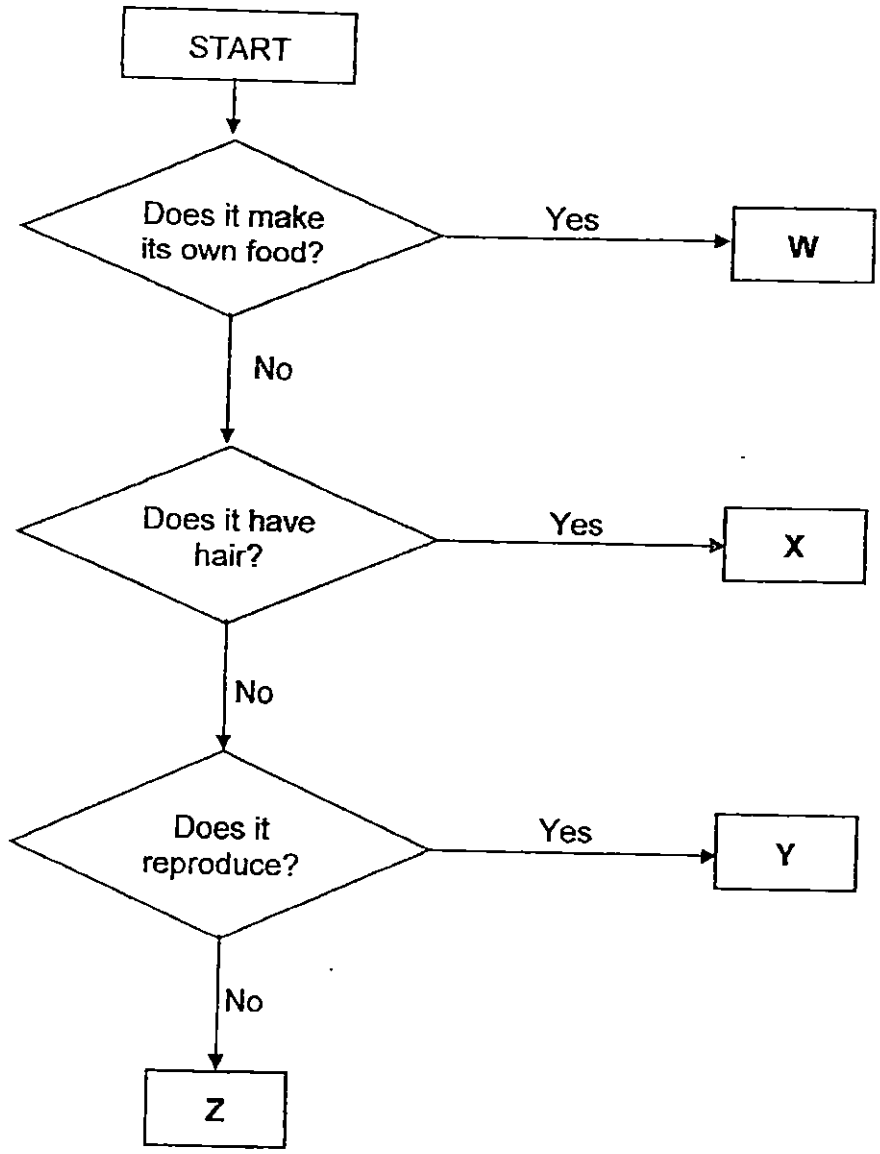
5 Study the flow chart below.



Based on the flow chart, which of the following are correct?

A X is a mammal.
B W is a type of plant.
C Z is a non-living thing.
D Y could be a type of fungi.

(1) A and B only
(2) B and C only
(3) A, B and D only
(4) A, B, C and D

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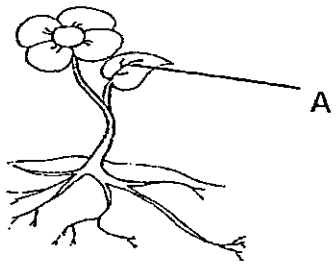
6 Study the plant below.



What is the function of A?

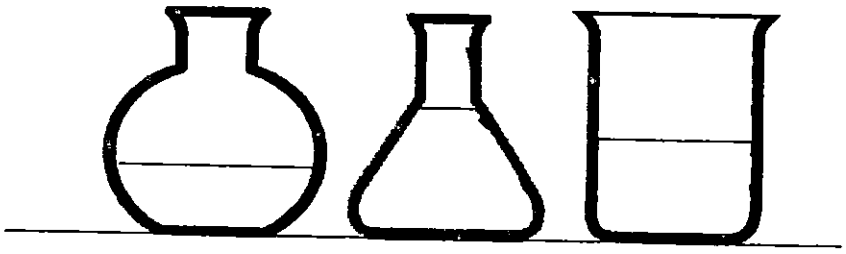
(1) To protect the seed

(2) To keep the plant upright

(3) To make food for the plant

(4) To take in water for the plant

7 The diagram below shows 3 different containers each filled with 500 ml of water.



Based on the observation of water in each container, we can conclude that water

_____.

(1) can be compressed

(2) has no definite mass

(3) has no definite volume

(4) has no definite shape

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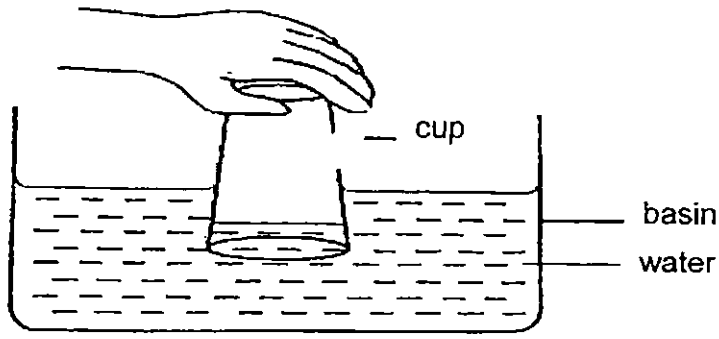
8 Study the diagram below.



The water level is lower in the cup than in the basin because __

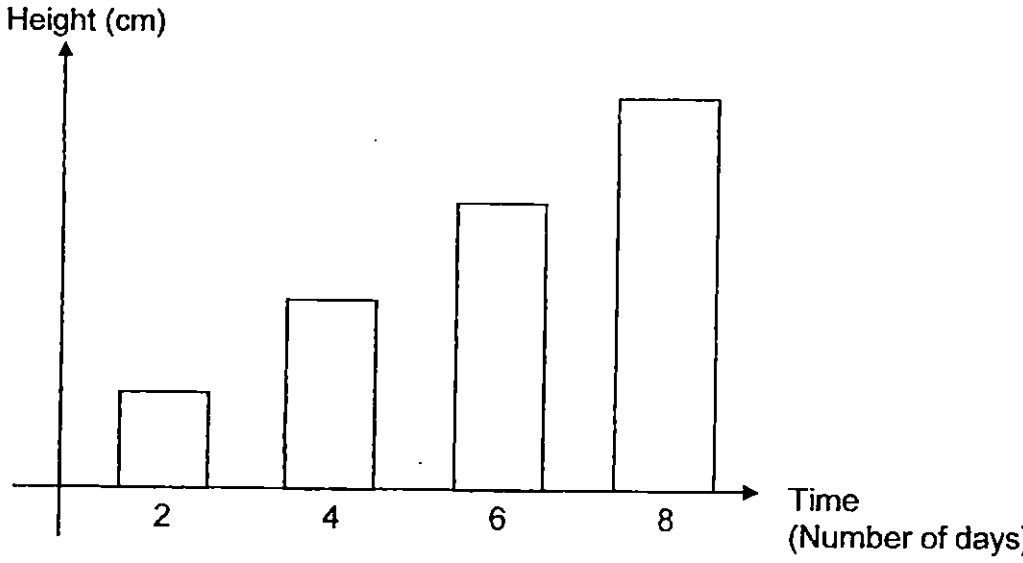
(1) air cannot be compressed

(2) air in the cup takes up space

(3) water does not have a definite shape

(4) water does not have a definite volume

9 The graph below shows the growth of a green bean plant over 8 days.



What can you conclude about the green bean plant from the graph above?

(1) The plant has reproduced.

(2) The plant has grown taller.

(3) The plant needs water to grow.

(4) The plant has stopped growing after Day 6.

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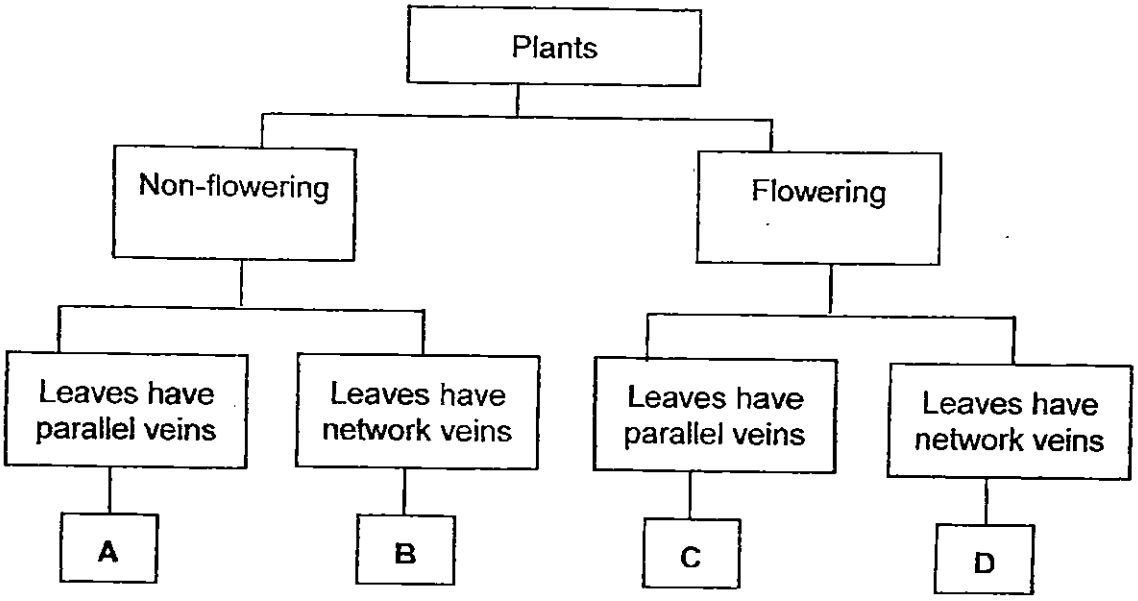
10 Study the classification chart below.



The table below shows the characteristics of Plant E.

Characteristics	Plant E
Produce flowers	Yes
Has parallel veins on leaves	No

In which box, should Plant E be placed in?

(1) A

(2) B

(3) C

(4) D

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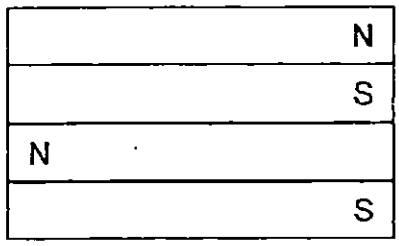
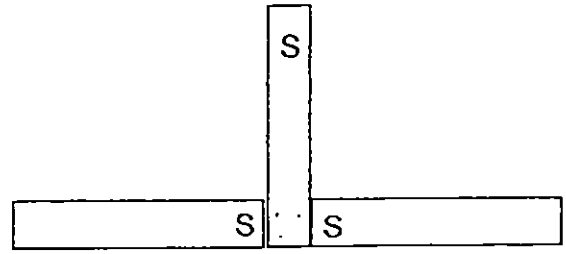
11 Different human systems is made up of different body parts.
Which body part has been matched **incorrectly** to the human system?

	Human system	Body part
(1)	Muscular	Muscles
(2)	Skeletal	Bones
(3)	Respiratory	Nose
(4)	Circulatory	blood vessels

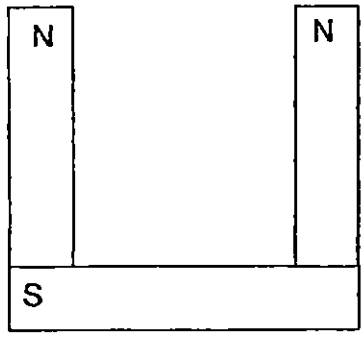
12 Study the four different arrangements of the magnets.



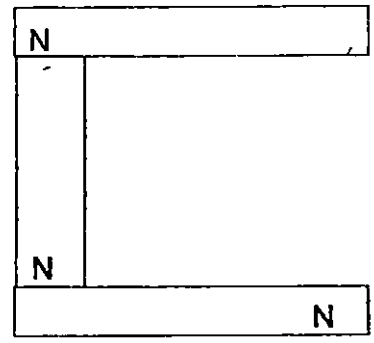
Set up A



Set up B



Set up C



Set up D

Which two of the set ups are possible?

(1) Set up A and Set up B

(2) Set up A and Set up C

(3) Set up B and Set up D

(4) Set up C and Set up D

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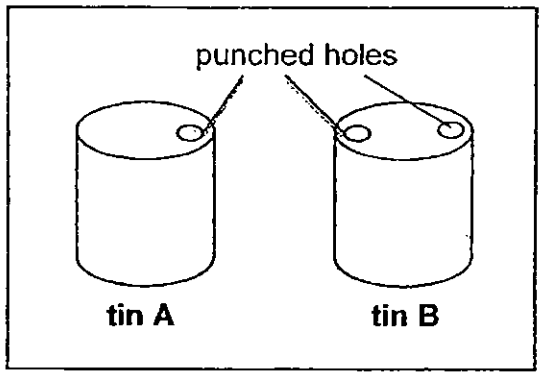
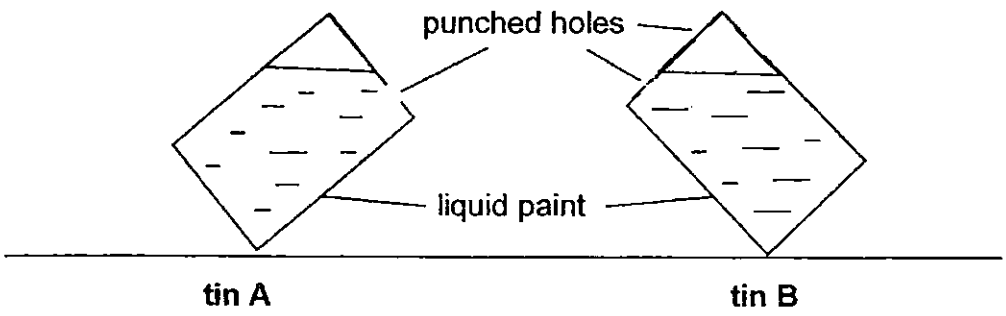
13 Ali wanted to pour out liquid paint from two identical tin, A and B. He punched one hole through tin A and two holes through tin B as shown in the diagram below.



She then tilted both tins at the same angle to pour out the liquid paint as shown below.



Based on the observation above, which of the following would most likely happen?

(1) Only liquid paint from tin A would flow out.

(2) No liquid paint would flow out from both tins A and B.

(3) Liquid paint from tin A would flow out as quickly as liquid paint from tin B.

(4) Liquid paint from tin B would flow out more quickly than liquid paint from tin A.

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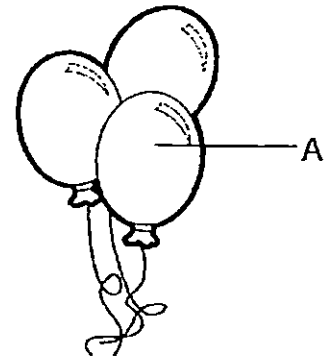
14 A number of items and the materials they are made of are listed below.
Which of the following items is **incorrectly** matched to the materials it is made of?

	Item	Material item is made of
(1)	Football t-shirt	Fabric
(2)	Magnifying lens	Glass
(3)	Electrical wires	Metal
(4)	Ceiling fan	Plasticine

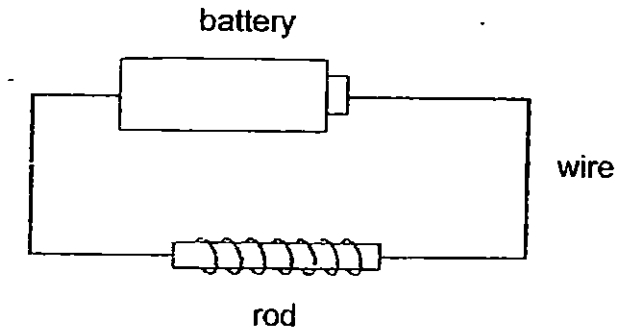
15 Which of the following are the properties of part A of the balloon?

A Stiff
B Light
C Flexible



(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

16 Adam wants to find out if the numbers of batteries will affect the number of paper clips an electromagnet can attract.



What is one important variable that must be kept constant in order to ensure a fair test?

(1) Number of batteries
(2) Shape of the paper clips
(3) Material of the paper clips
(4) Number of paper clips attracted

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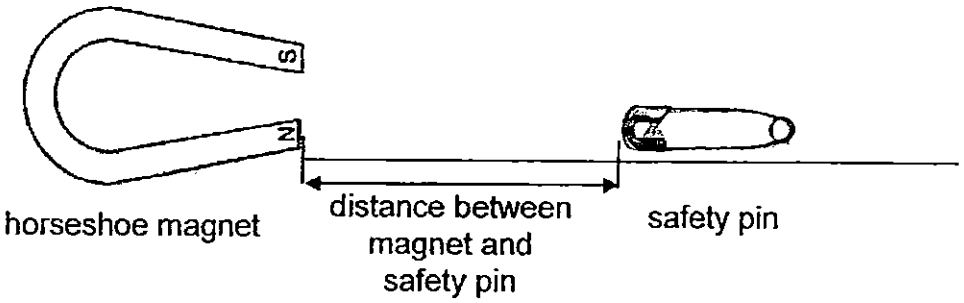
17 Sharon wanted to test the magnetic strength of four different horseshoe magnets. W, X, Y and Z.
She measured the furthest distance a safety pin could be attracted from magnet W.
She repeated the step with magnets X, Y and Z using the same safety pin.

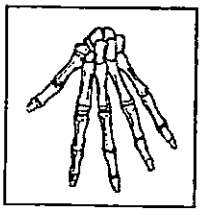


Magnet	Distance between magnet and safety pin (cm)
W	3
X	2
Y	1
Z	5

Which magnet has the strongest magnetic strength?

(1) W
(2) X
(3) Y
(4) Z

18 The diagram below shows a part of our body.



This part needs _____ to pick up a can.

(1) a heart
(2) lungs
(3) muscles
(4) a large intestine

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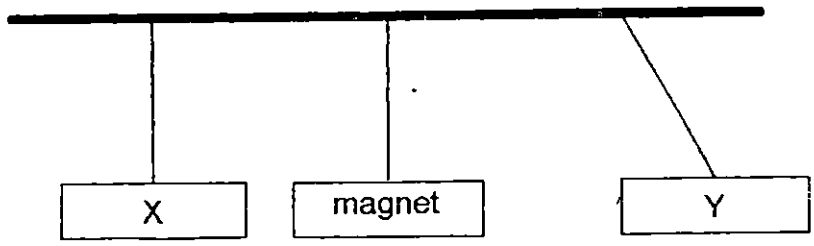
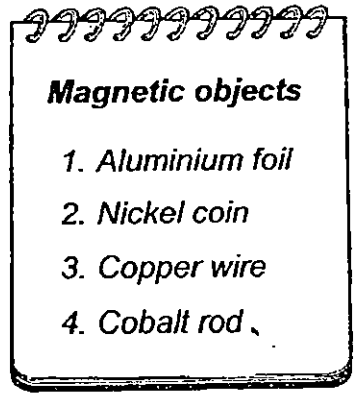
19 Alan hung a magnet between two objects X and Y. He made the observation as shown below.



What can he conclude about objects X and Y?

	X	Y
(1)	It is a magnet.	It is made of non-magnetic material.
(2)	It is made of magnetic material.	It is made of magnetic material.
(3)	It is made of magnetic material.	It is a magnet
(4)	It is made of non-magnetic material.	It is a magnet.

20 Matthew made a list of the magnetic objects that he knew.



However, not all the objects are magnetic.
Which of the following objects are non-magnetic?

(1) Cobalt rod and nickel coin

(2) Copper wire and nickel coin

(3) Aluminium foil and cobalt rod

(4) Aluminium foil and copper wire

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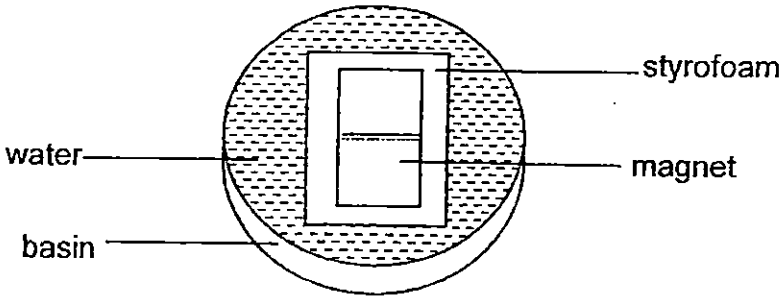
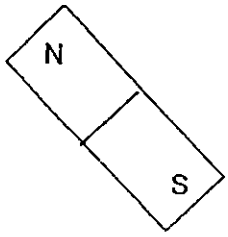
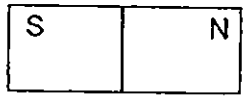
21 Jonathan tied a bar magnet to a piece of styrofoam. He then placed it in a basin of water and spun the bar magnet. He recorded the position of the magnet when it came to rest. He repeated the action and realized that the bar magnet always came to rest in the same position.



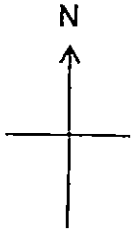
Which of the following shows the position of the bar magnet when it comes to a rest?

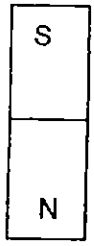


(1)

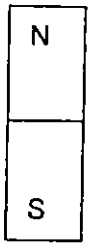


(2)





(3)



(4)

22 Which one of the following items does not have a magnet in them?

(1) Compass

(2) Metal tray

(3) Credit card

(4) Refrigerator

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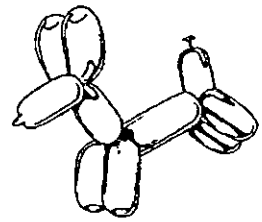
23 A clown fills two balloons with air. He then twists and squeezes them together so that they are shaped like an animal as shown below.



What property of air allowed the clown to change the shape of the balloon?

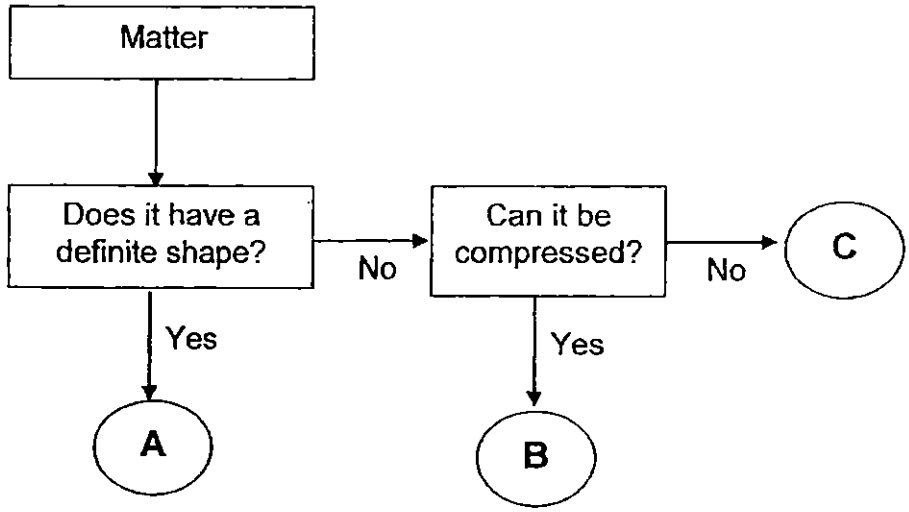
(1) Air has mass.

(2) Air is a matter.

(3) Air can be compressed.

(4) Air do not occupy space.

24 The flow chart below shows the properties of 3 matters A, B and C.



Which of the following represents A, B and C correctly?

	A	B	C
(1)	gas	solid	liquid
(2)	liquid	gas	solid
(3)	solid	gas	liquid
(4)	solid	liquid	gas

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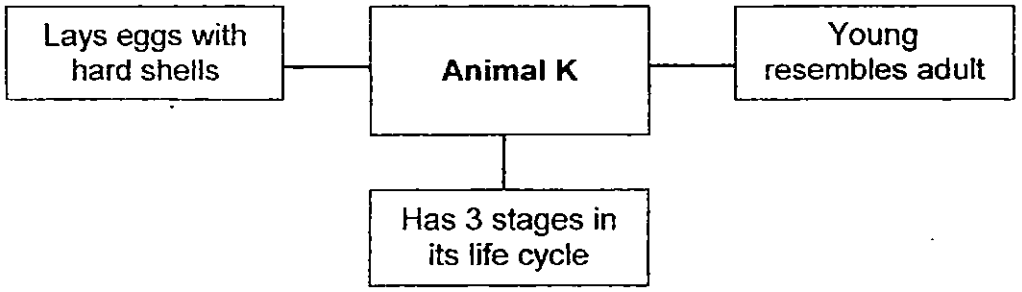
25 Study the concept map below.



What can Animal K be?

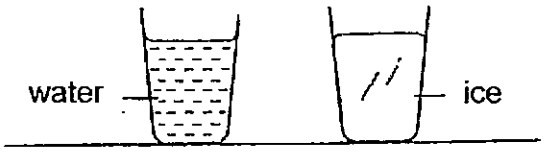
(1) Frog

(2) Bird

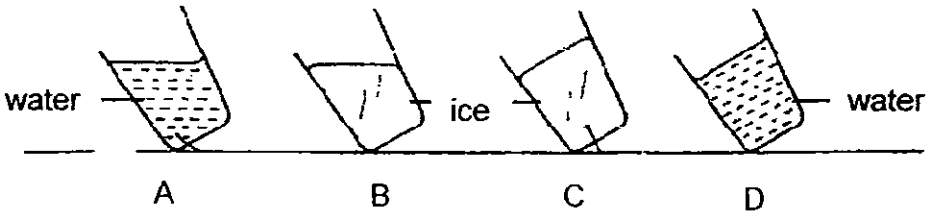
(3) Horse

(4) Butterfly

26 The diagram below shows a glass of water and a glass of ice that has just been taken out of a freezer.



Which two cups, A, B, C or D, below correctly show what is observed when both glasses above are tilted?



(1) A and B

(2) A and C

(3) B and D

(4) C and D

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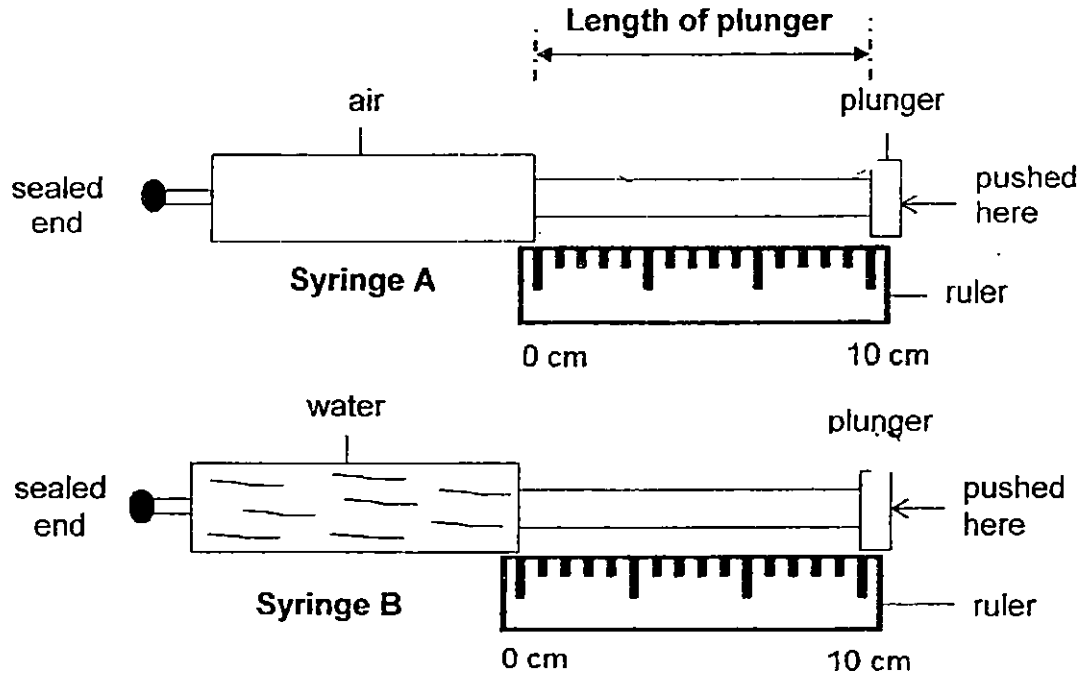
27 The diagrams below show the two syringes, A and B, at the start of the experiment, before the plungers are pushed in.



The plunger of each syringe was then pushed in as hard as possible. The length of the plunger was measured.

Which one of the following shows the correct length of the plunger after they were pushed?

	Length of plunger (cm)	
	Syringe A	**Syringe B**
(1)	5	10
(2)	0	10
(3)	8	10
(4)	10	0

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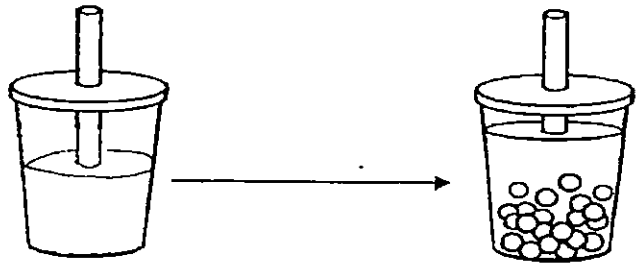
28 Jane added starch balls to a cup of bubble tea and realised that the water level in the cup increased.



Before adding starch balls

After adding starch balls

Based on her observation, what can Jane conclude about the starch balls?

A They occupy space.
B They do not have mass.
C They have a definite shape.
D They cannot be compressed.

(1) A only
(2) A and C only
(3) B and D only
(4) B, C and D only

29 Kai Yang made the two solid objects, Y and Z, below using the same amount of clay.

Y Z

Which of the following statements correctly describe the objects?

A Both have different weight.
B Both have the same amount of matter.
C Both do not occupy the same amount of space.

(1) C only
(2) A and B only
(3) B and C only
(4) A, B and C only

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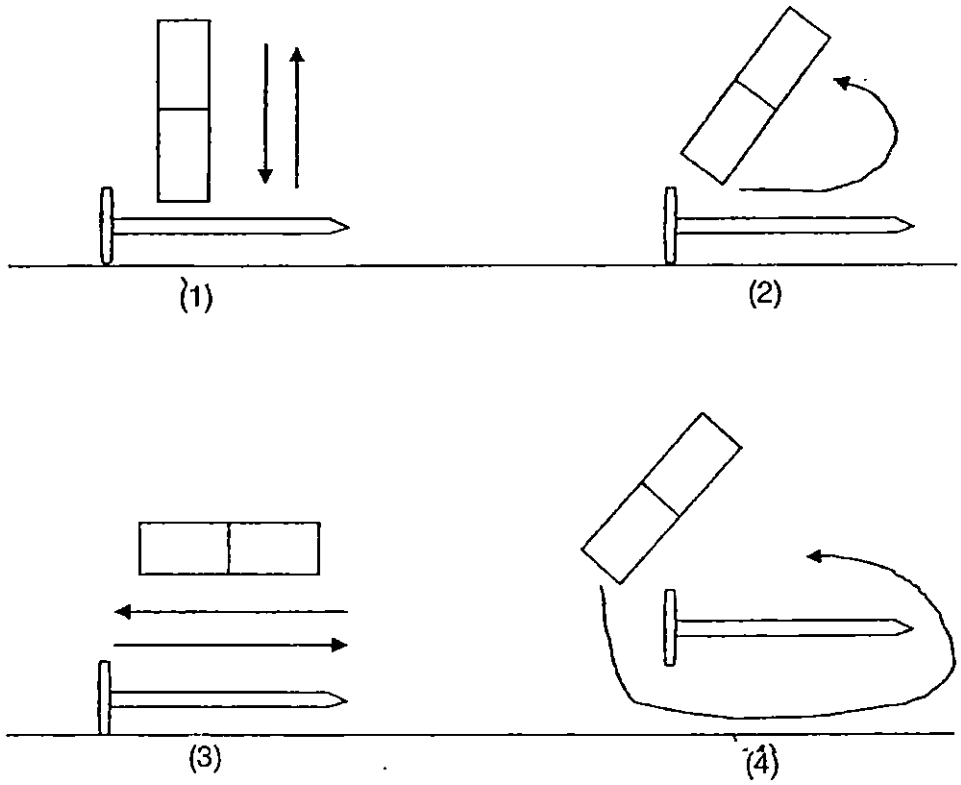
30 The diagrams below show different ways of stroking an iron nail to magnetise it.

Which of the following shows the correct way of magnetising the iron nail?



of Booklet A

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MARIS STELLA HIGH SCHOOL (PRIMARY)

SEMESTRAL ASSESSMENT 1

SCIENCE

13 MAY 2015

BOOKLET B

NAME: _____

CLASS: Primary 4 ( )

14 questions

40 marks

Total Time for Booklets A & B: 1 h 30 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

BOOKLET A:	_____	/ 60
BOOKLET B:	_____	/ 40
TOTAL:	_____	/ 100

PARENT'S SIGNATURE: _____

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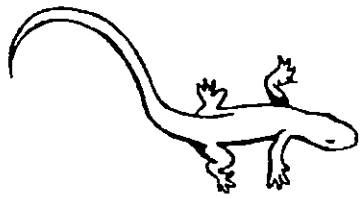
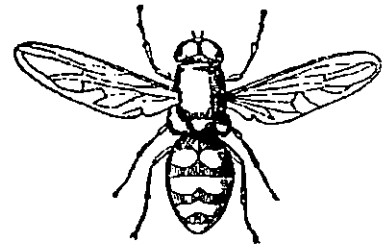
For questions 31 to 44, write your answers in this booklet. The number of marks available is shown in brackets [ ] at the end of each question or part question. (40 marks)

---

31 Compare the two animals, A and B, shown below.



Animal A



Animal B

(a) State two differences between Animal A and Animal B. [2]

(i) _____

_____

(ii) _____

_____

(b) Which animal group does Animal B belong to? [1]

_____

(c) Give a reason for your answer in (b). [1]

_____

	4

(Go on to the next page)

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32 Eight animals were classified according to their method of reproduction as shown below.

Group X	Group Y
Dog Rabbit Hamster Monkey	Snake Goldfish Cockroach House lizard

(a) Give a suitable heading for X and Y. [1]

X: _____

Y: _____

(b) In which group (X or Y) should a penguin be classified? [1]

_____

	2

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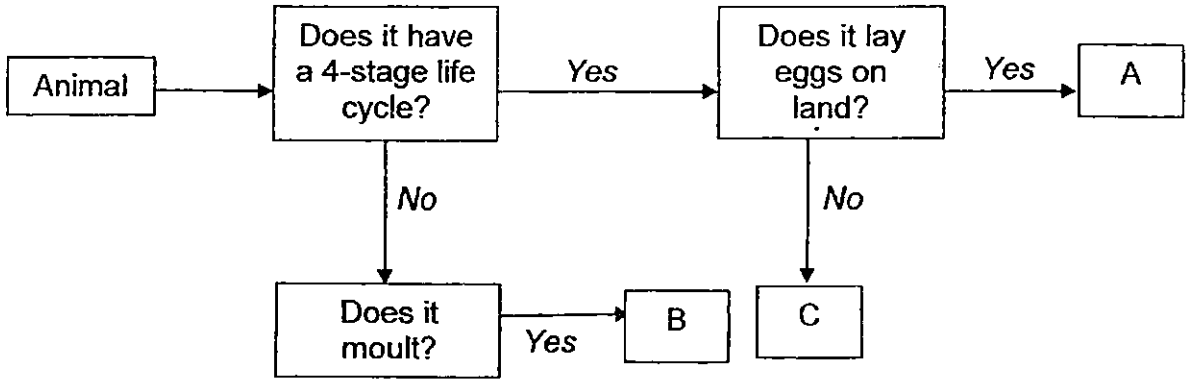
33 Study the flow chart below.



(a) Based on the flow chart, describe animal A. [2]

_____

_____

(b) Give one example of animal B. [1]

Animal B: _____

(c) Draw the life cycle of animal C. [1]

	4

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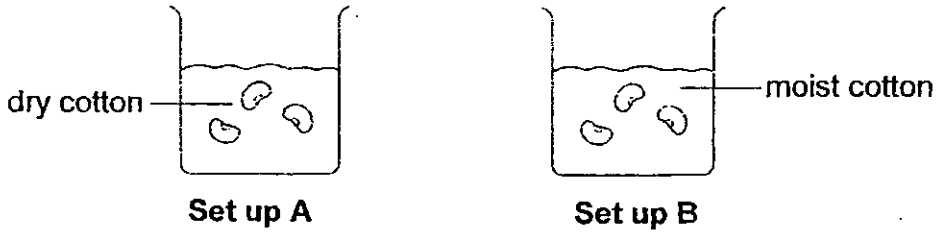
34 John put three green beans into each beaker and placed both beakers near the window in the classroom.



(a) In which set up (A or B) will the seed germinate? _____ [1]

(b) Give a reason for your answer in (a). [1]

_____

(c) Which part of the seed provides food for the germinating seed? [1]

_____

(d) Which part of the plant will grow out from the seed first during germination? [1]

_____

	4

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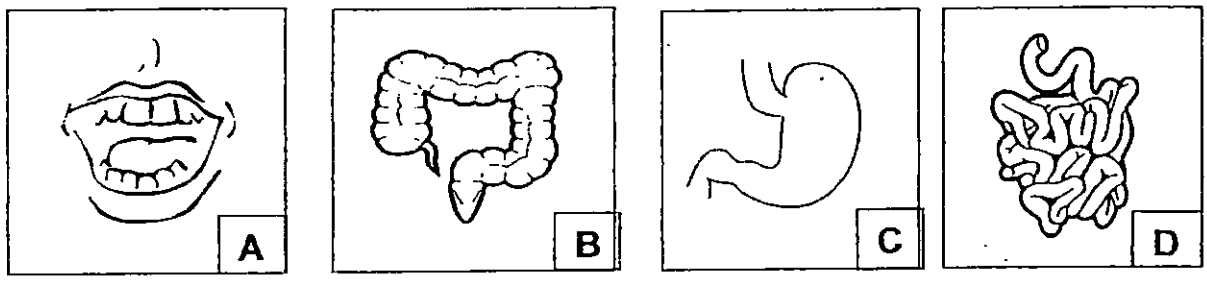
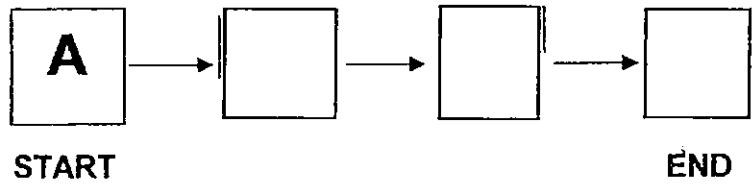
35 The boxes below show the different organs in the digestive system.



(a) Write letters (B, C and D) in the boxes provided to show the correct movement of food as it moves through the digestive system. [1]



(b) Match the organs (A, B, C and D) to the functions listed in the table below. Write the letters **(A, B, C or D)** in the table below. [2]

	Function	Organ
(i)	Most of the digestion takes place here.	
(ii)	Excess water and mineral salts are absorbed from the undigested food.	
(iii)	Digestion is completed here.	
(iv)	Food is broken down into smaller pieces.	

	3

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36 Oliver dropped the magnet from a height of 1 metre and records the number of paper clips the magnet attracted after it was dropped. He repeated the experiments by dropping the magnets for different number of times.

Number of times the magnet is dropped	Number of paper clips attracted
0	15
1	14
2	12
3	10
4	9
5	7

(a) State the following variables: [2]

(i) Manipulated variable: _____

(ii) Responding variable: _____

(b) What is the aim of Oliver's experiment? [1]

_____

_____

(c) State an important variable that Oliver needs to keep the same for a fair test. [1]

_____

	4

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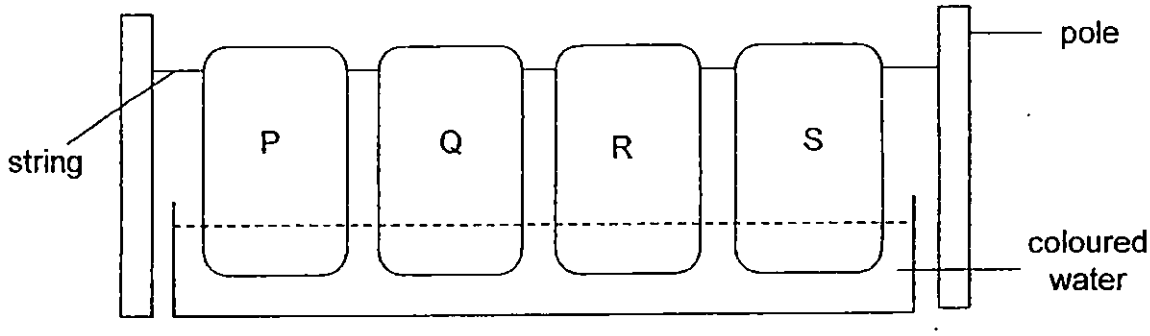
37 Jacob hung four different materials, P, Q, R and S of the same size and shape on a string and put part of the materials into a tray of coloured water. All materials are placed at the same distance away from the coloured water as shown in the diagram below.



He noticed that the coloured water move up the materials. After 3 minutes, he measured the height in which the water rose to on the hand towel. The results are recorded in the table below.

Material	Height where the water rose to (cm)
P	2
Q	8
R	14
S	5

(a) Which material (P, Q, R, S) should Jacob choose to make a hand towel that dries his hands the fastest? [1]

_____

(b) Give a reason for your answer in (a). [1]

_____

	2

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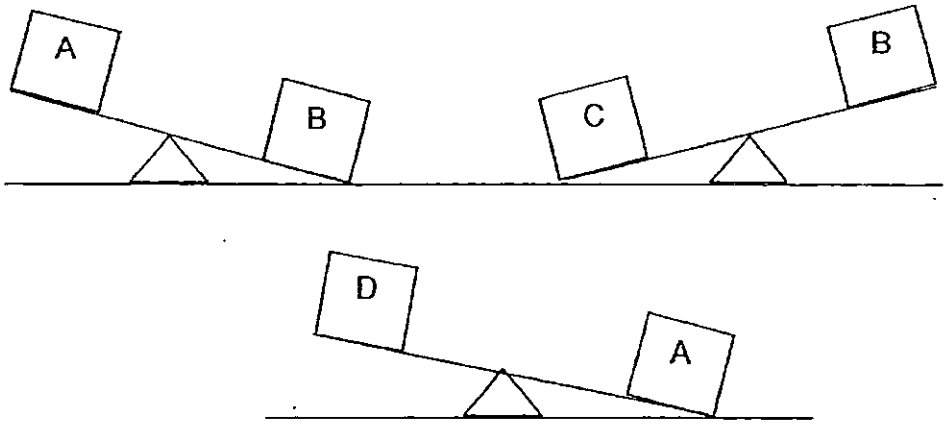
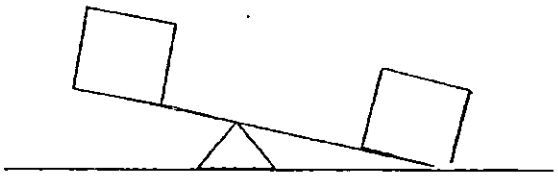
38 Travis took four objects, A, B, C and D, and placed two objects at a time on the balance, as shown below.



(a) Box _____ has the biggest mass. [1]

(b) Travis then placed object B and D on the balance.
Identify B and D by writing **B** and **D** in the boxes. [1]



	2

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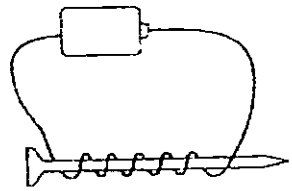
39 Alan used the electrical method to magnetise an iron nail.

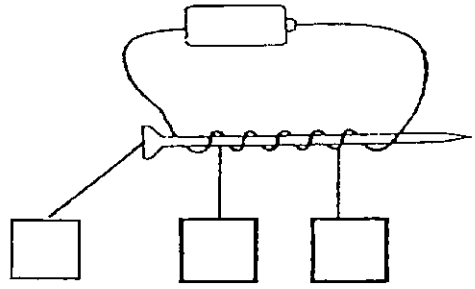


(a) Suggest one way to increase the magnetic strength of the electromagnet. [1]

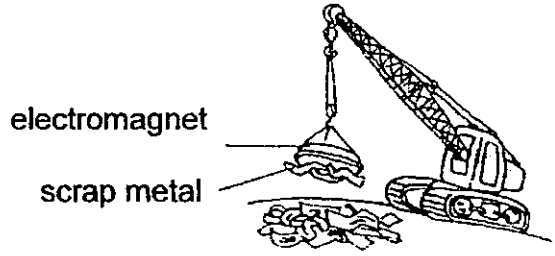
_____

(b) Alan placed the magnetised nail on top of a box of thumbtacks.

Put a (✓) in the box where it would attract the most number of thumbtacks. [1]



Electromagnets are used in scrap iron cranes where they are able to attract scrap metal from a pile of objects as shown in the picture below.



(c) What will happen to the scrap metal if the crane operator turns off the electricity? [1]

_____

	3

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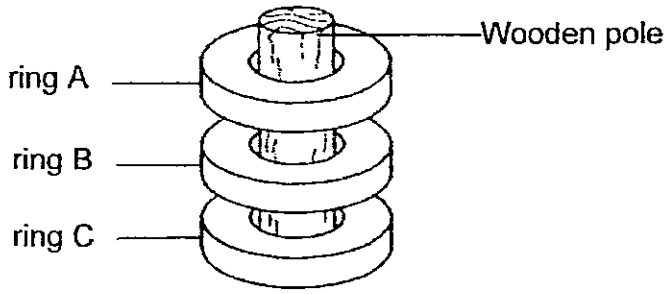
40 Rachel sets up an experiment using three ring magnets as shown below.



(a) Explain why the ring magnets are floating above one another. [1]

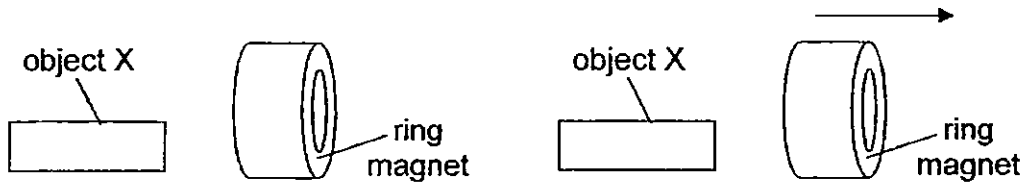
_____

_____

(b) Which magnet should Rachel turn so that all the three ring magnets will touch each other? [1]

_____

Rachel wants to find out if object X is a magnet. She places one end of object X near to one side of the ring magnet.



Before: Place object X near to the ring magnet

After: Ring magnet moves away from object X

(c) Rachel concluded that object X is a magnet.
Do you agree with her? Give a reason. [1]

_____

_____

3

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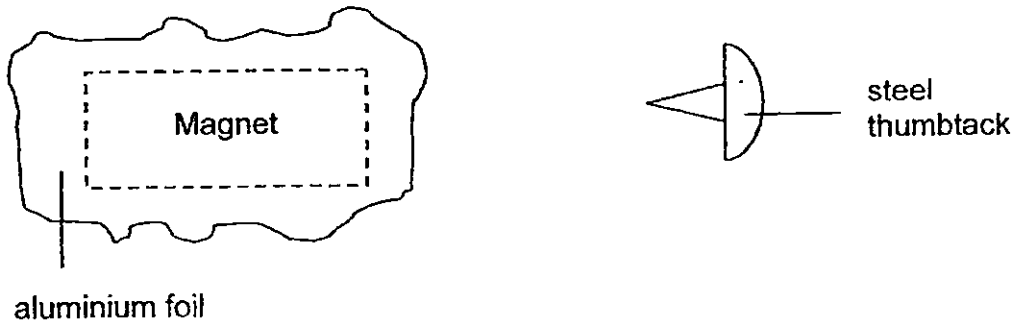
41 A magnet that was wrapped in an aluminium foil was placed near a steel thumbtack.



(a) What will happen when the wrapped magnet is brought near the steel thumbtack? [1]

_____

(b) Name one property of the aluminium foil that allowed for the observation to be made in (a). [1]

_____

_____

(c) State one property of magnet that is demonstrated in Ali's experiment. [1]

_____

	3

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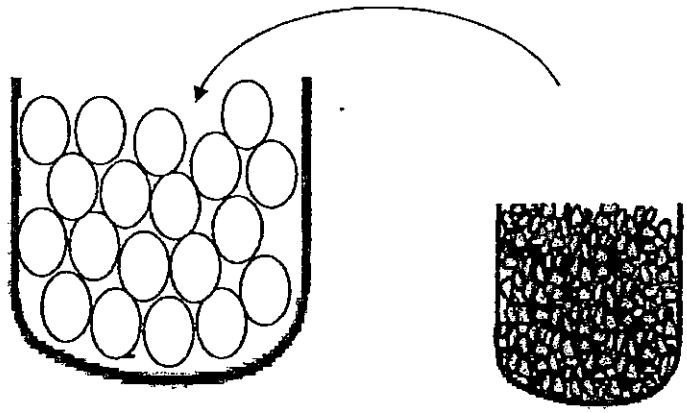
42 Keanu filled a beaker of 40 cm^3 with marbles to the brim. He filled another beaker of 20 cm^3 with sand to the brim.



Beaker of marbles
40 cm^3

Beaker of sand
20 cm^3

He then poured the sand into the beaker of marbles and realized that the beaker with marbles can hold all the sand.

(a) Give a reason why the beaker with marbles can hold all the sand. [1]

_____

_____

(b) Name the state (solid, liquid or gas) of the marbles and sand. [1]

Items	State of matter
Marbles	
Sand	

	2

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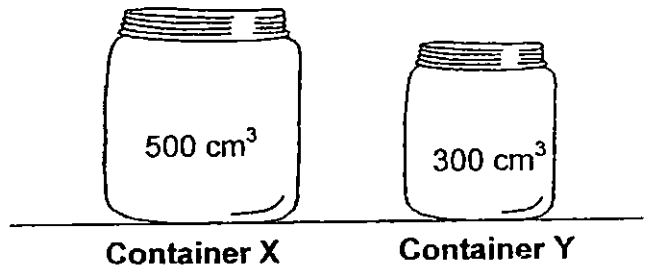
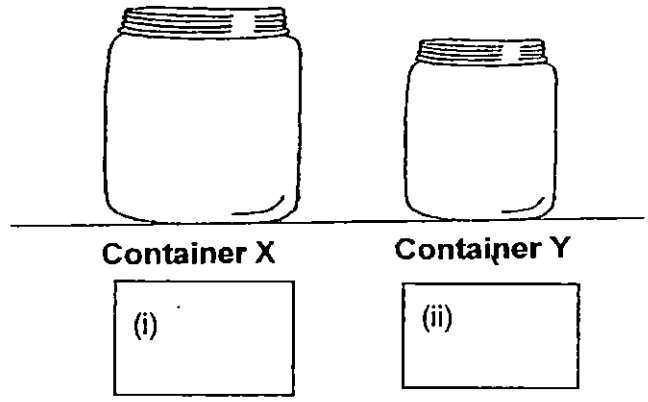
43 Yan Yan has two containers, X and Y, of the same material but different capacity.



She pumped 200 cm^3 of air into the two containers and measured the volume of air in both containers.

(a) In the boxes provided, write down the volume of air in each container. [1]



(b) What property of air does this experiment show? [1]

_____

	2

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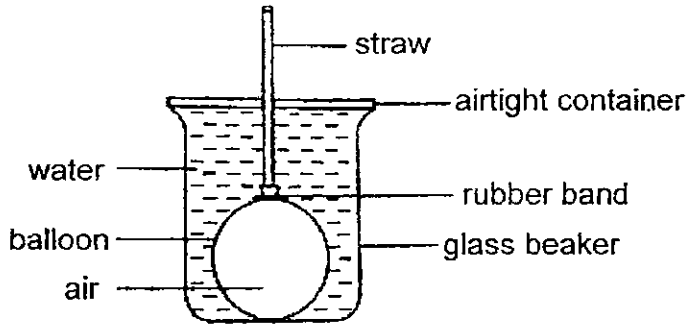
44 Patrick filled a balloon with some air and put it into a container filled with water as shown below.



(a) Patrick wanted to blow in more air into the balloon through the straw to increase the size of the balloon.
Is it possible for him to do that? Give a reason your answer. [1]

_____

_____

(b) Without removing the balloon from the container, what can Patrick do so that he can blow in more air to increase the size of the balloon? [1]

_____

_____

End of Booklet B

	2

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : MARIS STELLA HIGH SCHOOL (PRIMARY)
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	2	4	2	4	3	4	2	2	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
4	3	4	4	3	3	4	3	4	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	2	3	3	2	2	3	2	3	2

Q31a (i) Animal A has a long tail bit animal B does not have a long tail.
Q31a (ii) Animal A has 4 legs but animal B has 4 legs.

Q31b Insects Q31c. It has 6 legs

Q32a. X: Give birth to young alive. Q32a. Y: Lay eggs Q32b. X

Q33a. Animal A has a e stage life cycle and it lays it eggs on land.

Q33b. Animal B : cockroach

Q33c. egg→ larva→pupa →adult

Q34a. Set up B

Q34b. Set up B has moist cotton, if you want if to grow, you need to have air, food and water. Water is the same as moist.

Q34c. *Seed leaves*

Q34d. Roots

Q35a. A C D B

Q35b. (i) C Q35b (ii) B Q35b (iii) D Q35c (iv) A

Q36a. (i) number of times the magnet was dropped
Q36a (ii) number of paper clips attracted

Q36b. To find out if the number of times he drop the magnet will affect the number of paper clips attracted.

Q36c. The height the magnet is dropped

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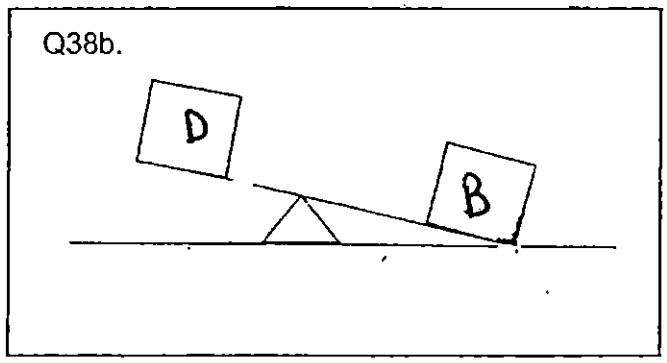
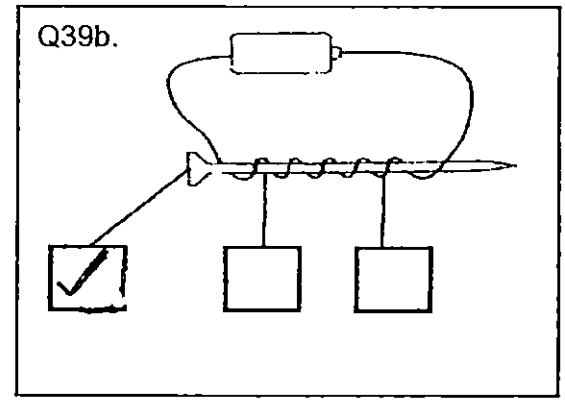
Q37a. R
Q37b. It is the most absorbent. It has absorbed the most amount of water in the experiment.

Q38a. Box C Q38b. **SEE PICTURE**

Q39a. Put more batteries Q39b. **SEE PICTURE**





Q39c. The scrap metal will drop on the ground

Q40a. The like poles of the tree ring magnets are facing each other and repelling each other.

Q40b. Unlike poles attract.

Q40c. Yes. Object X is repelling from the ring magnet. Only magnets repel.

Q41a. The steel thumbtack will move towards the magnet.

Q41b. Aluminum Q41c. Magnetism can pass through non magnetic materials.

Q42a. The sand will occupy the space in between the marbles.

Q42b. marbles – solid Q42b. sand – solid

Q43a. Container X : 500cm³ Q43a. Container Y : 300cm³

Q43b. Air has no definite volume and can be compassed.

Q44a. Water is taking up the space in the glass beaker and water cannot be compressed because it has a definite volume.

Q44b. Remove the cover

THE END

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METHODIST GIRLS' SCHOOL

Founded in 1887

SEMESTRAL ASSESSMENT 1
2015
PRIMARY 4
SCIENCE

BOOKLET A1

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 4._____

Date : 14 May 2015

This booklet consists of 13 printed pages including this page.

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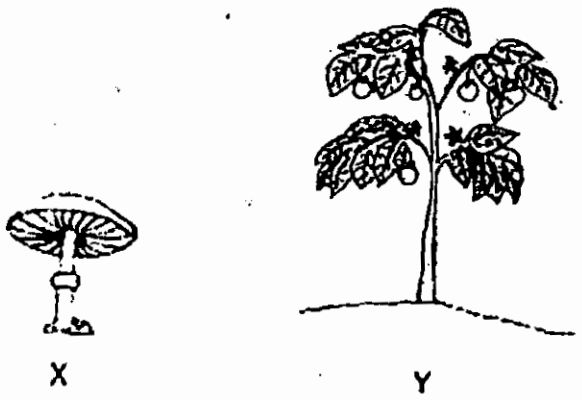
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

[50 marks]

---

1. Look at the diagrams of living things X and Y below.



Which of the following statement(s) about living things X and Y is/are true?

A: Both X and Y can grow.

B: Both X and Y can reproduce.

C: Both X and Y can make their own food.

(1) C only
(2) A and B only
(3) B and C only
(4) A, B and C

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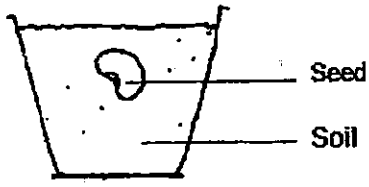
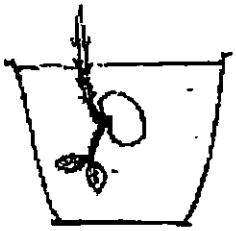
2. Jill placed a seed into a container of soil as shown below. She poured water on the soil daily.

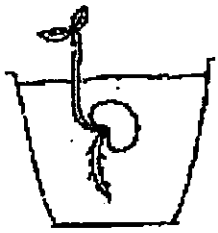


Which one of the following diagrams shows what Jill would observe after a few days?

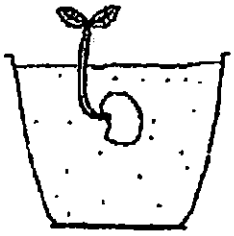
(1)



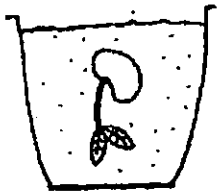
(3)



(2)



(4)



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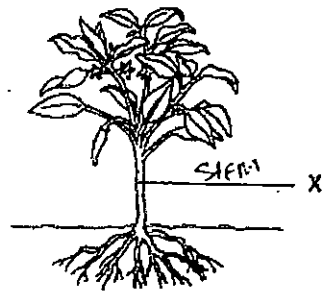
3. Four pupils, A, B, C and D, planted a seed which grew into a strong and healthy young plant as shown below.



They made the following statements about the main functions of the part labelled X.

Pupil	Statement
A	It supports the leaves and the flowers.
B	It makes food for the plant.
C	It takes in water and mineral salts from the soil.
D	It helps to transport water from the roots to other parts of the plant.

Which pair of pupils had made the correct statement?

(1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

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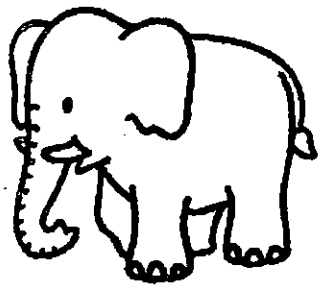
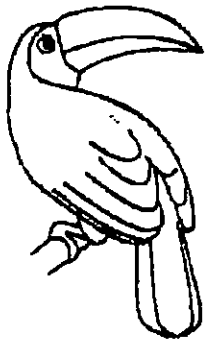
4. Jasvinder observed four animals, P, Q, R and S as shown below.



P



Q

R

S

She classified the animals into Group 1 and Group 2 in the table shown below.

Group 1	Group 2
P	Q
S	R

Which one of the following pair of headings is the most suitable for the groups?

	Group 1	Group 2
1	Have hair	Have feathers
2	Have young	Have no young
3	Have no wings	Have wings
4	Have backbone	Have no backbone

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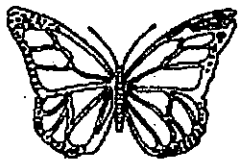
5. Study the pictures below.

Butterfly	Ball
	

Which of the following correctly describes the difference(s) between a butterfly and a ball?

	Butterfly	Ball
A:	Cannot move on its own	Can move on its own
B:	Can grow and reproduce	Cannot grow and reproduce
C:	Needs air, water and food	Does not need air, water and food

(1) A only

(2) B only

(3) B and C only

(4) A and C only

(Go on to the next page)

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6. Zimri placed four slices of bread in identical bags which were sealed as shown below.

Set-up A	Set-up B
Dry Bread In Refrigerator	Wet Bread In Refrigerator
Set-up C	**Set-up D**
Dry Bread In Wooden Cupboard	Wet Bread In Wooden Cupboard

After a few days, Zimri observed that some fungi started to appear on the bread in one of the set-ups. Which set-up is most likely to have fungi growing on the bread?

(1) A
(2) B
(3) C
(4) D

(Go on to the next page)

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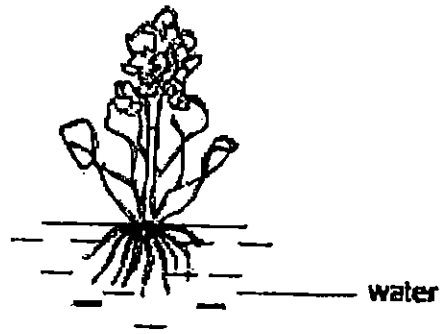
7. The table below shows some information of four organisms, E, F, G and H. A tick (√) shows that the characteristic is present and a cross (X) shows that it is not present.

	Characteristics		
	Has flowers	**Can make its own food**	**Grows on land**
E	√	√	√
F	X	√	X
G	√	√	X
H	X	X	√

The following plant has similar characteristics as one of the four organisms E, F, G and H.



Which organism has similar characteristics as the above plant?

(1) Organism E
(2) Organism F
(3) Organism G
(4) Organism H

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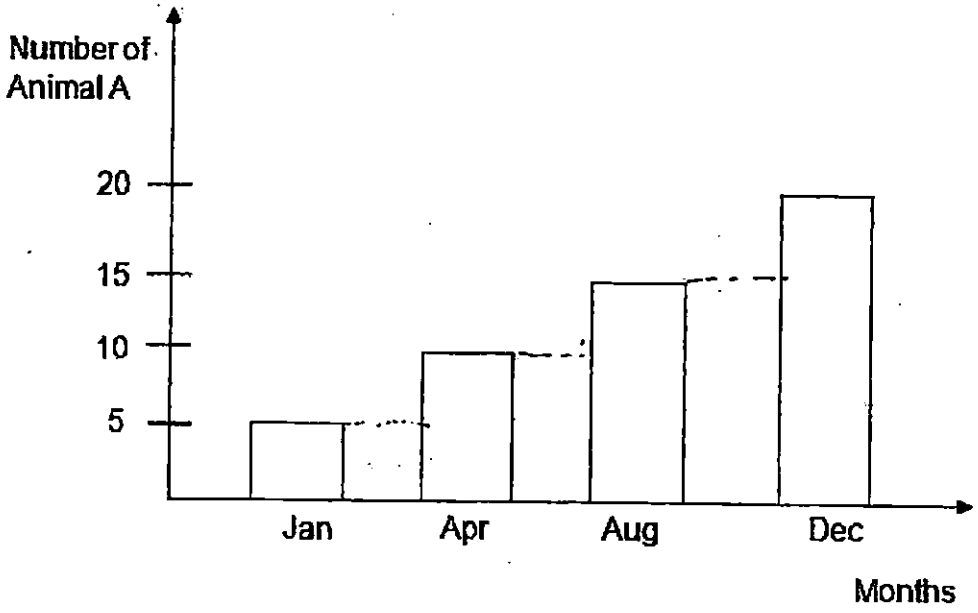
8. The graph below shows the number of Animal A over 12 months.



Based on the graph above, what can you conclude about Animal A?

(1) Animal A reproduced during the 12 months.
(2) The height of Animal A increased every month.
(3) Animal A grew in Jan, April, Aug and Dec only.
(4) Number of Animal A increased the most in the month of Dec.

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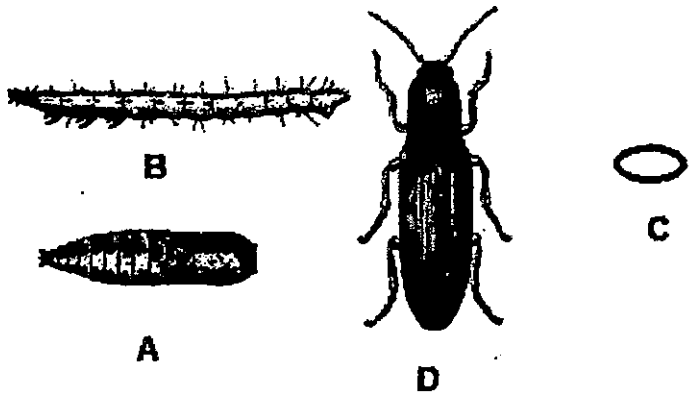
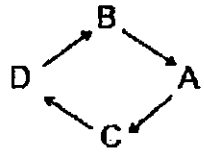
9. Ah Seng has some picture cards that show the life cycle of an animal.

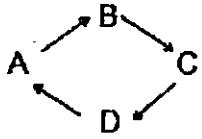


Which one of the following diagrams shows the correct life cycle of the animal?

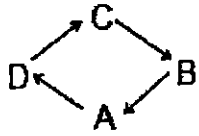
(1)



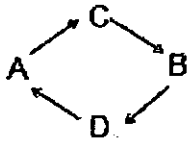
(2)



(3)



(4)



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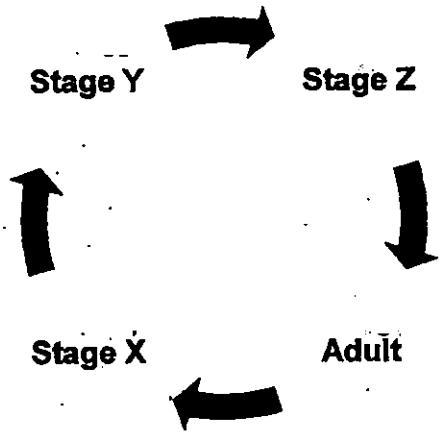
10. Azman observed an insect that goes through the life cycle as shown below.



He found that the insect does not take in food from the surrounding at some stages of the life cycle.

At which stage(s) did this happen?

(1) Z only
(2) X and Y only
(3) Y and Z only
(4) X and Z only

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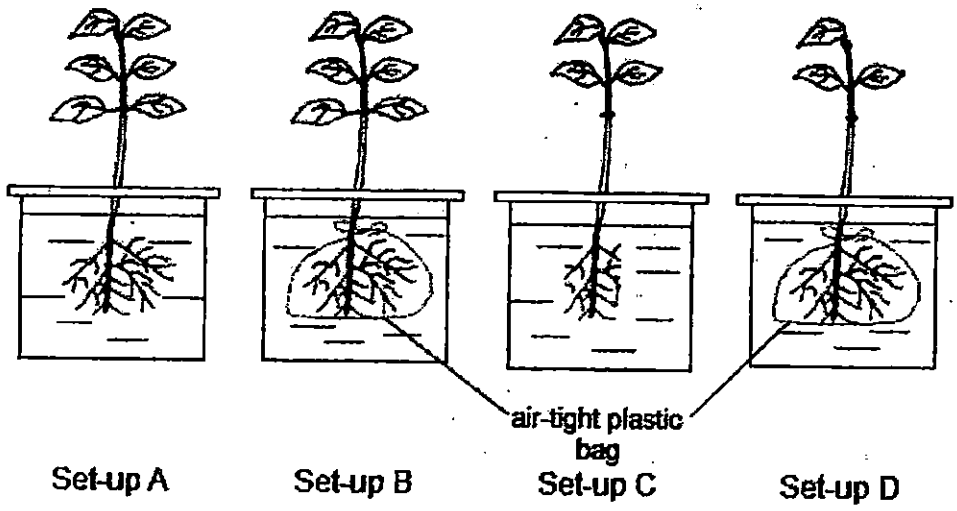
11. Gina wanted to find out if plants take in water through their roots.



The roots of the plants in set-up B and set-up D were tied with air-tight plastic bags at the start of the experiment before putting into the beaker of water. Each set-up had the same amount of water.

Which of the two set-ups above should she choose to conduct a fair test?

(1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

(Go on to the next page)

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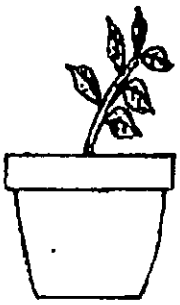
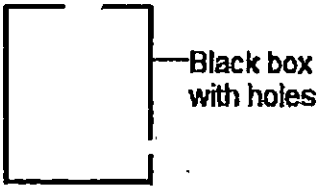
12. Sally placed a pot of plant in a black box with a small hole. She made sure that the plant was well watered. After a month, she observed the plant growing as shown below.

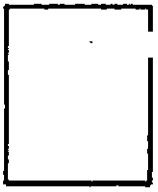


Which one of the following correctly shows the box in which the pot of plant was placed?

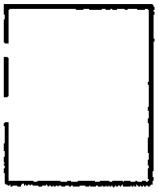
(1)



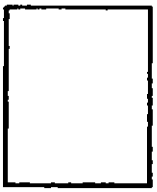
(2)



(3)



(4)



End of Paper A1

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METHODIST GIRLS' SCHOOL

Founded in 1887

SEMESTRAL ASSESSMENT 1
2015
PRIMARY 4
SCIENCE

BOOKLET A2

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 4. _____

Date :14 May 2015

This booklet consists of 12 printed pages including this page.

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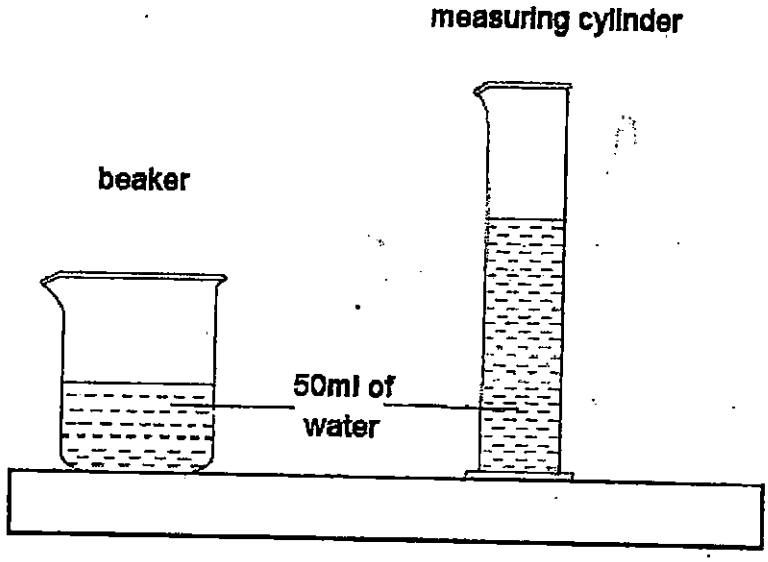
13. James poured 50 ml of water each into a beaker and a measuring cylinder as shown below.



Which of the following statement(s) is/are true about water inside the beaker and measuring cylinder?

A: The mass of water is the same.

B: The shape of water is different.

C: The volume of water is the same.

(1) B only
(2) C only
(3) A and B only
(4) A, B and C

(Go on to the next page)

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14. Devi blew up a balloon as shown in Diagram A. After that, she twisted the balloon into the shape as shown in Diagram B. She had performed this task at room temperature.

Diagram A

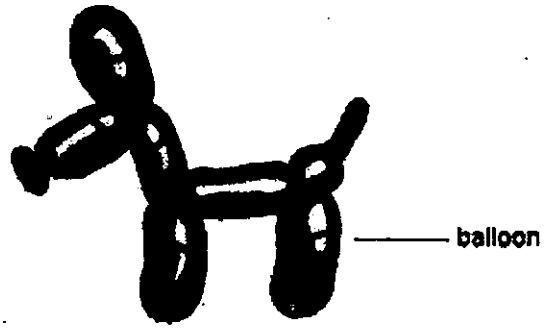

Diagram B

What can you conclude from Devi's experiment?

(1) Air has mass
(2) Air can expand
(3) Air can contract
(4) Air has no definite shape

15. A glass bottle has a volume of 1000 cm^3. Which of the following can be stored in this bottle?

A: 800 cm^3 of air

B: 1100 cm^3 of air

C: 800 cm^3 of water

D: 1100 cm^3 of water

(1) A and C only
(2) B and D only
(3) A, B and C only
(4) B, C and D only

(Go on to the next page)

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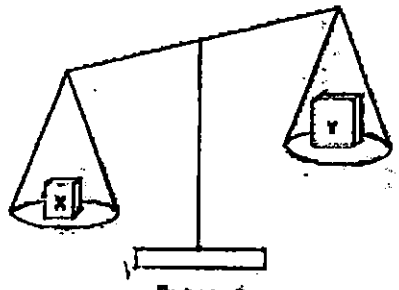
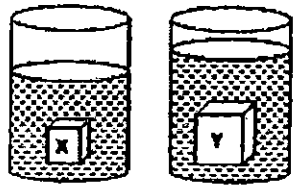
16. Neela used the set-ups below to find out more about solids X and Y.

First, she placed each of the solids on the balance as shown in Set-up A.



Set-up A

Next, she placed each of the solids into two containers which have the same volume of water as shown in Set-up B.



Set-up B

Based on Neela's observations in Set-ups A and B above, what conclusion could she draw about the solids X and Y?

A: X has a greater mass than Y.

B: Y occupied more space than X.

C: The amount of space a matter occupied depends on its mass.

(1) A only
(2) C only
(3) A and B only
(4) B and C only

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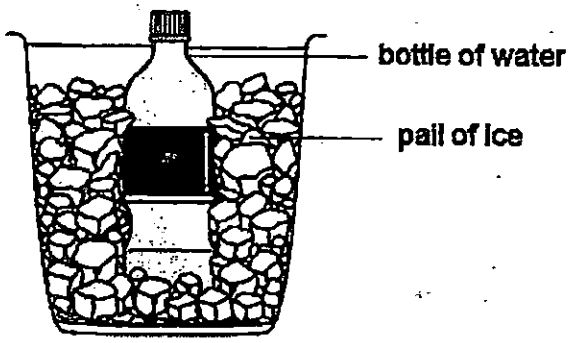
17. Tee Hock placed a bottle of water which was at room temperature in a pail of ice.

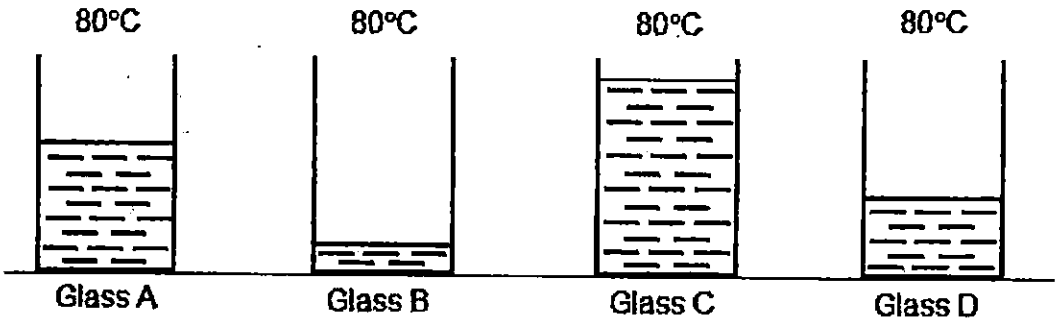


Which one of the following statements best describe(s) the changes in the set-up after 5 minutes?

A: The bottle of water lost heat to the ice.
B: The ice lost heat to the bottle of water.
C: The temperature of the bottle of water decreased.

(1) A only
(2) C only
(3) A and B only
(4) A and C only

18. Four similar glasses, A, B, C and D contain different amounts of hot water at 80° C.



Which glass of water will take the longest time to cool to 30°C?

(1) A
(2) B
(3) C
(4) D

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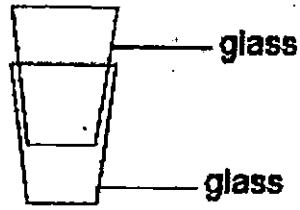
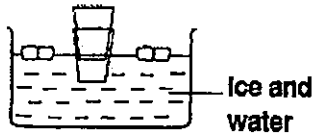
19. Two glasses were stuck together as shown below.

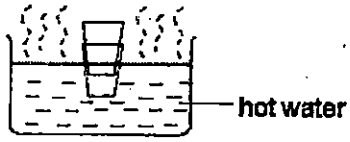


Which one of the following would be the most suitable way of separating the glasses?

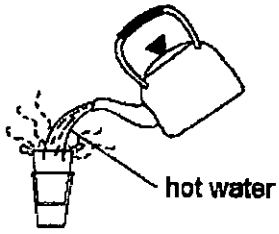
(1)



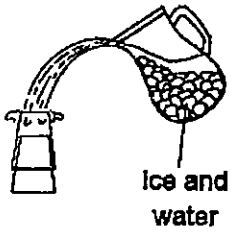
(2)



(3)



(4)



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20. Sue poured equal amounts of water at 100°C into four cups of the same shape and size. The four cups were made of different materials, T, U, V and W.

She measured the temperature of water in the cups after 20 minutes and recorded the results in the table below.

Material	Temperature of water after 20 minutes (°C)
T	75
U	60
V	45
W	80

From the table above, which one of the following materials is the poorest conductor of heat?

(1) T
(2) U
(3) V
(4) W

(Go on to the next page)

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21. The table below shows the properties of three types of materials, P, Q and R. A tick (√) shows that the property is present, while a cross (X) shows that the property is not present.

Properties	Materials		
	P	Q	R
Flexible	√	X	X
Magnetic	X	√	X
Allows light to pass through	X	X	√

Based on the information given in the table above, which one of the following materials would P, Q and R most likely be?

	P	Q	R
(1)	Rubber	Iron	Steel
(2)	Clear glass	Steel	Iron
(3)	Clear glass	Steel	Rubber
(4)	Rubber	Iron	Clear glass

(Go on to the next page)

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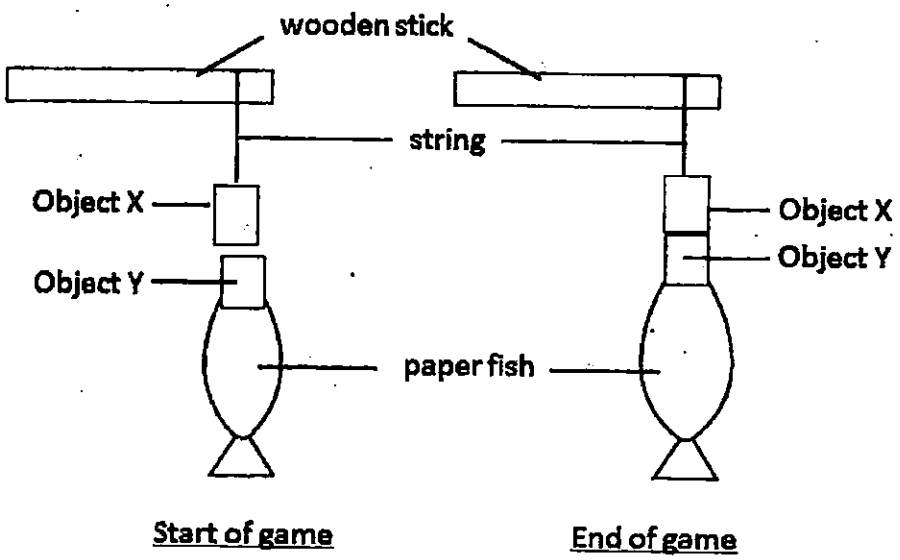
22. Ben and Jill played a game as shown in the diagram below. The aim of the game is to make use of object X to pick up object Y, which is attached to a paper fish.



Which of the following could represent objects X and Y?

	Object X	Object Y
A	iron rod	steel block
B	magnet	iron block
C	magnet	steel block

(1) A only

(2) C only

(3) B and C only

(4) A, B and C

(Go on to the next page)

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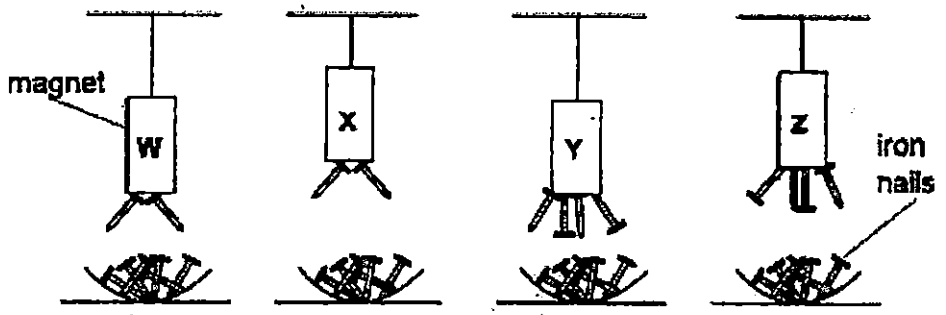
23. Four similar magnets, W, X, Y and Z were hung from strings of two different lengths. A tray with the same number of iron nails was placed below each magnet. It was observed that different number of iron nails was attracted as shown below.



Based on the observation above, which one of the magnets was the weakest?

(1) W
(2) X
(3) Y
(4) Z

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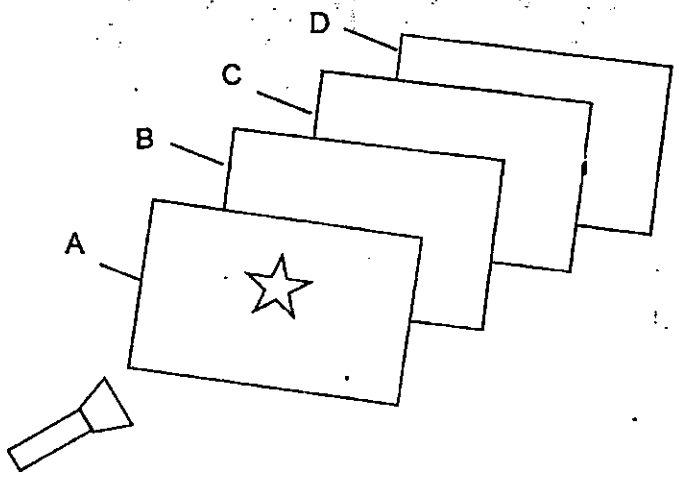
24. Bryan carried out the experiment below in a dark room.



Four sheets, A, B, C and D are arranged in a straight line. Sheet A has a star shaped cut-out on it.

When Bryan switched on the torch, a star shaped light is seen only on Sheet C. Which one of the following correctly describes the degree of transparency of sheets A, B, C and D?

	Light passes through	Light does not pass through	Not possible to tell
1	A	C	B and D
2	B	C	A and D
3	B and D	A	C
4	A and C	B	D

(Go on to the next page)

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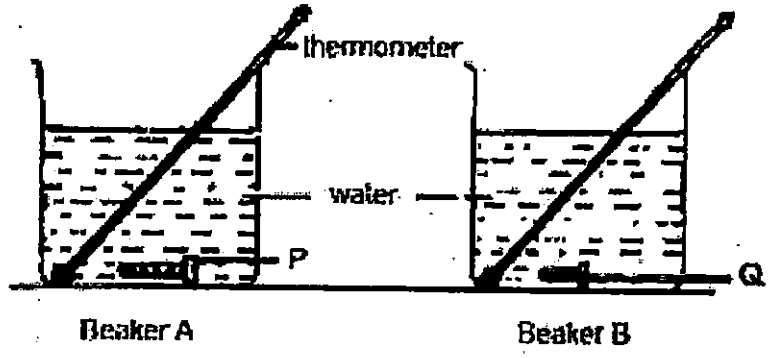
25. Isa poured an equal amount of tap water at room temperature into two identical beakers, A and B, containing identical thermometers. He then placed two screws, P and Q, in boiling water.

After ten minutes, he lifted the screws out of the boiling water with tongs. He put P in Beaker A and Q in Beaker B as shown below.



Which thermometer do you think would show the higher temperature and why?

	Thermometer in Beaker	Reason
(1)	A	P had more heat energy than Q.
(2)	B	Q lost heat faster to the water than P.
(3)	A	P would take more heat out of the water than Q.
(4)	B	The heat in Q was concentrated in a smaller mass and so is more intense.

End of Paper A2

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METHODIST GIRLS' SCHOOL

Founded in 1887

SEMESTRAL ASSESSMENT 1
2015
PRIMARY 4
SCIENCE

BOOKLET B

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 4._____

Date : 14 May 2015

Booklets A1 & A2	50
Booklet B	30
Total	80
Parent's Signature	

This booklet consists of 12 printed pages including this page.

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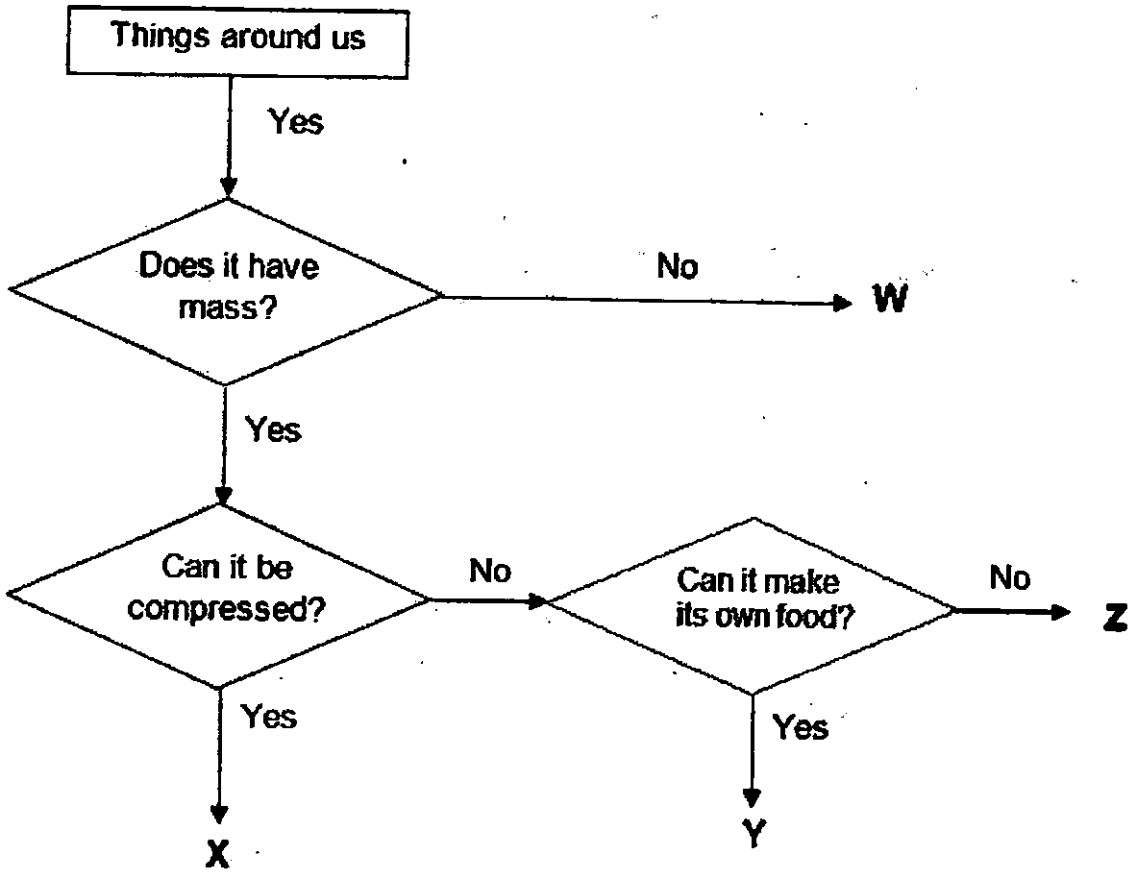
For questions 26 to 35, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[30 marks]

26. Study the flow chart below carefully.



(a) Based on the flow chart above, match the objects below with the letters, W, X, Y and Z. [2]

rock	
air	
light	
fern	

(b) Based on the flow chart, state one property of matter that is the same for both Y and Z. [1]

3

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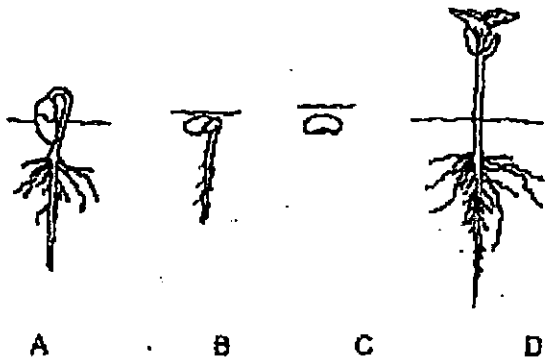
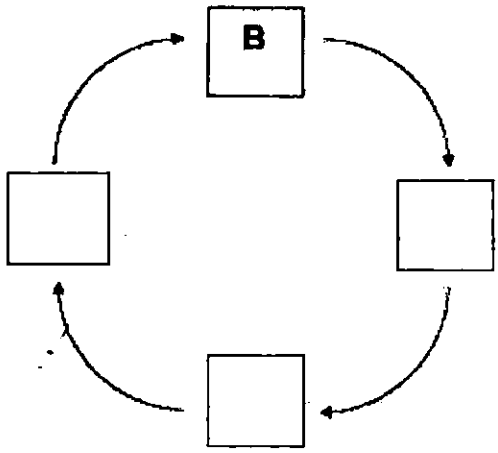
27. Study the diagram below.



(a) Write the letters A, C and D in the boxes below to show the life cycle of the plant. [1½]



(b) List three ways in which the roots help the plant to survive? [1½]

_____

_____

3

(Go on to the next page)

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28. The table below shows two animals X and Y

Characteristics	X	Y
Type of movement	Swims and walks	Flies
Place where they live	Water	Land
Type of body covering	Feathers	Hair
Method of reproduction	Lays eggs	Gives birth

(a) Classify X and Y into their correct groups by filling in the most suitable boxes below. [2]

Mammal	Bird	Fish

(b) Which group of animals produces milk to feed their young? [1]

_____

3

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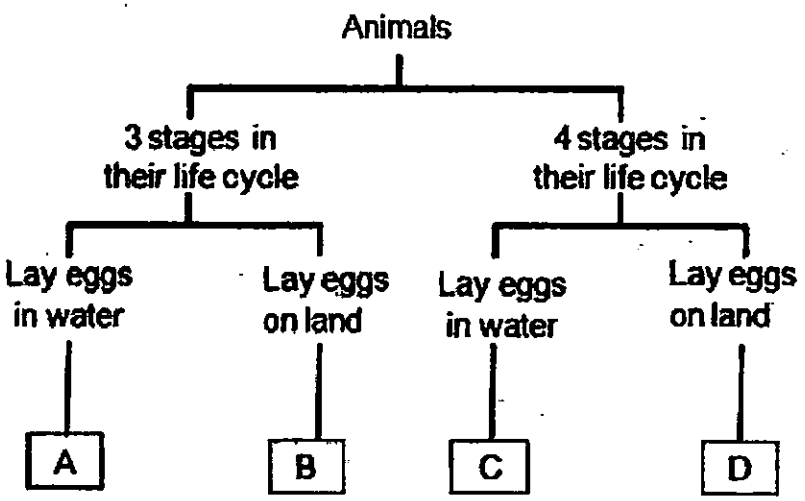
29. Study the classification chart below.



(a) Based on the classification chart, state one similarity between Animals B and D. [1]

_____

(b) Identify one animal that has the same characteristics as: [2]

(i) Animal A: _____

(ii) Animal C: _____

3

(Go on to the next page)

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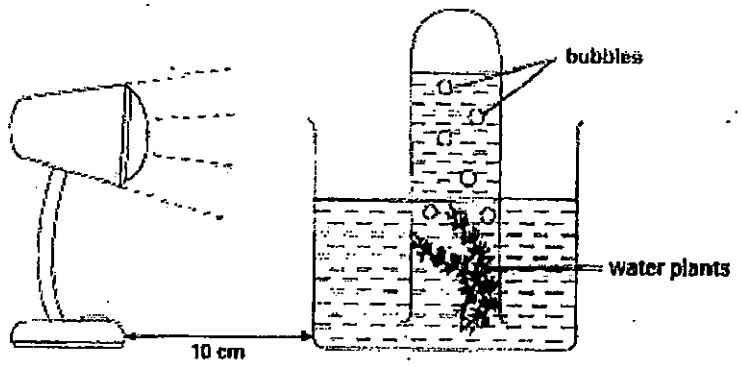
30. Thirui placed an inverted test-tube containing some water and water plants inside a beaker of water. The diagram below shows the initial set-up of his experiment.



After ten minutes, he counted the number of bubbles produced by the water plants over a period of one minute. He repeated the procedure several times, each time increasing the distance between the beaker and the lamp by 10 cm.

(a) What is the main function of the water plant leaves as shown in this experiment? [1]

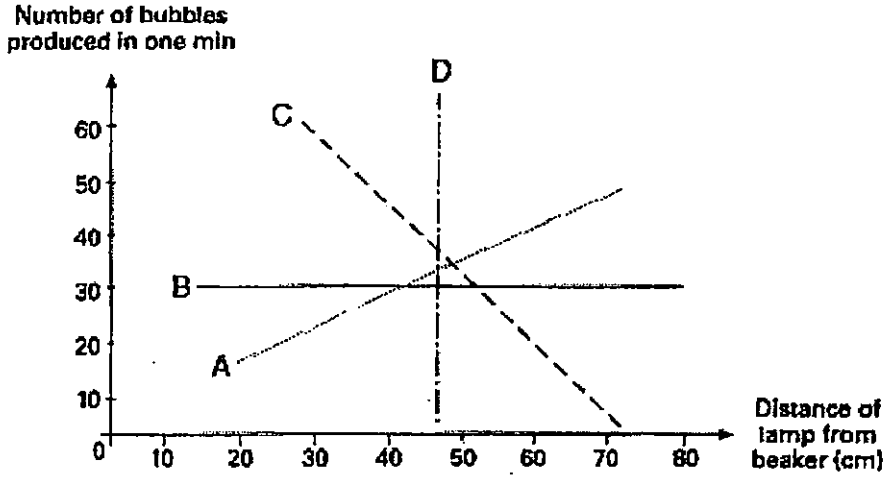
_____

(b) What is the gas that is found mainly in the bubbles? [1]

_____

(c) Which line in the graph below correctly shows the result that Thirui would get? [1]

Line: _____



3

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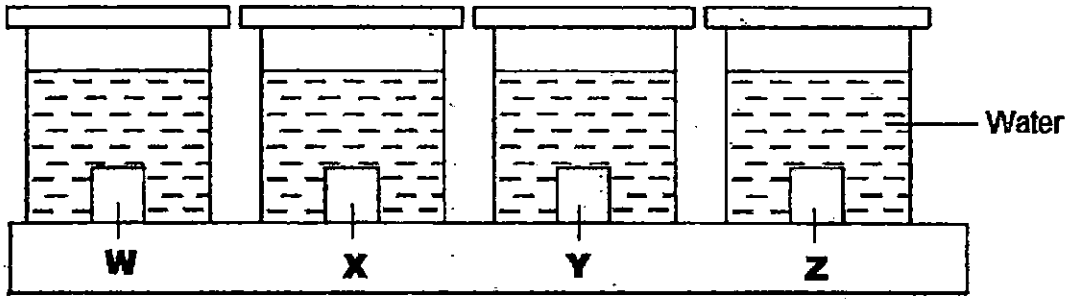
31. Yenni had four cubes which are made of different materials, W, X, Y and Z. She wanted to find out how well these cubes can absorb water. She placed the four cubes in four covered containers, each filled with 200ml of water as shown below.



She left the above set-ups in the science room for some time. At the end of the experiment, the cubes were removed and the amount of water left in each container was recorded in the table below.

Material of cube	W	X	Y	Z
Amount of water left in container (ml)	170	200	160	165

(a) Based on the table above, which material absorbed the most water? [1]

_____

(b) Which material is best suited to make a raincoat? Explain your answer. [2]

_____

_____

(c) Name one other variable, other than the amount of water, which must be kept the same. [1]

_____

4

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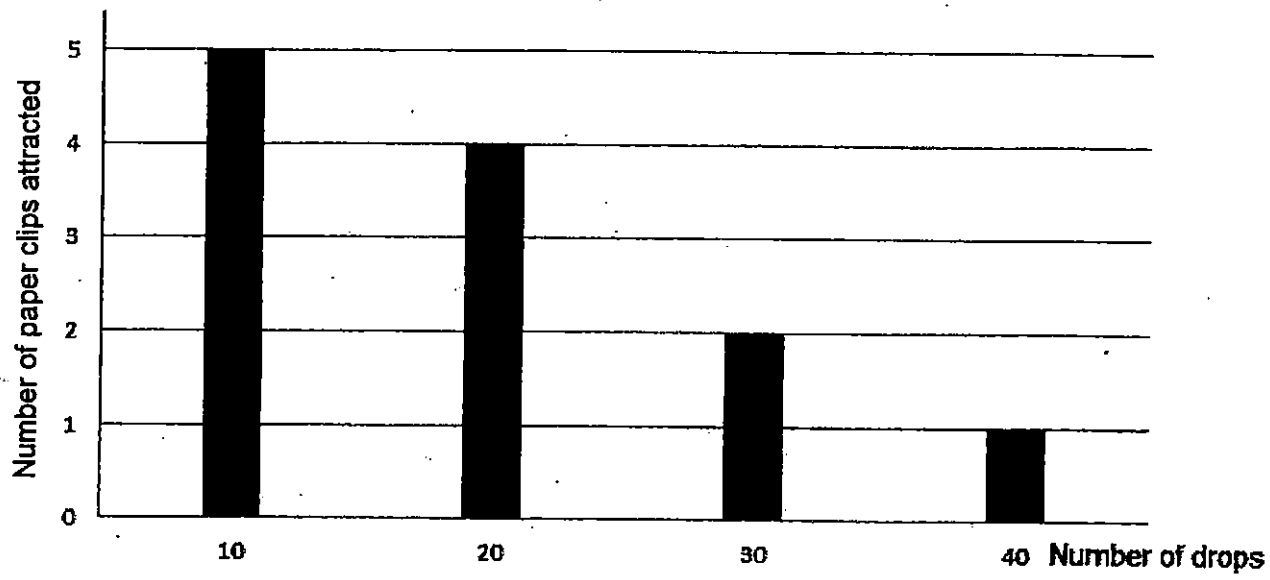
32. Ghaffar conducted an experiment to find out if the strength of a magnet is affected when it is dropped. He counted the number of times a magnet was dropped and also the number of paper clips attracted by the magnet after that. The graph below shows the results of his experiment.



(a) What was used to measure the strength of the magnet? [1]

_____

(b) What conclusion can Ghaffar make from his results? [1]

_____

_____

2

(Go on to the next page)

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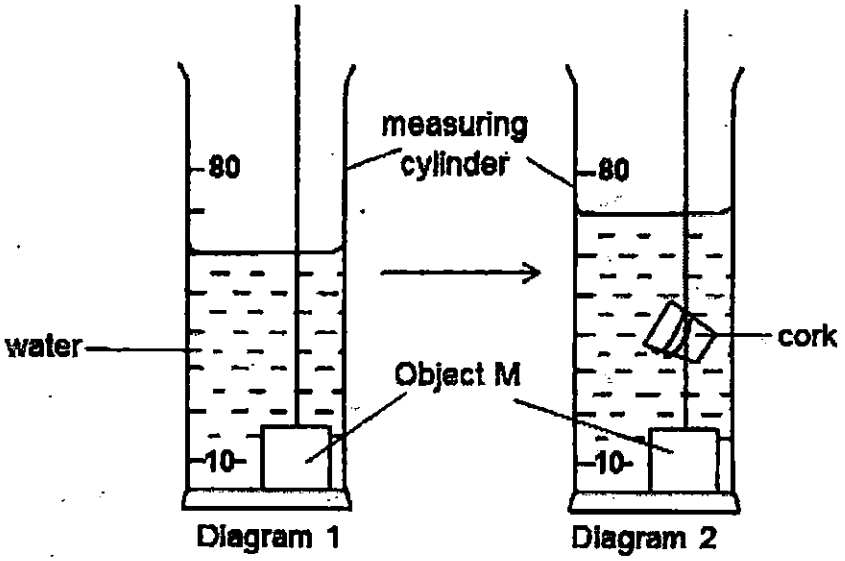
33. Ali poured 30cm^3 of water into a measuring cylinder. When Object M was lowered into the water by tying it to a string, the water level increased, as shown in diagram 1. When a cork was tied to the same string and lowered together with Object M, the water level increased further, as shown in diagram 2.



(a) What is the volume of the cork? [1]

_____

(b) Devi followed the same steps as Ali but she started with 40cm^3 instead of 30cm^3 of water in the measuring cylinder. Will the volume of the cork be the same? Explain your answer. [1]

_____

_____

(c) Ali decided to replace the cork with a piece of sponge of the same volume. He repeated his experiment. He noticed a difference in the water level as compared to that in Diagram 2. Why is there a difference? [1]

_____

_____

/ 3

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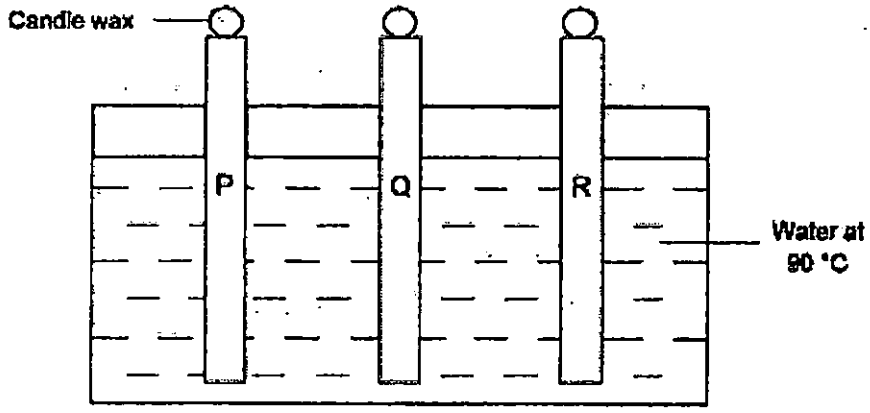
34. Leng Leng carried out an experiment to find out how well different materials can conduct heat. She used three rods that were made of different materials, P, Q and R and three identical balls of candle wax were placed on top of each rod as shown below.



Leng Leng recorded the time taken for the ball of wax to melt completely for each of the rods in the table below.

Material	Time taken for candle wax to melt completely (min)
P	4
Q	2
R	8

(a) What had caused the candle wax to melt? Explain your answer. [2]

_____

_____

(b) Arrange the materials, P, Q and R, based on how well they conduct heat by starting with the **best** heat conductor. [1]

Best heat conductor ⟶ Poor heat conductor

3

(Go on to the next page)

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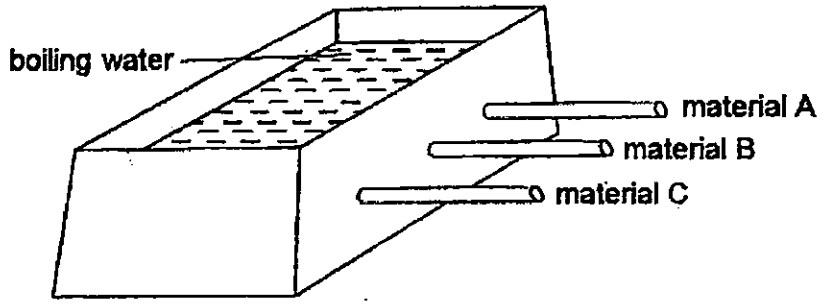
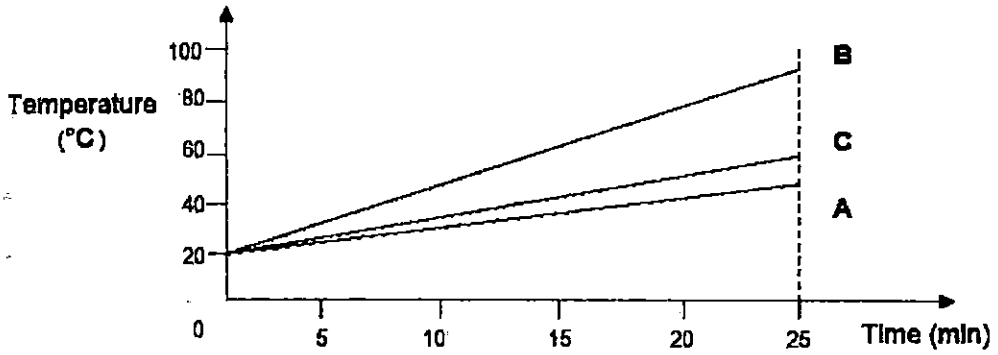
35. Melody placed three rods of different materials, A, B and C in the same container of boiling water as shown below. She measured the temperature of the three rods over time.



(a) If Melody wants to find out which one of the three materials is the best conductor of heat, state a variable which is not mentioned in the question that she needs to keep the same to ensure a fair test. [1]

_____

The graph below shows the change in temperature recorded for each material after some time. The last readings were recorded at the 25-minute mark.



(b) Which one of the materials (A, B or C) is most suitable to make the base for a frying pan? Explain your answer. [1]

_____

_____

(Go on to the next page)

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(c) What will happen to the temperature of each material after several hours? [1]

_____

_____

3

End of Paper

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : METHODIST GIRLS' SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
2	**3**	**2**	**1**	**3**	**4**	**3**	**1**	**3**	**4**
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
1	**2**	**4**	**4**	**3**	**3**	**4**	**3**	**2**	**4**
Q21	Q22	Q23	Q24	Q25					
4	**3**	**1**	**2**	**1**					

Q26a. Z , X , W , Y Q26b. Has mass

Q27a. B → A → D → C

Q27b. It absorbs the water and mineral salts from the soil, anchors the plant firmly to the ground and keeps the plant upright to prevent it from falling.

Q28a. Mammal – Y Q28a. Bird – X Q28b. Mammals

Q29a. Both animals B and D lay eggs on land.

Q29b (i) Frog Q29b (ii) Mosquito

Q30a. They need light to photosynthesize and make food.

Q30b. Oxygen Q30c. Line C Q31a. Material Y

Q31b. Material X as it did not absorb any water and is waterproof and a raincoat should be waterproof to keep the user dry. Hence, material X is best suited to make a raincoat.

Q31c. The thickness of the cubes. Q32a. See how many paper clips it can attract.

Q32b. The strength of the magnet will decrease when it is dropped.

Q33a. $10cm^3$ Q33b. Yes. All solids have a definite volume.

Q33c. The sponge absorbed some of the water, causing the water level to decrease.

Q34a. The hot water. The rods conducted heat from the hot water and to the candle wax, causing the candle wax to melt.

Q34b. Q , P, R Q35a. The thickness of the rods should be the same.

Q35b. Material B. A base of a frying pan should conduct heat very fast in order to cook the food. As material B conducted the heat the fastest, it should be the most suitable to make the base for a frying pan.

Q35c. It will turn to room temperature.

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2015
PRIMARY 4

SCIENCE

BOOKLET A

30 Multiple Choice Questions (60 marks)

Total Time for Booklets A and B : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

Marks Obtained

Booklet A		**/ 60**
Booklet B		**/ 40**
Total		**/100**

Name: _____ ( ) **Class: P 4** _____

Date : 13 May 2015 **Parent's Signature:** _____

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Section A: (30 x 2 marks = 60 marks)
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which of the following is/are source(s) of light?

   A Candle
   B Torch
   C Mirror

   (1) B only
   (2) A and B only
   (3) B and C only
   (4) A, B and C only

2. Daniel can see the soccer ball on the field because _____.

   (1) the ball gives off light
   (2) light from his eyes reaches the ball
   (3) the sun lights up the ball and makes it bright
   (4) the ball reflects light from the sun into his eyes

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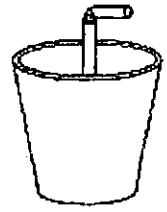
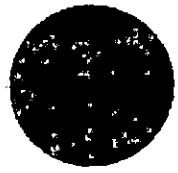
3. Look at the object below.

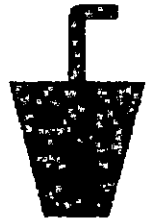


This object is placed between a lighted torch and screen in different positions. Which of the following cannot be a shadow of the object?

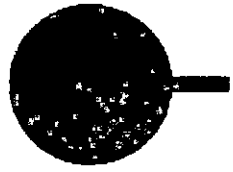
(1)



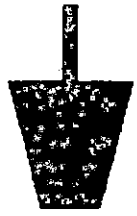
(2)



(3)



(4)



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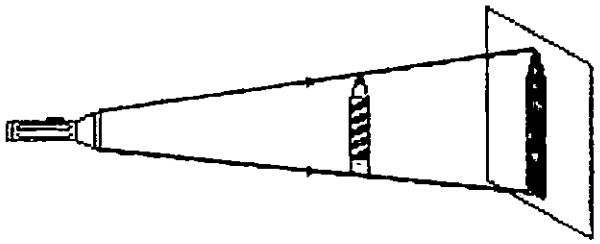
4. The diagram below shows the shadow of a pencil on a screen.



Which of the following will decrease the size of the shadow?

(1) Moving the screen further from torch.
(2) Moving the torch closer to the pencil.
(3) Moving the pencil closer to the torch.
(4) Moving the screen closer to the pencil.

5. Which of the following can be classified as matter?

A: Snow
B: Smoke
C: Oxygen
D: Sunlight

(1) A and B only
(2) B and C only
(3) A, B and C only
(4) B, C and D only

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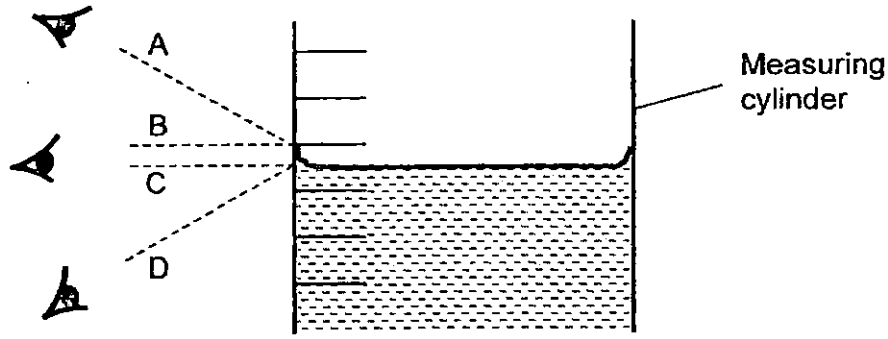
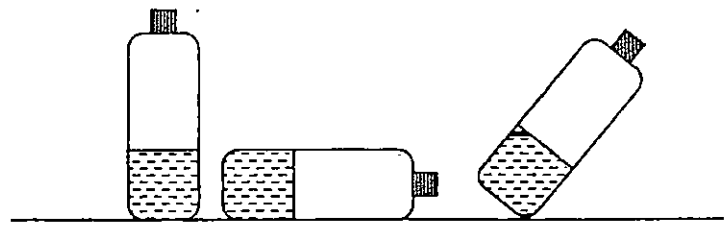
6. The diagram below shows an enlarged section of a measuring cylinder containing some water.



Which position, A, B, C and D, correctly shows how the water level should be read?

(1) A
(2) B
(3) C
(4) D

7. A bottle containing a substance was placed in various positions as shown below.



What does this experiment show about the substance?

(1) It is a liquid as it has a fixed volume.
(2) It is a solid as it has a fixed shape.
(3) It is a solid as it has a fixed volume.
(4) It is a liquid as it has a fixed shape

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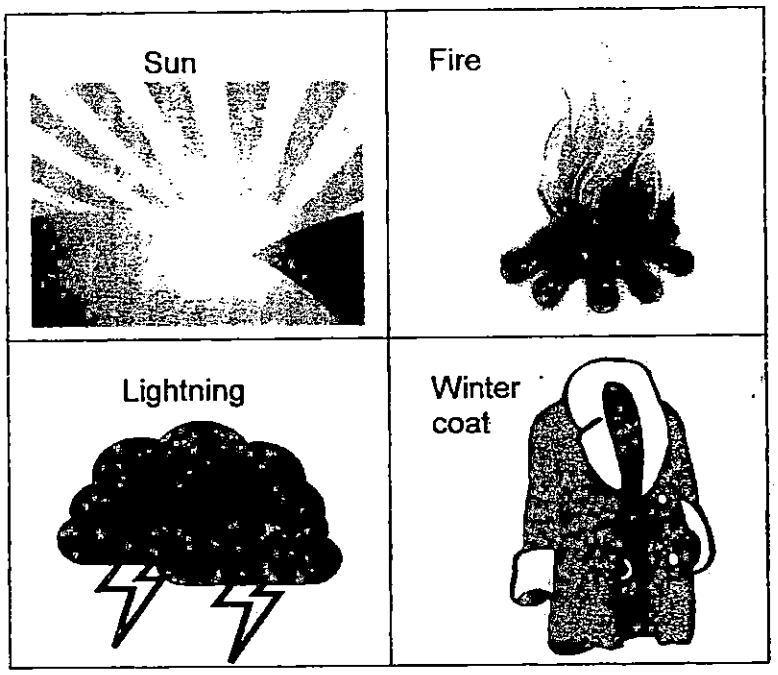
8. Study the diagram below carefully.



Which of the above are sources of heat?

(1) Sun
(2) Sun and fire
(3) Sun, fire and lightning
(4) Sun, fire and winter coat

9. After making a cup of hot coffee, Jane realised that it was too hot to drink. A few ice cubes were added and the temperature of the hot coffee immediately dropped such that Jane could start drinking it.

What happened to the coffee that allowed Jane to be able to drink it so quickly?

(1) The coffee lost heat to the ice cubes.
(2) The coffee gained heat from the ice cubes.
(3) The coffee gained heat from the surroundings.
(4) The ice cubes passed its coldness to the coffee.

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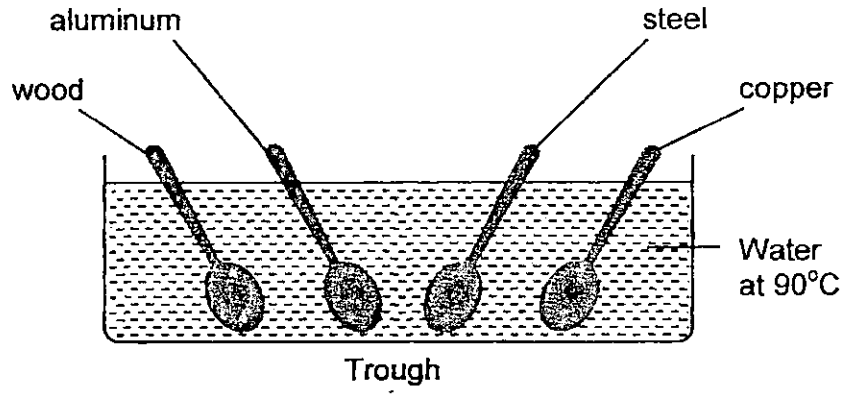
10. Janet went to a carnival at the Singapore Botanical Gardens in a hot afternoon and brought a balloon home. In the air-conditioned room, she noticed that her balloon became smaller.

What is a possible explanation for what happened to the balloon?

(1) The balloon expanded and the gas in the balloon contracted.
(2) The balloon gained heat and contracted in the cool air of the air-conditioned room.
(3) The gas in the balloon expanded less in the cool air of the air-conditioned room.
(4) The gas in the balloon lost heat to the cool air in the air-conditioned room and contracted.

11. Four spoons of different materials are placed in a trough of hot water at 90°C as shown in the diagram below.



Which spoon can you pick up without burning your bare hands?

(1) steel spoon
(2) copper spoon
(3) wooden spoon
(4) aluminum spoon

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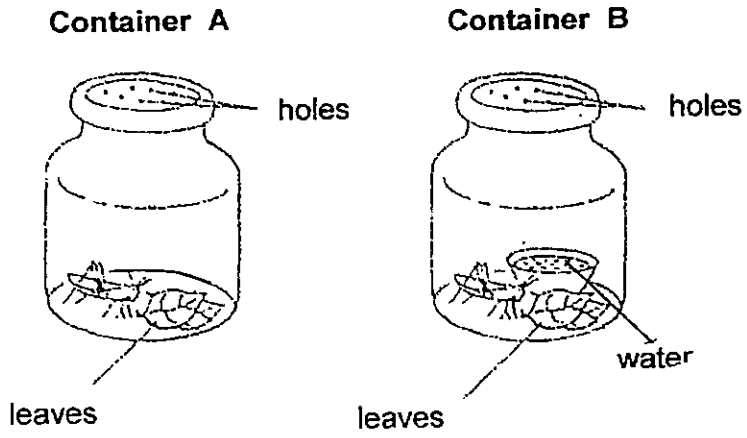
12. Serena placed two grasshoppers in two identical containers as shown below. She then covered the 2 containers with a plastic cover and poked holes on each of the plastic cover.



The two containers were placed inside a wooden cupboard. After one day, the grasshopper in Container A died but the grasshopper in Container B was still alive.

This experiment shows that _____ to stay alive.

(1) living things need air
(2) living things need food
(3) living things need water
(4) living things need sunlight

13. Which of the following statements are true about fungi?

A: They are edible.
B: They reproduce from spores.
C: They grow only on rotting logs.
D: They feed on living or dead plant and animals.

(1) A and C
(2) B and D
(3) C and D
(4) A and B

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14. Alice had two types of materials, P and Q, each of the same size. She wanted to find out which material would absorb the most amount of water. The table below shows the set-ups she had done.

Set-up	Material	Amount of water added to material
A	Q	100ml
B	P	50ml
C	Q	30ml
D	P	100ml

Which two set-ups should Alice choose in order for her test to be a fair one?

(1) A and B
(2) B and D
(3) A and D
(4) B and C

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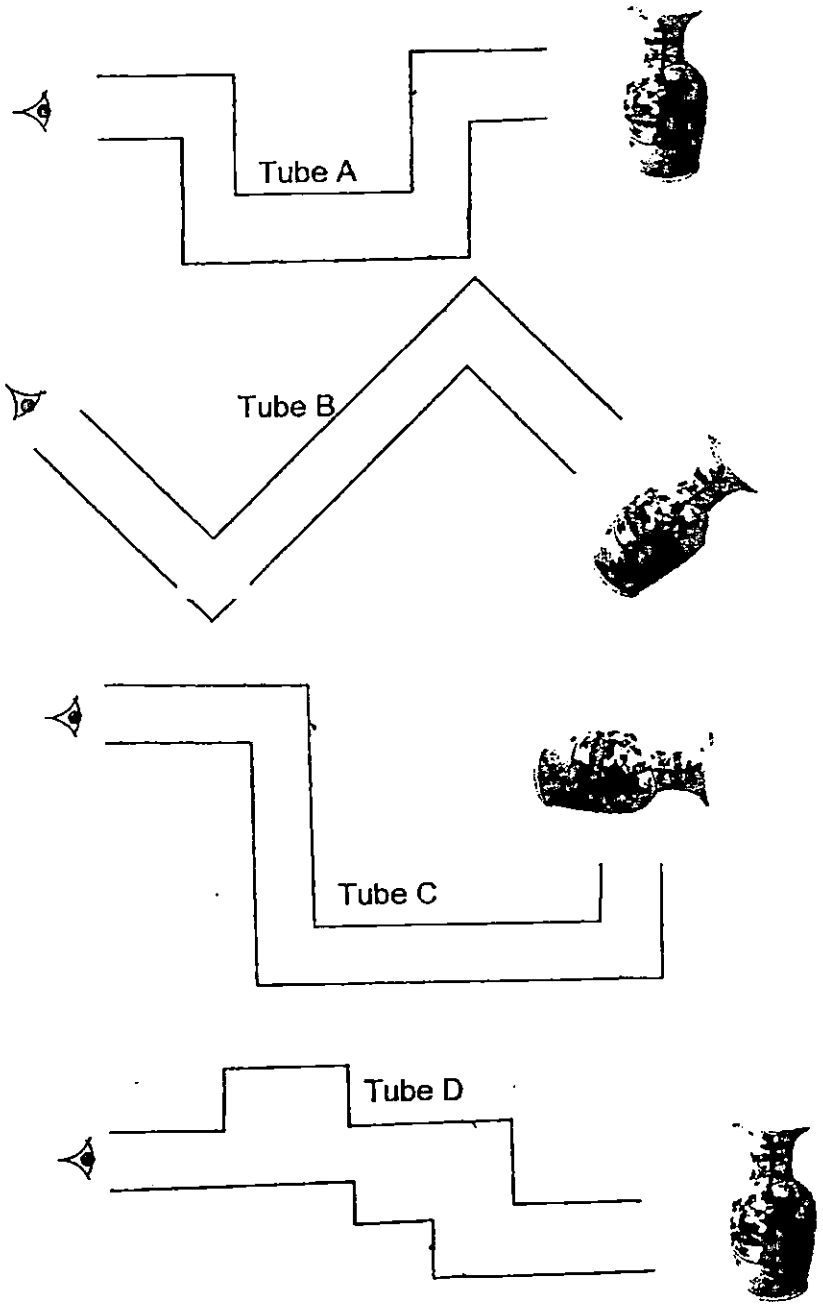
15. Shawn was given 4 tubes, Tube A, Tube B, Tube C and Tube D, made of the same type of opaque plastic.



Shawn's task was to fix mirrors in the tube such that he will be able to see the vase when he looked through the tube as shown in the diagrams above.

If Shawn was given only 3 mirrors to work with each tube, which tube(s) do you think Shawn will look through and be able to see the vase?
(Not all 3 mirrors need to be used)

(1) A only
(2) A and B only
(3) C and D only
(4) B, C and D only

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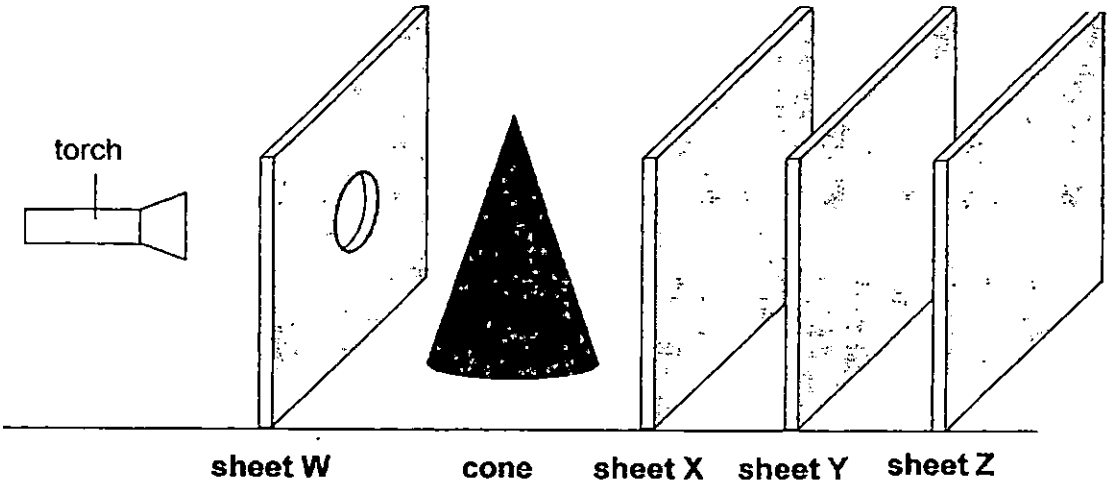
16. Sarah set up an experiment in a dark room, using a torch, a cone and four sheets W, X, Y and Z. She arranged the items as shown in the diagram below. She cut a hole in sheet W only.
The property of the four sheets of materials is shown in the table below.

Degree of transparency	Materials
Opaque	W, X, Z
Transparent	Y



She switched on the torch and made an observation.
Which of the following sheet will the shadow of the cone be seen?

(1) W
(2) X
(3) Y
(4) Z

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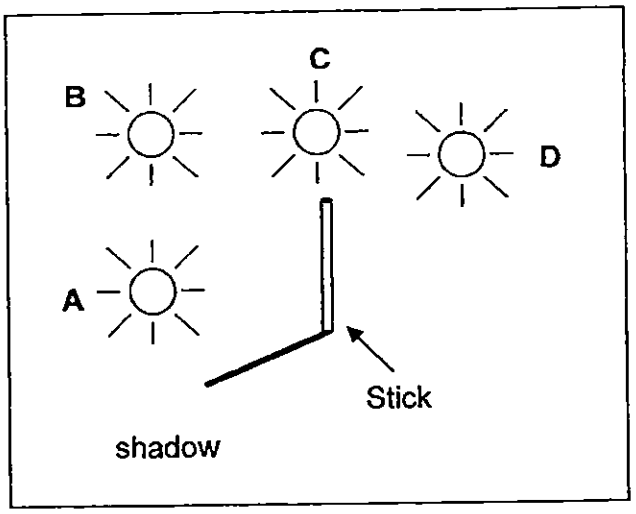
17. A, B, C and D represent the position of the Sun at different times of the day.



Based on the position of shadow in the diagram above, the Sun is likely to be at position _____.

(1) A
(2) B
(3) C
(4) D

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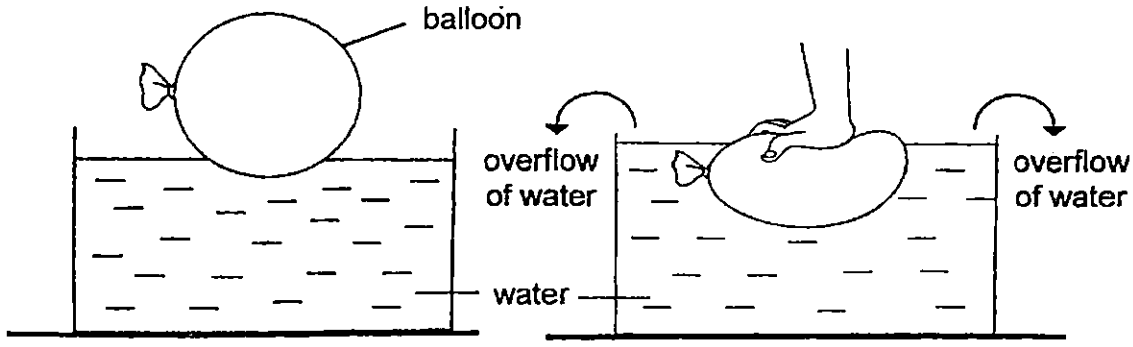
18. The diagram below shows a balloon being pushed into a basin of water.



Which of the following statement(s) can be inferred from the activity?

A Air has mass.
B Air occupies space.
C Air has no definite shape.

(1) B only
(2) A and B only
(3) B and C only
(4) A, B and C only

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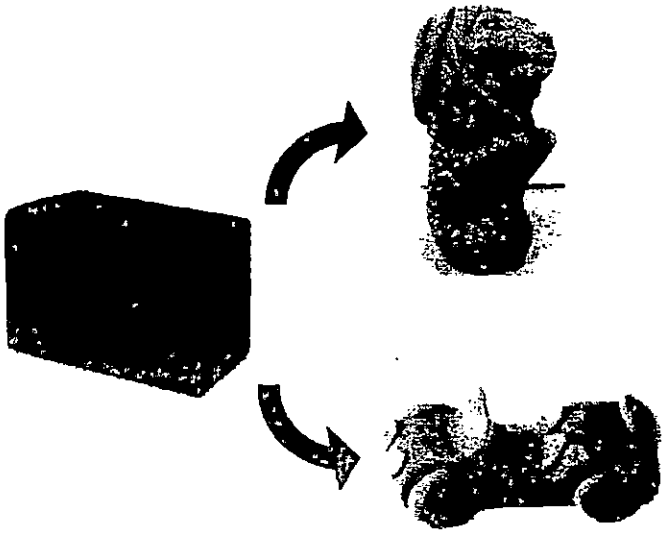
19. Zenith used a block of clay and made a Merlion out of it. He then used an identical block of clay and made a model car.



The Merlion and the model car he made both have the same _____.

A mass
B shape
C volume

(1) A only
(2) C only
(3) A and C only
(4) B and C only

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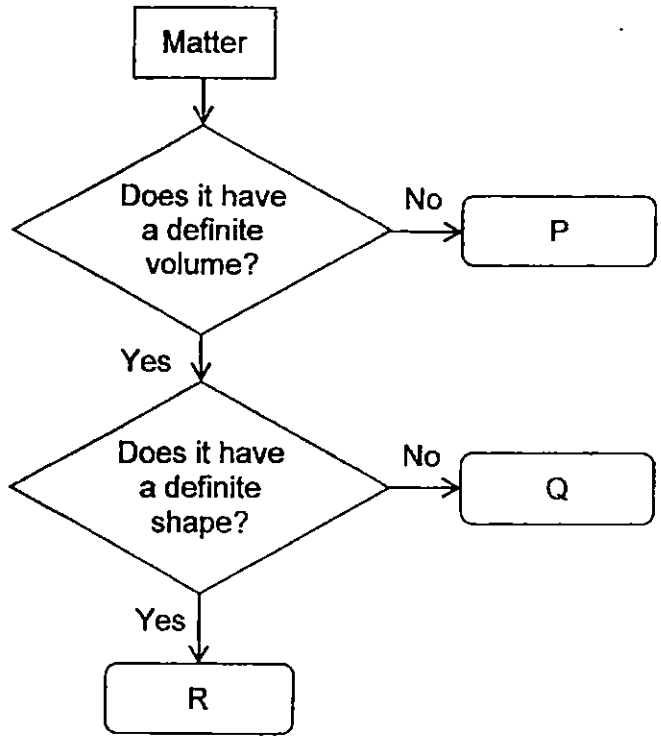
20. Study the diagram below carefully.



Which of the following statements about P, Q and R are correct?

A R is definitely a solid.
B P and Q can be compressed.
C P can possibly be carbon dioxide.

(1) A only
(2) B only
(3) A and C only
(4) B and C only

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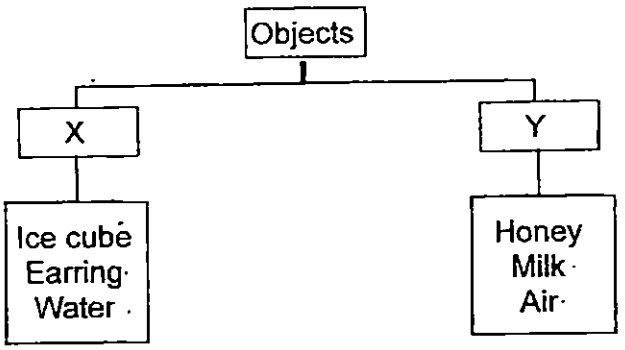
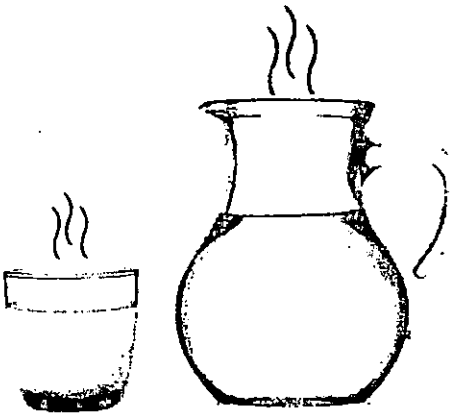
21. Study the classification below carefully.



According to the classification above, what should the headings, X and Y, be?

	X	Y
(1)	Has a definite shape.	Has a definite volume.
(2)	Has a definite volume.	Has no definite shape.
(3)	Cannot be compressed.	Can be compressed.
(4)	Has no definite shape.	Has a definite shape.

22.



After boiling some water, Fauzi poured the water into a jug and a cup as shown in the diagram above.

Which statement(s) below about the jug and the cup of water is correct?

A The temperature of the waters in the jug and cup are the same immediately after they were filled.
B There was more heat energy in the jug of water than the cup of water.
C Equal amount of ice is needed to cool down the hot waters in both the jug and cup.

(1) A only
(2) A and B only
(3) B and C only.
(4) A, B and C

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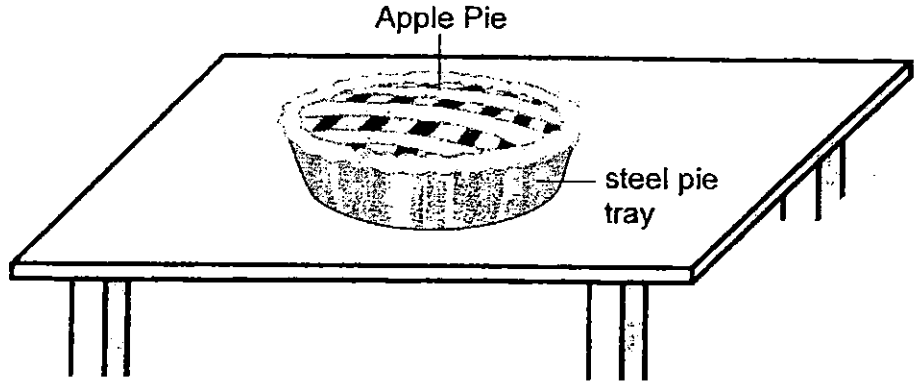
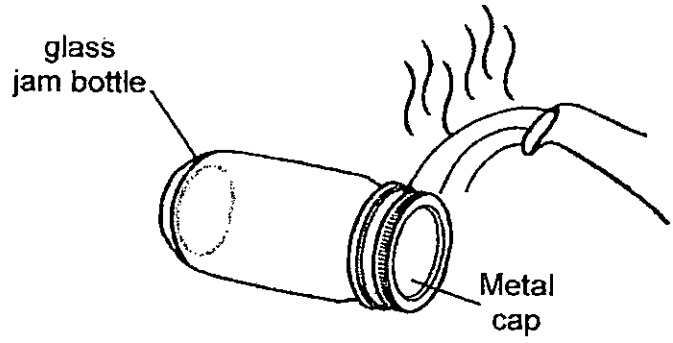
23 An apple pie was taken out of the oven and placed on a table to allow it to cool.



Which of the following statements about the cooling process of the apple pie is correct?

(1) The pie gained heat from the steel tray.
(2) The pie lost heat to the surrounding air only.
(3) The pie lost heat to the surrounding air and the steel pie tray.
(4) The pie lost heat to the surrounding air, the steel pie tray and the table top.

24. Glass jam bottles tend to close too tightly that we cannot open them.



One way is to pour some hot water onto the metal cap which helps to open the cap.

Which one of the following explains why pouring hot water on the metal cap helps to open jam bottles that are closed too tight to open?

	glass jam bottle	metal cap
(1)	expanded	expanded more
(2)	contracted	expanded
(3)	expanded	contracted
(4)	expanded more	expanded

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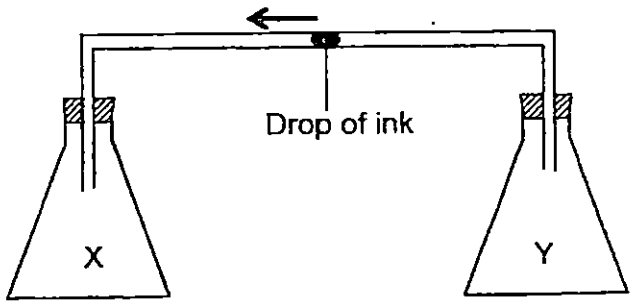
25. The diagram below shows two empty flasks, X and Y, connected by glass tube. A drop of ink is positioned in the centre of the tube.



Which of the following actions will cause the drop of ink to move to flask X?

A Put flask X in a basin of hot water and flask Y in a basin of cold water.
B Put flask X in a basin of cold water and flask Y in a basin of hot water.
C Put flask X in a basin of tap water and flask Y in a basin of ice water
D Put flask X in a basin of tap water and flask Y in a basin of warm water.

(1) A and B only
(2) A and D only
(3) B and C only
(4) B and D only

26. The table below provides some information on W, X and Y.

Things	Able to move on its own?	Able to reproduce?	Able to make its own food?
W	Yes	Yes	No
X	No	No	No
Y	No	Yes	Yes

Which of the following statements are true about W, X and Y?

A Both W and X are living things.
B W is an animal while Y is a plant.
C Both Y and X are non-living things.
D W is a living thing and X is a non-living thing.

(1) A and B only
(2) B and D only.
(3) A and C only
(4) B and C only

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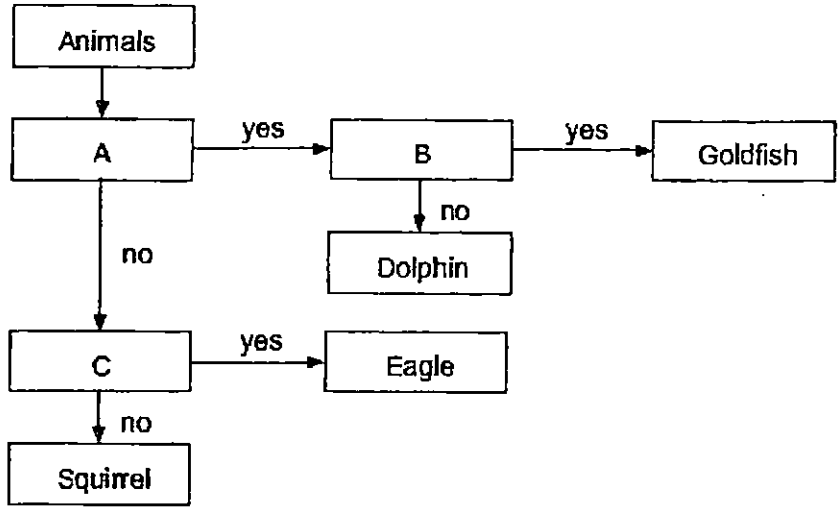
27. The flowchart below shows the characteristics of some animals.



Which of the following correctly represents A, B and C in the flowchart?

	A	B	C
(1)	Does it swim?	Does it have scales?	Does it have feathers?
(2)	Does it have scales?	Does it live in water?	Does it have fins?
(3)	Does it live in water?	Does it have scales?	Does it live on trees?
(4)	Does it have hair?	Does it lay eggs?	Can it fly?

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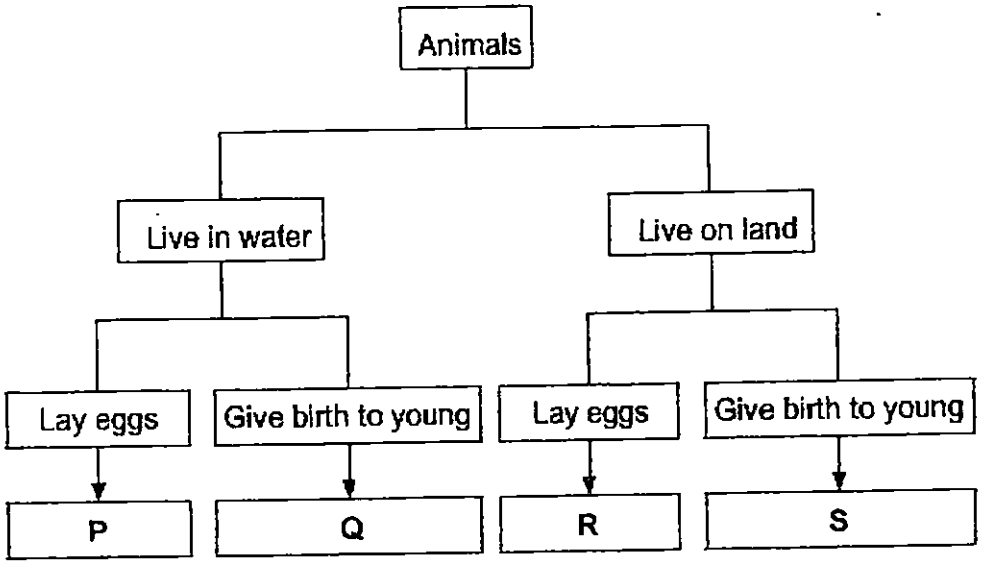
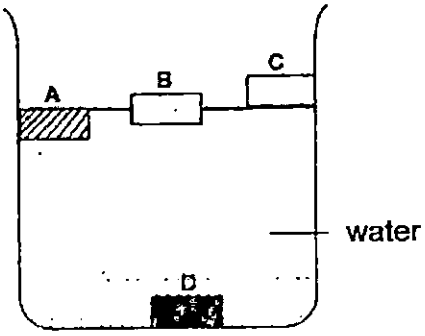
28. Study the classification chart below carefully.



Which one of the following describes an eagle?

(1) P
(2) Q
(3) R
(4) S

29. Materials A, B, C and D of the same size were placed into a container of water. The diagram below shows the position of the materials in the container of water.



What of the materials A, B, C or D is most likely to be made of ceramic?

(1) A
(2) B
(3) C
(4) D

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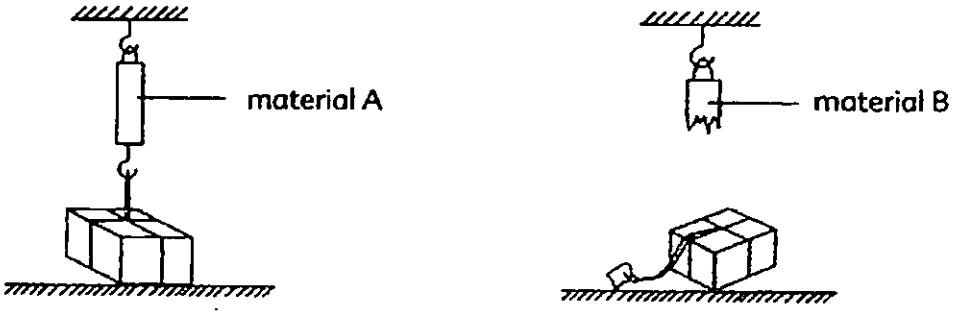
30. A strip of material A and material B were each hung on a hook as shown below.

Two boxes of the same weight were then hung onto the strips. The results are shown below.



What can be concluded from the experiment?

(1) Material A is lighter than material B.
(2) Material A is stronger than material B.
(3) Material B is more waterproof than material A.
(4) Material B is more transparent than material A.

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2015
PRIMARY 4

SCIENCE

BOOKLET B

14 Open-ended questions (40 marks)

Total Time for Booklets A and B : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B		/40

Name: _____ ( ) **Class: P 4** _____

Date : 13 May 2015 **Parent's Signature:**_____

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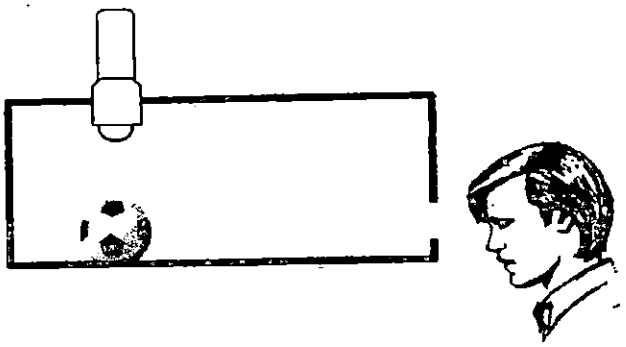
Section B: (40 marks)
Write your answers to questions 31 to 44.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. Jack made a box out of cardboard and painted it black all round. He then fixed a torchlight into it as shown in the diagram below.



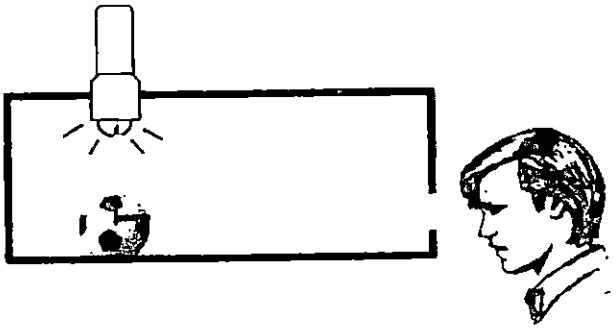
(a) Jack placed a ball in the box and peeked into a small hole made near the bottom of the box. He realized that he was unable to see anything inside. When he switched on the torchlight fixed to the box, he could clearly see the ball.

Explain why he was able to see the ball when he switched on the torchlight that was fixed to the box. [2]

_____

_____

(b) Draw the path of light in the diagram below to show how Jack was able to see the ball after he switched on the torchlight. [1]



Score	/ 3

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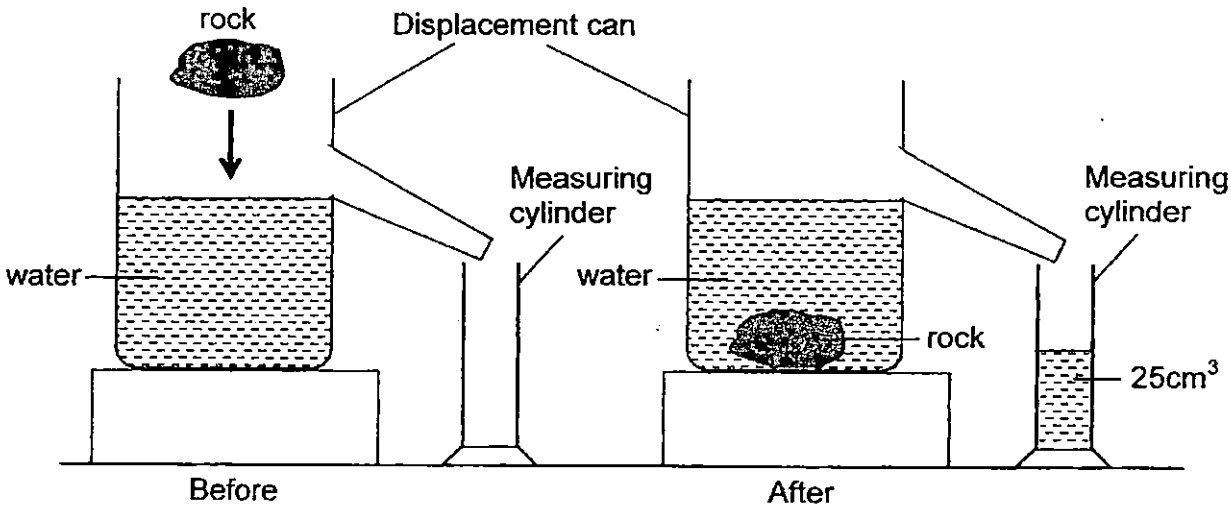
32. The diagram below shows a setup to find the volume of an irregular-shaped rock.



(a) What is the volume of the rock? [1]

_____

(b) What does the experiment show you about the property of water? [1]

_____

Score	/ 2

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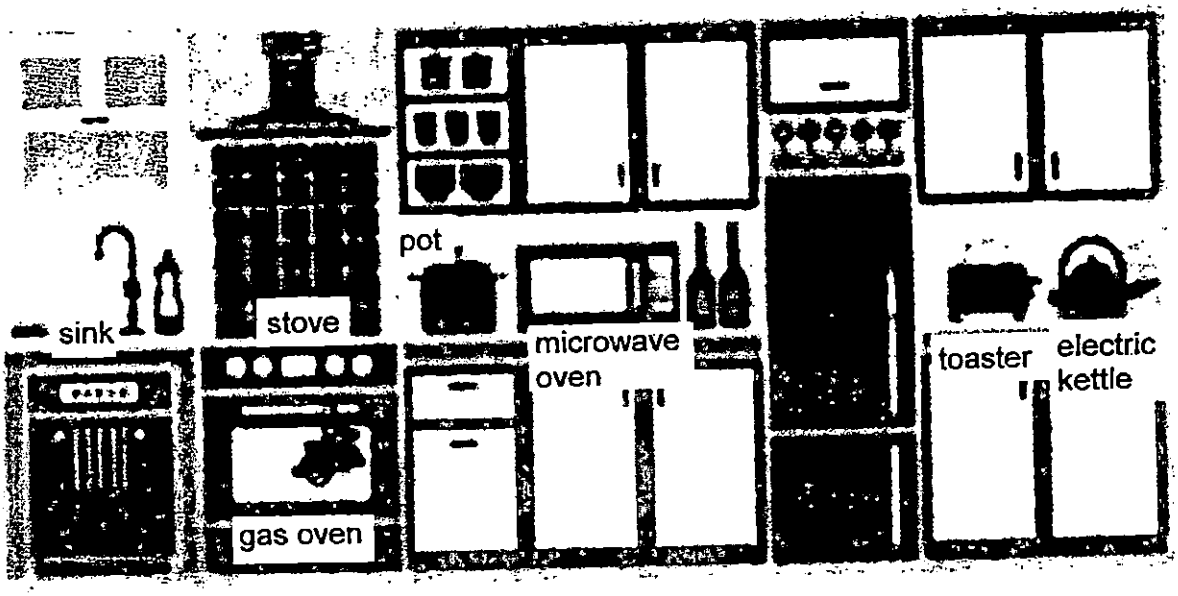
33. The diagram below shows a kitchen.



Study the diagram above carefully and answer the following questions.

(a) How many sources of heat are found in the kitchen above? [1]

_____

(b) Apart from the kitchen, name 2 other electrical appliances in the other rooms of the house that produce useful heat. [1]

_____

_____

Score	/ 2

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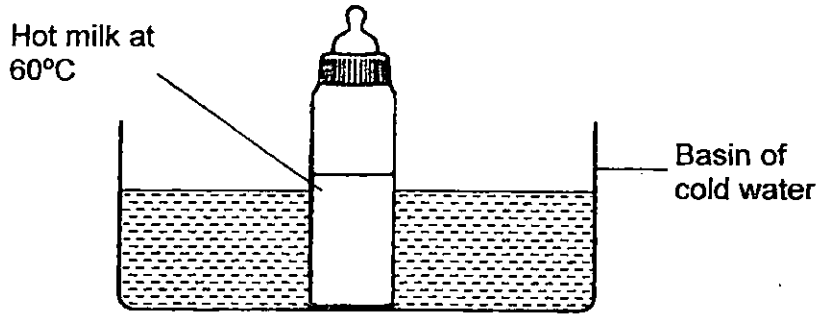
34. Mrs Tay made some milk for her baby but realised that it was too hot. She then put the milk bottle into a basin of cold water to cool it down.



(a) What will happen to the temperature of the milk?. [1]

_____

_____

(b) Explain what happened in part(a) above. [1]

_____

_____

Score	/ 2

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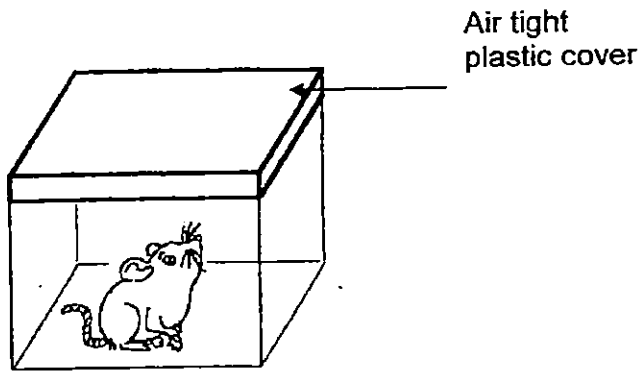
35. Joshua caught a mouse in his kitchen last night and placed it in an air-tight container as shown below.



(a) What will happen to the mouse the next morning? [1]

_____

(b) Give a reason for your answer in (a). [1]

_____

(c) Write (T) for 'True' or (F) for 'False'on the blanks provided. [2]

(i) All living things can make their own food. _____

(ii) Fish do not need air because they live in water. _____

(iii) Micro-organisms are very tiny living things. _____

(iv) Mammals feed their young with milk. _____

Score	/ 4

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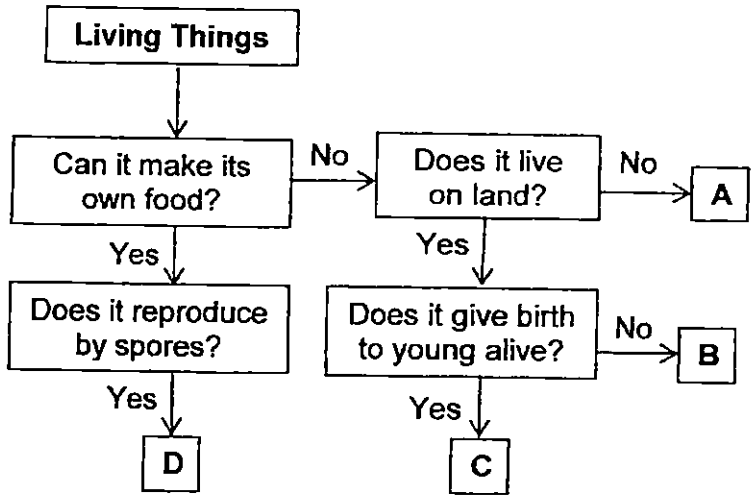
36. Study the flowchart below.



(a) Which letter represents a chicken? Explain your answer. [1]

_____

_____

(b) Based on the flowchart, state 2 similarities between B and C. [2]

_____

_____

_____

Score	/ 3

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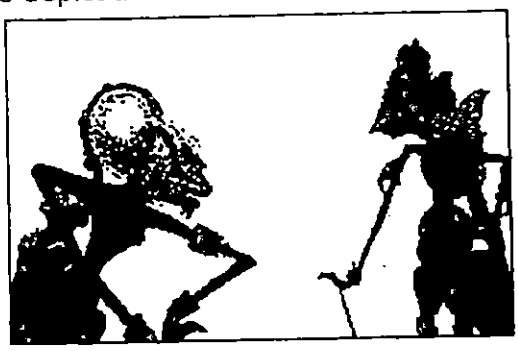
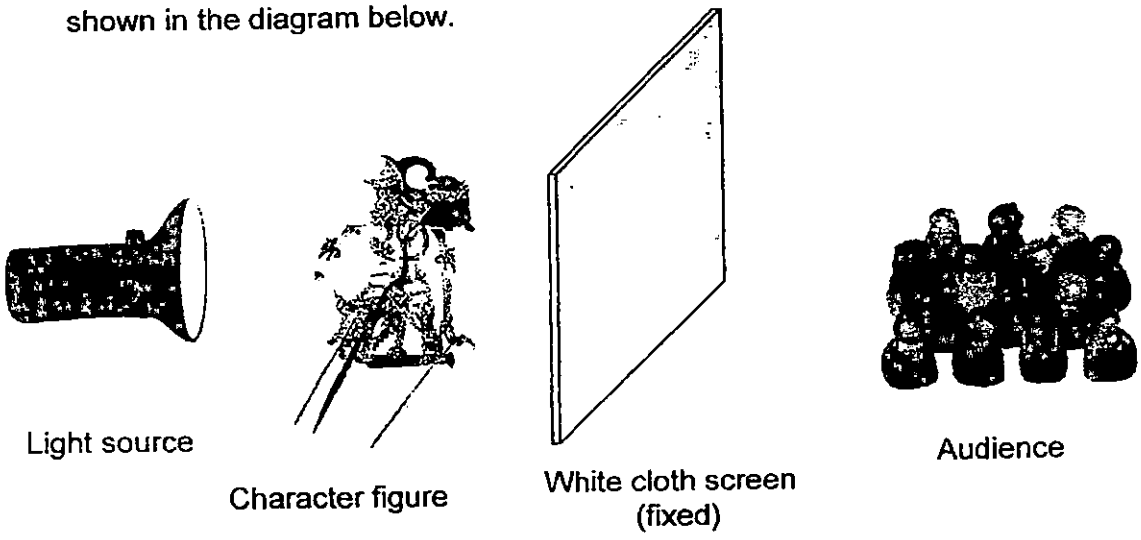
37. Brian's teacher took his class to watch a 'wayang kulit' performance which uses shadows to depict their characters.



They could not see the performers but only shadows of figures on the white cloth screen. The performers are on the other side of the cloth screen as shown in the diagram below.



(a) Brian went back to school and decided to put up a similar performance. Explain how the shadow of the figure was formed on the screen. [1]

_____

_____

(b) However, while practising, he discovered that the shadow of the figure on the white cloth screen were too light and blur.
Without moving the white screen, what should he do to make the shadow darker? [1]

_____

_____

Score	/ 2

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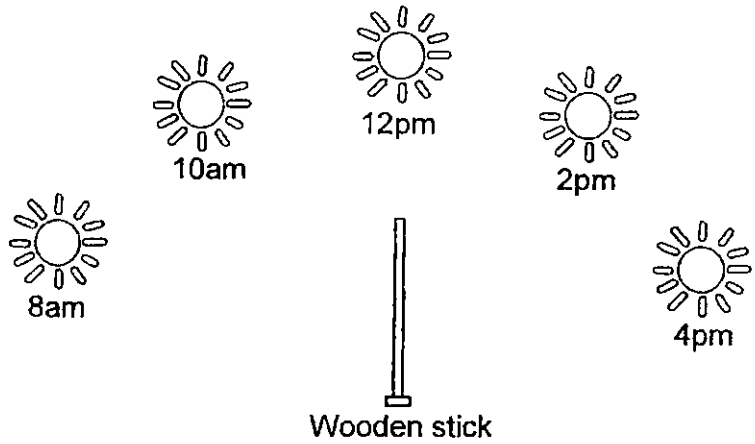
38. Shannon placed a wooden stick on the assembly ground as shown below.



She measured the length of the shadow at 8am, 10am, 12pm and 2pm, and recorded them in the table below.

Time	Length of Shadow
8am	12 cm
10am	8 cm
12pm	1 cm
2pm	8 cm
4pm	

(a) In the table above, Shannon had missed the time to measure the length of the shadow at 4pm.
Based on the information given, what do you think is the estimated length of the shadow at 4pm? Fill in the blank provided above. [1]

(b) For the experiment to be a fair test, identify the variables to change, to measure and to keep the same by putting a tick (✓) in the respective columns.[2]

Variables	Variable to change	Variable to measure	Variable to keep the same
Height of wooden stick			
Positon of wooden stick			
Height of shadow			
Time interval when height of shadow is recorded (i.e. every 2 hours)			

Score	/ 3

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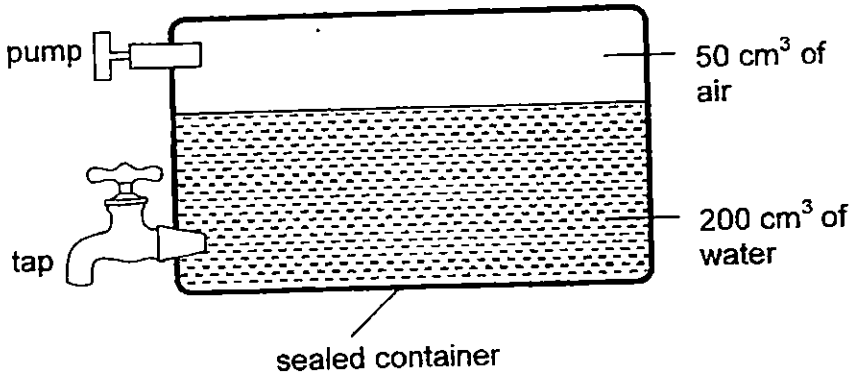
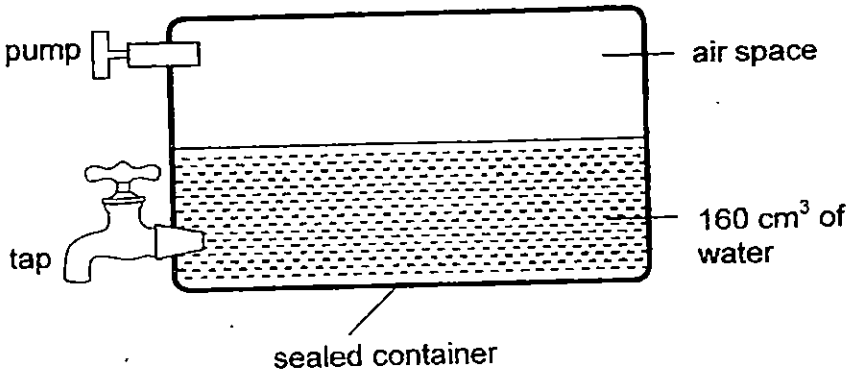
39. Amy conducted an experiment using the set-up as shown below.



She used the tap to remove 40 cm^3 of water.



She then pumped in 60cm^3 of air into the container.

(a) What is the final volume of air in the container? [1]

_____

(b) Name the properties of water and air that you used to obtain your answer in part (a). [2]

i) Air : _____

ii) Water : _____

Score	/ 3

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40. Guowei wanted to find out the states of three samples, P, Q and R He tested the samples according the table below. A tick (✓) means the behaviour was observed whereas a (×) means it was not.

Sample	Flows easily	Can be compressed
P	✓	×
Q	✓	✓
R	×	×

(a) From Guowei's findings above, his classmate identified sample P tø be a liquid. Explain how his friend was able to identify P to be a liquid. [2]

_____

_____

(b) From the observations made above, only one sample matches a substance in the table below. Fill in the blanks space to identify the sample that matches the substance. [1]

Substance	Sample P, Q or R
oxygen	
rubber	

Score	/ 3

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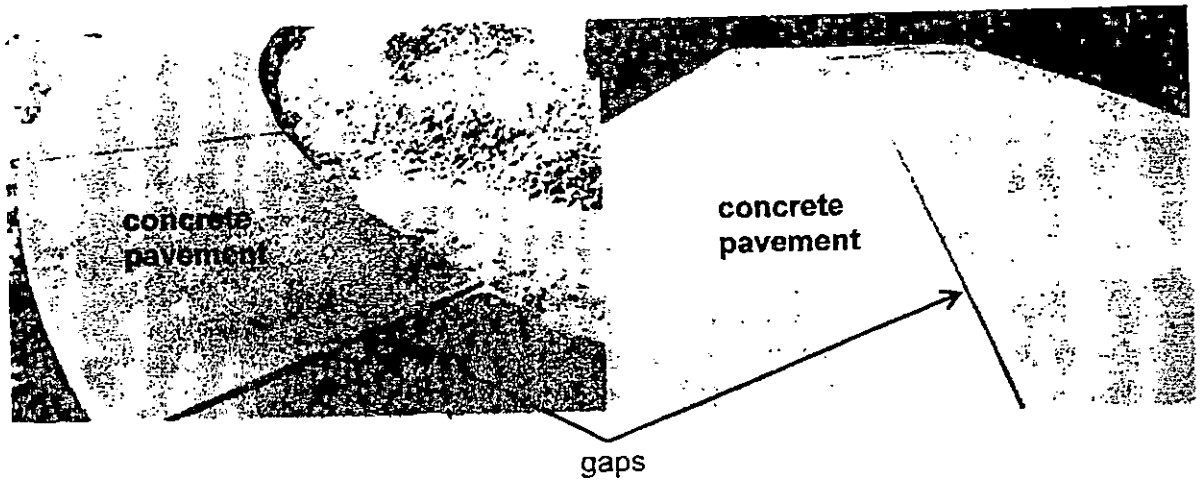
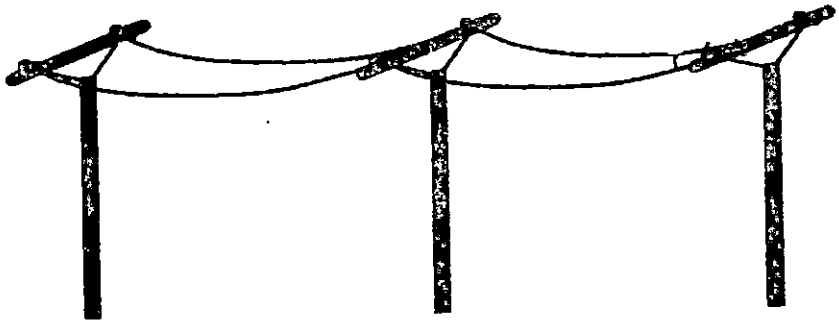
41. Study the picture of a concrete pavement below.



(a) These concrete pavements were purposely built with gaps in between. Why is this so?

_____

_____



Jason visited his uncle who lives in the countryside. One hot afternoon, he noticed that the electrical wires are hanging loosely downwards. He suggested to his uncle to tighten the wires but his uncle refused. His uncle warned that the wires might snap in the night if they are too tight.

(b) Do you agree with Jason's uncle? Explain why. [2]

_____

_____

_____

Score	/ 4

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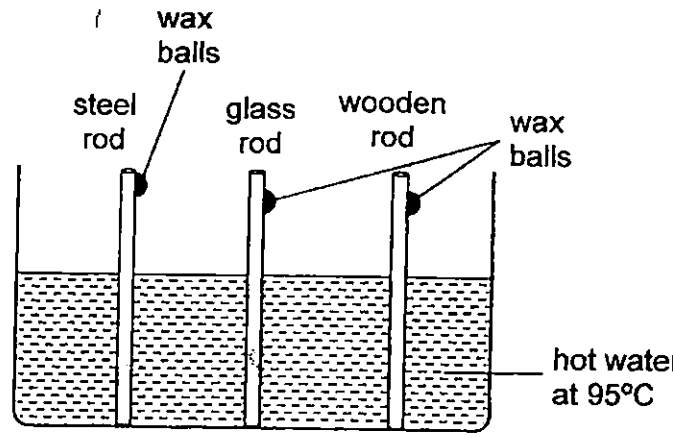
42. Henry set up an experiment as shown below.



He observed that the wax balls fell off one by one after some time.

(a) What variable should he measure if he wanted to find out which rod was the best conductor? [1]

_____

_____

(b) However, his experiment was not a fair one. Explain what was wrong with it. [1]

_____

_____

(c) Besides the temperature of the water, identify one other variable to keep the same to ensure a fair test in this experiment. [1]

_____

Score	/ 3

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43. The table below shows the characteristics of four animals W, X, Y and Z. Some of the information about the animals is missing.

Characteristic	W	X	Y	Z
Outer body covering	-	hair	-	feathers
Special	3 body parts	mothers produce milk for young	Breathes through gills	-
Movement	flies	swims	swims	runs
Reproduction	lays eggs	-	lays eggs	lays eggs

(a) Based on the information given in the table above, match the animals, W, X, Y and Z, to the correct animal group below. [2]

Fish	
Bird	
Insect	
Mammal	

(b) State one other characteristic of Animal W that is not stated in the classification table above. [1]

_____

_____

Score	/ 3

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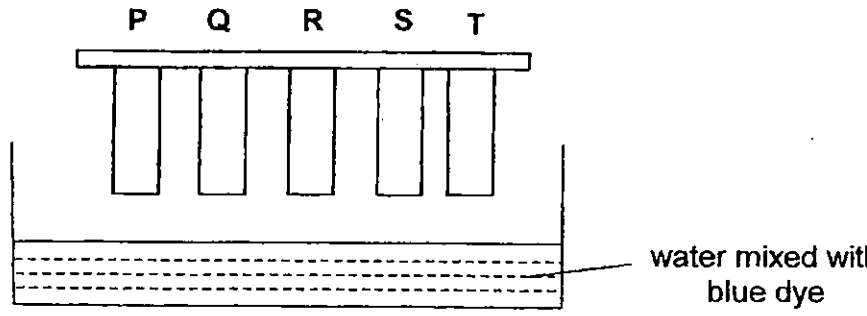
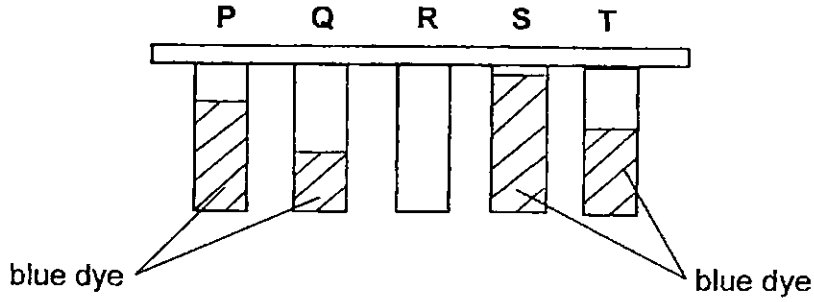
44. Samuel dipped 5 strips of different material into a beaker of water mixed with blue dye for 10 minutes, as shown in the diagram below.



After 10 minutes, the result of the investigation is shown in the diagram that follows.



(a) What can you conclude about material R and material S respectively, from the experiment above? [1]

_____

_____

_____

(b) Samuel wanted to make a raincoat from one of the materials listed above. Which material (P, Q, R, S or T) would be most suitable? Explain your answer. [2]

_____

_____

_____

End of paper

Score	/ 3

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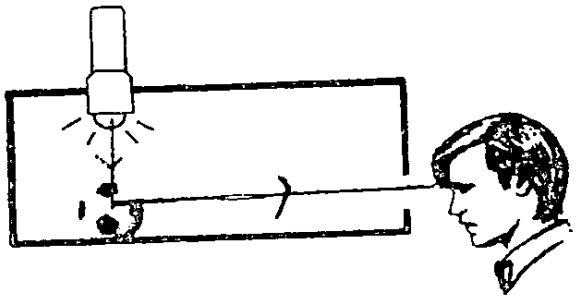
EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : NAN HUA PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
2	4	3	4	3	3	2	3	1	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
3	3	2	3	4	2	4	3	3	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	2	4	1	4	2	1	3	4	2

Q31a. The light from the torch is reflected off the ball and entered Jack's eyes.

Q31b. **SEE PICTURE** Q32a. 25cm² Q32b. Liquids have a definite volume.



Q33a. 5 sources of heat are found. Q33b. Water heater and hairdryer.

Q34a. The temperature of the milk will decrease.

Q34b. The hot milk loses heat to the cold water and the surroundings, hence it is less hot.

Q35a. The mouse would die. Q35b. It has no air.

Q35c. (i) F Q35c. (ii) F Q35c (iii) T Q35c (iv) T

Q36a. Letter B. It can makes its own food, lives on land and it does not give birth to its young alive.

Q36b. Both B and C do not make their own food and they live on land.

Q37a. The white cloth screen , which is opaque, does not allow any light to pass through. When light shines on the figure, a shadow is formed on the screen.

Q37b. He should use a brighter light source. Move to a darker place, make the character figure with a darker material, move the character figure with a darker material, move the character figure nearer to the screen, move the light source nearer to the character.

Q38a. 12cm

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Q38b. Height of wooden stick: Variable to keep the same
Q38b. Position of wooden stick : Variable to keep the same.
Q38b. Height of shadow : Variable to measure.
Q38b. Time interval when height of shadow is recorded (ie. Every 2hrs) : Variable to keep the same.

Q39a. $90cm^3$
Q39bi) Air : Air can be compressed Q39bii) Water: Water has a definite volume.

Q40a. A liquid has no definite shape, so it can flow easily. A liquid has a definite volume so it cannot be compressed.

Q40b. Oxygen : Q Q40b. rubber : R

Q41a. On a very hot day, the gaps provide space for the concrete to gain heat and expand, so it will not crack.

Q41b. I agree with him. On a cold day, the wires will lose heat to the cold surroundings, contract and decrease in volume, hence they will snap if they are taut.

Q42a. The times taken for each wax ball to fall off the rods.

Q42b. There should only be one changed variable which is the material of the rod but the position / height of the wax ball is not the same and it will affect the results of the experiment.

Q42c. The length of the rods.

Q43a. Y , Z , W, X

Q43b. It has a pair of feelers.

Q44a. Material R does not absorb water but material S absorbs the most water.

Q44b. Material R would be the most suitable as it is waterproof since a raincoat to protect the person wearing it from getting wet on rainy days.

THE END

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NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 1
2015

BOOKLET A

Date : 12 May 2015
Duration : 1 h 45 min

Name : _____

Class: Primary 4 ( )

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet A consists of 18 printed pages including this cover page.

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Section A (30 x 2 marks = 60 marks)

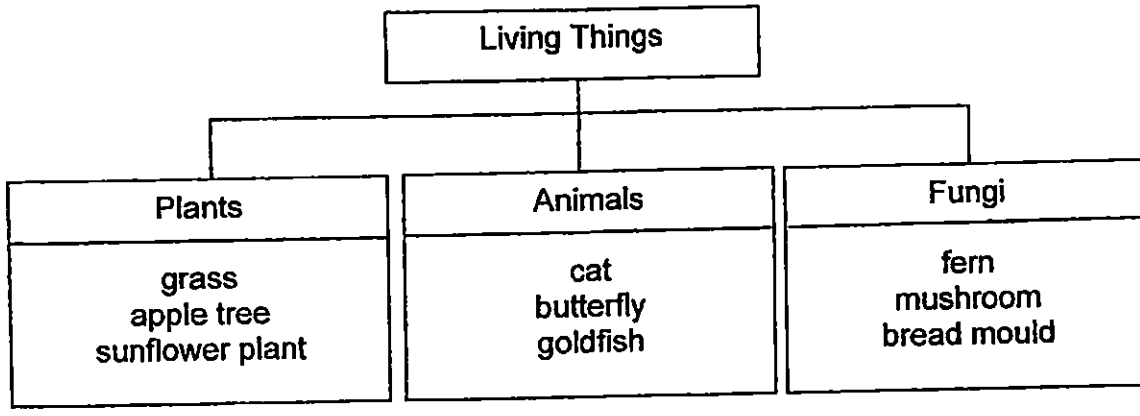
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. Which of the following examples **do not** show a living thing responding to changes in the environment?

   A A tree being chopped off.
   B A seedling growing towards sunlight.
   C A parrot flying towards its trainer to get food.
   D A balloon bursting when poked with a needle.

   (1) A and B only
   (2) A and D only
   (3) B and C only
   (4) C and D only

2. **Study** the classification chart below.



   Which group(s) has/have a living thing that was wrongly classified?

   (1) Fungi only
   (2) Plants only
   (3) Fungi and Animals only
   (4) Plants and Animals only

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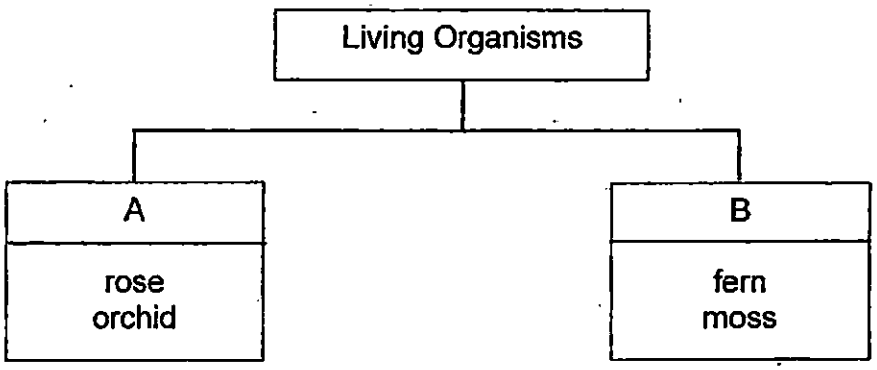
3. The table below shows four living organisms that had been classified into two groups.



Which one of the following is a suitable heading for group A and B?

	A	B
(1)	bear flowers	do not bear flowers
(2)	live in water only	live on land only
(3)	makes its own food	does not make its own food
(4)	reproduce from spores	reproduce from seeds

4. The table below shows the characteristics of four animals, W, X, Y and Z.

Animal	lays eggs	has feelers	has an outer covering of feathers
W	No	No	No
X	Yes	No	Yes
Y	Yes	Yes	No
Z	Yes	No	No

Which one of the animals could most likely represent a turtle?

1) W
2) X
3) Y
4) Z

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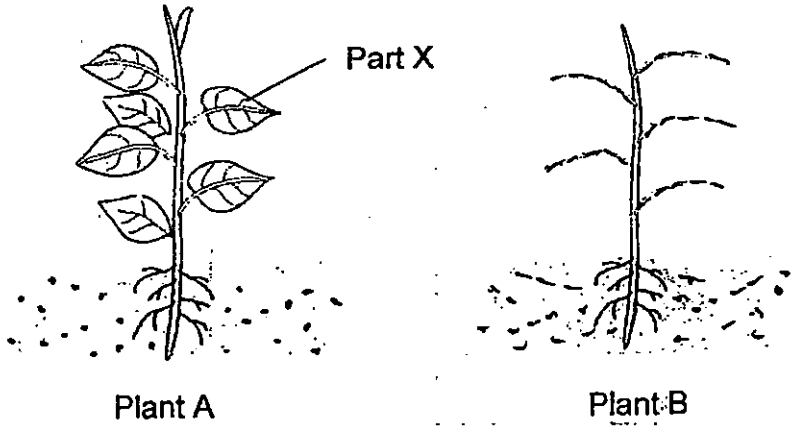
5. Study the table below.

Animals	
X	Y
parrot	seal
ostrich	giraffe
penguin	platypus

Which of the following could represent headings X and Y?

	X	Y
1)	can fly	cannot fly
2)	have four legs	have two legs
3)	have feathers	have hair
4)	give birth to young alive	lay eggs

6. Jenell carried out an experiment using 2 plants of the same type. At the start of her experiment, she removed part X of plant B. She then placed both plants under the sun outside her room.



Which of the following would she most likely observe in both plants after two weeks?

A Plant B withers and dies.
B Plant B will grow taller than plant A.
C Plant A will grow taller than plant B.
D Plant A will have new leaves growing.

(1) A only
(2) B and D only
(3) C and D only
(4) A, C and D only

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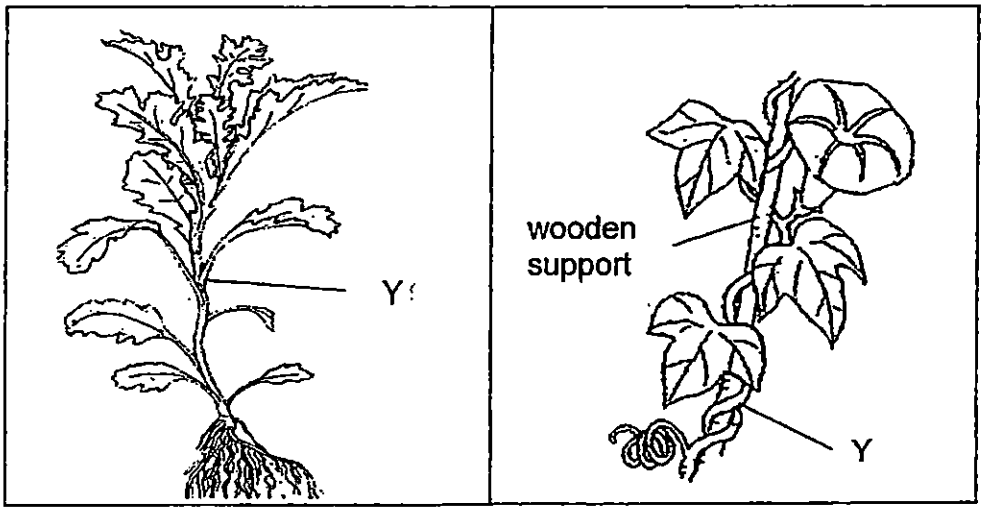
7. Study the two types of stems in the diagrams below.

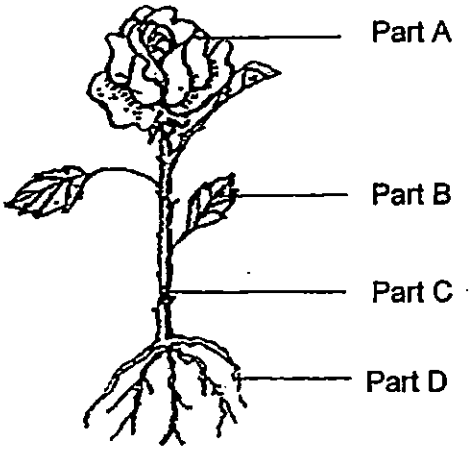


Plant E **Plant F**

Which one of the following shows a correct function for part Y of plants E and F?

(1) It produces fruits.
(2) It supports the plant.
(3) It absorbs water and minerals.
(4) It holds the plant firmly to the ground.

8. Study the diagram below.



Which one of the following statements about the labelled plant parts is **not true**?

(1) Part A can be found in all plants.
(2) Part B traps light energy from the sun.
(3) Part C holds the plant upright to get sunlight.
(4) Part D absorbs water and minerals from the soil

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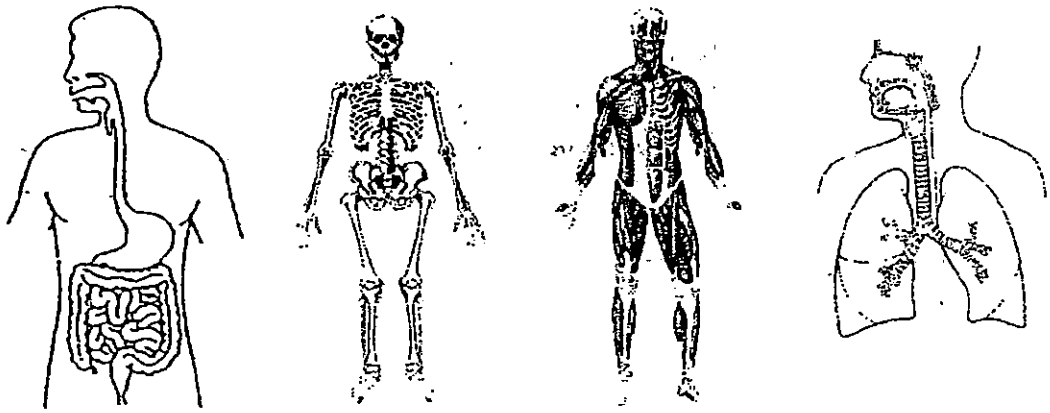
9. Which one of the following **does not** describe a human body system at work?

(1) A boy kicking a ball.
(2) A boy taking a deep breath.
(3) A girl's hair moving in the wind.
(4) A girl's heart beating faster as she jogs.

10. Look at the diagrams shown below.



A B C D

Which 2 systems above work directly together to enable us to stand upright?

(1) A and B
(2) A and D
(3) B and C
(4) C and D

11. Study the table below. Which one of the following sends digested food to different parts of the body?

	System	Part of System
(1)	digestive	water
(2)	respiratory	air
(3)	circulatory	blood
(4)	muscular	muscle

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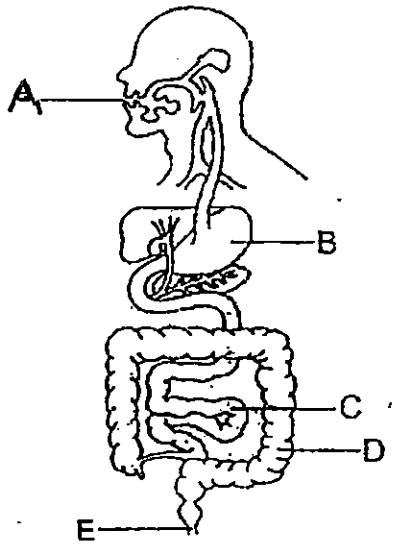
12. The diagram below shows the digestive system of the human body.



Which one of the following correctly identifies the body parts where digestion begins and ends?

	Digestion Begins	Digestion Ends
(1)	A	D
(2)	A	C
(3)	B	E
(4)	B	C

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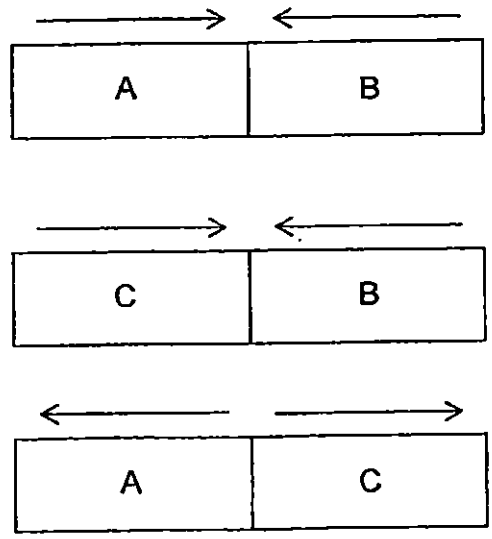
13. In the diagram below, the arrows represent the direction that the objects moved when they were placed near each other.



Which of the object(s) is/are definitely magnet(s)?

(1) A only
(2) B only
(3) A and C only
(4) B and C only

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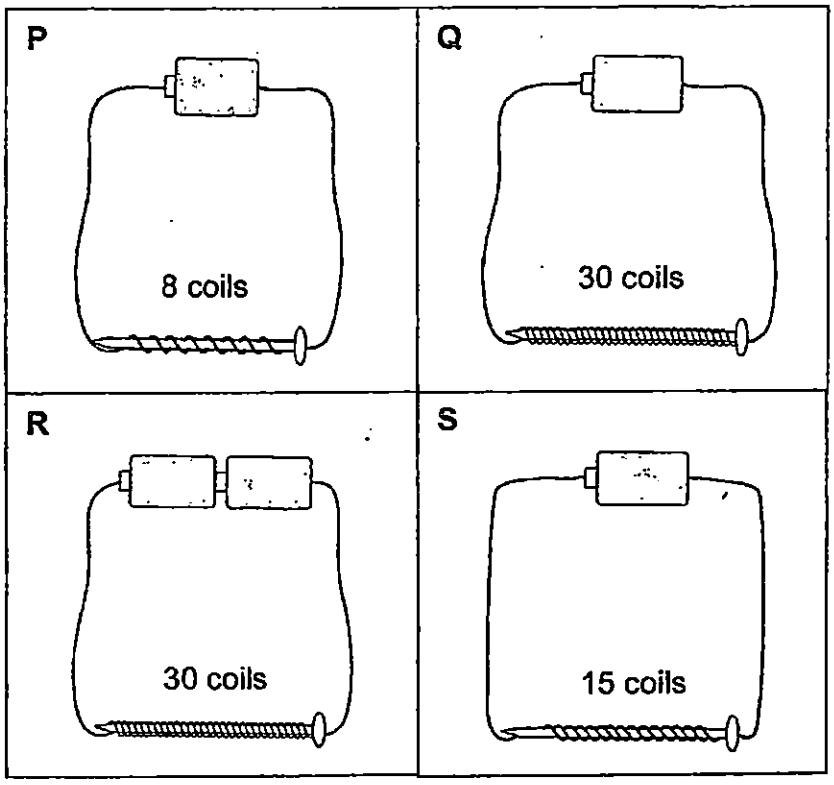
14. Study the four set-ups below. The same type of batteries, nail and wire had been used in each set-up.



Arrange the set-ups in order, starting from the strongest to the weakest electromagnet.

	strongest →			weakest
(1)	P,	S,	Q,	R
(2)	Q,	R,	S,	P
(3)	R,	Q,	P,	S
(4)	R,	Q,	S,	P

15. Which of the following are natural sources of light?

A Sun
B Stars
C Moon
D Firefly

(1) A and B only
(2) B and C only
(3) A, B and D only
(4) A, B, C and D

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16. Ali, Ben, Carlos and Diana entered a dark room together. They could not see anything until Ben turned on a torchlight. In the middle of the room, they could see a table. They then made the following statements.

Ali	We can see the table because the light from the torchlight was absorbed by the table.
Ben	We can see the table because the light from the torchlight was reflected from the table and into our eyes.
Carlos	The table cannot reflect light.
Diana	Our eyes are able to reflect the light from the torchlight to the table enabling us to see it.

Who had made the correct statement?

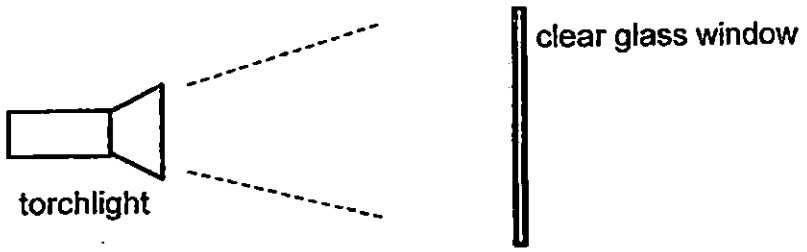
(1) Ben only
(2) Ali and Carlos only
(3) Carlos and Diana only
(4) Ali, Ben, and Diana only

17. Which of the following properties of light enables a shadow to be formed?

A Light can be blocked.
B Light travels in straight lines.
C Light is reflected from objects
D Light passes through some objects.

(1) A and B only
(2) A and C only
(3) B and D only
(4) C and D only

18. In a dark room, a torchlight was switched on and it was shone directly at a clear glass window.



Which one of the following states what happened to the light from the torchlight?

(1) Most of the light bends around the window.
(2) Most of the light is reflected by the window.
(3) Most of the light is absorbed by the window.
(4) Most of the light passes through the window.

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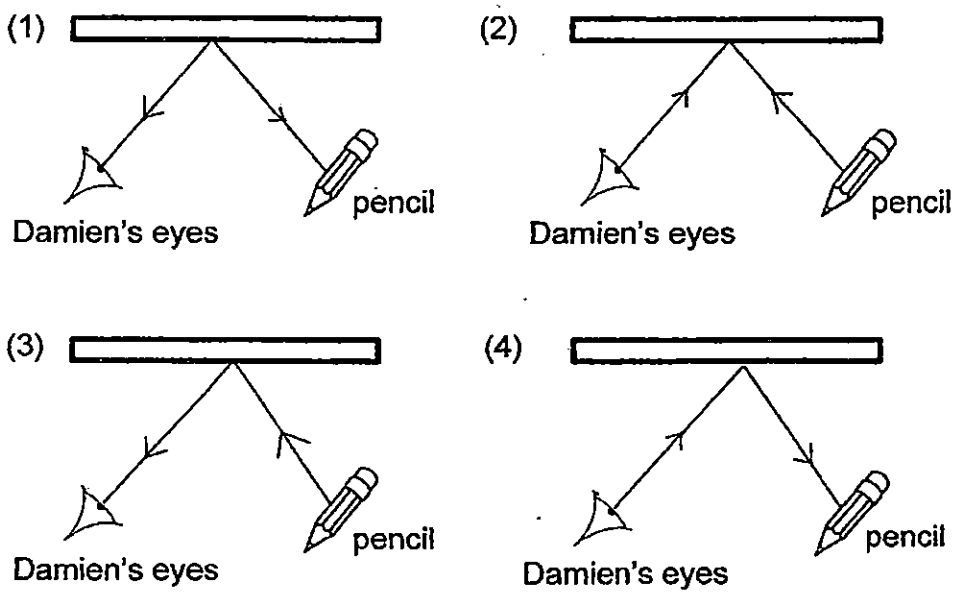
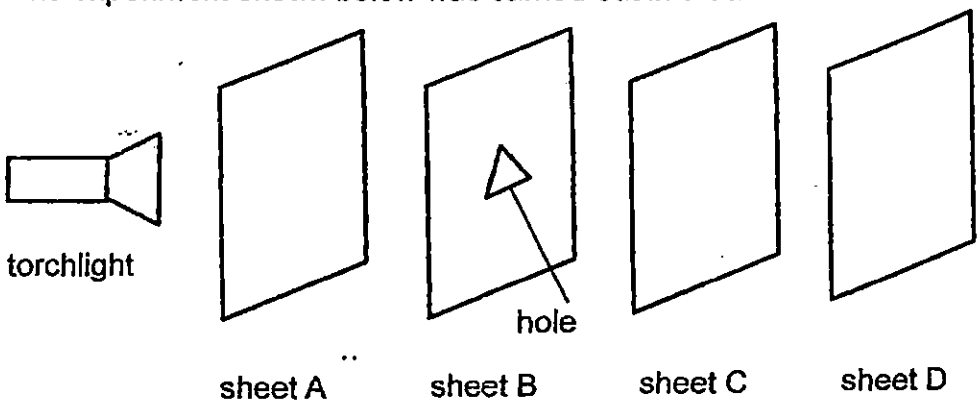
19. Damien looked into a mirror and saw the reflection of his pencil in it. Which diagram below shows the correct light ray that allowed the reflection to be seen?



20. The experiment shown below was carried out in a dark room.



Sheets A, B, C and D were made of different materials and were arranged in a straight line. The torchlight was switched on and a bright triangular shaped patch of light was seen on sheet C only.

Which one of the following correctly describes the properties of the materials which sheets A, B, C and D are most likely made of?

	Allows light to pass through	Does not allow light to pass through	Not possible to tell
(1)	C	B and D	A
(2)	B	A	C
(3)	A	B and C	D
(4)	A and B	C	D

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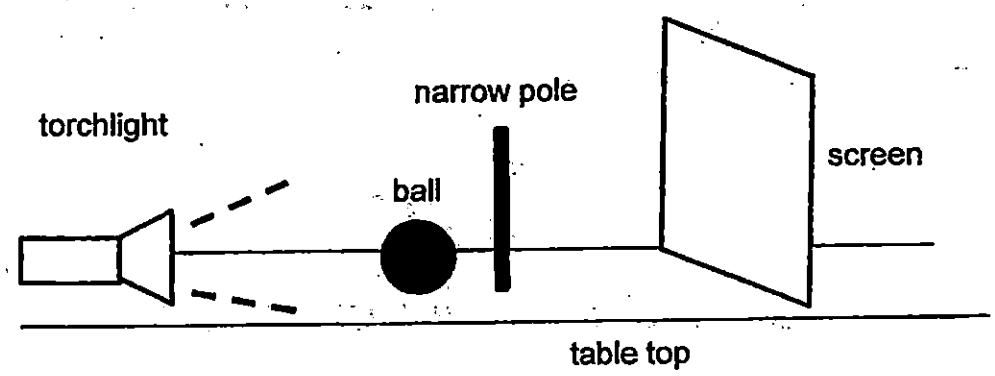
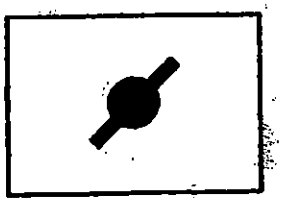
21. Study the diagram of an experiment below which was carried out in a dark room. A torchlight, a ball, a narrow pole and a screen were placed on a table in a straight line directly in front of each other. The torchlight was switched on and the direction of light was indicated below.

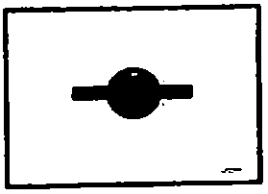


Which one of the following shadows could most likely be formed on the screen?

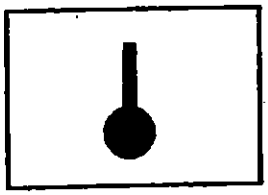
(1)



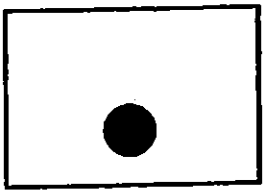
(2)



(3)



(4)



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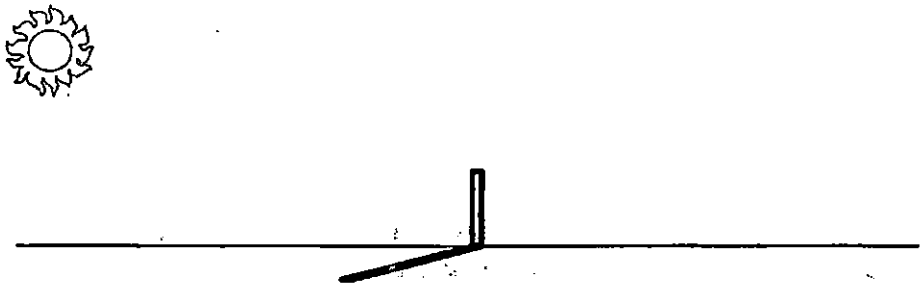
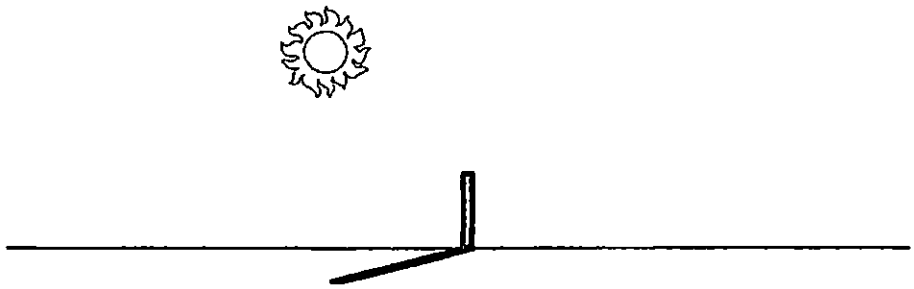
22. Rithi drew the shadow of a pole on the ground as shown below. Based on the position of the shadow, which one of the following diagrams correctly shows the most likely position of the Sun?

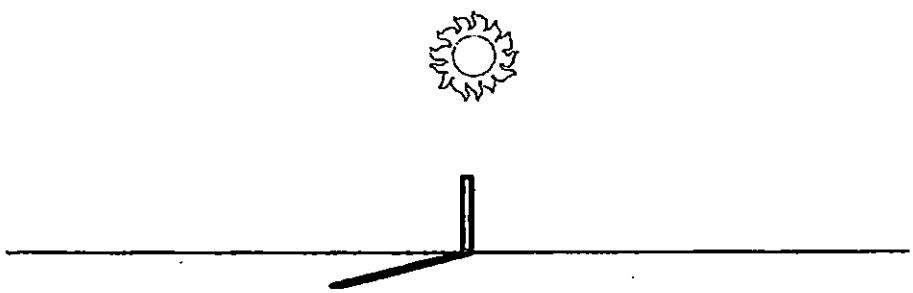
1)



2)



3)



4)

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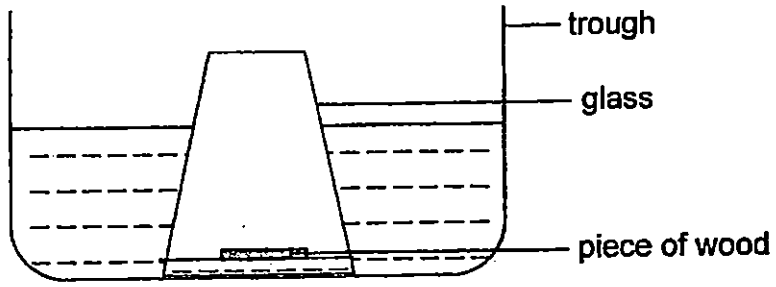
23. Which of the following can be classified as matter?

A air
B ant
C flower
D sunlight

(1) A and C only
(2) A, B and C only
(3) B, C and D only
(4) A, B, C and D

24. Jonathan lowered an empty glass with a piece of wood into a trough of water as shown below. He observed that the water level in the glass was lower than the water level outside the glass.



Which one of the following statements correctly explains Jonathan's observation?

(1) The air in the glass dissolved in the water.
(2) The piece of wood in the glass absorbed the water.
(3) The piece of wood in the glass occupied space and compressed the water
(4) The air in the glass occupied space and prevented more water from entering the glass.

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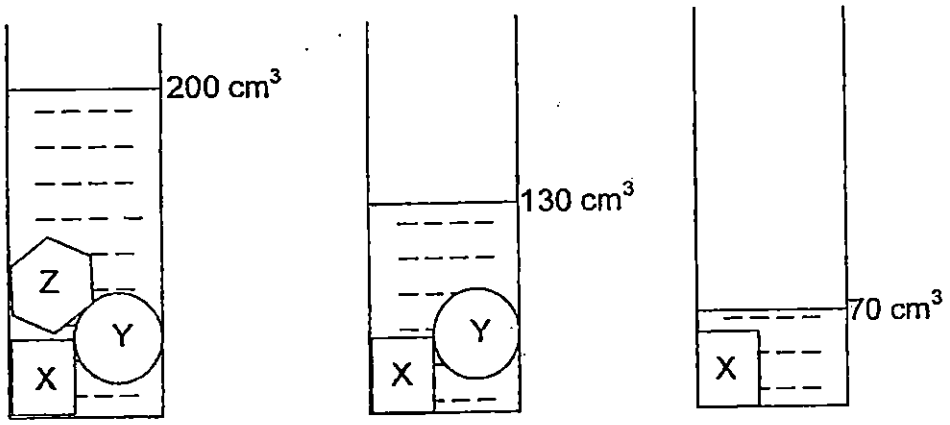
25. Sarah placed three objects, X, Y and Z, in a measuring cylinder and filled it with water to the 200 cm^3 mark.
She then removed the objects one by one, and recorded the water level in the measuring cylinder as shown below.

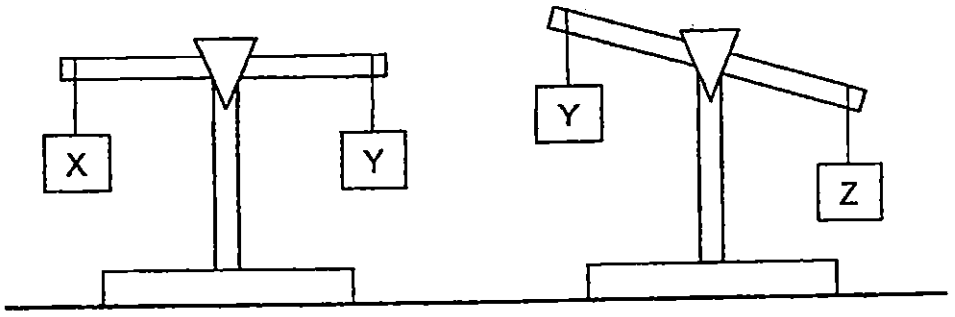


Based on the above, which of the following conclusions are **true**?

A Object X has a volume of 70 cm^3.
B Object Y has a volume of 60 cm^3.
C Object Z occupies the largest space.

(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

26. Three objects, X, Y and Z were hung on two lever balances as shown below.



Based on the set-ups, which one of the statements about objects X and Y is **false**?

(1) Object X has the least mass.
(2) Object Z has the greatest mass.
(3) Object X is lighter than object Z.
(4) Object Y weighs less than object Z.

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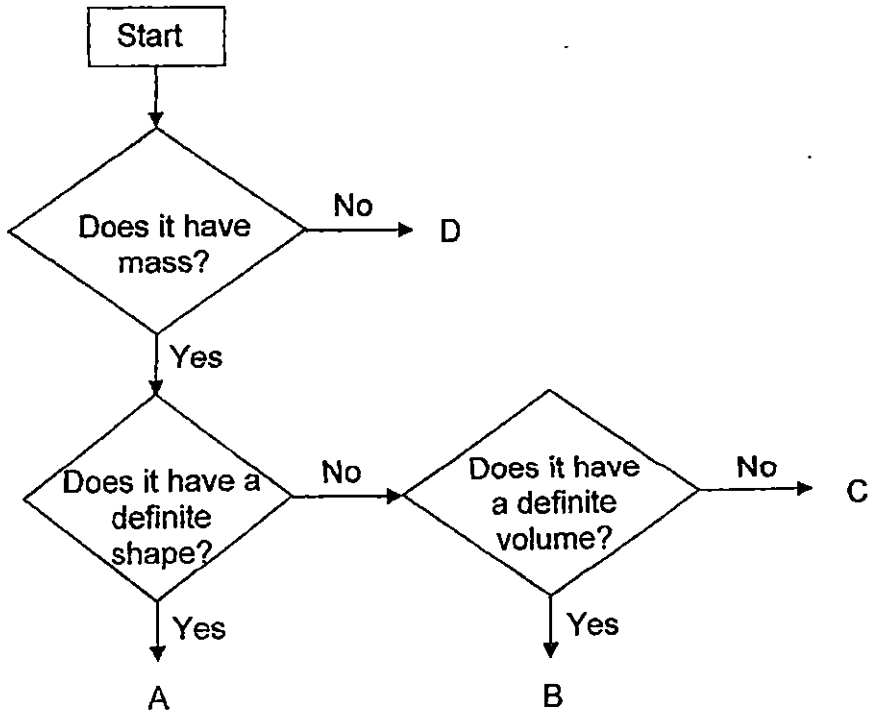
27. Study the flowchart below.



Based on the flowchart, which one of the following best represents A, B, C and D?

	A	B	C	D
(1)	marble	air	oil	shadow
(2)	oil	marble	shadow	air
(3)	shadow	air	marble	oil
(4)	marble	oil	air	shadow

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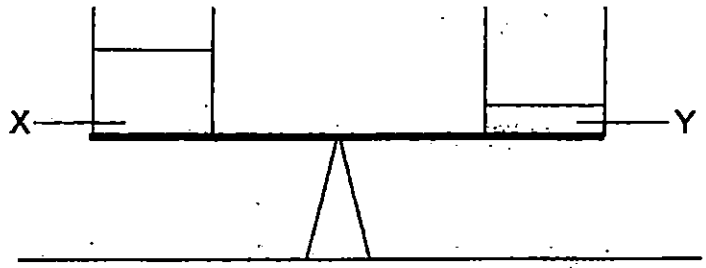
28. Two identical beakers containing different substances, X and Y, were placed on a lever balance as shown below.

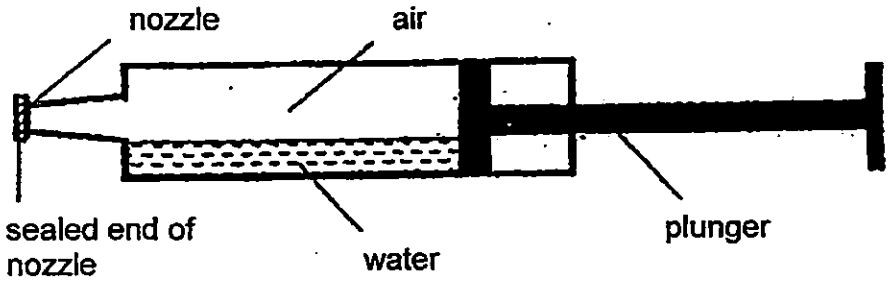


Based on the diagram above, which of the following conclusions can be made?

A Substance Y occupies a greater space than substance X.
B There is a greater volume of substance X than substance Y.
C The mass of substance X is equal to the mass of substance Y.
D The mass of substance X is heavier than the mass of substance Y.

(1) A and B only
(2) A and D only
(3) B and C only
(4) B, C and D only

29. A syringe is filled with some air and water. The nozzle is tightly sealed as shown in the diagram below.



Kai Yang pushed the plunger with all his strength but to his surprise, it could not be pushed in fully.

Which of the following could be the reason(s) for his observation?

A The air in the syringe occupied space.
B The air in the syringe could be compressed fully.
C The water in the syringe took the shape of the syringe.
D The water in the syringe occupied a definite amount of space.

(1) A and C only
(2) A and D only
(3) B and C only
(4) B and D only

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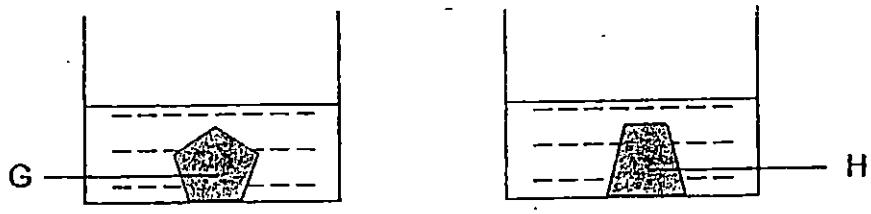
30. Wenhao filled two containers with equal amounts of water.
Then he placed objects G and H into a container each.
He observed that the new water level for the containers were the same as shown in the diagram below.



Which one of the statements about objects G and H is **true**?

(1) They have equal mass.
(2) They are buoyant in water.
(3) They have the same volume.
(4) They are made of the same material.

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NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 1
2015

BOOKLET B

Date : 12 May 2015

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 4 ( )

Marks Scored:

Booklet A:	60
Booklet B :	40
Total :	100

Any query on marks awarded should be raised by 21st May 2015. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature: ....

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet B consists of 16 printed pages including this cover page.

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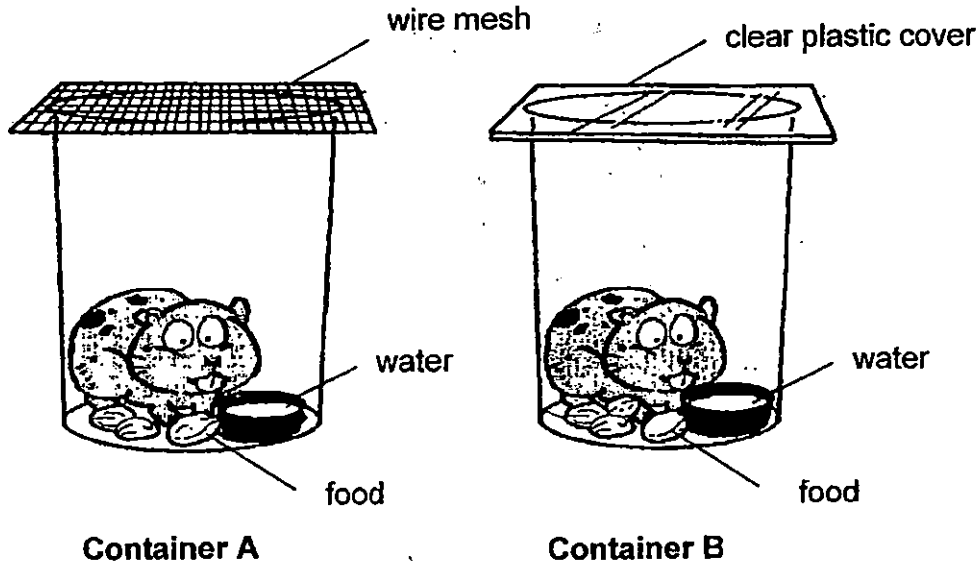
Section B (40 marks)
Write your answers to questions 31 to 44 in the spaces provided.

31. Erin bought two hamsters and kept them in two containers for two weeks as shown below.



(a) Based only on the information provided, which hamster will most likely not survive? [1]

_____

(b) Explain your answer in (a). [1]

_____

(c) Besides needing air, food and water, state one similarity in characteristic between a rose plant and the hamster. [1]

_____

_____

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32. Debbie was given an organism X. It had green leaves and reproduced by spores. She kept it in a dark closed cupboard for one week and watered it daily.

A week later, organism X died.

(a) Give a reason why organism X died after one week. [1]

_____

_____

(b) Would organism X be classified as a flowering plant? Give a reason for your answer. [1]

_____

_____

(c) Give an example of organism X based on its characteristics. [1]

_____

_____

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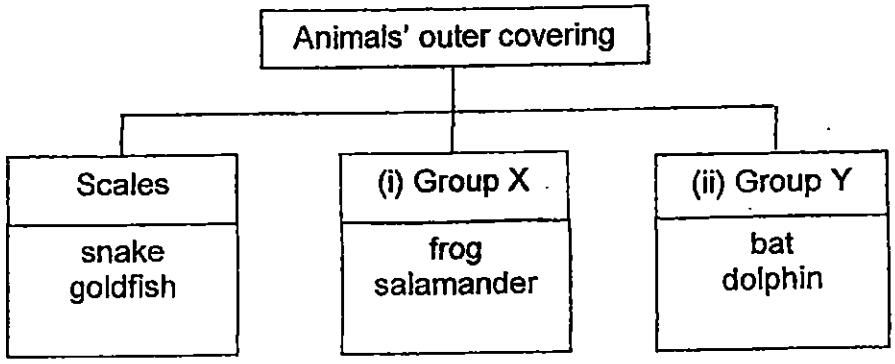
33. Study the classification chart below.



(a) State the outer covering of the animals in Group X and Y. [1]

(i) X:_____

(ii) Y:_____

(b) State one other difference in characteristic between the animals found in group X and Y. (Do not mention their outer covering) [1]

_____

_____

(c) Jacob could not include animal M into the classification chart above as it has a hard outer covering.

Which group of animals does animal M most likely belong to? [1]

_____

_____

(d) Based on its outer covering, state two other most likely characteristics of animal M. [1]

(i) _____

(ii) _____

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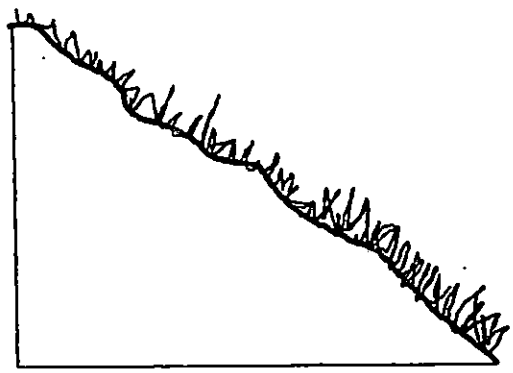
34. Li Ming placed a plant in a beaker containing 150ml of water. He recorded the amount of water left in the beaker each day.

Day	0	1	2	3	4
Amount of water left in the beaker (ml)	150	130	110	90	70

(a) Based on his results, how does the number of days affect the amount of water left in the beaker? [1]

(b) Why did the amount of water in the beaker get lesser and lesser each day? [1]

The diagram below shows some plants that were grown on a steep slope.



(c) Explain why some plants can be grown on steep slopes and they are not washed away during a heavy thunderstorm. [1]

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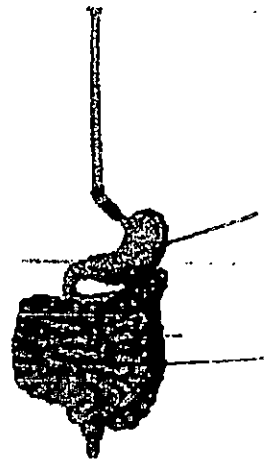
35. The diagram below shows the human digestive systems.



Human digestive system

(a) State the function of the digestive system. [1]

_____

_____

(b) On the diagram above, label two organs that produce digestive juices. [1]

The process of chewing helps us to cut up our food into smaller pieces before swallowing. However, the elderly often do not have many teeth. They are usually advised to eat soft, mushy food.

(c) How would eating such food **help them in digestion**? [1]

_____

_____

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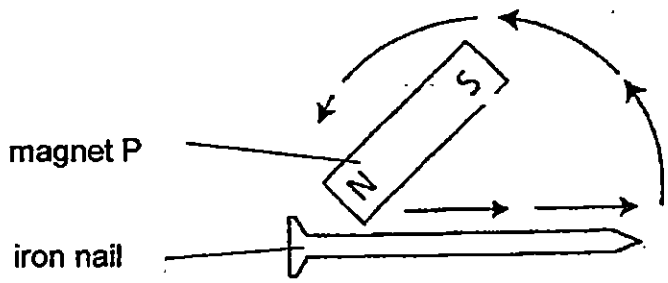
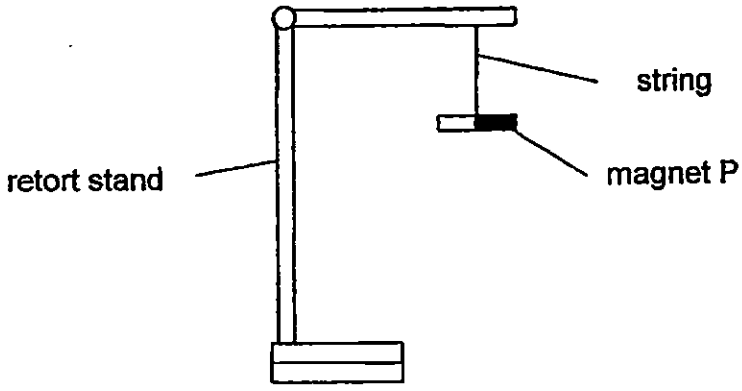
36. Sam made an iron nail into a temporary magnet using the stroking method. After that, he recorded the number of pins that the temporary magnet could pick up. Using the same magnet, he repeated the experiment with another identical iron nail.



	1st iron nail	2nd iron nail
Number of pins picked up	4	10

(a) What did Sam most likely do to the iron nail which enabled it to pick up **more** pins in the second experiment? [1]

Sam discovered two unidentified objects, S and T, in his drawer. He wants to find out if these objects are magnets. He used the set-up shown below.



(b) In which direction would the freely-suspended magnet P be pointing to? [1]

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He brought objects S and T close to magnet P. He observed that one end of object S repelled magnet P while the other end was attracted to the same pole of magnet P. Object T was attracted to both poles of the same magnet.

(c) i) What can he conclude about object S based on his observation? Explain your answer.

Object S: _____ [1]

Reason:

_____

_____

ii) Give an example of a material that object T could be made of. [1]

37. Read the following statements carefully. Write "T" (True) in the brackets for a correct statement and "F" (False) for an incorrect statement. [2]

(a) Light is a type of matter. ( )

(b) We can see without light. ( )

(c) Objects reflects light which enables us to see them. ( )

(d) Shadows are formed when light bends around objects. ( )

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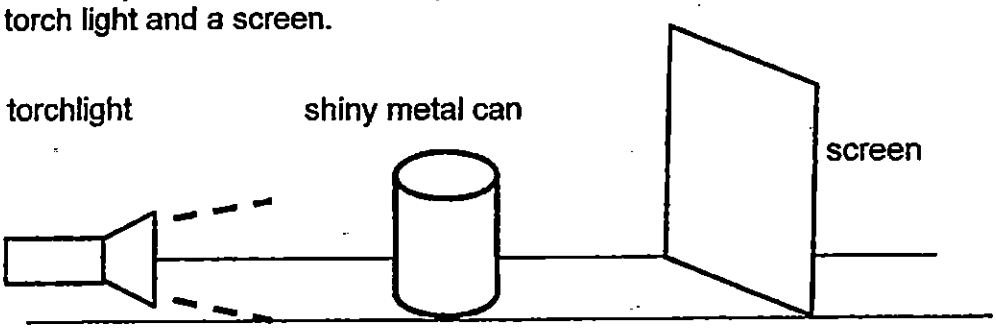
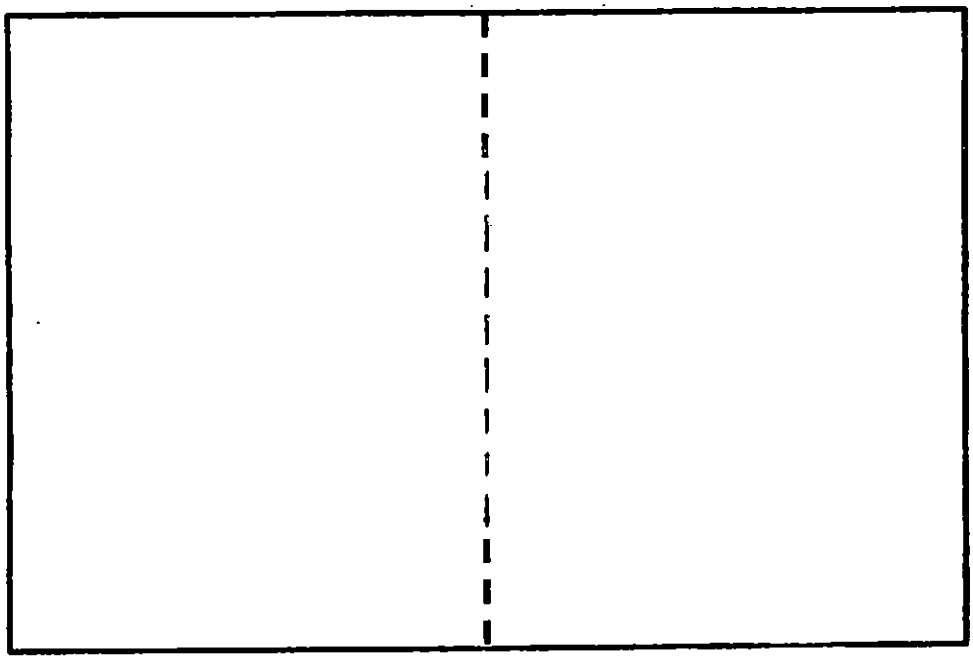
38. In the experiment below, a shiny metal can was placed on a table between a torch light and a screen.



In the space below, draw **2 possible shadows** which can be produced on the screen. (The can may be rotated to produce the shadows.) [2]



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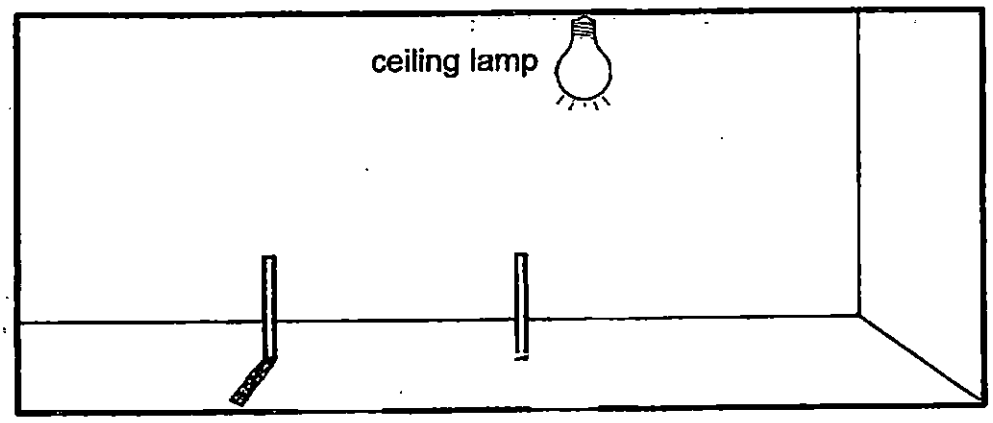
(a) Joseph stood in an open field during the day. He observed that his shadow was at different positions at different times of the day. Explain his observation. [1]

_____

_____

At night, Joseph placed 2 narrow poles in a room and observed the positions of their shadows. There was a lamp fixed to the ceiling above the pole as shown below.

(b) Draw the two shadows of the poles that can be observed. [1]



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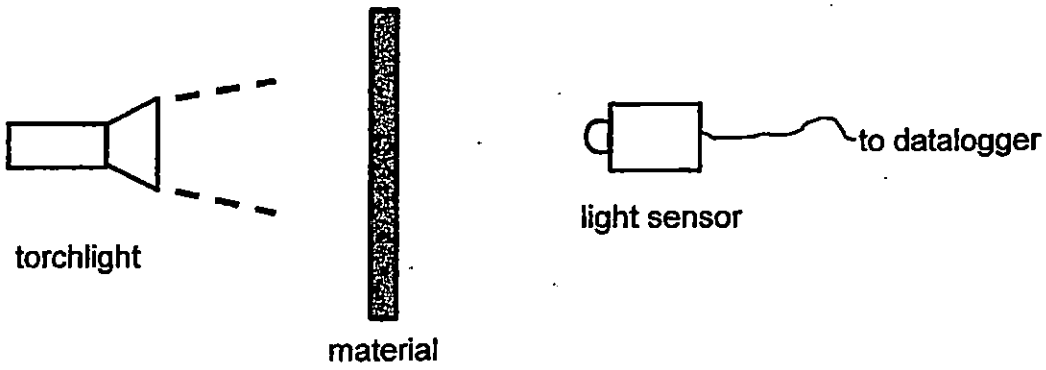
40. Alan conducted the experiment below in a dark room and used a light sensor to test the amount of light which passed through various materials.



The results of his experiment are shown in the table below.

Material	Light sensor reading
none	200
P	90
Q	180
R	0

Alan had used a clear glass sheet, a piece of writing paper and a ceramic tile in his experiment.

(a) Based on his results, match the materials he had used with materials P, Q, and R. [3]

a clear glass sheet : _____

a piece of writing paper : _____

a ceramic tile : _____

Alan noticed that his shadow was cast on the wall behind him when he stood in front of the torchlight.

(b) Without moving the torchlight, what could Alan do to make his shadow larger? [1]

_____

_____

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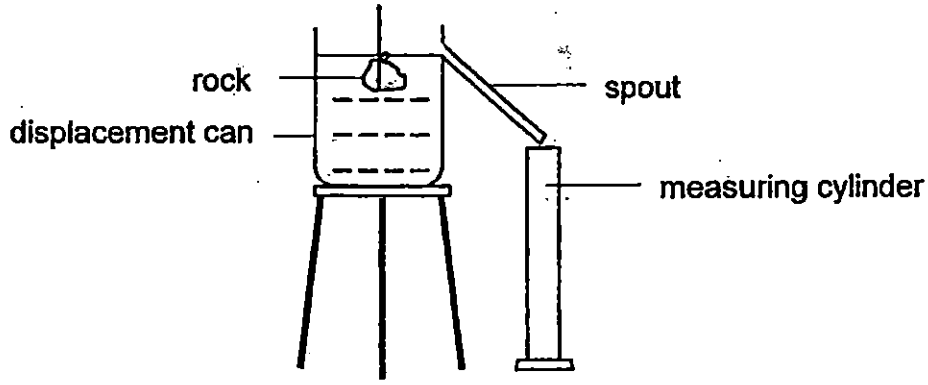
41. A displacement can, a measuring cylinder and some water can be used to find the volume of a rock.



(a) In the boxes below, write '1, 2, 3 or 4' to arrange the steps needed to find the volume of the rock. [1]

(i) Place your eye at the water level of the measuring cylinder to find the volume of the rock. ☐

(ii) Tie the rock to a string and lower it into the displacement can. ☐

(iii) Fill the displacement can with water until it starts to flow out from the spout. ☐

(iv) Place the measuring cylinder under the spout to contain the water flowing out from the spout. ☐

(b) What property of the rock is being used to find its volume using this method? [1]

_____

_____

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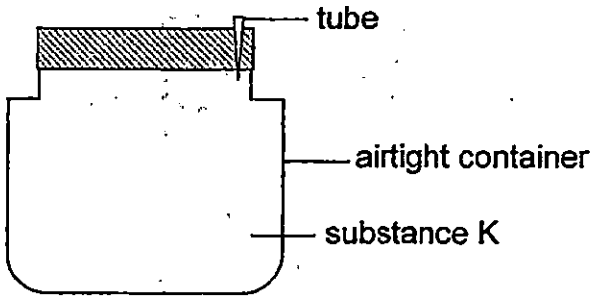
42. An airtight container with a capacity of 500 cm^3 was used to hold substance K.



The table below shows the mass and volume of substance K in the container as more of it was added into the container.

Mass (g)	20	22	24	26	28
Volume (cm^3)	500	500	500	500	500

(a) Which state is substance K found in during the experiment? [1]

_____

(b) Explain your answer to (a). [1]

_____

_____

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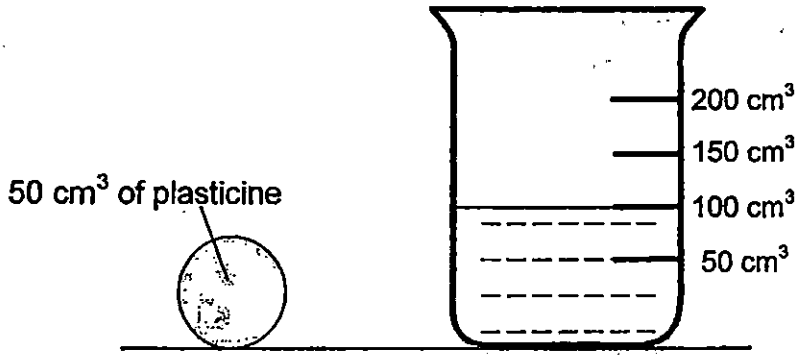
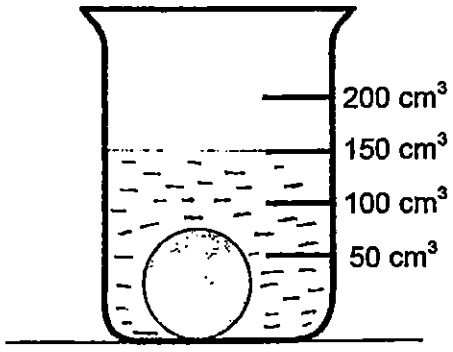
43. Haiwen was given 50 cm^3 of plasticine and 100 cm^3 of water in a beaker.



(a) In the diagram below, **draw in the water level** in the beaker when the plasticine was placed into the beaker of water. [1]



Haiwen flattened the 50 cm^3 of plasticine and placed it into the beaker of 100 cm^3 of water again.

(b) Will the water level be the same as what was drawn in (a)? Give a reason for your answer. [1]

_____

_____

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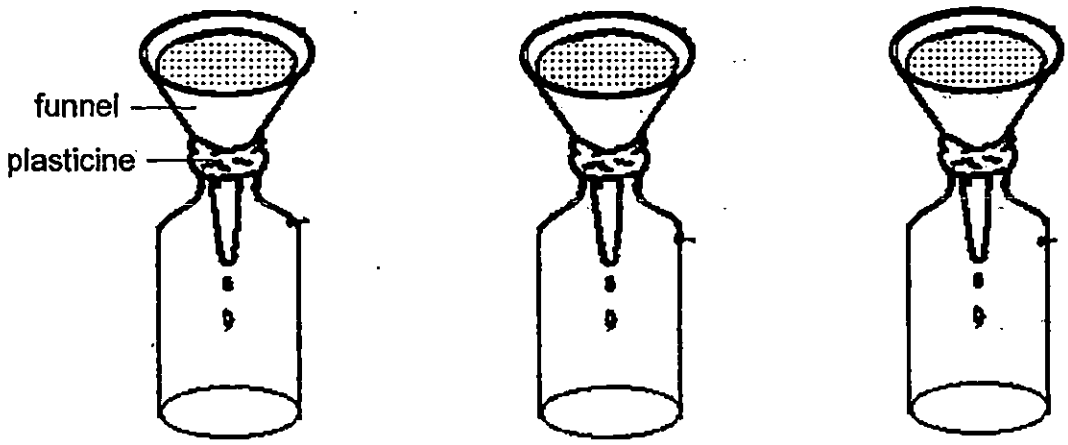
44. Sze Tong carried out an experiment to find out how the size of a hole made in a bottle affected the rate at which detergent could be poured into the bottle.

She took three identical bottles and fitted a funnel on each of them, sealing the parts together with plasticine. Then she made a hole of different sizes at the same position of each bottle, as shown in the diagram below.



Bottle P Bottle Q Bottle R

She poured 500 ml of detergent into the first funnel and recorded the time taken for the detergent to fill the bottle. She repeated this step with the other two bottles.

The results of her experiment are shown in the table below.

Bottle	P	Q	R
Size of hole made in bottle	small	medium	large
Time taken for the bottle to be filled with 500 ml of detergent (seconds)	89	40	15

(a) In which bottle did the detergent flow in the fastest? Explain your answer. [1]

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(b) Why did the size of the hole in the bottle affect the rate at which detergent flowed into the bottle? [2]

_____

_____

(c) Instead of making a bigger hole in bottle R, what can Sze Tong do so that the detergent can flow into the bottle faster? [1]

_____

_____

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : NANYANG PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	1	1	4	3	4	2	1	3	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	2	3	4	3	1	1	4	3	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	4	2	4	3	1	4	3	2	3

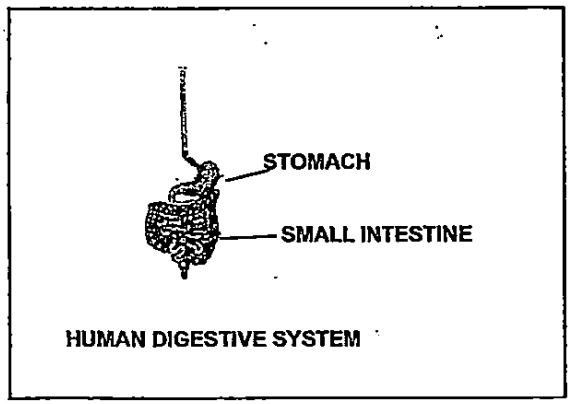
Q31a. The hamster in container B.
Q31b. The hamster needs air to live. The plastic container prevents air from entering the container, so it dies after a week.
Q31c. They both reproduce.

Q32a. It did not receive sunlight and could not make food.
Q32b. No, it reproduced by spores. Flowering plant reproduce by seeds.
Q32c. Bird's nest fern.

Q33a. i) Moist skin ii) Y: Hair
Q33b. The animals in group X reproduce by laying eggs while the animals in group Y reproduce by giving birth to young alive.
Q33c. Insects
Q33di) Animals M has 6 legs. Ii) Animal M most likely is cold- blooded

Q34.a. As the number of days increases, the amount of water left in the beaker decreases.
Q34b. The plant has roots and the roots absorb water for the plant.
Q34c. The roots of those plants are very strong so it could hold the plant firmly to the ground.

Q35a. The function of the digestive system is to break down food into simpler substances and absorb nutrients for the body to use.
Q35b. SEE PICTURE



Q35c. It allows the food to move down the gullet easily.

Q36a. Sam had most likely stroked the iron nail more times in one direction.
Q36b. It would be pointing to the north –south direction.
Q36ci) Object S is a magnet. ii) All magnets will either attract or repel and object S attracted and repelled to magnet P.

Q37a) F b)F c) T d) F

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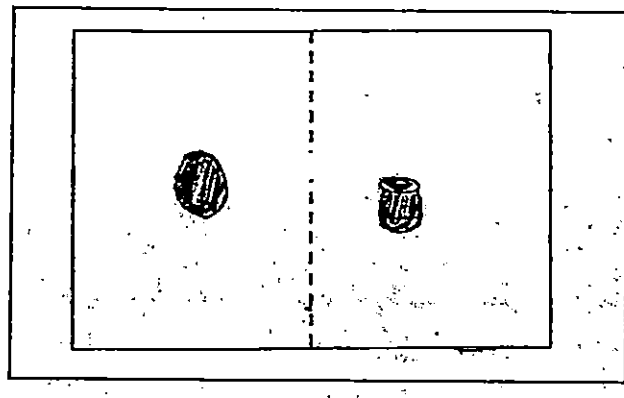
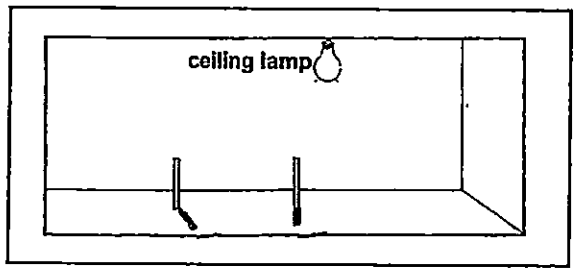
Q38. SEE PICTURE



Q39a. The sun before 12 noon is not right above so the shadow formed would not be very Short. At 12 noon, the sun is directly on top so the shadow formed would be very short.
Q39b. SEE PICTURE

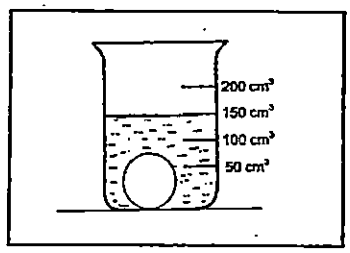


Q40.a. Q , P , R
Q40b. Alan could move closer towards the torchlight.

Q41a. i)4, ii)3, iii)1,iv) 2
Q41b. The rock occupies space.

Q42a. Gas.
Q42b. Gas can be compressed.

Q43a. SEE PICTURE



Q43b. Yes. The plasticine's volume would not change as plasticine is a solid and all solids have a definite volume.

Q44a. Bottle R. It took the shortest time to fill.
Q44b. When the size of the hole is larger, air could escape from the bottle faster. This will allow the detergent to flow in faster to occupy their space left behind.
Q44c. Sze Tong can remove the plasticine.

THE END

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PEI HWA PRESBYTERIAN PRIMARY SCHOOL

SEMESTRAL ASSESSMENT 1

PRIMARY 4

SCIENCE

(BOOKLET A)

15 MAY 2015

Name: _____

Class: 4 Teamwork _____

Total time for Booklets A and B: 1 h 30 mins

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

This booklet consists of 17 printed pages, excluding the cover page.

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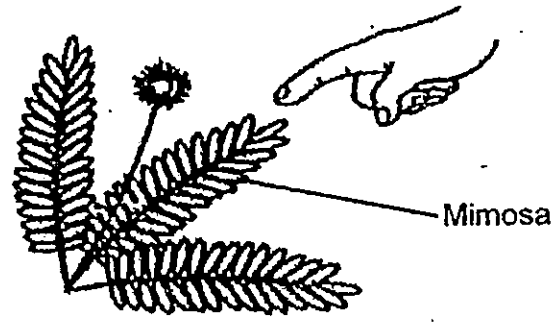
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice and shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

(60 marks)

1 A mimosa closes up its leaves when it is touched.



The mimosa plant is a living thing because it can _____.

(1) grow
(2) breathe
(3) respond
(4) reproduce

2 The table below shows some characteristics of 3 objects U, V, and W. A tick (√) shows that the object has the characteristic and a cross (X) shows that the object does not have the characteristic.

Objects	Grows	Reproduces	Moves on its own
U	√	√	X
V	√	√	√
W	X	X	X

Which statement below best describes the objects in the table above?

(1) Object V is the only living thing.
(2) Object U and W are living things.
(3) Object V and W are non-living things
(4) Object W is the only non-living thing.

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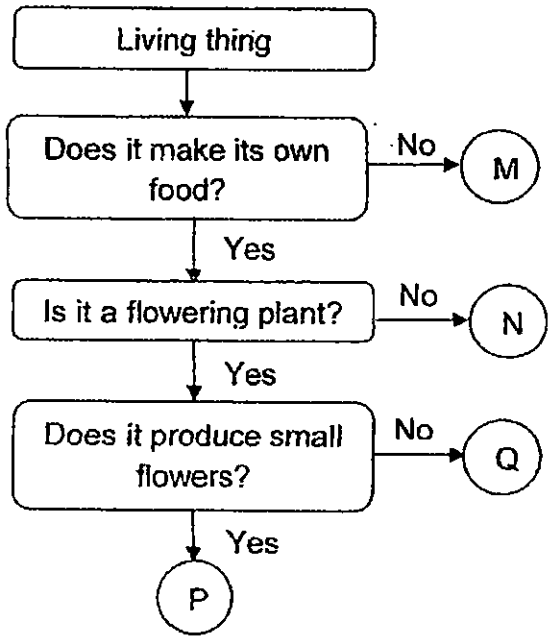
3 Which of the following characteristics do mammals have in common?

A They can fly.
B They have a pair of legs.
C They give birth to live young.
D They feed their young with milk.

(1) C and D only
(2) ~~B and~~ D only
(3) A, B and C only
(4) A, B, C and D

4 Study the flowchart below.



Where could moss be placed in the flowchart above?

(1) M
(2) N
(3) Q
(4) P

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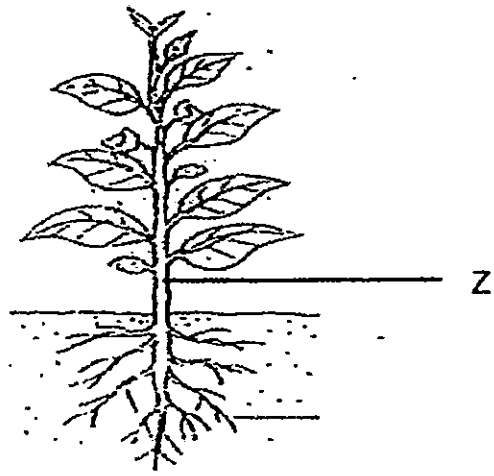
5 The picture below shows a plant.

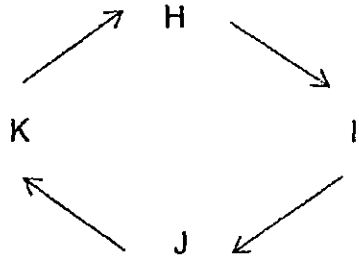


Based on the plant above, what are the main functions of Z?

A Hold the plant upright.
B Makes food for the plant.
C Anchor the plant firmly to the ground.
D Transport food from leaves to all parts of the plant.

(1) A and C only
(2) B and C only
(3) A and D only
(4) A, B and D only

6 Study the lifecycle of an animal below. Each letter represents a stage.



If H represents the pupa stage, what stage does J represent?

(1) Egg
(2) Adult
(3) Larva
(4) Nymph

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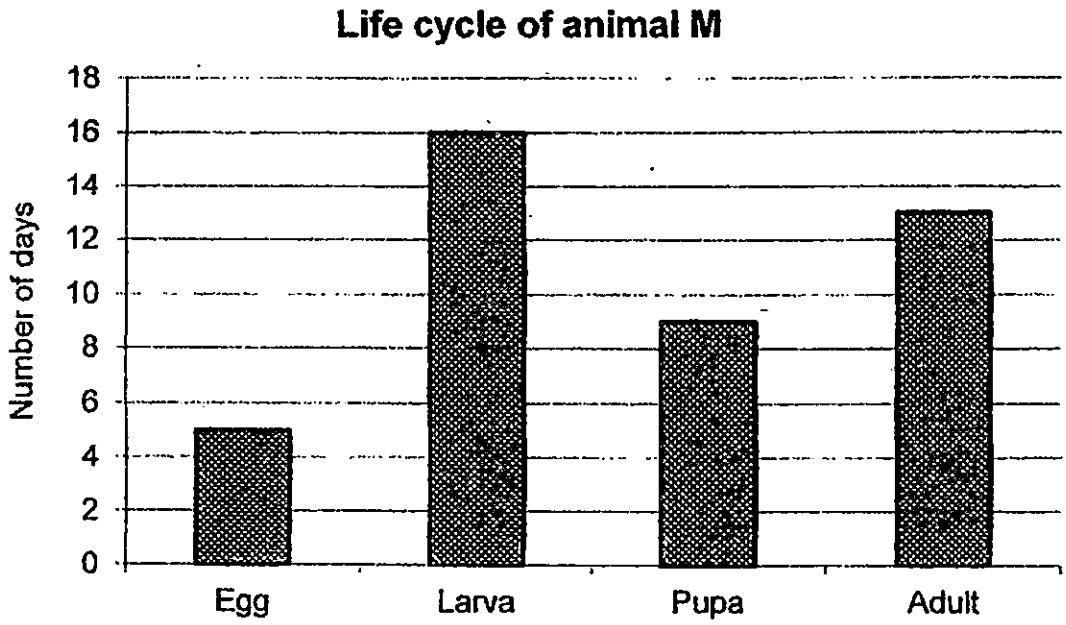
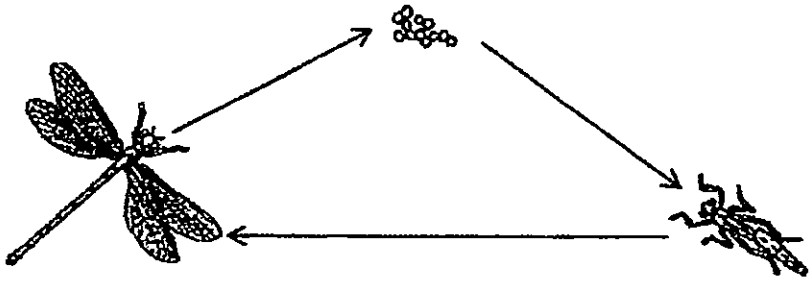
7 The graph below shows the life cycle of animal M over a period of time.



How long did it take for the animal to become a pupa after the egg was laid?

(1) 5
(2) 9
(3) 16
(4) 21

8 The diagram below shows the lifecycle of an insect.



Which of the following animals has a *life cycle similar* to the *life cycle* above?

(1) Ladybird
(2) Butterfly
(3) Grasshopper
(4) Mealworm Beetle

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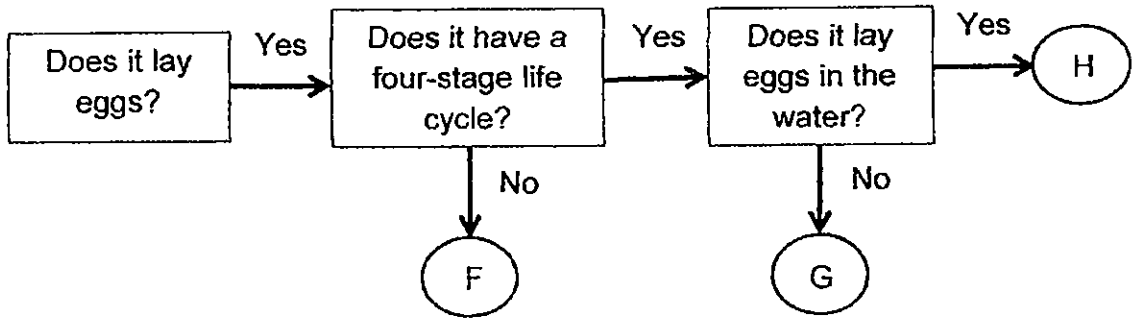
9 Four children made statements on the lifecycles of a cockroach and a human as shown below.

Peter	The nymph of the cockroach and the young of a human resemble the adult.
Xiao Wei	The cockroach nymph undergoes moulting but the human does not.
Gita	Both have an egg stage in its life cycle.
Siti	Both life cycles consists of three stages.

Which child/children made a correct statement on the life cycles?

(1) Gita only
(2) Gita and Siti only
(3) Gita, Siti and Xiao Wei only
(4) Gita, Siti, Xiao Wei and Peter

10 Study the flowchart below.



	Animal F	Animal G	Animal H
(1)	Grasshopper	Mealworm Beetle	Human
(2)	Chicken	Mosquito	Butterfly
(3)	Ladybird	Grasshopper	Human
(4)	Chicken	Butterfly	Mosquito

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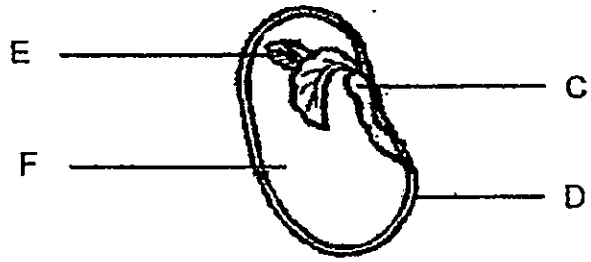
11 The diagram below shows a seed with the parts C, D, E and F labelled.



Which part of the seed provides the seed with the source of food?

(1) C
(2) D
(3) E
(4) F

12 Study the different stages of a plant shown below carefully.

Stage G

Stage F

Which of the following statements is/are true of the plant in both the stages shown above?

A Only stage G requires warmth to grow.
B Both needs to trap sunlight to make food.
C Both take in water and mineral salts through the roots.

(1) C only
(2) A and C only
(3) B and C only
(4) A, B and C

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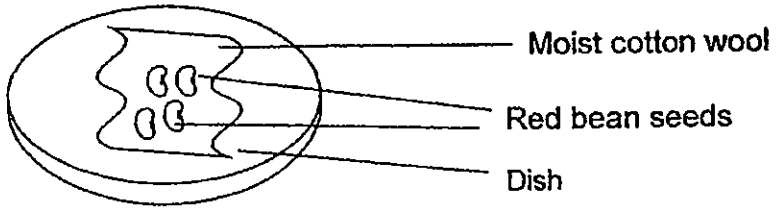
13 Clark wanted to find out if light is required for seeds to germinate into a young plant. He needed 2 set-ups. He prepared the first set-up as shown below and placed it near a window.



Which of the following should Clark use as the second set-up to conduct a fair experiment?

	Number of seeds	Type of seeds	Cotton wool	Location dish placed
(1)	5	Green bean	Moist	In a freezer
(2)	4	Red bean	Dry	On an open field
(3)	4	Red bean	Moist	In a black box
(4)	4	Green bean	Dry	Near a window

14 Toadstools are not plants because they _____.

(1) are not green
(2) reproduce by spores
(3) feed only on living things
(4) cannot make their own food

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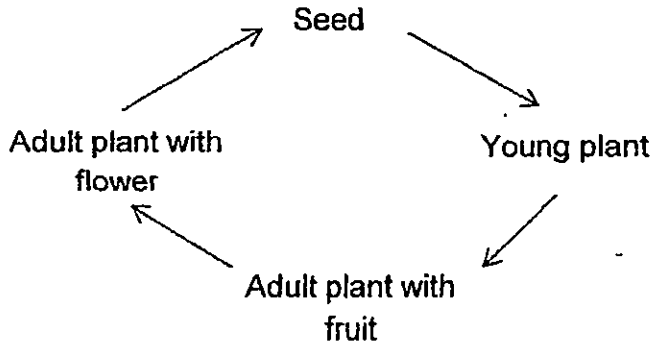
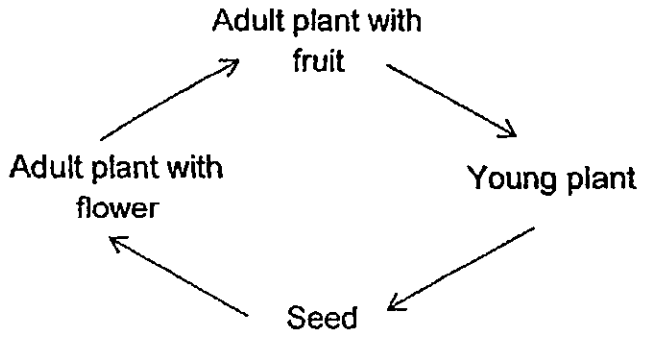
15 Which one of the following shows the correct order of stages in the life cycle of a flowering plant?

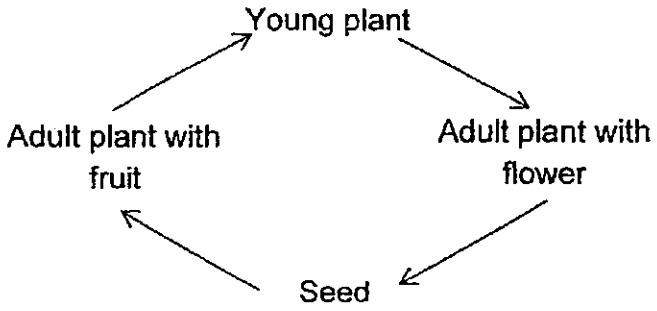
(1)



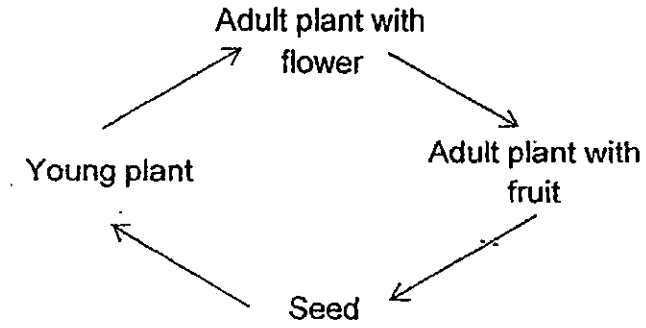
(2)



(3)



(4)



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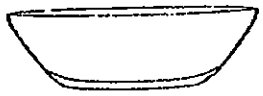
16 Victor moulded a piece of plasticine into a cup. He then used the same piece of plasticine and remoulded it into a bowl.

Cup



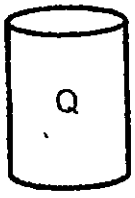
Bowl

Which one of the following statements of the cup and bowl is true?

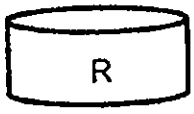
The plasticine used in both the cup and the bowl would have the same _____.

(1) mass only
(2) volume only
(3) shape and mass
(4) mass and volume

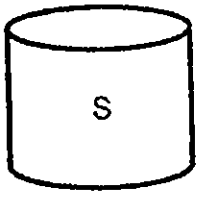
17 Which of the following containers can hold 25 cm^3 of air?



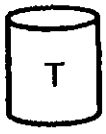
30 cm^3



25 cm^3



45 cm^3



20 cm^3

(1) T only
(2) R and Q only
(3) R, Q and S only
(4) Q, R, S and T

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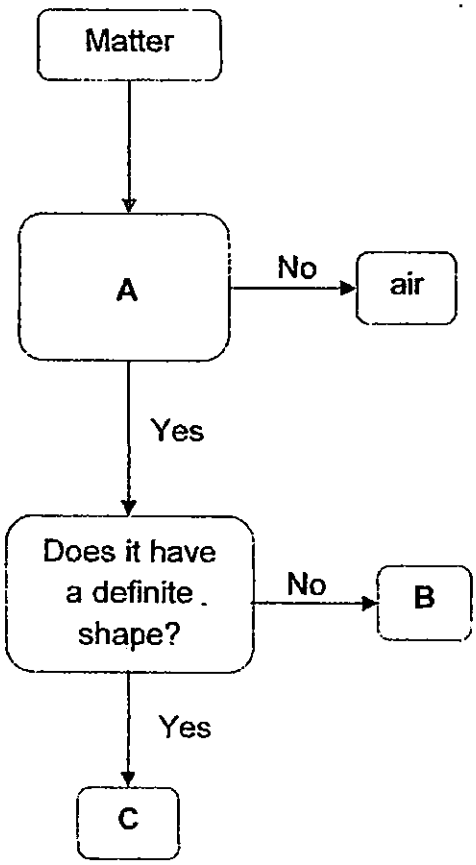
18 Study the flowchart on matter below.



Which of the following could A, B and C be?

	A	B	C
(1)	Does it have a definite volume?	remote control	televison
(2)	Does it occupy space?	steam	pot
(3)	Does it have a definite volume?	water	book
(4)	Does it have mass?	body lotion	coin

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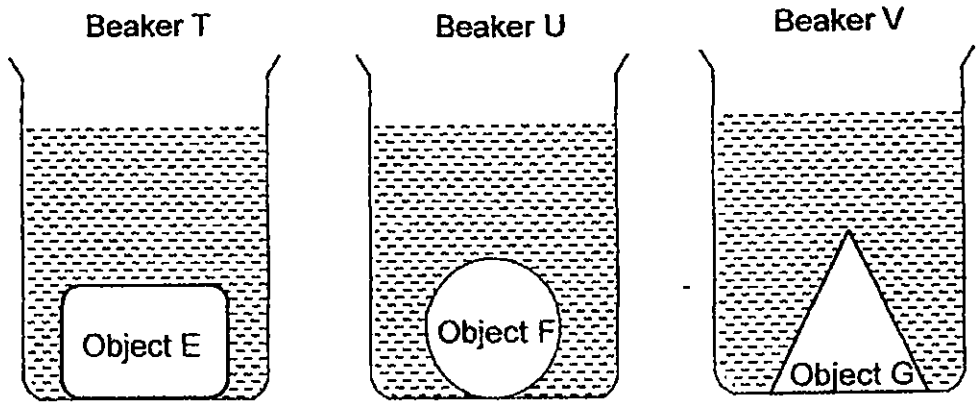
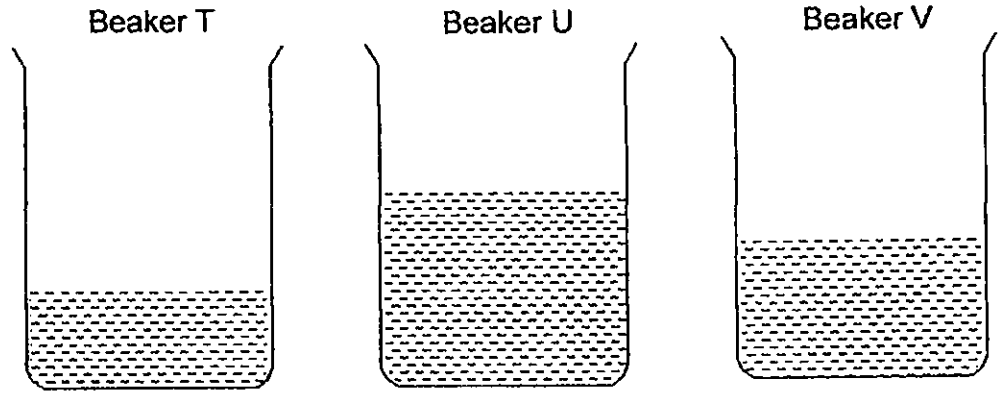
19 James placed three objects, E, F and G in 3 identical beakers, T, U and V. He then poured water to the same level as shown below.



He then removed the objects from the beakers and observed the amount of water left in the beakers as shown below.



Which of the following statements about the 3 objects, E, F and G, is correct?

(1) Object E has the least volume.
(2) All three objects have the same volume.
(3) Object G has a greater volume compared to Object F.
(4) Object E has a lesser volume compared to Object G.

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20 Bob wanted to conduct an experiment to find out how moisture affects the growth of bread mould.

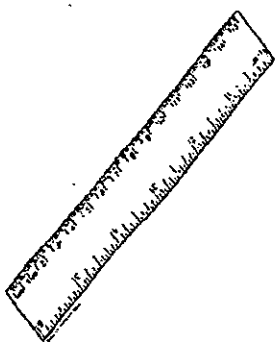
Which of the following must be kept the same to ensure a fair test?

A Size of bread
B Type of bread
C Location of set-up
D Amount of water on bread

(1) B and D only
(2) A, B and C only
(3) B, C and D only
(4) A, B, C and D

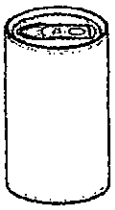
21 Which of the following objects is made of a magnetic material?

(1)



Steel ruler

(2)



Aluminium can

(3)

Glass bottle

(4)

Copper coin

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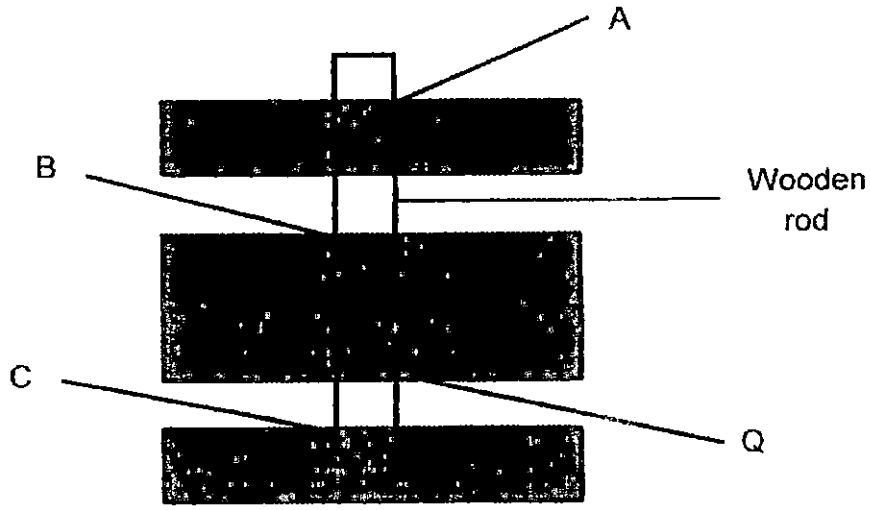
22 The table below shows the number of nails attracted to four different parts on a bar magnet.

Part	Number of nails it attracted
J	5
K	9
L	12
M	4

Which part, J, K, L or M, is most likely to be the pole of the bar magnet?

(1) J
(2) K
(3) L
(4) M

23 Study the diagram of 4 ring magnets suspended through a wooden rod as shown below.



If Q is a north pole, what poles would A, B, and C be?

	A	B	C
(1)	North	North	South
(2)	South	South	North
(3)	South	North	South
(4)	North	South	North

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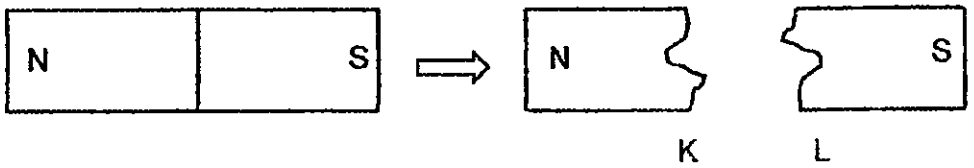
24 Shu Hui had accidentally dropped a magnet and it broke into 2 pieces as shown below.



Which of the following correctly shows the poles of the broken magnet pieces at K and L?

	K	L
(1)	South	South
(2)	North	North
(3)	South	North
(4)	North	South

25 Which one of the following is <u>not</u> matter?

(1) fire
(2) clay
(3) wax
(4) smoke

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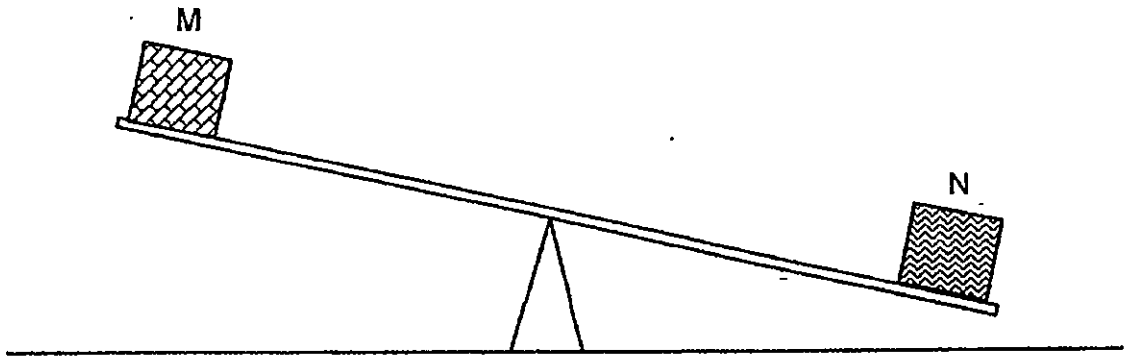
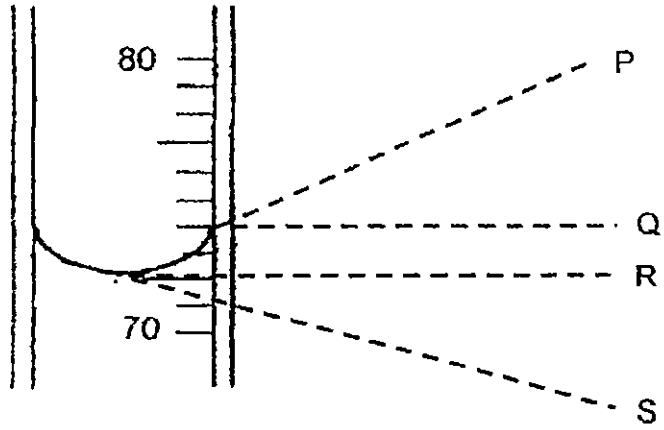
26 The diagram below shows 2 objects, M and N of similar volume on a beam balance.



Which of the following statements is definitely true?

(1) N has less mass than
(2) N has greater mass than
(3) N occupies less space than M.
(4) N occupies more space than M.

27 The diagram below shows part of a measuring cylinder filled with some liquid.



At which point should the eye level be to ensure accurate reading of the volume of the liquid?

(1) P
(2) Q
(3) R
(4) S

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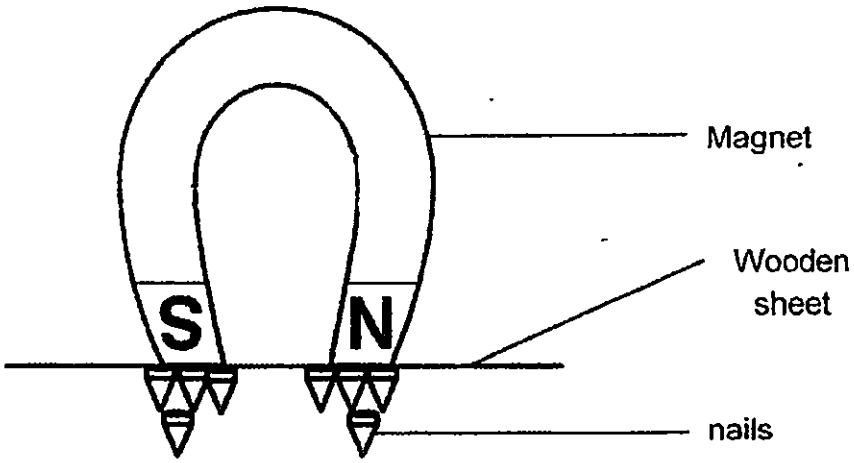
28 Ming Hui placed the magnet at the top of the wooden sheet and slid it from left to right. Ming Hui realised that the nails at the bottom of the sheet moved with the magnet.

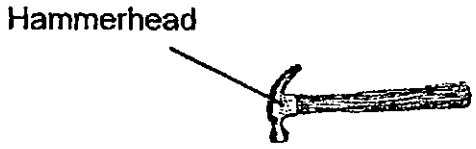


Which of the following statements explains the above observation?

(1) Wooden sheet is a magnetic material.
(2) The magnet magnetized the wooden sheet.
(3) The nails are made of non-magnetic material.
(4) Magnetic force can pass through the wooden sheet.

29 The following table shows the properties of four materials E, F, G and H. A tick (√) shows that the material has that particular characteristic and a cross (X) shows that the material does not have that characteristic.

Property	Material E	Material F	Material G	Material H
Strong	√	X	√	X
Flexible	√	X	X	√
Waterproof	X	√	√	√



Which one of the materials E, F, G and H is a suitable material for making a hammerhead to knock a nail into the wall?

(1) E
(2) F
(3) G
(4) H

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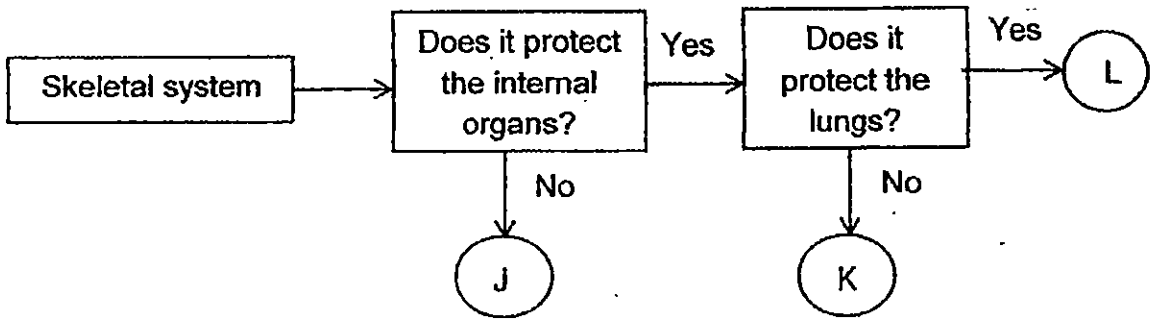
30 Study the flowchart on the skeletal system below.



Based on the flowchart above, which of the following could J, K and L be?

	J	K	L
(1)	spine	skull	foot bone
(2)	ribcage	arm bone	spine
(3)	leg bone	skull	ribcage
(4)	finger bone	spine	skull

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PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1

PRIMARY 4
SCIENCE
(BOOKLET B)

15 MAY 2015

Parent's Signature

Name: _____

Class: 4 Teamwork _____

Total time for Booklets A and B: 1 h 30 mins

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

Marks (Booklet A) :	60
Marks (Booklet B) :	40
Total Marks (Booklets A & B) :	100

This booklet consists of 12 printed pages, excluding the cover page.

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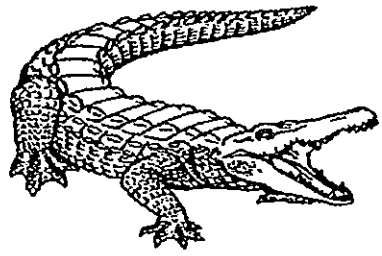
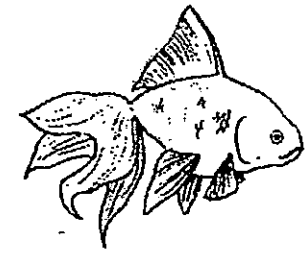
Write your answers to the questions 31 to 44 in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question. (40 marks)

31 Study the diagram of a reptile and fish.



Reptile



Fish

(a) State two similarities of the reptiles and the fish in : [2]

(i) the way they reproduce.

_____

(ii) their body covering.

_____

(b) State one physical difference in the reptile and the fish in the way they breathe. [1]

_____

_____

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32 The table below shows the characteristics of the 3 materials, P, Q and R.

Characteristic	Waterproof	Not waterproof
Flexible	P	Q
Not flexible	R	

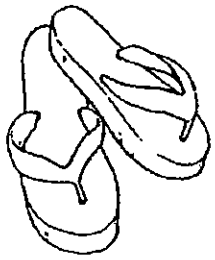
(a) Based on the table, what are the differences between material R and Q? [1]

_____

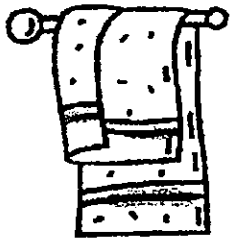
_____

(b) Study the pictures below carefully.

Metal key



Rubber sandals



Body towel

Which of the items above is most likely to be made of material P? Explain your choice of the material. [2]

_____

_____

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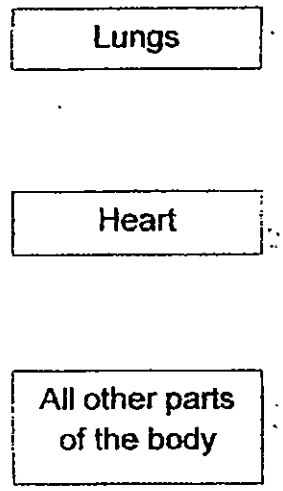
33 (a) The diagram below shows parts of a human body.

Draw four arrows (⟶) on the diagram to show the direction of blood flow in a human body. [1]



(b) Heart attack happens when the heart stops pumping. Explain how this can cause a person to die. [1]

_____

_____

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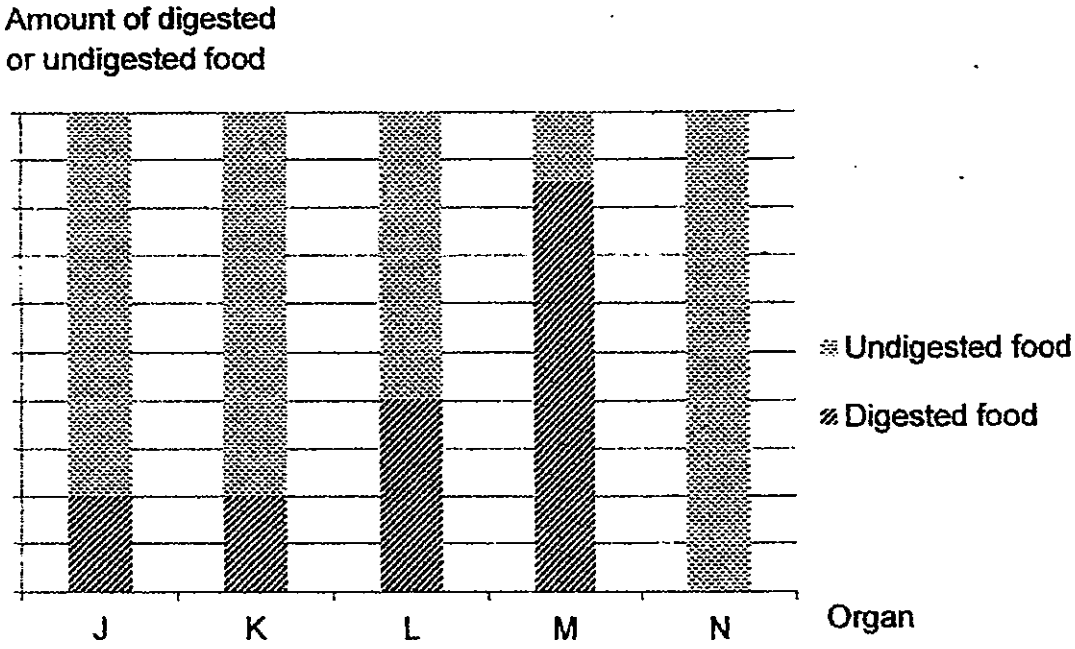
34 The bar chart below shows the amount of digested and undigested food in the various organs in the human digestive system.



(a) From the graph above, identify the small and large intestine. [1]

Small intestine : Organ _____

Large intestine: Organ _____

(b) Explain why organs J and K have the same amount of undigested food? [1]

_____

_____

(c) Explain why a person will have watery stools when a person is suffering from diarrhoea. [1]

_____

_____

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35 Paul kept a larva of a butterfly in a tank over a period of time. He studied the larva carefully. Over a period of time, he observed some dried skin in the tank.

(a) What is the process that caused the dried skin to appear in the tank? [1]

_____

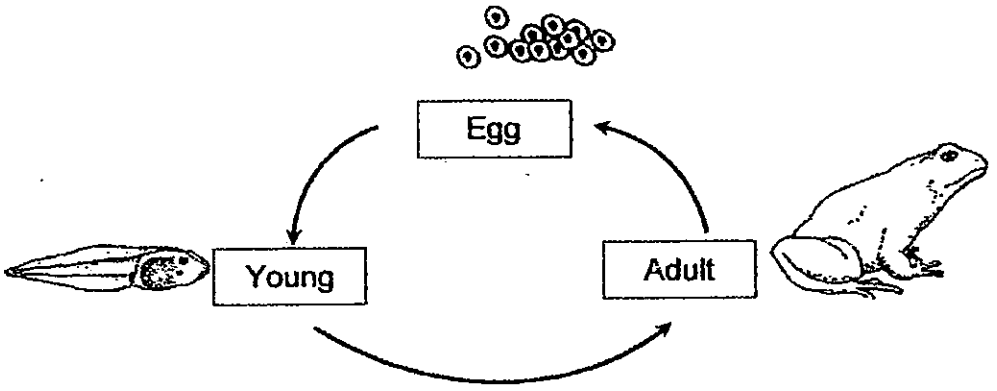
(b) Why is there a need for the larva to go through the process in (a)? [1]

_____

(c) Paul's father said that the larva was considered to be a pest to farmers. Explain why this is so. [1]

_____

36 Study the life cycle of a frog as shown below.



(a) Why are frog eggs coated with a jelly-like substance? [1]

_____

(b) State one difference between the young and adult of the frog. [1]

_____

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37 The diagram below shows a red bean seed which is about to germinate.

(a) Which part of the seed would appear first? [1]

_____

(b) Why is there a need for the part mentioned in (a) to appear first? [1]

_____

38 Victoria plotted the table below during the growth of a seed into a young plant. The mass of the seed leaves and the seedling were recorded over the nine days.

	Day 1	Day 3	Day 5	Day 7	Day 9
Seed leaves	1g	0.9g	0.7g	0.5g	0.3g
Seedling	0 g	0.3 g	0.6g	0.9 g	1.2 g

(a) What is the relationship between the mass of the seed leaves and the mass of seedling over the nine days? [1]

_____

(b) List all the conditions required for germination. [1]

_____

(c) It was observed that the seed leaves dropped on Day 10, how would the seedling get its food from Day 10 onwards? [1]

_____

_____

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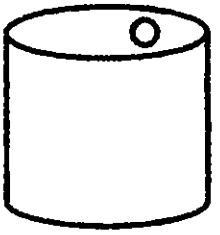
39 Gary decided to pour out some milk from a condensed milk tin. So he punched one hole on the top of the cover.



(a) However, his mother advised him to punch another hole on the cover to pour out the milk much more easily.
Explain how this would help Gary pour out the milk more easily. [2]

_____

_____

(b) What is the state of matter the condensed milk is in? [½]

_____

(c) Which property of the state in (b) helped the milk to flow out easily? [½]

_____

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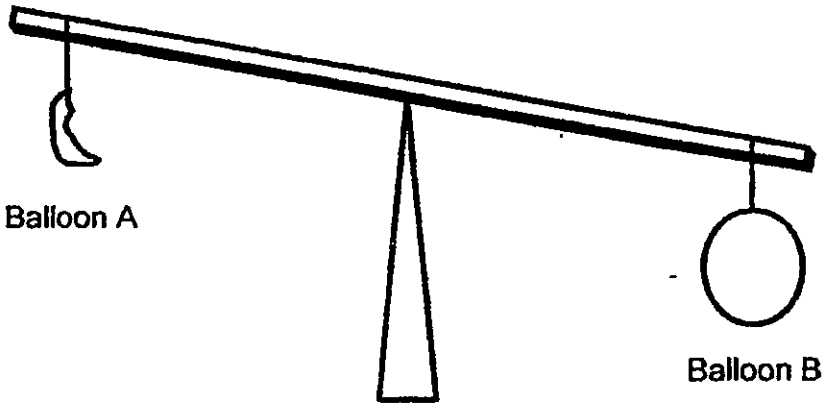
40 The diagram below shows a balance with 2 similar balloons attached on each end. One balloon was deflated, while the other was inflated with air.

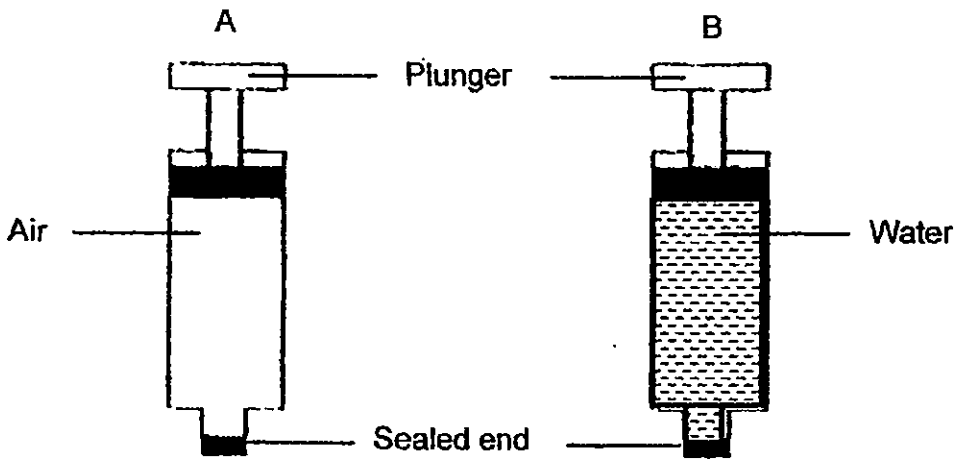


(a) Explain how the diagram above shows that air is matter. [2]

_____

_____

(b) The diagram below shows 2 syringes, A and B, filled with air and water each with its ends sealed.



In which syringe, A, B or both, can the plunger be pushed in? Explain your answer. [2]

_____

_____

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41 Shun Hao conducted an experiment to find out how the objects, J, K and L interact with the magnet and recorded his findings in the table below. A tick(√) shows that the observation was made and a cross (X) shows that the observation was not made.

Objects	J	K	L
Attracted by magnet	X	√	√
Repelled by magnet	X	X	√

(a) Which of the following is likely to be made of non-magnetic material? Explain your answer. [1]

_____

_____

(b) Which of the objects, J, K or L is likely to be a magnet? Explain your answer. [1]

_____

_____

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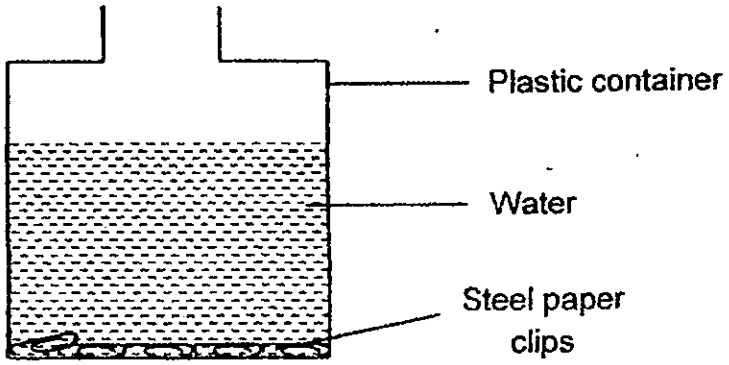
42 Charlene had a plastic container filled with water. It contained some steel paper clips. She had to remove the steel paper clips but she could not pour out the water and her hand could not fit into the opening of the tank.



(a) Charlene's friend suggested using a bar magnet to remove the paper clips. Explain why this is possible? [2]

_____

_____

(b) If the steel paper clips were replaced by gold rings, will she be able to remove the gold rings using the magnet? Explain your answer. [2]

_____

_____

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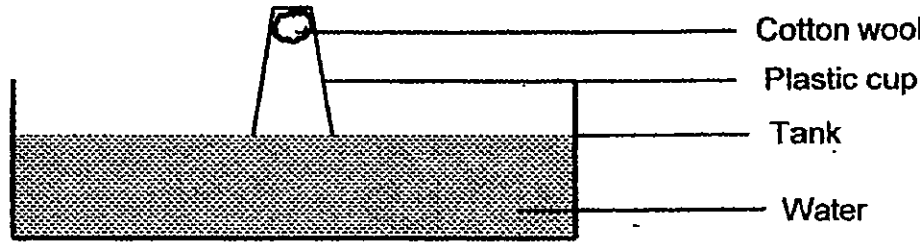
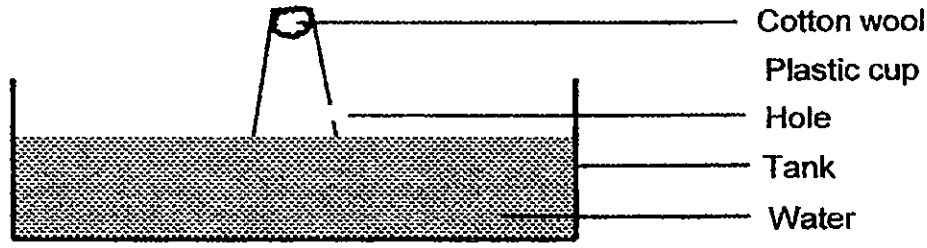
43 Rachel conducted an experiment as shown below. She pasted some cotton wool inside a plastic cup and pushed the cup down into a basin of water as shown below. She then took out the cup and felt that the cotton wool was dry.



(a) Explain why the cotton wool felt dry. [1]

Rachel poked a hole on the cup as shown below and pushed the cup into the tank of water until the cup is fully in the water.



(b) She observed that the cotton wool was still dry. [2]

Explain why the cotton wool stayed dry even though a hole was poked on the cup.

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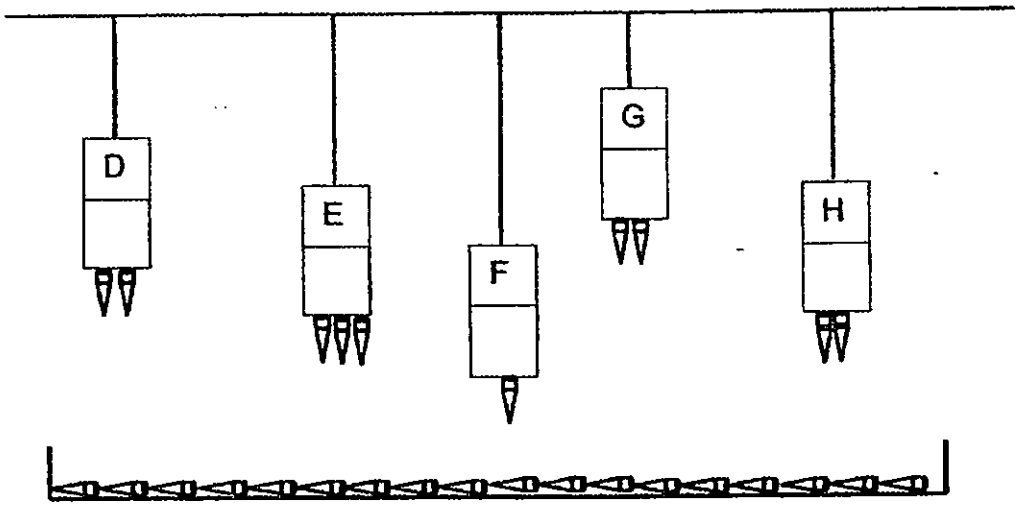
44 Junjie wanted to test the strength of the magnets, D, E, F, G and H. He hung them from strings of different lengths as shown below. A plastic tray of nails are placed under the magnets. Some nails had been attracted to the magnets.



(a) Based on the diagram above, which is the weakest magnet? [1]

_____

_____

(b) If Junjie wanted to test the magnetic strength of another magnet and magnet H, what are the 2 variables he needs to keep the same to ensure it is a fair test? [2]

(i) _____

(ii) _____

End of Paper

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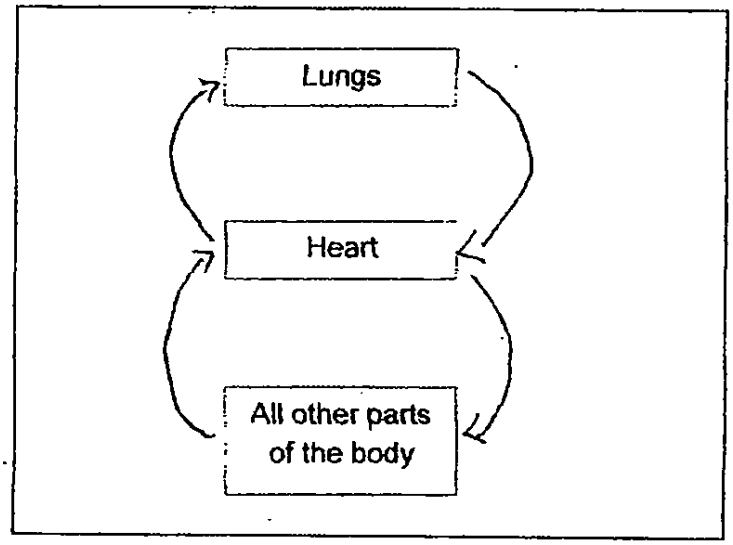
EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	4	1	2	3	1	4	3	4	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
4	1	3	4	4	4	4	3	3	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	3	4	3	1	2	3	4	3	3

Q31a (i) Both the reptile and the fish lay eggs
Q31a (ii) Both of their body covering are scales.
Q31b. The reptile uses its lungs to breathe but the fish uses its gills to breathe.

Q32a. Material R us waterproof and not flexible but Material Q is not waterproof and flexible.
Q32b. The rubber sandals are most likely to be made of material P. It needs to be flexible for the wearer to be comfortable and waterproof so that it can be worn in the rain.

Q33a. **SEE PICTURE** Q33b. The heart helps to pump blood around our body. If the heart stops pumping, the blood flow cannot continue and blood contains oxygen for a person to survive. Hence, a person will die when the heart stops pumping.



Q34a. Small intestine : Organ M / Large intestine : Organ N
Q34b. Organ J is most likely to be the mouth where food is broken down to simpler substances but Organ K is likely to be the gullet where no digestion takes places but the food is pushed down to the stomach.

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Q34c. The large intestine may not be working well. The large intestine helps to absorb all the water from the stools. Hence, this is why a person will have watery stools.

Q35a. Moulting
Q35b. The larva moult to shed its skin to accommodate its larger growing body.
Q35c. At the larva stage, the caterpillar is considered a pest to farmers as it feeds on the crops.

Q36a. The jelly-like substance is there to protect the young from the predators from eating them.
Q36b. The young has a tail but the adult frog does not has a tail.

Q37a. The roots.
Q37b. The roots helps to absorb water and mineral salts for the seed to survive.

Q38a. The more the seedlings grow, the seed leaves mass decreases.
Q38b. Air, water and warmth.
Q38c. The seedling will grow leaves to trap sunlight and make food for the plant to survive.

Q39a. Air would be able to enter the second hole in the tin to occupy the space inside, pushing the milk out of the first hole.
Q39b. Liquid
Q39c. It does not has a definite shape.

Q40a. Balloon B moves downwards which shows that air has mass and since balloon B is bigger than A, it shows that it occupies space thus it is matter.
Q40b. A. Air does not have a definite volume so it can be compressed. Liquid has a definite volume so it cannot be compressed. Thus, syringe A can be pushed in compared to B.

Q41a. J. It was not attracted by a magnet and not repelled by a magnet. Hence, it is most likely to be made of a non-magnetic material.
Q41b. L. It was repelled by a magnet. Only magnets can repel each other. Therefore, L is likely to be a magnet.

Q42a. Steel paper clip is made of a magnetic material and the magnet can attract the steel paper clips.
Q42b. No, because gold rings are not a magnetic material, so it cannot be attracted by a magnet.

Q43a. The air inside the cup occupied some space and the water did not reach the cotton wool. Hence, the cotton wool felt dry.
Q43b. Whe the cup is fully in water, the hole is also in water. Air in the cup cannot escape and so the water cannot enter the cup.

Q44a. Magnet F.
Q44b. (i) Distance between magnet and nails.
Q44b. (ii) Number of pins under each magnet.

THE END

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RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1)

Section A	60
Section B	40
Your score out of **100** marks	
Parent's signature	

Name : _____ Index No: ____Class: P4____

7 May 2015 SCIENCE Att: 1 h 45 min

SECTION A (30 x 2 marks)
For each question from 1 to 30, four options are given.
One of them is the correct answer. Make your choice (1, 2, 3 or 4).
Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1. What is the common characteristic(s) of all animals?

A They make their own food.
B They give birth to young alive.
C They need air, food and water to survive.
D The respond to changes in their surroundings.

(1) C only
(2) C and D only
(3) B and D only
(4) A, B and D only

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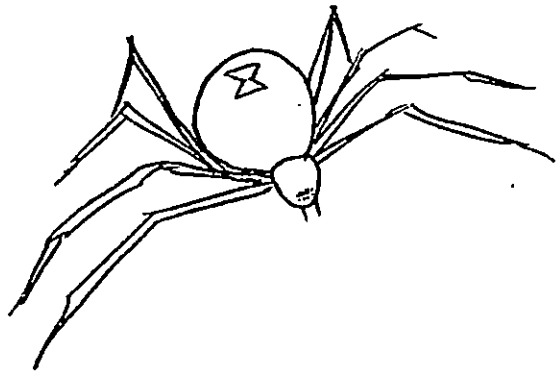
2. John observed the animal below and said that it is not an insect.



Which of the following statement(s) show(s) why it is not an insect?

The animal _____.

A has 2 feelers.
B has 2 body parts
C more that 6 legs.
D is too big to be an insect.

(1) A and D only
(2) A and C only
(3) B and C only
(4) B and D only

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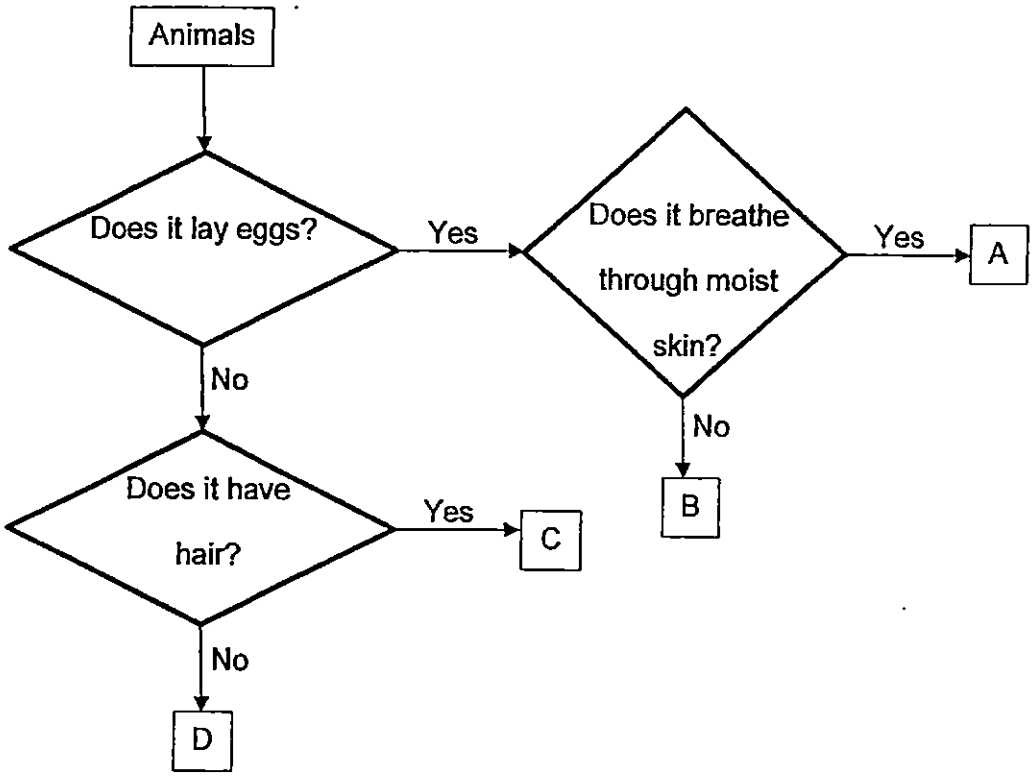
3. The flowchart below shows how some animals are classified.



Based on the flow chart above, which one of the options shows the correct identification of animals A, B, C and D?

	A	B	C	D
(1)	dog	turtle	guppy	frog
(2)	frog	turtle	dog	guppy
(3)	guppy	dog	frog	turtle
(4)	turtle	guppy	dog	frog

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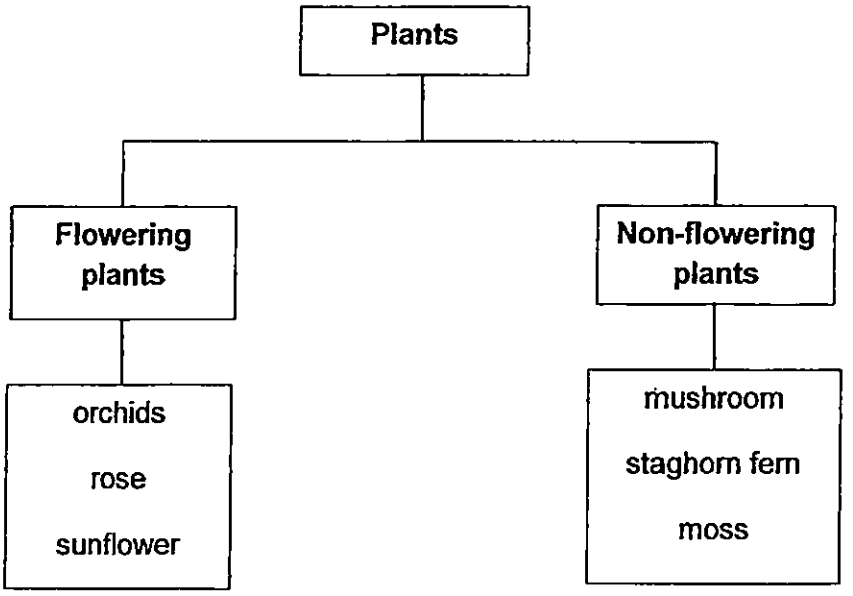
4. Jamie found some organisms in the garden and classified them in the table shown below.



Which one of the above organisms is classified wrongly?

(1) rose

(2) moss

(3) sunflower

(4) mushroom

5. Which one of the following statements is true about fungi?

(1) Fungi produce flowers.

(2) Fungi reproduce by seeds.

(3) Fungi do not respond to changes.

(4) Fungi cannot make their own food.

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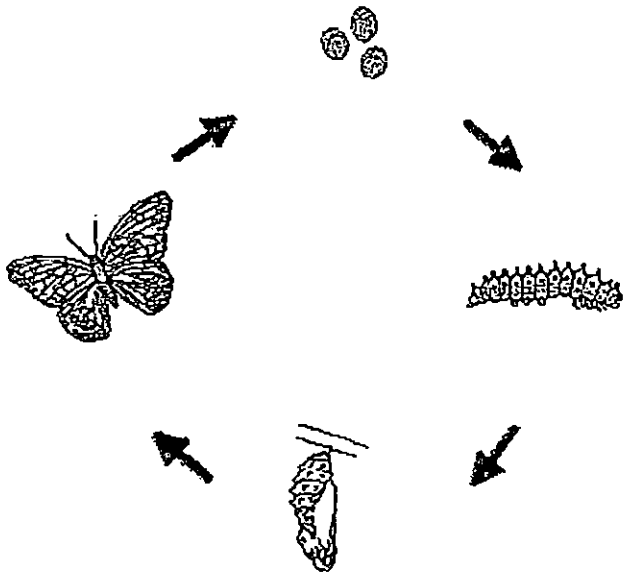
6. The diagram below shows the life cycle of a butterfly.



The life cycle of a butterfly shows the _____.

(1) food the butterfly eats.

(2) different body parts of the butterfly.

(3) various stages of development of the butterfly.

(4) different types of animals in that animal group.

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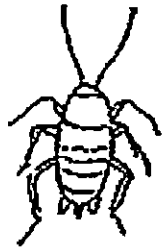
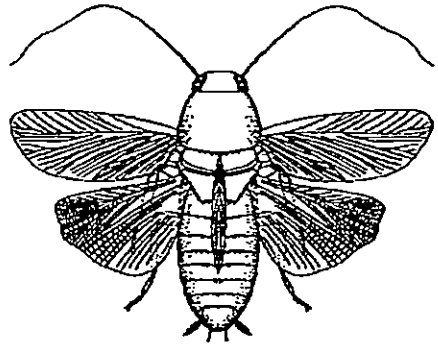
7. The diagram below shows the nymph and adult of a cockroach.



Nymph



Adult

Study the diagrams above and compare the nymph and adult of the cockroach.

Which of the following statement(s) below is/are correct about the nymph and the adult?

A Both have feelers.

B The nymph resembles the adult.

C The nymph does not have wings but the adult has fully developed wings.

(1) C only

(2) A and B only

(3) B and C only

(4) A, B and C

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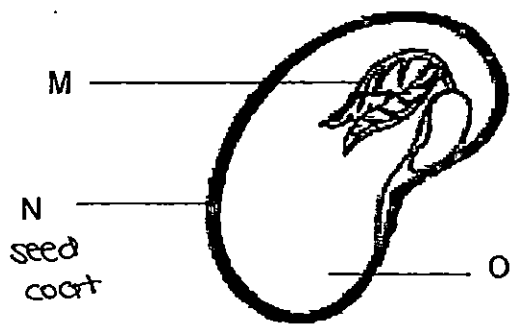
8. The picture below shows the cross section of a seed with its parts labelled M, N and O.



Which part(s) protect(s) the seed?

(1) N only

(2) O only

(3) M and O only

(4) N and M only

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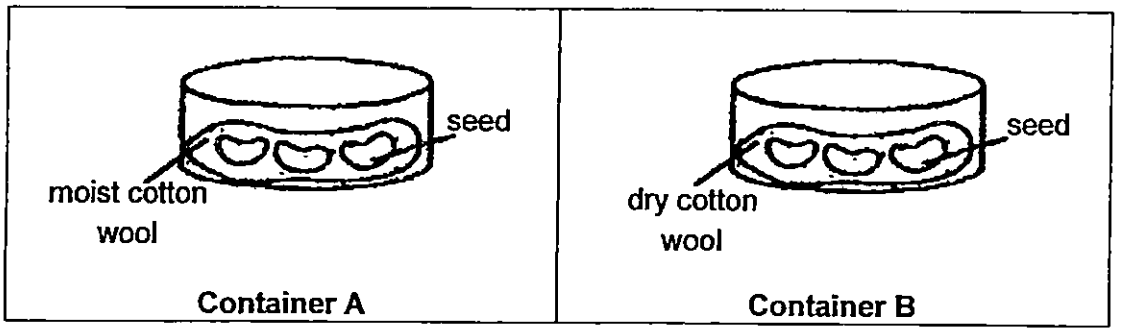
9. Amy placed 3 similar seeds each on a moist cotton wool in Container A and on a dry cotton wool in Container B as shown below.
She then placed the two containers near a window where there is sunlight.

After two days, the seeds on the moist cotton wool germinated but not the seeds on the dry cotton wool.



What can she conclude from the experiment?

Seeds need _____ to germinate.

(1) air

(2) water

(3) sunlight

(4) cotton wool

10. Which one of these statements is true about the large intestine?

(1) Digestion ends in the large intestine

(2) Water is absorbed by the body in the large intestine.

(3) The large intestine has muscular walls which churns and breaks down food into simpler substances.

(4) Most of the nutrients from the digested food are absorbed by the body in the large intestine.

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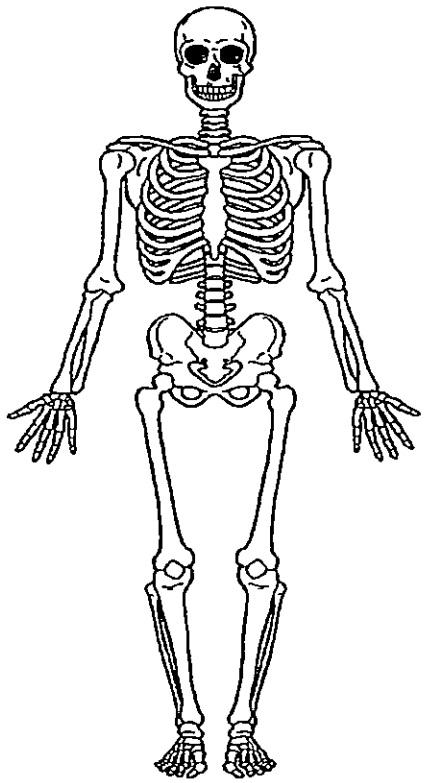
11. The diagram below shows the skeletal system of a human body.



Which of these is/are the functions(s) of the skeletal system?

A It supports the body.

B It gives the body its shape.

C It helps in the exchange of gases.

D It helps to transport water and nutrients to all part of the body.

(1) A and B only

(2) C and D only

(3) A, C and D only

(4) A, B, C and D

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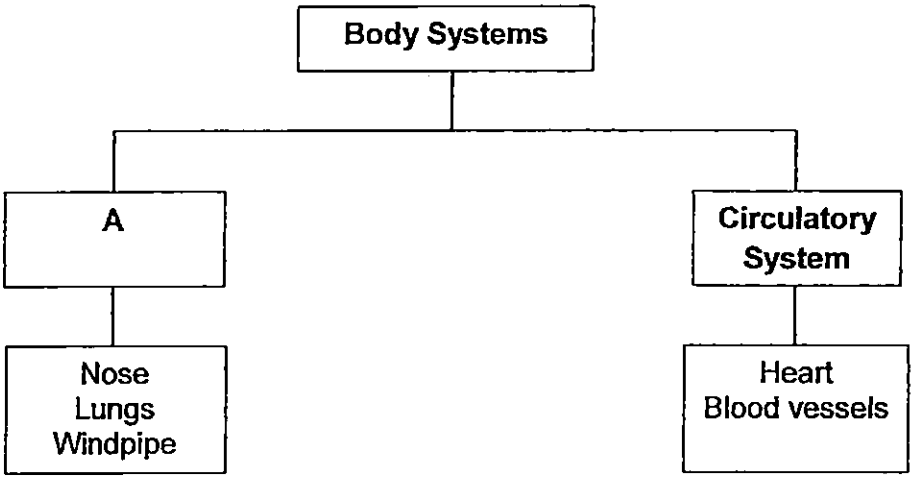
12. Julia classified some organs as shown in the table below.



Which one of the following best represents "A"?

(1) Skeletal system

(2) Muscular system

(3) Digestive system

(4) Respiratory system

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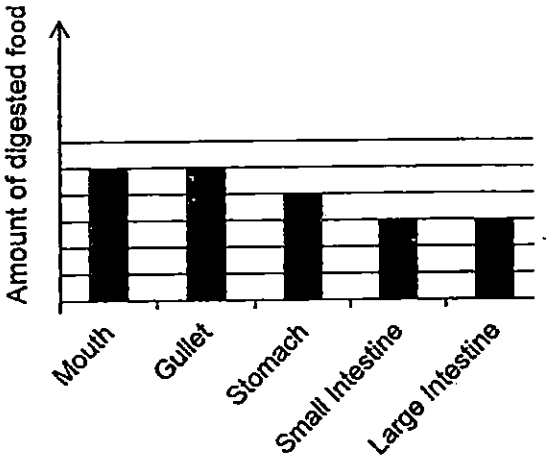
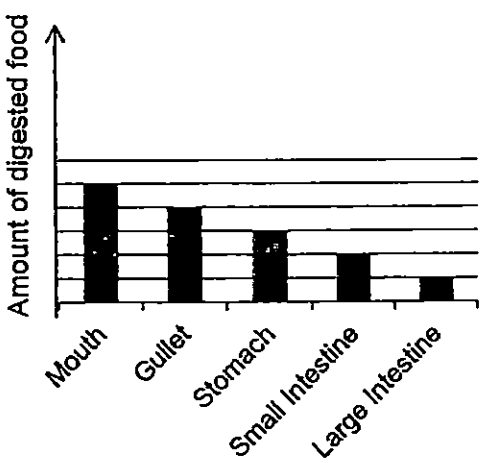
13. Jane had a burger for lunch. She plotted a bar graph to show the amount of digested food in the different organs.

Which one of the following shows the correct amount of digested food in each organ?

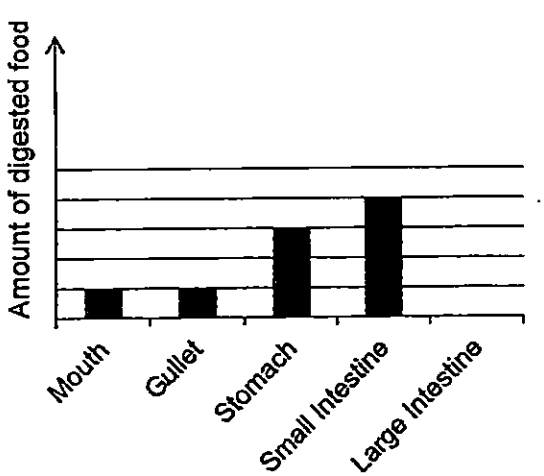
(1)



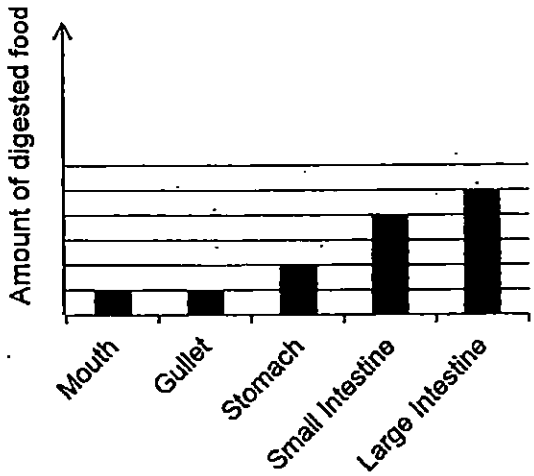
(2)



(3)



(4)



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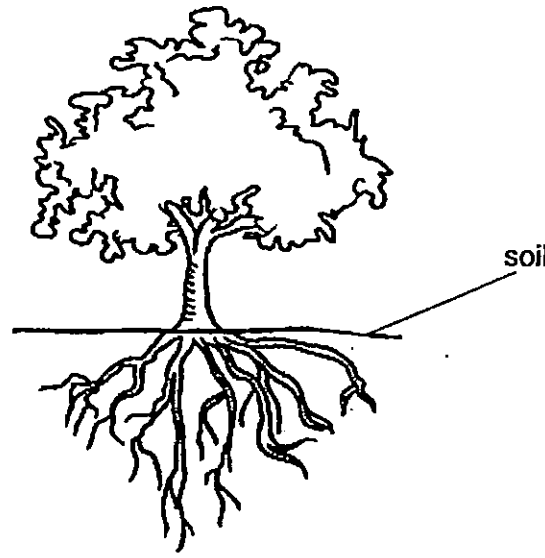
14. The diagram below shows a tree.



Which one of the following statements best explains why the tree will not fall easily when there is strong wind?

(1) The tree is tall.

(2) The tree has many leaves.

(3) The stem of the tree is thick and woody.

(4) The roots of the tree anchor the tree to the ground.

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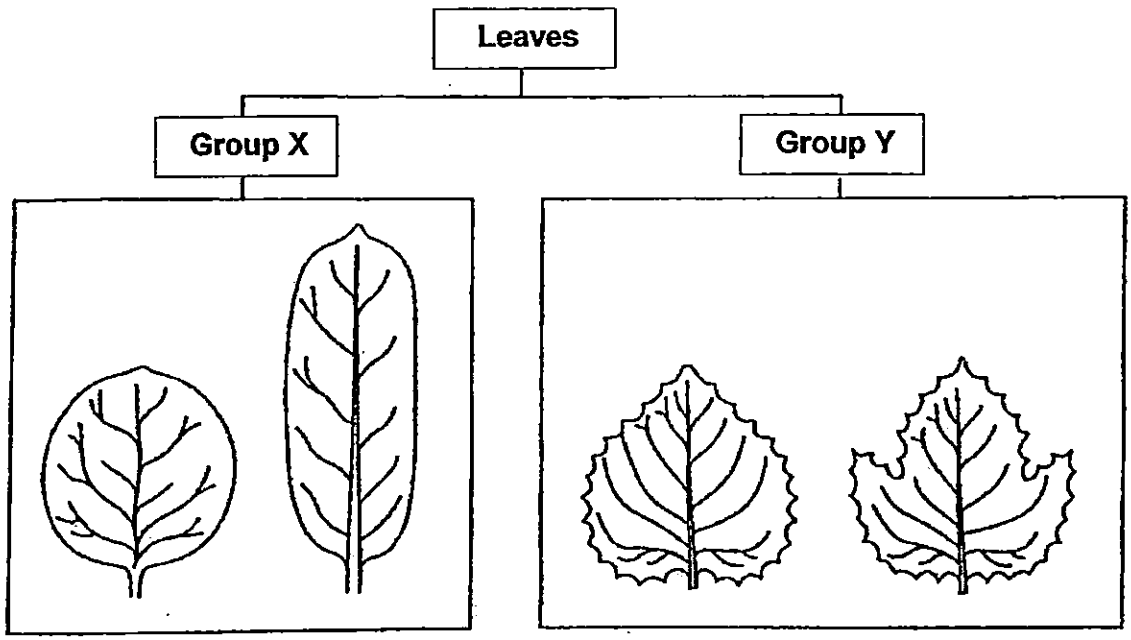
15. Amy compared 4 leaves and classified them into 2 groups, X and Y.



Which one of the following characteristics did Amy use to classify the leaves?

(1) edge
(2) shape
(3) size
(4) texture

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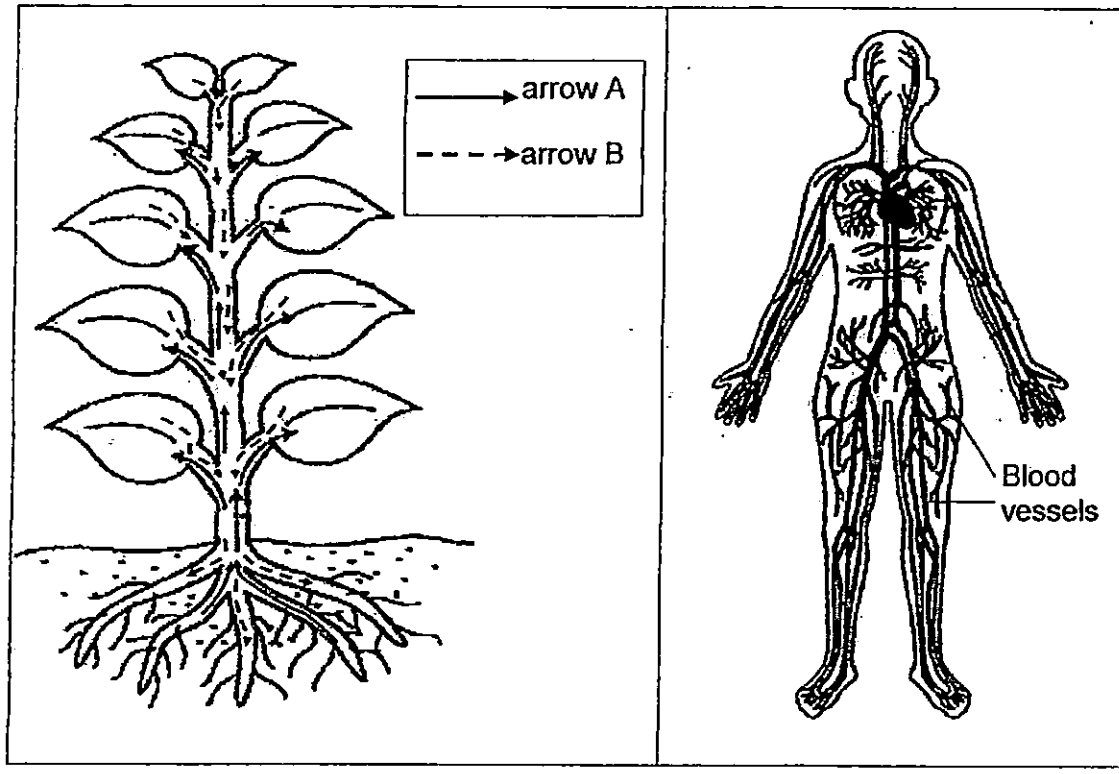
16. The diagrams below show a plant transport system and the human circulatory system.



Which one of the following statements is correct?

	Plant Transport System	Human Circulatory System
(1)	Arrow A shows the transportation of water and mineral salts.	Blood vessel carry blood that transports water only
(2)	Arrow A shows the transportation of food.	Blood vessels carry blood that transport water only.
(3)	Arrow B shows the transportation of water and mineral salts.	Blood vessels carry blood that transport digested food only.
(4)	Arrow B shows the transportation of food.	Blood vessels carry blood that transport digested food, water and waste products.

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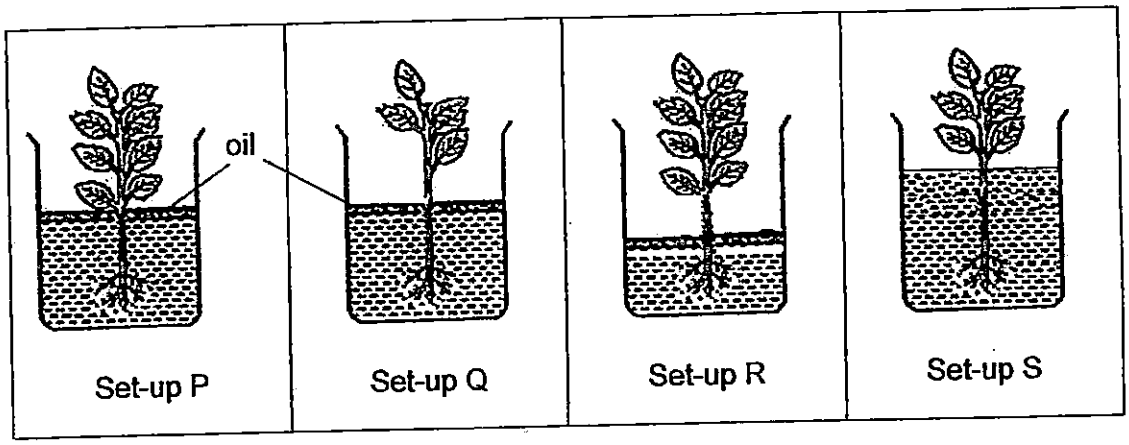
17. Jack wanted to find out if the number of leaves affects the amount of water taken in by the plant. He set up the experiment using similar types of plants and beakers as shown in the diagram below. He left the beakers of plants near an open window where there was sunlight.



Which two set-ups should Jack use to ensure that it is a fair test?

(1) Set-ups P and Q

(2) Set-ups P and S

(3) Set-ups Q and R

(4) Set ups Q and S

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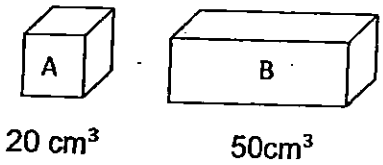
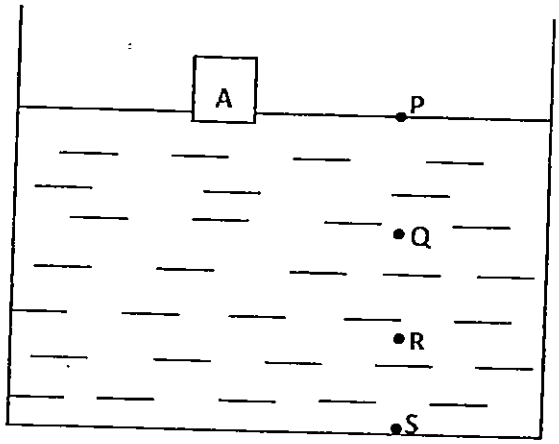
18. Two solid blocks A and B shown below were of different sizes but made of the same material.



Block A was dropped into a tank of water and floated to the same height as position P as shown below.



In which position, P, Q, R or S would block B be after it was dropped into the tank of water?

(1) P
(2) Q
(3) R
(4) S

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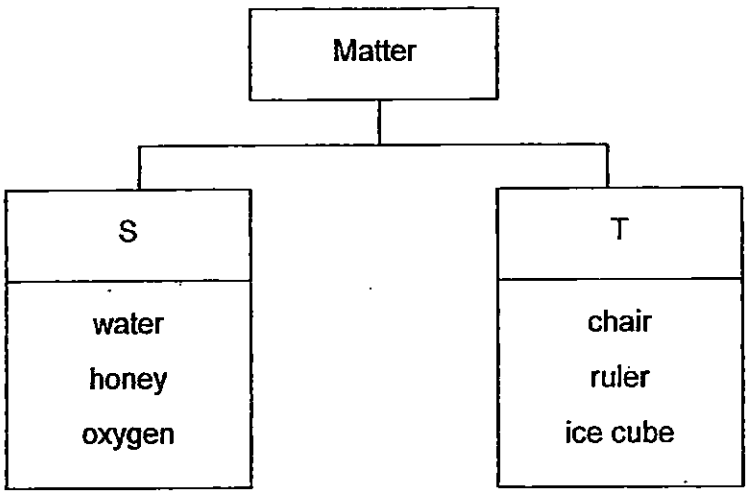
19. Which of the following properties do solids, liquids and gases have in common?

A They have mass.
B They take up space.
C They have definite volume.
D They have definite shapes

(1) A and B only
(2) C and D only
(3) A, B and C only
(4) B, C and D only

20. Six items are classified in the chart below.



Which one of the following could be the headings for S and T?

	S	T
(1)	No mass	Has mass
(2)	No definite shape	Has definite shape
(3)	No definite volume	Has definite volume
(4)	Can be compressed	Cannot be compressed

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21. Sam investigated the properties of three substances, A, B and C and recorded his findings in the table below.
A tick (✓) indicates the presence of the property in the substance.

	A	B	C
Has mass	✓	✓	✓
Has definite shape			✓
Has definite volume	✓		✓

Which one of the following shows the correct state of each substance?

	A	B	C
(1)	Gas	Liquid	Solid
(2)	Liquid	Gas	Solid
(3)	Liquid	Solid	Gas
(4)	Solid	Gas	Liquid

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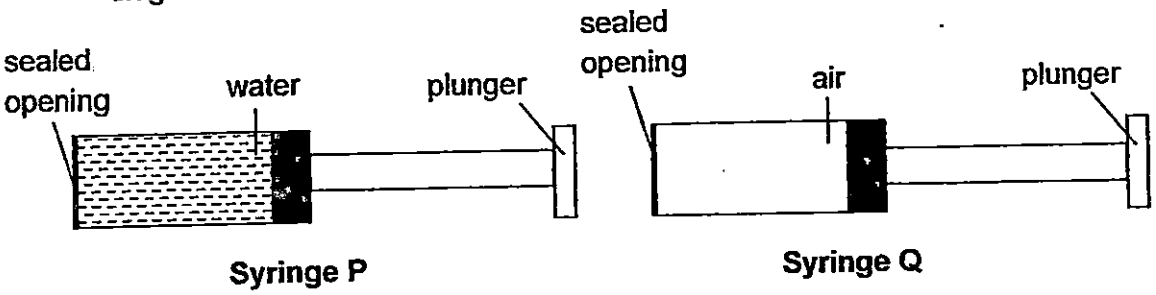
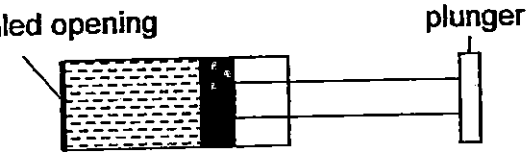
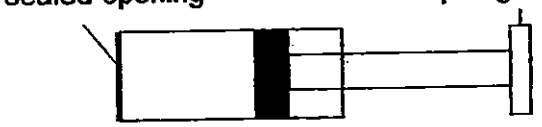
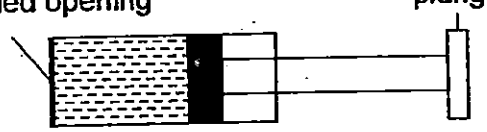
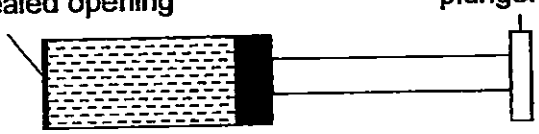
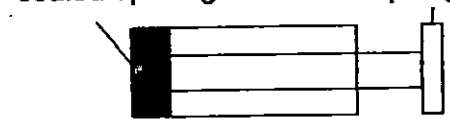
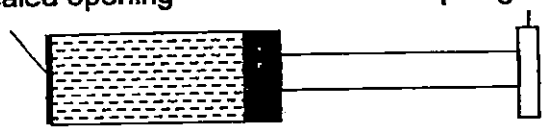
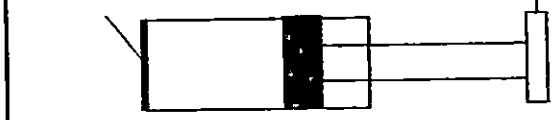
22. Two identical syringes, P and Q, were completely filled with water and air respectively. The openings of both syringes were sealed as shown in the diagram below.



Which one of the following could be Syringe P and Q when the plungers were pushed in?

	Syringe P	Syringe Q
(1)		
(2)		
(3)		
(4)		

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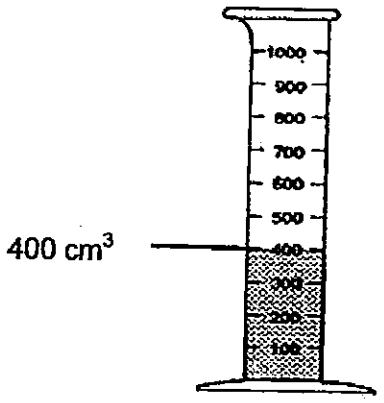
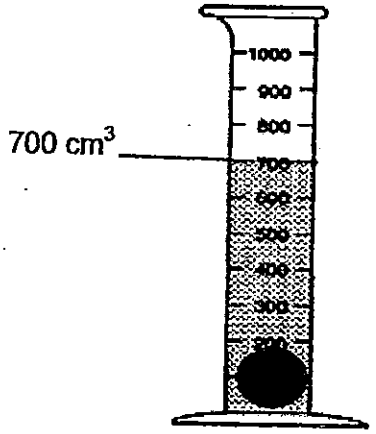
23. Jamie filled a measuring cylinder with some water.



She then placed a metal ball into the same measuring cylinder as shown below.



What is the volume of the metal ball?

(1) 300 cm^3
(2) 400 cm^3
(3) 700 cm^3
(4) 1100 cm^3

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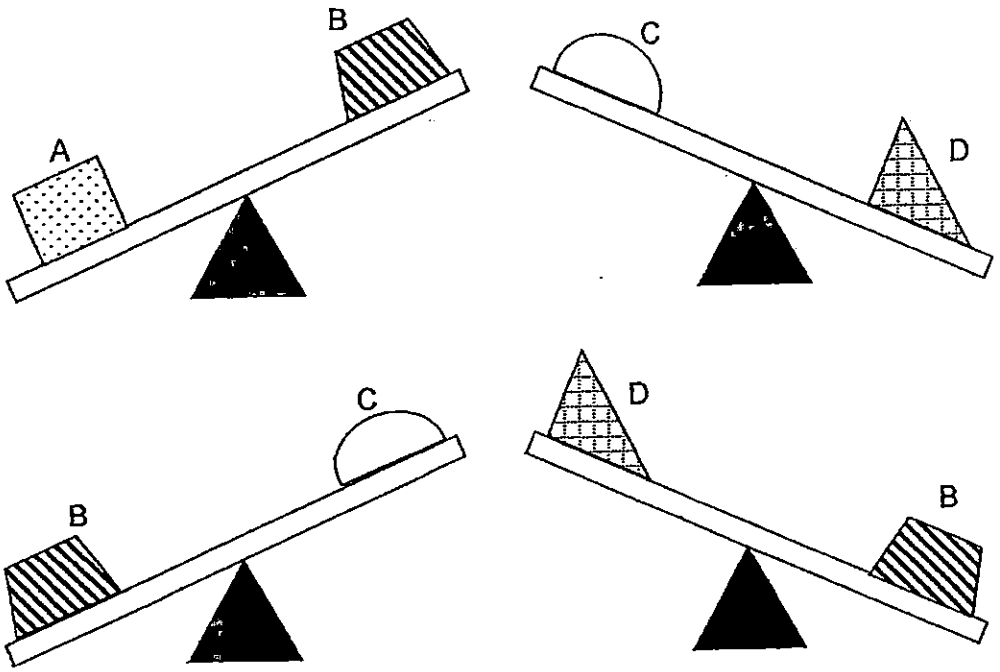
24. Alan wanted to compare the mass of objects A, B, C and D. He placed two objects on a balance each time. The diagrams below show his observation.



Which one of the following arranges the objects A, B, C and D from the greatest mass to the least mass?

	Greatest → Least			
(1)	A	B	D	C
(2)	A	C	B	D
(3)	D	B	C	A
(4)	D	B	A	C

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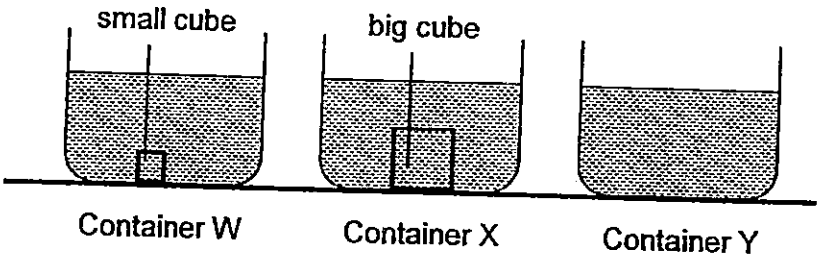
25. Ken had three identical containers, W, X and Y. He placed two cubes of different sizes in containers, W and X. He then poured water into each container until the water levels in the three containers were of the same height as shown below.



Which one of the following could possibly be the amount of water Ken poured into container W, X and Y respectively?

	Amount of water (ml) in container		
	W	X	Y
(1)	500	500	500
(2)	500	700	900
(3)	700	500	900
(4)	700	900	500

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26. Shane placed the N-pole of a magnet near one end of object H as shown in the diagram below.

He observed that object H moved towards the magnet. He then flipped the magnet and placed the S- pole of the magnet near the same end of object H.

He observed that object H again moved towards the magnet. He repeated the experiment with three other objects, object I, J and K and recorded his observations in the table below.

Object	Movement of object when N-pole of magnet was placed near the object	Movement of object when S- pole of magnet was placed near the object
H	moved towards magnet	moved towards magnet
I	moved towards magnet	moved away from magnet
J	did not move	did not move
K	moved towards magnet	moved towards magnet

Based on Shane's observations, which object(s) is/are made of magnetic material?

(1) I only
(2) J only
(3) H and K only
(4) H, I and K only

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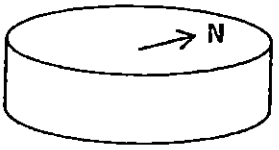
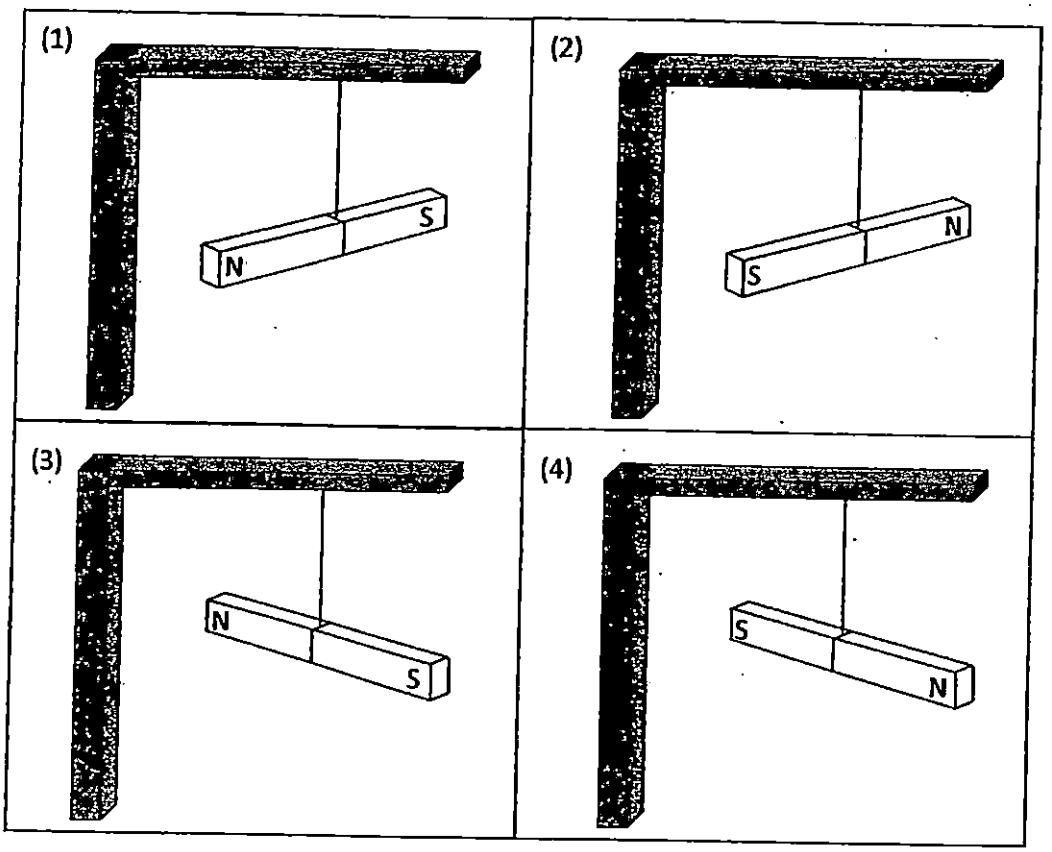
27. The compass below shows the direction of the needle at rest.



A bar magnet was hung such that it could turn freely.

Which one of the following diagrams below shows the direction of the bar magnet when it comes to rest?



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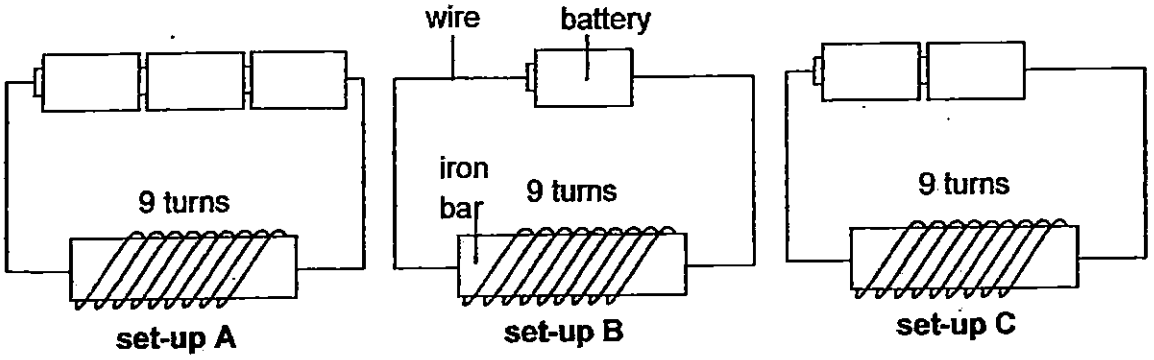
28. Mina set up the following electromagnets using identical iron bars, batteries and wires.



Arrange the set-ups according to the strength of the electromagnet, starting with the one with the greatest magnetic strength.

	magnetic strength		
	strongest →		weakest
(1)	C	B	A
(2)	C	A	B
(3)	A	C	B
(4)	A	B	C

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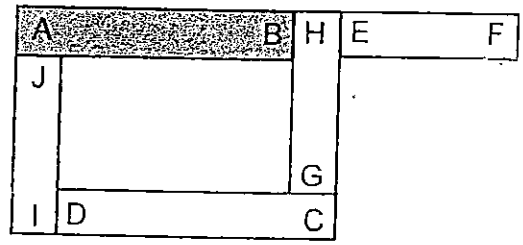
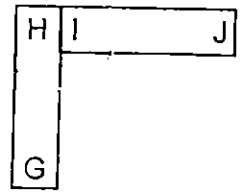
29. An iron bar with ends marked A and B and four magnets with ends marked from C to J can be arranged as shown below.

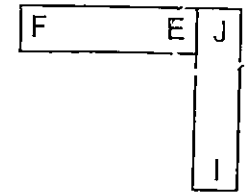


Which one of the following diagrams shows a possible arrangement of two of the bars?

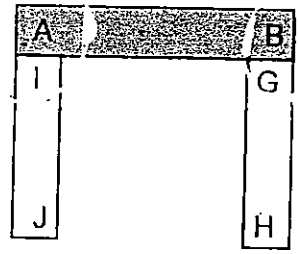
(1)



(2)



(3)



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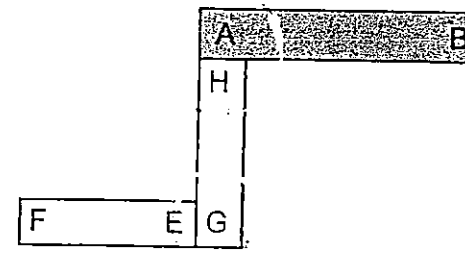

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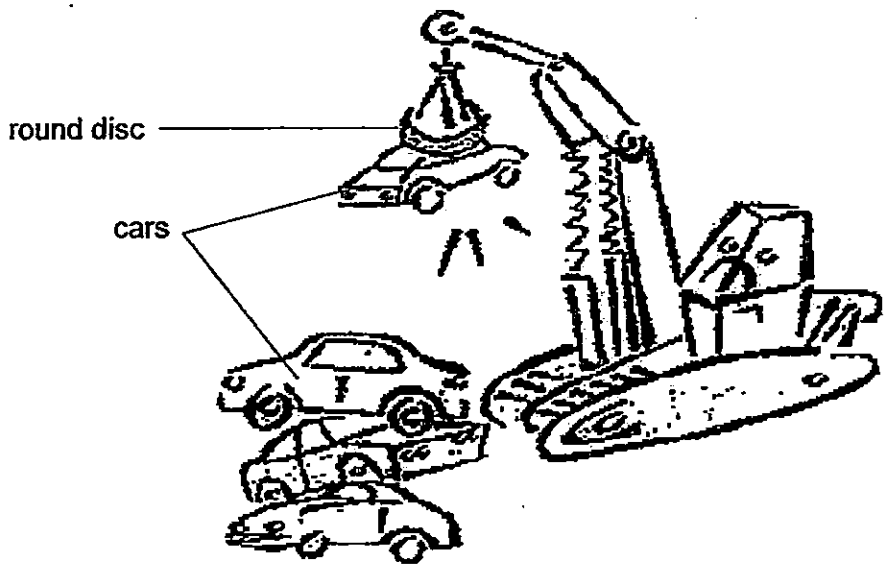
30. The picture below shows a crane using electromagnet to move cars.



When the electromagnet was activated, the car was attracted to the disc. The crane then moved the car to another position.

When the electromagnet was not activated, the car was not attracted by the disc and it dropped into the new position.

Which one of the following identified the correct materials that were used to make the disc and cars?

	Disc	Cars
(1)	iron	steel
(2)	steel	aluminium
(3)	copper	steel
(4)	aluminium	aluminium

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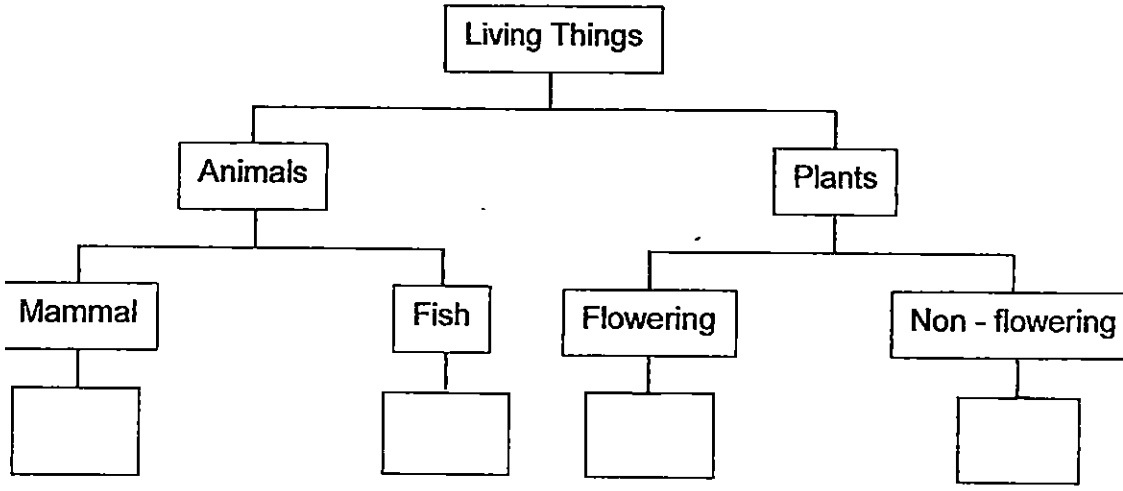
Name : _____ Index No: ____ Class: P4___ /40

SECTION B (40 marks)
For questions 31 to 44, write your answers clearly in the spaces provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. The table below shows some characteristics of 4 living things, A, B, C and D. A tick (√) indicates the presence of the characteristic.

Characteristics	A	B	C	D
Does it have hair?	√			
Can it make its own food?			√	√
Does it reproduce by spores?			√	
Does it breathe through gills?		√		
Does it give birth to live young?	√			
Can it move from place to place?	√	√		

(a) In the classification chart below, classify the living things by writing A, B, C and D in the correct groups. [2]



Score /2

Continue on next page.

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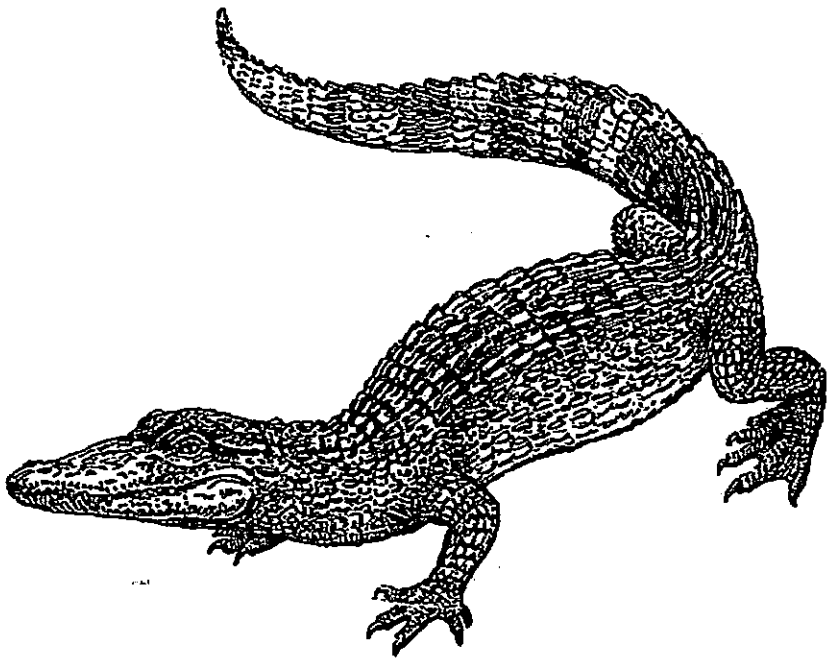
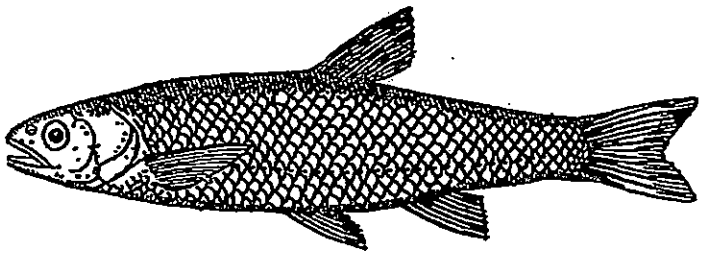
Continue from previous page.

(b) The diagrams below show a crocodile and a fish, not drawn to scale. David said that a crocodile is a fish because it has scales.



crocodile



fish

Based on your observation of the crocodile and fish above, do you agree with David? State one reason for your answer. [1]

_____

_____

_____

Score	/ 1

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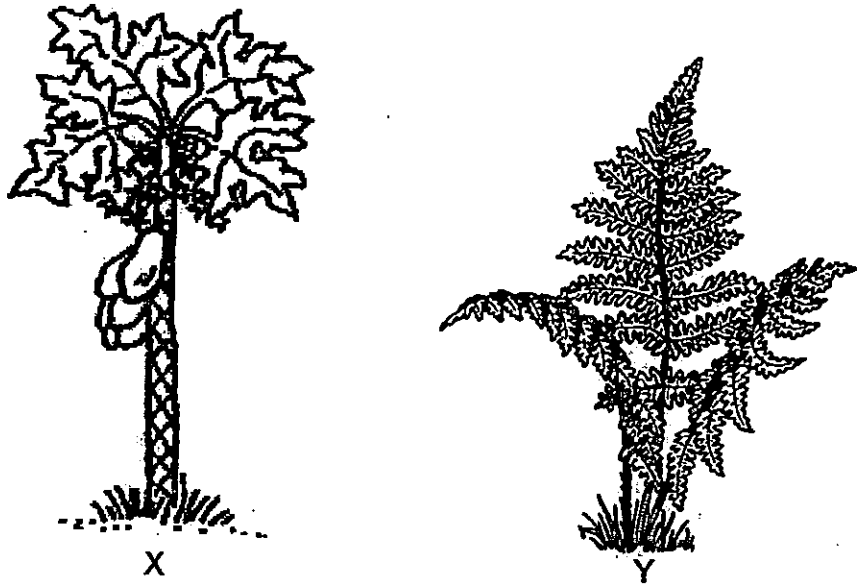
32. The diagrams below show two organisms, X and Y, not drawn to scale.



Based on your observation only, state 1 similarity and 1 difference between organisms X and Y. [2]

(Do **NOT** compare shape, size and colour.)

Similarity	
Difference	

Score	/ 2

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33. The table below shows the time taken for an animal to develop from egg to adult at different temperatures.

Temperature (°C)	15	21	25	30	33	35
Time taken for egg to develop into adults (days)	30	14	10	15	20	25

(a) What is the most ideal temperature for the animal to grow? Give a reason for your answer. [1]

_____

_____

_____

(b) What is the relationship between the temperature and the number of days taken for the animal to develop into an adult? [2]

From 15 °C to 25 °C	
From 30 °C to 35 °C	

Score	/ 3

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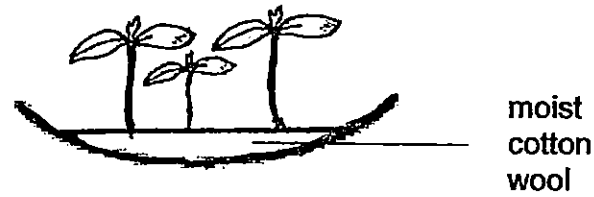
34. (a) The dish below shows some seeds on a moist cotton wool. Amy left the flask shown below in an enclosed cupboard. She watered the seeds every day. After a week, Amy observed that the seeds have germinated.

(i) Explain clearly why the seeds germinated in Amy's cupboard. [1]

_____

_____

Amy observed the seedlings shown below after 10 days.
Even though Amy kept the cotton wool moist, she found that the seedling had wilted and died in the cupboard.



(ii) Explain why the seedling wilted and died. [1]

_____

_____

Score	/ 2

Continue on next page.

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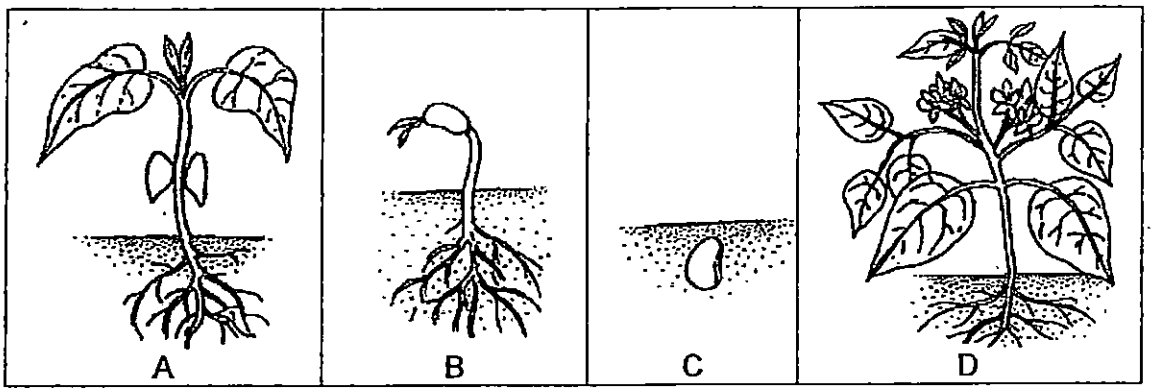
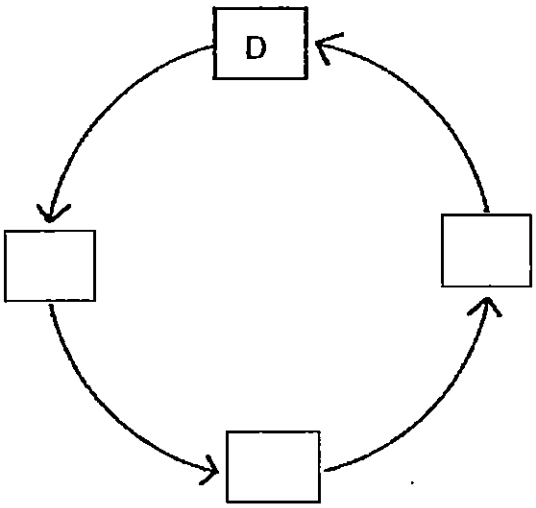
Continue from previous page.

The pictures below show the different stages of development of a plant.



(b) Complete the diagram below, with the letters A, B, C and D, to show the correct order of the development stages. [1]



Score	/ 1

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35. During PE lesson, Julie had to run around the field.

(a) Name four other systems that work with muscular system to enable Julie to run. [2]

(i) _____

(ii) _____

(iii) _____

(iv) _____

(b) Which body system helps to transport digested food to different part of the body? [1]

_____

_____

Score	/ 3

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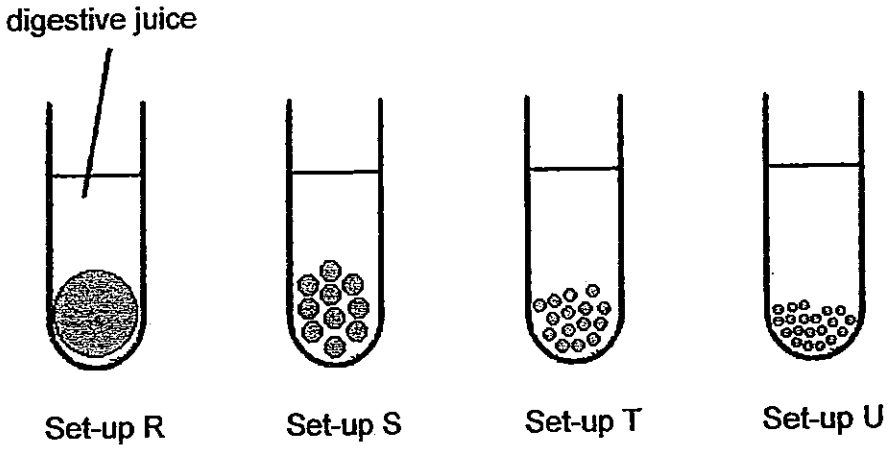
36. Sam would like to find out if breaking undigested food into smaller pieces helps in digestion. He set up 4 set-ups with the same amount of identical biscuit and equal amount of digestive juice. Each test tube contained the biscuit broken into smaller pieces as shown in the diagram below.



The results are shown in the table below.

Set-up	R	S	T	U
Number of pieces biscuit is broken into	1	10	15	20
Time taken for the biscuit to be digested (min)	25	20	16	8

(a) How is the time taken for the biscuit to be digested affected by the number of pieces the biscuit is broken into? [1]

_____

_____

Score	/ 1

Continue on next page.

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Continue from previous page.

(b) Based on Sam's experiment, how does chewing food helps in the digestion process? [2]

_____

_____

(c) List all the parts in the digestive system which produce digestive juices. [1]

_____

_____

Score	/ 3

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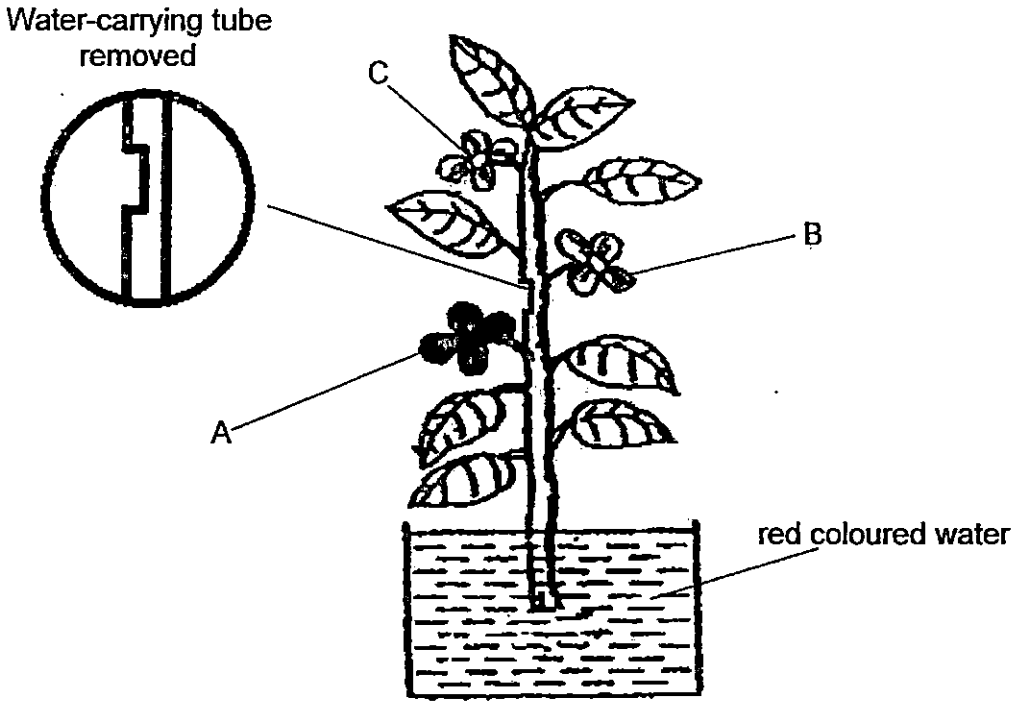
37. May placed a plant with white flowers in red coloured water as shown below. She made a cut in the stem and removed the water-carrying tube in the part shown below.



(a) What is the function of the water-carrying tube? [1]

_____

_____

(b) After 12 hours, May observed that flower A has become completely red while flowers B and C have streaks of red. Explain May's observation clearly. [2]

_____

_____

_____

Score	/ 3

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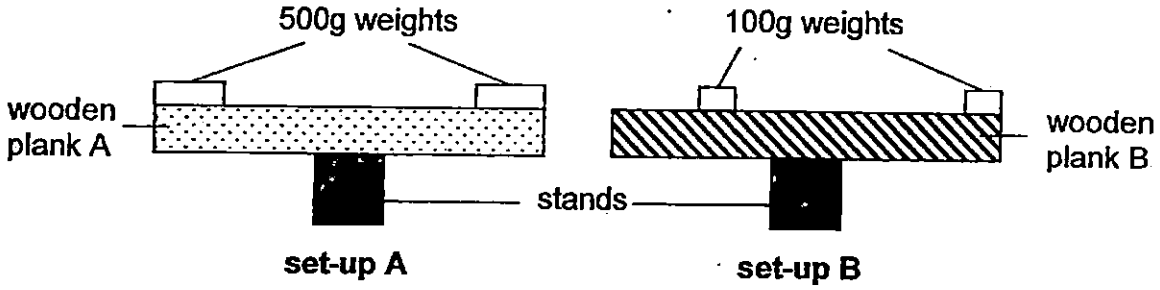
38. Ali wanted to find out if wooden plank A is stronger than wooden plank B. He prepared set-ups, A and B, using plank A and B. He placed each plank on a stand and added two identical weights on each plank as shown in the diagram below.



Ali's teacher commented that Ali's experimental set-up is not a fair test.

(a) Describe two changes that Ali should make to set-up B, in order to make the experiment a fair test. [2]

(i) _____

_____

(ii) _____

_____

(b) After making the changes in his set-up, Ali added another two identical weights on each end for each plank. He continued to add identical weights to each plank.

How can Ali determine which plank, A or B, is stronger? [1]

_____

_____

Score	/ 3

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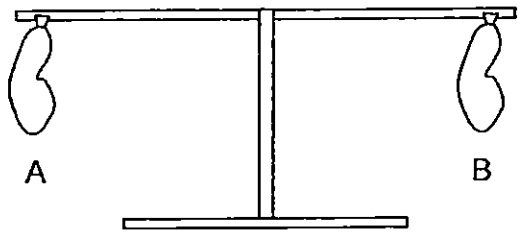
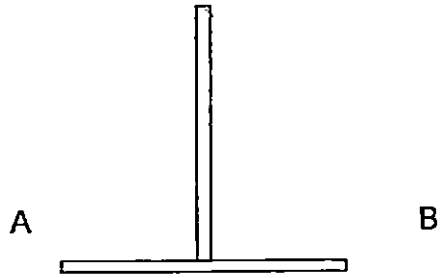
39. Jenny hung two identical deflated balloons on a balance as shown below.



Then she inflated balloon B.

(a) In the diagram below, draw how the balance will look like when balloon B is inflated. [1]



(b) State a property of air that is shown in your answer in (a). [1]

_____

_____

Score	/ 2

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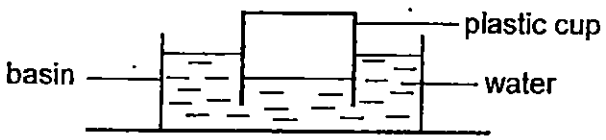
40. Tom filled a basin with some water. An empty inverted plastic cup was pushed into the basin of water as shown in the set-up below.

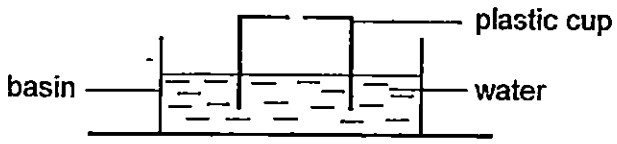


(a) Explain why only some water was able to enter the plastic cup. [1]

_____

_____

(b) Tom then made a hole at the bottom of the plastic cup and pushed the cup into the basin of water again.



He observed that more water could enter the plastic cup.
Explain clearly for this observation. [1]

_____

_____

(c) Tom predicts that the mass of the water in (b) is smaller. Do you agree? Give a reason for your answer. [1]

_____

_____

Score	/ 3

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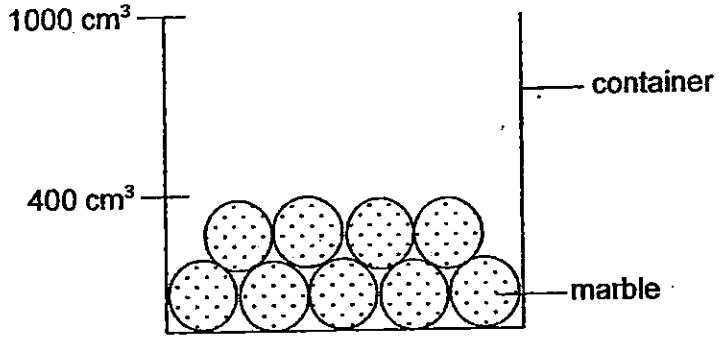
41. John had an empty container with a capacity of 1000 cm^3. He placed some marbles into the container until the marbles reached the 400 cm^3 mark as shown below.

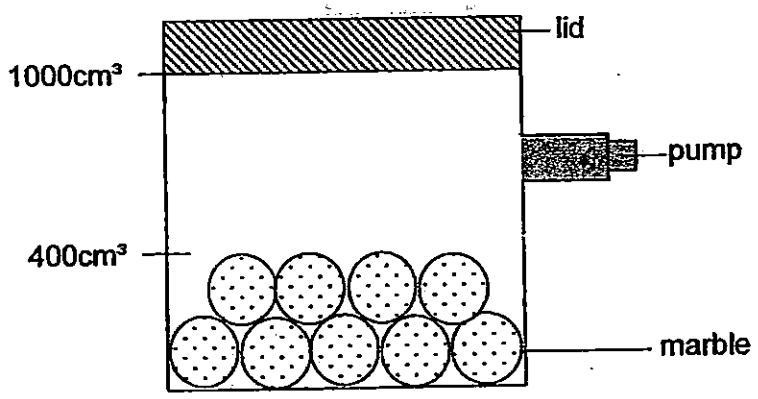


(a) John poured water into the container until the container is full. He noticed that he could pour in 700 cm^3 of water into the container. Explain why. [1]

_____

_____

(b) Using another identical set-up, John sealed the container and inserted a pump. He wanted to pump air, instead of water into the container.



Would John be able to pump in 750 cm^3 of air into the container? Explain your answer. [1]

_____

_____

Score	/ 2

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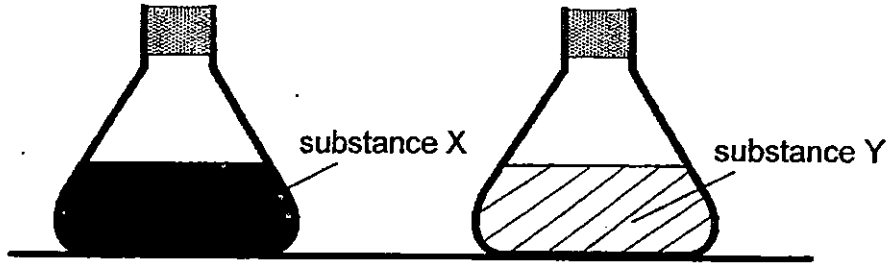
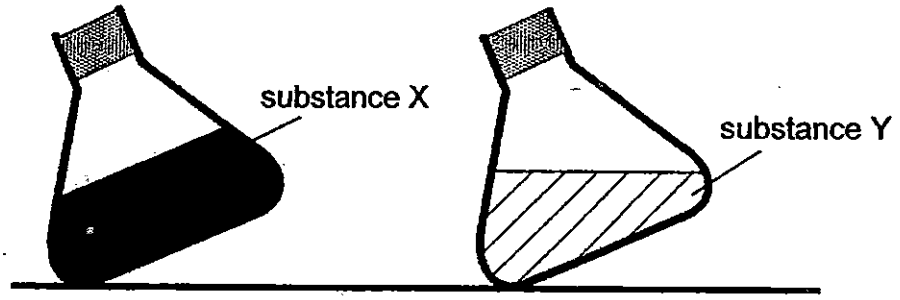
42. Fred placed 500 ml of substance X and Y respectively into two identical flasks.



Fred then tilted the flasks.



(a) What is the state of substance X and Y? [1]

X: _____ Y: _____

(b) Explain your answer in (a). [1]

_____

_____

Score	/ 2

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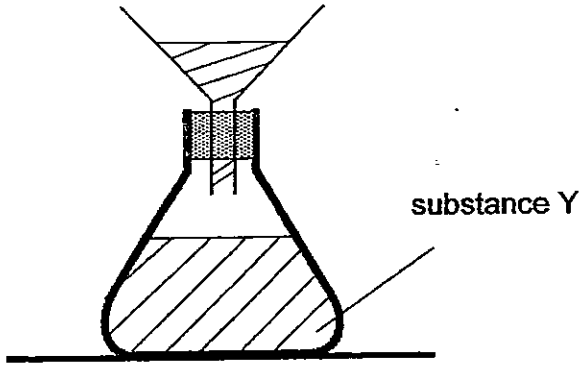
(c) Fred added more substance Y into the sealed flask as shown below.



He realized that he was unable to put in additional amount of substance Y into the sealed flask to fill it up **completely**. Explain why. [1]

Score	/ 1

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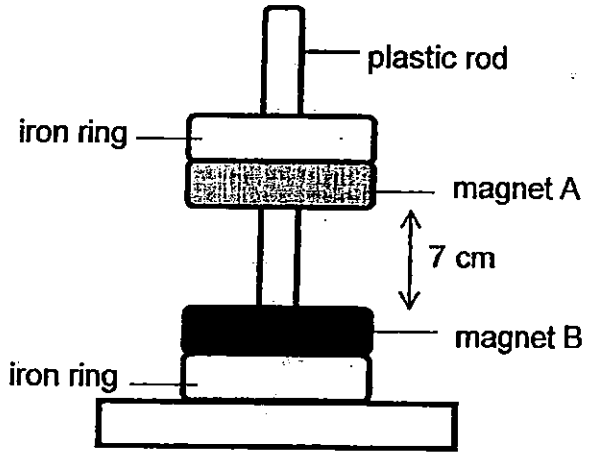
43. Jenny had four rings, A, B, C and D. Only two rings were magnets and the other two rings were made of iron. She placed the four rings through a plastic rod as shown below.



The distance between magnet A and magnet B is 7 cm.

(a) Explain why there was a distance of 7 cm between magnets A and B. [1]

_____

_____

(b) Jenny heated magnet B and placed the rings back in the same order. She noticed that the distance between magnets A and B decreased to 4 cm.
Explain her observation clearly. [1]

_____

_____

Score	/ 2

Continue on next page

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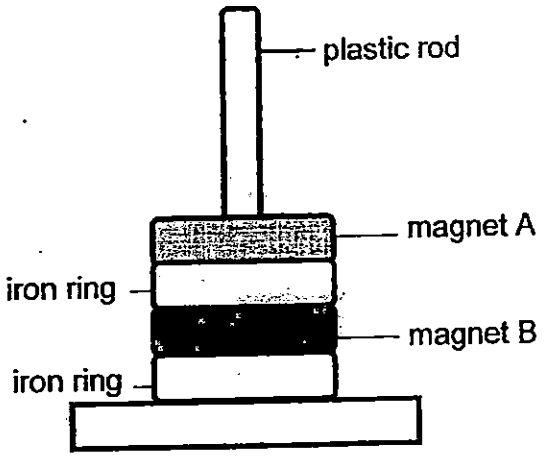
Continue from previous page

(c) Jenny changed the position of magnet A and the iron ring as shown below.



Explain why no space was observed between the four rings. [1]

_____

_____

Score	/ 1

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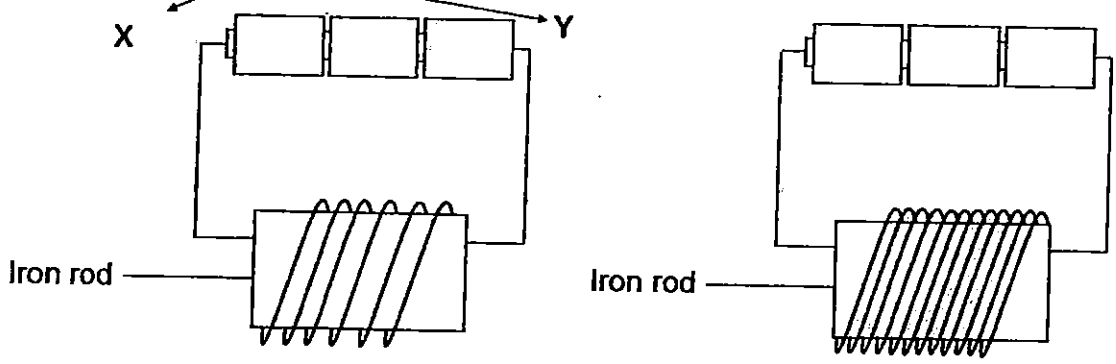
44. Steven had 2 identical iron rods. He wound different number of turns of wire around each iron rod. The ends of the wires were connected to identical batteries as shown in set-ups A and B below.



Set-up X

Set-up Y

For each set-up, Steven tested the strength of the electromagnet by counting the number of steel paper clips that each could attract. He recorded his results in the table as shown below.

Set-up	Number of turns of wire round the iron rod	Number of paper clips attracted to magnetised iron rod
X	6	7
Y	12	16

(a) What is the relationship between the number of turns of the wire round an iron rod and its magnetic strength? [1]

_____

_____

(b) Name **ANOTHER** variable that Steven must keep the same to ensure that he carried out a fair test. [1]

_____

(c) If the iron rod was replaced with an aluminium rod in Set-up Y, predict how many paper clips will be attracted by the aluminium rod when the number of coils around it was increased to 25? Give a reason for your answer. [1]

_____

_____

- END OF PAPER -

Score	/ 3

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : RAFFLES GIRLS PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA1

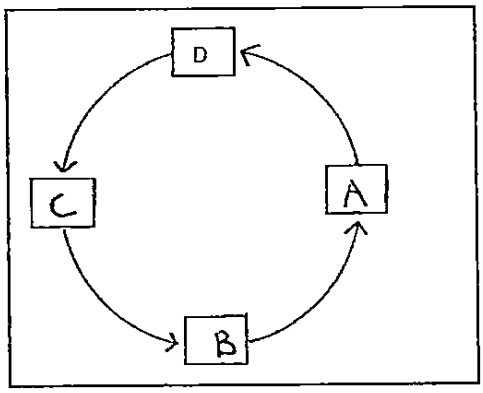
Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
2	3	2	4	4	3	4	1	2	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
1	4	3	4	4	4	1	1	1	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	1	1	3	3	2	3	4	1

Q31 Mammal → A
Q31 Fish → B
Q31 Flowering → D
Q31 Non – flowering → C
Q31b. No. Crocodile has legs but fish have fins.

Q32. Similarity → Both X and Y have leaves
Q32 Difference → X bears fruits while Y does not.

Q33a. The animal takes the shortest time to develop from egg to adult.
Q33b. From 15° to 25°C → The higher the temperature the shorter the time taken for the egg to develop into adult.
Q33b. From 30° to 35°C → The higher the temperature the longer the time taken for the egg to develop into adult.

Q34ai) Seeds need air, water and warmth to germinate. Since the seeds got all of this, they germinated.
Q34aii) All living things need air, water and food to survive. Plants make their own food, but they need light to do that. There was no light in the cupboard, the seedling wilted and died.
Q34b. SEE PICTURE



Q35a. i) Skeletal System ii) Respiratory system iii) Circulatory system iv) Digestive system
Q35b. Circulatory system

Q36a. The more the number of pieces, the faster the biscuit is digested.
Q36b. Chewing breaks the food into smaller pieces, so there is greater surface area of food for the digestive juices to act on, making digestion faster.
Q36c. Mouth, stomach and small intestine.

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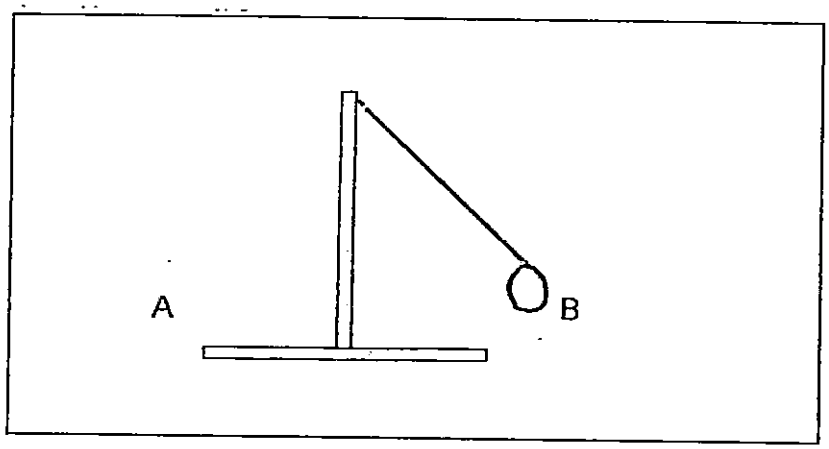
Q37a. It carries water and minerals salts from the roots to all parts of the plant.
Q37b. The water carrying tubes that lead to flowers B and C have been damaged. Hence, little water was able to go up to the flowers. The water carrying tubes leading to flower A is intact and could transport water to the flower.

Q38ai) Change the weights to 500g weights.
Q38aii) Place the weights at the end of the plank.
Q38b. The stronger plank will be the one, which can hold a greater amount of weight before it breaks.

Q39a. SEE PICTURE



Q39b. Air has mass.

Q40a. Air that is trapped occupies space in the plastic cup. Since air can be compressed, water could enter the cup to occupy space.
Q40b. Air, which occupies space in the plastic cup, could escape through the hole, so more water could enter the plastic cup to occupy the space previously occupied by air.
Q40c. There will be no change in the mass as the volume of water remained in the basin remained the same.

Q41a. There are air spaces between the marbles. When water flows in, it occupies the spaces.
Q41b. Yes. Air can be compressed; so can take up a smaller space.

Q42a. X : Solid Y: Liquid
Q42b. Solid has a definite shape while liquid does not.
Q42c. The air, which occupied space in the sealed flask, could not escape so there was no space for substance Y to occupy.

Q43a. Like poles of magnet A and B faced each other and so magnet A repelled B.
Q43b. Heating causes the magnet B to lose some of its magnetism.
Q43c. Iron is a magnetic material so the iron rings did not allow magnetism to pass through.

Q44a. The greater the number of turns of wires around an iron rod, the greater its magnetic strength.
Q44b. He must use the same type of wire.
Q44c. O. Aluminum is not a magnetic material so will not be magnetized.

THE END

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RED SWASTIKA SCHOOL

2015 SEMESTRAL ASSESSMENT 1
SCIENCE
PRIMARY 4

Name : _____ ( )

Class : Primary 4/ _____

Date : 12 May 2015

BOOKLET A

Total time for Booklets A & B: 1h 30 min

Booklet A: 30 questions (60 marks)

Note:

1. Do not open the booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the booklet.
3. Do not waste time. If the question is too difficult for you, go on to the next question.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
   a. Page 1 to Page 17
   b. Questions 1 to 30

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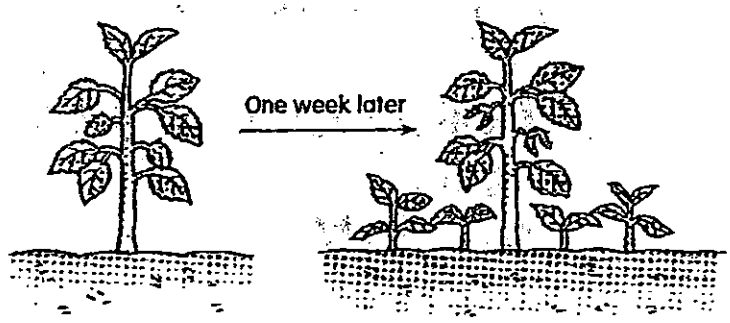
Section A

For Questions 1 to 30, choose the most suitable answer and shade its number in the OAS provided.

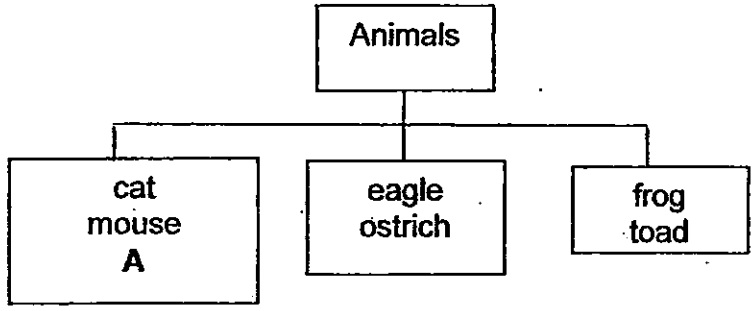
1. Study the diagram below.



Which of the characteristics of living things does the above show?

(1) Living things can respond.
(2) Living things can reproduce.
(3) Living things need air and water.
(4) Living things can move by themselves.

2. Study the classification table below.



Which of the following can animal A be?

(1) zebra
(2) lizard
(3) guppy
(4) butterfly

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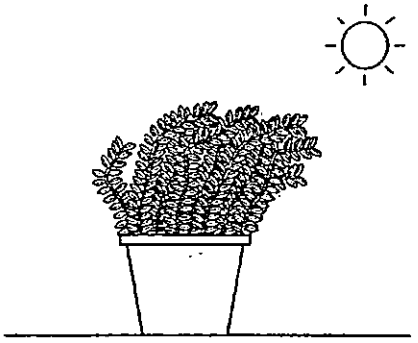
3. Four students found some plants growing in a pot, as shown below.



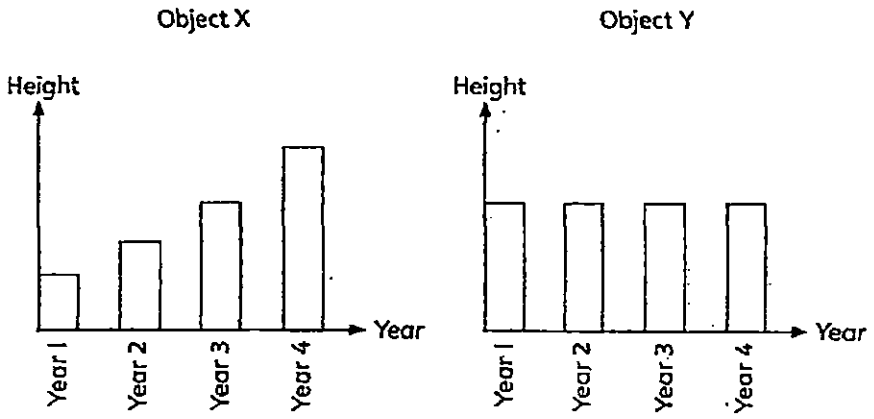
The students made the following statements:

A: The plants will compete with each other for water.
B: The plants will compete with each other for sunlight.
C: The plants will compete with each other for nutrients in the soil.

Which of the statements are correct?

(1) A and B only
(2) B and C only
(3) A and C only
(4) A, B and C

4. Study the bar charts shown below.



Which of the following correctly shows examples of X and Y?

	Object X	Object Y
(1)	tree	baby
(2)	baby	cupboard
(3)	cupboard	block of flats
(4)	block of flats	tree

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5. Which of the following living things develop from seeds?

(1) grass
(2) mushroom
(3) toadstool
(4) bird's nest fern

6. The characteristics of two animals are given in the table below.

Characteristic	Animal A	Animal B
Lays eggs	✓	✓
Has a 4-stage life cycle	✓	X
Useful to man in at least one stage of its life cycle	✓	✓
Is a pest to man in at least one stage of its life cycle	✓	X

Based on the information given, which of the following animals are represented by A and B?

	Animal A	Animal B
(1)	mosquitc	frog
(2)	mosquito	duck
(3)	butterfly	chicken
(4)	grasshopper	cockroach

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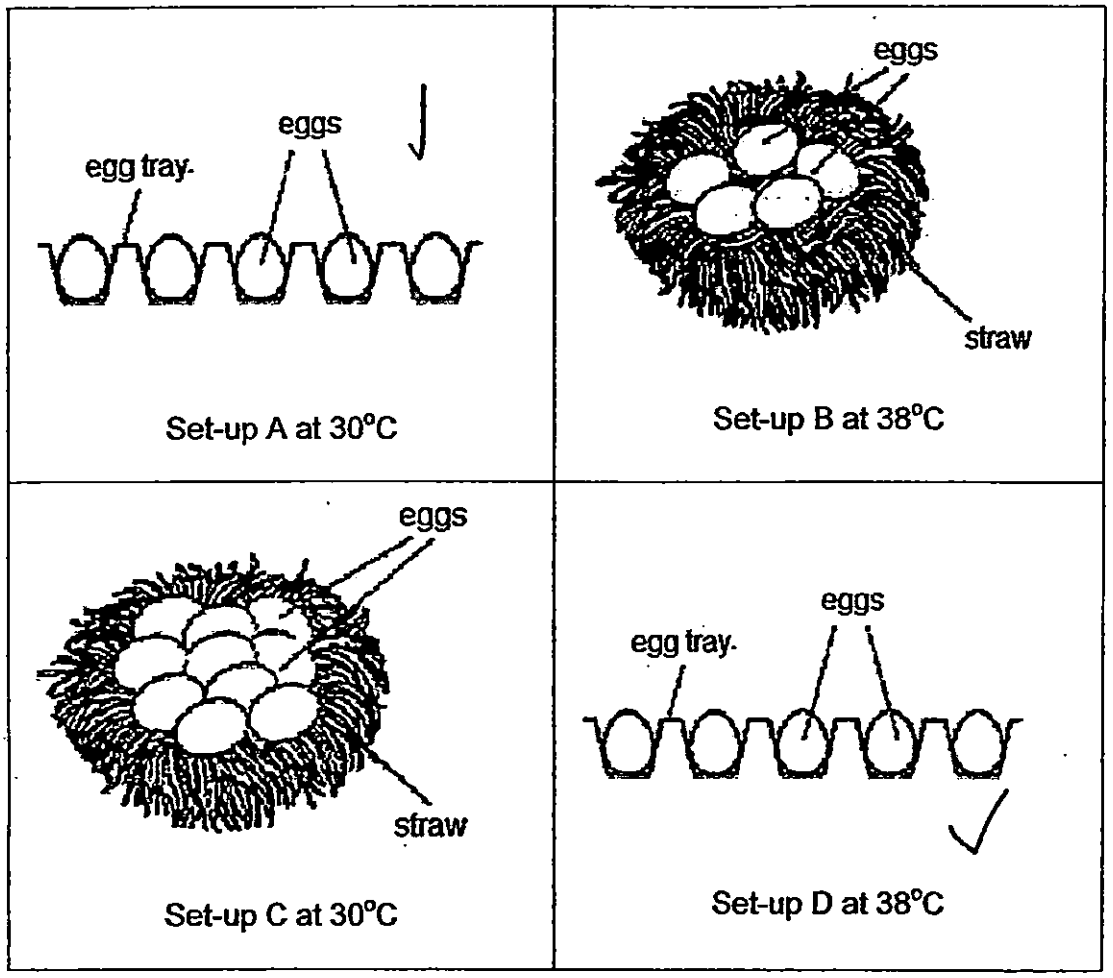
7. Janice wanted to find out what temperature is more suitable for hatching fertilised chicken eggs in an incubator.



Which two set-ups should she use in order to have a fair experiment?

(1) A and B
(2) A and D
(3) B and C
(4) B and D

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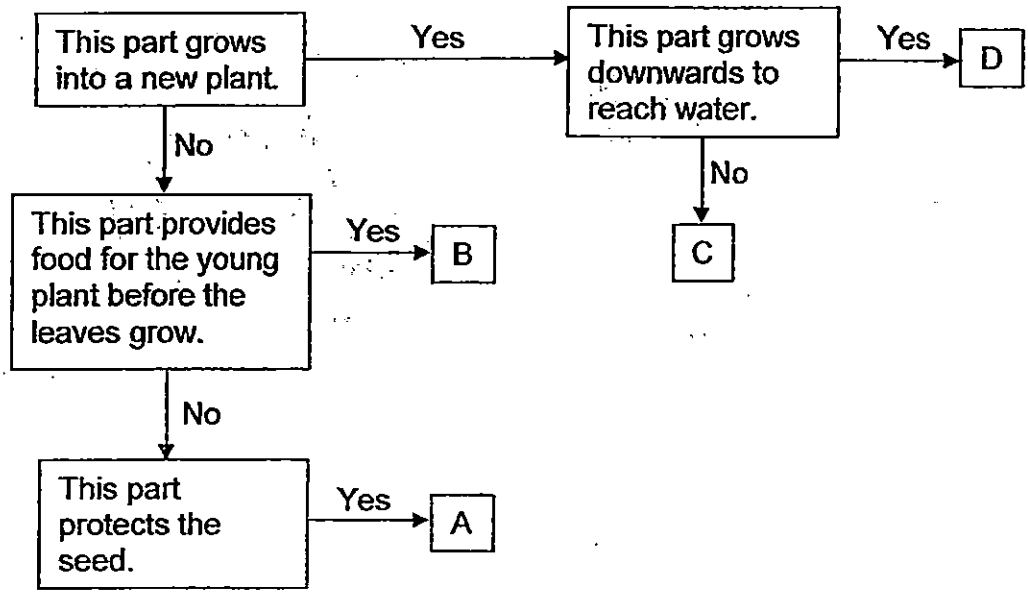
8. The diagram below shows a flow chart. A, B, C and D represent different parts of a seed which is grown in the soil in the garden.



Which of the following correctly identifies the letters representing the shoot and the seed leaves?

	Shoot	Seed leaves
(1)	A	D
(2)	B	C
(3)	C	B
(4)	D	A

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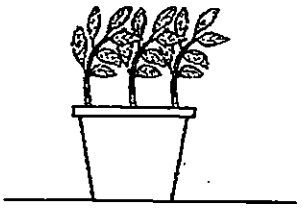
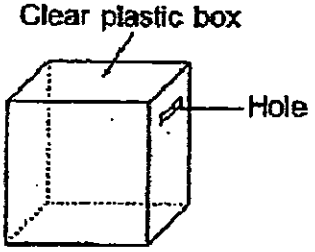
9. Gerald's Science teacher showed him a pot of young plants. He was told that they had been kept in a box for one week and had been watered daily. The box was placed in the open school field.

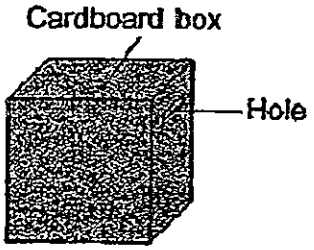


Which of the following boxes could the pot of young plants have been placed in?

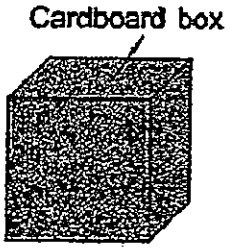
(1)



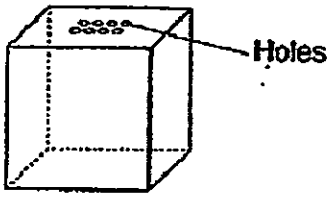
(2)



(3)



(4)



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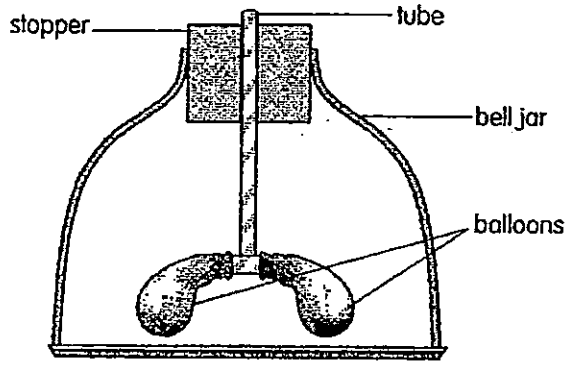
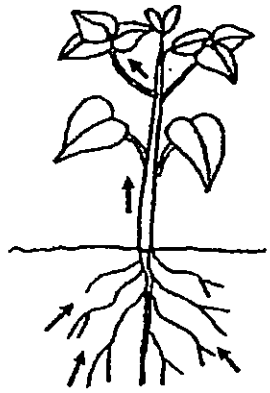
10. A model of the respiratory system is shown below.



Which of the following correctly matches the parts of the model to the organs of the respiratory system?

	Tube	Balloons	Bell jar
(1)	windpipe	lungs	rib cage
(2)	windpipe	lungs	heart
(3)	gullet	heart	rib cage
(4)	gullet	lungs	heart

11. Look at the diagram of the plant shown below.



What do the arrows on the diagram show?

(1) The movement of oxygen in the plant.
(2) The movement of carbon dioxide in the plant.
(3) The movement of food to all parts of the plant.
(4) The movement of water to all parts of the plant.

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12. Ali had his dinner four hours ago. How did the food travel in his body before it was completely digested and absorbed?

(1) gullet → stomach → mouth → small intestine
(2) mouth → gullet → stomach → small intestine
(3) stomach → mouth → small intestine → gullet
(4) mouth → small intestine → stomach → large intestine

13. Which of the following activities are most likely to speed up a person's heart rate?

A: taking a nap
B: taking a slow walk
C: doing aerobic exercises
D: going on an exciting roller coaster ride

(1) B only
(2) A and B only
(3) A and C only
(4) C and D only

14. Which of the four human systems is correctly matched to its function?

	System	Function
(1)	Muscular	Breaks down food into simpler substances.
(2)	Digestive	Supports the body and gives it a shape.
(3)	Circulatory	Transports digested food, water and other substances to all parts of the body.
(4)	Skeletal	Removes undigested food from the body.

15. Four healthy potted plants were provided with different conditions as shown in the table below.

Pot	Location	Water	Temperature
A	cupboard with door closed	present	26°C
B	dark storeroom	present	24°C
C	garden	absent	30°C
D	garden	present	30°C

One week later, only one of the plants grew healthily. The leaves of the other three plants started to turn yellow.

Which pot of plants grew healthily?

(1) Pot A
(2) Pot B
(3) Pot C
(4) Pot D

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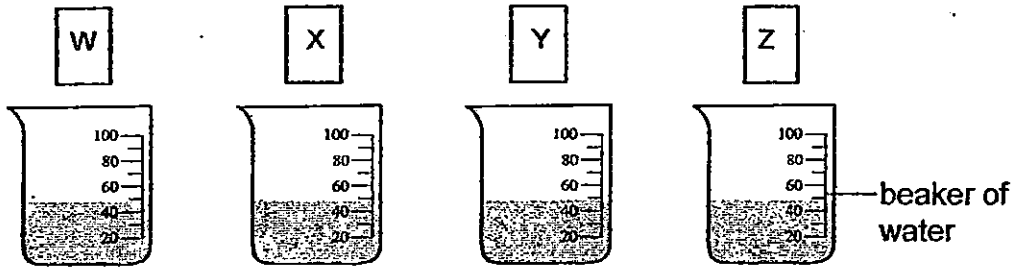
16. Four thin sheets of materials W, X, Y and Z of similar sizes, were weighed individually before they were put into four beakers containing equal amounts of water. After fifteen minutes, each sheet was weighed again. Their masses were recorded in the table below.

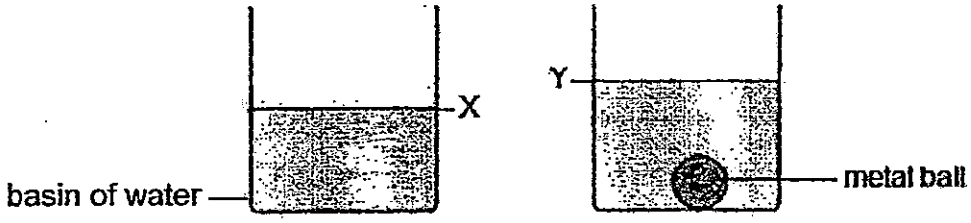


Material	Mass at the beginning (g)	Mass after 15 minutes (g)
W	8	16
X	10	10
Y	12	14
Z	13	18

Based on the information given, which material is most suitable for use in making a tent?

(1) W
(2) X
(3) Y
(4) Z

17. An experiment was set up as shown below.



At the start of the experiment, the water level was at X. After a student dropped a metal ball into the beaker of water, the water level rose to Y. This experiment shows that _____.

(1) the metal ball does not take up space
(2) water can be compressed
(3) water does not have a definite volume
(4) the metal ball has a definite volume.

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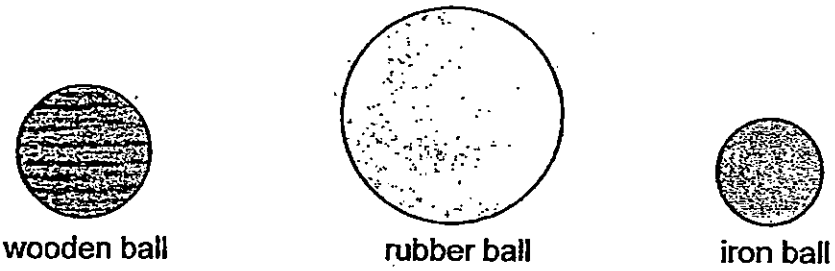
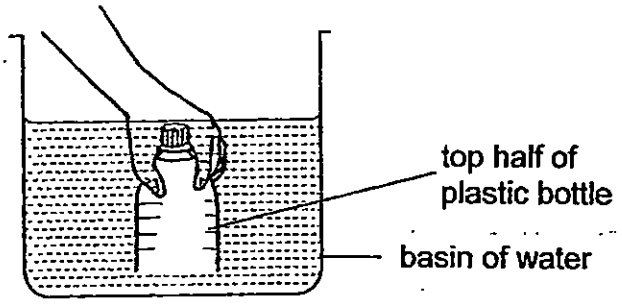
18. The diagram below shows three balls of the same mass.



Which of the following statement is true?

(1) The iron ball has the least amount of substance in it.
(2) The wooden ball has the least amount of substance in it.
(3) The rubber ball has the most amount of substance in it.
(4) The three balls have the same amount of substance in them.

19. Junaidah cut a plastic bottle into half. She screwed the bottle cap tightly and pushed the top half of the bottle downwards into the basin of water, until it was fully submerged in the water, as shown below. She observed that only a little water entered the bottle.



While holding the bottle under water, she unscrewed the bottle cap. Air bubbles were observed coming out from the top of the bottle, and water rushed in from the bottom of the bottle.

What did the experiment show?

A: Air can be compressed.
B: Air takes up space.
C: Water takes up space.

(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

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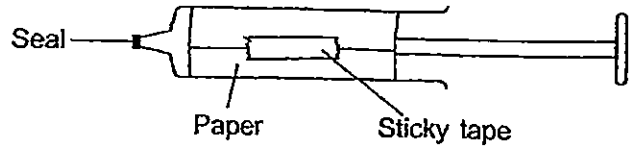
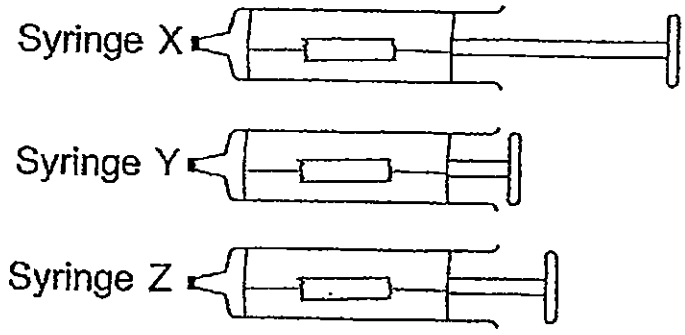
20. Mr Rahman prepared three identical syringes by wrapping up the sides syringe with paper, as shown below. This is to prevent his student seeing the contents of the syringe. He then filled one syringe with another with air and the last one with a mixture of air and water. The r of each syringe were tightly sealed to stop the contents from leaking ou



Mr Rahman then pressed the plunger of each syringe as far as it would The results were shown below:



Based on the results, identify the contents of each syringe.

	Syringe X	Syringe Y	Syringe Z
(1)	Air only	Water only	Air and water
(2)	Air and water	Air only	Water only
(3)	Water only	Air only	Air and water
(4)	Water only	Air and water	Air only

21. Lost in the forest by himself, Sammy ties a bar magnet to a string anc the magnet. When the magnet stops spinning, he should see the n resting in the _____ direction.

(1) North-South
(2) North-West
(3) South-East
(4) South-West

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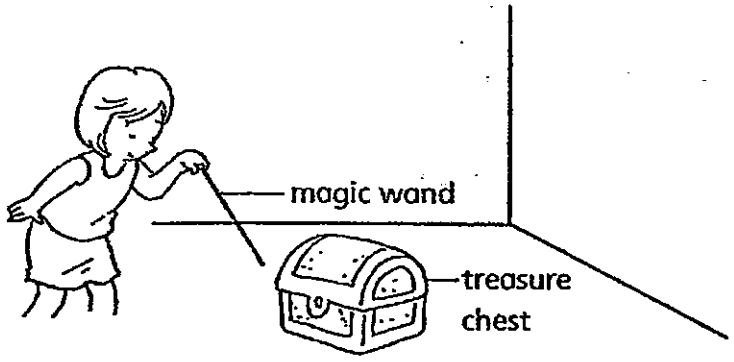
22. Kelly is performing a magic show. She is using a magic wand to push a treasure chest to a corner without the magic wand touching the chest.



She made use of magnets to perform her show.

Which of the following concepts has Kelly used in her magic show?

A: Like poles of two magnets repel.
B: Unlike poles of two magnets attract.
C: Magnetic forces can act at a distance.

(1) B only
(2) C only
(3) A and C only
(4) B and C only

23. Devi wanted to find out the magnetic strength of four different bar magnets. She placed each magnet and a nail on the table and she slowly moved the magnet closer to the nail until it could attract the nail. Her results are shown in the table.

	Magnet A	Magnet B	Magnet C	Magnet D
Distance between the magnet and the nail when the magnet could attract the nail	6 cm	8 cm	2 cm	4 cm

Based on the table, arrange the magnets according to its magnetic strength starting from the magnet with the least magnetic strength.

(1) B, A, D, C
(2) C, B, D, A
(3) C, D, A, B
(4) D, C, A, B

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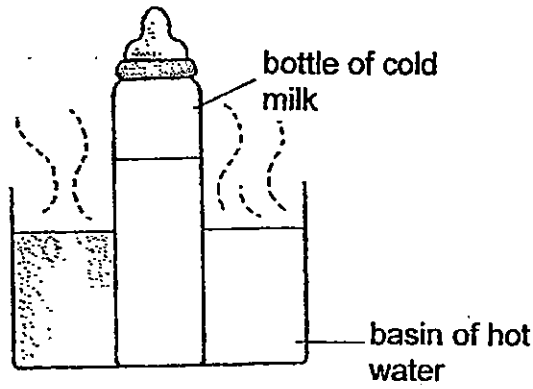
24. Heat is given out by _____.

(1) an unlit candle
(2) melting ice
(3) an empty metal cup
(4) the Sun

25. Study the diagram below.



A bottle of cold milk was placed in a basin of hot water. Which of the following statements are correct?

A: The cold milk loses heat.
B: The temperature of the hot water falls
C: The cold milk gains heat from the hot water.
D: The hot water gains heat from the cold milk.

(1) A and B only
(2) B and C only
(3) A and D only
(4) C and D only

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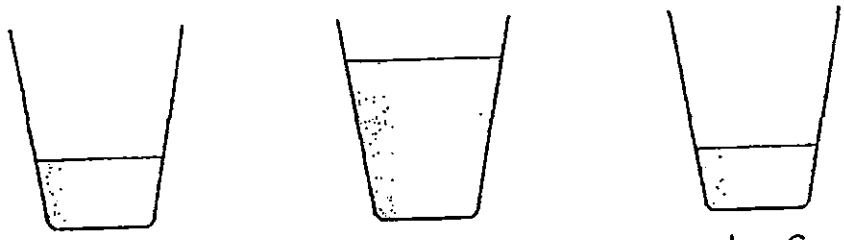
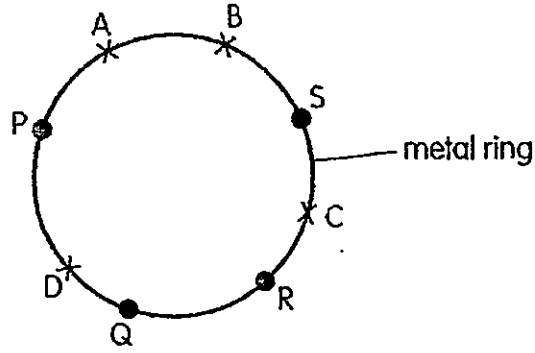
26. Study the diagram below.



The glasses are filled with different amounts of water at different temperatures. Arrange the glasses in order, beginning with the one that has the most heat .

(1) A, C, B
(2) B, A, C
(3) B, C, A
(4) C, A, B .

27. P, Q, R and S are blobs of wax on a metal ring. When the ring was heated at a certain point, blob S dropped off first, followed by P, R and Q.



For this to happen, the ring was heated at point _____.

(1) A
(2) B
(3) C
(4) D

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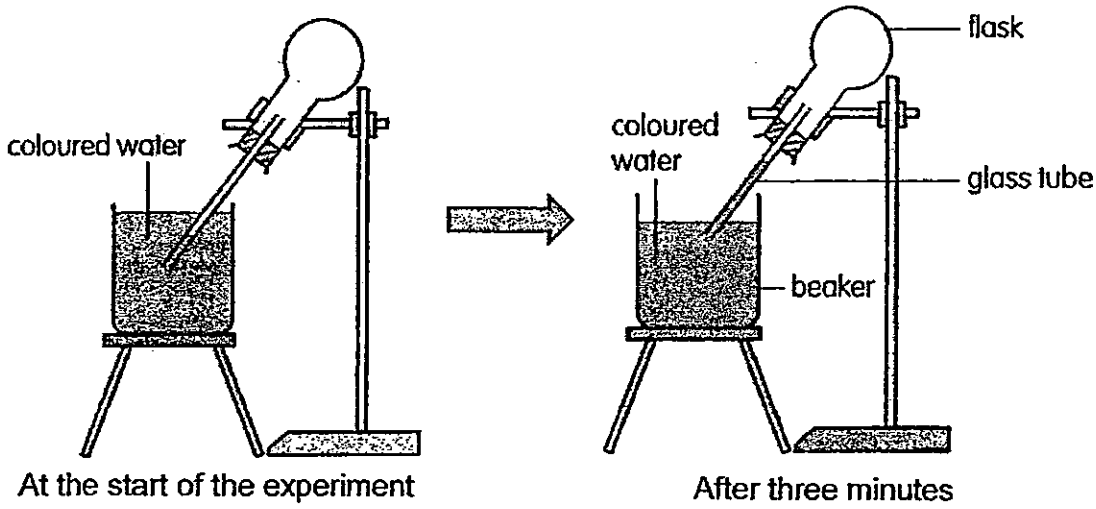
28. An experiment was set up as shown below. After three minutes, the coloured water rose up the glass tube.



What was the cause of this observation?

A: The flask was heated.
B: The beaker was cooled.
C: The flask was cooled.

(1) C only
(2) A and B only
(3) B and C only
(4) A, B and C

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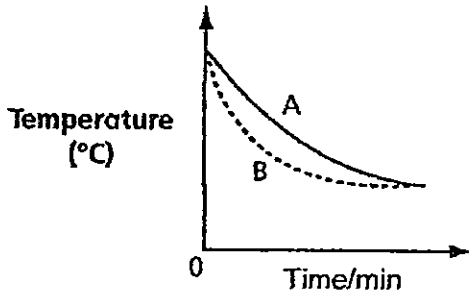
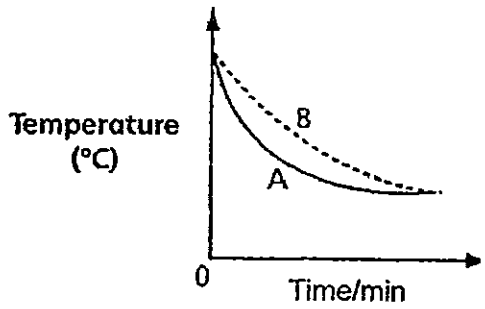
29. There are two identical beakers, A and B. Beaker A contains 200 ml of boiling water but Beaker B contains 500 ml of boiling water. The two beakers are left on a table in an air-conditioned room with the temperature set at 20°C.

Which of the following line graphs shows the likely changes in the temperature of the water in the two beakers?

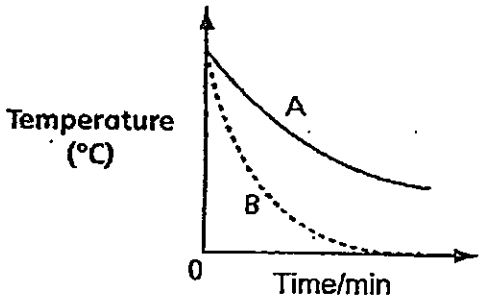
(1)



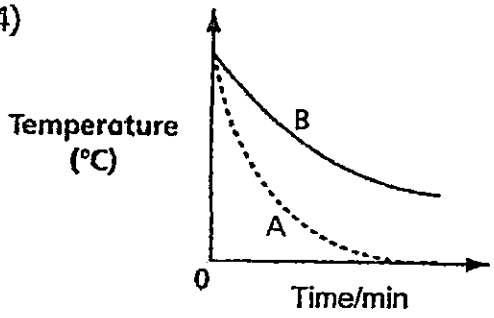
(2)



(3)



(4)



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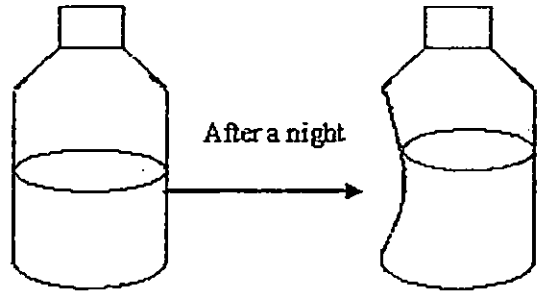
30. A plastic bottle half-filled with water was put in a refrigerator for a night. The next morning, the shape of the bottle was changed as shown below. What could have possibly caused the change?



(1) The water in the bottle has gained heat and contracted..
(2) The air in the bottle has lost heat and contracted.
(3) The water in the bottle has lost heat and decreased in mass.
(4) The air in the bottle has gained heat and expanded.

END OF SECTION A
PLEASE CHECK YOUR WORK.

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恭宽信敏

RED SWASTIKA SCHOOL

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SCIENCE
2015 SEMESTRAL EXAMINATION 1
PRIMARY 4

Name : _____ ( )

Class : Primary 4/ _____

Date : 12 May 2015

BOOKLET B

14 Questions
40 Marks

In this booklet, you should have the following:
a. Page 18 to Page 33
b. Questions 31 to 44

MARKS

	OBTAINED	POSSIBLE
BOOKLET A		60
BOOKLET B		40
TOTAL		100

Parent's Signature : _____

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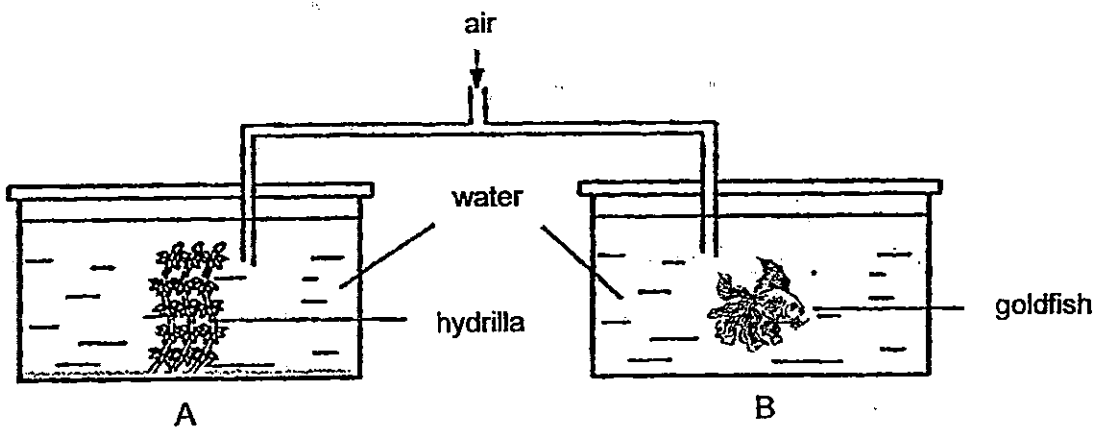
Section B

Answer all the questions in the space provided.

31. Jason conducted an experiment using the set-ups below. The set-ups were placed under a light source during the experiment.



Two tightly sealed glass containers of the same size containing the same amount of water are supplied with an equal amount of air. Both set-ups are left under the light source for two weeks.

(a) Which organism, the hydrilla or the goldfish, is likely to die at the end of two weeks? (1 m)

_____

_____

(b) Explain your answer for part (a). (1 m)

_____

_____

The experiment is repeated using only set-up A. Set-up A is placed in a dark room.

(c) What will happen to the plants after two weeks? Why? (1 m)

_____

_____

3

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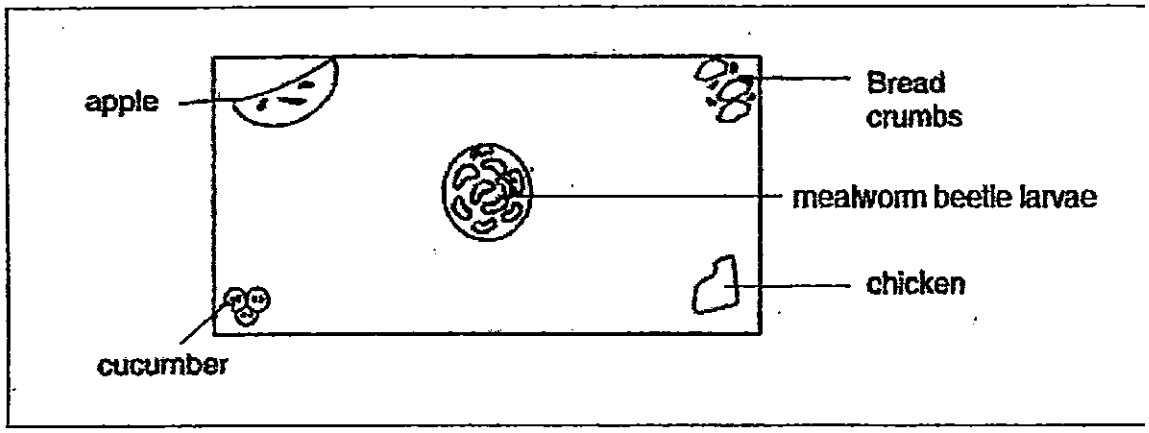
32. Jerry carried out an experiment with ten mealworm beetle larvae. The larvae were placed in the centre of a tray as shown in the diagram below. The same amount of food was placed at each corner.



After half an hour, the number of larvae at each corner was counted. The results were then recorded in the table below.

Distance of food from the larvae(cm)	Type of food	Number of larvae after half an hour
20	apple	3
20	bread crumbs	5
20	cucumber	2
20	chicken	0

(a) What was the changed variable in the experiment? (1 m)

_____

_____

(b) Based on the table, which type of food do you expect to be eaten up completely first? Why? (2 m)

_____

_____

(c) In terms of their life cycle, state one way in which the mealworm beetle larva is different from the cockroach nymph. (1 m)

_____

_____

4

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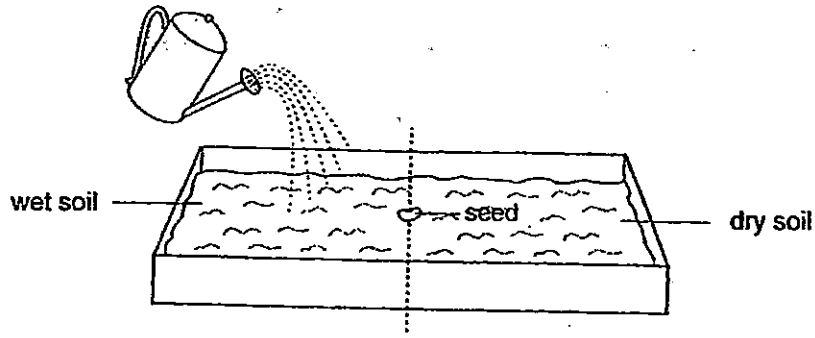
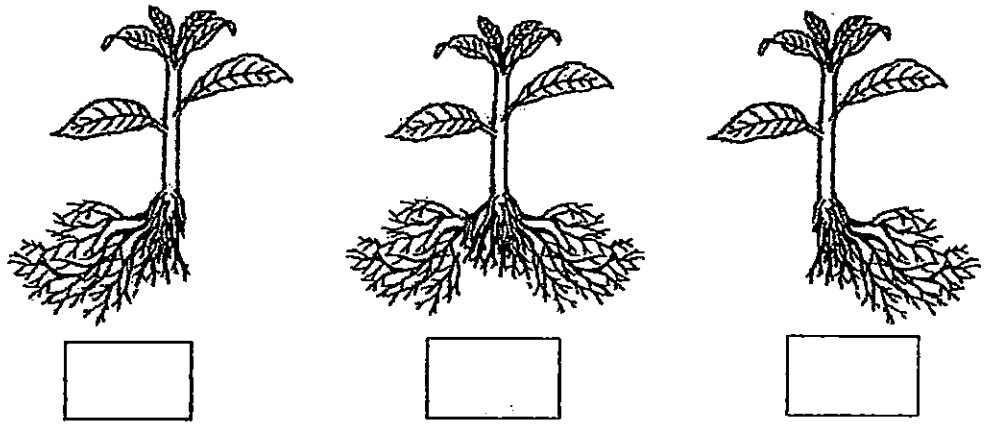
33. Susan planted a seed in the centre of a large, rectangular box. She placed the box in a sunny garden and watered the soil daily. However, she only watered the left half of the soil in the box, as shown below.



After two months, Susan dug up the plant and examined the roots.

(a) Put a tick (✓) in the correct box below to show how you would expect the roots to grow. (1 m)



(b) Explain your answer to part (a). (1 m)

_____

_____

2

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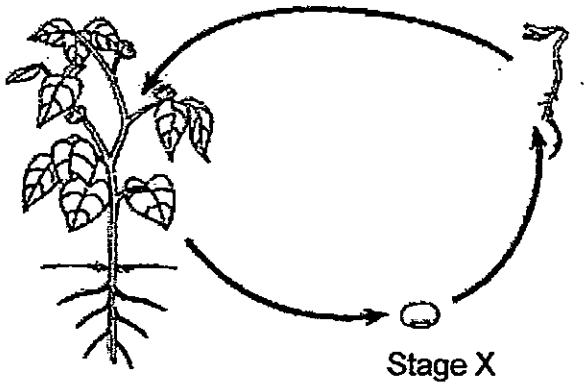
The diagram below shows the life cycle of the plant that Susan grew.



(c) What does the plant in Stage X require in order to germinate? (1 m)

_____

_____

/1

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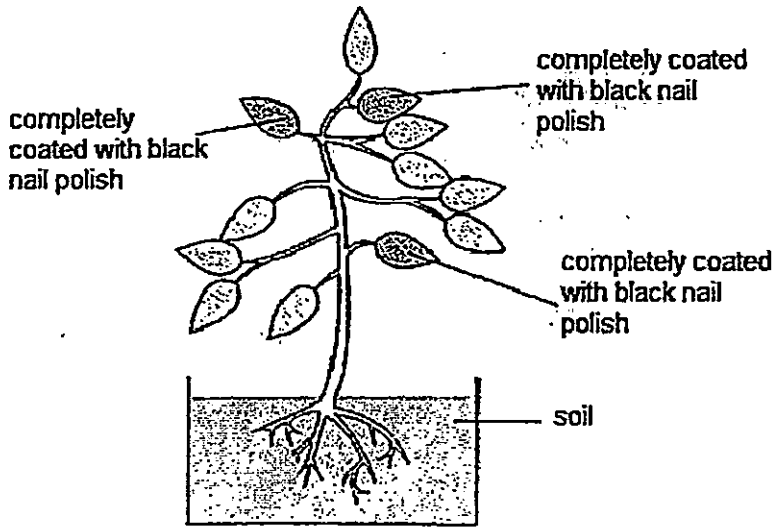
34. Siti carried out an experiment on the plant shown below. She painted three of its leaves with black nail polish.



(a) After two weeks, what will happen to the leaves that were covered with black nail polish? (1 m)

_____

_____

(b) Explain your answer in part (a). (1 m)

_____

_____

Siti carried out a second experiment to find out whether the number of leaves would affect the amount of water absorbed by a plant.

(c) Put a tick (✓) in the correct boxes to indicate the variables that she should keep the same or change in order to carry out her experiment.(1 m)

	Variables	Keep the same	Change
i	Amount of water given	✓	
ii	Number of leaves on each plant		✓
iii	Location of each plant	✓	
iv	Type of plant	✓	

3

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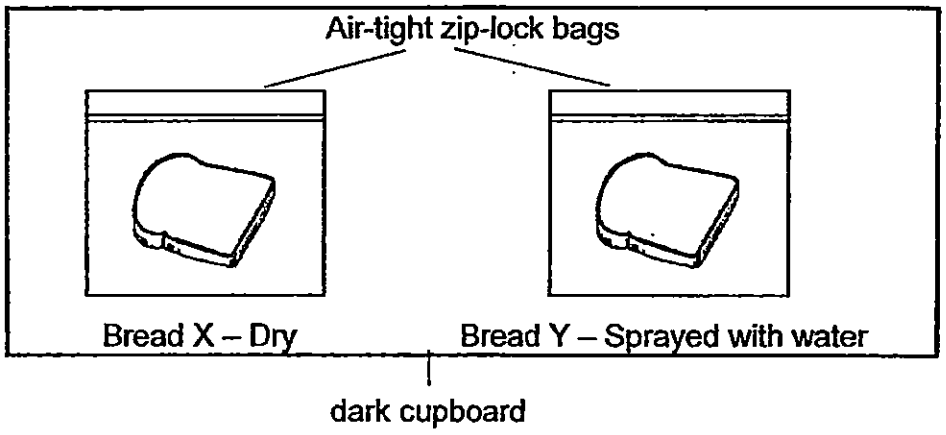
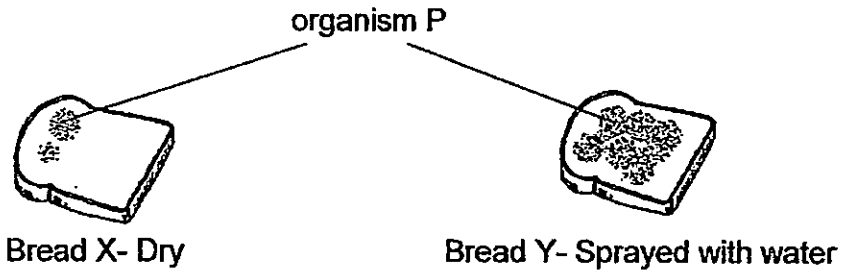
35. Benedict placed two similar slices of fresh bread in two similar air-tight zip-lock bags. He left both bags in a dark cupboard for one week.



After one week, he noticed organism P growing on both slices of bread as shown below.



(a) Identify organism P growing on the bread slices. (1 m)

_____

(b) From the diagram, what can be observed about the patches of organism P growing on both Bread X and Bread Y? (1 m)

_____

_____

(c) Can organism P be classified in the same group of living things as a sunflower? Why? (1 m)

_____

_____

3

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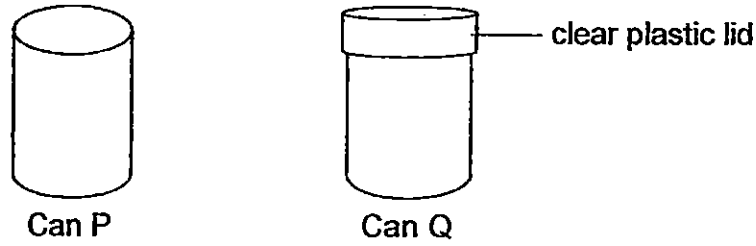
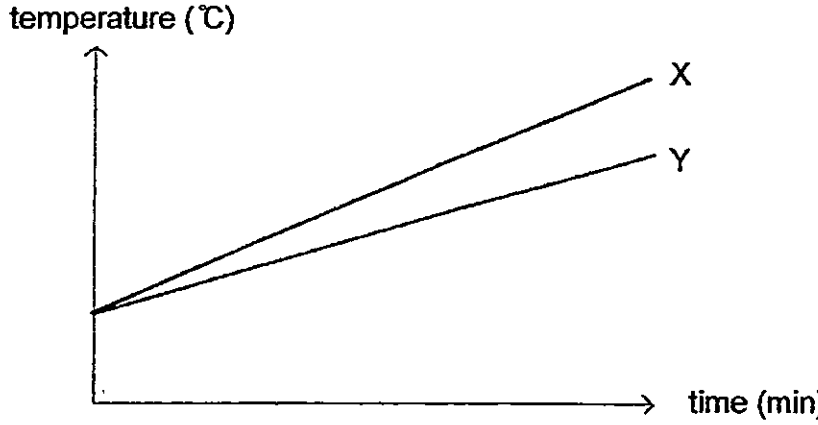
36. The diagram shows two cans made of the same material placed in a school garden under the hot sun for two hours. Can P is not covered while Can Q is covered with a clear plastic lid.



The temperatures of the air in both cans are recorded as shown in graphs X and Y below.



(a) Fill in the blanks below correctly with the letters 'X' and 'Y' to show the change in the temperature of air in Can P and Can Q. (1 m)

Can P: _____

Can Q: _____

(b) Explain your answer in part (a) for Can Q. (1 m)

_____

_____

2

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37. The table below shows some properties of three types of material.

Property	Material R	Material S	Material T
Flexible?	✓	X	X
Lightweight?	X	✓	X
Waterproof?	✓	✓	✓

Rena wants to bring some crisp biscuits to a picnic. She wants a plastic container that can ensure that the biscuits will not be crushed so easily into pieces.

(a) Which material, R or S, is more suitable for Rena's use? Give two reasons to support your answer based on the table given. (2 m)

_____

_____

_____

(b) Material T is most suitable to be used to make the windscreen of a car. Identify another physical property of material T. (1 m)

_____

_____

3

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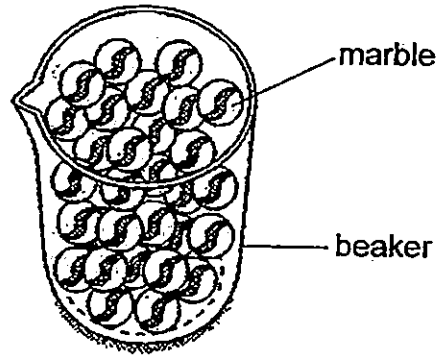
38. James filled a 500 ml beaker completely with marbles as shown.



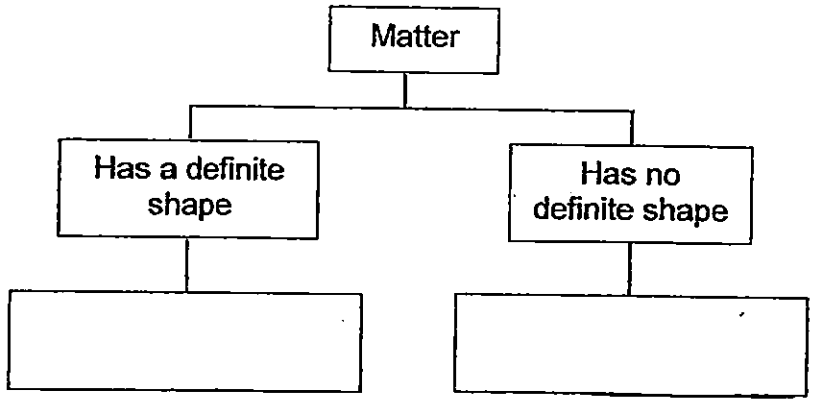
He poured 20 ml of water into the beaker containing the marbles.

(a) Would the water overflow from the beaker? Explain your answer. (1 m)

_____

_____

(b) Complete the boxes given below by writing the words, "marbles" and "water" in the correct box. (1 m)



/2

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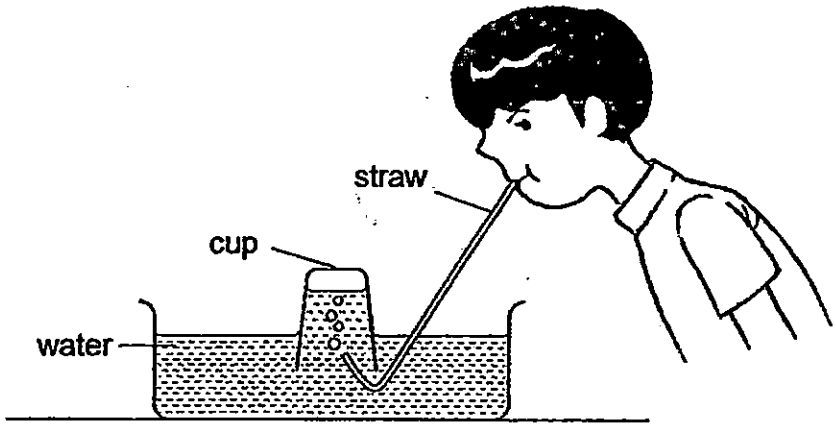
39. Jinxiang filled a cup with water and inverted it into a basin of water as shown below. Using a bendable straw, he then blew air bubbles into the cup.



(a) Jinxiang observed that the water level in the cup decreased as he blew bubbles into it. Explain why. (1 m)

_____

_____

(b) What happened to the water level in the basin as Jinxiang blew bubbles into the cup? Why was this so? (1 m)

_____

_____

/2

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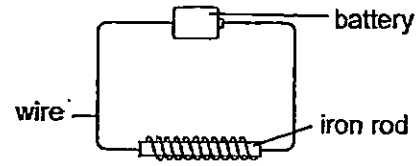
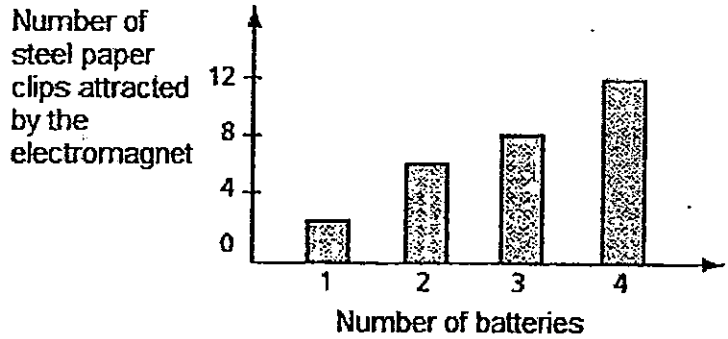
40. Ron conducted an experiment to find out how the number of batteries affects the magnetic strength of an electromagnet.



He changed the number of batteries and counted the number of steel paper clips attracted to the electromagnet.
At the end of his experiment, he plotted a graph as shown below.

Results for Experiment 1



(a) Based on the graph, state the relationship between the number of batteries used and the number of steel paper clips attracted to the electromagnet. (1 m)

_____

_____

Then, Ron changed one more variable and carried out his experiment again. He recorded his readings in the table below.

Results for Experiment 2

Number of batteries used	1	2	3	4
Number of steel paper clips attracted	6	10	16	20

He observed that the number of steel paper clips attracted had increased.

(b) What could Ron have done to increase the number of steel paper clips attracted if the iron rod and the number of batteries used remained the same? (1 m)

_____

_____

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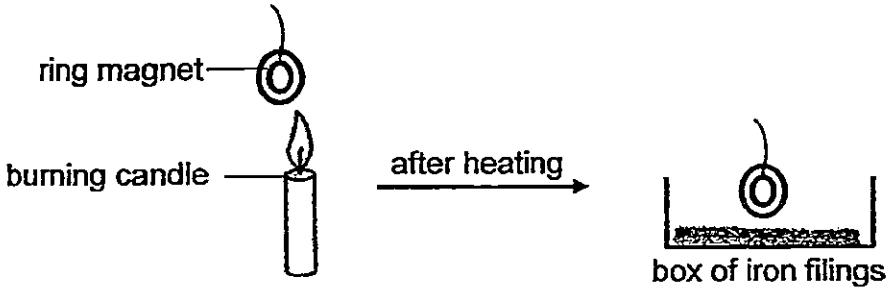
(c) When Ron replaced the iron rod with a copper rod in experiment 2, he could not attract any steel paper clips at all. Why was this so? (1 m)

_____

_____

Ron set up a third experiment to find out if the magnetic strength of a ring magnet would be affected by heating.



After heating the ring magnet as shown above, he placed it in a box of iron filings. Then he recorded the mass of the iron filings attracted to the ring magnet in the table below.

Duration the magnet was heated (minute)	Mass of iron filings attracted (g)
0	30
2	26
4	20
6	12
8	6

(d) Based on the table, what can Ron conclude about the magnetic strength of the ring magnet after the magnet was heated? (1 m)

_____

_____

/ 2

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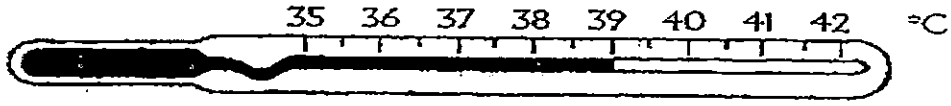
41. The diagram below shows a thermometer.



(a) What is the reading on the thermometer? (1 m)

_____

(b) Name another thermometer that can measure a temperature that is above 42 °C. (1 m)

_____

2

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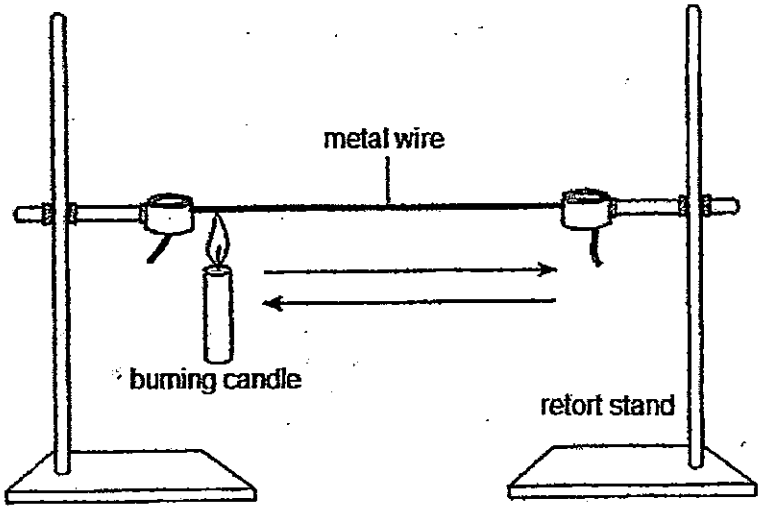
42. A wire was placed between two retort stands as shown below.



A candle was lit and the flame was moved along the length of the wire several times.

(a) What would happen to the length of the metal wire after the flame heated it for some time? (1 m)

_____

_____

(b) Explain your answer in part (a). (1 m)

_____

_____

The table below shows water in its different states as it interacts with its surroundings.

(c) For each process, put a tick in the correct column to indicate whether water gains or loses heat to the surroundings. (1 m)

	Process	Water gains heat	Water loses heat
i)	Water freezes into ice.		
ii)	Hot water cools down on the table.		

3

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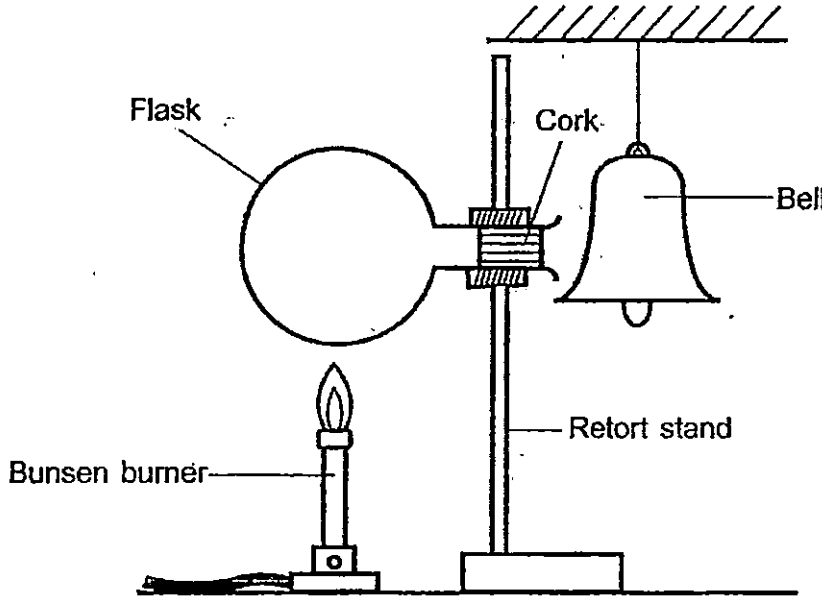
43. Terry set up a flask near a bell as shown below. The flask is stoppered with a cork that is placed near to the bell. He then heated the flask by using a bunsen burner.

Experiment 1



(a) What will happen to the cork and the bell if Terry heats the flask for five minutes? (1 m)

_____

_____

(b) Explain your answer in part (a). (1½ m)

_____

_____

_____

(c) When Terry used a stronger bunsen flame, the time taken for the changes in his set-up to occur was shorter than experiment 1 shown above. Why? (1 m)

_____

_____

3½

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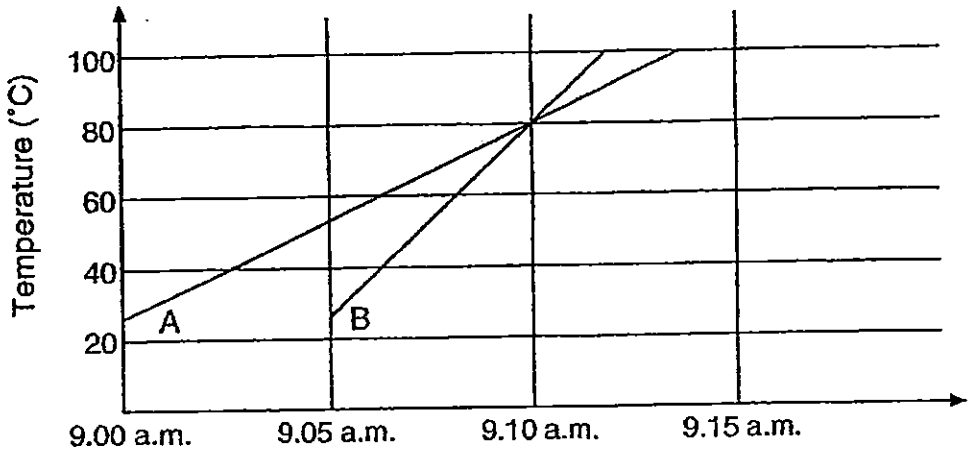
44. Two beakers, A and B, containing 300 ml of water each were heated. The flame for Beaker A was lit five minutes before the flame for Beaker B was lit.

The graph below shows the changes in the temperature of the water in beakers A and B.



(a) Based on the graph, which beaker reached the boiling point first? (½ m)

_____

After the water in both beakers had boiled, the beakers were placed in the classroom. Anna recorded the temperature of the water in both beakers in the table shown below.

	Temperature of water (°C)	Temperature of classroom (°C)
Start of experiment	100	30
Six hours later	30	30

(b) What is the temperature of the water after six hours? Why is this so? (1 m)

_____

_____

(c) The water used in part (b) was then left in the freezer for one day. What is the change in the state of matter of water at the end of the experiment? (1 m)

From _____ state to _____ state.

2½

END OF PAPER

PLEASE CHECK YOUR WORK

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : RED SWASTIKA SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
2	1	4	2	1	3	2	3	2	1
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
4	2	4	3	4	2	4	4	4	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	3	3	4	2	3	2	1	2	2

Q31a. The goldfish is likely to die in two weeks.

Q31b. The goldfish does not have anything to eat, as it could not make its own food. However, the hydrilla could make its own food.

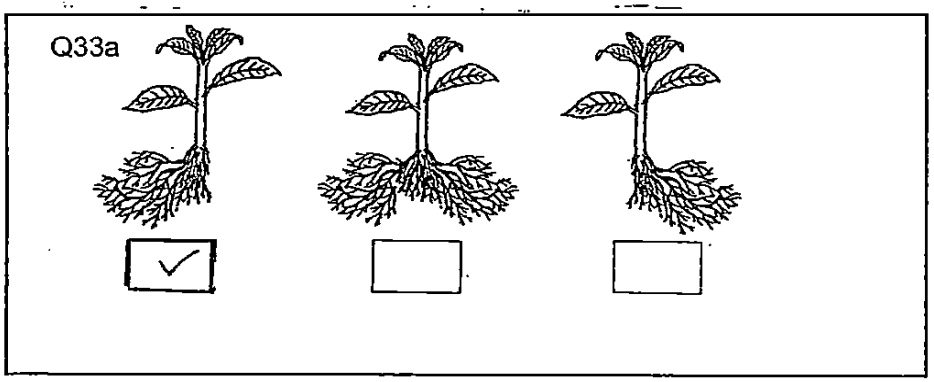
Q31c. The plant will die. The plant has no sunlight to make food.

Q32a. Type of food.

Q32b. Bread crumbs. The most number of larvae were found there which shows that the larvae prefer bread crumbs the most.

Q32c. The young of the mealworm beetle does not resemble its adult but the young of the cockroach resembles its adult.

Q33a. **SEE PICTURE.** Q33b. Since the roots take in water, the roots will grow towards the left as there is more water available there.



Q34c. SEE PICTURE

	Variables	Keep the same	Change
i	Amount of water given	✓	
ii	Number of leaves on each plant		✓
iii	Location of each plant	✓	
iv	Type of plant	✓	

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Q33c. The plant in stage X needs air, water and warmth to germinate.

Q34a. The leaves will dry up

Q34b. Black nail polish prevents air from entering the leaves. Thus, without air to breathe, the leaves will wither. **Q34c. SEE PICTURE on page 1**

Q35a. Fungi Q35b. Bread Y has more patches of organism P than bread X.

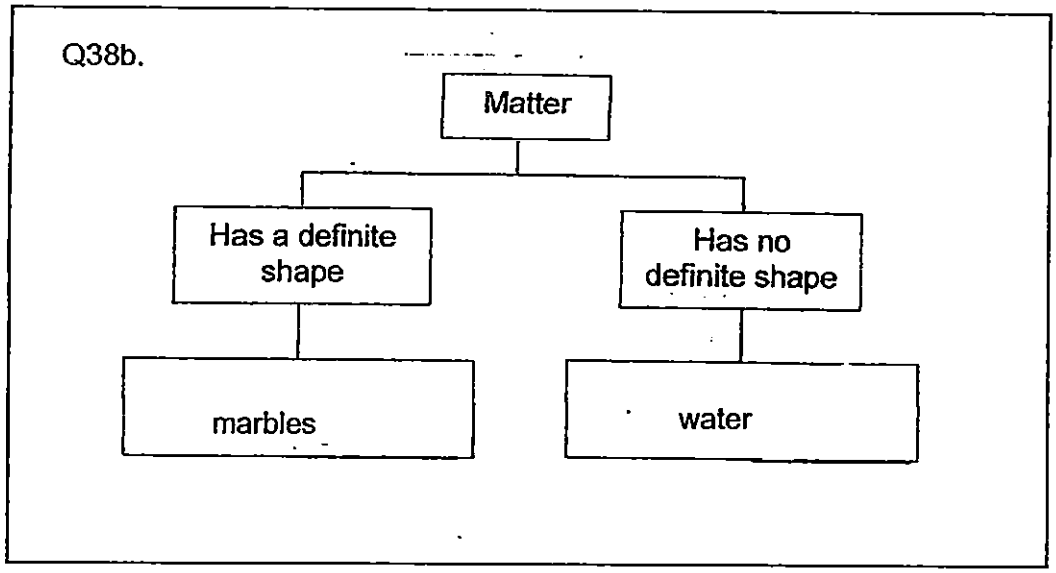
Q35c. No. Organism P / mould is a fungi but a sunflower.

Q36a. Can P: Y Can Q: X

Q36b. Can Q has a lid to cover the can. The hot air in Can Q cannot escape easily. Therefore, the temperature is higher.

Q37a. Material S, material S is not flexible and it is waterproof.

Q37b. Material T allows light to pass through.
Q38a. No, the water could not overflow as the water will occupy the tiny spaces between the marbles. **Q38b. SEE PICTURE**



Q39a. When air was blown into the cup, air took up the space previously occupied by water in the cup.

Q39b. The water level in the basin will increase as Jin Xiang blew air into the cup and air takes up space.

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Q40a. As the number of batteries used increased, the number of steel paper clips attracted to the electromagnet increased.

Q40b. Ron increased the coils around the iron rod.

Q40c. Copper is anon-magnetic material and thus, cannot be magnetized to attract the steel paper clips.

Q40d. The magnetic strength had increased.

Q41a. 39°C

Q41b. Laboratory thermometer.

Q42a. The length of the metal wire would be longer.

Q42b. The metal wire gained heat and expanded.

Q42c. (i) Water freezes into ice – Water loses heat
Q42c. (ii) Hot water cools down on the table. – Water loses heat.

Q43a. The cork will fly out of the flask and then hit the bell.

Q43b. The air in the flask gained heat from the burner and expanded. The expanded air pushed the cork out of 6the bottle, causing the cork to hit the bell.

Q43c. The air gained heat faster and expanded faster.

Q44a. Beaker B.

Q44b. 30°C. Heat travelled from the warm water to the cooler surroundings in the classroom until both reach the same temperature.

Q44c. From liquid state to solid state.

THE END

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Rosyth School
First Semestral Examination for 2015
SCIENCE
Primary 4

Total Marks: 100

Name: _____

Class: Pr 4 _____ Register No._____ Duration: 1 h 45 min

Date: 14th May 2015 Parent's Signature:_____

Booklet A

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 44, give your answers in the spaces given in Booklet B.

* This booklet consists of 16 pages.

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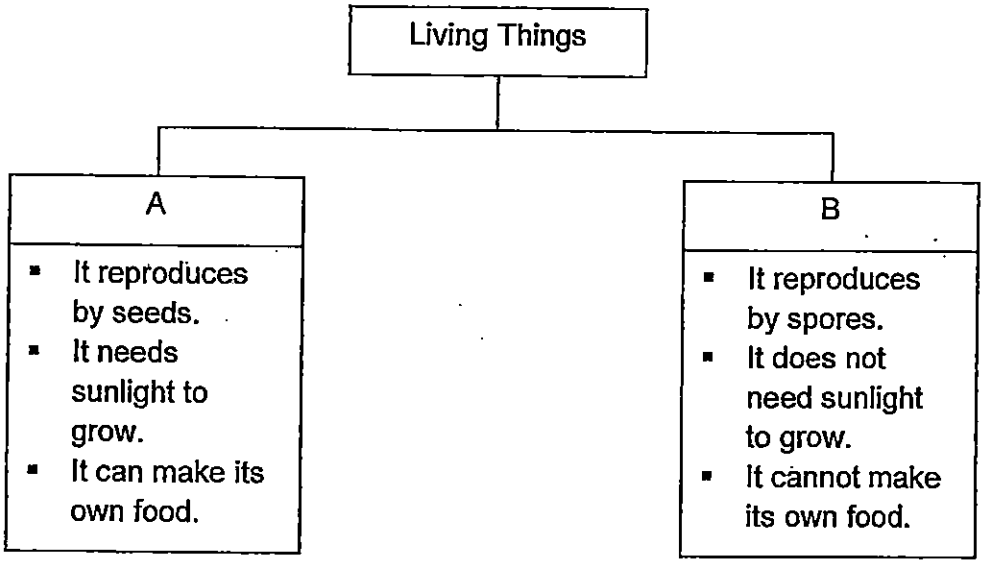
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet. (60 marks)

1. Kelly saw some butterflies in a garden. When she tried to catch the butterflies, they flew away. What characteristic of living things did the butterflies show?

(1) Living things can die.
(2) Living things can grow.
(3) Living things can respond to changes.
(4) Living things need air, food and water to survive.

2. Study the classification chart below.



What are living things A and B likely to be?

	A	B
(1)	Plants	Fungi
(2)	Plants	Bacteria
(3)	Fungi	Plants
(4)	Bacteria	Fungi

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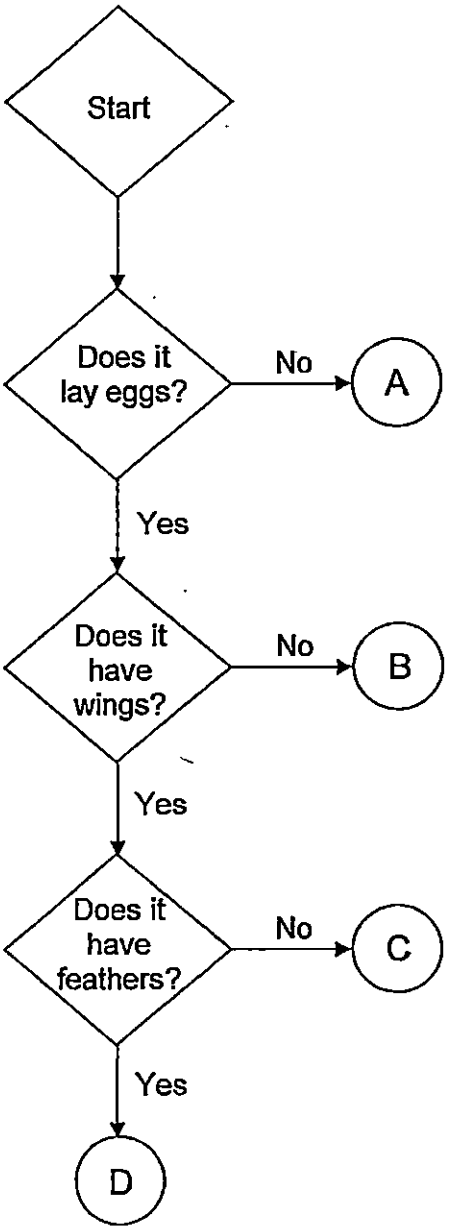
3. Study the flow chart below carefully.



Which group of animals would C most likely represent?

(1) Fish
(2) Birds
(3) Insects
(4) Mammals

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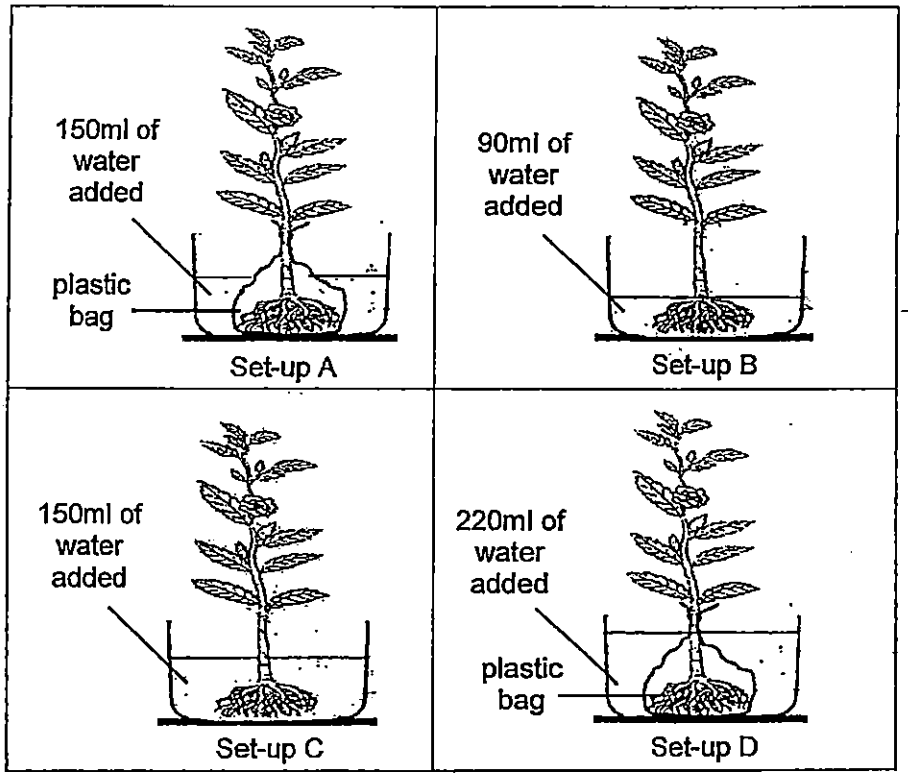
4. James is able to blow a balloon to make it bigger. What property of the material allows him to blow the balloon?

(1) Strength
(2) Flexibility
(3) Waterproof
(4) Transparency

5. Leela carried out an experiment on two similar plants to find out if the presence of roots would affect the growth of the plants.



Which of the following set-ups did Leela choose to ensure a fair test?

(1) A and B
(2) A and C
(3) B and C
(4) C and D

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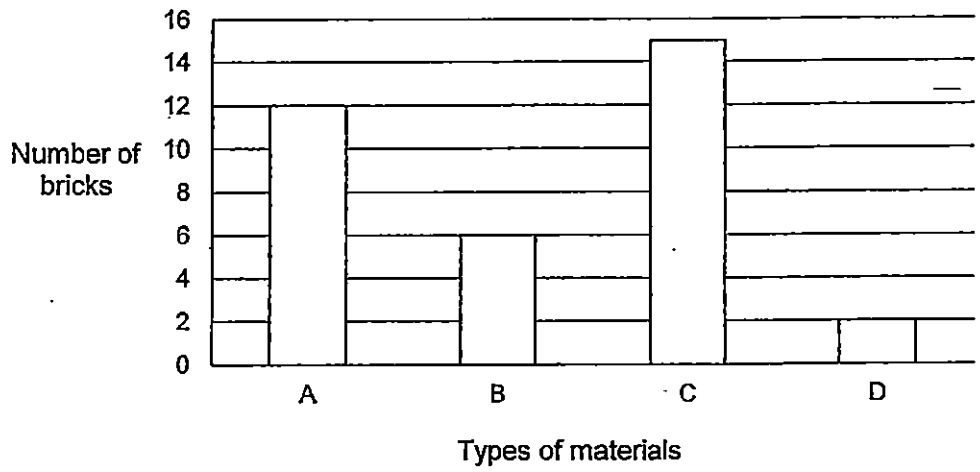
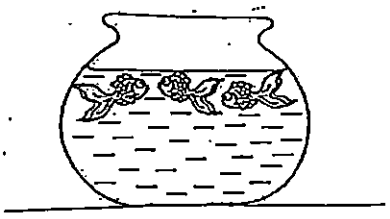
6. Mrs Lim had 4 similar bags made of different materials, A, B, C and D. She then carried out an experiment to find the number of bricks that the bags could hold before breaking. The results are shown in the graph below.



Based on the results above, which one of the following statements best describes the materials of the bags correctly?

(1) Material D is the strongest.
(2) Material C is the most flexible.
(3) Material A is stronger than material B.
(4) Material D is less flexible than material C.

7. Mr Tan placed three fish in a bowl. The next day, after he had fed the fish, he noticed that the fish were swimming near to the water surface as shown below.



Which is a possible reason that Mr Tan's fish swam near to the water surface?

(1) The fish are looking for food.
(2) The fish do not like the cold water.
(3) There is more air at the water surface.
(4) There is more sunlight near the water surface.

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8. The mealworm beetle has 4 stages, W, X, Y and Z. The description for each stage is shown in the table below.

Stages	Descriptions
W	The larva hatches from the egg then moults several times at this stage.
X	The pupa develops into an adult and soon the female mealworm beetle lays eggs to repeat the life cycle all over again.
Y	The female mealworm beetle lays small and white eggs.
Z	The larva develops into a pupa and stops moving around.

Which of the following shows the correct order of stages in the life cycle of a mealworm beetle?

(1) Z, W, X, Y
(2) Y, W, Z, X
(3) W, Y, X, Z
(4) Y, Z, W, X

9. Four animals, P, Q, R and S are described in the table as shown below.

Descriptions	Animal P	Animal Q	Animal R	Animal S
The adult has wings.	No	Yes	No	Yes
The adult has feelers.	No	Yes	No	No
The young resembles the adult.	Yes	No	Yes	Yes
The animal has 3 stages in its life cycle.	No	No	Yes	Yes

Based on the information in the table above, which of the animal best describes a chicken?

(1) Animal P
(2) Animal Q
(3) Animal R
(4) Animal S

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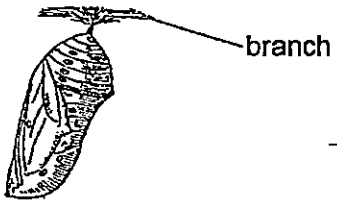
10. Four children found a pupa hanging on a branch. They looked at it and made the following statements about the pupa.

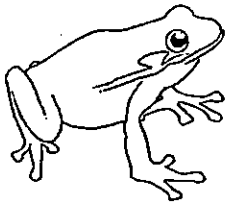


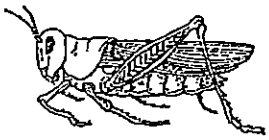
Jim: It is developing into an adult.
Muthu: It feeds on leaves at this stage.
Sarah: It does not breathe at this stage.
Nurul: It is inactive but changes are taking place inside.

Which of the children gave the correct statements?

(1) Jim and Sarah
(2) Muthu and Sarah
(3) Jim and Nurul
(4) Muthu and Nurul

11. Sam wanted to compare the life cycles of a frog and a grasshopper.


frog


grasshopper

He wrote the similarities of the two life cycles in his worksheet.

A: Both begin from the egg stage.
B: Both the adults lay eggs in water.
C: Both the young look like the adult.
D: Both have 3 stages in their life cycles.

Which of his statements are correct?

(1) A and D only
(2) B and C only
(3) C and D only
(4) A, B and D only

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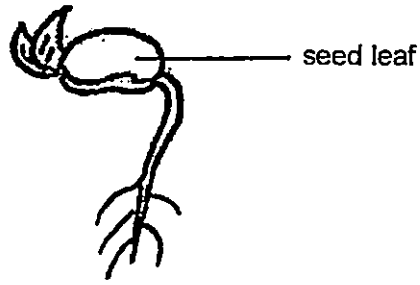
12. The diagram below shows a young seedling.

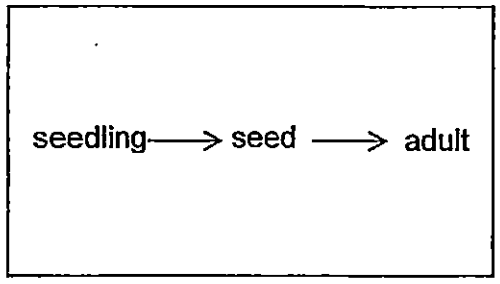


How does the seed leaf help the seedling?

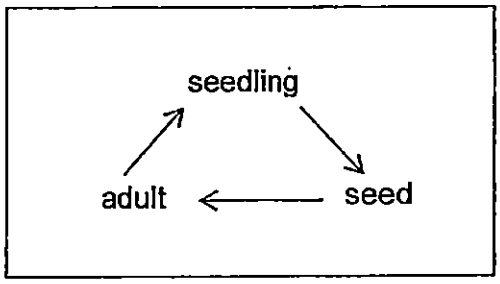
(1) It absorbs water.
(2) It protects the seedling.
(3) It makes food for the seedling.
(4) It provides food for the seedling.

13. Look at the diagrams below. Which one of the following shows the correct life cycle of a flowering plant?

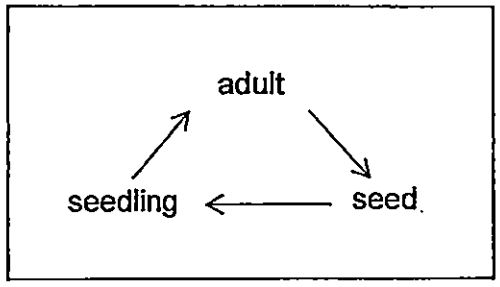
(1)



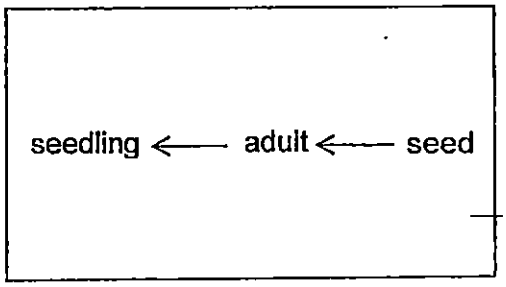
(2)



(3)



(4)



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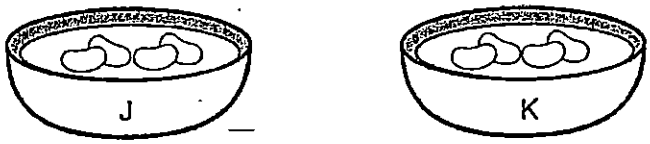
14. Manisha placed 4 identical seeds in containers, J and K as shown below.



After a few days, Manisha observed that the seeds in container J germinated but the seeds in container K did not germinate.

What were the most likely conditions that caused the result in both the containers?

	J	K
(1)	Placed in a sealed box.	Placed under a lamp.
(2)	Placed on a dry cotton pad and put in a sealed box with holes.	Placed on a damp cotton pad and put in a sealed box.
(3)	Placed near a sunny place and not watered.	Placed in a refrigerator and not watered.
(4)	Placed on a damp cotton pad and put in a dark cupboard.	Placed on a dry cotton pad and put in a dark cupboard.

15. Emma wanted to find out if the amount of water would affect the growth of the plant over five days.

Which of the variables should be kept the same?

A: Size of plants
B: Type of plants
C: Amount of water given to each plant
D: Location where the plants are placed

(1) B and C only
(2) A, B and C only
(3) A, B and D only
(4) B, C and D only

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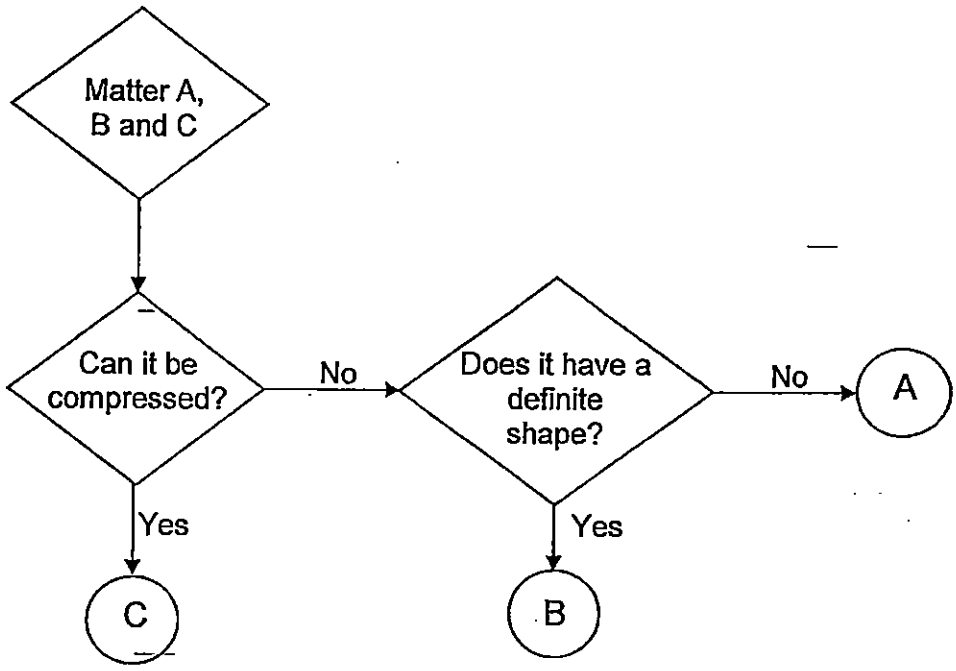
16. The flow chart below is used to differentiate between Matter A, B and C.



Which one of the following identifies Matter A, B and C correctly?

	A	B	C
(1)	Gas	Solid	Liquid
(2)	Solid	Gas	Liquid
(3)	Liquid	Solid	Gas
(4)	Solid	Liquid	Gas

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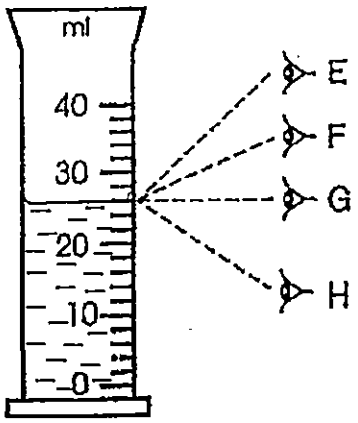
17. The diagram below shows a measuring cylinder containing some water.

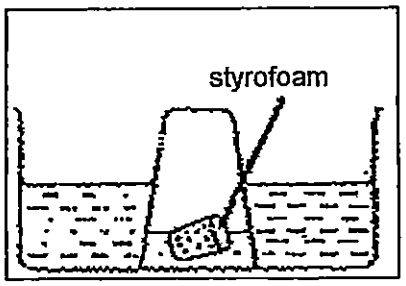


Which one of the following shows the correct position of the eye on the measuring cylinder when reading the volume of water?

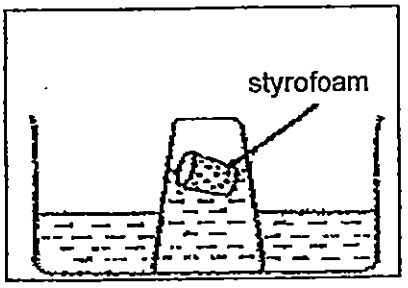
(1) E
(2) F
(3) G
(4) H

18. An empty glass is inverted over a piece of styrofoam floating in a basin of water. Which one of the following shows the correct observation?

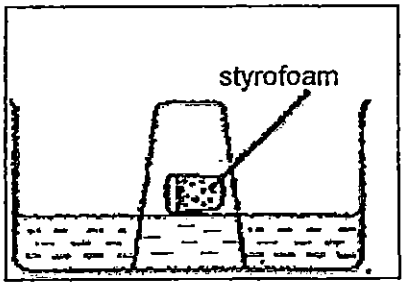
(1)



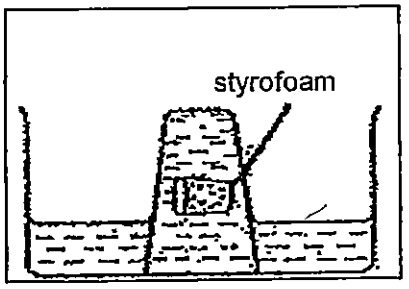
(2)



(3)



(4)



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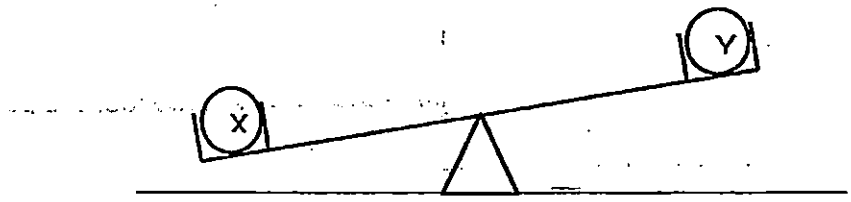
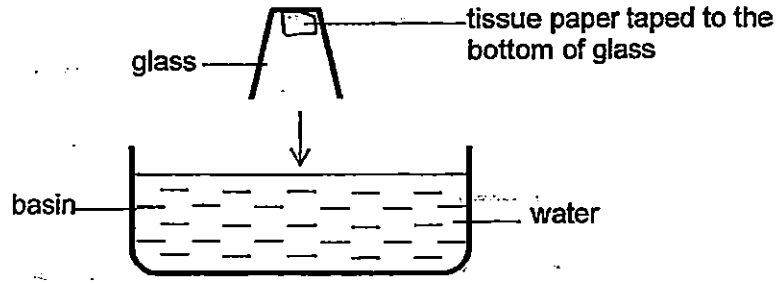
19. An experiment was carried out with two sponge balls, X and Y of similar mass. Ball X was soaked in water but ball Y was dry. When both balls were placed on the lever balance, the following observation was made.



Based on the observation above, which one of the following statements is correct?

(1) Water has mass.
(2) Water takes up space.
(3) Air in the sponge balls have mass.
(4) Ball X occupies more space than Ball Y.

20. Ali pushed an inverted glass into a basin of water as shown in the diagram below.



He noticed that the glass was not filled completely with water and the tissue paper was not wet. What should Ali do to ensure that the tissue paper is wet?

A: Add more water into the basin.
B: Tilt the glass slightly at an angle.
C: Make a hole at the base of the glass.
D: Push the glass straight down directly to the bottom of the basin.

(1) A only
(2) C only
(3) A and D only
(4) B and C only

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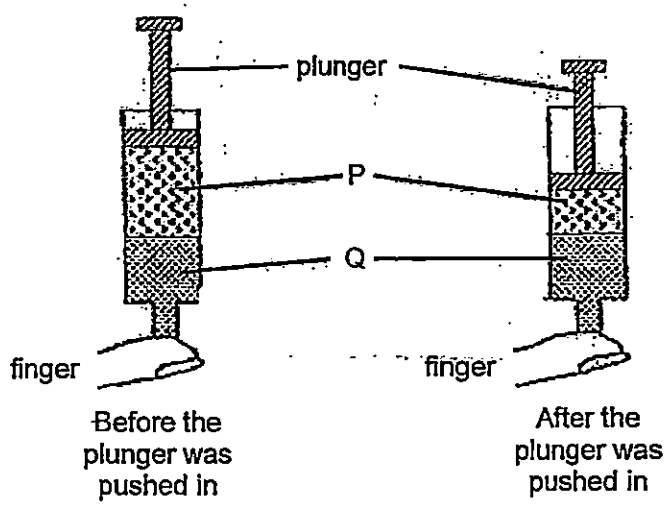
21. Four children, Adam, Betty, Charlie and Diane, each used a piece of plasticine to conduct an experiment. They made the following observations:

Adam : When the plasticine is rolled, it became round like a ball.
Betty : When the plasticine is placed in an empty beaker, it remained unchanged.
Charlie: When the plasticine is placed on one pan of a lever balance, the pan goes down.
Diane : When the plasticine is lowered into a cylinder of water, the water level rises.

Whose observation shows that the piece of plasticine has mass?

(1) Adam's (2) Betty's
(3) Charlie's (4) Diane's

22. The diagrams below show the syringe before and after the plunger was pushed in.



Which one of the following would P and Q most likely to be?

	P	Q
(1)	Oil	Sugar
(2)	Sugar	Oxygen
(3)	Oxygen	Oil
(4)	Sugar	Oil

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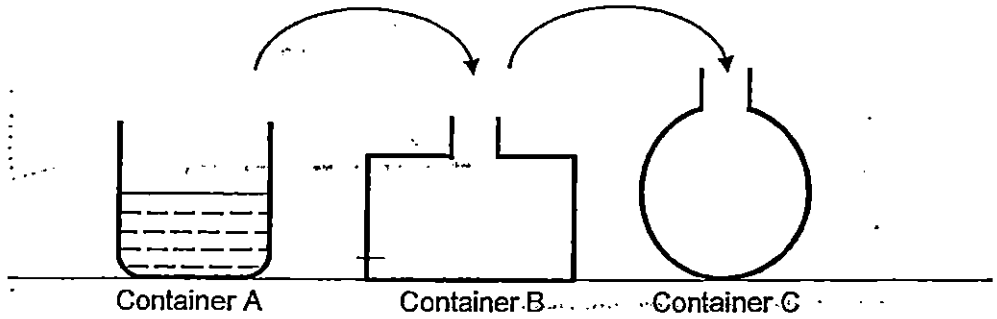
23. Container A contains 250ml of water as shown below.

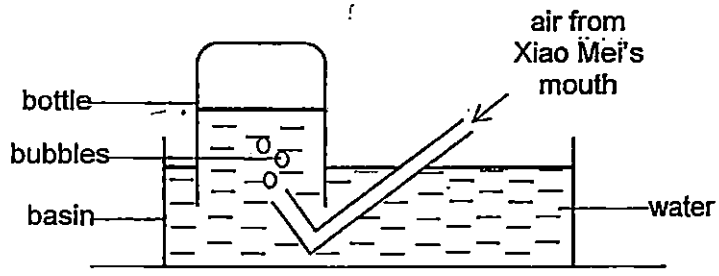


What changes will be observed when all the water is poured from Container A to Container B, then to Container C, with no loss of water?

A: Change in the mass of water
B: Change in the shape of water
C: Change in the volume of water

(1) A only
(2) B only
(3) A and B only
(4) B and C only

24. Xiao Mei blew air into an inverted bottle of water through a tube as shown in the diagram below.



What will happen to the water level in the bottle?

(1) The water level in the bottle will rise.
(2) The water level in the bottle will drop.
(3) The water level in the bottle will rise then drop.
(4) The water level in the bottle will remain unchanged.

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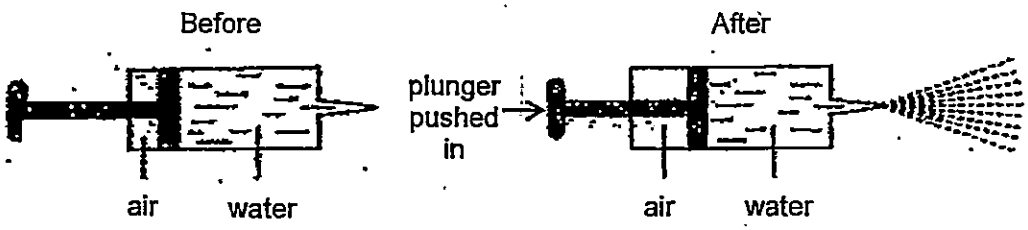
25. A syringe is filled with water. When its plunger is pushed, a jet of water shoots out in the direction as shown below.



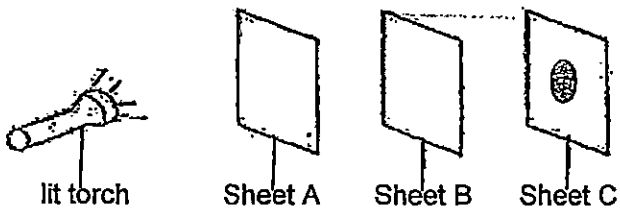
Which one of the following correctly describes what has happened to the volume of air and water in the syringe after the plunger is pushed in?

	Volume of air	Volume of water
(1)	Increase	Decrease
(2)	Increase	Remained the same
(3)	Decrease	Increase
(4)	Remained the same	Decrease

26. Which one of the following is not a source of light?

(1) Torch
(2) Fireflies
(3) Mirror
(4) Mobile phone

27. The experiment below was carried out in a dark room. Sheet A, B and C were arranged in a straight line.



When the torch was switched on, bright circular patch of light was seen on Sheet C only.
Which of the following correctly classifies Sheet A, Sheet B and Sheet C according to their properties?

	Allows light to pass through	Does not allow light to pass through
(1)	B	A and C
(2)	C	A and B
(3)	A and B	C
(4)	A and C	B

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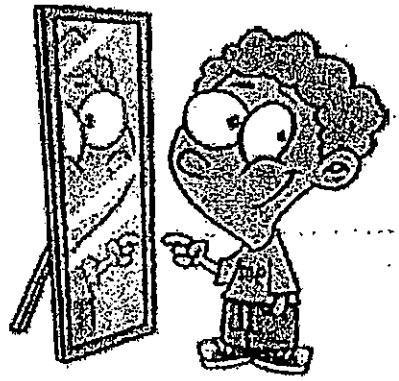
28. Aaron stood in front of a mirror. He was able to see his reflection.

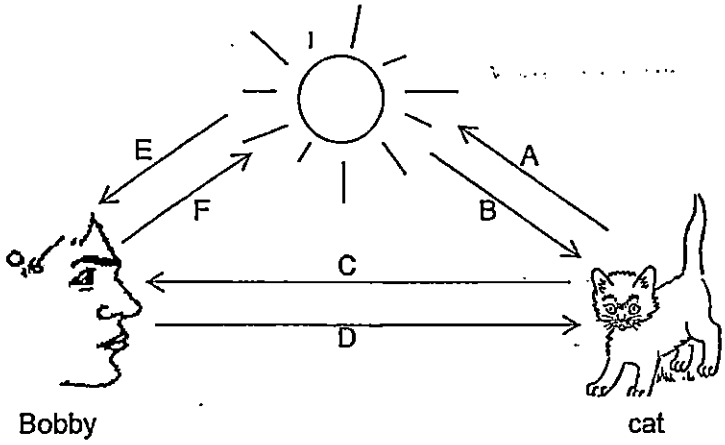


Which of the following statements explain why Aaron was able to see his reflection?

A: The mirror blocked all the light.
B: The mirror allowed light to pass through.
C: The mirror reflected some light back into Aaron's eyes.

(1) A only
(2) C only
(3) A and C
(4) B and C only

29. The diagram below shows some paths of light, A, B, C, D, E and F.



Which one of the following path of light allowed Bobby to see the cat?

(1) A and D
(2) B and C
(3) D and E
(4) C and F

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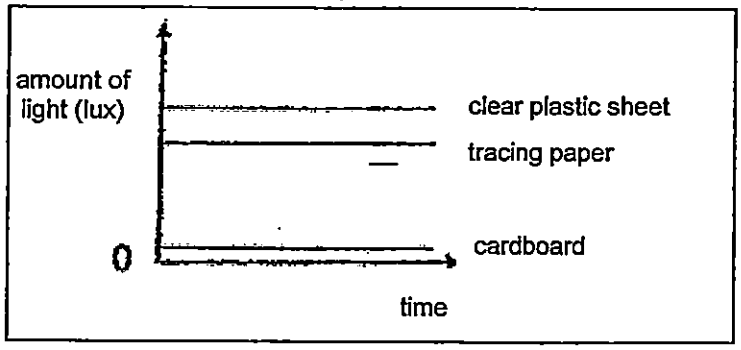
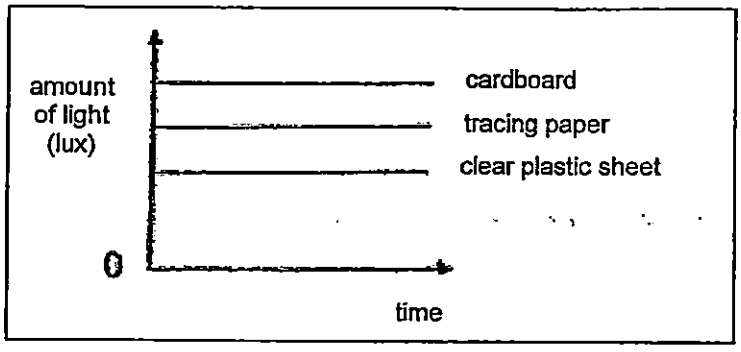
30. Kathy conducted an experiment to find out the amount of light that could pass through three materials, tracing paper, clear plastic sheet and cardboard, of the same thickness. She drew a graph to show the amount of light recorded.

Which one of the following graphs best shows the results recorded?

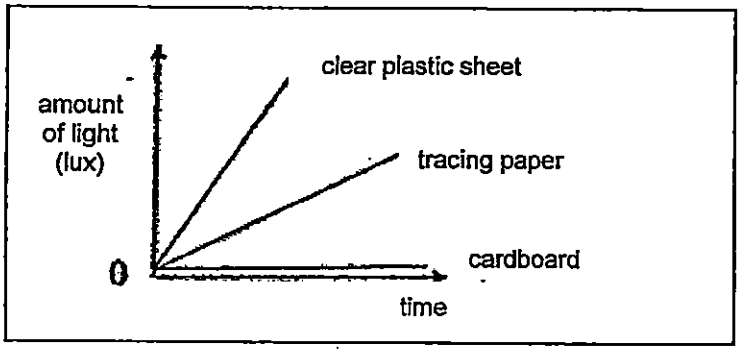
(1)



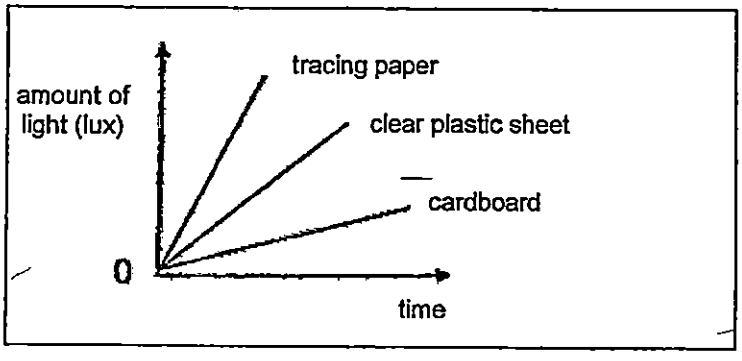
(2)



(3)



(4)



End of Part 1

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Rosyth School
First Semestral Examination for 2015
SCIENCE
Primary 4

Total Marks: 100

Name: _____

Class: Pr 4 _____ Register No. _____ Duration: 1 h 45 min

Date: 14th May 2015 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 44, give your answers in the spaces given in this Booklet B.

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 14 pages.

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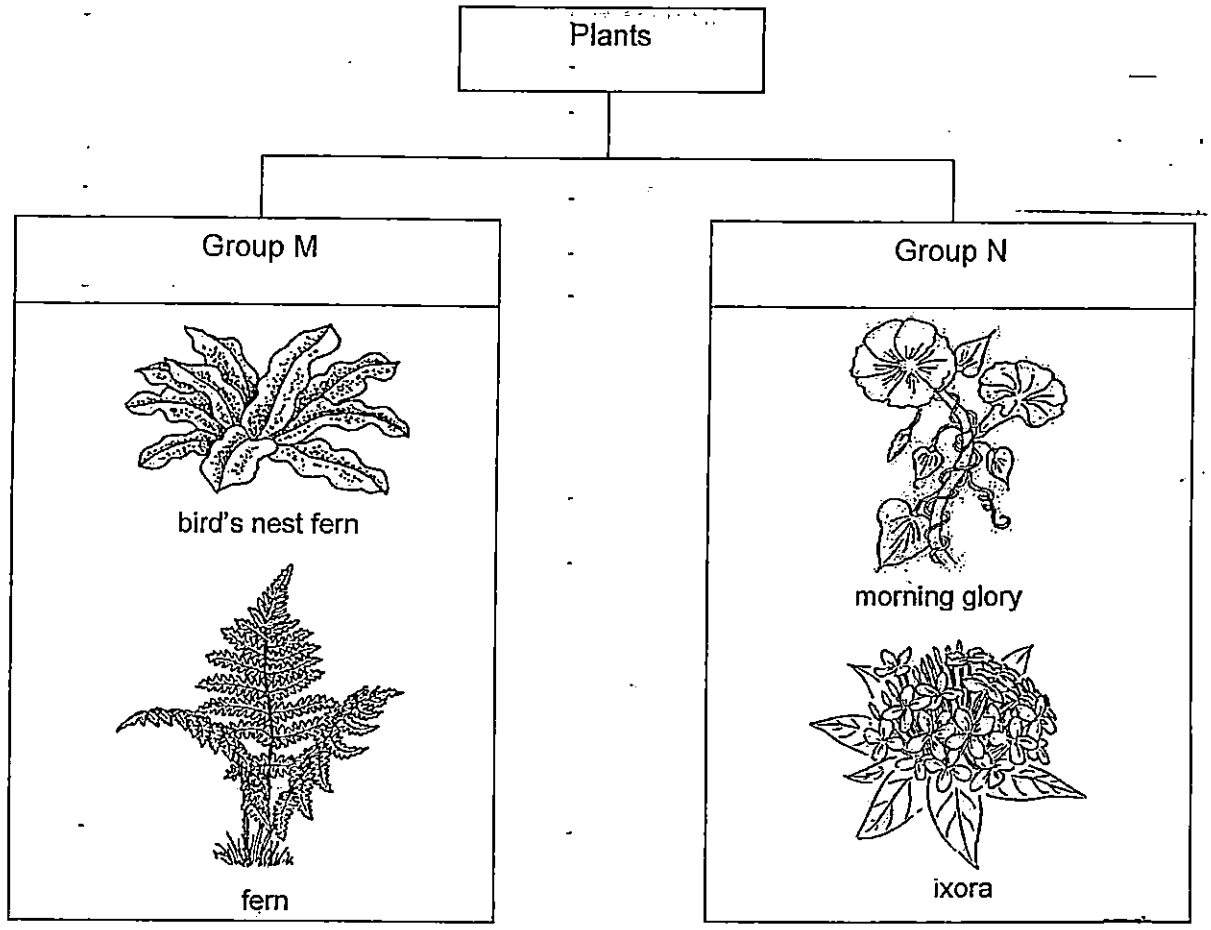
For questions 31 to 44, write your answers in this booklet. (40 marks)

31. The classification chart below shows how plants are being classified.



(a) Give a suitable heading for (1m)

_____

(b) Maria found Plant X in a park. She observed the leaves and found many spore bags on the underside of the leaves.

Based on her observation, which group M or N does Plant X belong to? Support your answer. (1m)

_____

_____

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32. Based on each of the observation, state the characteristic of the living things in the table below. (2m)

Observations	Characteristics of Living Things
A lioness gives birth to its young.	
Alice removes her hand quickly when she accidentally touches the hot kettle.	
A plant withers as it lacks of water and sunlight.	
Marcus is taller this year than last year.	

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33. The table below shows the characteristics of four different animals, K, L, M and N. A tick (✓) indicates that the animal has the characteristics.

Characteristics	Animals			
	K	L	M	N
Has feathers			✓	
Has wings			✓	
Has six legs				✓
Lives on land only	✓	✓	✓	✓
Reproduces by laying eggs		✓	✓	✓

(a) Based on the information given above, state the similarities between animals L and M. (1m)

_____

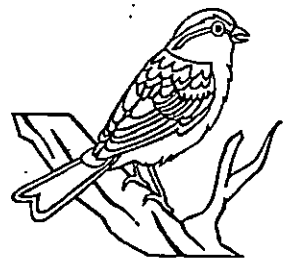
_____

(b) Based on the information given above, which animal, K, L, M or N is most likely to be an insect? Support your answer. (1m)

_____

_____

(c) Study Animal R below.



Animal R

Johan said that Animal R is definitely a bird. State a characteristic that is not mentioned in the table above that determines Animal R is a bird. (1m)

_____

_____

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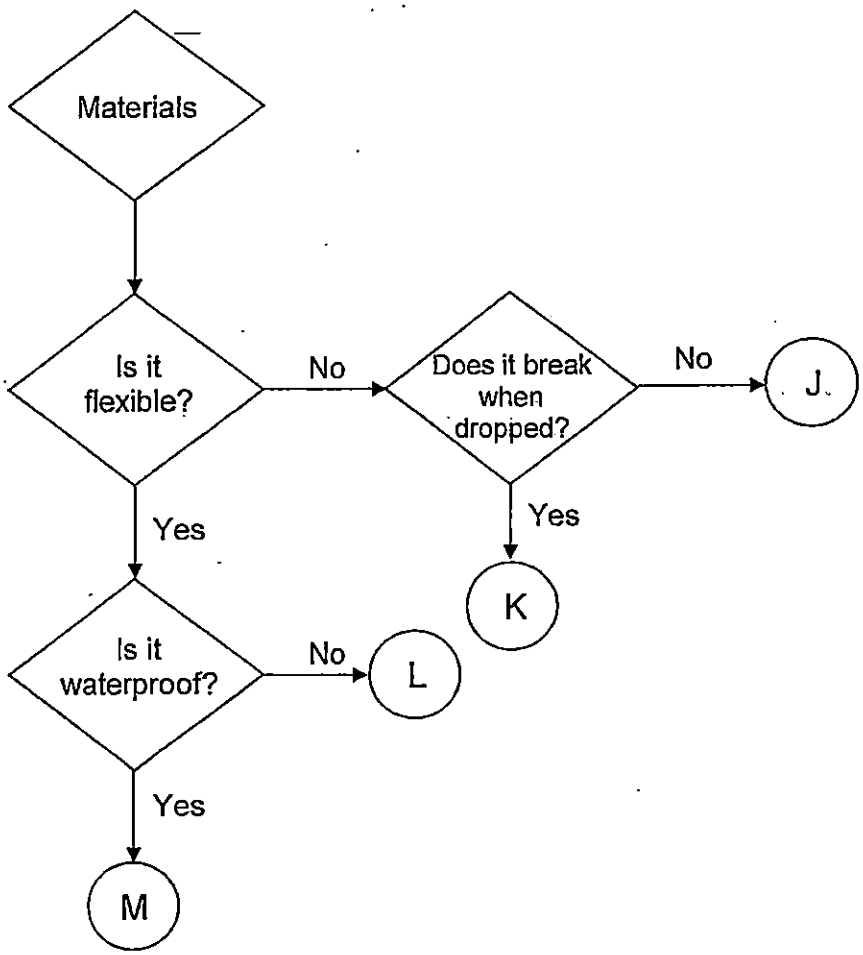
34. Study the flow chart below.



(a) State all the characteristics of material J. (1m)

_____

(b) State one difference between materials M and L. (1m)

_____

_____

(c) Mrs Tan wore a pair of gloves when washing the bathroom. Should she use the gloves made of Material L? Support your answer. (1m)

_____

_____

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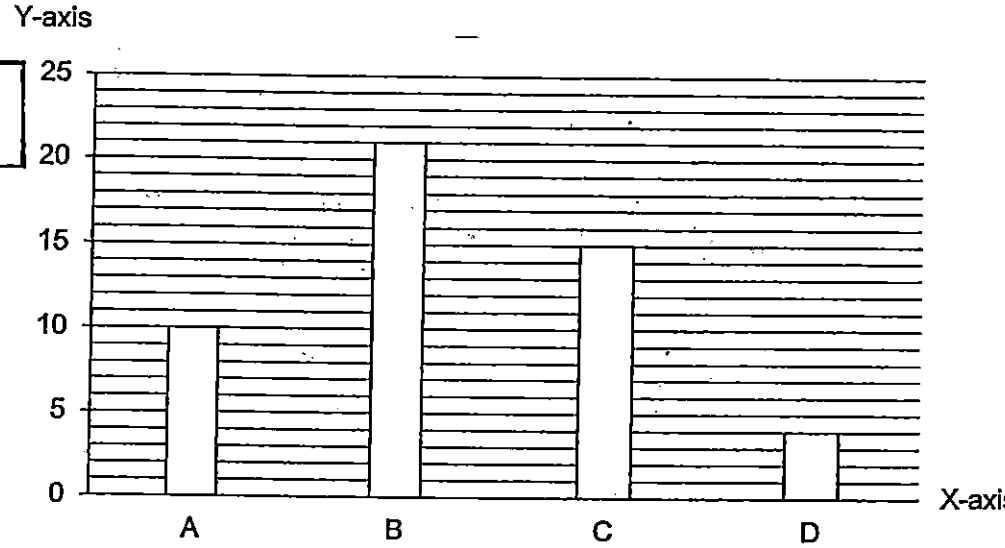
35. The graph below shows the number of days in each stage of the life cycle of Animal Y.

Label the graph below with the following variables, 'Number of days' and 'Stage'. (1m)

a)



b)

(c) Using the information from the graph, put a tick (✓) in the correct box to indicate whether each statement is 'True', 'False' or 'Not possible to tell'. (2m)

Statements	True	False	Not possible to tell
Animal Y is an insect.			
It takes less than 40 days for Animal Y to develop from an egg to an adult.			
Animal Y is a butterfly.			
There are 3 stages in the life cycle of Animal Y.			

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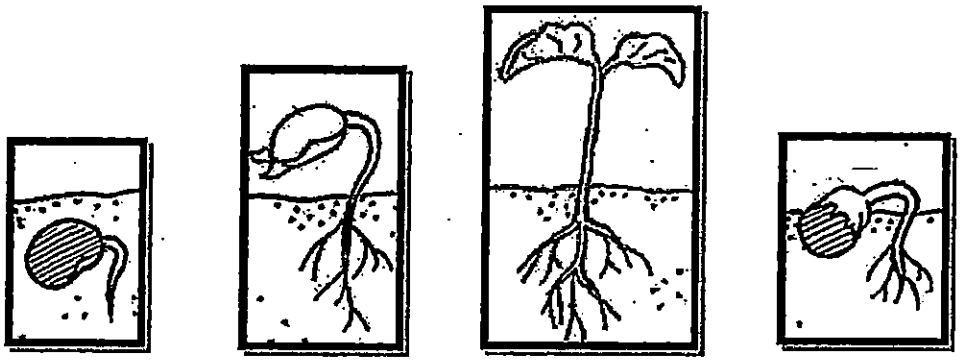
36. The diagrams below show the developmental stages in the growth of a bean plant.



P Q R S

(a) Arrange the stages in the life cycle of a bean plant. Write the letters P, R and S in the boxes provided. (1m)

Q	,		,		,	

(b) At which stage, P, Q, R or S is the plant able to make its own food? (1m)

_____

(c) Give a reason for your answer in (b). (1m)

_____

_____

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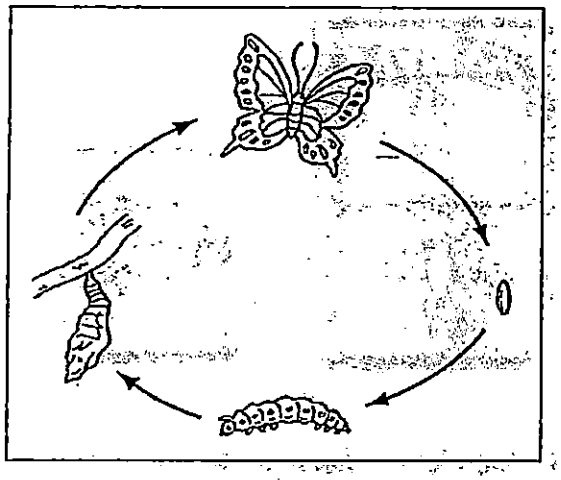
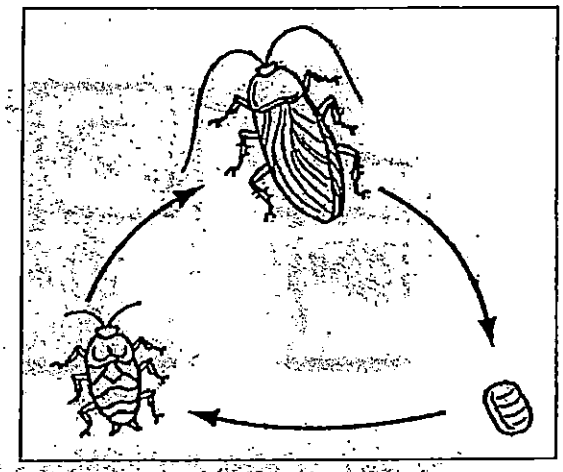
37. The diagrams below show the life cycle of organisms X and Y.



Life cycle of Organism X



Life cycle of Organism Y

(a) State a similarity between the life cycle of organism X and Y. (1m)

_____

_____

(b) State a difference between the life cycle of organism X and Y. (1m)

_____

_____

(c) Name one way in which the young of organism Y looks like the adult. (1m)

_____

_____

(d) Organism X was found to have eaten up many of the leaves on a plant. Which stage of organism X eats the leaves? (1m)

_____

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38. Read the following information about Item X.

- It cannot be compressed.
- It has mass and occupies space.
- Its shape changes according to the containers it is placed in.

Based on the information above, which of the following could be Item X? Tick in the boxes provided. (1m)

(a)

Items	Tick
Oxygen	
Styrofoam	
Cooking oil	
Wooden block	

(b) Name an instrument that can be used to measure the mass of Item X. (1m)

_____

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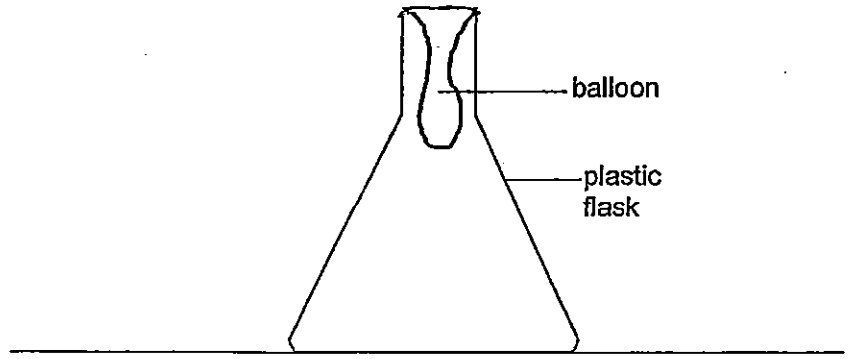
39. Ahmad set up an experiment as shown below by inserting a balloon into a plastic flask.



(a) What will happen to the balloon when Ahmad tried to blow some air into it? (1m)

_____

(b) Explain the observation in part (a). (2m)

_____

_____

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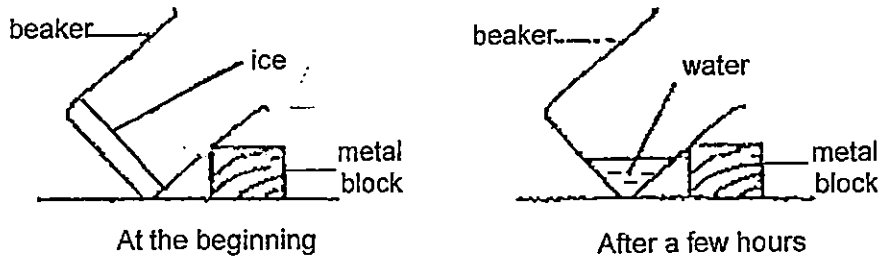
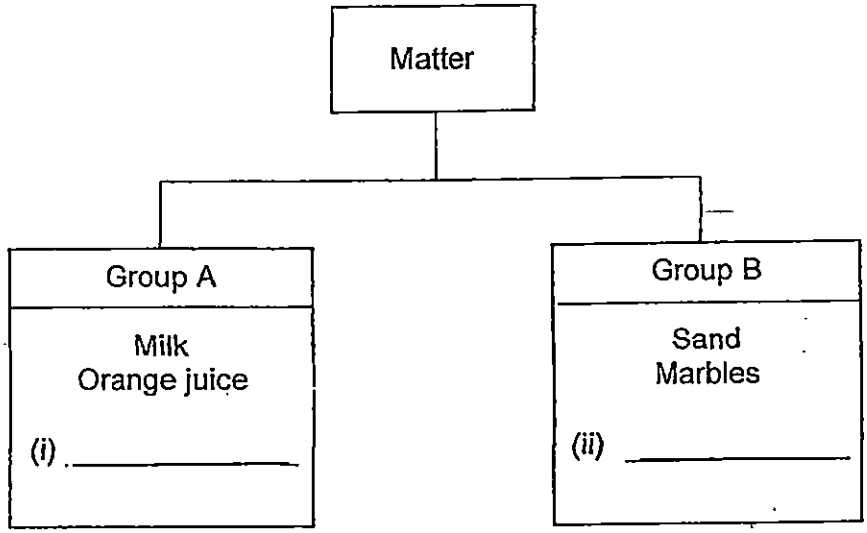
40. The diagram below showed what had happened to ice at the beginning and after a few hours.



(a) Based on the observations above, write 'ice' and 'water' in the correct groups in the classification diagram below. (1m)



(b) State one difference between the items in Group A and the items in Group B. (1m)

_____

_____

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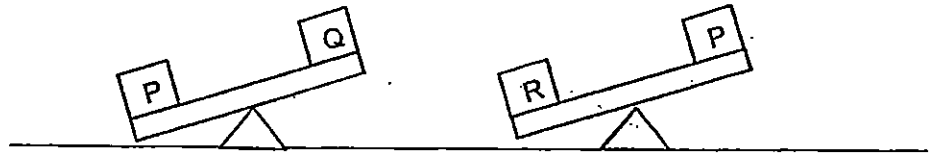
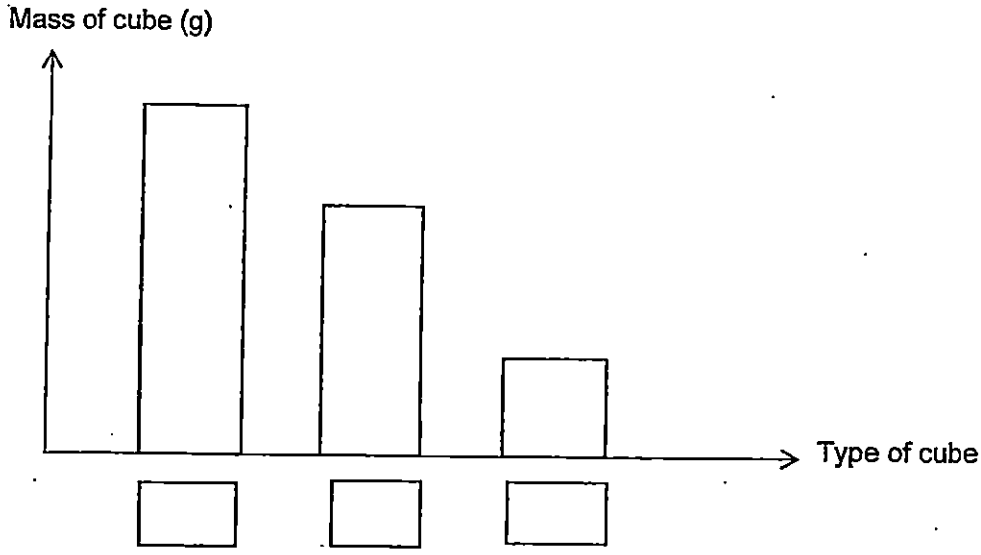
41. Susan measured the masses of 3 similar cubes, P, Q and R. They were made of different materials. The diagrams below showed her observations using a lever balance.



After observing the mass of each cube, she recorded her observations in the bar graph as shown below.



(a) Based on the observation, write the letters, P, Q and R in the correct boxes in the graph above. (1m)

(b) Using the same cubes, she wanted to find out if cubes of different mass will affect the volume.

Identify the correct variables for this experiment by putting a tick (✓) in the correct boxes below. (2m)

	Changed variable	Measured variable	unchanged variable
Shape of cubes			
Mass of cubes			
Volume of cubes			
Type of measuring instrument used		—	

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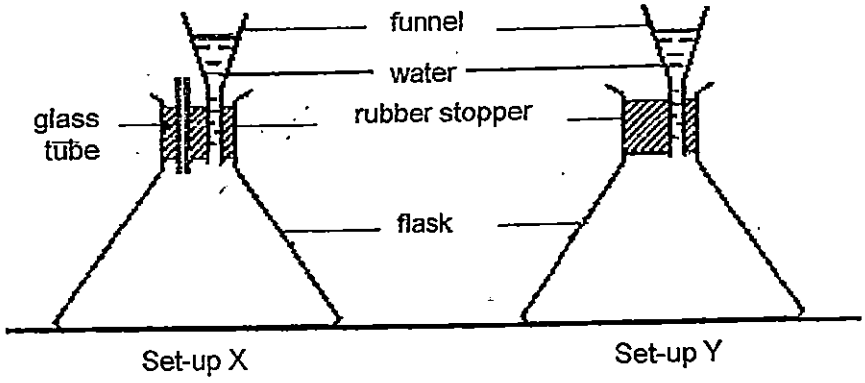
42. Siti prepared Set-up X and Y as shown in the diagrams below. She wanted to find out which set-up would allow water to flow through the funnel in the shortest time.



The results were shown in the table below.

Table 1	
Volume of water in the flask (ml)	Time taken (min)
0	0
10	2
20	4
30	6
40	8
50	10

Table 2	
Volume of water in the flask (ml)	Time taken (min)
0	0
10	1
20	2
30	3
40	4
50	5

(a) Based on the results above, which set-ups do Table 1 and 2 belong to? (1m)

(i) Table 1: Set-up _____

(ii) Table 2: Set-up _____

(b) State the measured variable in the experiment above. (1m)

_____

(c) For the set-up that allowed water to flow slower, what could Siti do to decrease the time for water to flow into the funnel? (1m)

_____

_____

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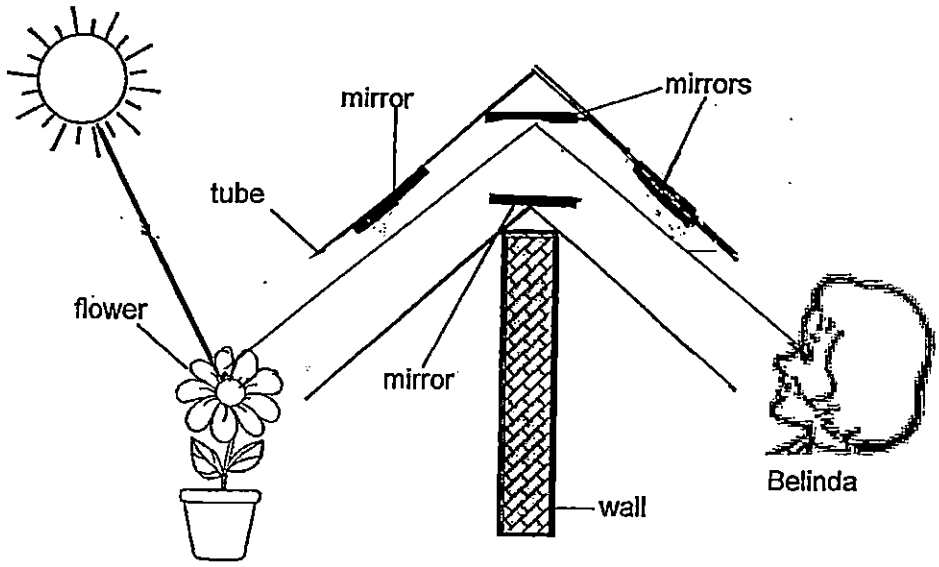
43. Belinda wanted to see the flower at the other side of the wall. She used the tube containing 4 mirrors placed at different angles as shown in the diagram below.



(a) Using a ruler, draw the light rays in the diagram above that enabled Belinda to see the flower. (1m)

(b) Explain why Belinda was able to see the flower. (2m)

_____

_____

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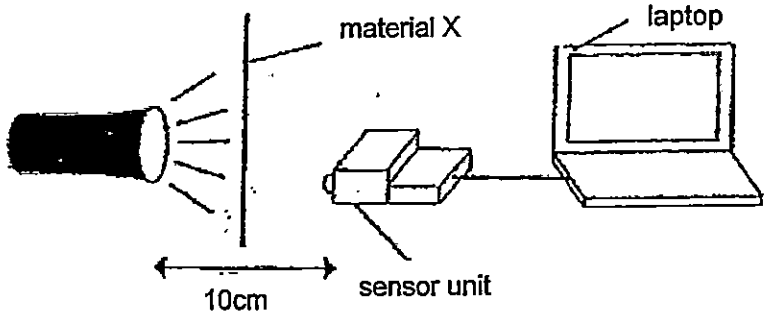
44. Devi wanted to find out if the thickness of Material X affects the amount of light passing through it. She set up the experiment as shown below.



She measured the amount of light that could pass through and recorded the result in the table below. She repeated the experiment using different number of Material X.

Number of sheets of Material X	1	2	3	4	5
Amount of light that could pass through (lux)	100	80	60	40	20

(a) What is the relationship between the number of sheets of Material X used and the amount of light that could pass through? (1m)

_____

_____

(b) Devi decided to change Material X to Material Y. She discovered that the sensor did not detect any amount of light. Explain why. (1m)

_____

_____

(c) Devi wanted to make a lantern. Which material (X or Y) would be most suitable? Give a reason to support your choice. (2m)

_____

_____

END.

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SCHOOL : ROYSTH SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	3	2	2	3	3	2	4	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	4	3	4	3	3	3	1	1	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	3	2	2	1	3	3	2	2	1

Q31a. Flowering Plants.
Q31b. M. Plant X has spores, all non – flowering plant reproduce by spores.

Q32. Living things reproduce, Living things respond to changes, Living things need air, food and water to survive, Living things grow.

Q33a. They live on land only and reproduce by laying eggs.
Q33b. N. All insects have six legs and reproduce by laying eggs.
Q33c. It has a beak.

Q34a. Material J is not flexible and does not break when dropped.
Q34b. M is waterproof but L is not. Q34c. No, it is not waterproof.

Q35a. Number of days, **Q35b.** stages, **Q35c.** True, False, Not possible to tell, False.
Q36a. Q,R,P,S, **Q36b.** R, **Q36c.** It has fully grown green leaves.

Q37a. Their life cycle starts with an egg.
Q37b. Y has three stages in its life cycle but X has four stages in its life cycle.
Q37c. It has six legs. Q37d. Caterpillar.

Q38a. Cooking oil. Q38b. Electronic balance.

Q39a. The balloon will not be bigger. **Q39b.** Air occupies space; the air from the flask could not escape.

Q40a. i) water ii) ice **Q40b.** B has definite shape but A has no definite shape.

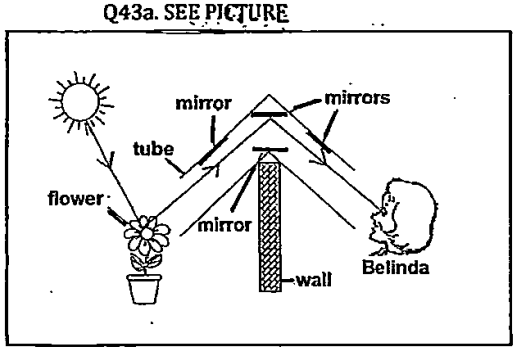
Q41a. R P Q Q41b. unchanged variable, changed variable, measured variable, unchanged variable

Q42a. i) Y ii) X Q42b.Time taken for water to flow in.
Q42c. She should add more glass tubes to let the air escape faster.

Q43b. The flower is not a light source so it reflects light from the sun. The light is then reflected by the mirror and enters our eyes thus enabling Belinda to see the flower.

Q44a. The more the number of sheets the amount of light that could pass through will be lesser.
Q44b. Material Y is a opaque.
Q44c. X. Material X allows light to pass through and the lantern can be used as a light source

Q43a. SEE PICTURE



THE END

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Rulang Primary School

SEMESTRAL ASSESSMENT 1
SCIENCE
2015

Name:	_____ ( )	**Marks:**	_____ / 60
Level:	**Primary 4**	**Total Time for Booklets**	
Class:	**Primary 4 ( )**	**A and B:**	**1 h 30 min**
Setter:	**Ms Sng Chee Hoon**	**Date:**	**14 May 2015**

Total Marks: ____ / 100

BOOKLET A

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**
2. You are required to answer **all** the questions in this booklet.
3. This question booklet consists of **19** printed pages, including the cover page.

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Section A (30 x 2 marks)

For each of the questions from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Study the pictures below carefully.

Cat **Shadow of a girl** **Bottle of water**

A **B** **C**

Which one of the following statements is true about the three pictures?

1) B and C have mass but A does not have mass.
2) B does not have mass but A and C have mass.
3) A and B occupy space but C does not occupy space.
4) A does not occupy space but B and C occupy space.

2. Study the table below carefully.

Substance	Has mass	Can be compressed
A	✓	x
B	x	x
C	✓	✓
D	x	✓

Which of the following substances are examples of matter?

1) A and B only
2) A and C only
3) B and C only
4) A, B and D only

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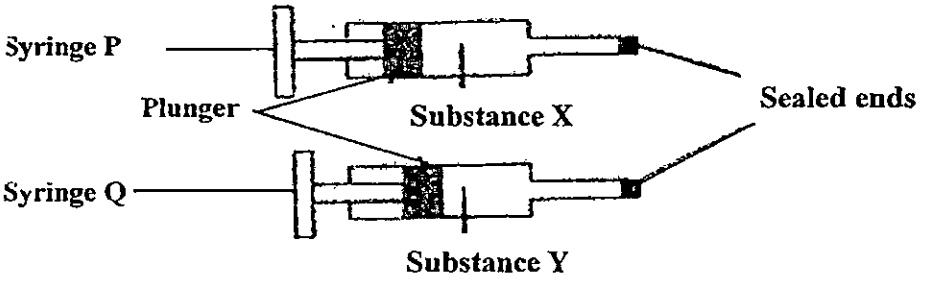
3. The table below shows the properties of objects E, F, G and H.

Property	Object			
	E	F	G	H
Can be compressed	✓	✓	×	×
Has a definite shape	✓	×	×	✓
Has a definite volume	×	×	✓	✓

Which one of the following objects represents a desk?

1) E
2) F
3) G
4) H

4. The diagram below shows two syringes, P and Q, containing substances X and Y respectively. The end of each syringe is sealed. The plunger in syringe Q can be pushed in slightly while the plunger in syringe P cannot be pushed in at all.



Which one of the following sets is most likely to be the states of substances X and Y?

	Substance X	Substance Y
1)	Liquid	Gas
2)	Solid	Liquid
3)	Gas	Solid
4)	Gas	Liquid

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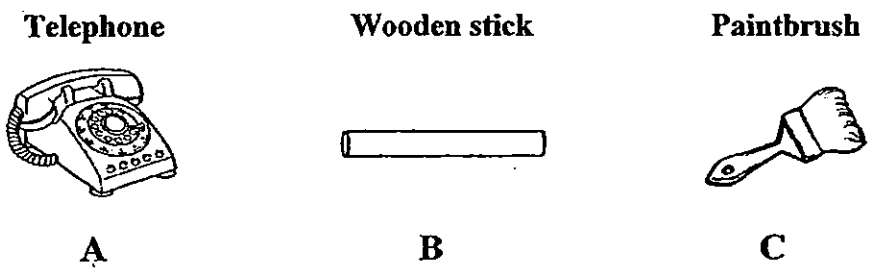
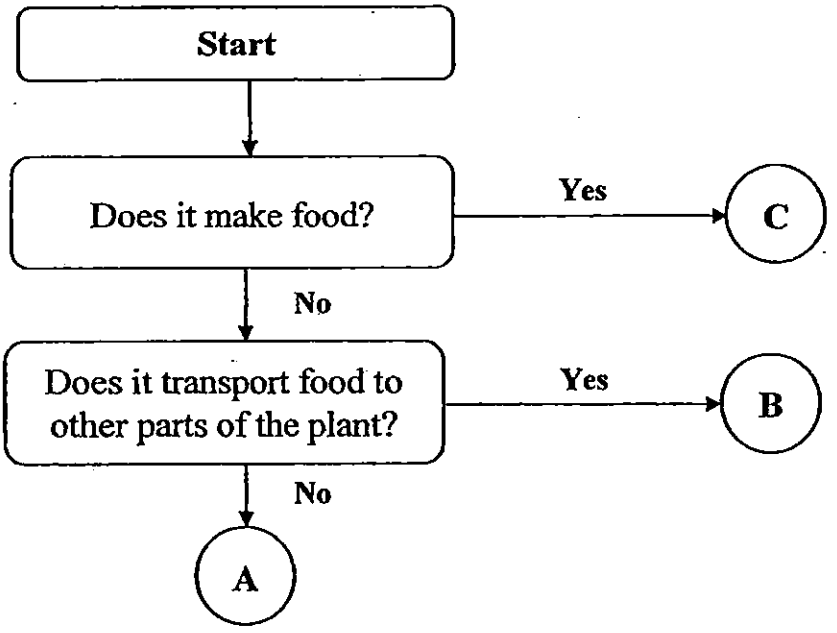
5. Study the diagrams below carefully.



Which of the following are examples of a system?

1) A and B only
2) A and C only
3) B and C only
4) A, B and C

6. Study the flowchart below carefully. The letters, A, B and C, represent parts of a hibiscus plant.



Which one of the following sets best represents A, B and C respectively?

	A	B	C
1)	stem	root	leaf
2)	leaf	stem	root
3)	root	stem	leaf
4)	leaf	root	stem

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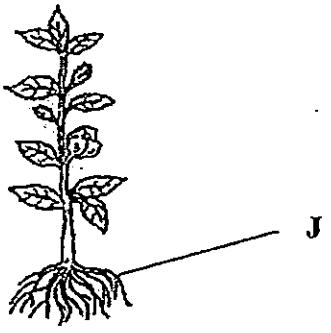
7. The diagram below shows a balsam plant.

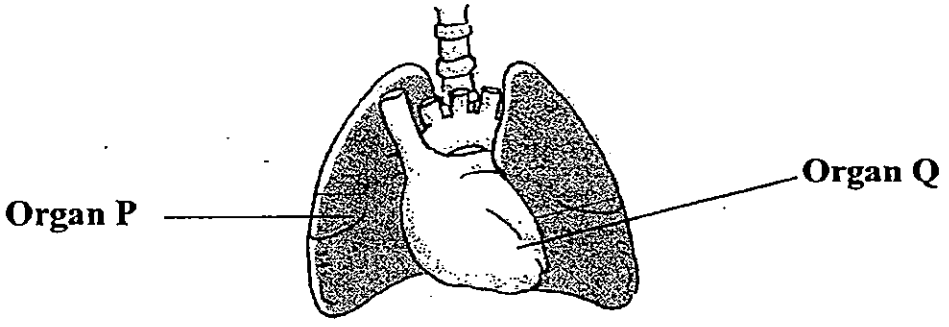


The function of the plant part labelled J is to _____.

A: hold the plant upright
B: transport food to all parts of the plant,
C: absorb water and mineral salts from the soil

1) B only
2) C only
3) A and B only
4) A, B and C

8. Study the diagram below carefully.



Which one of the following sets of body systems do organs P and Q belong to?

	Organ P	Organ Q
1)	Circulatory system	Respiratory system
2)	Muscular system	Digestive system
3)	Digestive system	Circulatory system
4)	Respiratory system	Circulatory system

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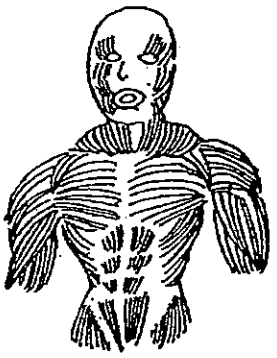
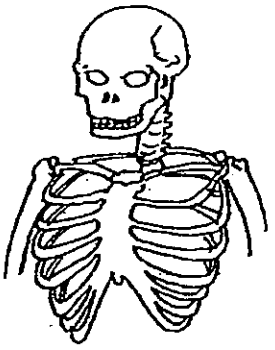
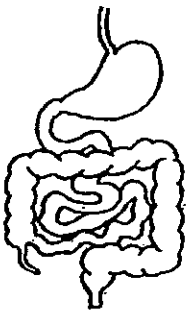
9. Study the diagrams below carefully.



System A



System B

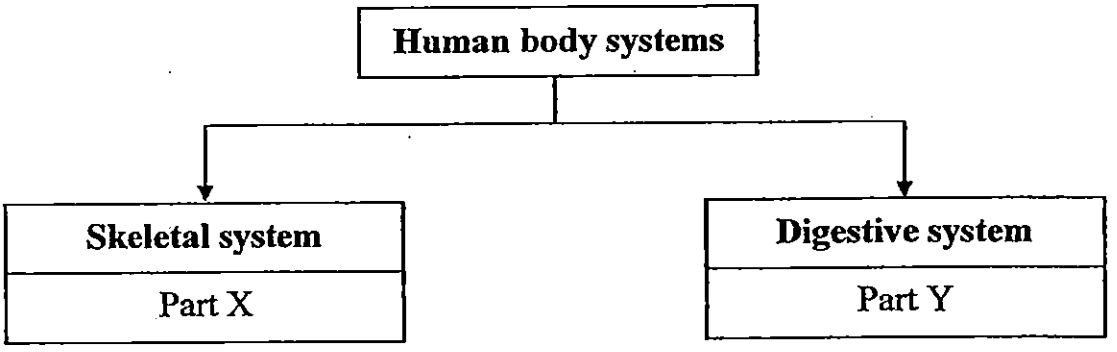


System C

What can the three systems, A, B and C, be?

	System A	System B	System C
1)	Skeletal system	Muscular system	Digestive system
2)	Respiratory system	Muscular system	Skeletal system
3)	Muscular system	Skeletal system	Digestive system
4)	Circulatory system	Muscular system	Respiratory system

10. Study the classification chart below carefully.



Which one of the following pairs can parts X and Y be?

	Part X	Part Y
1)	Skull	Windpipe
2)	Heart	Mouth
3)	Backbone	Small intestine
4)	Muscle	Large intestine

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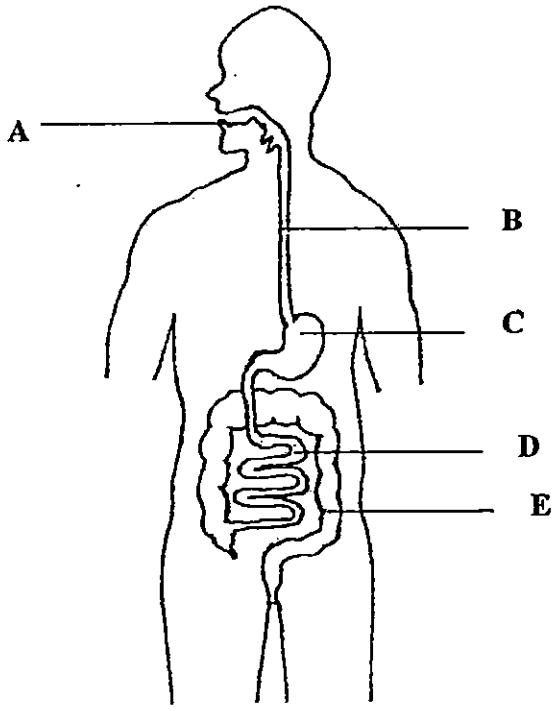
11. Study the diagram of the human digestive system below carefully.



In which parts of the digestive system does digestion of food take place?

1) B and C only
2) A, C and D only
3) A, B, D and E only
4) A, B, C, D and E

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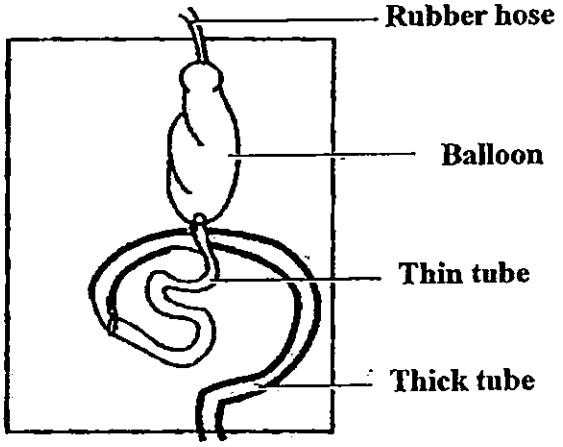
12. Vivian made a model of the human digestive system using some materials as shown below.



Which part of the model above represents the stomach?

1) Balloon
2) Thin tube
3) Thick tube
4) Rubber hose

13. Which of the following statements is / are true about what takes place in the small intestine?

A: Digestion is completed here.
B: Water is removed from the undigested food.
C: Digested food is carried by the blood to all parts of the body.

1) A only
2) B only
3) A and C only
4) A, B and C

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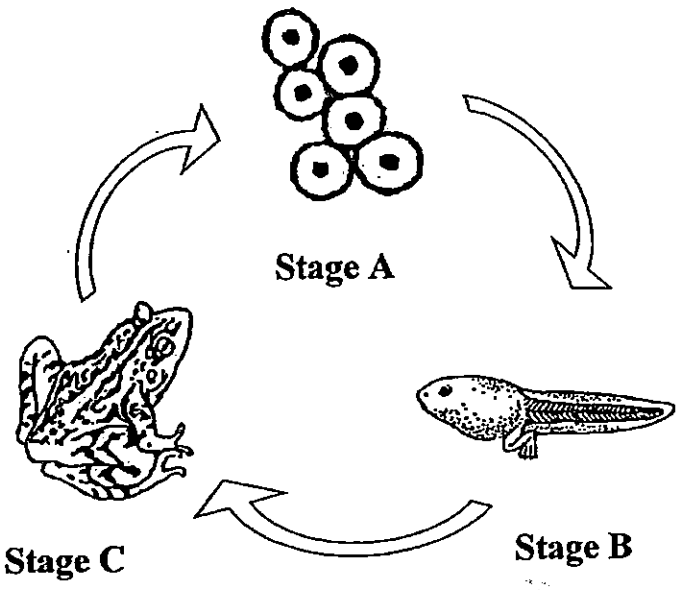
Study the diagram of the life cycle of a frog below and answer questions 14 and 15.



14. In which stages of the life cycle can the frog move around from place to place on its own?

1) Stage A only
2) Stage B only
3) Stages A and C only
4) Stages B and C only

15. Anna made a comparison among the different stages of the life cycle of a frog and recorded her observations below.

A: The frog lives in the water only during stages A and B
B: The frog in stage A looks like the adult frog in stage C.
C: The frog lives on land and in the water during stages B and C.
D: The eggs in stage A have jelly-like covering but the adult frog in stage C has a moist skin.

Which of the following statements are true?

1) A and B only
2) A and D only
3) B and C only
4) C and D only

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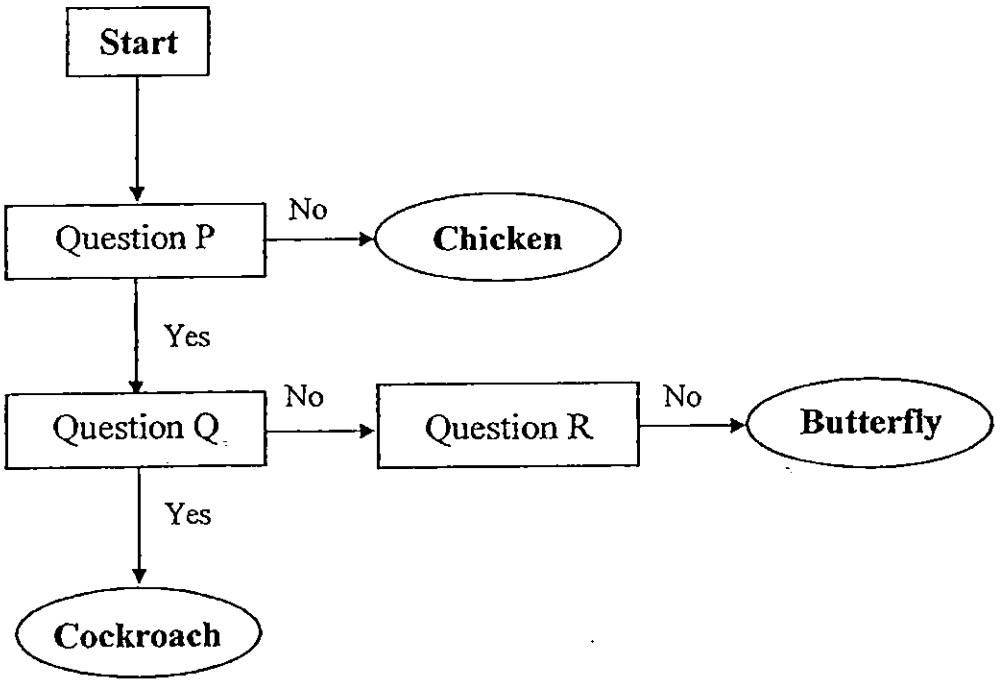
16. Study the flowchart below carefully.



Which one of the following sets of questions best represents questions P, Q and R respectively?

	Question P	Question Q	Question R
1)	Does it have six legs?	Does it have a three-stage life cycle?	Does the young resemble its parents?
2)	Does it have six legs?	Does it have a four-stage life cycle?	Does it moult several times as it grows?
3)	Does it have two legs?	Does it have a three-stage life cycle?	Does the young resemble its parents?
4)	Does it have two legs?	Does it have a four-stage life cycle?	Does it moult several times as it grows?

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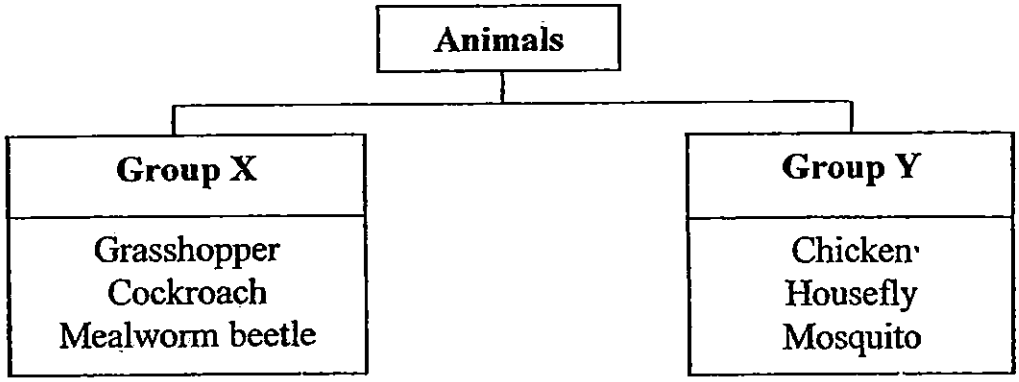
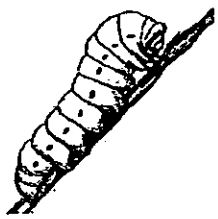
17. The animals in the classification chart below are grouped according to the number of stages in their life cycles.



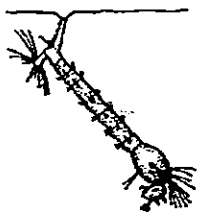
Which of the following animals are in the wrong group?

1) Cockroach and housefly
2) Grasshopper and chicken
3) Grasshopper and mosquito
4) Mealworm beetle and chicken

18. Study the young of two animals below carefully.



Caterpillar



Larva

Which of the following describes the characteristics of the young of the two animals?

	Caterpillar	Larva
1)	It feeds on leaves.	It feeds on eggs.
2)	It lives on land.	It lives in the water.
3)	It feeds and grows into an adult.	It does not eat till it becomes an adult.
4)	It looks different from the adult butterfly.	It resembles the adult mosquito.

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19. Caili recorded some observations on two animals, X and Y, in the table below.

Observation	Animal X	Animal Y
The young looks like its adult.	×	✓
It has a 4-stage life cycle.	✓	×
The eggs are found in egg cases.	×	✓

Which one of the following sets correctly represents animals X and Y respectively?

	Animal X	Animal Y
1)	Cow	Grasshopper
2)	Mosquito	Cockroach
3)	Eagle	Damselfly
4)	Horse	Housefly

20. Which one of the following objects, A, B, C or D, is most likely a glass vase?

Object	Properties		
	Is it flexible?	Does it absorb water?	Does it break easily?
A	Yes	Yes	Yes
B	No	No	No
C	No	No	Yes
D	Yes	Yes	No

1) A
2) B
3) C
4) D

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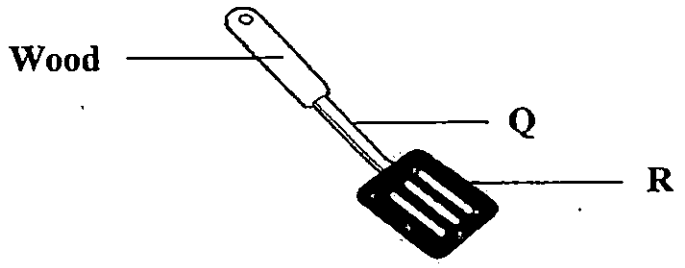
Study the picture below carefully and answer questions 21 and 22.



21. Three pupils listed the properties of wood as shown below.

Annie : It is flexible.
Bala : It is transparent.
Cathy : It can absorb water.

Which of the following pupils listed the properties of wood correctly?

1) Cathy only
2) Annie and Bala only
3) Bala and Cathy only
4) Annie, Bala and Cathy

22. Which materials are most suitable for making parts Q and R?

	Q	R
1)	Glass	Rubber
2)	Metal	Glass
3)	Rubber	Glass
4)	Metal	Plastic

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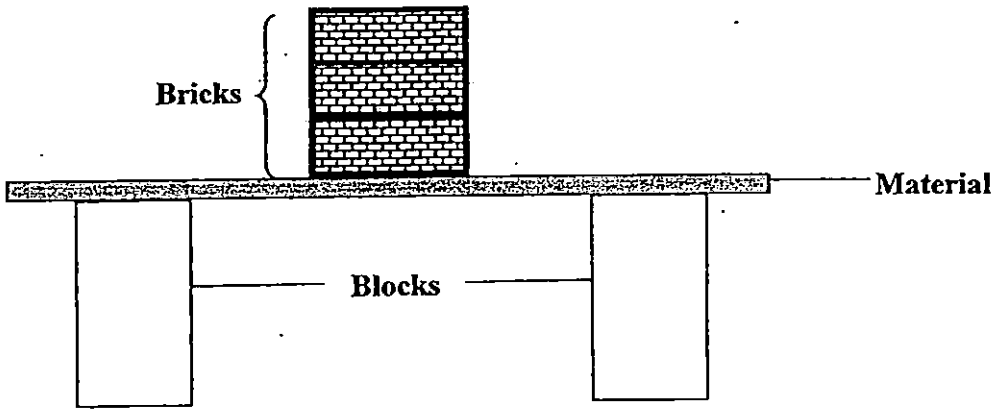
23. Gina carried out an experiment using four different materials, P, Q, R and S, as shown in the diagram below. A piece of each material was first placed over two blocks. Bricks, weighing 2 kg each, were then stacked on the piece of material, one at a time, until it broke.



She recorded her findings in the table below to show the number of bricks needed to break each piece of material.

Material	Number of bricks needed to break the material
P	2
Q	4
R	6
S	8

Based on the information above, which materials could Gina choose if she wanted to make a box that would be able to hold a weight of up to 5kg?

1) P and Q only
2) R and S only
3) P, Q and S only
4) Q, R and S only

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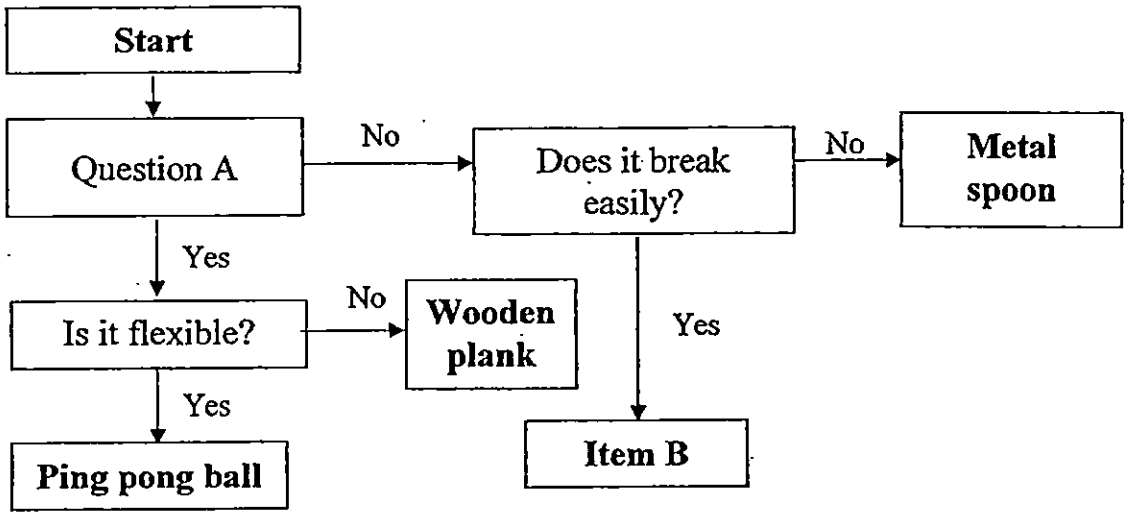
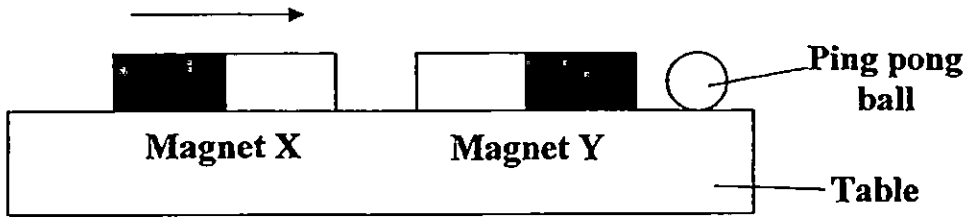
24. Study the flowchart below carefully.



Which one of the following sets best represents question A and item B?

	Question A	Item B
1)	Can it float on water?	Nail
2)	Can it float on water?	Ceramic cup
3)	Does it absorb water?	Rubber duck
4)	Does it absorb water?	Tennis ball

25. Study the diagram below carefully.



Walter brought magnet X close to magnet Y and noticed that the ping pong ball was pushed off the edge of the table when magnet Y moved to the right. What was a possible reason for this?

1) Magnet X had lost its magnetism.
2) The magnetism in magnet Y was stronger than that of magnet X.
3) Both the like poles of magnets X and Y were facing each other.
4) Both the unlike poles of magnets X and Y were facing each other.

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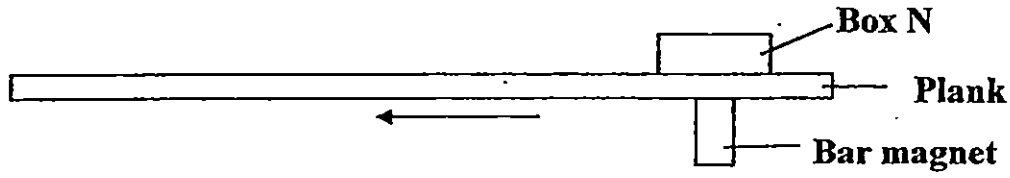
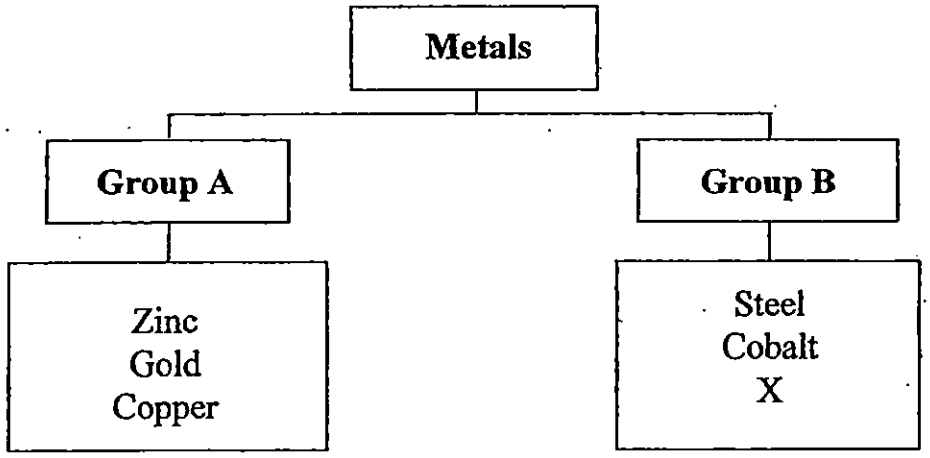
26. When Wei En moves a bar magnet below a thin wooden plank as shown in the diagram below, she notices that box N moves along the wooden plank.



What is most likely the item found inside box N?

1) Iron nail
2) Glass marble
3) Aluminium foil
4) Wooden matchstick

27. The metals in the classification chart below are grouped according to whether they can be attracted to a magnet or not.



Which one of the following metals could X be?

1) Iron
2) Brass
3) Silver
4) Bronze

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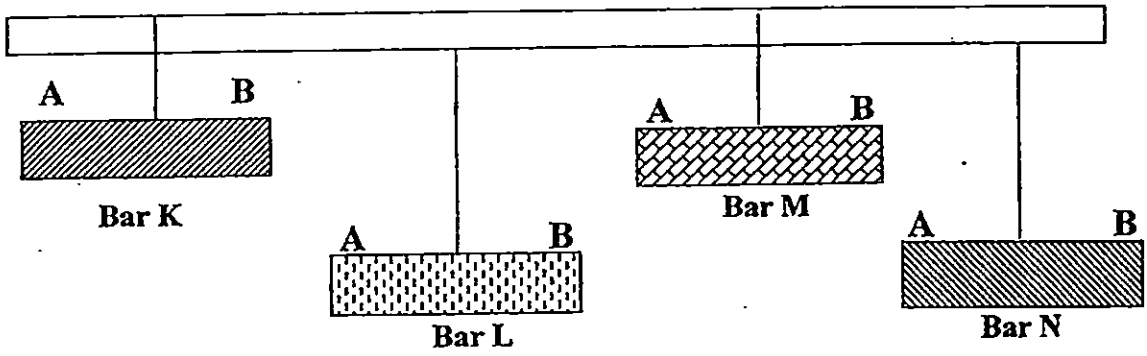
28. Four metal bars, K, L, M and N, were left to hang freely as shown below.



Justin brought the North-seeking pole of a bar magnet near poles A and B of each metal bar.

He recorded his observations in the table below.

	Observations	
Metal Bar	**North-seeking pole and end A**	**North-seeking pole and end B**
K	Attracted	Attracted
L	Repelled	Attracted
M	Attracted	Repelled
N	No reaction	No reaction

Based on the observations made in the table, which of the metal bars are most likely magnets?

1) K and N only
2) L and M only
3) L and N only
4) M and N only

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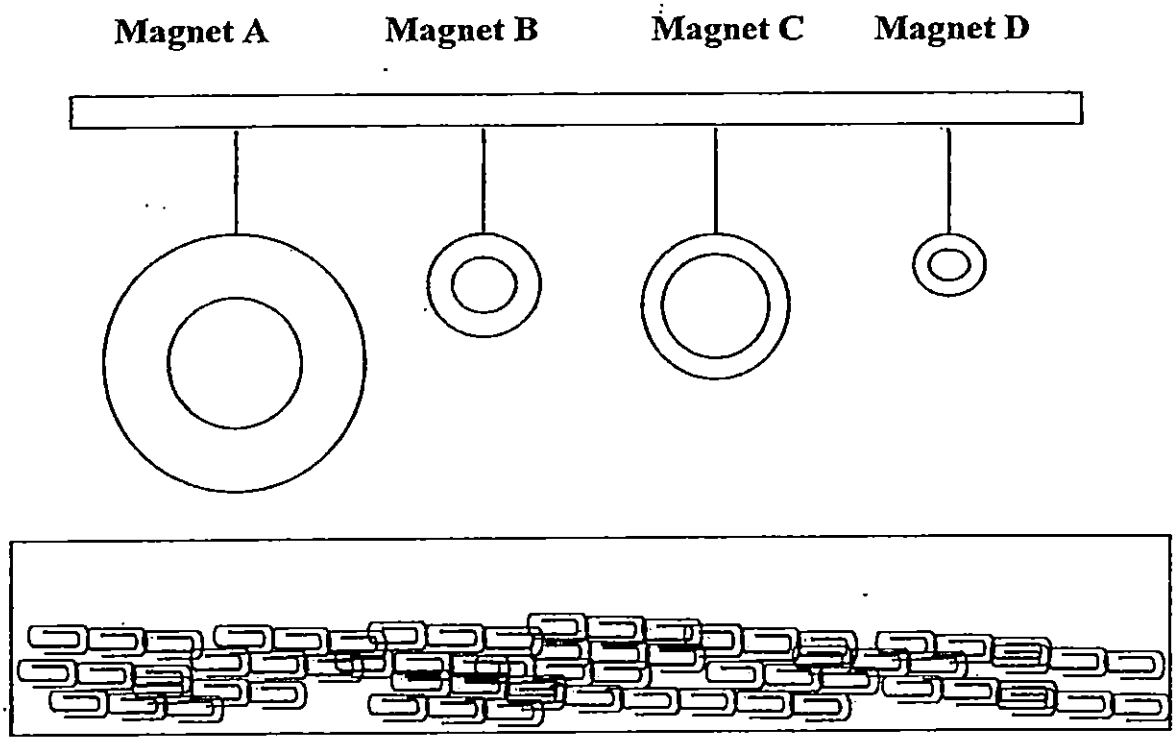
29. Jolene conducted an experiment using four ring magnets, A, B, C and D. Each magnet was lowered down into a box of paper clips as shown in the diagram below.



She recorded the number of paper clips attracted to each magnet in the table below.

	Magnet A	Magnet B	Magnet C	Magnet D
Number of paper clips attracted	9	15	21	30

What can Jolene conclude from the findings of the experiment?

1) The strength of a magnet depends on its size.
2) Smaller magnets are stronger than bigger magnets.
3) Bigger magnets are stronger than smaller magnets.
4) The strength of a magnet does not depend on its size.

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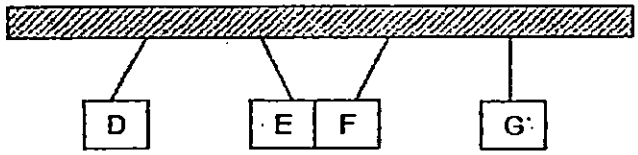
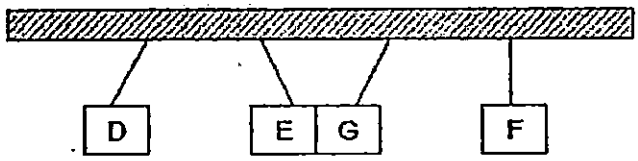
30. Susan hung four objects, D, E, F and G, on a wooden rod. The diagram shows what she observed.



She then exchanged the positions of F and G. The diagram below shows her new observations.



Which one of the following sets correctly describes the objects?

	Object D	Object E	Object F	Object G
1)	Magnet	Magnet	Magnet	Non-magnetic material
2)	Magnet	Magnet	Magnetic material	Magnetic material
3)	Non-magnetic material	Non-magnetic material	Magnet	Magnetic material
4)	Non-magnetic material	Magnet	Magnetic material	Magnet

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Rulang Primary School

SEMESTRAL ASSESSMENT 1
SCIENCE
2015

Name:	_____ ( )	**Marks:**	_____/40
Level:	**Primary 4**	**Date:**	**14 May 2015**
Class:	**Primary 4 ( )**	**Parent's Signature:**	_____

BOOKLET B

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**
2. You are required to answer **all** the questions in this paper using your own words / expressions as far as possible.
3. All drawings / diagrams must be clearly shown and labelled.
4. Marks will be deducted for wrongly spelt key words.
5. This question booklet consists of **15** printed pages, including the cover page.

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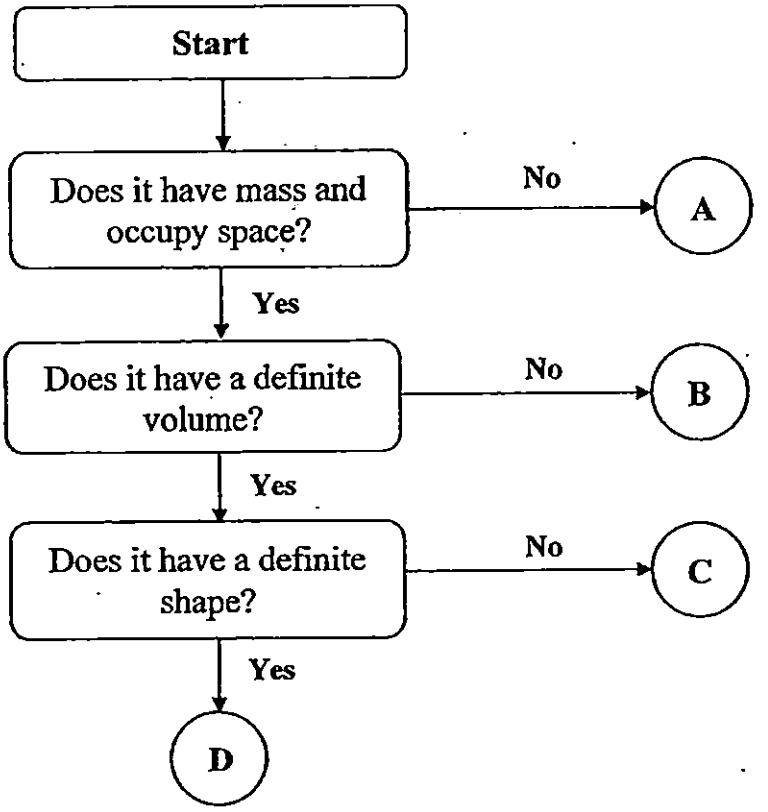
Section B (40 marks)
Write your answers to questions 31 to 44 in this booklet.

31. Study the flowchart below carefully.



What could the states of objects C and D be? (2 m)

Object C: _____

Object D: _____

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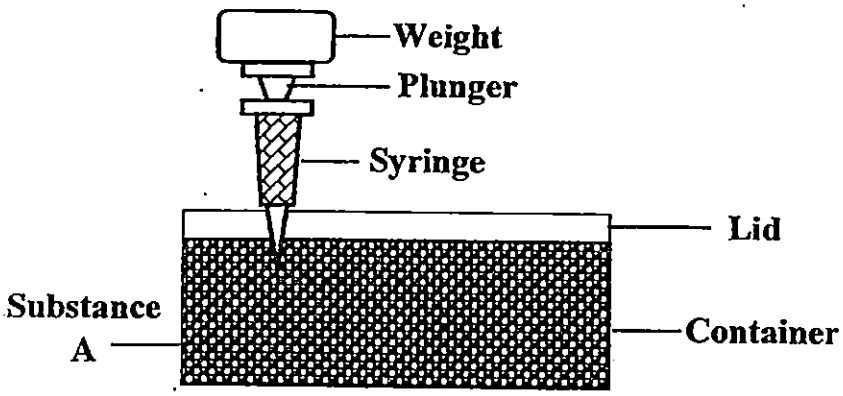
32. Siew Leng carried out several investigations using the container shown below.



She filled the container with substance A and used the lid to seal the container completely. She then attached a syringe with 75ml of water to the container. She placed a 1-kg weight on the plunger and observed the amount of water that could be forced into the container. She repeated the experiment using different weights and recorded her results in the table below.

Weight used to force plunger in (kg)	Amount of water forced into container (ml)
1	25
2	50
3	75

Next, she emptied substance A and replaced the container with substance B. She sealed the container with the lid completely and repeated her experiment. She recorded her results in the table below.

Weight used to force plunger in (kg)	Amount of water forced into container (ml)
1	0
2	0
3	0

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(a) Based on her results, what can Siew Leng conclude about the properties of substances A and B? (2 m)

_____

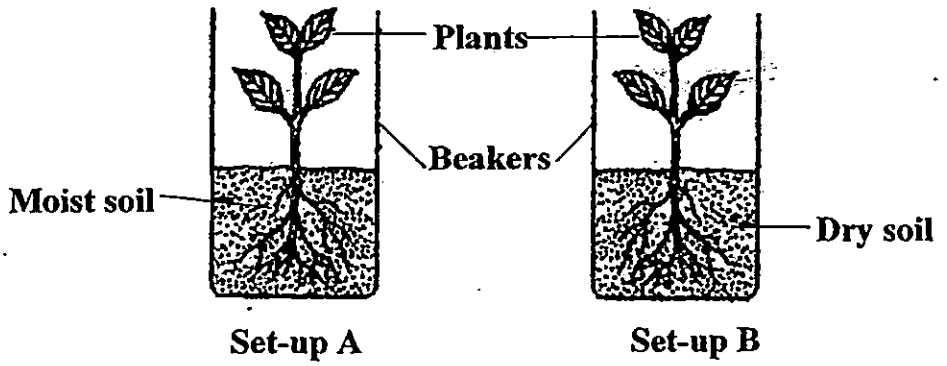
_____

(b) Which substance is more likely a solid? (1 m)

_____

_____

33. Cindy set up an experiment as shown in the diagram below. She placed both set-ups beside her bedroom window. She kept the soil in set-up A moist by watering it daily.



(a) What is the aim of her experiment? (1 m)

_____

_____

(b) Name one other variable that must be kept the same to ensure that the experiment is a fair one. (1 m)

_____

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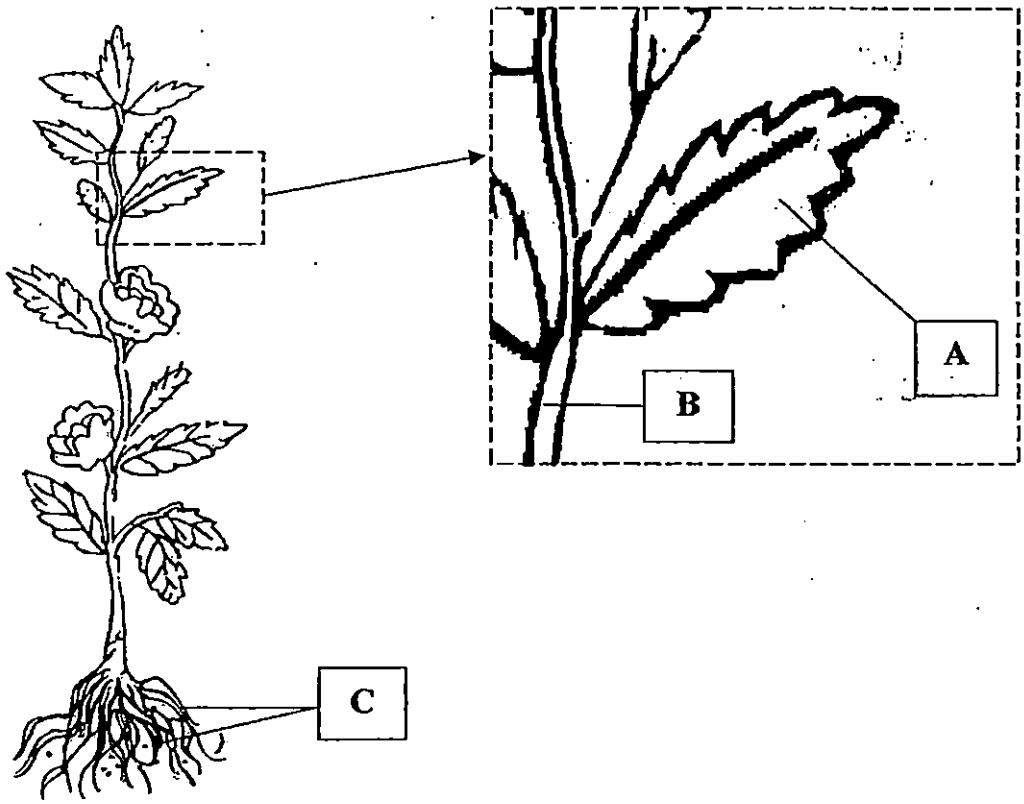
34. Study the pictures below carefully.



Name the plant parts and their functions in the table below. (3 m)

Part	Name of plant part	Function
A		
B		
C		

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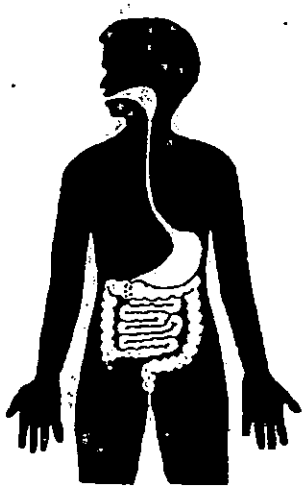
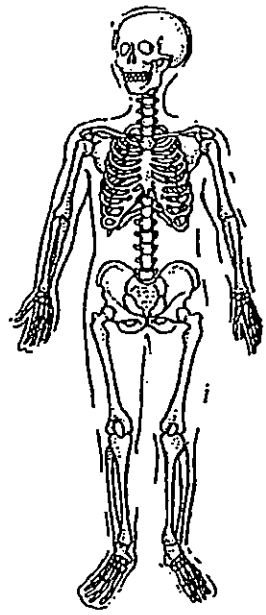
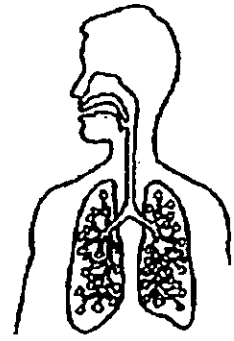
35. Study the pictures of the different human body systems below carefully.



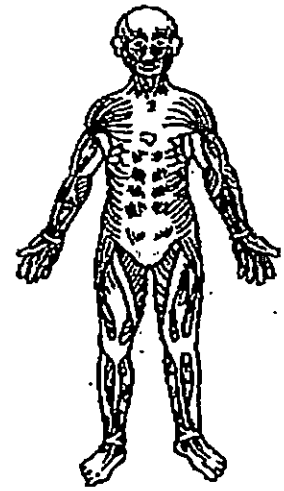
A



B



C



D

Match the descriptions to the correct systems (A, B, C or D). (3 m)

S/N	Description of the system	System
(i)	It breaks food down into simpler substances before they can be absorbed into the blood.	
(ii)	It protects the delicate organs in the body.	
(iii)	It helps different parts of our body to move.	

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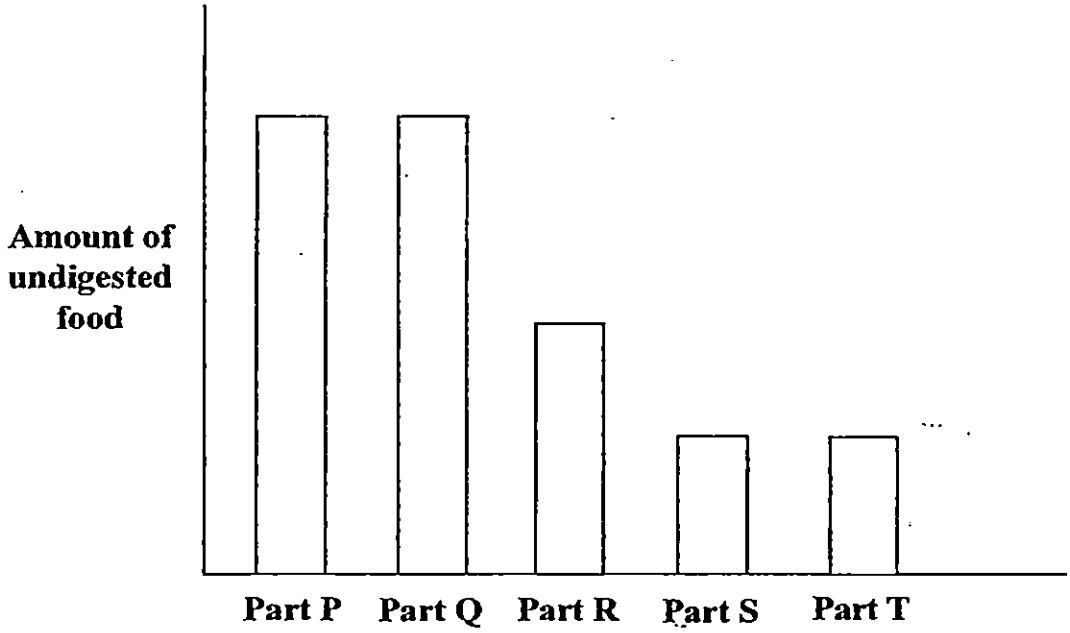
36. Yihan ate a cheese burger for lunch. The graph below shows the amount of undigested food left in the various organs as it leaves the organs in his digestive system.



(a) Identify parts P, Q, R and S. (2 m)

Part	Name of part in digestive system
P	
Q	
R	
S	

(b) Explain why there is a decrease in the amount of undigested food from the moment it leaves part Q to the moment it leaves part R. (2 m)

_____

_____

_____

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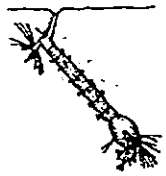
37. The diagrams below show four animals P, Q, R and S.



P

Q

R

S

(a) Which two animals are not in their adult stage? (1 m)

Animals _____ and _____

(b) Which two animals have a four-stage life cycle? (1 m)

Animals _____ and _____

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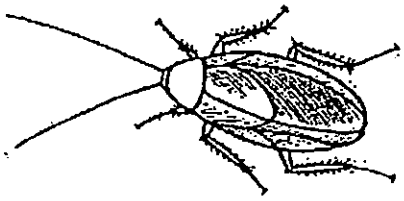
38. The diagrams below show a grasshopper and a cockroach.

Grasshopper



Cockroach

(a) List two similarities between the life cycles of the grasshopper and the cockroach in terms of: (2 m)

(i) the stages in their life cycle;

_____

(ii) their young.

_____

(b) The diagrams below show a caterpillar and a butterfly.

Caterpillar

Butterfly

Write **down one difference** between the caterpillar and the butterfly in terms of **their movements.** (1 m)

_____

_____

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39. Wendy weighed 4 pieces of materials, P, Q, R and S, which were similar in size. She soaked them into a bowl of water for two minutes and removed them, shook off any droplets of water on their surfaces and weighed them again. She recorded her findings in the table below.

Material	Mass before putting into water (g)	Mass after shaking off water droplets (g)
P	50	72
Q	50	84
R	50	60
S	50	52

(a) Which material (P, Q, R or S) absorbed the most amount of water? (1 m)

Material _____

(b) Which material (P, Q, R or S) is suitable for making umbrellas? Explain your answer clearly. (2 m)

_____

_____

_____

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40. Study the table below carefully.

Material	Waterproof	Flexible	Able to float on water
E	Yes	No	Yes
F	No	No	Yes
G	No	Yes	Yes

(a) Write down two differences between materials E and G based on the table above. (2 m)

(i) _____

(ii) _____

(b) Write down one similarity between materials F and G. (1 m)

_____

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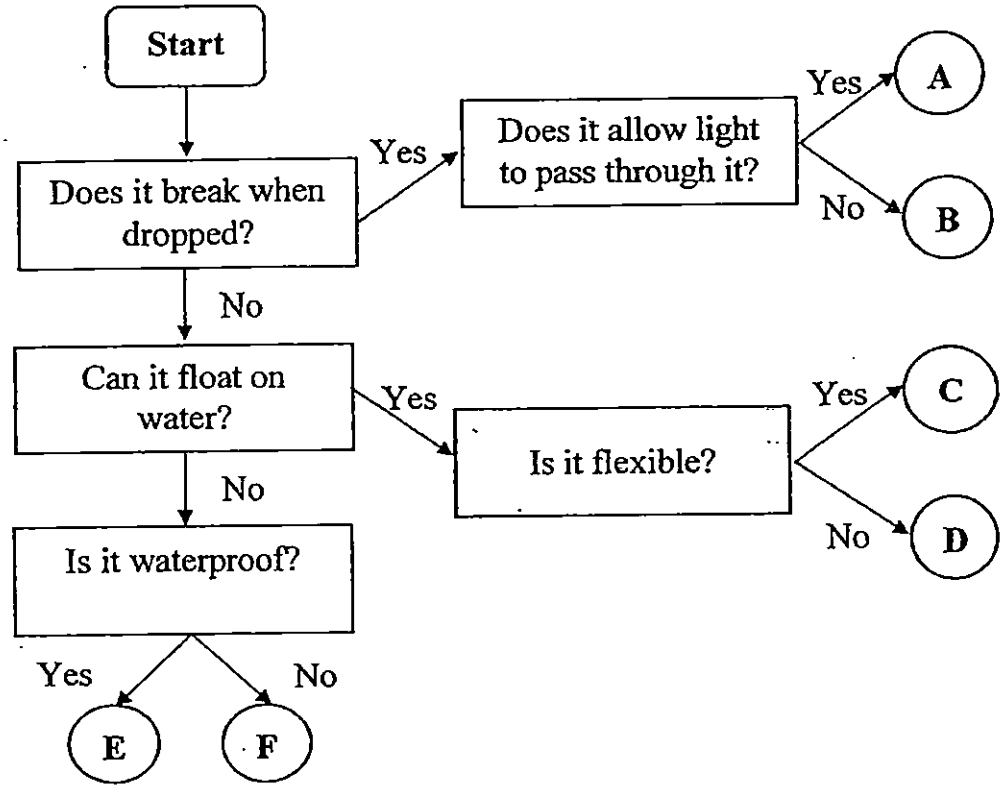
41. Study the flowchart below carefully.



(a) Based on the information in the flowchart only, which letters (A, B, C, D, E or F) best represent the objects correctly? Each letter can only be used once or not at all. (2 m)

Letter	Object
E	~~Metal Key~~ steel ruler
A	~~Glass bottle~~ clay bowl
C	Paper boat
B	Ceramic mug

(b) Write down one property of material B that makes it unsuitable for making a window pane. (1 m)

_____

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42. The following pairs of objects are placed close together to see how they interact with each other.

Objects		Observations
A	B	Repel
A	C	Attract
C	B	Attract

(a) Bala says that object B is definitely a magnet. Do you agree with him? Explain your answer. (2 m)

_____

_____

(b) Bala places object D, which is a plastic bar, near objects B and C. What do you think will happen? Write "Repel", "Attract" or "No reaction" in the table below. (1 m)

Objects		Observations
D	B	
D	C	

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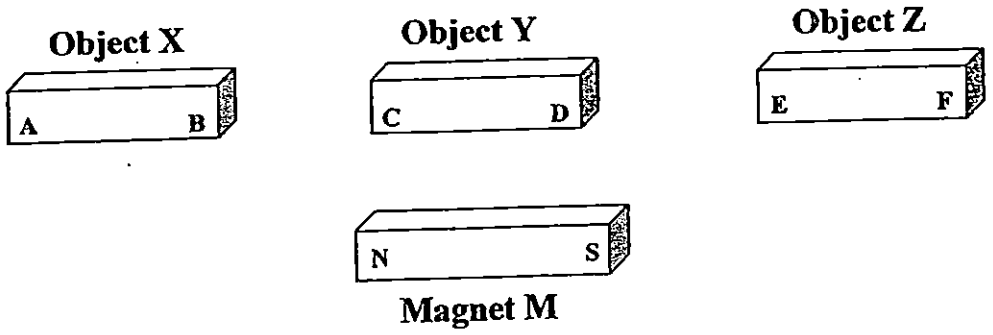
43. Benny carried out an experiment using objects X, Y and Z and magnet M. He brought magnet M to the ends of objects X, Y and Z. The table below shows the results of his experiment.



End of object brought near to the South pole of magnet M	Attract	Repel	No reaction
A			✓
B			✓
C		✓	
D	✓		
E	✓		
F	✓		

(a) What was the aim of Benny's experiment? (1 m)

_____

_____

(b) What conclusion could Benny make from the experiment about the materials that were used to make objects X and Z? (2 m)

_____

_____

_____

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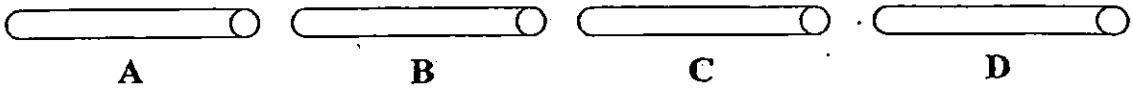
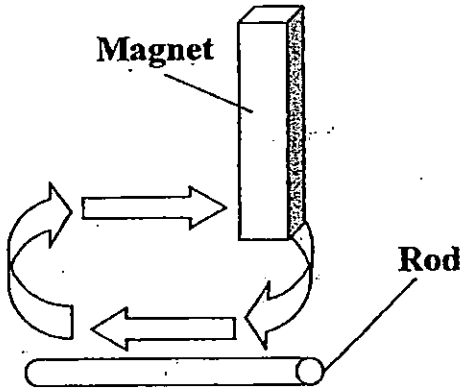
44. Jeremy prepared four rods, A, B, C and D, made from different materials but were of similar length and thickness.



He then used a magnet to stroke the four rods, one at a time, as shown below.



He found out that rods A and D could attract some paper clips but rods B and C could not attract any paper clips.

(a) What could Jeremy conclude about the materials used to make rods B and C from the experiment? (1 m)

_____

_____

(b) List two other variables that must be kept the same to ensure a fair test. (2 m)

(i) _____

(ii) _____

END OF PAPER

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : RULANG PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
2	**2**	**4**	**1**	**2**	**3**	**2**	**4**	**3**	**3**
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
2	**1**	**3**	**4**	**2**	**1**	**4**	**2**	**2**	**3**
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	**4**	**4**	**2**	**3**	**1**	**1**	**2**	**4**	**2**

Q31. Object C: Liquid Q31. Object D: Solid

Q32a. Substance A can be compressed and has no definite volume but substance B cannot be compressed and has a definite volume.

Q32b. Substance B is more likely a solid.

Q33a. The aim of her experiment t is to find out whether plants need water to survive.

Q33b. The number of leaves on each plant must be kept the same to ensure that the experiment is a fair one.

Q34a. Leaf – The leaves trap light to make food for the plant.

Q34b. Stem – The stem transports water and mineral salts from the roots, food from the leaves to all other plants of the plant.

Q34c. Roots – The roots anchor the plant firmly to the ground and absorb water and mineral salts from the soil.

Q35i) Digestive system Q35ii) Skeletal system Q35iii) Muscular system

Q36a. P- Mouth, Q- Gullet, R- Stomach, S- Small intestine

Q36b. The food which exited part Q is the same when it enters part P as no digestion takes place at part Q and the undigested food was broken down into simpler substances in part R. More digestive juices are added to break down the food.

Q37a. Animals P and S

Q37b. Animals R and P

Q38ai) Both animals have a life cycle of 3 stages.

Q38aii) Both young of the grasshopper and the cockroach resembles it adult.

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Q38b. The butterfly has wings to fly but the caterpillar has legs to crawl.

Q39a. Material Q.

Q39b. Material S. Material S absorbed the least amount of water as the mass after shaking off water droplets was the lightest.

Q40ai) Material E is waterproof but material G is not waterproof.

Q40aii) Material G is flexible but material E is not flexible.

Q40b) Both materials F and G is able to float on water.

Q41a. Letter E – steel ruler, Letter B – Clay bowl

Q41b. Material B does not allow light to pass through it.

Q42a. Yes, object B is a magnet. The like poles of object A and B are facing each other and repelled each other.

Q42b. No reaction Q42b. No reaction.

Q43a. The aim of the experiment is to find out whether which object is a magnet.

Q43b. He could conclude that object X and Z is made out of a magnetic material. Object X is made of a non-magnetic material but Z is made of a magnetic material.

Q44a. He could conclude that rod B and C is made out of a non-magnetic material.

Q44bi) The magnet used to magnetise the rod.
Q44bii) The number of times the rod is stroked.

THE END

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SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2015

SCIENCE

PRIMARY FOUR

NAME: DATE:

CLASS:

BOOKLET A

25 questions

50 marks

Total time for Booklets A & B: 1 h 25 mins

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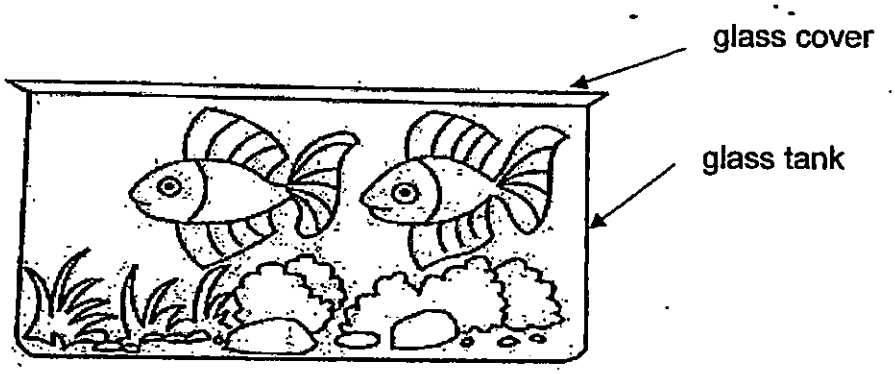
Part I (25 x 2 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Jasmine went on a holiday. When she returned 2 weeks later, she was shocked to see that both her fish had died. What would be the most likely reason that her fish had died?



The fish did not have enough _____.

1) air
2) water
3) light
4) warmth

2. Look carefully at the diagrams below. Which of the following is **not** an insect?

(1) (2) (3) (4)

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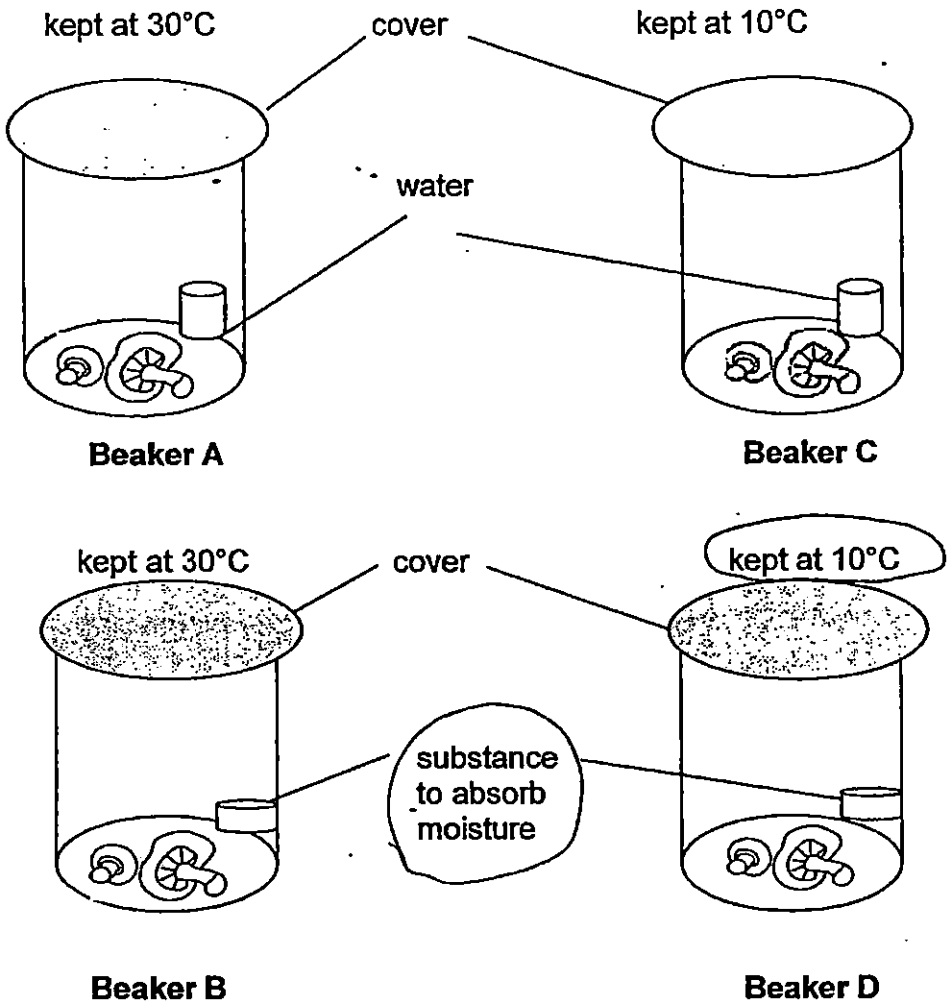
3. Lily conducted an experiment to find out how to keep mushrooms fresh. 2 mushrooms were placed into each jar and kept in different conditions as shown below.



After one week, Lily noticed that only the mushrooms in Beaker D were still fresh. This shows that in order to keep mushrooms fresh as long as possible, they should be kept _____.

1) dry at 10°C
2) dry at 30°C
3) moist at 10°C
4) moist at 30°C

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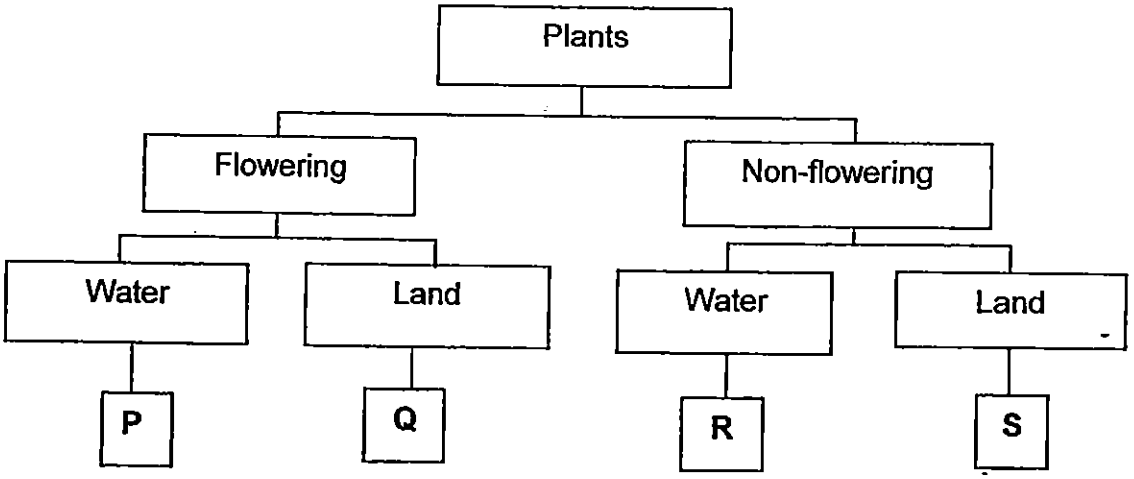
4. Study the classification table below.



Which of the following shows correctly what P,Q,R and S represent?

	Water Plants	Land Plants
1)	P and R	Q and S
2)	P and Q	R and S
3)	Q and S	P and R
4)	Q and R	P and S

5. Which of the following materials and their properties are paired correctly?

	Materials	Property
A	Ceramic	Sinks in water
B	Fabric	Not flexible
C	Metal	Absorbs water
D	Plastic	Waterproof

1) A and B only
2) A and D only
3) B and C only
4) C and D only

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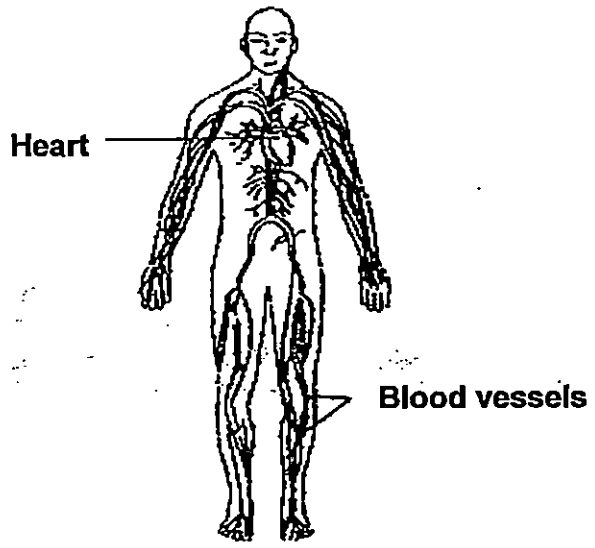
6. The table below shows a comparison between what happens in our small and large intestines.

	Small intestine	Large intestine
A	Food is completely digested.	Food is being digested.
B	It passes food to the large intestine into the blood for further digestion.	Undigested food is absorbed into the blood. X
C	Digested food is absorbed into the blood.	Food is not absorbed into the blood.

Which of these comparisons A, B or C between the small intestine and the large intestine is/are correct?

1) A only
2) C only
3) A and B only
4) B and C only

7. The diagram below shows one of the systems in our human body.



The function of the above system is to _____.

1) digest our food
2) help different parts of the body move
3) carry digested food, water and oxygen to all parts of the body.
4) take in oxygen into the body and removes carbon dioxide from the body

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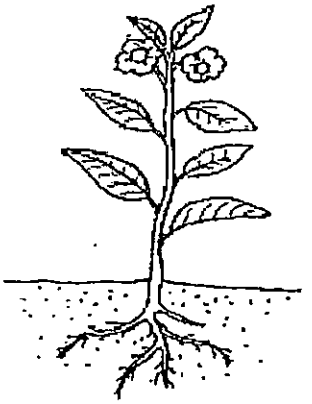
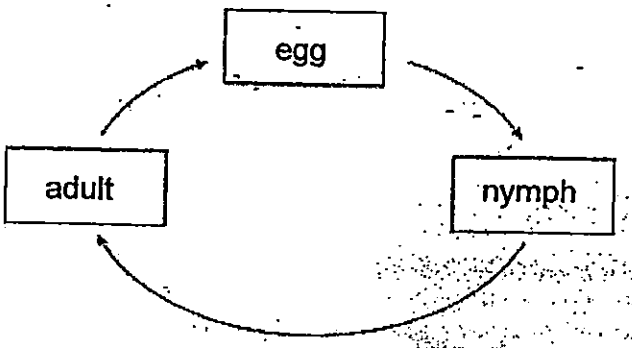
8.



The picture above shows a balsam plant. Which of the following matches the plant part to its function correctly?

	Plant Part	Function
1)	Roots	Carries water to all parts of the plant
2)	Stems	Hold the plant firmly to the ground
3)	Flowers	Hold the plants upright
4)	Leaves	Makes food for the plant

9. The diagram below shows the life cycle of an animal.



Which animal **does not** have the life cycle as shown above?

1) butterfly
2) dragonfly
3) cockroach
4) grasshopper

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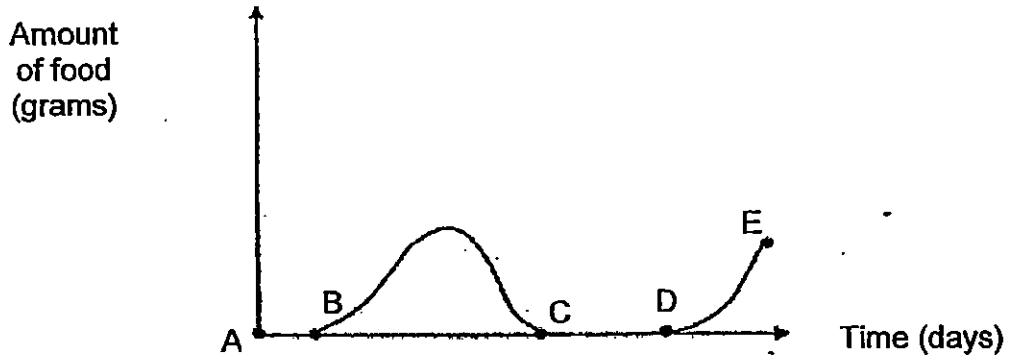
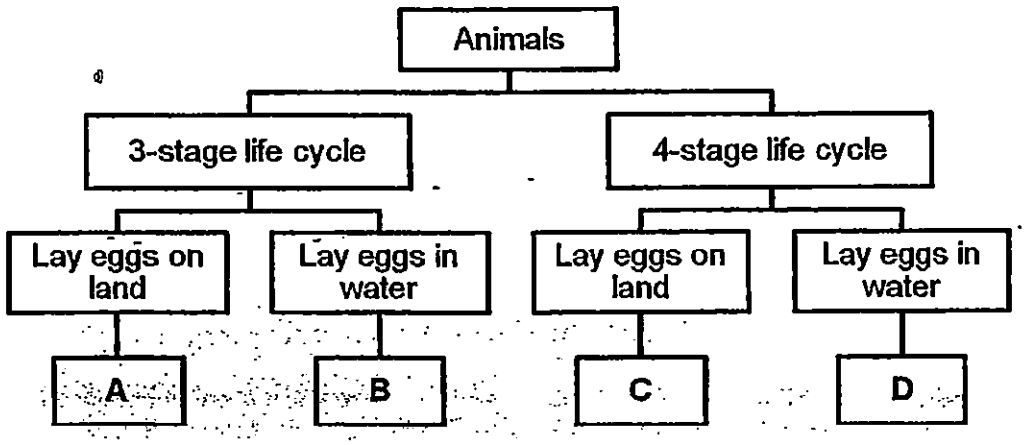
10. The graph belows shows the amount of food consumed by a butterfly at different stages of its life cycle. Which part of the graph shows the butterfly at its pupa stage?



1) A to C
2) B to C
3) C to D
4) D to E

11. Study the diagram below.



In which group does the mosquito belong to?

1) A
2) B
3) C
4) D

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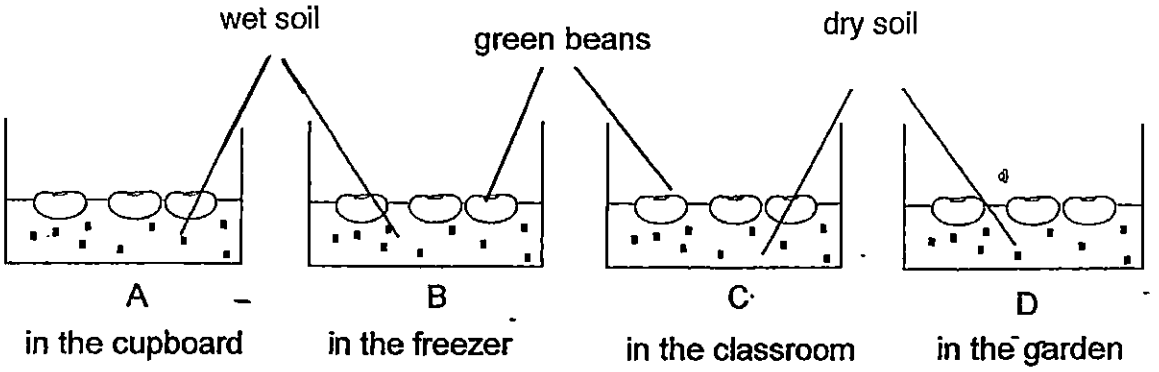
12. The table below gives information about the life cycles of 4 animals, S, T, U and V.

Description	S	T	U	V
The young looks like the adult.	Yes	No	No	Yes
It has a 4-stage life cycle.	No	No	Yes	No
The young goes through a process known as moulting.	Yes	No	Yes	No

Which animal, S, T, U or V most likely represents a cockroach?

1) S
2) T
3) U
4) V

13. Jason carried out an experiment as shown below. He planted 3 green beans in each of the set-ups and placed them at different locations



In which set-up(s) will the green beans germinate?

1) A only
2) A and B only
3) B and D only
4) A, C and D only

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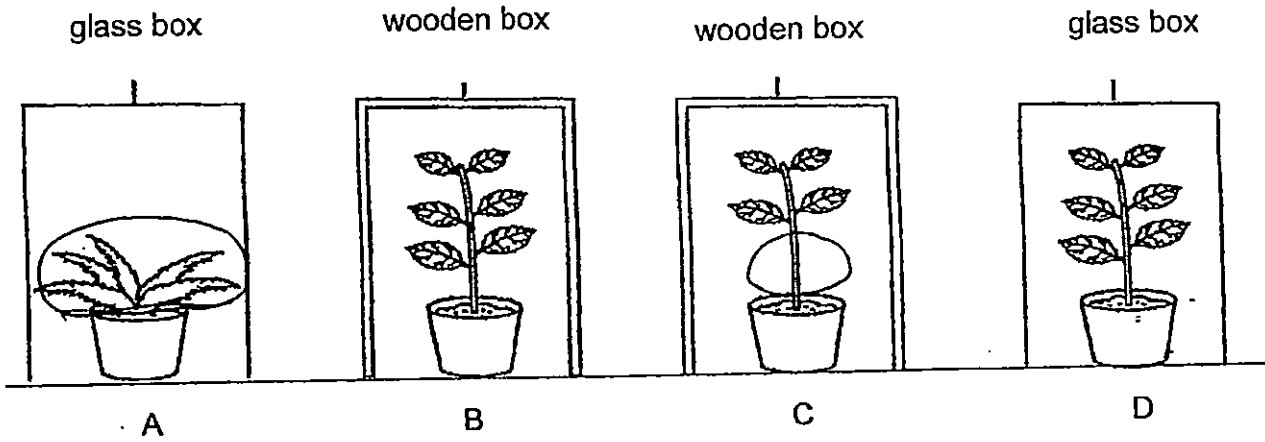
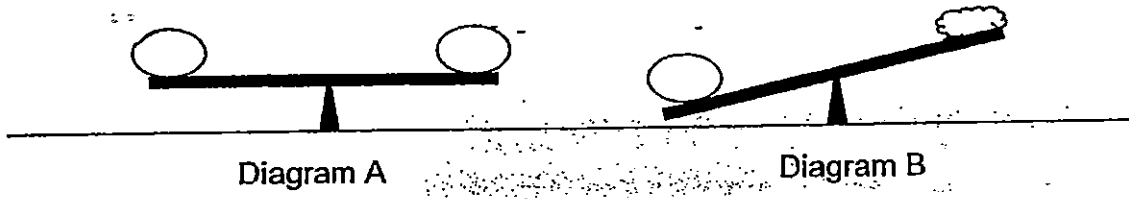
14. Susan wanted to find out if light affects how fast plants grow. She set up an experiment as shown below.

Which 2 set-ups should she choose in order to conduct a fair test?



1) A and B
2) B and C
3) B and D
4) C and D

15. Mei Ling tied 2 similar balloons to a balance as shown in Diagram A. She then pierced one of the balloons with a needle and the result can be seen in Diagram B.



The result shown in Diagram B shows that air_____.

1) has mass
2) can be compressed
3) has no definite shape
4) has a definite volume

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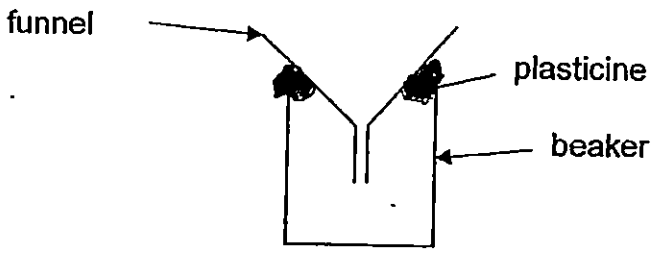
16. Carey poured some water into a beaker through a funnel fitted tightly to the beaker using plasticine. She observed that the water flowed into the beaker slowly and then stopped.



Why did the water stop flowing into the beaker after a while?

1) The funnel was too big for the beaker.

2) The air in the beaker was compressed.

3) The plasticine stopped the water from flowing in.

4) Air in the beaker cannot escape and it occupies space.

17. The table shows the properties of 3 substances A, B and C.

	Substance		
Properties	**A**	**B**	**C**
Has mass?	Yes	Yes	Yes
Has definite shape?	Yes	No	No
Has definite volume?	Yes	Yes	No

Which of the following shows correctly what A, B and C represent?

	A	B	C
1)	solid	liquid	Gas
2)	gas	liquid	Solid
3)	solid	gas	Liquid
4)	liquid	gas	Solid

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18. At the school carnival, Kathy saw a clown twisting a long balloon into the shape of a flower. He was able to do this because air_____.

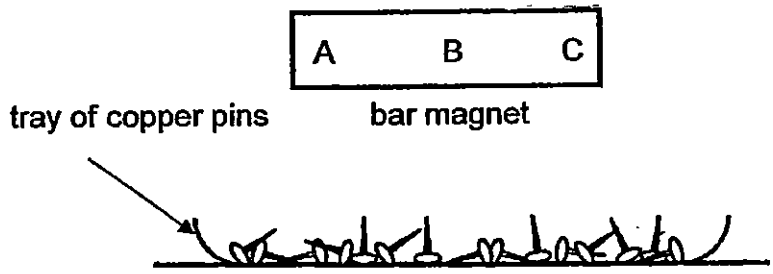
1) has mass

2) occupies space

3) has no definite shape

4) has a definite volume

19. Kelly brought a bar magnet near a tray of copper pins as shown below.



Which of the following correctly shows the number of copper pins on different parts of the bar magnet when the magnet is lowered into the tray and then lifted up?

	A	B	C
1)	10	5	10
2)	5	0	5
3)	5	5	5
4)	0	0	0

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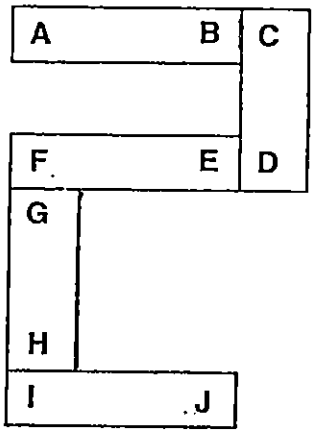
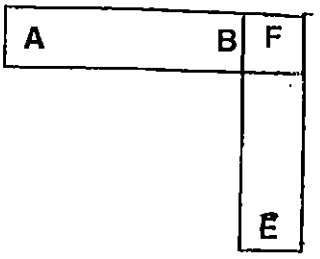
20. Five bar magnets with their ends marked A to J can be arranged as shown below.

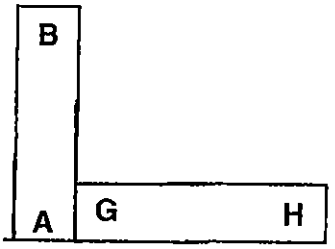


Which one of the following diagrams shows a possible arrangement of 2 magnets from the above arrangement?

1)

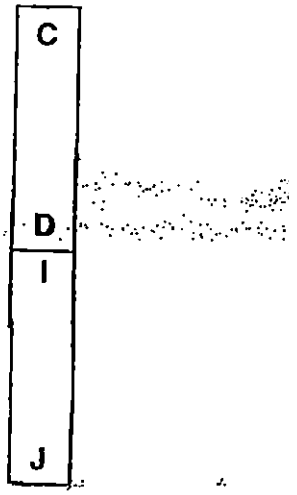


3)



2)

4)



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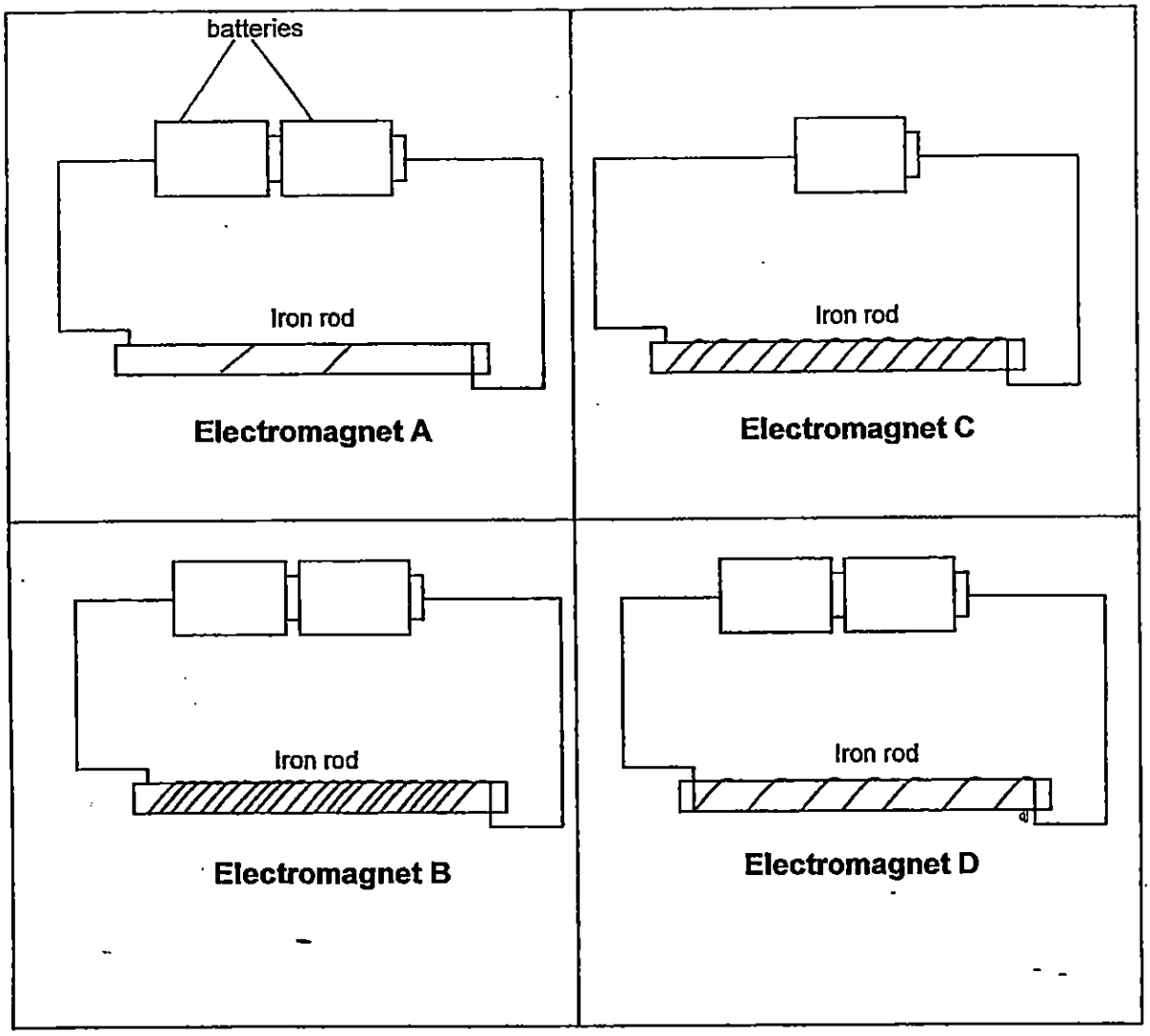
21. 4 electromagnets are shown below.



Which is the strongest electromagnet?

1) A
2) B
3) C
4) D

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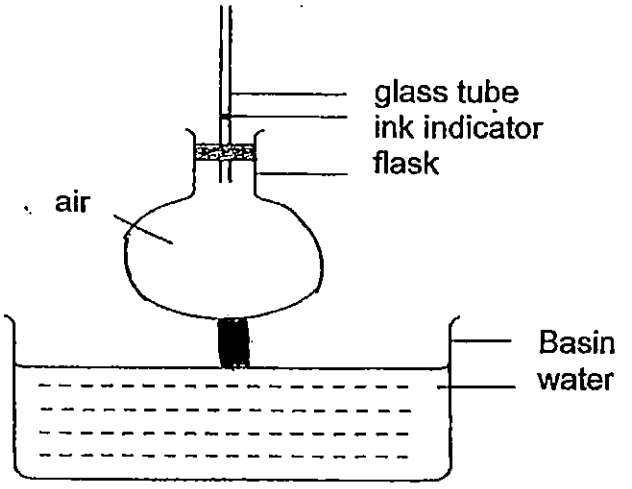
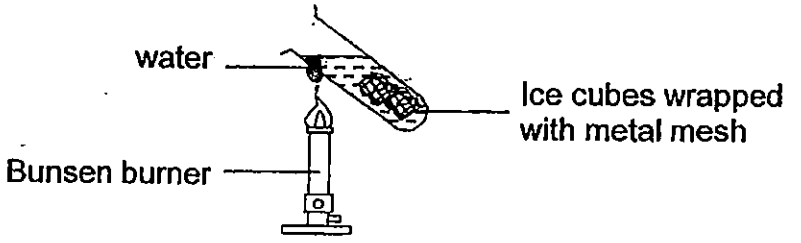
22. Gemma placed a flask into a basin of hot water as shown below.



Why do you think the ink indicator moved up in the glass tube when the flask was placed in the hot water?

1) The air in the flask expanded.
2) The air in the flask contracted.
3) The ink indicator in the glass tube expanded.
4) The ink indicator in the glass tube contracted.

23. Miss Wong conducted an experiment as shown below.



After a few minutes, the ice cubes have not melted completely.
What can you conclude from the above experiment?

1) Metal is a poor conductor of heat.
2) Water is a poor conductor of heat.
3) Metal is a good conductor of heat.
4) Water is a good conductor of heat.

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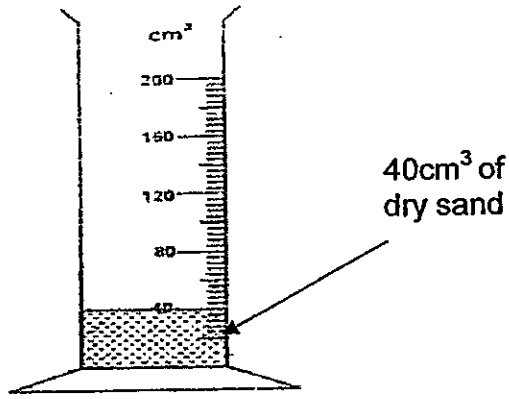
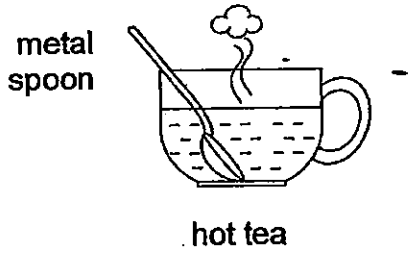
24. $40cm^3$ of dry sand was poured into a measuring cylinder as shown in the diagram below. Then $30\ cm^3$ of water is poured into the measuring cylinder.



What is the most likely new volume of the sand and water mixture?

1) $30cm^3$
2) $60cm^3$
3) $70cm^3$
4) $90cm^3$

25. Polly placed a metal spoon in a cup of hot tea.



After a while, the spoon became hotter because the_____.

1) cup lost heat to the hot tea.
2) spoon lost heat to the hot tea.
3) spoon gained heat from the hot tea.
4) spoon gained heat from the surrounding.

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SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2015

SCIENCE

PRIMARY FOUR

NAME: _____ DATE: _____

CLASS:

Booklet A		50
Booklet B		30
Total		80

Parent's Signature

_____

BOOKLET B

10 questions

30 marks

Total time for Booklets A & B: 1 h 25 mins

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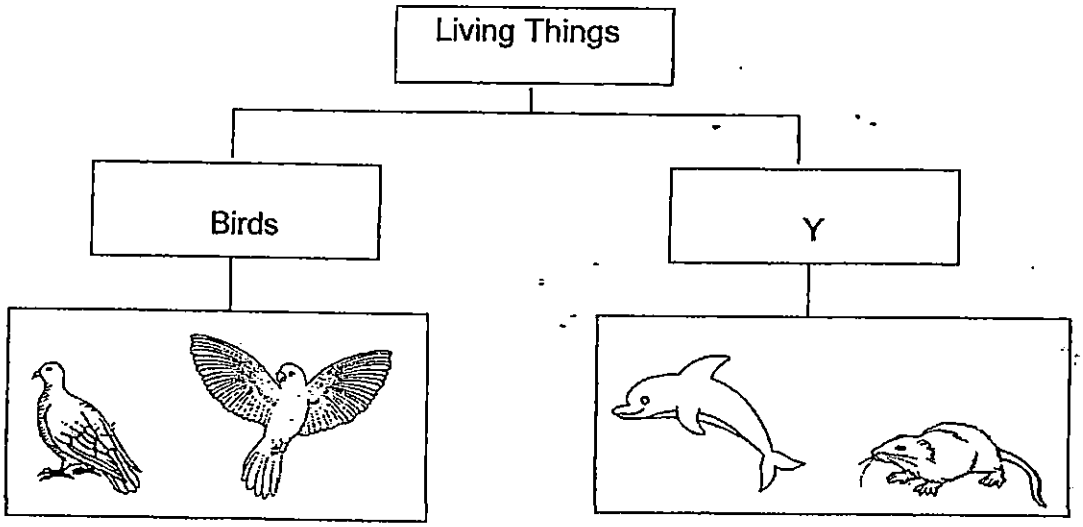
Part II (30 marks)

Answer all the following questions.

26. Janet grouped some living things in a classification chart as shown below.



a) What does 'Y' represent? (1m)

Y: _____

b) State 2 differences between the characteristics of Birds and the animals in Group Y. (2m)

i) _____

ii) _____

3

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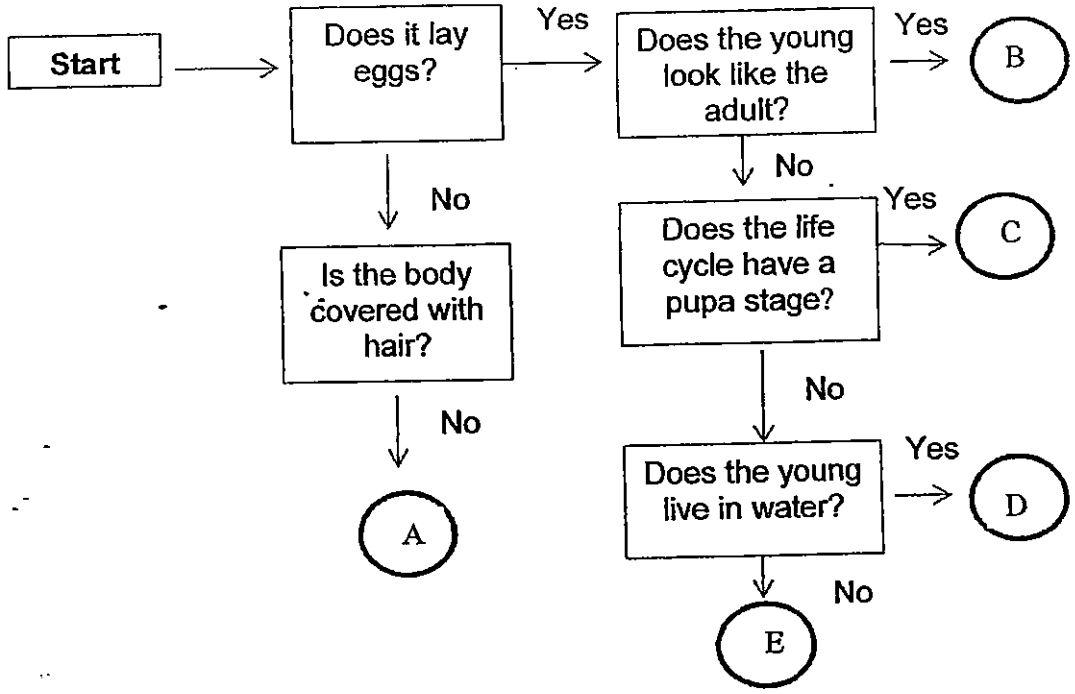
27. In the flow chart below, A, B, C and D represent 4 different animals.



a) Identify the letter that best represents each of the following animals. (2m)

Chicken : _____

Frog : _____

b) Based on the information from the flow chart above, state all the characteristics of Animal A. (1m)

3

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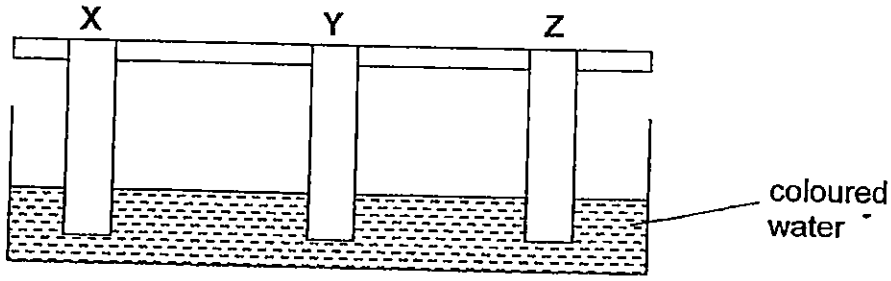
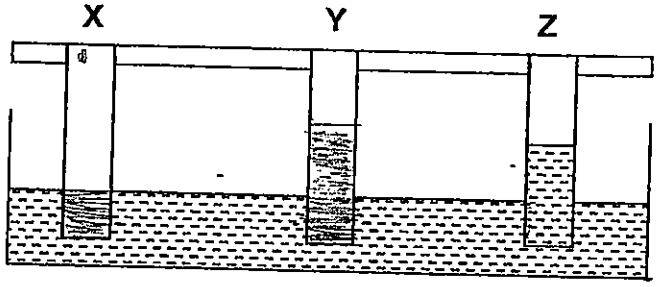
28. Joel set up an experiment as shown below to find out how much water the 3 pieces of fabric, X, Y and Z can absorb.



The highest point water travelled on each fabric is shown in the table below.

	X	Y	Z
Highest point water travelled to	5 cm	15 cm	10 cm

a) Shade how the experimental set-ups X and Y would look like at the end of the experiment. Fabric Z has been done for you. (1m)



Which material, X, Y or Z would you choose to dry your dishes?

bi) Material _____ (1m)

bii) Explain your answer in (bi) (1m)

_____

3

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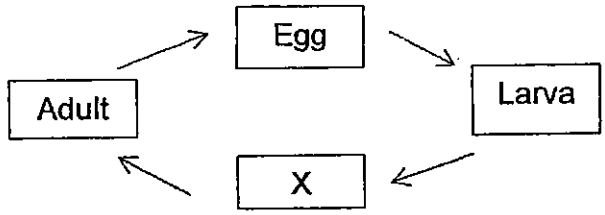
29. The diagram below shows the life cycle of a mealworm beetle.



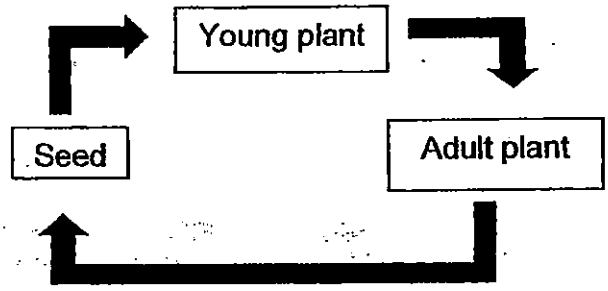
a) Name the stage marked "X". (1m)

X:

b) Write (T) for True or (F) for False in the boxes provided below. (2 m)

	Statements	T or F
i)	The mealworm beetle moults at the larva stage.	
ii)	The mealworm beetle looks the same at the larva stage and 'X' stage.	

30. The life cycle of a flowering plant is shown below.



Fill in the blanks using the helping words given below. (2m)

air	light	food	fertiliser

A green bean seed needs _____ , warmth and water to germinate into a young plant. Once it has grown green leaves, the leaves will make _____ for the plant.

5

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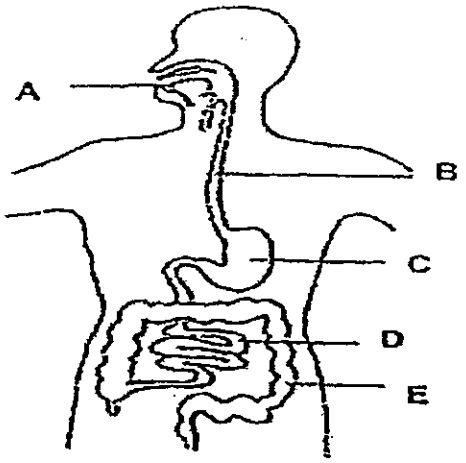
31. The diagram below shows the human digestive system.



(a) Name the organs of the digestive system. (2m)

A: _____

B: _____

C: _____

D: _____

(b) At which part A, B, C, D or E is excess water being absorbed by the body? (1m)

_____

3

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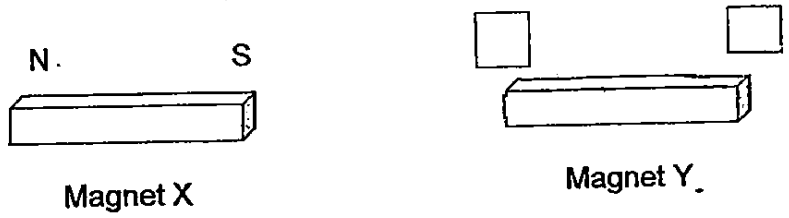
32. Karen placed 2 magnets as shown below.

a) When the 2 magnets were brought together, they attracted each other. Fill in the "N" and "S" poles in the boxes provided below for Magnet Y. (1m)



b) She then heated Magnet Y for an hour and placed it at the same position. Which of the following is likely to happen? Put a tick (✓) in the right column. (2m)

	will attract	will repel	neither attract nor repel
i) When a silver nail is placed near Magnet Y			
ii) When Magnet X's North pole is facing Magnet Y			
iii) When a steel paper clip is placed near Magnet Y			
iv) When Magnet X's South pole is facing Magnet Y			

3

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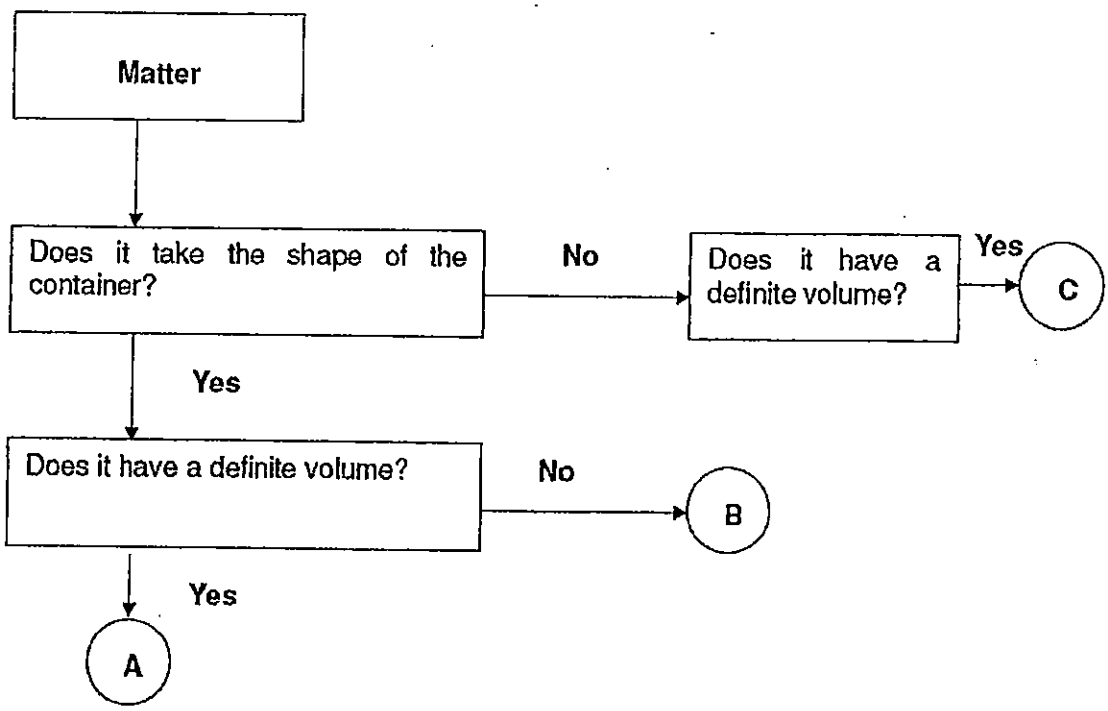
33. The flow chart below shows the properties of Objects A, B and C. Look at the chart and answer the questions below.



a) Write down two properties of Object A. (1m)

b) Write down one difference between Object A and Object B. (1m)

c) How is Object C similar to Object A? (1m)

3

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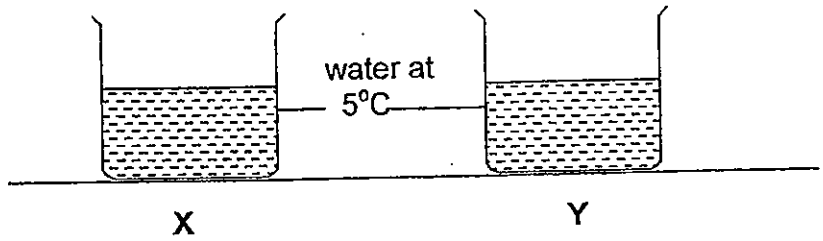
34. Susan filled Containers X and Y, each made of a different materials, with the same amount of water at 5°C at the same time.



Both containers were left in a classroom at 30°C. The temperature of the water in both containers was measured every five minutes. The table below shows the changes in the temperature of water in container X and Y over a period of 20 minutes.

Temperature	Time (mins)				
	0	5	10	15	20
Water in Container X	5 °C	6 °C	8 °C	11 °C	13 °C
Water in Container Y	5 °C	9 °C	13 °C	?	22 °C

(a) Predict the temperature of the water in container Y at the 15th minute. (1m)

_____

(b) Susan made some ice lemon tea for a picnic. Which container, X or Y would keep her tea cold for a longer period of time? (1m)

Container _____

(c) Which container, X or Y, would be more suitable for Susan to use as a lunchbox to keep her food warm? Explain your answer. (2m)

_____

_____

4

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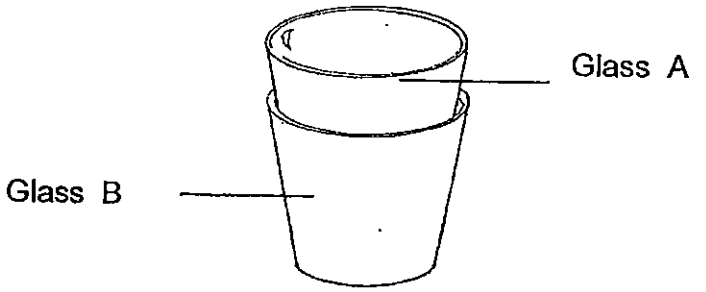
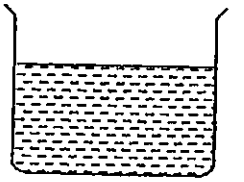
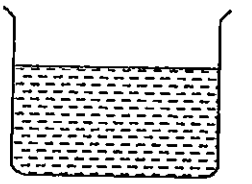
35. John found 2 glasses stacked together in his kitchen. He wanted to separate the glasses but he could not.



Empty Basin



Hot water



Cold water

a) Using the items above, describe how John can separate Glass A from Glass B. (1m)

Step 1: Put Glass A and Glass B (as shown in the diagram) into the empty basin.

Step 2: Pour _____

Step 3: Pour _____

b) Explain how John was able to separate the 2 glasses. (2m)

_____

_____

END.

3

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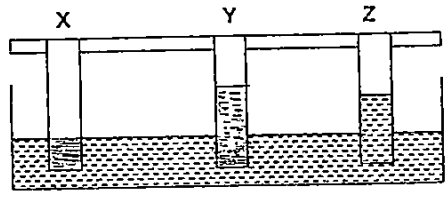
EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : SINGAPORE CHINESE GIRLS SCHOOL
SUBJECT : SCIENCE
TERM : SA1

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
1	2	1	1	2	2	3	4	1	3
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
4	1	1	3	1	4	1	3	4	4
Q21	Q22	Q23	Q24	Q25					
2	1	2	2	3					

Q26. Y: Mammals
Q26bi) The birds lay eggs while the animals in Group Y do not.
Q26ii) The birds have feathers while the animals in Group Y do not.

Q27a. Chicken : B Frog: D
Q27b It does not lay eggs and the body is not covered with hair.

Q28a. SEE PICTURE



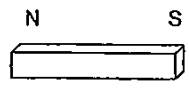
Q28bi) Material X
Q28bii) Material Y absorbed the most amount of water.

Q29a. X: Pupa
Q29bi) True Q29bii) False

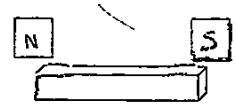
Q30. A green bean seed needs **air,** warmth and water to germinate into a young plant. Once it has grown green leaves will make **food** for the plant.

Q31a. **A:** Mouth , **B:** Gullet, **C:** Stomach, **D:** Small intestine
Q31b. Part E

Q32a. SEE PICTURE



Magnet X



Magnet Y

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Q32bi) neither attract nor repel
Q32bii) will attract
Q32biii) neither attract nor repel
Q32b9v) will attract

Q33a. It takes the shape of the container and has a definite volume.
Q33b. Object A has a definite volume while object B does not.
Q33c. They both have a definite volume.

Q34a. 17°c
Q34b. Container X
Q34c. Container X. It is a poorer conductor of heat than Y, so it will conduct heat from the food to the surroundings slower.

Q35a. Step 2 : Pour cold water into glass A.
Q35a. Step 3: Pour hot water into the empty basin.
Q35b. The cold water contracted Glass A and the hot water expanded Glass B.

THE END

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PRIMARY 4 MID-YEAR EXAMINATION 2015

Name : _____ ( ) Date: 15 May 2015

Class : Primary 4 ( ) Time: 8 a.m. – 9.45 a.m.

Duration: 1h 45min

Parent's Signature : _____ Marks: _____ / 60

SCIENCE
BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

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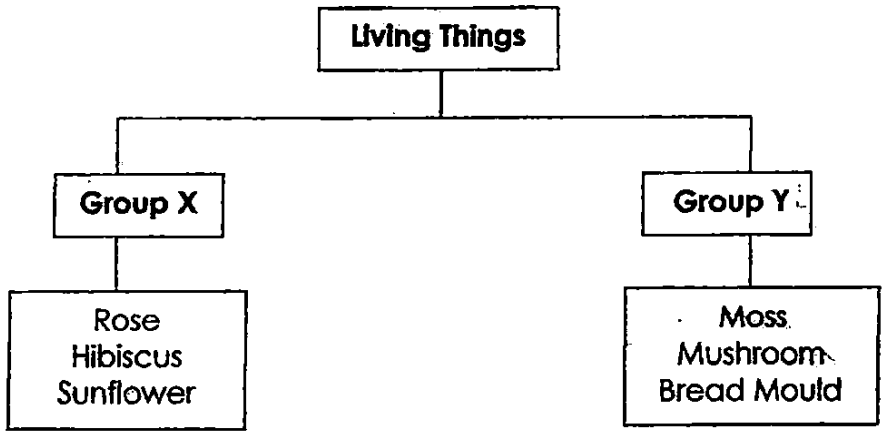
Section A (30 x 2 marks)

For each question, choose the most suitable answer and shade its corresponding oval (1, 2, 3 or 4) in the optical answer sheet.

1. Study the classification chart below.



How are the living things above classified?

	Group X	Group Y
(1)	Has stem	No stem
(2)	Grow on land	Grow in water
(3)	Has chlorophyll	No chlorophyll
(4)	Reproduce by seeds	Reproduce by spores

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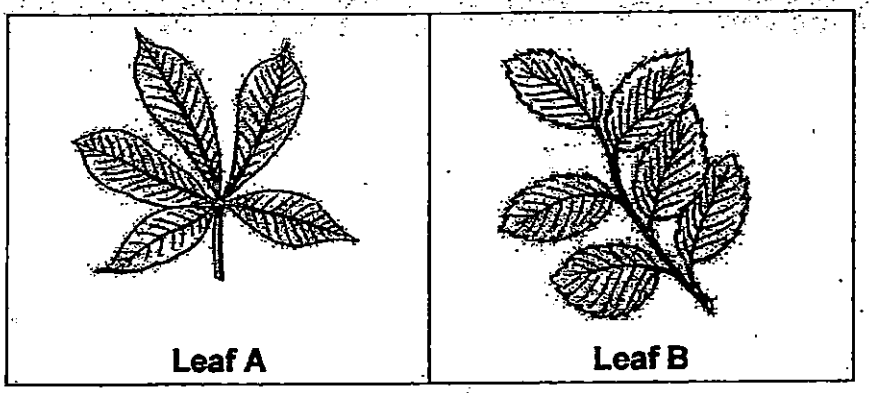
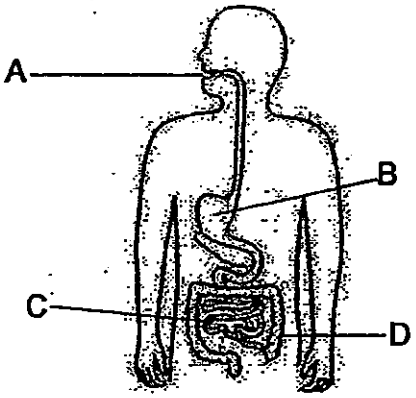
2.



Which of the following best describes the leaves above?

(1) Both have smooth edges.
(2) Both have parallel veins.
(3) Leaf A has parallel veins while Leaf B has network veins.
(4) Leaf A has smooth edges while Leaf B has toothed edges.

3. A, B, C and D are parts of the human digestive system shown below.



Where does digestion end?

(1) A
(2) B
(3) C
(4) D

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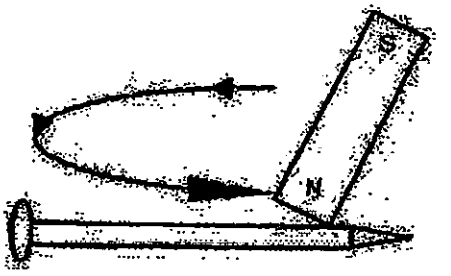
4. A wooden crate is sometimes used to store fruits, instead of a cardboard box. Why?

(1) It is light.
(2) It is strong.
(3) It is flexible.
(4) It is waterproof.

5. Tom wants to make a temporary magnet using the stroking method as shown below.



Which material of nail should Tom use?

(1) Zinc
(2) Steel
(3) Copper
(4) Aluminium

6. A green bean has just sprouted. Which of the following conditions are necessary for its germination?

A: Air
B: Water
C: Sunlight
D Fertiliser

(1) A and B only
(2) C and D only
(3) A, B and C only
(4) A, B , C and D

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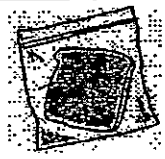
7. Susan puts 4 slices of bread in sealed plastic bags and places them in different locations as shown below.

			
In a garden	In a cupboard	In a classroom	In a freezer
Set-up A	**Set-up B**	**Set-up C**	**Set-up D**

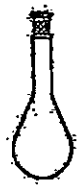
Which 2 set-ups should Susan use to find out if bread mould needs light to grow?

(1) Set-up A and Set-up D
(2) Set-up B and Set up C
(3) Set-up A and Set-up C
(4) Set-up B and Set-up D

8. Which of the following is not matter?

(1) Book
(2) Light
(3) Slime
(4) Dough

9.



Container X
300 cm^3

Container Y
500 cm^3

Container Z
800 cm^3

Look at the three containers above. Which container(s) can hold 500 cm^3 of air?

(1) Y only
(2) Z only
(3) Y and Z only
(4) X, Y and Z

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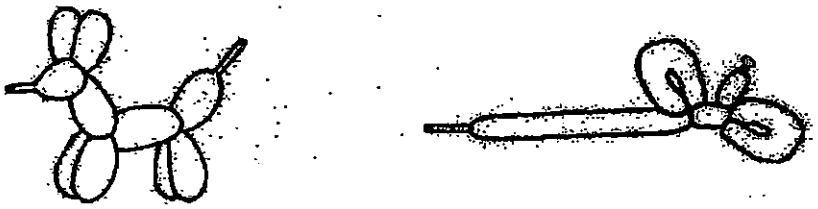
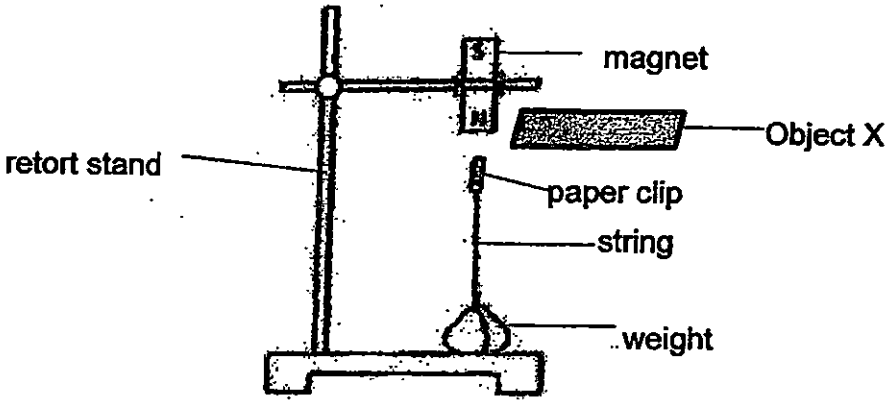
10. A clown is making some balloon sculptures. He fills them with some air. He then twists, squeezes and bends them into the balloon sculptures shown below.



Which property of air allows the clown to make these balloon sculptures?

(1) Air has mass.
(2) Air occupies space.
(3) Air is a mixture of gases.
(4) Air has no definite shape.

11. Minah conducted the following experiment. Initially, the paper clip was suspended in the air. However, the paper clip fell when she placed Object X between the magnet and the paper clip.



What is Object X ?

(1) A sheet of iron
(2) A sheet of glass
(3) A sheet of paper
(4) A sheet of plastic

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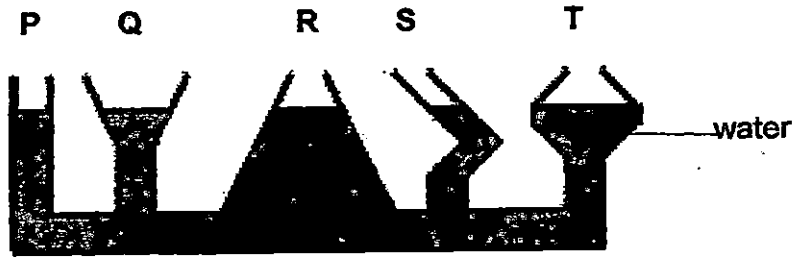
12 Peter pours 300ml of water into a communicating vessel with the parts, P, Q, R, S and T, as shown in the diagram below. He then used a syringe to remove 100ml of water from the part, R.
What is the change in water level of the parts, P, Q, R, S and T ?



Communicating Vessel

	Water level of the parts				
	P	Q	R	S	T
(1)	Unchanged	Unchanged	Decreased	Unchanged	Unchanged
(2)	Decreased	Decreased	Decreased	Decreased	Decreased
(3)	Increased	Increased	Increased	Increased	Increased
(4)	Unchanged	Unchanged	Increased	Unchanged	Unchanged

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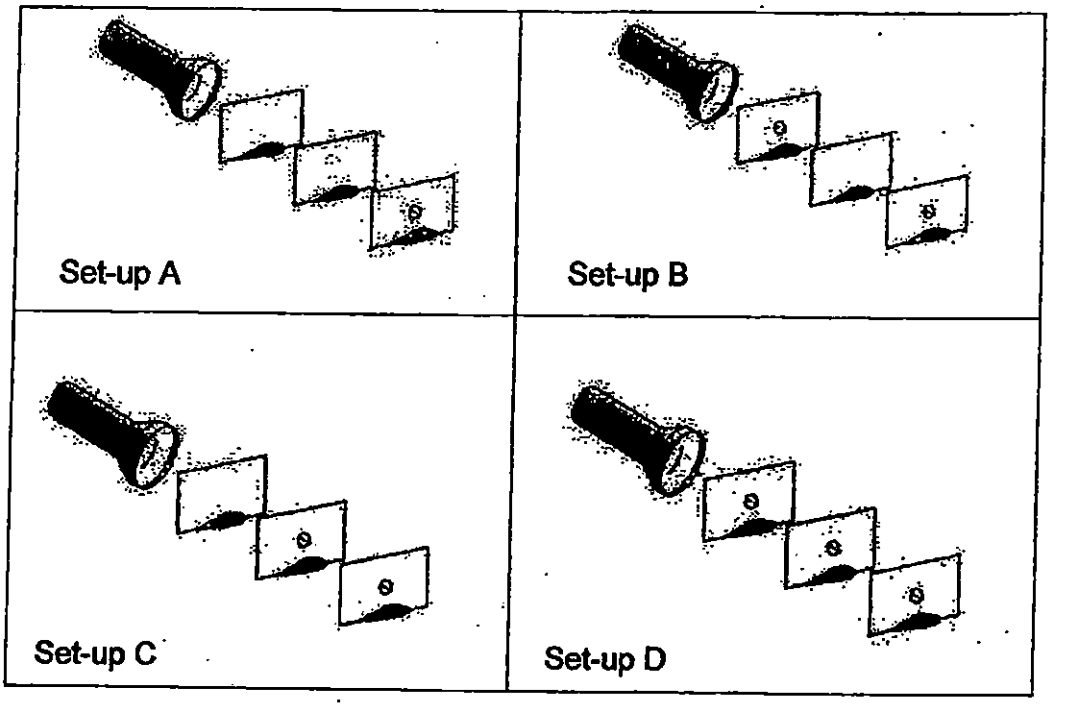
13 The following set-ups have 3 pieces of cardboard and a torch each. The torch is shone onto the 3 pieces of cardboard. Some of the pieces of cardboard have a hole in them.



In which set-up would light pass through the last piece of cardboard?

(1) Set-up A
(2) Set-up B
(3) Set-up C
(4) Set-up D

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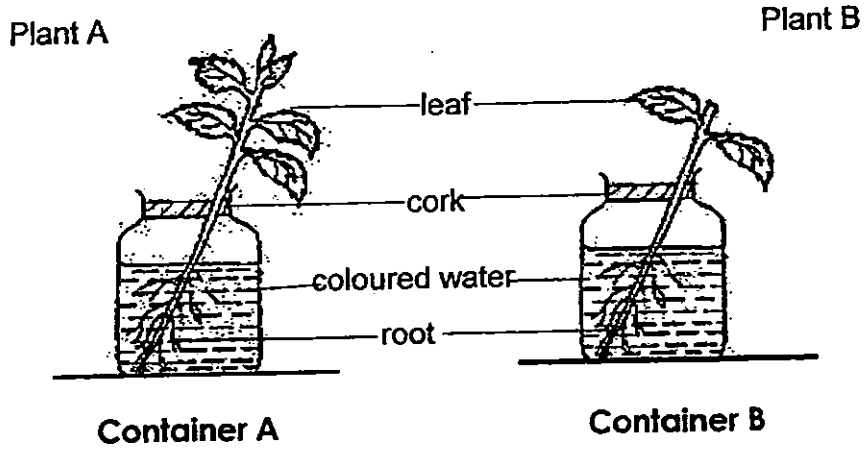
14. Fanny places 2 similar plants, Plant A and Plant B, in a container each. She trims off some leaves from Plant B. She gives each plant an equal volume of water. She then records the volume of water left in the containers for seven days in the table below.



	Volume of water left in the container (ml)			
	Day 1	Day 3	Day 5	Day 7
Container A	500	450	400	350
Container B	500	495	490	485

What is the aim of Fanny's experiment?

(1) To find out if plants need water to make food.
(2) To find out if the stem of a plant absorbs water.
(3) To find out if the roots affect the volume of water taken in by plants.
(4) To find out if the number of leaves affects the volume of water taken in by plants.

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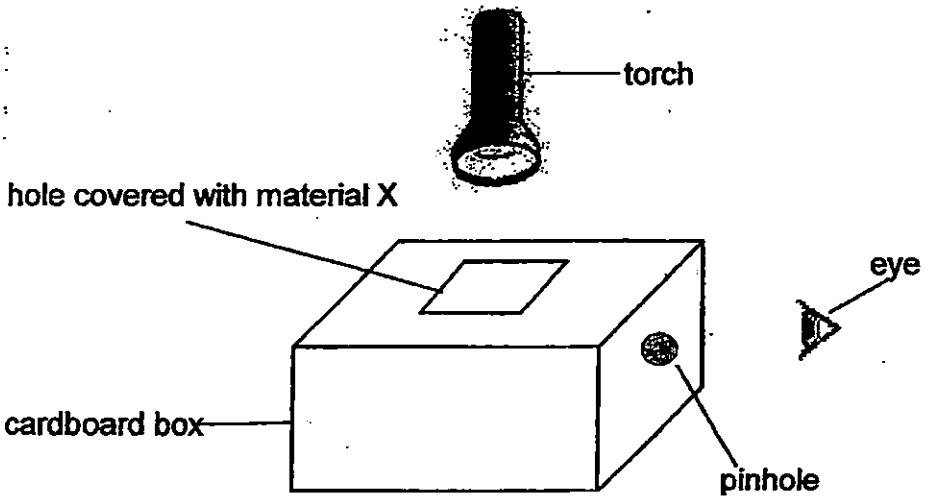
15. The diagram below shows a cardboard box placed in a dark room. Light is shone from a torch through the hole covered with material X. The eye is able to see the ball placed inside the box clearly through the pinhole.



What could material X be ?

(1) cloth
(2) cardboard
(3) clear plastic
(4) tracing paper

16.

caterpillar	cockroach nymph	mosquito larva	mealworm larva

What is a common characteristic among the young of these insects?

(1) All live on land.
(2) All do not eat or drink at this stage.
(3) All have four stages in their life cycles.
(4) All moult a few times before they grow into the next stage.

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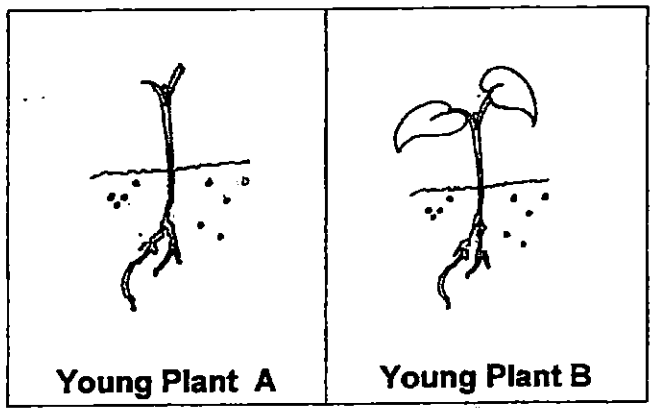
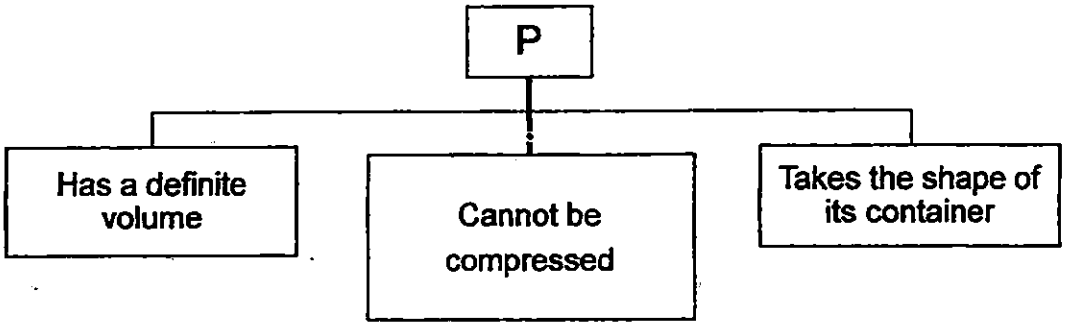
17. Yan planted 2 similar young plants as shown in the diagrams below. She cut the leaves of Young Plant A.



What would happen to the young plants after two weeks?

(1) Both young plants will die.
(2) Both young plants will grow into adult plants.
(3) Young Plant A will die but Young Plant B will grow into an adult plant.
(4) Young Plant A will grow into an adult plant without leaves but Young Plant B will die.

18. The diagram below shows the properties of P.



Which of the following is P?

(1) Air
(2) Book
(3) Water
(4) Balloon

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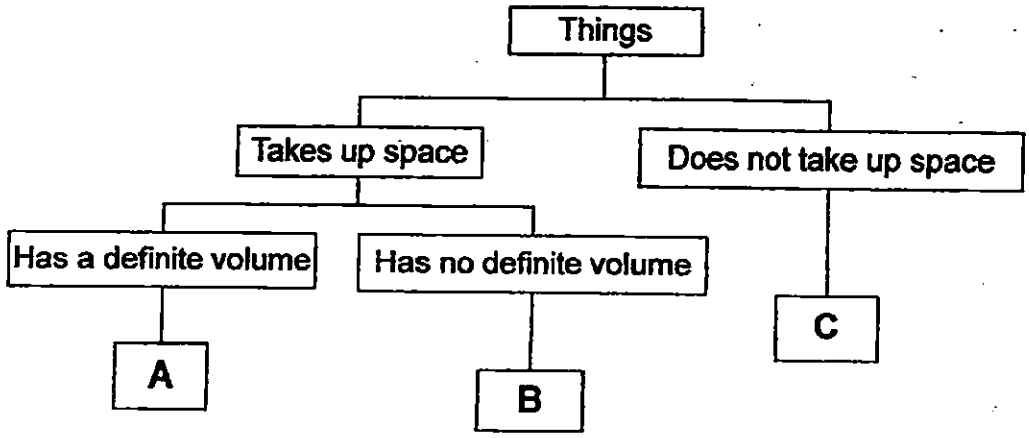
19. Study the classification chart below.



What are represented by **A**, **B** and **C** ?

	A	B	C
(1)	water	jelly	light
(2)	pencil	oxygen	sound
(3)	book	milk	air
(4)	oil	carbon dioxide	pen

20. A data logger is used to measure the amount of light that can pass through an object. Objects that do not block light will show the highest reading. The table below shows the result when light was shone on three objects, A, B and C.

Object	Reading on the data logger (lux)
A	1000
B	0
C	200

Based on the result, which of the following are represented by the objects, **A**, **B** and **C**?

	A	B	C
(1)	coloured plastic sheet	frosted glass	cloth
(2)	clear glass	cardboard	tracing paper
(3)	aluminium foil	clear plastic	writing paper
(4)	metal sheet	ceramic tile	cellophane paper

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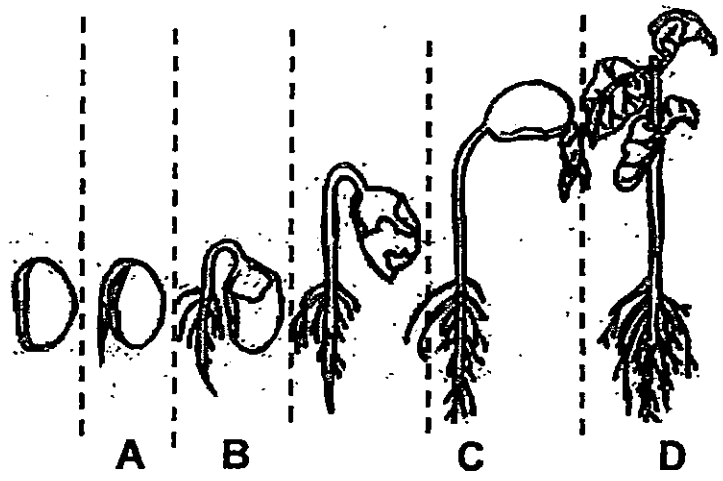
21. What is the similarity between a life cycle of a mosquito and a life cycle of a frog?

(1) Both have 3 stages in their life cycles.
(2) Both have 4 stages in their life cycles.
(3) Their young look different from their parents.
(4) Their young moult before they develop into the adult stage.

22. The diagram below shows the stages, A, B, C and D, of a germinating seed.



Which stage shows the start of germination?

(1) A
(2) B
(3) C
(4) D

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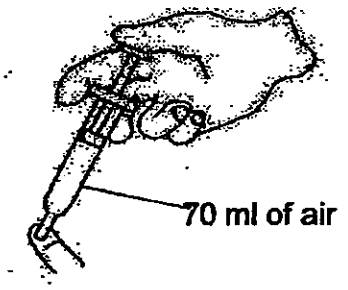
23. Four children are having a discussion about light. Whose statement is true?

(1) Peter : We can see without light when our eyes are used to the darkness.
(2) Henry: I can see a book because it reflects light from the sun to my eye.
(3) Sarah: The Sun gives out light in the day while the moon gives out light in the night.
(4) Noah : I can see water in a glass bottle because light can pass through all materials.

24. Betty fills a syringe with 100ml of air when she pulls its plunger. Then she covers the tip of the syringe with her finger. She pushes the plunger till it can no longer be pushed as shown below. It stops at 70 ml.



What can Betty conclude from this experiment?

(1) Air has mass.
(2) Air takes up space.
(3) Air has definite shape.
(4) Air can be compressed.

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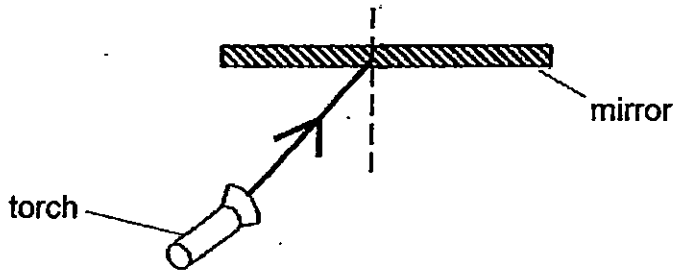
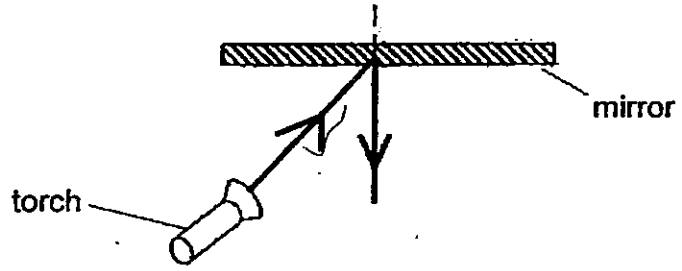
25. Muthu shone a torch at a mirror from an angle as shown below.

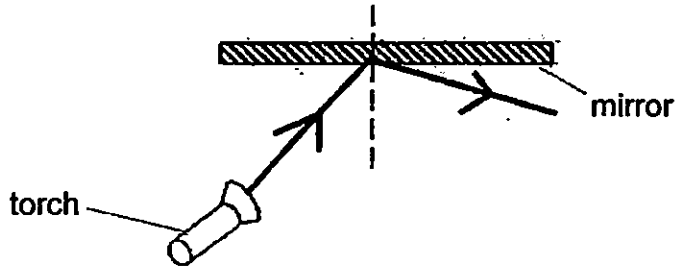


Which diagram shows the correct path of the reflected light ?

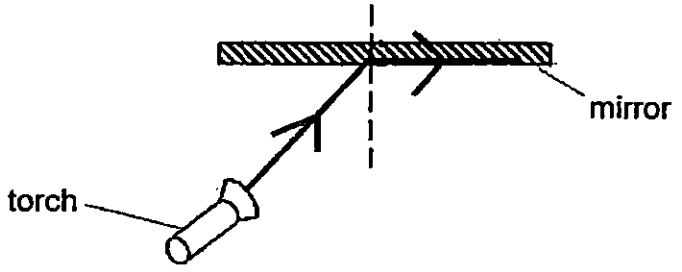
(1)



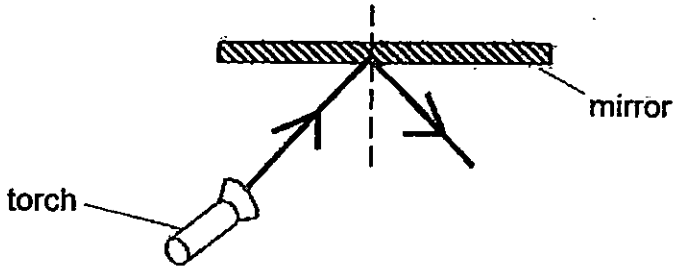
(2)



(3)



(4)



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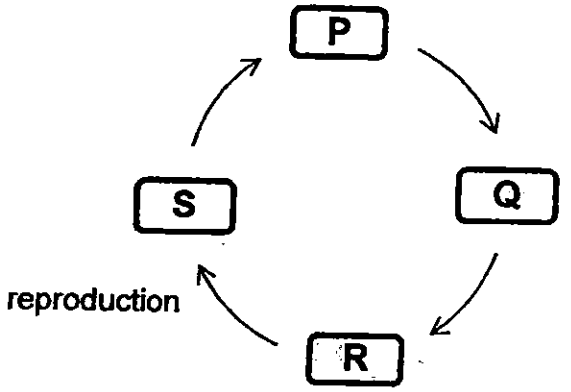
26. The diagram below shows **P**, **Q**, **R** and **S**, the four stages in the life cycle of a beetle and when reproduction occurs.



Which stages are represented by **P**, **Q**, **R** and **S** respectively?

	P	Q	R	S
(1)	Egg	Larva	Pupa	Adult
(2)	Larva	Pupa	Adult	Egg
(3)	Pupa	Adult	Egg	Larva
(4)	Adult	Egg	Larva	Pupa

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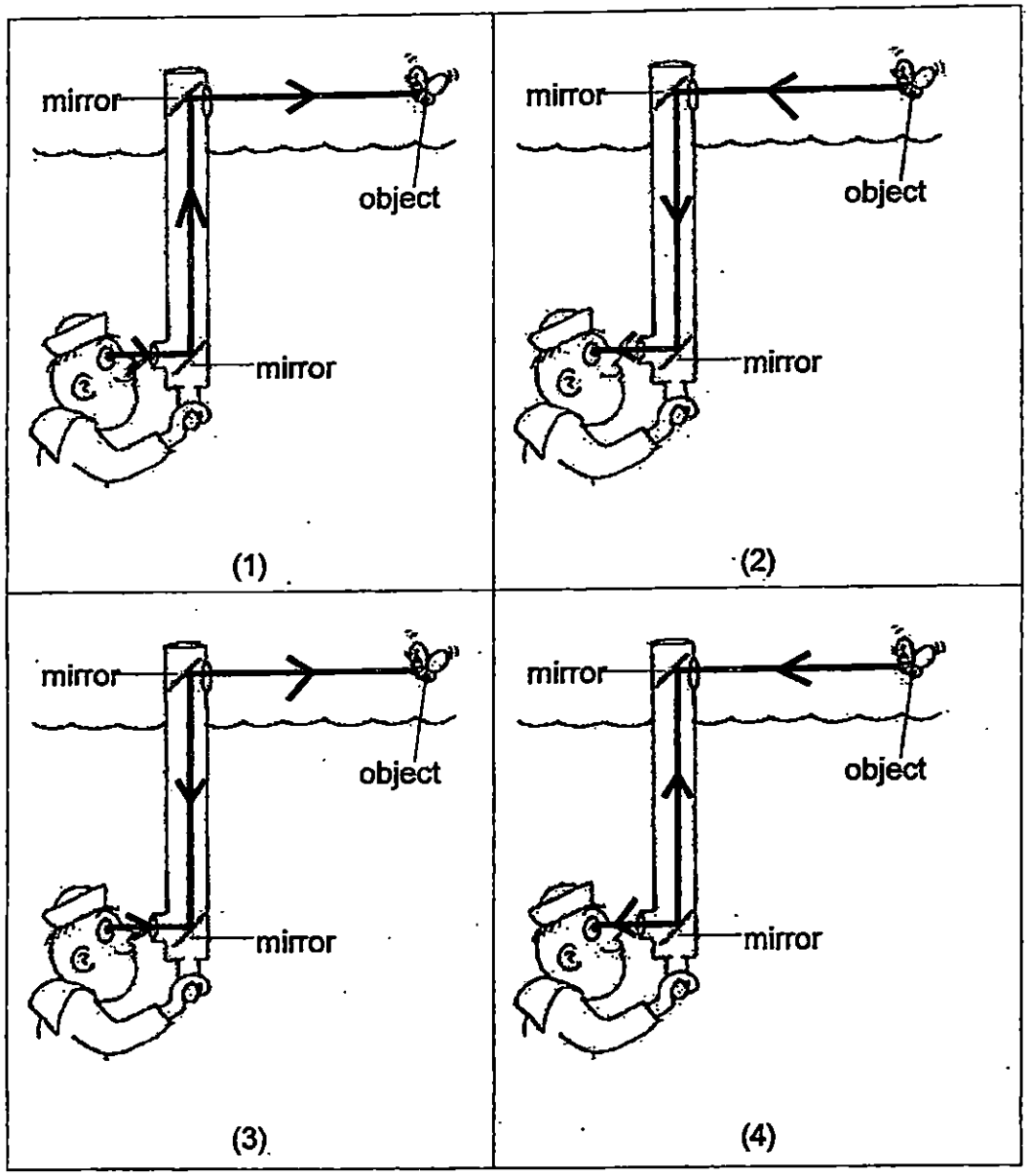
27. Sailor Tom could see the object using a periscope in his submarine. Which of the following shows the correct reflection of light in his periscope?



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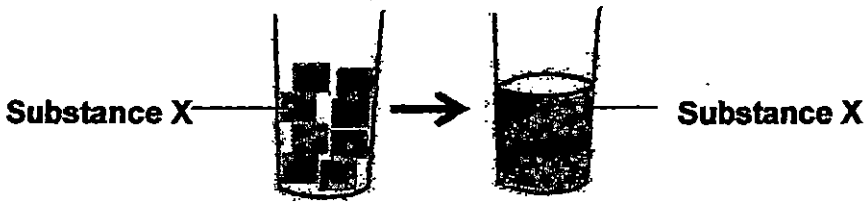
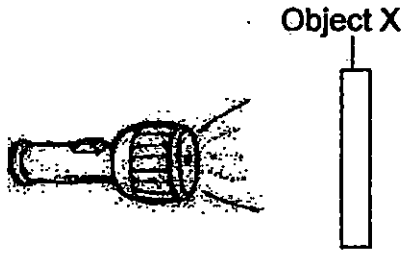
28. Kelly put Substance X in a clear container and left it on a table. About an hour later, she noticed that Substance X had changed as shown in the diagram below. Which of the following best describes the change in Substance X?



At the start At the end

	At the start	At the end
(1)	Definite volume	Does not have a definite volume
(2)	Does not have a definite volume	Definite volume
(3)	Definite shape	Does not have a definite shape
(4)	Does not have a definite shape	Definite shape

29. Serene conducted an experiment in a dark room as shown below. She placed Object X in front of a torch and only some light passes through it.



What material is Object X made of ?

(1) Cardboard
(2) Frosted glass
(3) Aluminium foil
(4) Wooden plank

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30. Mrs Tan wanted to find out which type of soil is suitable for growing plants. She prepared three pots of plants, Pot P, Pot Q and Pot R, with the conditions shown below.

	Pot P	**Pot Q**	**Pot R**
Type of plant	Rose	Balsam	Sunflower
Material of pot	Plastic	Plastic	Plastic
Type of soil	Garden soil	Sandy soil	Clay soil
Amount of soil	1500 cm^3	1500 cm^3	1500 cm^3
Volume of water given every day	100 ml	100 ml	100 ml

This experiment is **NOT** a fair test. Why?

(1) The type of soil is different.
(2) The type of plant is different.
(3) The volume of water is the same.
(4) The material of the pots is the same.

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TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

PRIMARY 4 MID-YEAR EXAMINATION 2015

Name : _____ ( )

Date: 15 May 2015

Class : Primary 4 ( )

Time: 8 a.m. – 9.45 a.m.

Duration: 1h 45min

Parent's Signature : _____

Marks: _____ / 40

SCIENCE
BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

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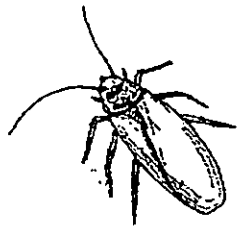
Section B (40 marks)

Write your answers in the spaces provided.

31. Study Animal X and Animal Y below.



Animal X

Animal Y

(a) Based on the pictures above, state one similarity between Animal X and Animal Y. (Do not mention their colour, shape or size) [1]

_____

_____

(b) Based on the pictures above, state one difference between Animal X and Animal Y. (Do not mention their colour, shape or size) [1]

_____

_____

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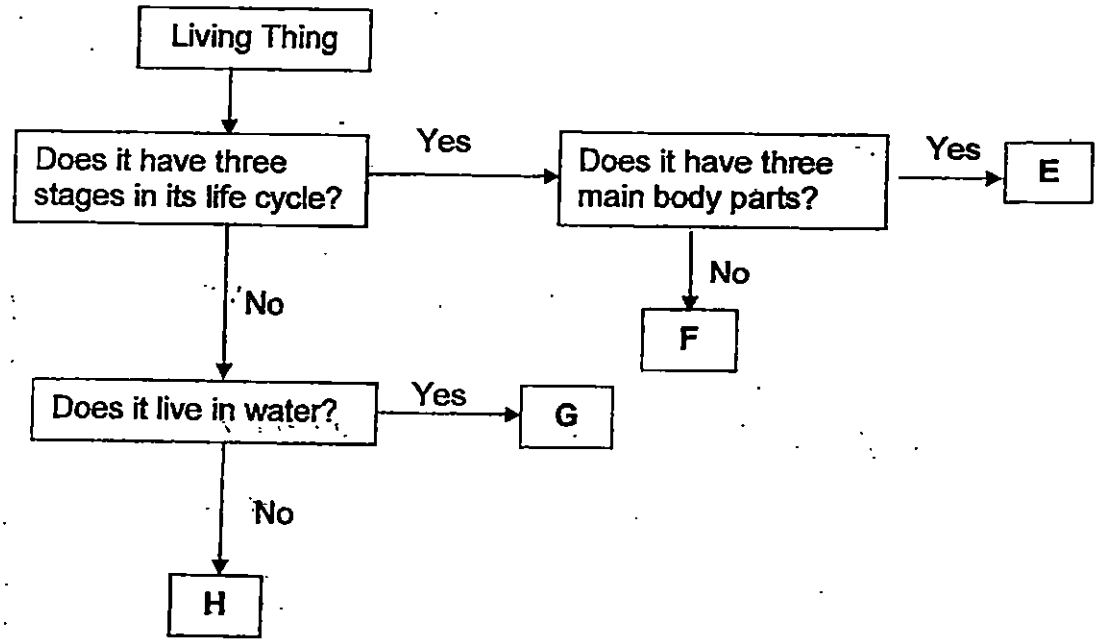
32. Study the flowchart below.



(a) State one similarity between G and H. [1]

_____

_____

(b) State one difference between E and F. [1]

_____

_____

(c) List all the characteristics of G. [1]

_____

_____

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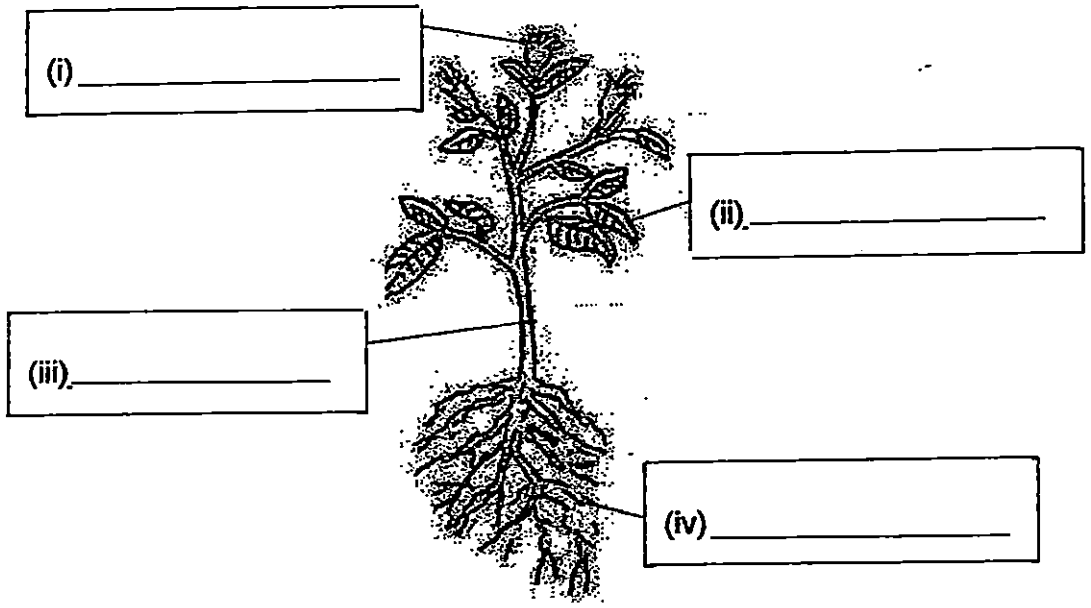
33. Study the plant below.

(a) Label the parts of the plant. [2]



(b) Which part of the plant makes food ? [1]

_____

(c) Name the process when the plant makes its own food. [1]

_____

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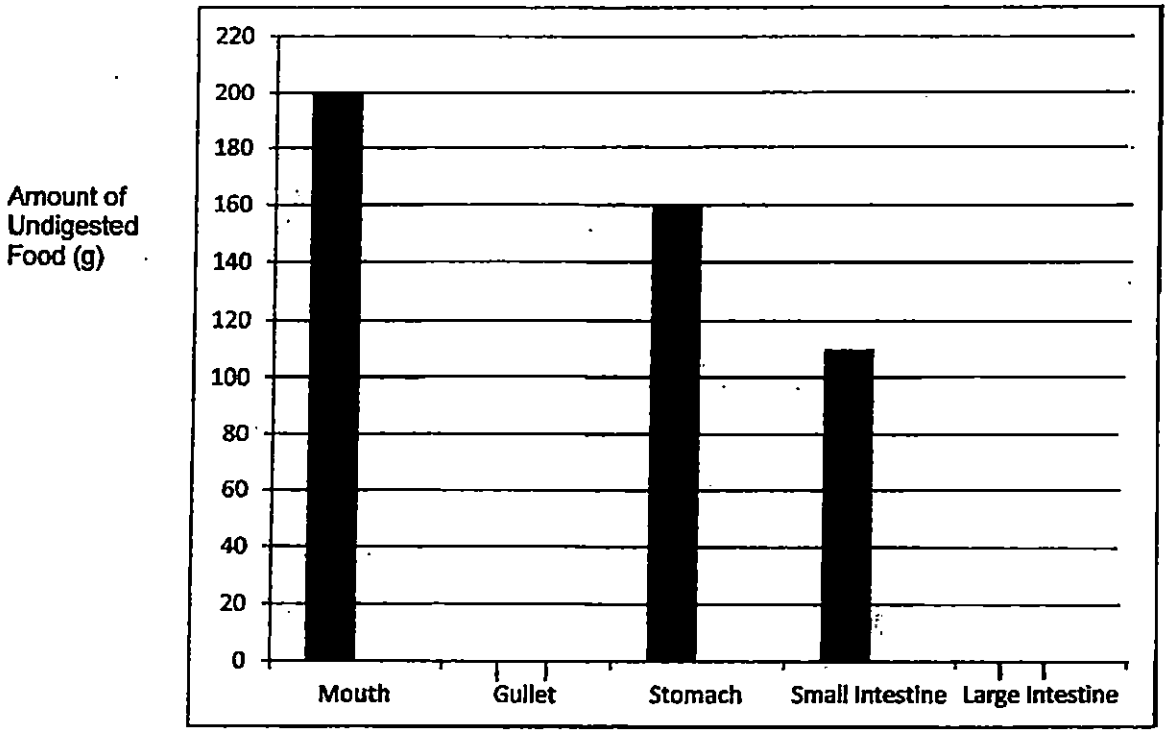
34. Draw and complete the bar graph to show the amount of undigested food in the **gullet** and in the **large intestine** of the human digestive system. [2]



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35. An electromagnet is used to separate magnetic and non-magnetic objects as shown in the picture below.

The list of objects to be separated is as follows :

rubber shoe	ceramic mug	iron rod	styrofoam cup
steel spoon	nickel coin	aluminium foil	copper wire

(a) Classify the objects in the classification chart below. [2]

Objects

Magnetic	**Non-Magnetic**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

(b) Will the electromagnet be able to separate the objects into metallic and non-metallic objects effectively? Explain your answer. [2]

_____

_____

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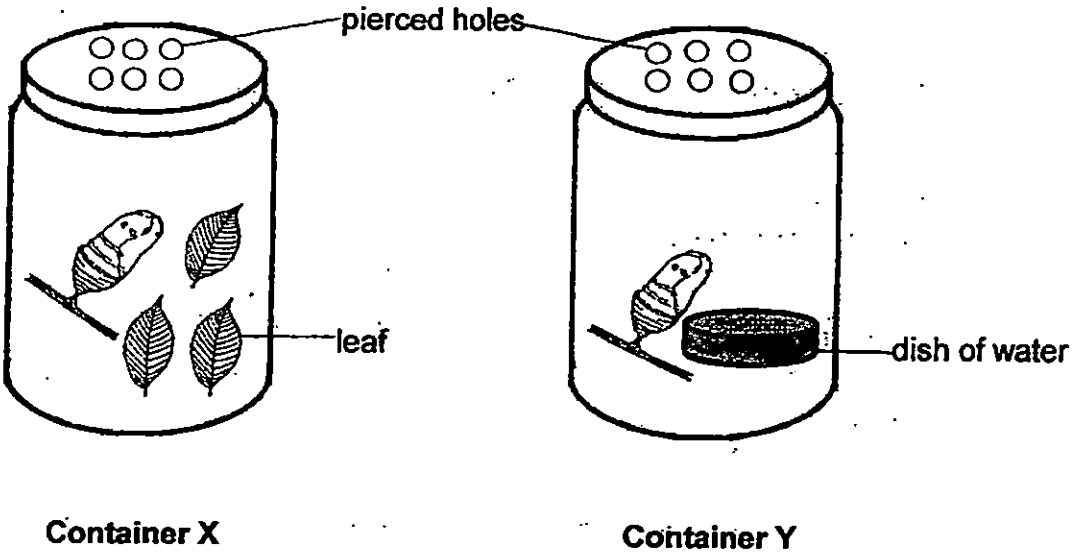
36. Warren wanted to observe the development of the young of butterflies. He kept them in two containers as shown below.



(a) At which stage of the life cycle of butterflies are these two young at? [1]

_____

(b) In which container/s will the young of the butterflies change into an adult butterfly? [1]

_____

_____

(c) Explain your answer for (b). [2]

_____

_____

_____

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37. Bobby wanted to find out if temperature would affect the number of days before a seed germinates. He planted 5 seeds in each pot, A, B, C, D and E. He placed the pots in different locations.

Pot	A	B	C	D	E
Temperature (°C)	15	20	25	30	35
Number of days before germination	28	25	18	12	8

(a) From the above results, state the relationship between the temperature and the number of days before germination. [1]

_____

_____

(b) Name one variable which should be kept constant in order for it to be a fair test. [1]

_____

(c) Which part of the seedling helps it to make its own food? [1]

_____

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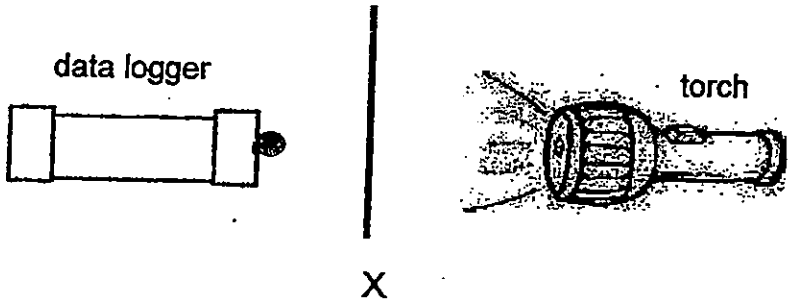
38. Nathan conducts an experiment as shown below.



When no paper is placed at position X, the data logger shows a reading of 1000 lux. When a sheet of thin paper is placed at X, the reading becomes 450 lux.

(a) Based on the readings, identify one property of the sheet of thin paper? [1]

_____

(b) Explain why there is a decrease in the reading on the data logger. [1]

_____

_____

(c) What type of material can Nathan use so that the reading on the data logger remains at 1000 lux? [1]

_____

_____

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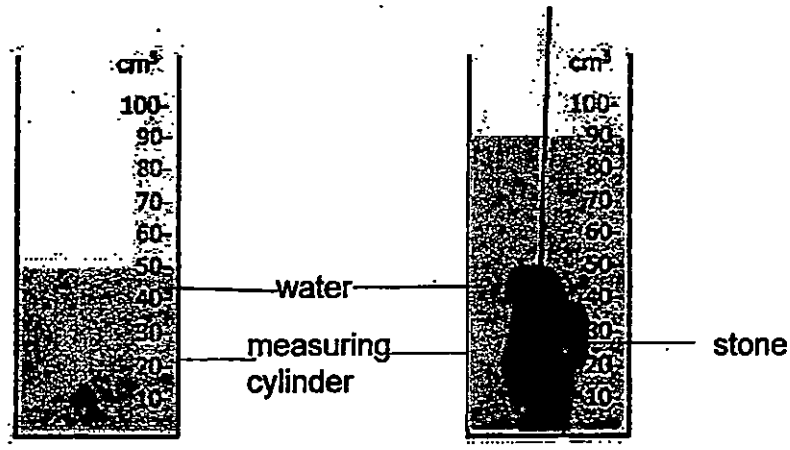
39. Jane wanted to measure the volume of a stone. She lowered the stone into a measuring cylinder with some water as shown in the diagram below.



Using the information from the above diagram, complete the table below.

Volume of water	_____ cm^3	[½]
Volume of water and the stone	_____ cm^3	[½]
Volume of the stone	_____ cm^3	[1]

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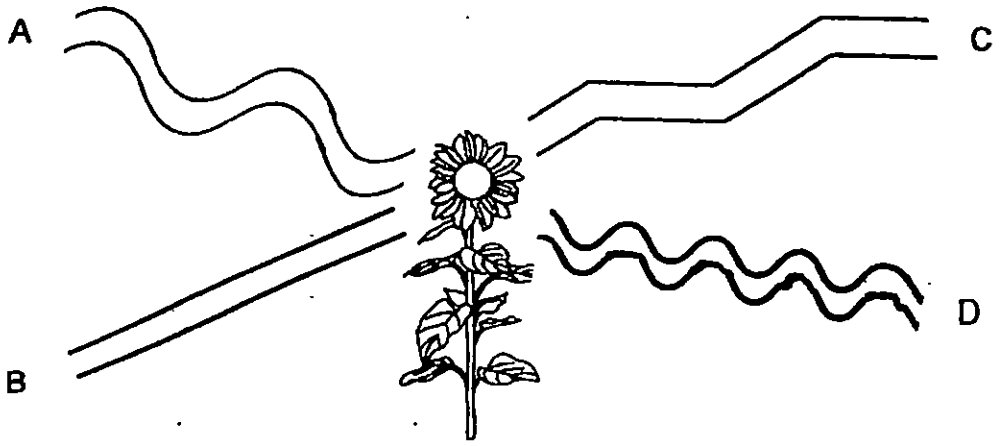
40. Aisha uses 4 different tubes, A, B, C and D, to look at a flower as shown below.



(a) Which of the tubes, A, B, C and D, would allow Aisha to see the flower ? [1]

_____

(b) Explain your choice in (a). [2]

_____

_____

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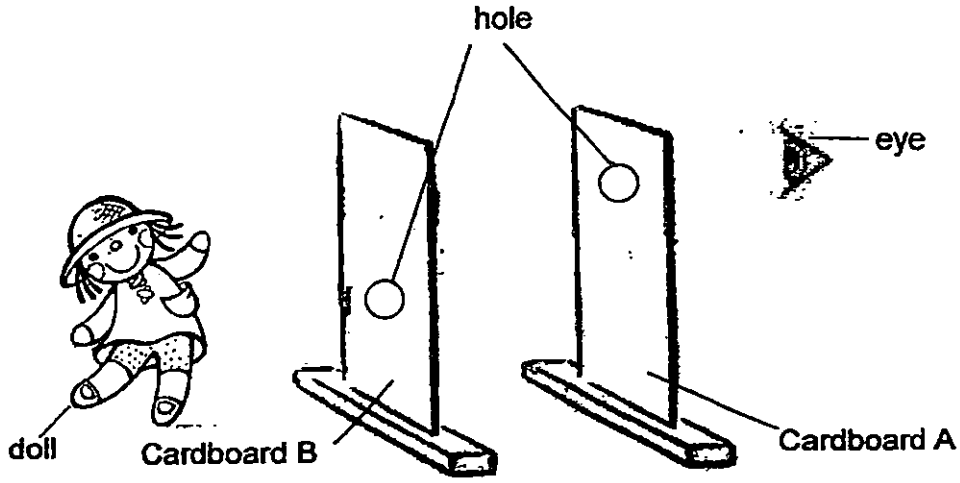
41. Jane set up an experiment with a doll and two pieces of cardboard, as shown below. There was a hole each on Cardboard A and Cardboard B.



(a) Why was Jane unable to see the doll ? [1]

_____

_____

(b) Jane removed Cardboard B. She replaced it with another piece of material of the same size. Although there was no hole in this piece of material, Jane was able to see the doll. Explain why Jane could see the doll. [1]

_____

_____

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42. At an open sea fish farm, a number of fish died. A researcher investigating their death, collected information about micro-organism X floating on the water and oxygen level in the water as shown in the table below.

Day	1	3	5	7
Mass of micro-organism X (unit/m²)	50	70	100	150
Number of dead fish	10	50	120	200
Oxygen level in the water (unit/l)	10	8	5	2

(a) Based on the table above, what is the relationship between the mass of micro-organism X and the number of dead fish? [1]

_____

_____

(b) The researcher found that the fish had died due to micro-organism X and no other factors. Based on the table, explain how micro-organism X caused the death of the fish. [1]

_____

_____

_____

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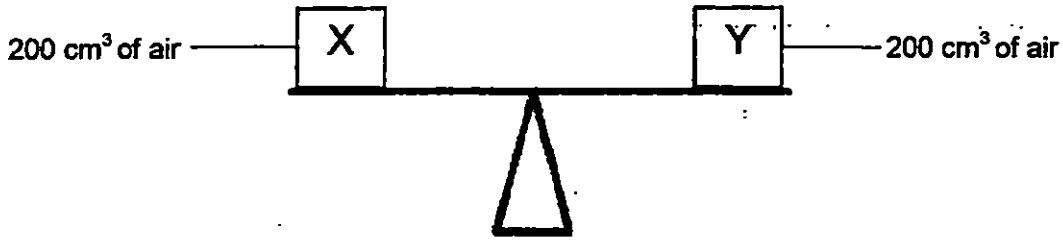
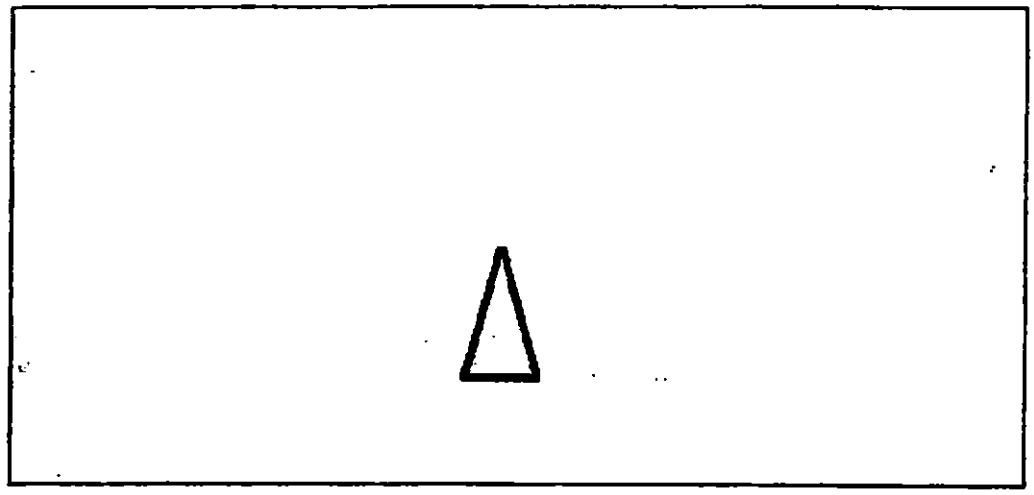
43. Johnny had two identical containers, X and Y, of equal capacity, 200 cm^3. He placed them on a beam balance as shown below.



(a) If Johnny pumped another 100 cm^3 of air into Container **X**, draw and label how the beam balance would look below. [1]



(b) Explain your answer in (a). [1]

_____

_____

(c) What would be the volume of the air in Container **X** after Johnny had pumped 100 cm^3 of air into it? Explain your answer. [2]

_____

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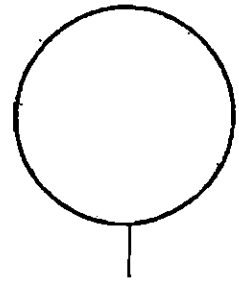
44. Lala played with 200g of plasticine. She kneaded **all** the plasticine to make a ball of plasticine as shown below.

200 g of plasticine



ball of plasticine

She made four statements about the plasticine below. Tick (✓) the correct boxes to indicate whether each statement is 'True', 'False' or 'Not Possible To Tell'. [2]

	True	False	Not Possible To Tell
The plasticine is a solid.			
The volume of the ball of plasticine is smaller than ~~that of~~ the 200g of plasticine.			
The ball of plasticine can bounce while the 200g of plasticine cannot.			
The mass of the 200g of plasticine is the same as that of the ball of plasticine.			

End of Paper

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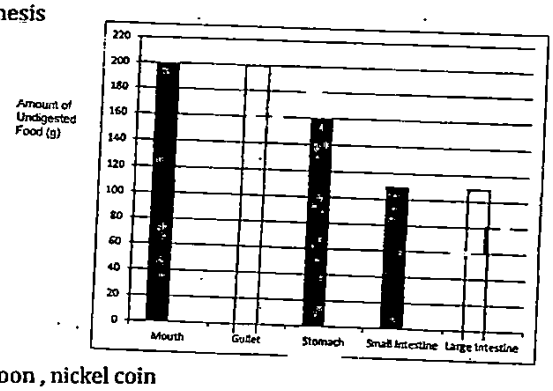
LEVEL : PRIMARY 4
SCHOOL : TAO NAN
SUBJECT : SCIENCE
TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	4	3	2	2	1	2	2	4	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	2	4	4	3	4	3	3	2	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	1	2	4	4	2	2	3	2	2

Q31a Both animal X and Animal Y have eyes.
Q31b. Animal X has three pairs of legs while Animal Y has two pairs of legs.

Q32a. Both G and H do not have three stages in their life cycles.
Q32b. E has three main body parts while F does not have three main body parts.
Q32c. G does not have three stages in his life cycle and lives underwater.

Q33. i) Flower Q33ii) leaves Q33iii) stem Q33iv) roots
Q33 b. The leaf Q33c. Photosynthesis
Q34. See picture



Q35a. Magnetic – iron rod, steel spoon , nickel coin
Q35a Non – magnetic – rubber shoe, ceramic mug, Styrofoam cup,
Aluminum foil, copper wire
Q35b. No. Aluminium and copper are also metal but they are non magnetic. Hence, the electromagnet will not be able to get attracted.

Q36a. They are at the pupal stage. Q36b. Container Y & X
Q36c. Both, because they are at the pupa stage and will not be eating or drinking .

Q37a. C → The higher the temperature is, the faster the seed will germinate.
Q37b. The type of seed used. Q37c. C → Leaves

Q38a. It allows some light to pass through it.
Q38b. The thin piece of paper only allowed some light to pass through it and not all the light.
Q38c. Nathan can use clear plastic.
Q39. Volume of water → $50cm^3$
Q39. Volume of water and the stone → $90cm^3$
Q39 Volume of the stone → $40cm^3$

Q40a. B
Q40b. Light can only travel in a straight line and tube B is the only straight tube.

Q41a. The holes are not as the same height and light can only travel in a straight line.
Q41b. The material is transparent .

Q42a. The heavier the mass of Micro – organism, the bigger the number of dead fish.
Q42b. The fish might not have enough oxygen in the water as micro- organism might have taken in most of the oxygen.

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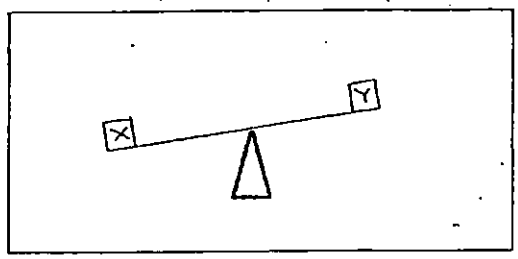
Q43a. SEE PICTURE

(a) If Johnny pumped another 100 cm^3 of air into Container X, draw and label how the beam balance would look below. [1]



Q43b. Air has mass and more air was added into Container X which made it heavier.
Q43 C → 200cm^3. the air can be compressed.
Q44. The plasticine is a solid → TRUE
Q44. The volume of the ball of plasticine is smaller than the 200g of plasticine. → FALSE
Q44. The ball of plasticine can bounce while the 200g of plasticine cannot. → Not possible to tell
Q44. The mass of the 200g of plasticine is the same as that of the ball of plasticine. → TRUE

THE END

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ANGLO-CHINESE SCHOOL
(JUNIOR)

CONTINUAL ASSESSMENT 2 (2015)
PRIMARY 4

SCIENCE

BOOKLET A

Wednesday **26 August 2015** **50 minutes**

Name : _____ **(** **)**

Class : P4 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 12 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

The total marks for this booklet is 24.

The total time for Booklets A and B is 50 minutes.

This question paper consists of 8 printed pages (inclusive of cover page).

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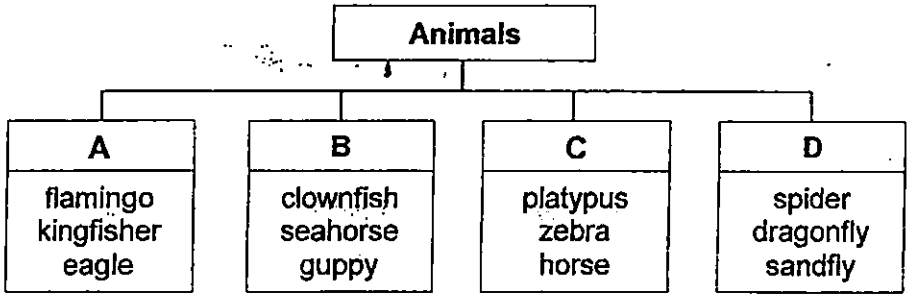
Booklet A (24 marks)

For each question from 1 to 12, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. (12 x 2 marks)

1. Study the classification chart shown below.



In which group has an animal been **incorrectly** classified?

(1) A

(2) B

(3) C

(4) D

2. Which of the following statements about the circulatory system is/are correct?

A The circulatory system consists of the heart, lungs and nose.

B Our blood vessels, which form part of our circulatory system, carries blood to all parts of our body.

C The circulatory system transports oxygen, water, waste substances and digested food to different parts of the body.

(1) C only

(2) A and B

(3) A and C

(4) B and C

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3. Ali wanted to find out if temperature affects the time taken for seeds to germinate. He placed 5 seeds each on 3 identical dishes, S, T and U and placed them under conditions necessary for germination.

Which variable(s) must Ali keep constant for it to be a fair experiment?

A Amount of light.

B Amount of water.

C Temperature of the surroundings.

D Number of days taken for each seed to germinate.

(1) B only

(2) A and C only

(3) B and D only

(4) A, C and D only

4. Which one of the following statements about light and shadows is **false**?

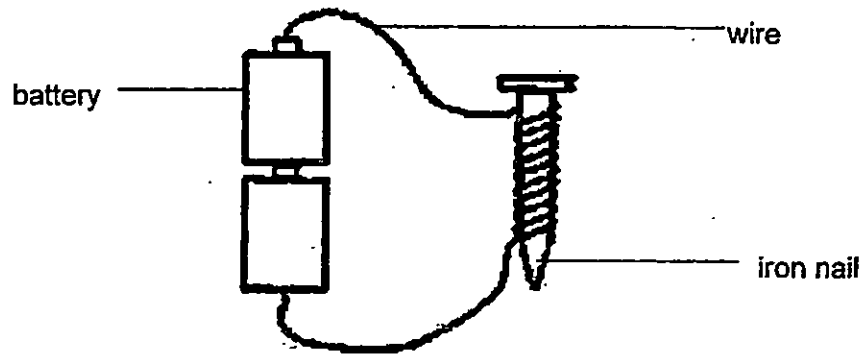
(1) Light ~~energy~~ helps us to see.

(2) The Moon and stars are sources of light.

(3) An opaque object can form shadows of different shapes and sizes.

(4) We can see through a material if it allows most of the light to pass through it.

5. Jason coils some wire around an iron nail and connects the ends of the wire to a set of batteries as shown in the diagram below.



What will happen when he dips the iron nail into a bowl of copper coins and steel filings?

(1) The steel filings will be attracted to the iron nail.

(2) The copper coins will be attracted to the iron nail.

(3) Both the copper coins and the steel filings will be attracted to the iron nail.

(4) Both the copper coins and the steel filings will not be attracted to the iron nail.

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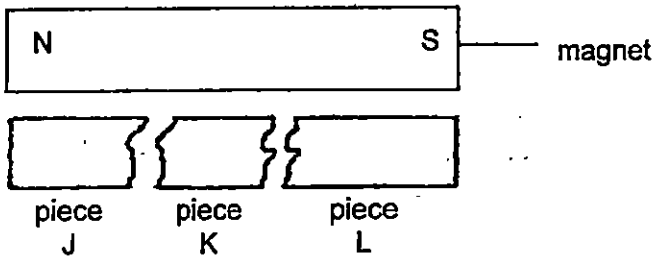
6. Bob broke a magnet into 3 pieces, J, K and L as shown in the diagram below. He then brought the pieces J, K and L close together.



His friends Chloe, Daisy and Edward made some observations about the broken pieces of magnet. Which of their conclusion(s) is/are correct?

Chloe:	Piece J does not have a south-seeking pole.
Daisy:	Piece L's magnetism is strongest at its poles.
Edward:	Piece K has a north-seeking pole and a south-seeking pole.

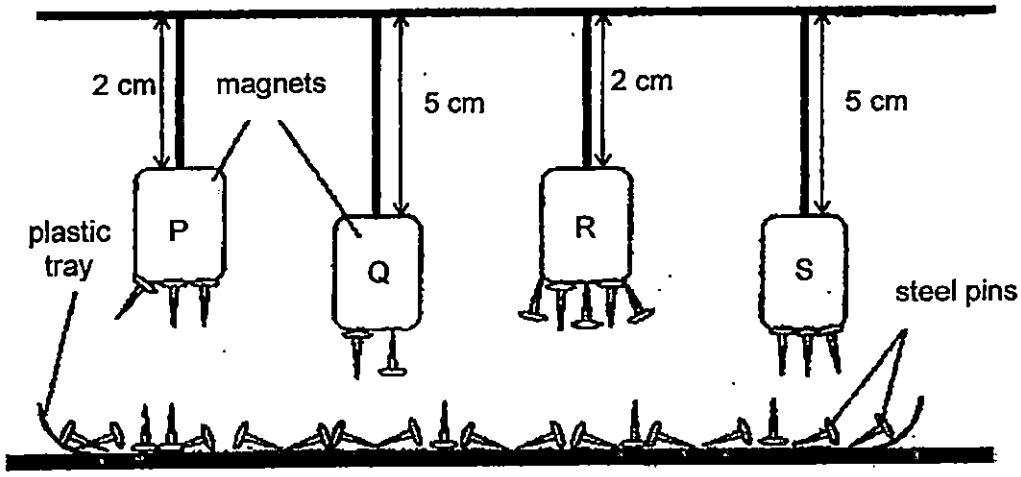
(1) Chloe only

(2) Edward only

(3) Chloe and Daisy

(4) Daisy and Edward

7. Sally set up the experiment below to test the strength of 4 different magnets, P, Q, R and S. She hung the magnets at two different lengths and placed a plastic tray of steel pins below them.



Based on the experiment, arrange the magnets according to their strength, from the weakest to the strongest.

(1) Q, P, S, R

(2) Q, S, P, R

(3) R, P, S, Q

(4) R, S, P, Q

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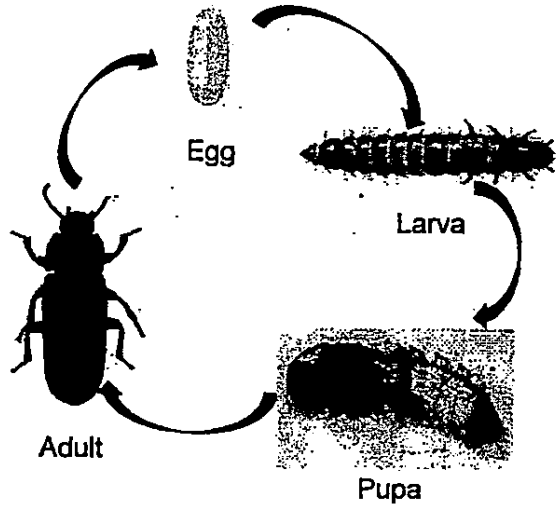
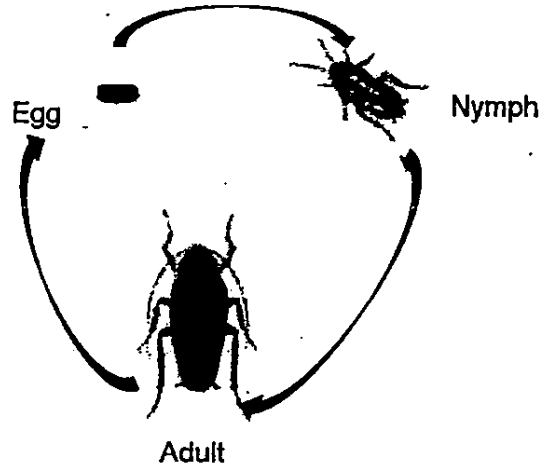
8. Jenny compared the life cycles of a mealworm beetle and a cockroach and made some statements about the two life cycles.



Life cycle of a mealworm beetle



Life cycle of a cockroach

Which of her statements is/are true?

A Both their young ~~melt~~ moult.

B They both have an egg stage.

C Both go through a nymph stage.

D Their young resemble the adults.

(1) C only

(2) A and B only

(3) B and D only

(4) A, C and D only

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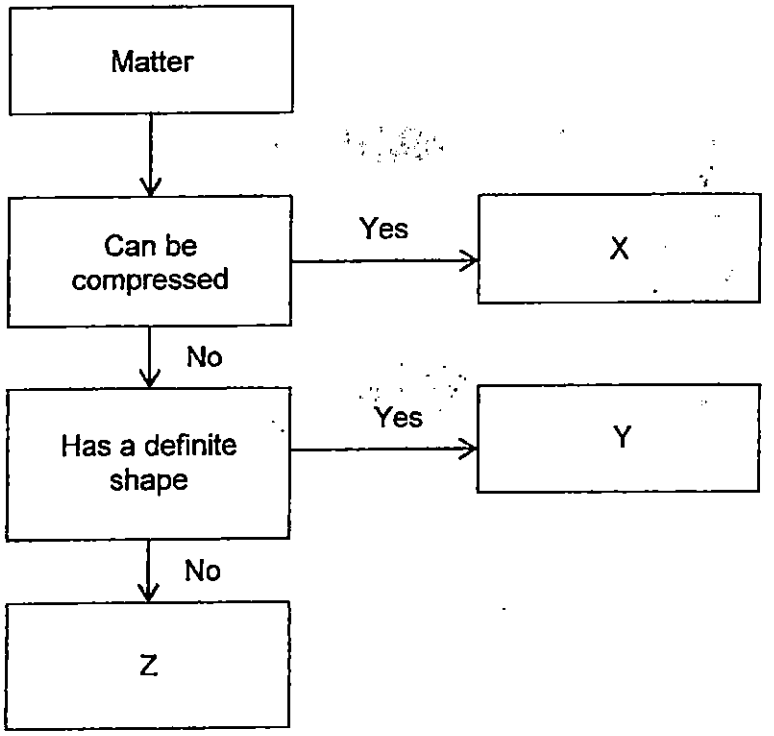
9. Study the flowchart carefully.



What are X, Y and Z most likely to be?

	X	Y	Z
(1)	Oxygen	Mango juice	Sharpener
(2)	Mango juice	Sharpener	Oxygen
(3)	Sharpener	Oxygen	Mango juice
(4)	Oxygen	Sharpener	Mango juice

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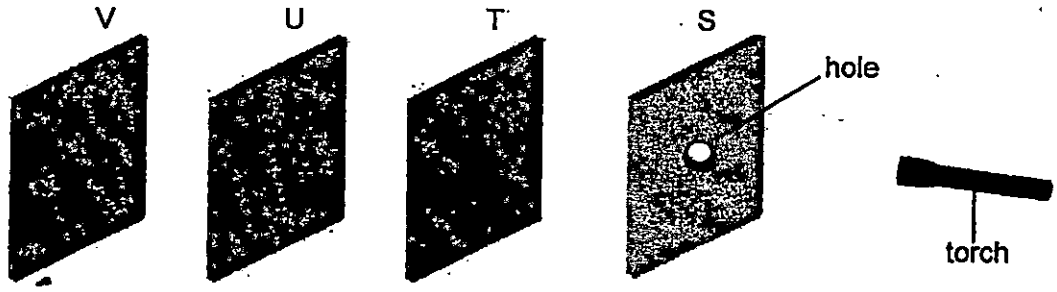
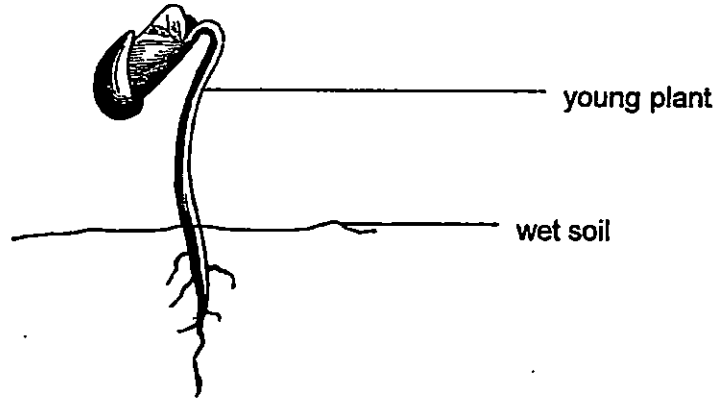
10. Four sheets of different materials were arranged in a straight line as shown in the diagram below. A torch was placed in front of sheet S.



The torch was switched on and a bright patch of light was seen on Sheet V. Which of the following are most likely the materials of sheets S, T, U and V?

	Sheet S	Sheet T	Sheet U	Sheet V
(1)	Wood	Clear plastic	Clear glass	Aluminium foil
(2)	Wood	Clear glass	Aluminium foil	Wood
(3)	Aluminium foil	Clear glass	Cardboard	Clear plastic
(4)	Clear glass	Cardboard	Wood	Clear plastic

11. Observe the diagram below.



David planted a seed in some wet soil and placed it in a dark corner of a room. A few days later, the seed grew into a young plant as shown above. Which of the following statements about the seed is true?

(1) The seed can make its own food.

(2) The seed needs light to germinate.

(3) The seed uses its stored food to grow.

(4) The seed gets its food from the wet soil.

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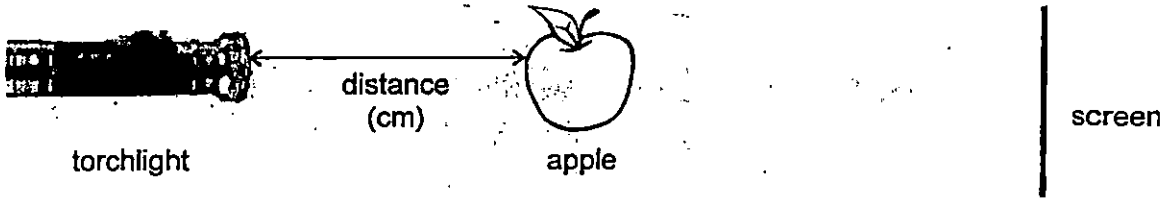
12. Cassie wanted to test if the distance between a light source and an object would affect the height of the shadow formed by it on the screen. She prepared the following set-up and repeated the test 3 times, each time changing the distance between the torchlight and the apple.



She recorded the results of her experiment in the table below:

Distance between torchlight and apple (cm)	Height of shadow of apple (cm)
15	5
10	15
3	25

From the results of her experiment, what can Cassie conclude about the relationship between the distance of the light source and the height of the shadow formed?

(1) The height of the shadow remains unchanged.

(2) The greater the distance between the light source and the object, the longer the height of its shadow.

(3) The shorter the distance between the light source and the object, the shorter the height of its shadow.

(4) The greater the distance between the light source and the object, the shorter the height of its shadow.

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ANGLO-CHINESE SCHOOL
(JUNIOR)

CONTINUAL ASSESSMENT 2 (2015)
PRIMARY 4

SCIENCE

BOOKLET B

Wednesday **26 August 2015** **50 minutes**

Name : _____ ( )

Class : P4 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 6 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

The number of marks is given in brackets [ ] at the end of each question or part question.

The total marks for this booklet is 16.

The total time for Booklets A and B is 50 minutes.

This question paper consists of 7 printed pages (inclusive of cover page).

PRACTICAL	**/ 10**
BOOKLET A	**/ 24**
BOOKLET B	**/ 16**
TOTAL	**/ 50**
Parent's signature/ Date:	

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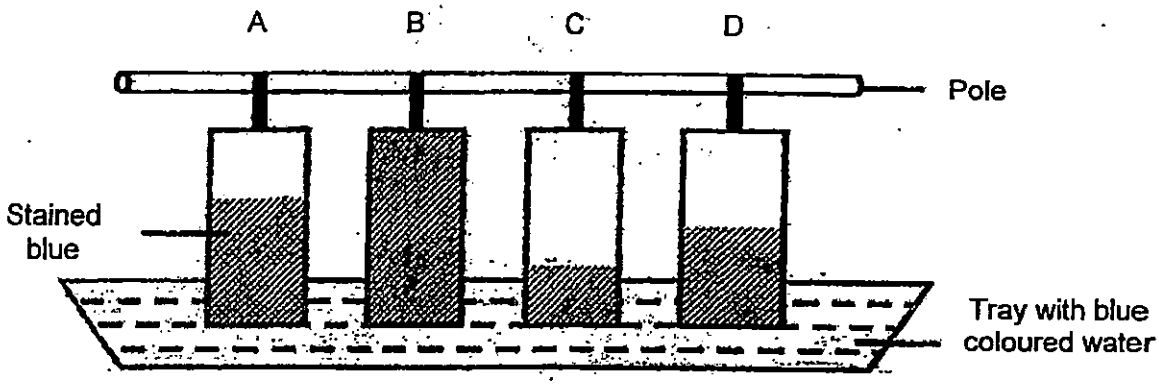
Booklet B (16 marks)

For questions 13 to 18, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

13. Jane dipped four sheets of materials, A, B, C and D of same length and size into a tray of blue coloured water as shown below. The shaded parts of the materials indicate the amount of blue coloured water absorbed after twenty minutes.



(a) What was the aim of Jane's experiment? [1]

_____

_____

(b) What is the changed variable in the experiment above? [1]

_____

_____

(Go on to the next page)

SCORE	/ 2

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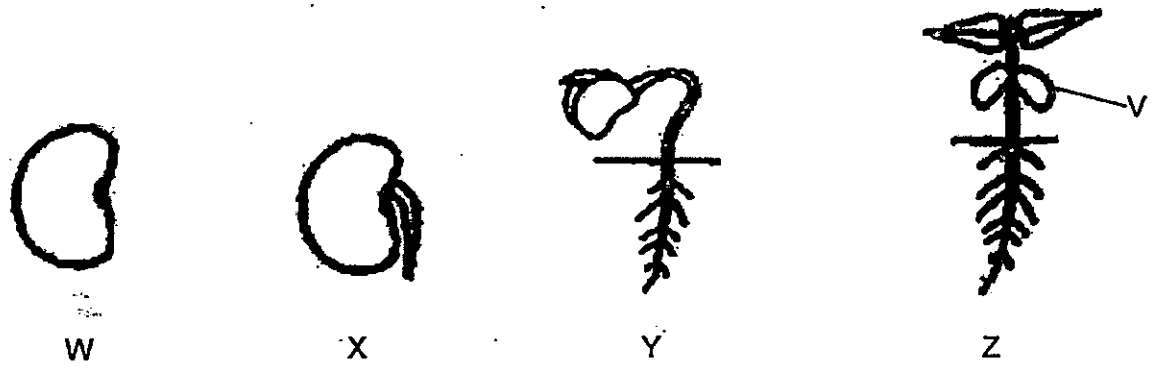
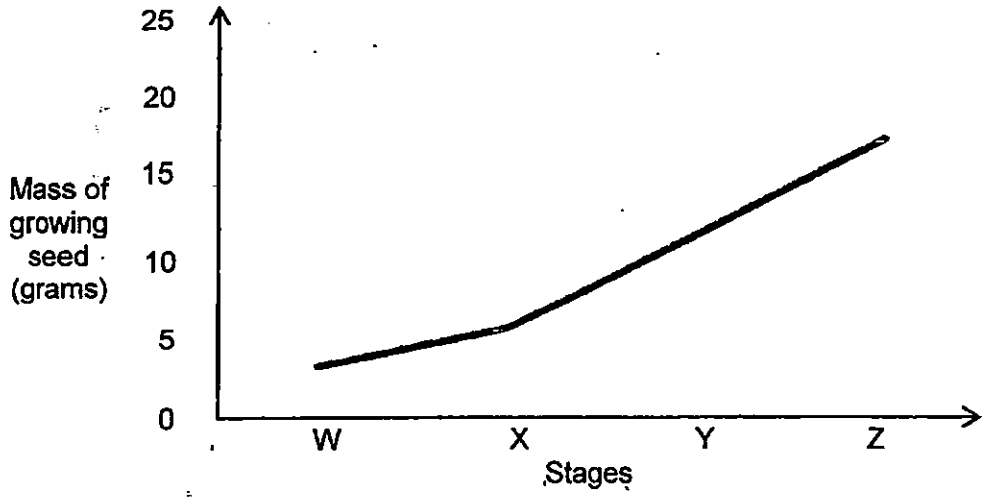
14. Frank observed the growth of a seed as shown below.
He recorded the mass of the seed from stage W to stage Z.





(a) From the results, the mass of the growing seed increased from stage W to stage Z. Explain why. [1]

_____

_____

(b) Look at stage Z. Name the part labeled V. [1]

_____

_____

(c) Frank removed the part labeled V. Will the young plant continue to grow? Explain your answer. [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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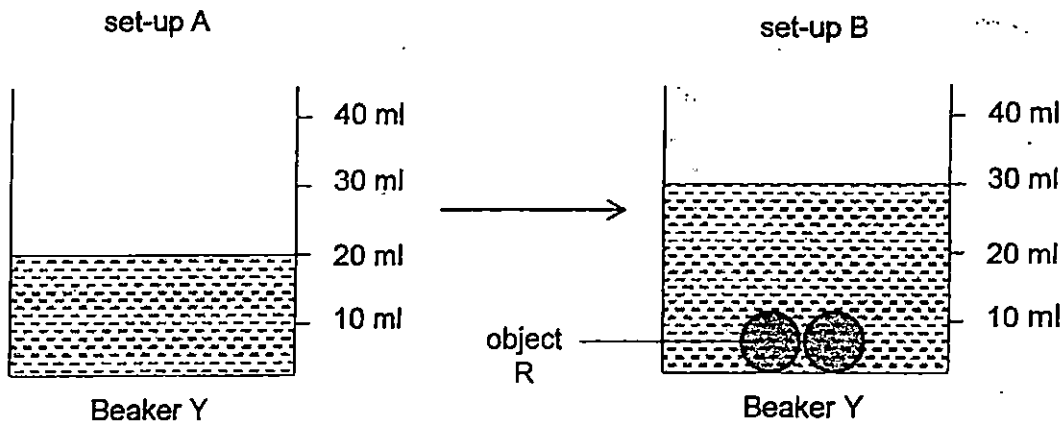
15. Gary wanted to find out how the volume of an object could be measured. He filled a beaker, Y, with some water as shown in set-up A. He then dropped 2 identical objects, R, into the beaker of water. The water level rose, as shown in set-up B.



(a) What is the volume of both objects, R? [1]

_____

_____

(b) Explain why the water level rose in set-up B. [1]

_____

_____

(c) Based on this experiment, state one property of water that is shown in the above set-up. [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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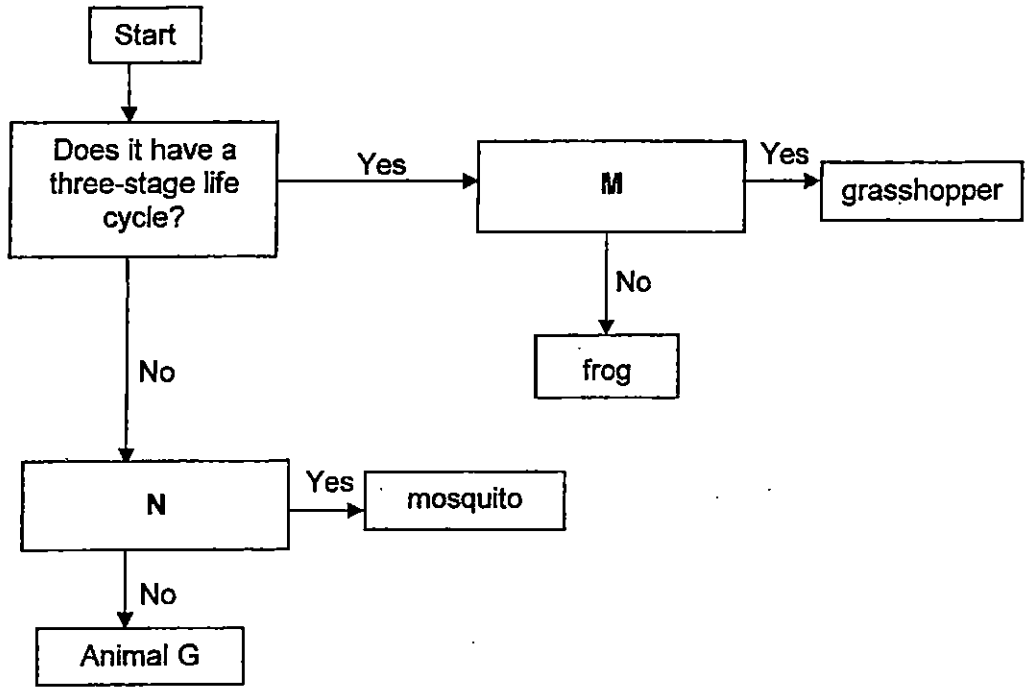
16. Study the flowchart below carefully.



(a) Based on the flowchart above, which questions best represent M and N? Fill in your answers, M and N, in the correct boxes below. [1]

Question	Letter
Does the larva live in the water?	
Does the young resemble the adult?	

(b) Based on the flowchart, what could Animal G be? [1]

_____

_____

(Go on to the next page)

SCORE	/ 2

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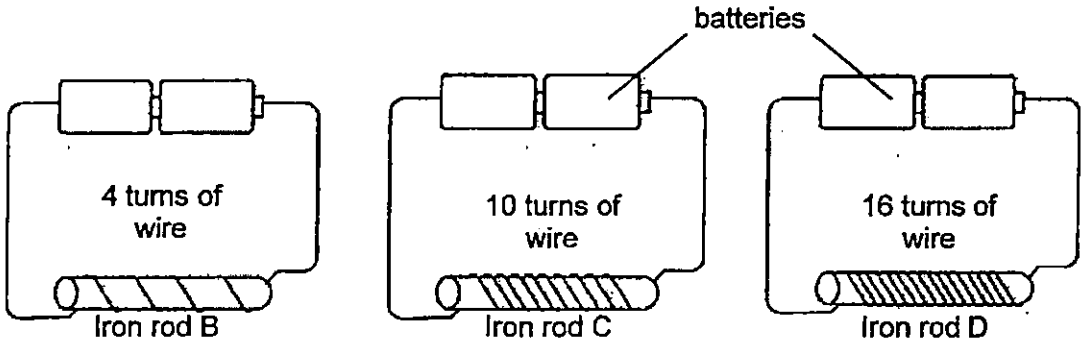
17. Adam set up the following experiment to find out if the number of turns of wire around an iron rod would affect the magnetic strength of the electromagnet. He set up the experiment as shown below.



(a) Adam tested the magnetic strength of each electromagnet by placing them into a tray of paper clips. Which electromagnet would attract the most number of paper clips? Explain your answer. [1]

_____

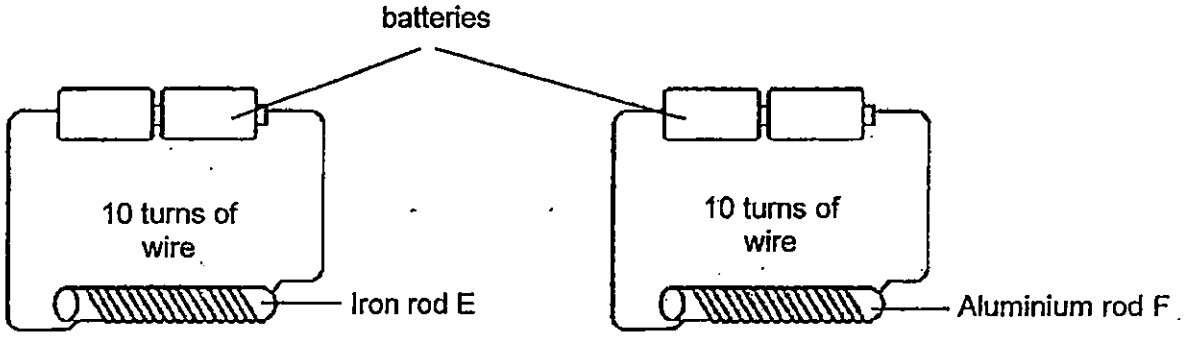
_____

(b) Adam now wants to change the aim of his experiment. He wants to find out if the amount of electricity in the set-ups affects the magnetic strength of the electromagnet. Which variable should he change to achieve his aim? [1]

_____

_____

(c) Adam repeated the experiment by comparing two set-ups. One of the set-ups had an aluminium rod as shown below. He then placed each rod into a tray of paper clips.



If the electromagnet with Iron rod E attracted 10 paper clips, what would Adam observe about the number of paper clips attracted by the electromagnet with Aluminium rod F? Explain your answer. [1]

_____

_____

(Go on to the next page)

SCORE	

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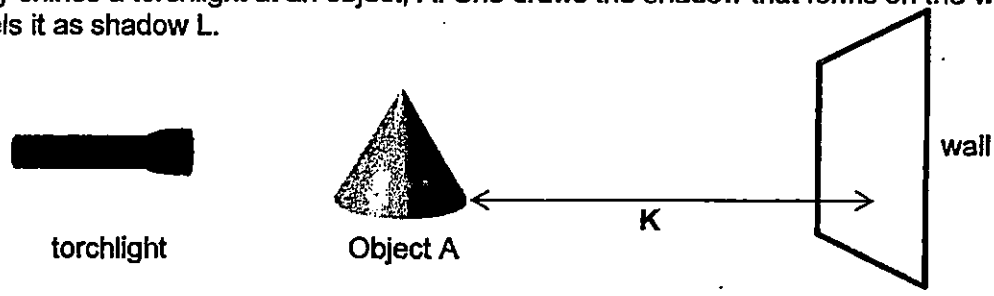
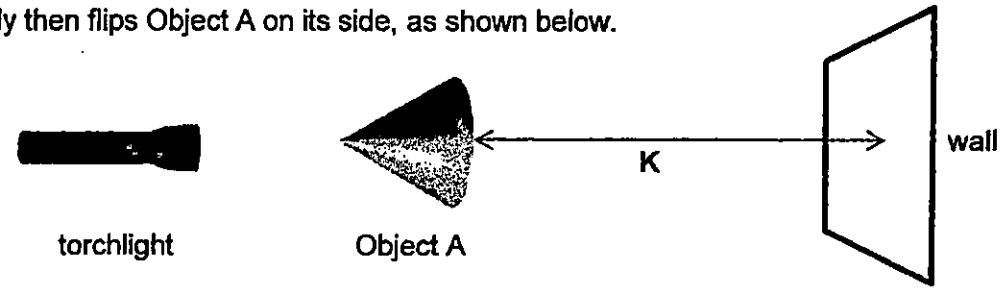
18. Sally shines a torchlight at an object, A. She draws the shadow that forms on the wall and labels it as shadow L.

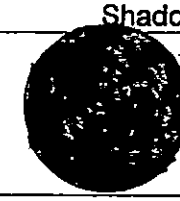


Sally then flips Object A on its side, as shown below.



Draw in the table below the shadow, M, that will form on the wall when Sally shines the torchlight again.

(a) [1]

Shadow L	Shadow M
	

(b) Apart from the property that light travels in a straight line, state another property of light that allows Shadows L and M to form. [1]

_____

_____

(c) Sally shines the torchlight on Object A again. After changing the distance *K*, which is the distance between the object and the wall, she recorded the height of the shadow formed as follows.

Distance *K* (cm)	Height of shadow (cm)
10	5
15	7
20	9

Describe the relationship between the distance *K* and the height of the shadow formed. [1]

_____

_____

End of Paper

SCORE	/ 3

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)
SUBJECT : SCIENCE
TERM : CA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	4	1	2	1	4	2	2	4	1
Q11	Q12								
3	4								

Q13a. She wanted to find what kind of materials can absorb water the most.

Q13b. The type of material.

Q14a. The bean seed is growing into a young plant and as the root and stem appear the mass increased.

Q14b. The seed coat.

Q14c. Yes. The leaves will make food for the plant and the food in the seed is used up.

Q 15a. 10ml.
Q15b. Object R is a matter, so t will take up space.
Q15c. Water have no definite shape.

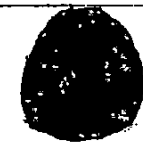
Q16a. N / M Q16b. Butterfly

Q17a. It has the most number of turns of wire. Therefore it has the most magnetic strength.

Q17b. The amount of batteries.

Q17c. The number of paper clips attracted is 0. Aluminum is not a magnetic object, only magnetic material is able to be a electromagnet.

Q18a. **SEE PICTURE**
Q18b. When light is blocked by an opaque object, a shadow will form.
Q18c. The greater the distance of the wall and the longer the height of the object , the shorter is the shadow.

Shadow L	Shadow M
	

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NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 2 2015
PRIMARY FOUR
SCIENCE

Name : _____ ( )

Class : Primary 4 / _____

Date : 25 August 2015

Duration : 1 hr 30 min

Parent's Signature : _____

MARKS	
Sect A:	/ 40
Sect B:	/ 40
Total :	**/ 80**

<u>Section A:</u> (20 x 2 marks = 40 marks)
For each question from 1 to 20, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which one of the following is/ are **not** source(s) of light?

   A fire
   B stars
   C mirror
   D diamond

   (1) A only
   (2) B only
   (3) C and D only
   (4) B, C and D only

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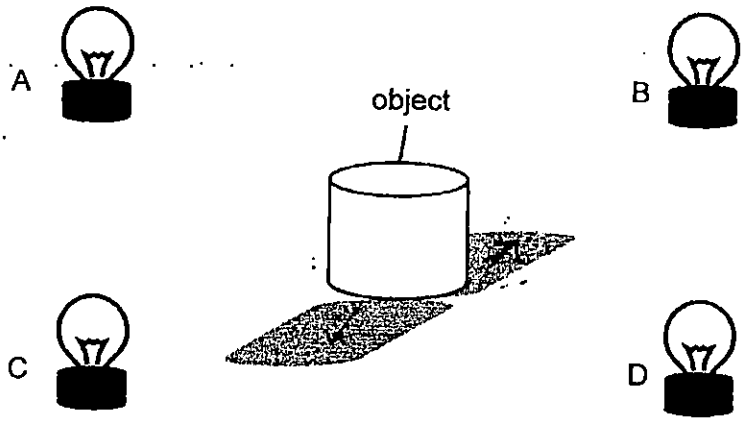
2. Study the diagram below.



An object is placed at the centre of four light bulbs, A, B, C and D. Which light bulb(s) is/ are switched on to form the shadows shown in the diagram.

(1) A and B only
(2) B and C only
(3) B and D only
(4) C and D only

3. Ronald wanted to classify the following into matter and non-matter.

A Salt
B Light
C Oxygen
D Shadow

Which of the following consists of only non-matter?

(1) A and B only
(2) A and C only
(3) B and D only
(4) B, C and D only

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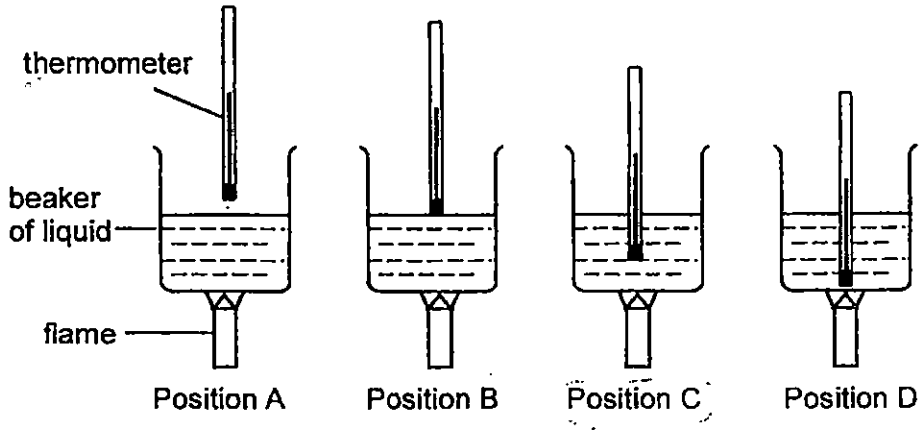
4. Kathy listed down the properties of solid and liquid in the table below. Which of the properties are true about solid and liquid?

	Solid	Liquid
A	Cannot be compressed	Can be compressed
B	Floats on water	Does not float on water
C	Has a definite shape	Takes the shape of the container
D	Has definite volume	Has definite volume

(1) A and C only
(2) B and D only
(3) C and D only
(4) A, C and D only

5. Four laboratory thermometers are held at positions A, B, C and D to measure the temperature change of a liquid as shown below.



At which position should the thermometer be held so as to give the best measurement of the temperature of the liquid?

(1) A
(2) B
(3) C
(4) D

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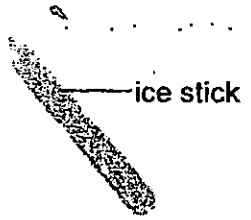
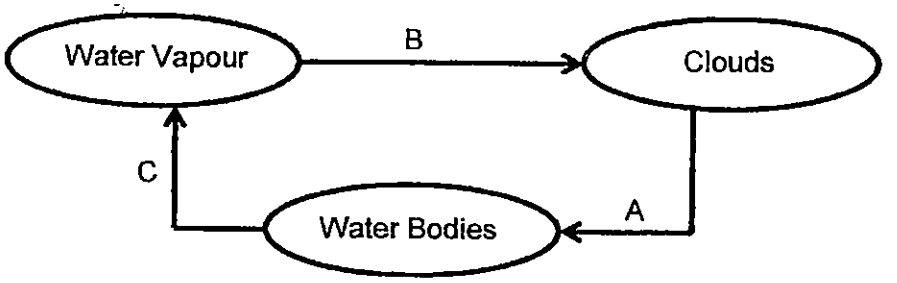
6. Jane wants to bring an ice stick to her friend who lives 10 minutes away from her house. She finds a sheet of tissue paper, a piece of newspaper, a cotton handkerchief and a piece of bubble wrap in her house.



Which is the best material for wrapping the ice stick so as to slow down the change in state of the ice?

(1) Newspaper
(2) Bubble wrap
(3) Tissue paper
(4) Cotton handkerchief

7. Study the water cycle diagram below. A, B and C are processes occurring in the water cycle.



Which of the following letters, A, B or C, correctly represent evaporation and condensation?

	Evaporation	Condensation
(1)	A	B
(2)	B	C
(3)	C	B
(4)	B	A

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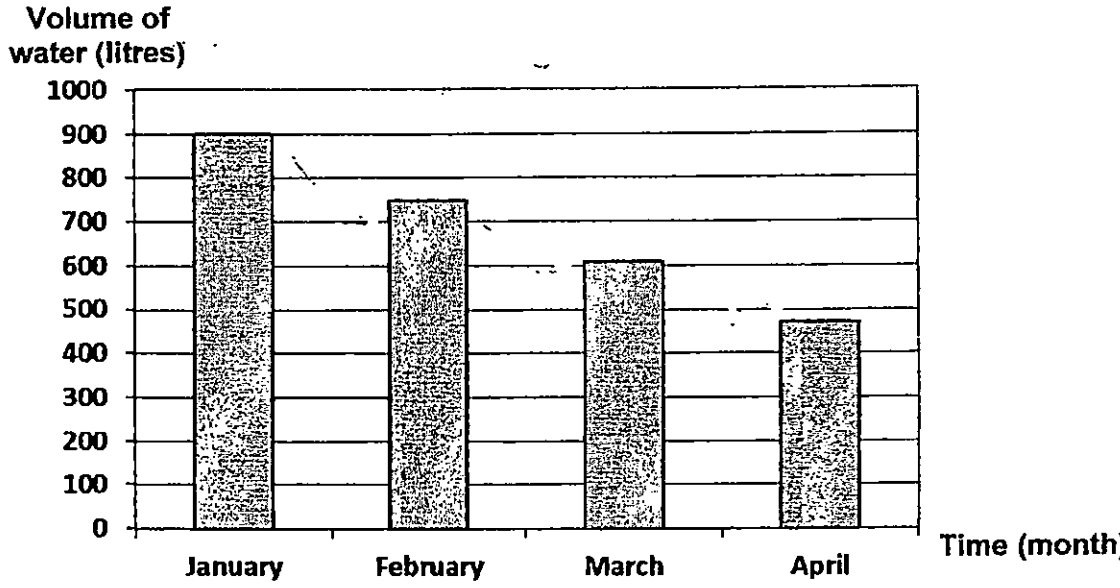
8. The chart below shows the household water consumption of the Tan family over 4 months.



Based on the chart above, which one of the following activities could have contributed to the change in the Tan's household water consumption?

(1) Using a cup when brushing teeth

(2) Leaving the tap on when soaping their hands

(3) Washing the dishes and vegetables under a running tap

(4) Washing on a half load rather than full load when using the washing machine

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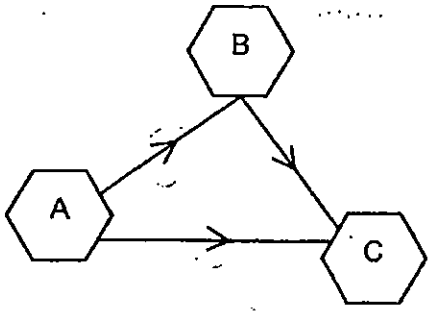
9. In the diagram below, the path of light is indicated by the arrows.



Choose the option that best fits A, B and C.

	A	B	C
(1)	Eyes	Object	Light source
(2)	Eyes	Light source	Object
(3)	Light source	Eyes	Object
(4)	Light source	Object	Eyes

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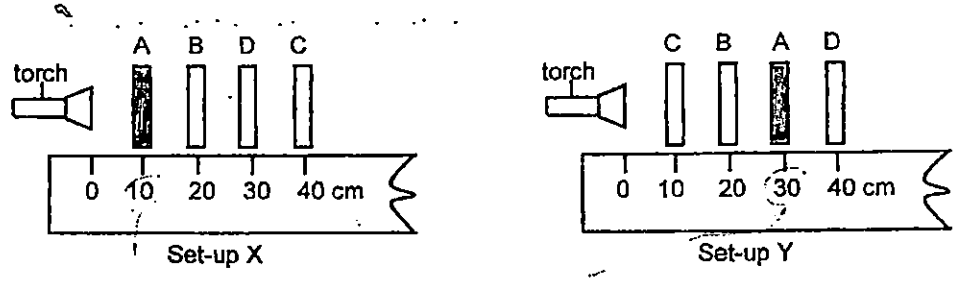
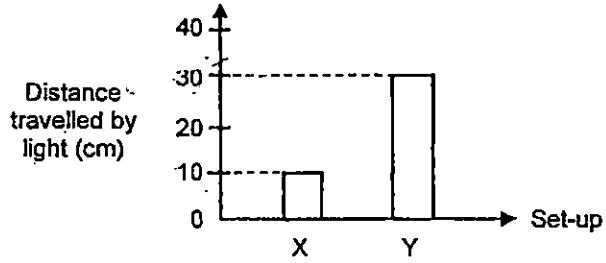
10. An experiment was conducted to investigate whether light can pass through four sheets, A, B, C and D, made of different materials. The sheets were arranged in two set-ups, X and Y, as shown below.



The distance travelled by the light for each set-up was measured and the results are shown in the chart below.



Which one of the following correctly describes the properties of sheets A, B, C and D?

	Allow light to pass through	Does not allow light to pass through	Not possible to tell
(1)	A	C	B and D
(2)	B	C and D	~~B~~ A
(3)	A and C	B	D
(4)	B and C	A	D

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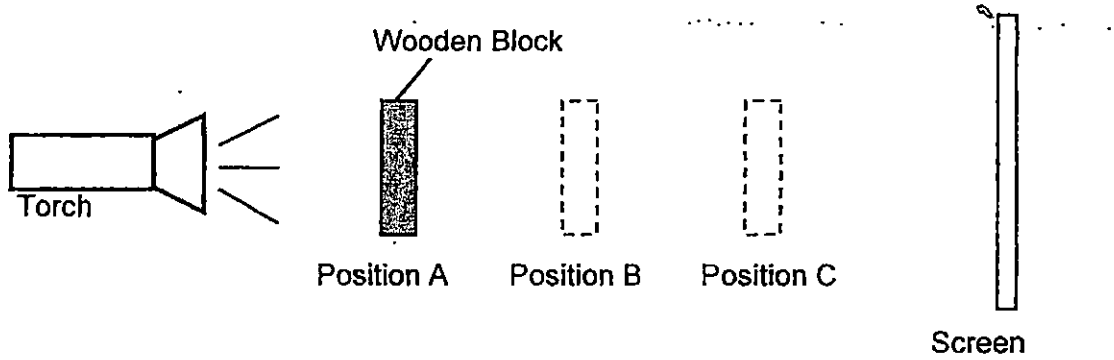
11. Danny placed a piece of wooden block at Position A and measured the height of the shadow cast on the screen as shown in the diagram below.



He repeated the experiment by placing the wooden block at Position B and Position C.

Which one of the following would most probably be his measurements of the shadows at the various positions?

	Height (cm) of shadow when wooden block is at Position		
	A	B	C
(1)	7	14	21
(2)	14	21	7
(3)	21	7	14
(4)	21	14	7

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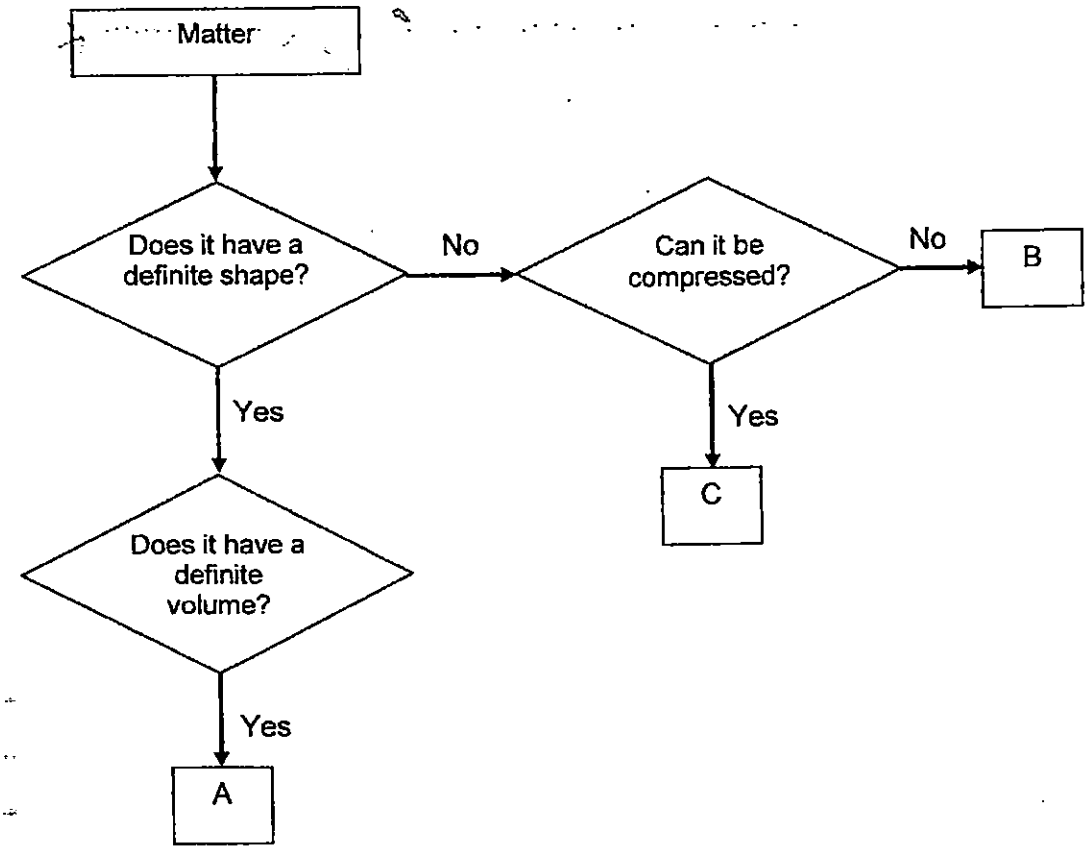
12. Study the flowchart below.



Based on the information given in the flowchart, which one of the following correctly represents A, B and C?

	A	B	C
(1)	Milk	Cooking oil	Book
(2)	Air	Coin	Milk
(3)	Book	Cooking oil	Air
(4)	Coin	Milk	Cooking oil

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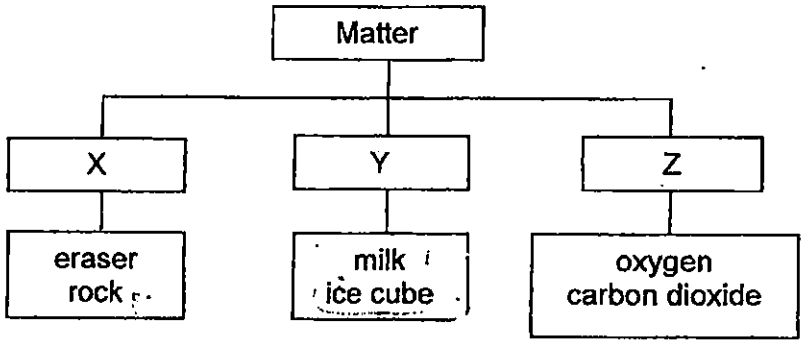
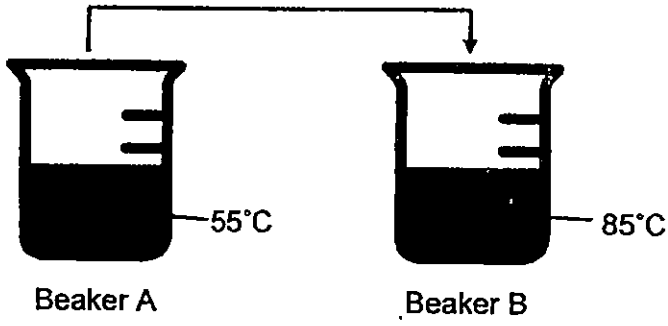
13. The classification chart below shows how different states of matter are grouped.



Which of the following is wrongly grouped?

(1) rock
(2) eraser
(3) ice cube
(4) carbon dioxide

14. The diagram below shows two beakers, each containing 100 cm^3 of water at different temperature.



What will immediately happen to the water in beaker B when water in beaker A is poured into it?

(1) The temperature of water in beaker B will decrease, and then increase.
(2) The water in beaker B will gain heat and increase in temperature to 140°C.
(3) The temperature of water in beaker B will decrease to 55°C, and then to the temperature of the surroundings.
(4) The temperature of water in beaker B will decrease to a temperature higher than 55°C but lower than 85°C.

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15. Michael placed a balloon over the mouth of a flask as shown in Diagram 1. After a while, he placed the flask in a container of hot water as shown in Diagram 2.

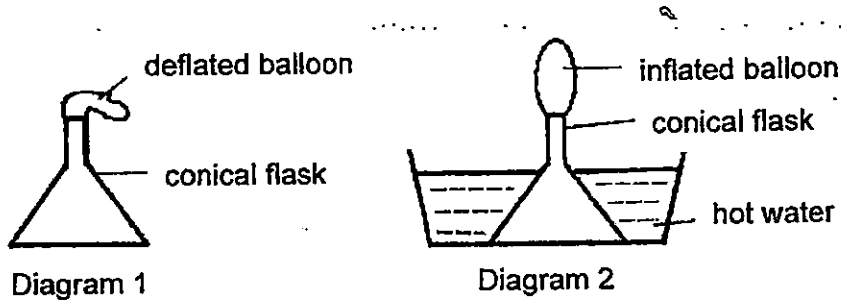

Diagram 1 Diagram 2

What causes the balloon in Diagram 2 to inflate?

(1) The flask gains heat from the hot water and expands.

(2) The balloon gains heat from the hot water and expands.

(3) The air in the flask gains heat from the hot water and expands.

(4) The air in the flask gains heat from the hot water and contracts.

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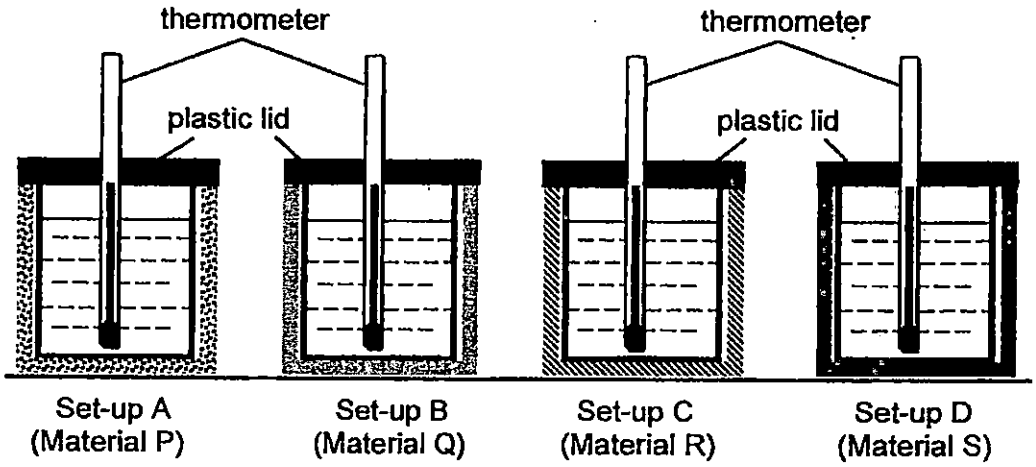
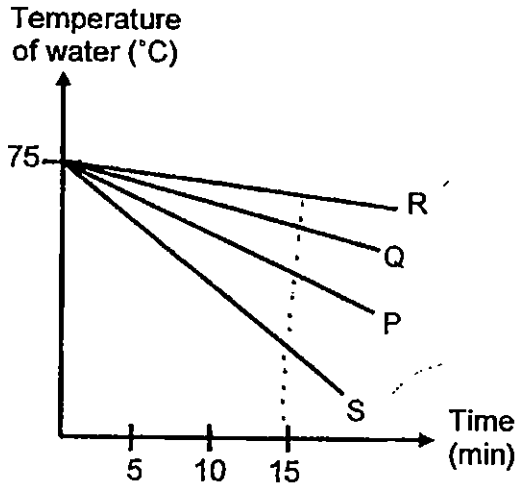
16. Benny conducted an experiment using set-ups A, B, C and D as shown below. He wrapped the four identical glass beakers with materials P, Q, R and S respectively. He filled all four beakers with the same amount of hot water at 75°C.



Benny measured the temperatures of the water in all four beakers over a period of 15 minutes and plotted his results as shown in the graph below.



Based on his observations, which material would be most suitable to make a winter jacket?

(1) P
(2) Q
(3) R
(4) S

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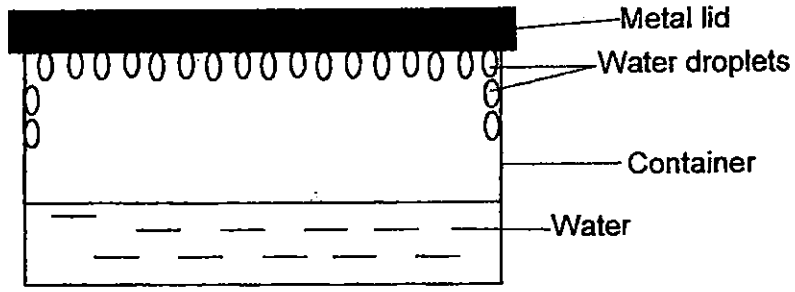
17. Lucas poured some water into the container shown below. He then placed a metal lid over the container and left it in his living room. At the end of 20 minutes, Lucas observed that there were water droplets on the inner surface of the metal lid.



What conclusions can Lucas make based on the experiment above?

A The water in the container was cooler than the metal lid.

B The water vapour in the container lost heat to the metal lid.

C The water vapour in the surrounding air condensed on the metal lid.

D The lower surface of the metal lid was cooler than the water vapour in the container.

(1) A and B only

(2) A and D only

(3) B and C only

(4) B and D only

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18. Jamie recorded the states of Substances W, X, Y and Z at different temperature.

	30°C	50°C	90°C
W	liquid	gas	gas
X	solid	liquid	gas
Y	solid	solid	liquid
Z	liquid	liquid	gas

Based on the information given above, which of the following substances are likely to have boiling point that is above 50°C?

(1) W and X only
(2) X and Y only
(3) W, X and Z only
(4) X, Y and Z only

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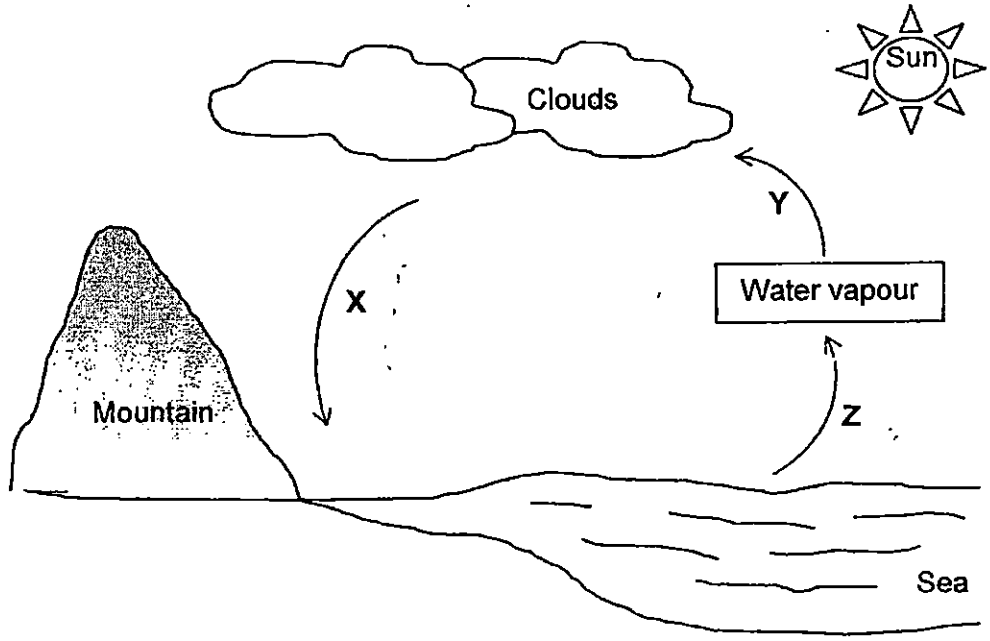
19. Study the diagram below. X, Y and Z shows the processes in the water cycle.



Which of the following statement(s) is/are correct?

A Water loses heat in Process Z.

B Water vapour loses heat in Process Y.

C Water changes from a liquid to a gas in Process X.

(1) A only

(2) B only

(3) B and C only

(4) A, B and C

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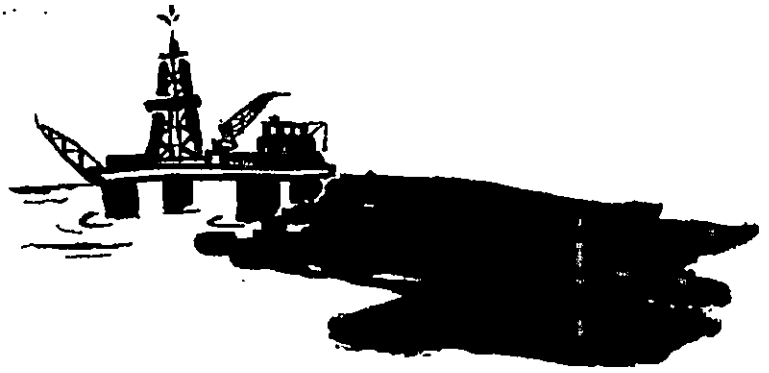
20. Oil spills from ships can cause harm to the environment.



Which of the following are the effects of oil spills?

A Some aquatic animals will die due to the lack of oxygen.

B The people in the town will experience breathing difficulties.

C Birds will have difficulties flying if they are caught on the layer of oil spills.

D Some sea mammals can no longer swim or float as their fur clump together.

(1) A and B only

(2) B and C only

(3) B and D only

(4) A, C and D only

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NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 2 2015
PRIMARY FOUR
SCIENCE

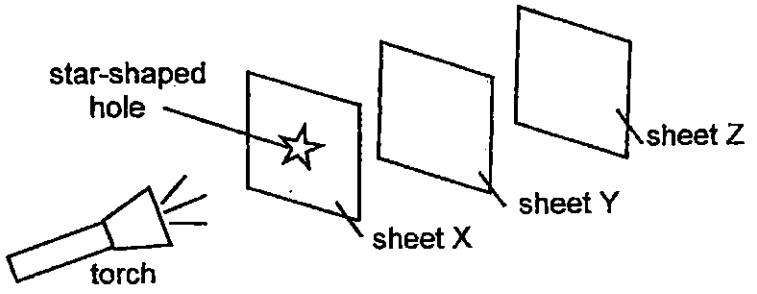
Name : _____ ( )

Class : Primary 4 / _____

MARKS
40

Section B: (40 marks)
Write your answers to questions 21 to 34.
The number of marks available is shown in brackets [ ] at the end of each question or part-question.

21. Sally conducted an experiment in a dark room with the set-up shown below.



She arranged three sheets made of different materials, X, Y and Z, in a straight line. When the torch was switched on, Sally observed that a bright patch of light in the shape of a star was seen on Sheet Z only.

(a) From Sally's observation, describe the properties of Sheet X and Sheet Y. [1]

Materials	Degree of transparency
Sheet X	
Sheet Y	

(b) State one property of light as shown above. [1]

_____

Score	2

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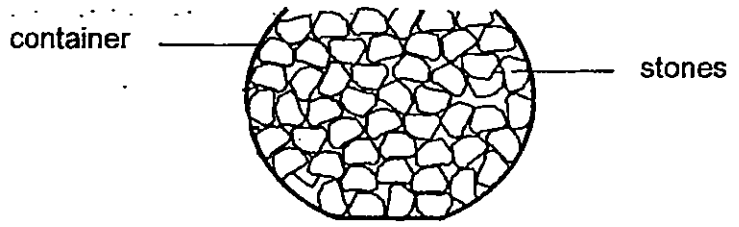
22. Kelly filled the container to its brim with $250cm^3$ of stones as shown below



(a) Identify the state(s) of matter found in the above container. [1]

_____

(b) Tick (✓) the box that shows the most likely volume of the container. [1]

Volume of Container	Tick (✓) the correct volume
Less than $250cm^3$	
Equals to $250cm^3$	
More than $250cm^3$	

(c) Kelly wanted to fill the container with some water without removing the stones. Will she be able to do it? Give a reason for your answer. [1]

_____

_____

Score	/ 3

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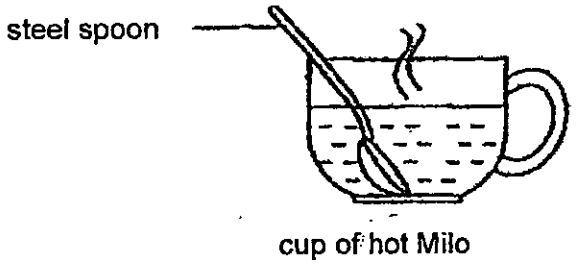
23. Faith used a steel spoon to prepare a cup of Milo with boiling water.



(a) How does the handle of the spoon feel when she touches it? [1]

_____

_____

(b) Give a reason for your answer in (a). [1]

_____

_____

Score	/ 2

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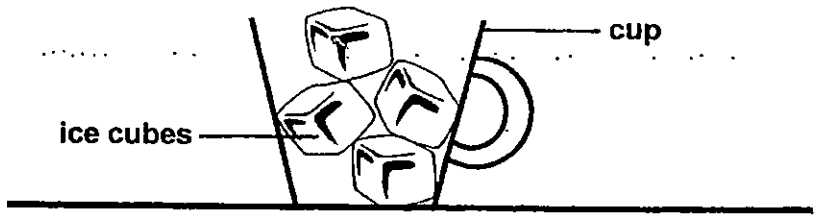
24. Arjun conducted an experiment in the school science room. He placed some ice cubes in a cup and left it on a table in the science room, as shown below.



Arjun used a thermometer to measure the temperature of the ice cubes every minute, for ten minutes. He recorded the temperature in the table shown below.

Time (minutes)	Temperature (°C)
1	0
2	0
3	0
4	0
5	0
6	8
7	19
8	26
9	26
10	26

(a) What is the process that is taking place between the first minute and the fifth minute? Give a reason for your answer. [2]

_____

_____

(b) Based on the table above, what is the room temperature of the school science room? [1]

_____

Score	/ 3

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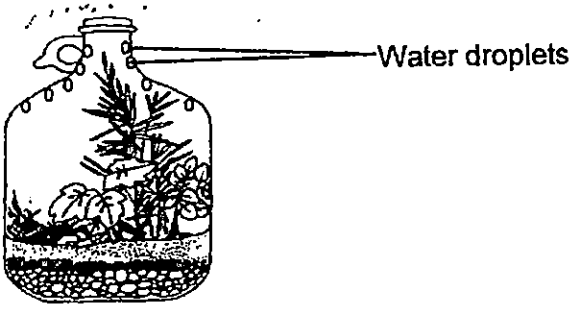
25. Caleb set up a terrarium which is a collection of small plants growing inside a transparent sealed container. He does not have to water the plants as the water in the terrarium goes through a similar process in the water cycle. He noticed some water droplets forming on the inner surface of the container as shown below.



(a) What do the water droplets represent in the water cycle? [1]

_____

_____

(b) Why is the water cycle important for the survival of living things? [1]

_____

_____

(c) Water conservation refers to saving and using water wisely as it is one of the Earth's natural resources.

Put a tick (√) in the respective boxes that show activities which help to conserve water. You may tick more than 1 box. [2]

Activity	Tick (√)
Take shorter showers.	
Repair any leakages in pipes immediately.	
Use the water from washing rice to water the plants.	
Use running water to thaw meat or other frozen food.	

Score	/ 4

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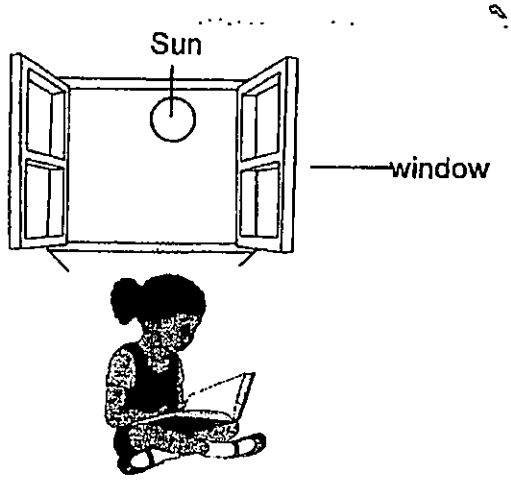
26. Jasmine was reading a storybook in her room with the window opened as shown in diagram below.



Jasmine looked out of the window and she was able to see the Sun.

(a) Describe how Jasmine was able to see the Sun. [1]

_____

_____

Jasmine sat near the window to read a storybook.

(b) Describe how she was able to read the storybook in the room. [1]

_____

_____

Score	/ 2

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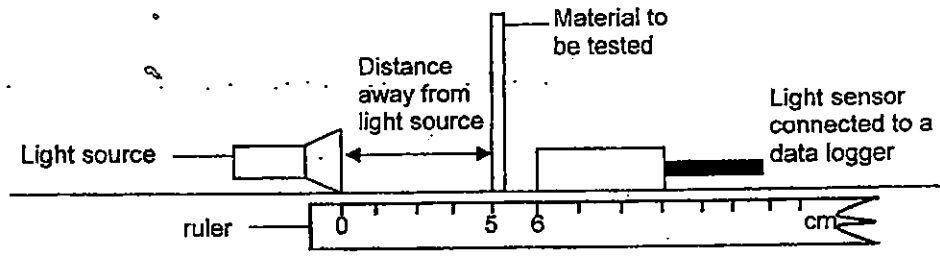
27. Andy set up an experiment as shown below.



He wanted to investigate the amount of light passing through three different materials, A, B and C, of similar size and thickness with a light sensor connected to a data logger.

Object placed between torch and data logger	Amount of light measured (units)
No material (Light from the torch)	250
Material A	250
Material B	0
Material C	80

The table above shows the amount of light passing through the three materials.

(a) What is the independent variable (variable changed) in this experiment? [1]

_____

Andy wanted to choose a material to make a display cabinet for his trophies.

(b) Which material should he choose to make the display cabinet? Give a reason for your answer. [2]

_____

_____

Score	/ 3

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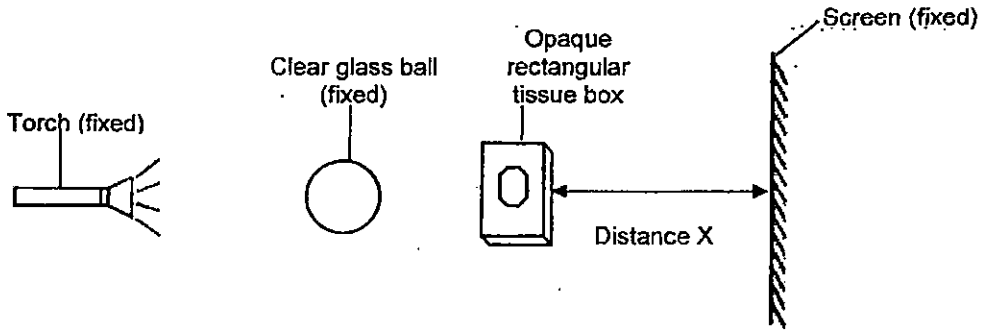
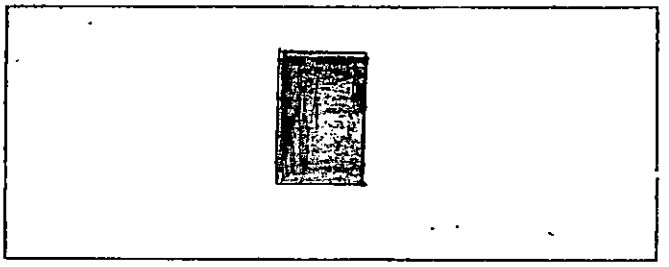
28. Max arranged a torch, a clear glass ball and an opaque rectangular tissue box in a straight line in front of a screen as shown below.



The positions of the torch, clear glass ball and the screen are fixed.

When the torch was turned on, a shadow was formed on the screen.

(a) In the box below, draw the shadow that he will observe on the screen. [1]



Max repeated the above experiment using different distances between the opaque rectangular tissue box and the screen. He recorded the height of the shadow formed on the screen in the table below.

Distance X (cm)	Height of shadow formed on the screen (cm)
4	9
6	11
8	13

(b) Based on the information given in the table, what is the relationship between distance X and the height of shadow formed? [1]

_____

_____

Score	/ 2

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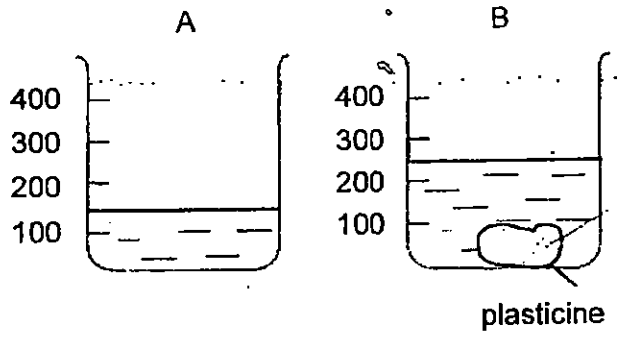
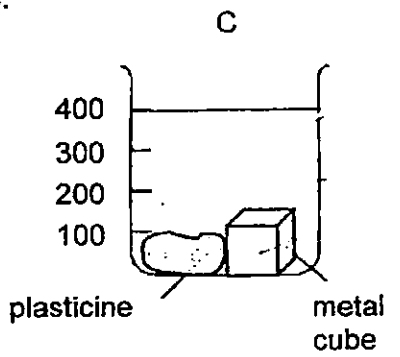
29. Jordan poured 150ml of water into a beaker as shown in diagram A. He then placed some plasticine in the beaker. The water level rose as shown in diagram B.



He then carefully placed a metal cube of volume $150cm^3$ into the same beaker as shown in diagram C.



(a) In diagram C above, **draw the new water level** to show the volume of the water with the plasticine and the metal cube. [1]

(b) Jordan then removed the plasticine and reshaped it into a ball. He then placed the plasticine ball back into the beaker together with the metal cube. Will the water level be higher, lower or the same as the water level you have drawn in (a)? Give a reason for your answer. [2]

_____

_____

Score	/ 3

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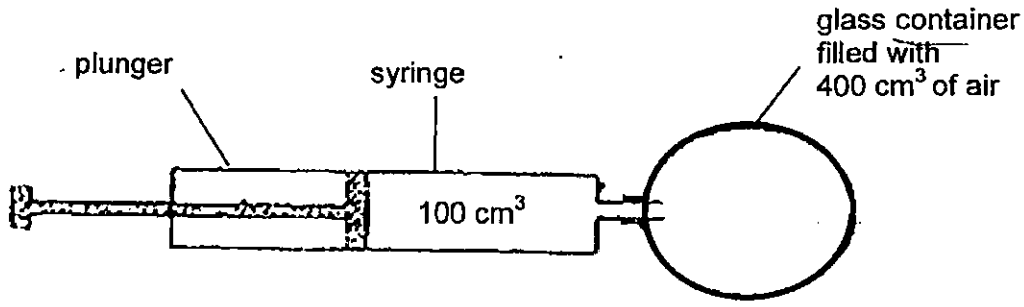
30. Melissa conducted an experiment as shown below. She connected a syringe containing 100 cm^3 of air to a glass container filled with 400 cm^3 of air. She then pushed the plunger all the way in.



Based on the diagram above, answer the following questions.

(a) What is the volume of air in the glass container **after** Melissa has pushed the plunger in? [1]

_____

(b) Explain your answer in (a). [1]

_____

_____

(c) Melissa did another experiment and filled the plunger with 50 cm^3 of Liquid X. She pushed the plunger all the way in and measured the volume of Liquid X and the volume of air in the container. Write the volume of Liquid X and volume of air in the table below. [2]

Volume of Liquid X (cm^3)	Volume of air (cm^3)

Score	/ 4

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31. Jerry went to the coffee shop to buy hot tea for his mother. Upon reaching the coffee shop, he saw Mr Samy pouring hot tea from one container into another, as shown in the diagram below. After a while, the hot tea became cool.

Explain how Mr Samy's action reduces the temperature of the hot tea more quickly than leaving the cup of hot tea on the table to cool. [2]

Score	/ 2

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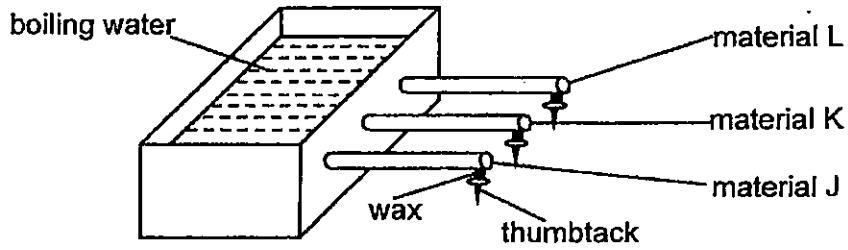
32. Wei Kang had three rods made of different materials, J, K and L. He wanted to find out which material of the rod is the best conductor of heat. He inserted one end of each rod into a container of boiling water and attached a thumbtack at the other end of each rod with an equal amount of wax as shown below.



He recorded the time taken for the thumbtacks to drop off in the table below.

	Material J	Material K	Material L
Time (min)	9	15	4

(a) Besides the amount of wax used, state another variable that he needs to keep the same to ensure a fair test. [1]

_____

(b) Arrange the materials, J, K and L, in order beginning with the best conductor of heat to the poorest conductor of heat. [1]

Best conductor of heat		Poorest conductor of heat

(c) Based on the table above, which material is suitable to make the handle of a kettle? Give a reason for your answer. [2]

_____

_____

Score	/ 4

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33. As Julian got off an air-conditioned bus, his glasses immediately 'fogged up' and he was not able to see clearly for a short period of time.

(a) Explain in detail what caused the "fogging" on Julian's glasses. [2]

_____

_____

Julian decided to record the observations of his glasses 'fogging' up over a period of five days. He stepped out of the bus at 8 am every morning on his way to school. The amount of water vapour in the surrounding air was similar for the five days. He recorded the amount of fogging as "low", "medium" and "high".

Day	Temperature in the bus	Surrounding temperature	Fogging of glasses
Monday	18°C	30 °C	High
Tuesday	18°C	25 °C	Medium
Wednesday	18°C	21°C	Low
Thursday	18°C	20 °C	Low
Friday	18°C	28 °C	High

(b) Based on the results shown in the table above, explain why Julian experienced "low" fogging on his glasses on Wednesday and Thursday. [1]

_____

_____

Score	/ 3

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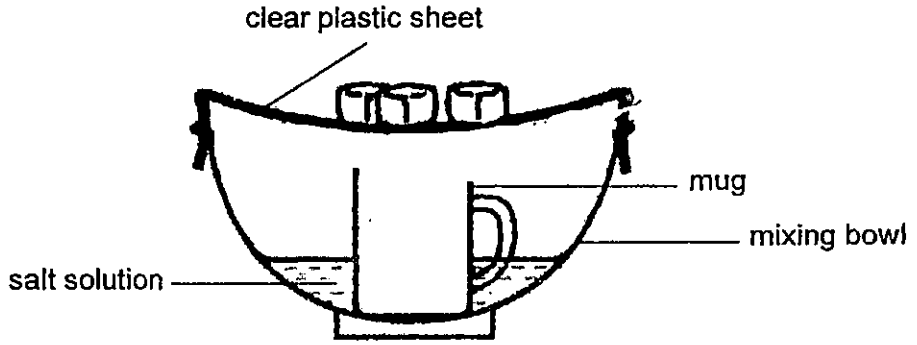
34. Cindy used the set-up below to illustrate a model of the water cycle. She left the set-up under the sun.



(a) What is the purpose of putting ice on the clear plastic sheet? [1]

_____

_____

_____

(b) Cindy observed some water droplets in the setup. **Draw** a few of the water droplets found in the set-up. [1]

(c) After that, the water droplets dripped down and were collected inside the mug. Cindy tasted the water and realized that it was not salty. Explain why the water was not salty. [1]

_____

_____

_____

Score	/ 3

END OF PAPER

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : NAN HUA PRIMARY
SUBJECT : SCIENCE
TERM : CA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	2	3	3	3	2	3	1	4	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
4	3	3	4	3	3	4	4	2	4

Q21a. Sheet X : Opaque Sheet Y: Transparent

Q21b. Light travels in a straight line.

Q22a. Solid and gas. Q22b. More than 250cm^3

Q22c. Yes, there are air spaces (gaps) in between the stones for water to occupy.

Q23a. The handle of the spoon feels hot.

Q23b. Steel is a good conductor of heat as it gained heat from the Milo quickly, hence Faith's hands gains heat from the steel spoon.

Q24a. Melting . Melting takes place at 0°C. Q24b. 26°C

Q25a. It represent the rain in the water cycle.

Q25b. The water cycle provides a continuous supply of fresh water for living things to survive.

Q25c. (i) Take shorter showers (ii) Repair any leakages in pipes immediately
Q25c. (iii) Use the water from washing rice to water the plants.

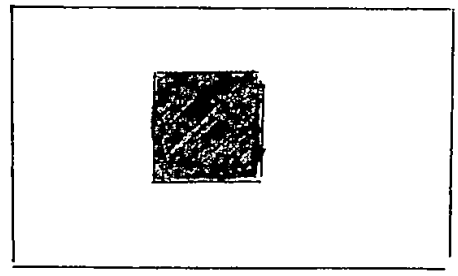
Q26a. The sun gives off light which enters Jasmine's eyes.

Q26b. When the light from the sun falls on the storybook, the storybook reflects the light falling onto it into her eyes, enabling her to see the book.

Q27a. The type of the materials.

Q27b. He chose Material A. Material A allows most of the light to pass through so he would be able to see the trophies.

Q28a. **SEE PICTURE**



Q28b. As the distance X increases, the height of the shadow formed on the screen increases.

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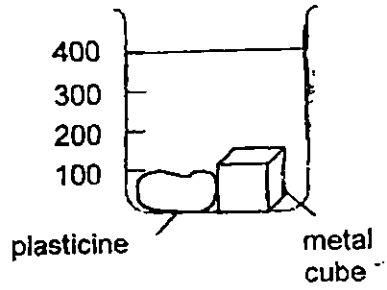
Q29. **SEE PICTURE** Q29b. Same. Plasticine has definite volume.



Q30a. 400cm^3
Q30b. Air can be compressed and the volume of the glass container is only 400cm^3.
Q30c. Volume of Liquid X – 50 Q30c. Volume of air – 350

Q31. The exposed surface area increases when he pours the tea from one container into another. The amount of heat lost to the surrounding air increases.

Q32a. The length of the rods. Q32b. **L J K**

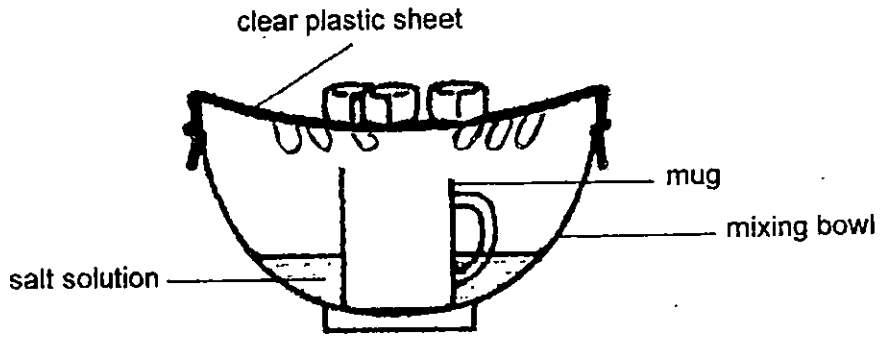
Q32c. Material K. It conducts heat the slowest (poorest conductor of heat) so the handle of the kettle can he held without scalding the hand.

Q33a. Water vapour in the surrounding air that evaporated from the ground comes in contact with the cooler surface of the glasses, lose heat and condenses to form water droplets.

Q33b. The surrounding temperature is nearer to the temperature of the bus, so there was low fogging.

Q34a. To cool down the plastic sheet so that condensation of water vapour can take place.

Q34b. **SEE PICTURE**



Q34c. Only the water in the salt solution evaporates to water vapour, leaving the salt behind . Salt doe not evaporate.

THE END

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Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2015
SCIENCE
PRIMARY FOUR
BOOKLET A

Name: _____ **Class: Primary 4** _____

Date: 29 October 2015 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTION TO CANDIDATES

1. This question paper consists of **18** printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

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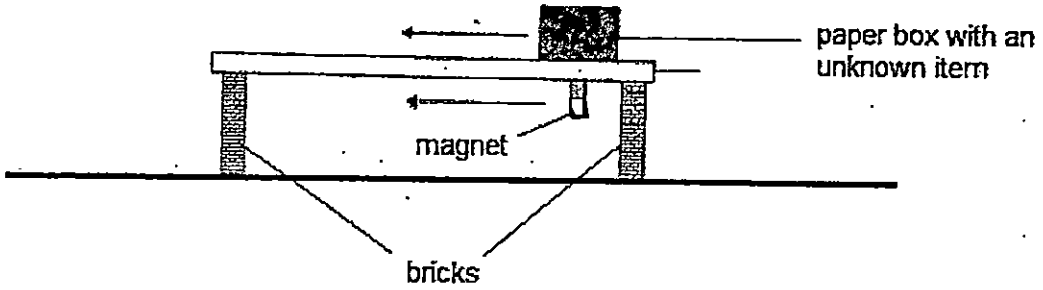
For each of the following questions from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

[60 marks]

1 An item was placed in a paper box. The paper box was placed on top of a piece of wood. Darren then held a magnet at the bottom of the wood, as shown in the diagram below. When he moved the magnet, the paper box moved along with the magnet. He repeated the experiment three more times, each time replacing the item with a new one.



Which of the following objects were most likely to be the items placed in the paper box?

A Iron ball

B Nickel coin

C Copper coin

D Steel paperclip

(1) A, B and C only

(2) A, B and D only

(3) A, C and D only

(4) B, C and D only

(Go on to the next page)

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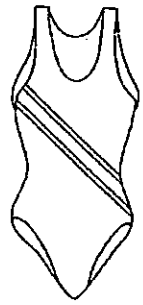
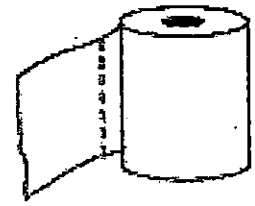
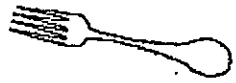
2 In which part of the digestive system is water absorbed from the undigested food?

(1) Gullet
(2) Stomach
(3) Small intestine
(4) Large intestine

3 Which one of the following objects is most likely **not** made of a waterproof material?

(1) swimsuit 	(2) toilet paper 
(3) metal fork 	(4) rubber gloves

4 Which one of the following is the function of a stem of a plant?

(1) Makes food for the plant
(2) Takes in water
(3) Holds the plant upright
(4) Takes in mineral salts

(Go on to the next page)

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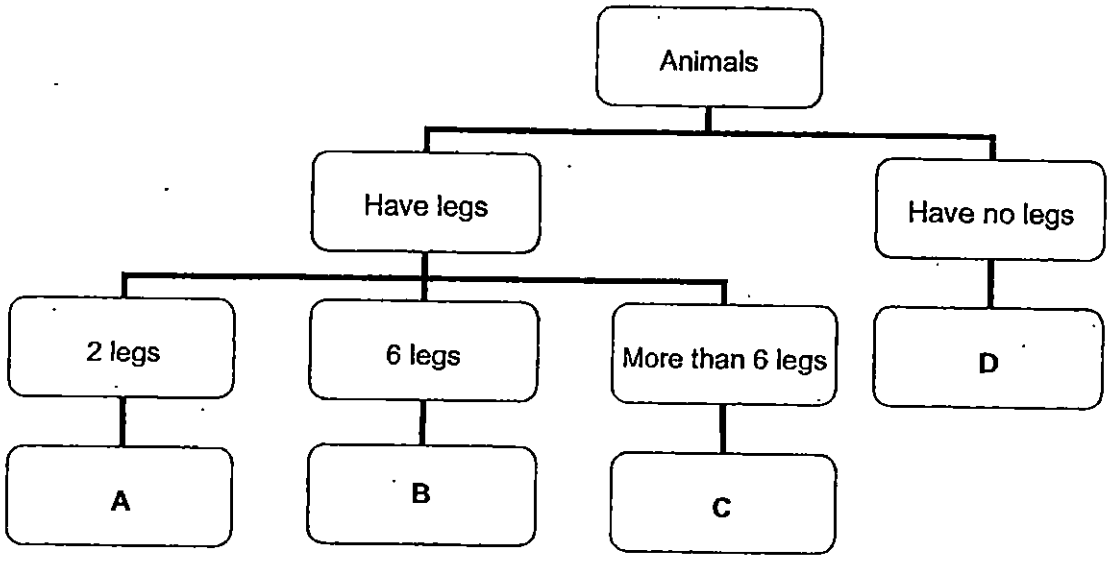
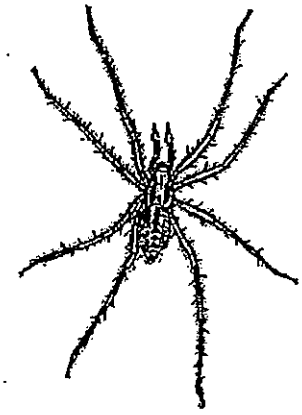
5 Study the classification chart below.



Where would you put this animal in the picture below in the classification chart above?



(1) A
(2) B
(3) C
(4) D

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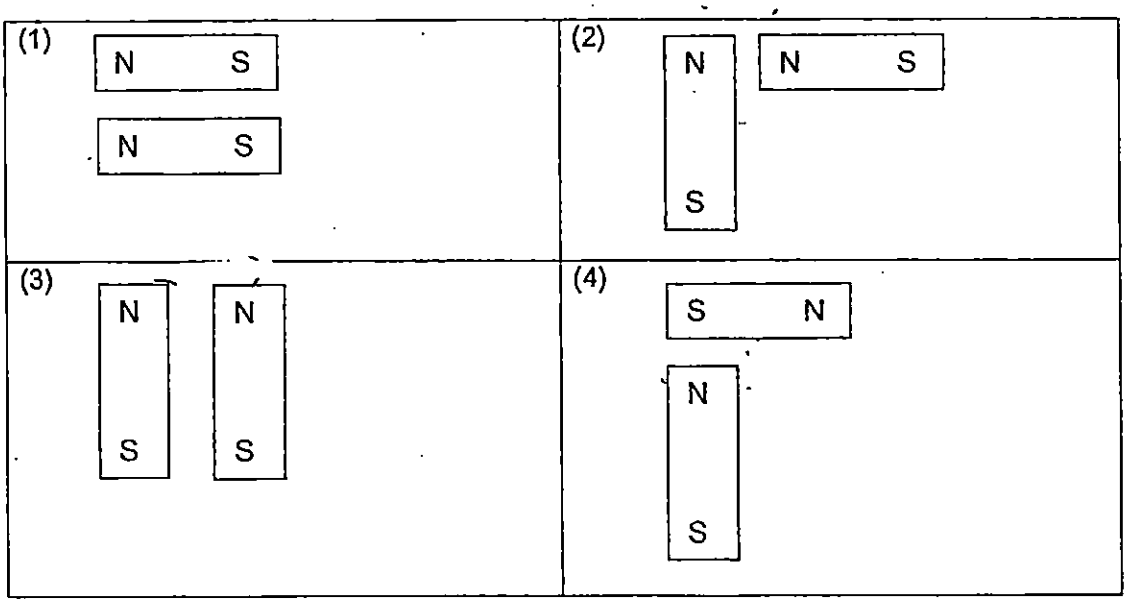
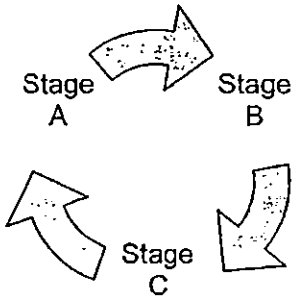
6 In which one of the following arrangements will the two magnets attract each other?



7 Study the life cycle of an animal shown below.



Each letter in the cycle represents a particular stage in the life cycle of a grasshopper. If Stage C represents the egg stage, what does Stage A represent?

(1) Pupa
(2) Adult
(3) Larva
(4) Nymph

(Go on to the next page)

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8 What are the similarities between an adult cockroach and its nymph?

A They have six legs.

B They have a pair of wings.

C They have a pair of feelers.

(1) A and B only

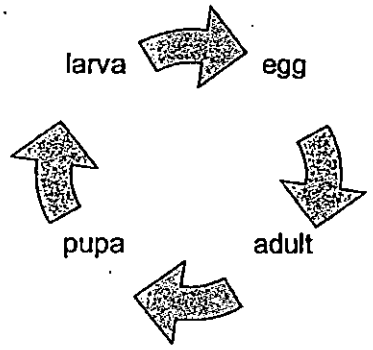
(2) B and C only

(3) A and C only

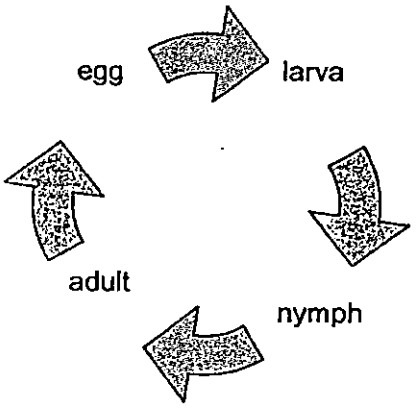
(4) A, B and C

9 Which one of the following diagrams correctly represents a four-stage life cycle of an insect?

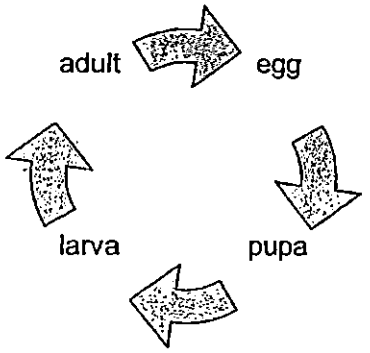
(1)



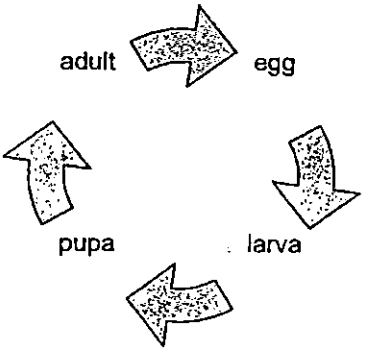
(2)



(3)



(4)



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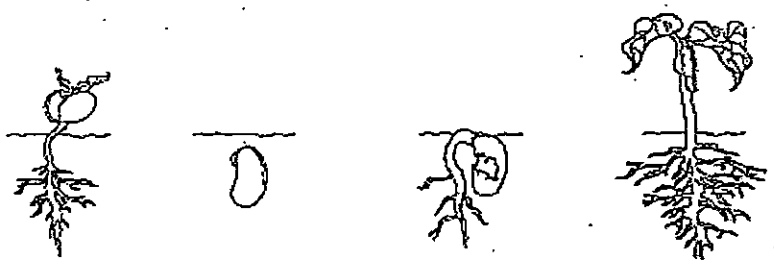
10 The diagram below shows the stages of growth in the life cycle of a plant.



A B C D

Which one of the following shows the correct order of the stages of growth in the life cycle of the plant?

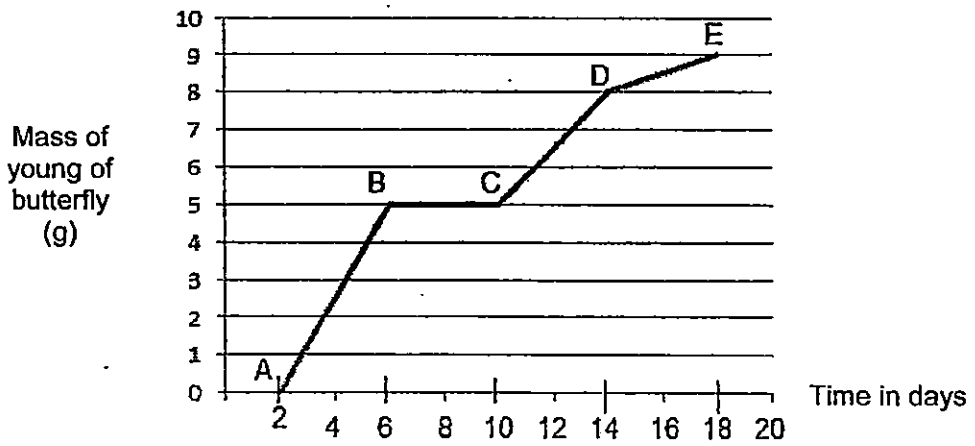
(1) A → C → D → B

(2) B → C → D → A

(3) B → C → A → D

(4) D → A → C → B

11 A butterfly's young is kept in a room. The graph below shows the mass of the young of the butterfly over a period of time.



Which line in the graph above represents the young of the butterfly at the pupa stage?

(1) AB

(2) BC

(3) CD

(4) DE

(Go on to the next page)

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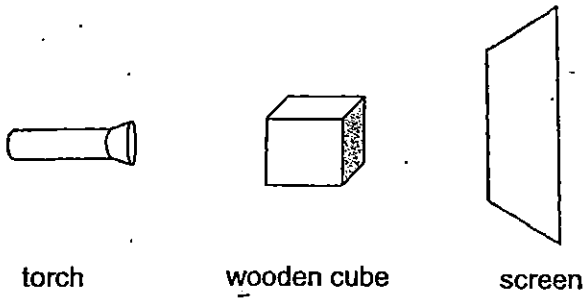
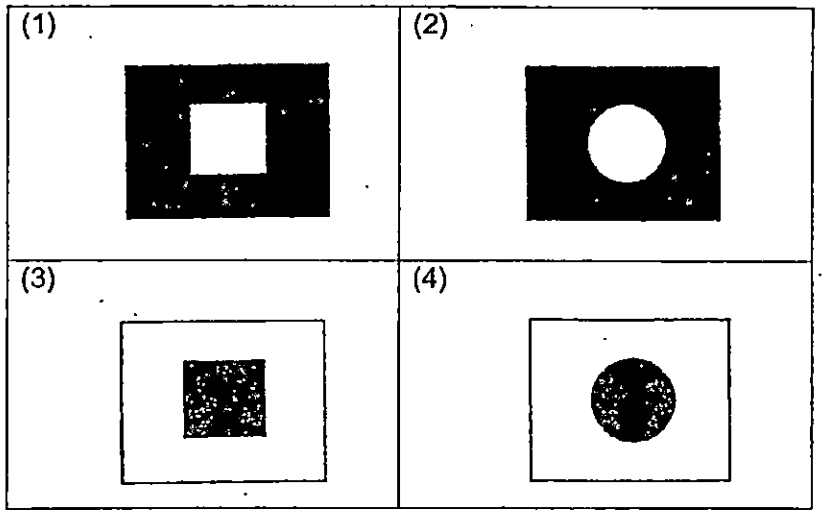
12 Which one of the following is the best conductor of heat?

(1) A wooden cup
(2) A plastic cup
(3) A paper cup
(4) A metal cup

13 The set-up below shows light shining on a wooden cube.



Which one of the following would likely be seen on the screen? The dark patch represents the shadow of the wooden cube.



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14 Which one of the following is **not** a source of heat?

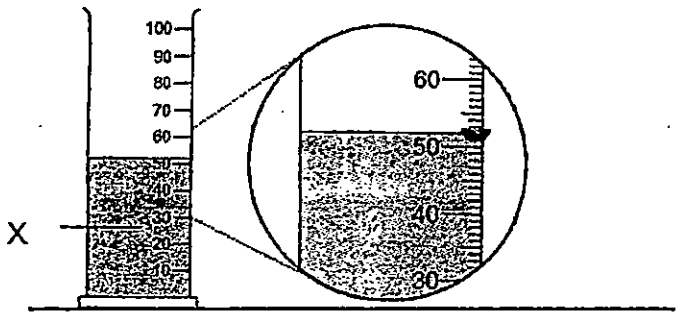
(1) The Sun

(2) A lighted bulb

(3) A candle flame

(4) A woollen blanket

15 In the diagram below, what is the volume of liquid X?



(1) 68 ml

(2) 62 ml

(3) 52 ml

(4) 50 ml

16 Which one of the following properties is true of both air and a ruler?

(1) They can be seen.

(2) They take up space.

(3) They have fixed shapes.

(4) They have fixed volumes.

(Go on to the next page)

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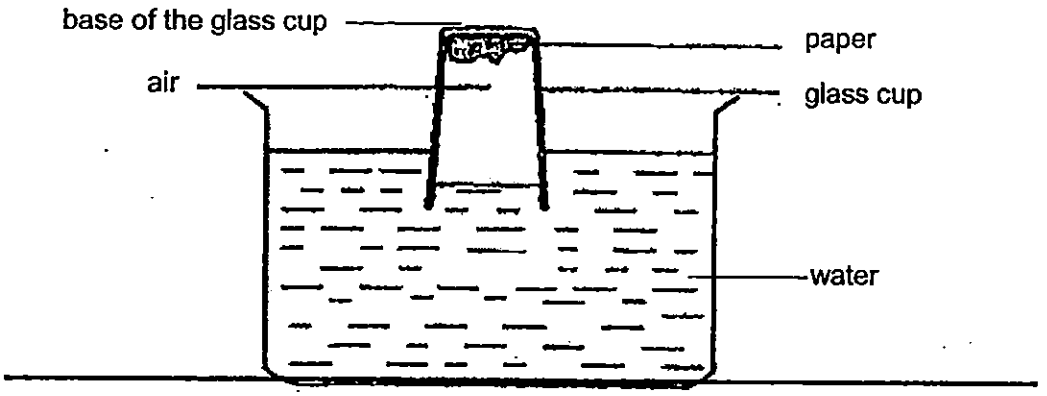
17 Calvin pasted a piece of paper onto the base of a glass cup as shown in the diagram below. He turned the glass cup upside down and pushed it into a basin of water. He noticed that the paper remained dry.



Which property of air does this experiment show?

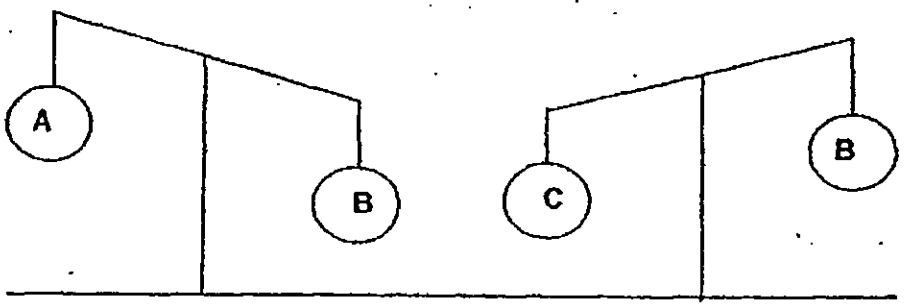
(1) Air has mass.

(2) Air occupies space.

(3) Air cannot dissolve in water.

(4) Air takes the shape of the glass.

18 Annie compared the masses of three different plastic balls, A, B and C, using a lever balance as shown in the diagram below.



Based on the diagram, which one of the following statements is correct?

(1) A is heavier than B.

(2) B is heavier than C.

(3) C is heavier than A.

(4) A and C have the same mass.

(Go on to the next page)

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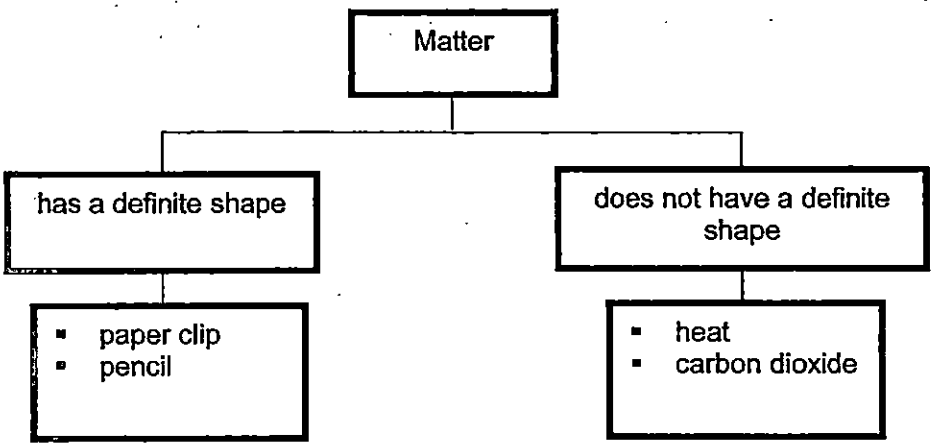
19 Study the classification chart below.



Based on the chart above, which one of the following is not classified correctly?

(1) carbon dioxide

(2) paper clip

(3) pencil

(4) heat

20 Which of the following statements are true?

A All matter has mass.

B All matter occupies space.

C All matter can be compressed.

(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

(Go on to the next page)

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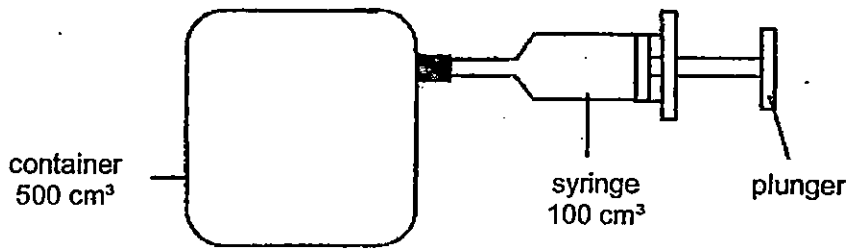
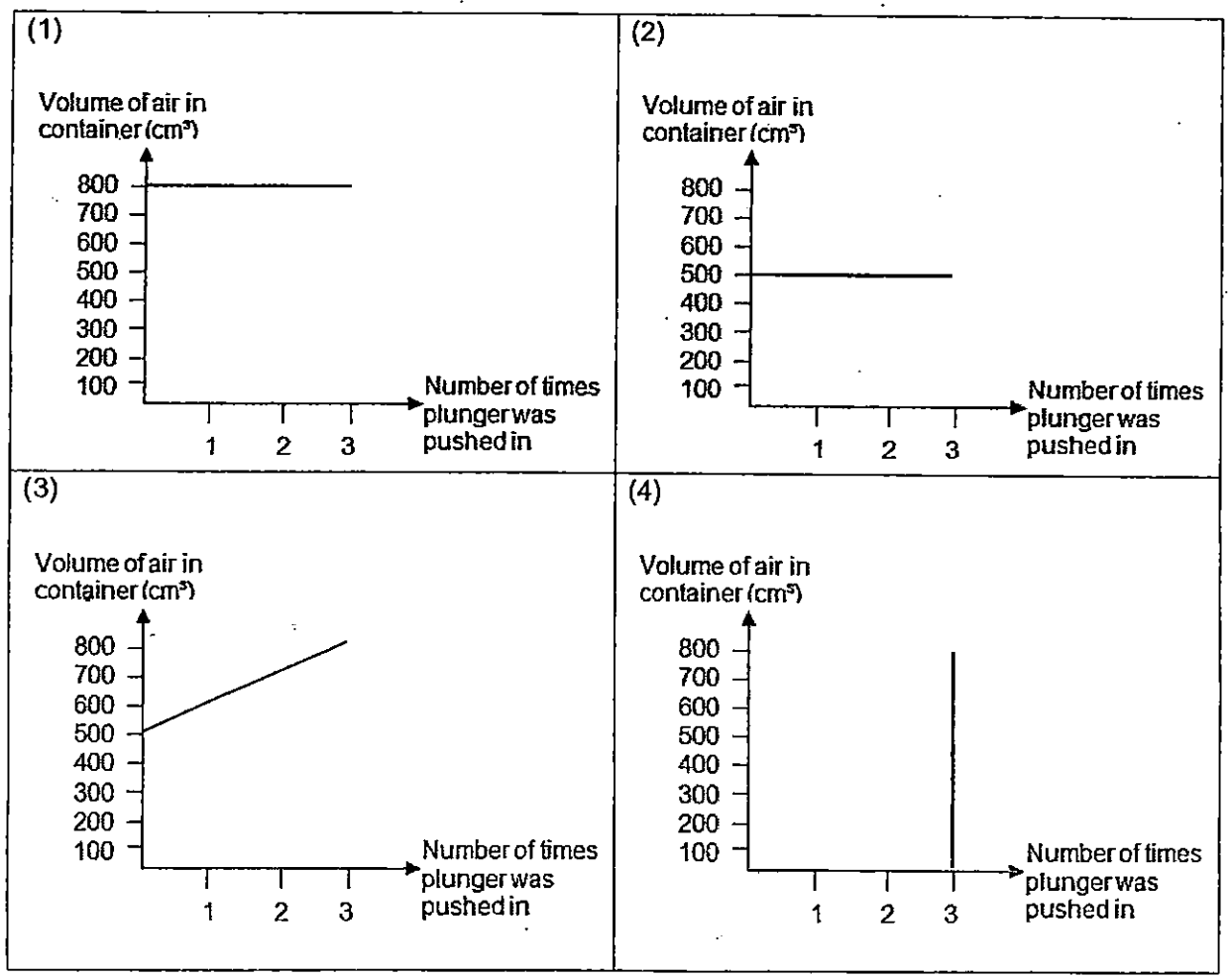
21 Elsa had a container with a capacity of 500 cm^3. She fitted a syringe to the container. Each time she pushed in the plunger of the syringe, 100 cm^3 of air would enter the container. Elsa pushed in the plunger three times.



Based on the information given above, which one of the following graphs shows the changes in volume of air in the container?



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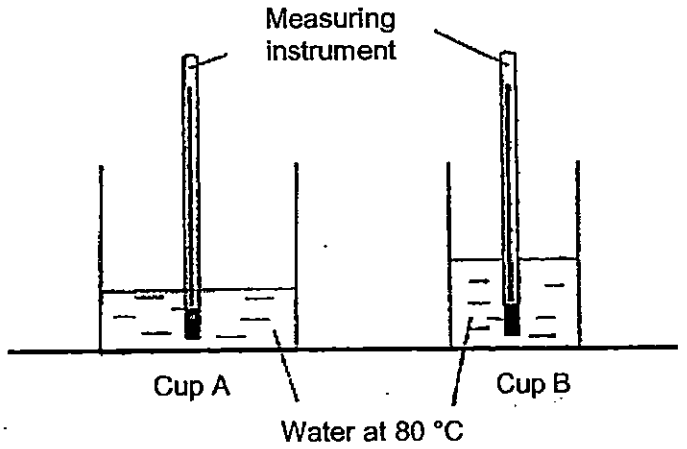
22 David wanted to find out whether Cup A or Cup B was a better conductor of heat. He poured the same amount of water at 80°C into each cup. Then, he measured the temperature of the water in the cups every minute.



Which of the following statements best explained why the experiment conducted was not a fair test?

(1) Cup A was bigger than Cup B.

(2) The amount of water was the same in both cups.

(3) Cup A was a better conductor of heat than Cup B.

(4) The original temperature of water in both cups was the same.

23 Which of the following are natural sources of light?

A Sun

B Stars

C Moon

D Firefly

(1) A and B only

(2) C and D only

(3) A, B and D only

(4) A, B, C and D

(Go on to the next page)

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24 Zuby removed a jar of honey as shown below from the refrigerator. She could not open the metal lid of the jar because it was too tight.

She poured some hot water over the metal lid of the jar. This helped her to open the jar as the heat caused the _____ to expand.

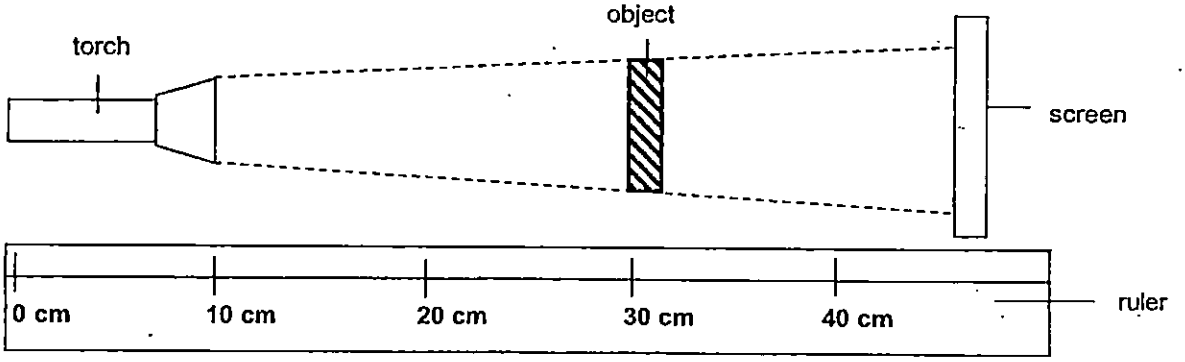
(1) jar

(2) metal lid

(3) air in the jar

(4) air in the jar and the jar

25 Ray placed a torch at the 10 cm mark of a ruler as shown in the diagram below. The torch shone at an object that was placed at the 30 cm mark. A shadow was cast on the screen.



At which position of the ruler should the torch be placed so as to obtain a smaller shadow on the screen than before?

	Position of torch on the ruler
(1)	0 cm mark
(2)	20 cm mark
(3)	30 cm mark
(4)	40 cm mark

(Go on to the next page)

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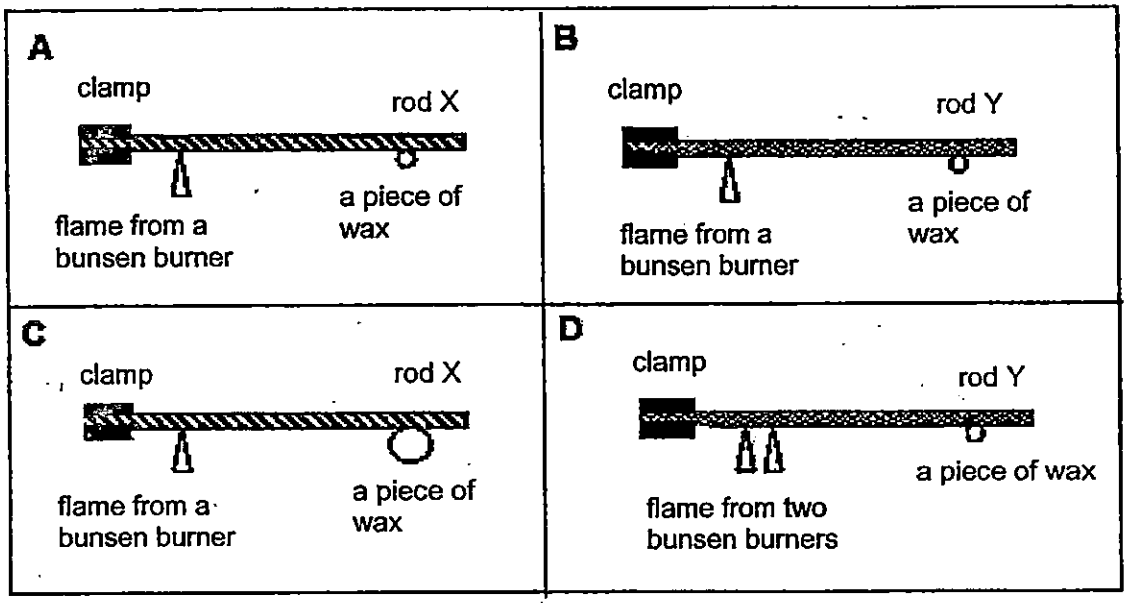
26 James wanted to find out how the material of a rod affected the time taken to melt a piece of wax.



Which two set-ups should James use to conduct his experiment in order to ensure a fair test?

(1) A and B

(2) A and C

(3) B and C

(4) C and D

(Go on to the next page)

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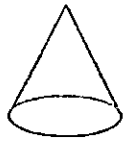
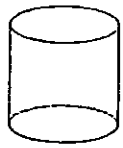
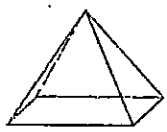
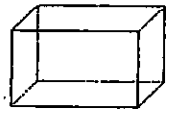
27. Sameel placed an object in front of a light source in a dark room. He observed the following shadow formed on the screen.

Which one of the following objects could not have cast the shadow above?

(1) 	(2) 
(3) 	(4) 

(Go on to the next page)

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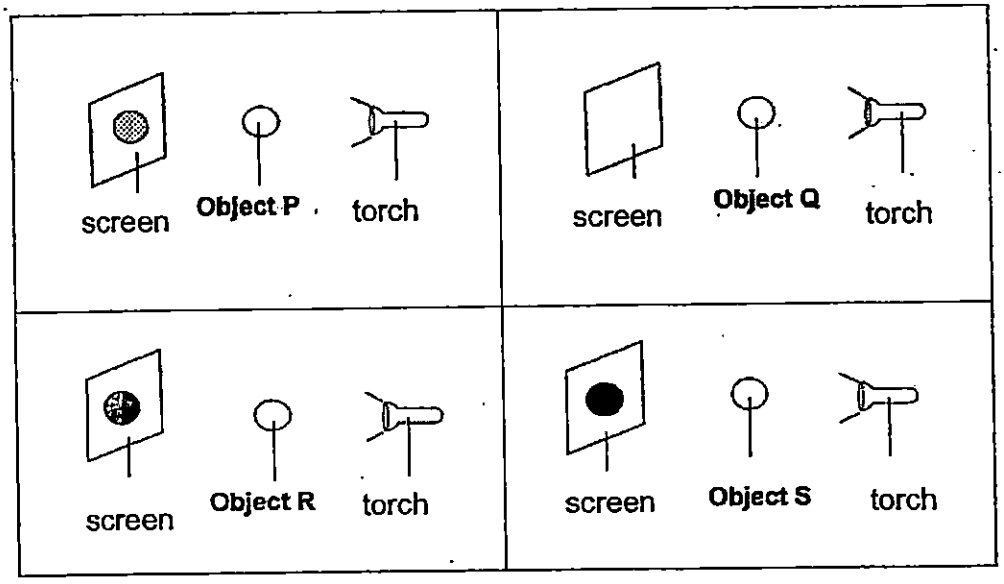
Study the diagrams below and use them to answer questions **28** and **29**.

Four identical torches were shone at four different objects, **P**, **Q**, **R** and **S**, as shown in the diagrams below. The objects were made of different materials and their shadows were cast on similar screens.



28 Which one of the following could objects **P**, **Q**, **R** and **S** be?

	P	Q	R	S
(1)	Mirror	Wood	Clear Glass	Tracing Paper
(2)	Tracing Paper	Mirror	Wood	Clear Plastic
(3)	Clear Glass	Frosted glass	Mirror	Wood
(4)	Frosted glass	Clear Glass	Wood	Mirror

29 Which one of the following variables has been changed in this experiment?

(1) The brightness of the torch

(2) The size of the screen used

(3) The material used to make the objects

(4) The distance between the object and the torch

(Go on to the next page)

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30 A datalogger connected to a light sensor was placed on a table facing the window. The table below shows how the intensity of light changed with time.

Time (minutes)	Intensity of light (units)
0	250
1	252
2	255
3	258
4	689

Which of the following statements is/are possible explanation(s) for the sudden change in light intensity after three minutes?

A Sunlight entered the room.

B A light source was turned on.

C A light source was turned off.

D The curtains were fully closed.

(1) A and B only

(2) A and C only

(3) B and C only

(4) B and D only

END OF BOOKLET A

Please go on to Booklet B.

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Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2015
SCIENCE
PRIMARY FOUR
BOOKLET B

Name: _____ **Class: Primary 4** _____

Date: 29 October 2015 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 12 printed pages including this cover page.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions in this booklet.

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

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For questions 31 to 44, write your answers in the spaces provided in this booklet.
The number of marks available is shown in the brackets [ ] at the end of each question or part question.
(40 marks)

31(a) Adam conducted an experiment to find out which material, P, Q, R or S, was the poorest conductor of heat. He poured boiling water into four cups of the same size but made from material P, Q, R or S. He then recorded the time taken for the boiling water to reach 40^0C. The results were shown below.

Material	Time taken for boiling water to reach 40^0C
P	22 min
Q	47 min
R	25 min
S	38 min

(i) Based on the results in the table above, which material should Adam use to make a container to keep his water warm for the longest time? [1]

_____

(ii) Using the information from the table above, explain your answer to (i) [1]

_____

(iii) Based on the table above, state the <u>two</u> measuring instruments used in the experiment. [1]

_____ and _____

(Go on to the next page)

Score	/ 3

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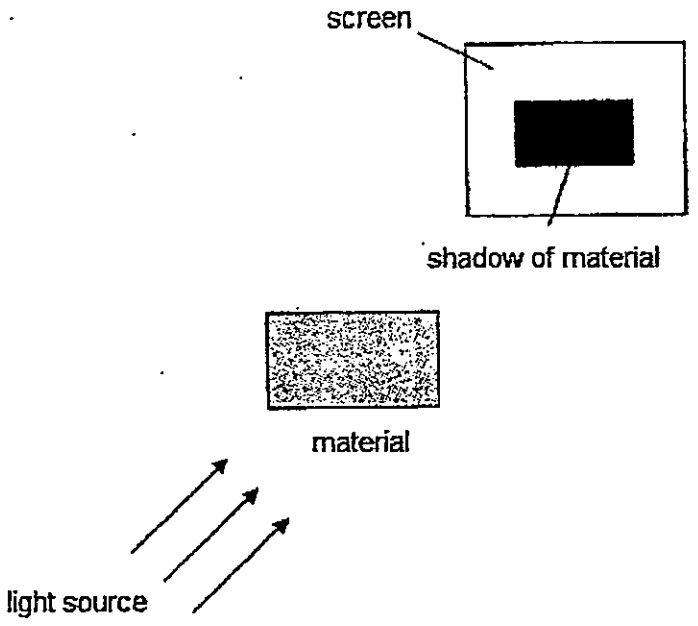
(b) Mary wanted to make a new set of curtains for her living room to reduce the amount of sunlight entering the room. Materials W, X, and Y, were chosen and tested to determine the type of shadow that each material created. She conducted the experiment and the results are shown in the table below.



Material	Shadow of material observed on screen
W	A very dark shadow was formed
X	No shadow was formed
Y	A light shadow was formed

(i) Which material, W, X or Y, should Mary use to make her curtains? [1]

_____

(ii) Based on the information given in the table above, explain your answer to **(i)**. [1]

_____

(Go on to the next page)

Score	/ 2

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32 Jasmine grouped some things as shown in the table below.

Group F	Group G
Lion	Stone
Ant	Tissue
Mushroom	Pen

What are the suitable headings for groups **F** and **G**? [2]

Group F: _____

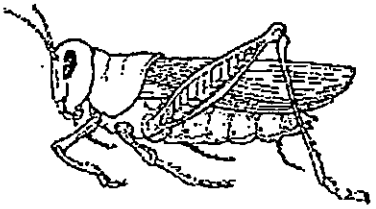
Group G: _____

33 Fill in the blanks in the table below with names of broad groups of living things. [2]

Group of living things	Characteristics
	Body covered with feathers
	Body divided into three body parts

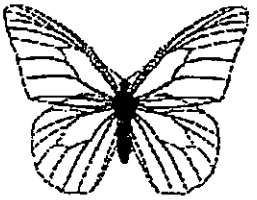
34 Classify the following animals according to the number of stages in their life cycle. [2]

chicken



grasshopper

mosquito



butterfly

Has three stages in its life cycle	Has four stages in its life cycle

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Score	/ 6

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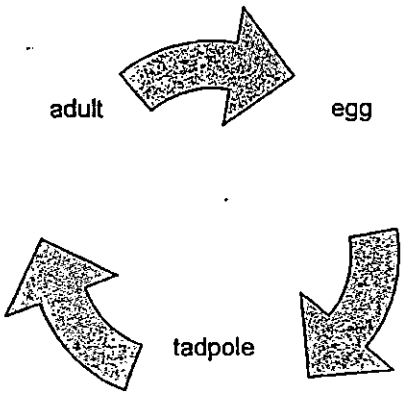
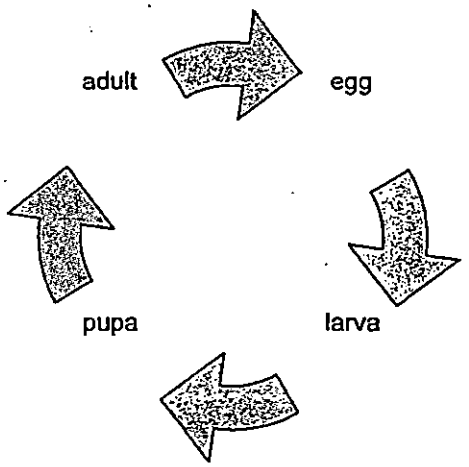
35 The diagram below shows the life cycles of a frog and a housefly.



Life Cycle of a Frog



Life Cycle of a Housefly

(a) Based on the diagrams above, state one similarity and one difference between the **life cycle** of a frog and a housefly. [2]

(i) Similarity: _____

_____

(ii) Difference: _____

_____

(b) In what way is the tadpole of a frog different from the adult frog? [1]

_____

_____

(c) At which stage of the life cycle of a housefly does its young stop feeding? [1]

_____

(Go on to the next page)

Score	/ 4

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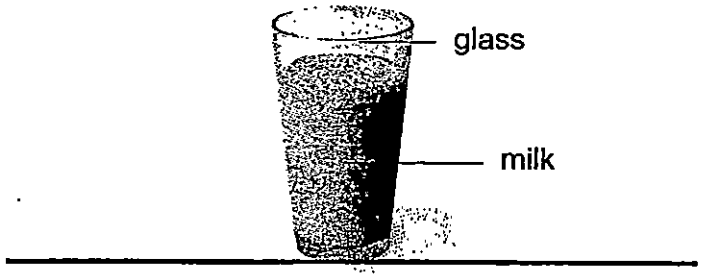
36 The diagram below shows a glass of milk.

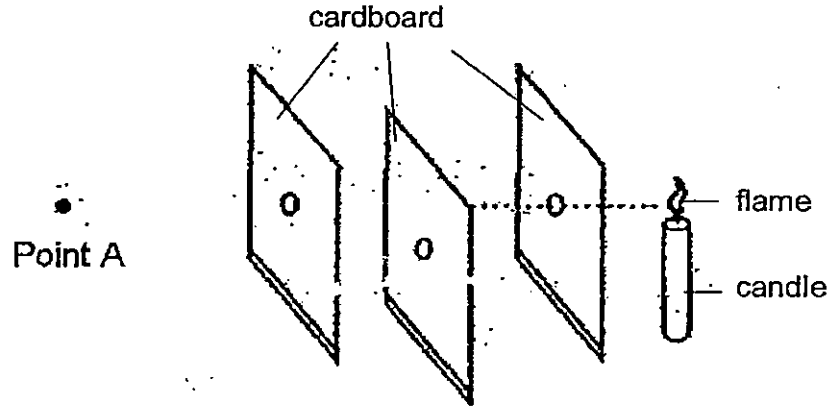


Complete the sentences below to state if the parts labelled are solid, liquid or gas.

(a) The glass is a _____ [1]

(b) Milk is _____ [1]

37 Wilfred arranged three cardboards as shown in the diagram below.



(a) Will Wilfred be able to see the candle flame from Point A? [1]

_____

(b) Explain your answer in **(a)**. [1]

_____

(Go on to the next page)

Score	/ 4

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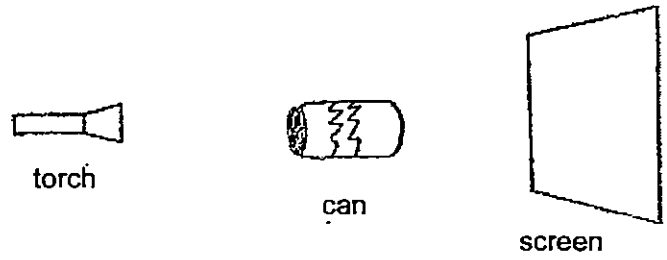
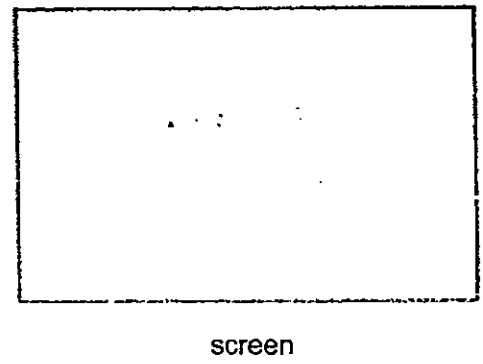
38 Penny shone a torch on a can and a shadow was formed on a screen.



(a) A shadow is formed when light is _____ by an object. [1]

(b) Using a pencil, draw the shadow of the can that is formed on the screen. [1]



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Score	/ 2

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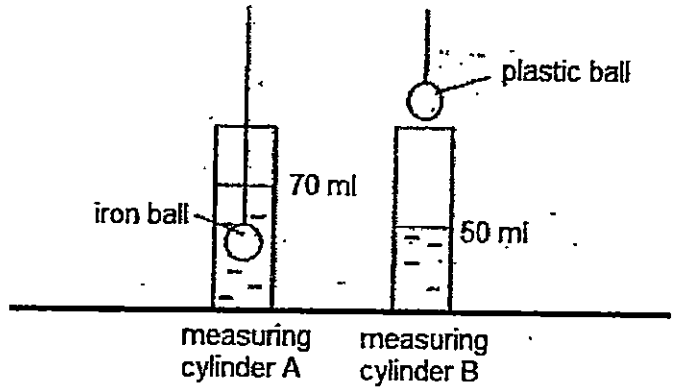
39 Ali poured 50 ml of water each into measuring cylinders A and B. He lowered an iron ball into measuring cylinder A until it is fully submerged as shown in the diagram below. He repeated the same steps to lower a plastic ball into measuring cylinder B. Both the iron and plastic balls have the same shape and size.



He recorded the water levels in the table below.

Measuring cylinder	Water level (ml) before the ball was lowered into the measuring cylinder	Water level (ml) after the ball was lowered into the measuring cylinder
A	50	70
B	50	?

(a) What was the volume of the iron ball? [1]

_____

(b) What would the total volume in measuring cylinder B be after the plastic ball was put inside? [1]

_____

(c) What does the above experiment show about the property of the metal and plastic balls? [1]

_____

_____

(Go on to the next page)

Score	/ 3

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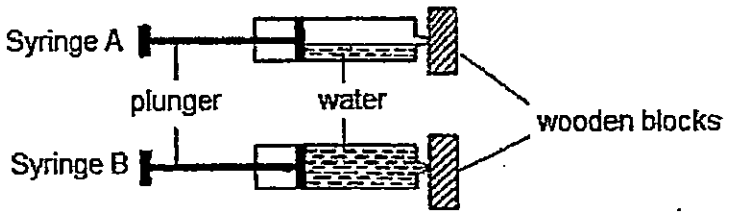
40 Study the two syringes, A and B, as shown below.



(a) In which one of the above syringes can the plunger be pushed in further? [1]

_____

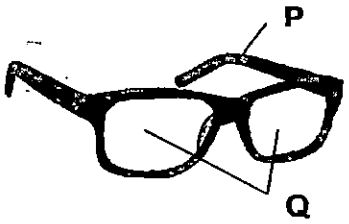
(b) Explain why the plunger of each syringe can or cannot be pushed in further. [2]

_____

_____

_____

41 The diagram below shows a pair of spectacles.



(a) State two materials that are suitable in making parts P and Q. [2]

(i) Part P: _____

(ii) Part Q: _____

(b) Explain your answers in **(a)(i)** and **(a)(ii)**. [2]

(a)(i): _____

(a)(ii): _____

(Go on to the next page)

Score	/ 7

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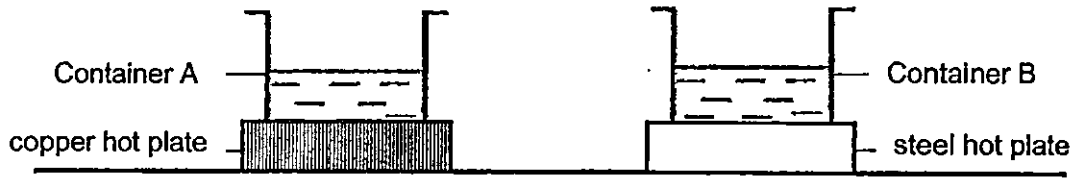
42 In an experiment, Jamie poured the same amount of water into two similar containers, A and B. The two containers were placed on two similar-sized hot plates made of different metals respectively as shown below.



With the same amount of heat applied to both hot plates, Jamie measured the temperature of water in both containers at two-minute intervals. She recorded her results as shown in the table below.

Duration (min)	Temperature of water in Container A (°C)	Temperature of water in Container B (°C)
0	26	26
2	28	30
4	40	?
6	56	70
8	76	88

(a) Predict the possible temperature of water observed in Container B at the 4th minute. [1]

_____

(b) Which metal hot plate, copper or steel, is a better conductor of heat? [1]

_____

(c) Based on the results in the table above, explain your answer in **(b)**. [1]

_____

_____

(Go on to the next page)

Score	/ 3

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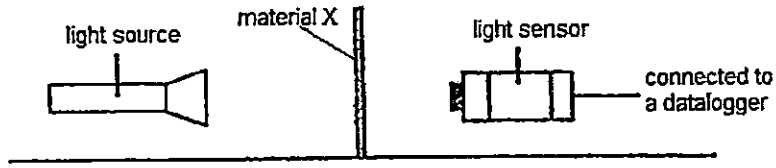
43 Ganesh carried out an investigation as shown in the diagram below. He placed a sheet of material X between a light source and a light sensor. The amount of light that passed through material X was detected and recorded by the datalogger.



Ganesh repeated his experiment with different number of sheets of material X and recorded the amount of light detected in the table below.

Number of sheets	Amount of light detected by the light sensor (units)
1	2050
5	1420
7	780
9	0

(a) What was the aim of Ganesh's experiment? [1]

_____

(b) Put a tick (✔) in the appropriate boxes to indicate which variable(s) to change or keep the same to ensure a fair test in the experiment above. [1]

Variable	Change	Keep the same
Position of the torch		
Position of the light sensor		
Number of sheets of material X		

(c) Based on the results shown in the table above, what is the relationship between the number of sheets of material X and the amount of light detected by the light sensor? [1]

_____

_____

(Go on to the next page)

Score	/ 3

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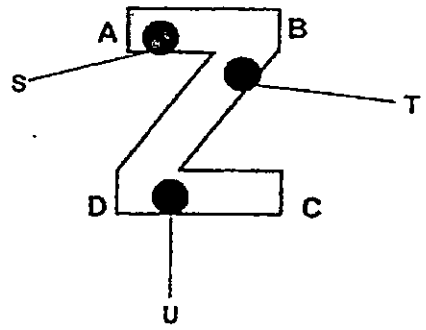
44 S, T, and U are pieces of wax of similar size. They were stuck on a piece of wire shaped like the letter "Z".



When the wire was heated at a certain point, the pieces of wax melted in the order of T, S and U.

(a) At which point, A, B or C, was the wire heated? [1]

_____

(b) Explain your answer in (a). [1]

_____

_____

(c) If the wire was heated at point D instead, predict the order in which the pieces of wax would fall [1]

_____

END OF BOOKLET B/ PAPER

Please check all your answers carefully.

Score	/ 3

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : ANGLO-CHINESE SCHOOL (PRIMARY)
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
2	4	2	3	3	4	4	3	4	3
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
2	4	3	4	3	2	2	3	4	1
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	1	3	2	1	1	1	4	3	1

Q31a (i) Material Q
Q31a (ii) It took the longest time to reach 40°C, so it is the best material.
Q31a (iii) Stopwatch and thermometer

Q31b. (i) Material Y.
Q31b. (ii) The material was translucent allowing some light to pass through.

Q32. Group F: Living things Group G: Non – living things

Q33. Birds / Insects

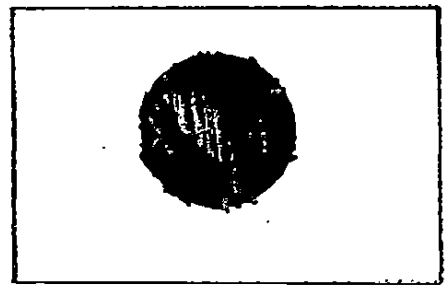
Q34. Has three stages in its life cycle - Chicken / Grasshopper
Q34. Has four stages in its life cycle – Mosquito / Butterfly

Q35a (i) Both life cycles start with the egg stage.
Q35a (ii) The life cycle of a housefly has 4 stages whereas the life cycle of a frog has 3 cycles.
Q35b. The tadpole breathes through its gills while the adult frog breathes through its skin.
Q35c. The pupa stage.

Q36a. solid Q36b. liquid Q37a. NO

Q37b. Light travels in a straight line, and the light was blocked by the middle piece of opaque cardboard.

Q38a. blocked Q38b. **SEE PICTURE**



screen

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Q39a. $20cm^3$
Q39b. 70ml
Q39c. They are solids, and they have definite volume.

Q40a. Syringe A.
Q40b. Air can be compressed, and there was air in syringe A, allowing it to be pushed in.

Q41a. Part P: Plastic Q41a Part Q: Glass
Q41b (i) It is light, so it is not heavy.
Q41b (ii) Glass is transparent, allowing all the light to pass through, allowing the user to see things clearly.

Q42a. 50°C
Q42b. The steel hot plate
Q42c. The temperature of water in container A is lower than the temperature of water in Container B in 8 minutes.

Q43a. The aim was to find out if the number of sheets affect the amount of light detected by the light sensor.

Q43b. Position of the torch – keep the same
Q43b. Position of the light sensor – keep the same
Q43b. Number of sheets of material X – change

Q43c. The higher the number of sheets of material X, the les light will be detected by the light sensor.

Q44a. Point B.
Q44b. Wax T melted first, followed by S and finally U. Point B was where the wire was heated.
Q44c. U,T,S

THE END

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Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 2 (2015)

PRIMARY 4

SCIENCE

BOOKLET A

dnesday **4 November 2015** **1 hr 30 min**

me: _____ ( ) Class: 4.( )

ITRUCTIONS TO PUPILS

Do not turn over the pages until you are told to do so.

Follow all instructions carefully.

There are 25 questions in this booklet.

Answer ALL questions.

Shade your answers in the Optical Answer Sheet (OAS) provided.

is question paper consists of 16 printed pages (inclusive of cover page).

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Booklet A (50 marks)

For each question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. (25 x 2 marks)

1. Which one of the following statements is true for all insects?

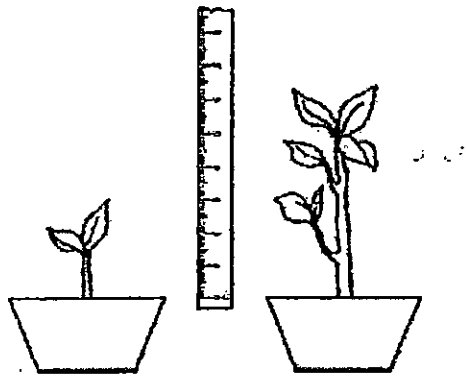
   (1) They have tails.

   (2) They have wings.

   (3) They have six legs.

   (4) They have two body parts.

2. Sarah found a plant in the garden and measured its height. After two weeks, she measured its height again. From her observation, Sarah concluded that the plant is a living thing because it can _____.



   (1) grow

   (2) breathe

   (3) respond

   (4) reproduce

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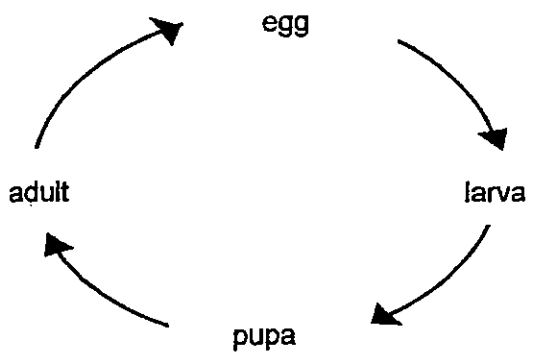
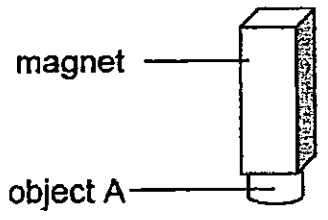
3. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle as shown above?

(1) Frog
(2) Chicken
(3) Mosquito
(4) Grasshopper

4. Object A was attracted to a magnet, as shown in the figure below.



Object A is made of _____ .

(1) steel
(2) wood
(3) rubber
(4) plastic

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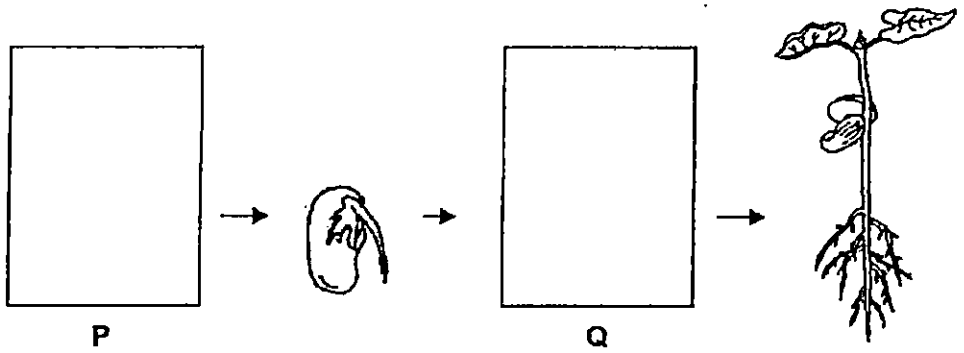
5. The diagram below shows the growth of a young plant.



Which one of the following shows P and Q?

	P	Q
(1)		
(2)		
(3)		
(4)		

6. Which one of the following actions does **not** show the characteristic of a living thing?

(1) A pole blown by the wind

(2) Mosquito sucking blood from a man

(3) Woman standing under a tree for shade

(4) Creeper plant growing around a wooden stick

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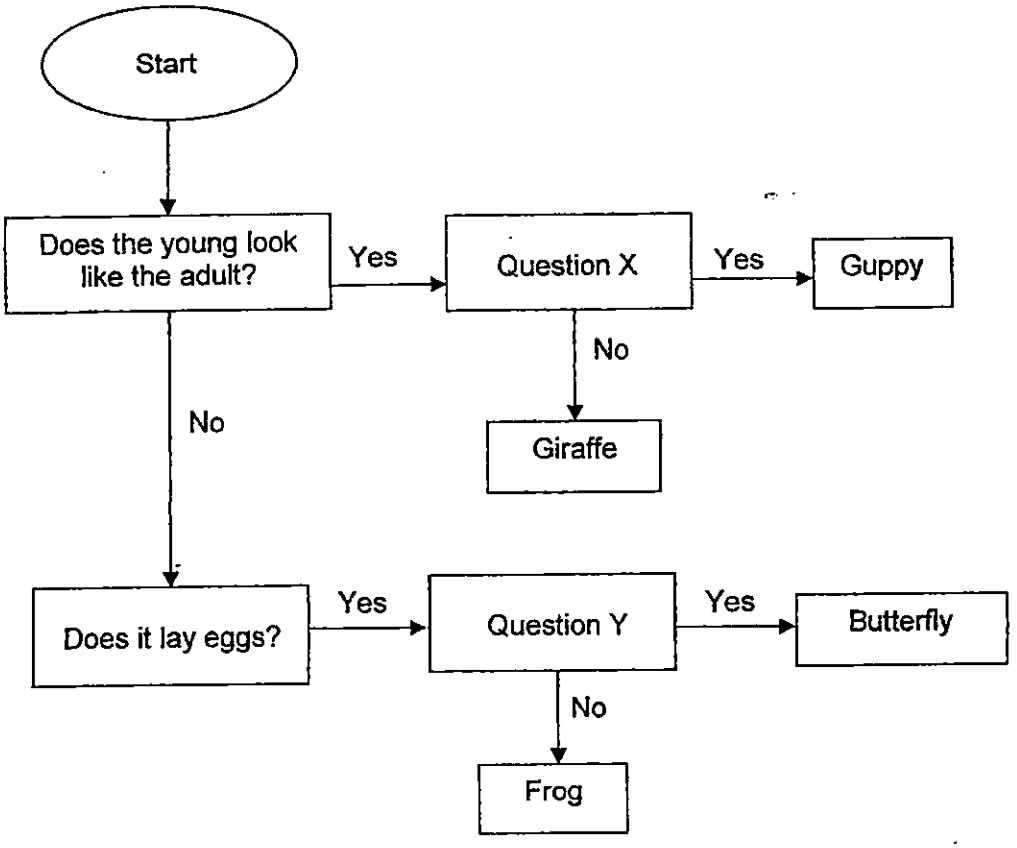
7. Which of the following is correct?

	Animals that can crawl	Animals that can fly
(1)	beetle, lizard, turtle	mosquito, eagle, bat
(2)	mosquito, eagle, bat	beetle, lizard, turtle
(3)	ant, caterpillar, crocodile	pigeon, parrot, penguin
(4)	pigeon, parrot, penguin	ant, caterpillar, crocodile

8. Four animals are grouped using the flow chart below.



Based on the information above, which one of the following best represent Questions X and Y?

	Question X	Question Y
(1)	Does it live in water?	Does it have 3-stage life cycle?
(2)	Does it live on land?	Does it have 3-stage life cycle?
(3)	Does it live in water?	Does it have 4-stage life cycle?
(4)	Does it live on land?	Does it have 4-stage life cycle?

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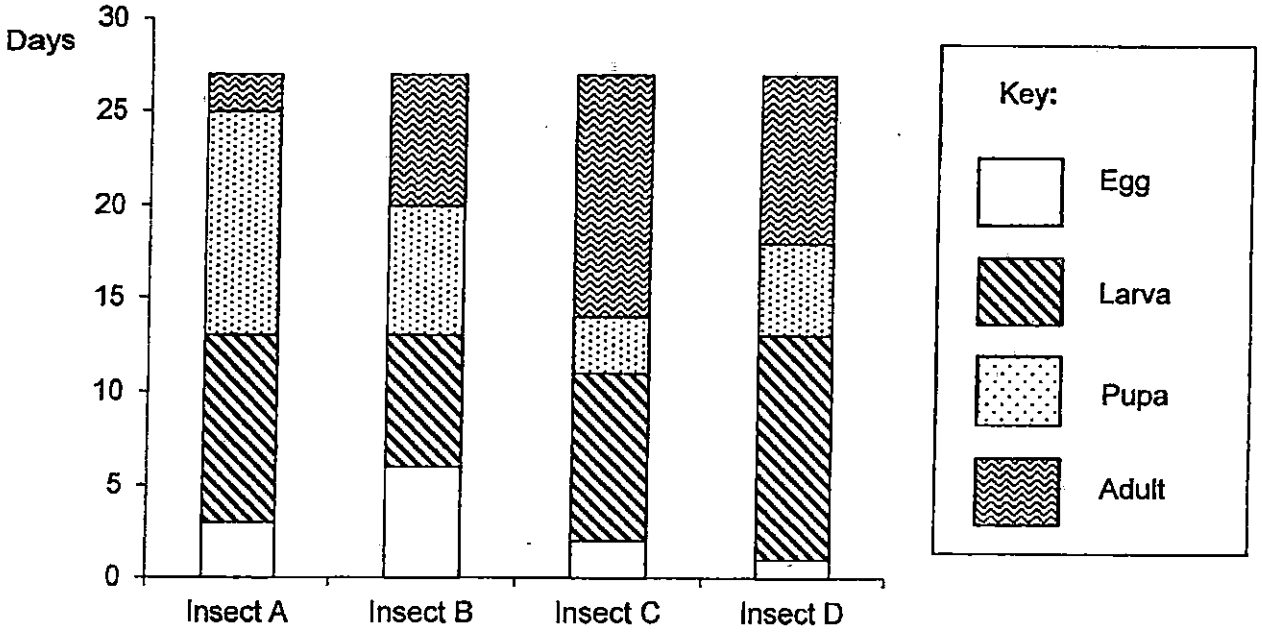
9. The graph below shows the number of days four insects, A, B, C and D were in the different stages of their life cycles. The eggs of the four insects were laid on the same day and they each have a 4-stage life cycle.



On which day are all four insects at the same stage in their life cycle?

(1) Day 5

(2) Day 10

(3) Day 15

(4) Day 20

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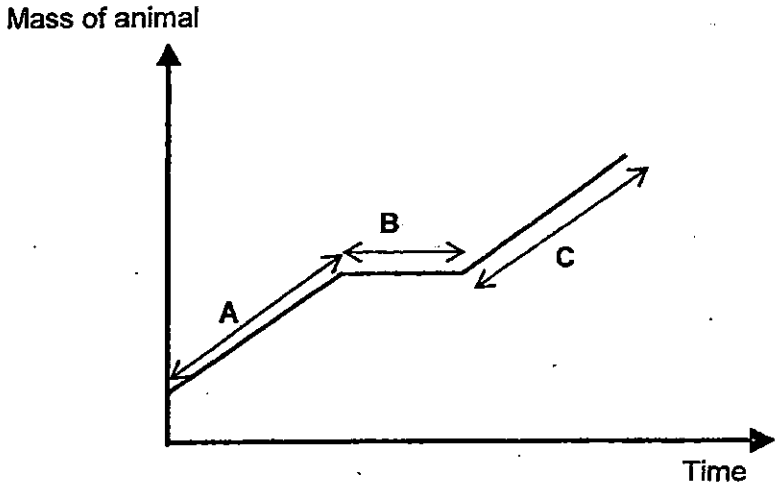
10. The graph below shows the changes in the mass of an animal during some of the different stages in its life cycle.



Which of the following stages could parts A, B and C represent?

	A	B	C
(1)	egg	nymph	adult
(2)	larva	pupa	adult
(3)	egg	larva	pupa
(4)	pupa	adult	larva

11. John listed the following statements about a germinating seed and an adult plant.

A Make their own food

B Get food from the seed leaves

C Take in water through the roots

Which of the following is true for both the germinating seed and the adult plant?

(1) C only

(2) A and B only

(3) A and C only

(4) B and C only

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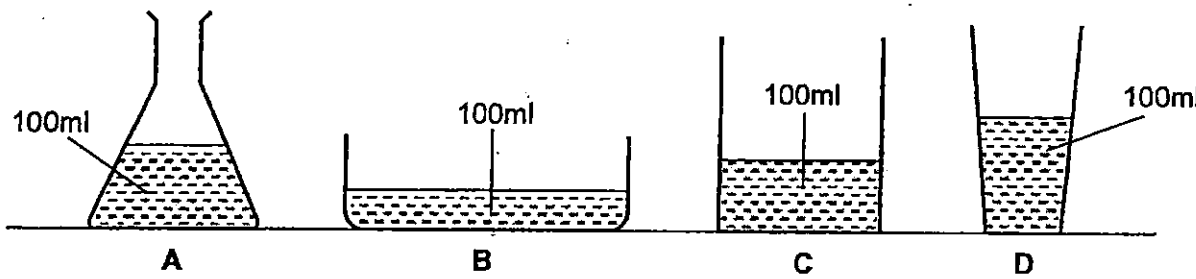
12. Susan poured 100ml of liquid into 4 different containers, A, B, C and D, of different shapes and sizes as shown below.



Based on the diagrams above, which of the following are properties of the liquid?

A Takes up space

B Can be compressed

C Has a definite shape

D Has a definite volume

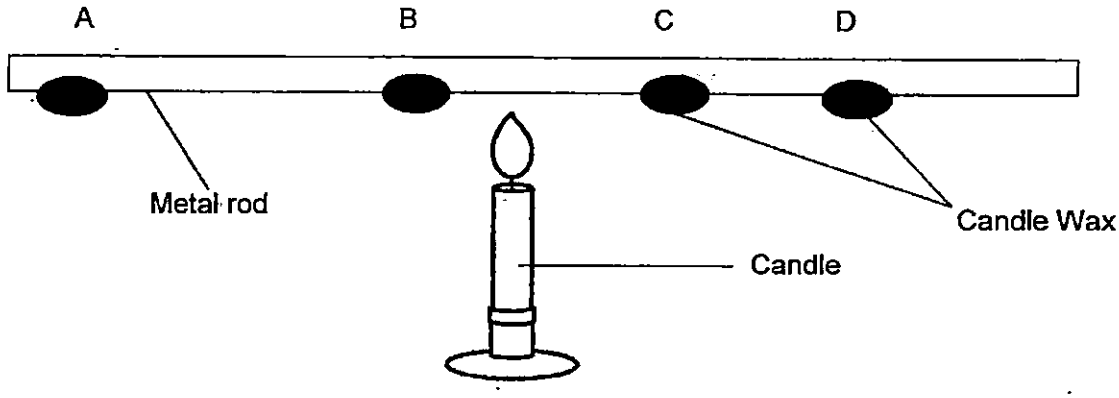
(1) A and B only

(2) A and D only

(3) B and D only

(4) C and D only

13. Jocelyn carried out the following experiment. She placed some candle wax at four positions, A, B, C and D, on a metal rod as shown below. She lighted a candle and observed the set-up for 20 minutes.



After 20 minutes, Jocelyn observed that the candle wax at all four positions had completely melted. In which order would she observe the candle wax melting?

(1) B → C → A → D

(2) B → C → D → A

(3) C → D → B → A

(4) C → D → A → B

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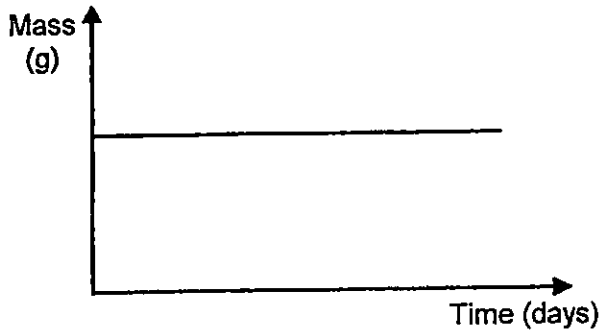
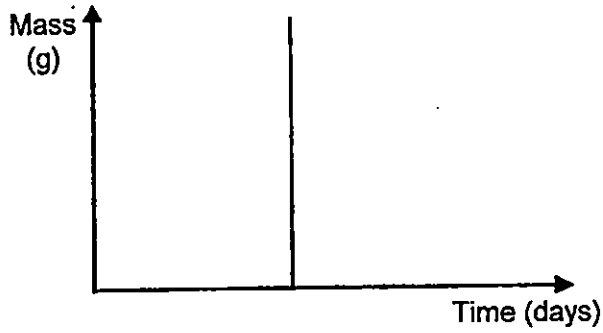
14. Which one of the following graphs correctly shows the change in the mass of the seed leaf as a seed germinates?

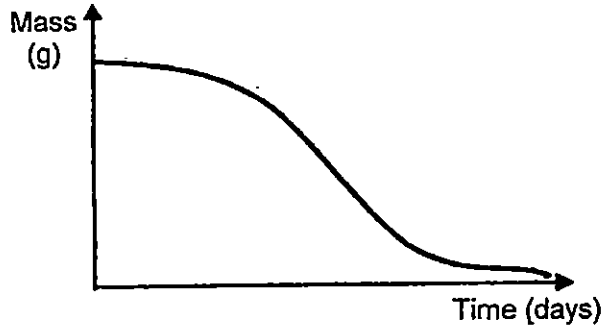
(1)



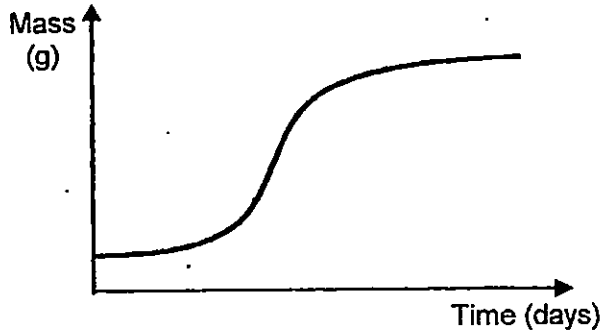
(2)



(3)



(4)



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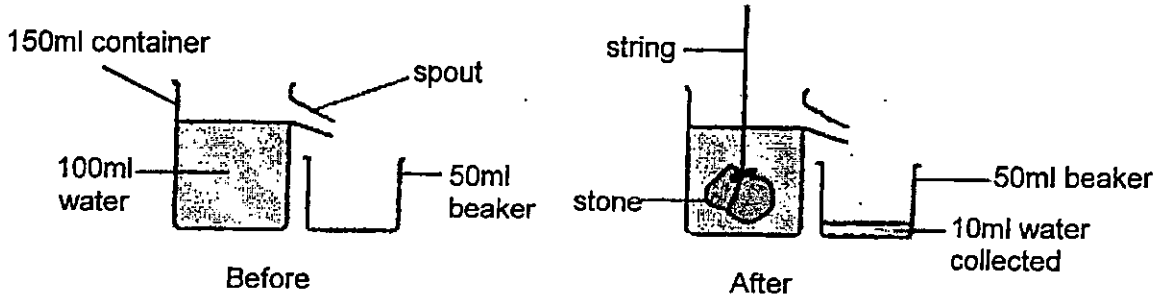
15. Joe carried out an experiment as shown in the diagram below. He filled a 150ml container with 100ml of water till the brim of the spout. He then lowered a stone into the container and some water flowed out of the spout and was collected in the 50ml beaker.



What is the volume of the stone from the experiment above?

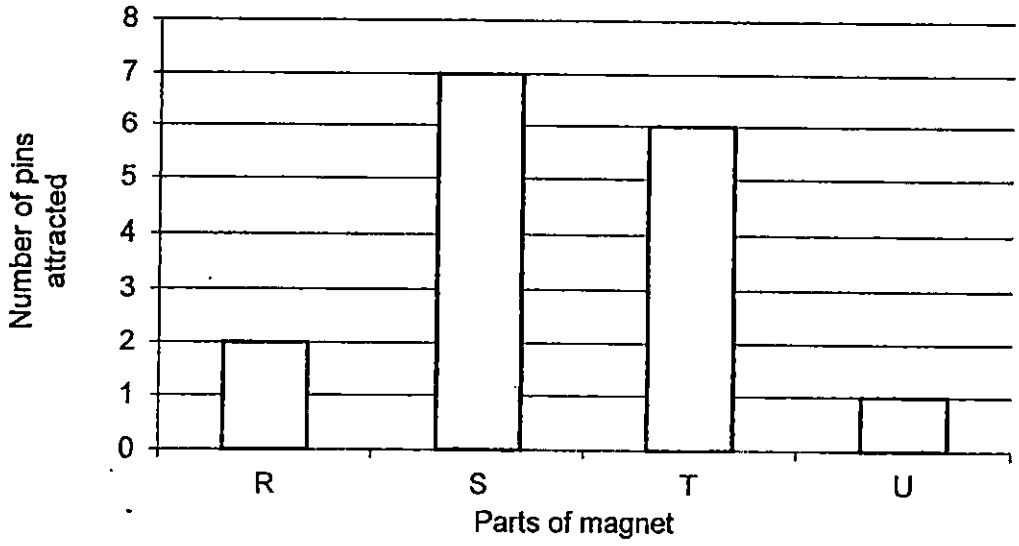
(1) 10ml

(2) 50ml

(3) 100ml

(4) 150ml

16. Steward lowered a magnet into a tray of pins and then counted the number of pins attracted to the magnet. He repeated the experiment with the same magnet but each time he used a different part of the magnet to face the tray of pins.
He then plotted his results in a bar graph below.



Based on his experiment, which of the parts, R, S, T and U, are most likely the poles of the magnet?

(1) R and S

(2) T and U

(3) R and U

(4) S and T

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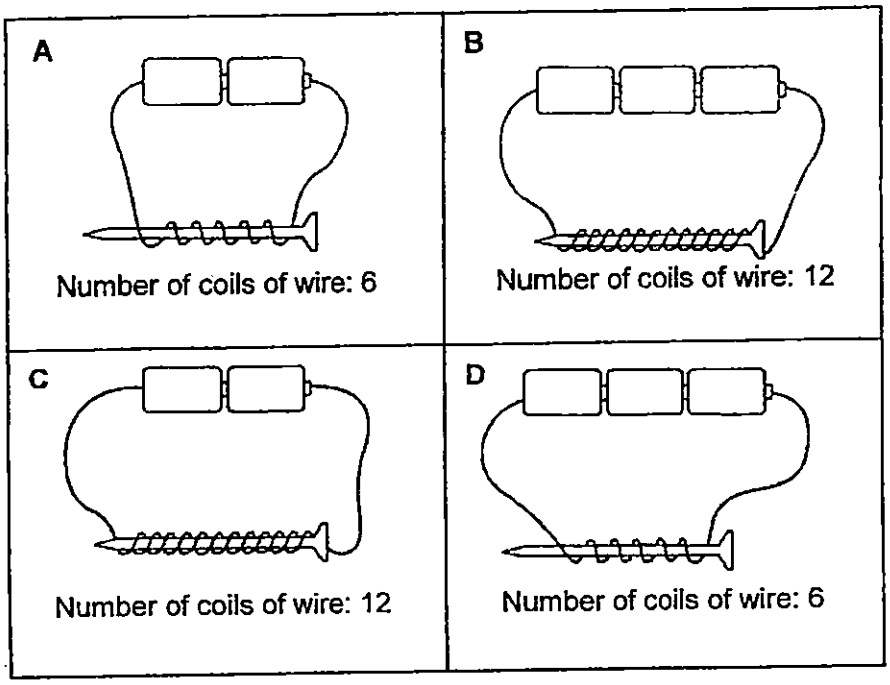
17. Sarah wants to find out if the number of coils of wire affects the strength of an electromagnet. Which two set-ups shown below should she prepare to conduct a fair test?



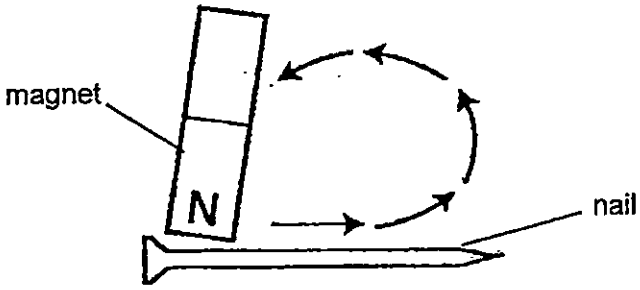
(1) A and B

(2) A and D

(3) B and C

(4) B and D

18. Angel strokes a nail 20 times with a magnet as shown in the diagram below.



She then brought it near a pile of iron pins and observed that the nail did not attract any of the iron pins. Which one of the following could explain her observation?

(1) The nail had become a temporary magnet.

(2) The nail was stroked in the wrong direction.

(3) The nail is made of a non-magnetic material.

(4) The magnet used to stroke the nail is too strong.

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19. Diagram 1 shows a torch shining light on 3 objects M, N, and O which are made of different materials. The objects come in different shapes and are placed at different distances from the torch. They are being arranged in a straight line one after another. Diagram 1 shows the side view of the set-up.

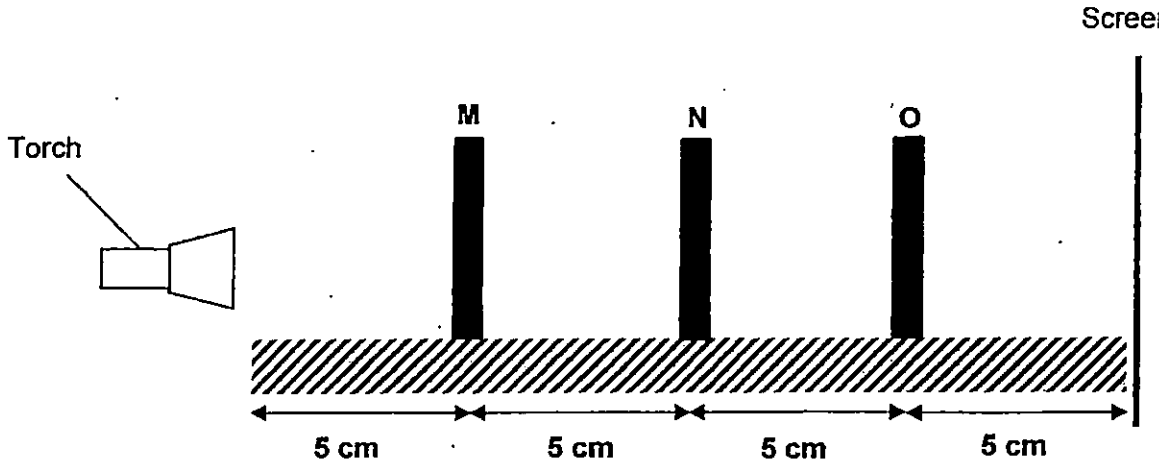


Diagram 1

Diagram 2 shows the front view of the 3 objects.

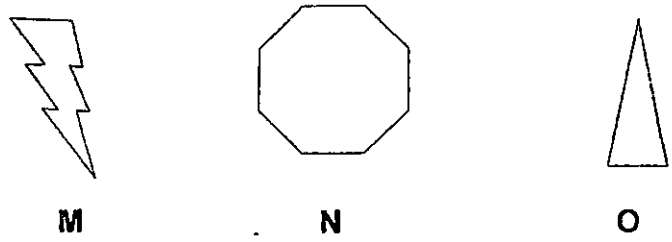


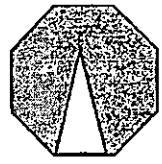
Diagram 2

The table below shows the material that each shape is made of.

Shape	Material
M	Transparent
N	Translucent
O	Opaque

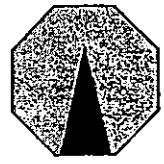
Which of the following correctly represents the shadow that was seen on the screen?

(1)



(2)

(3)



(4)

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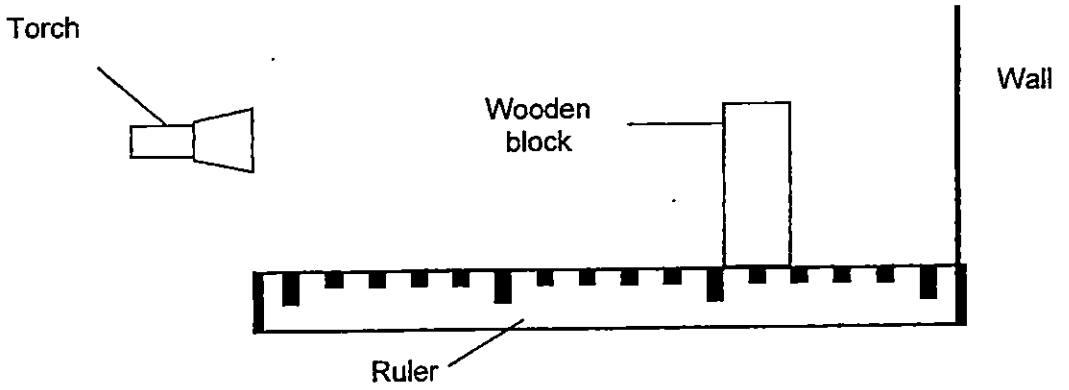
20. Hairi carried out an experiment to find out how the distance between the wall and the torch affects the height of the shadow formed on the wall.

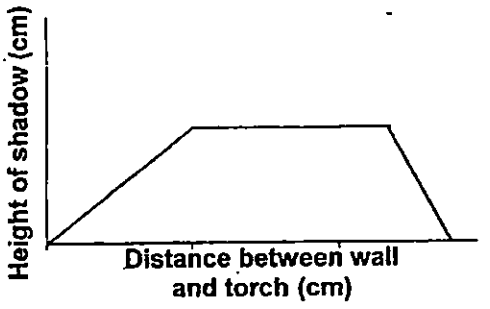


The table below contains the information he collected. Then, he used this information to draw a line graph.

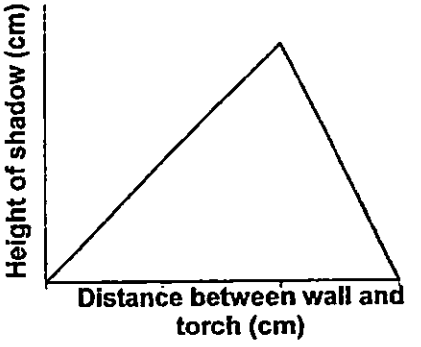
Distance between wall and torch (cm)	Distance between wall and wooden block (cm)	Height of shadow on the wall (cm)
10	5	18
15	5	16
20	5	12

Which one of the following line graphs best represents his results?

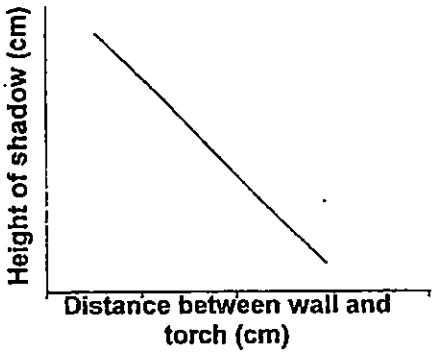
(1)



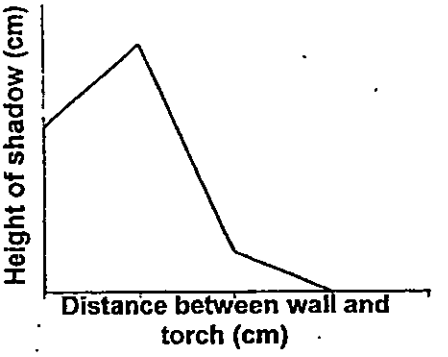
(2)



(3)



(4)



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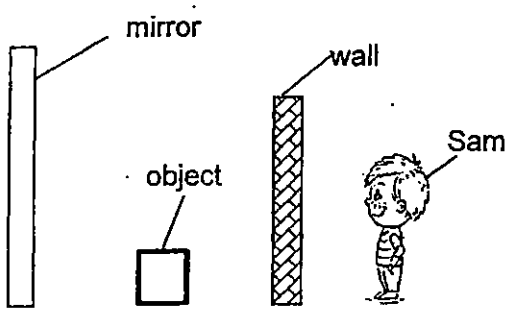
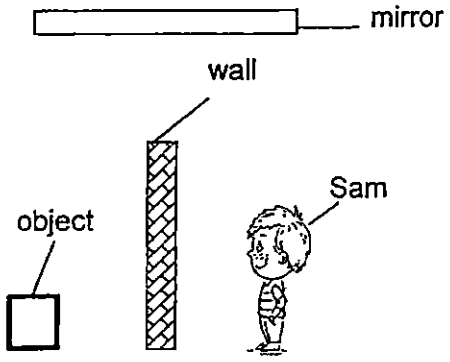
21. Sam wants to see the object that his sister had hidden behind a wall. Which of the following mirror arrangement would enable Sam to see the object?

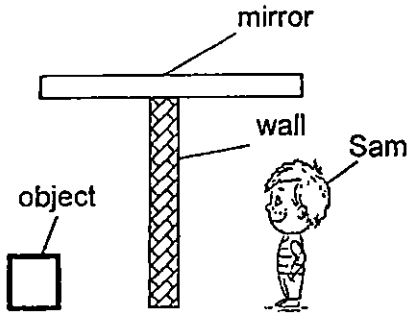
(1)



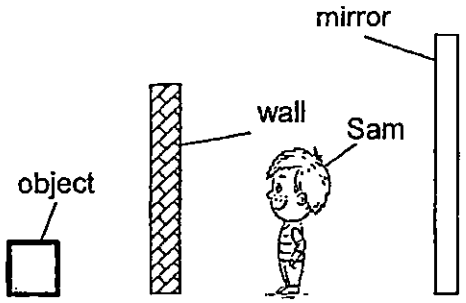
(2)



(3)



(4)



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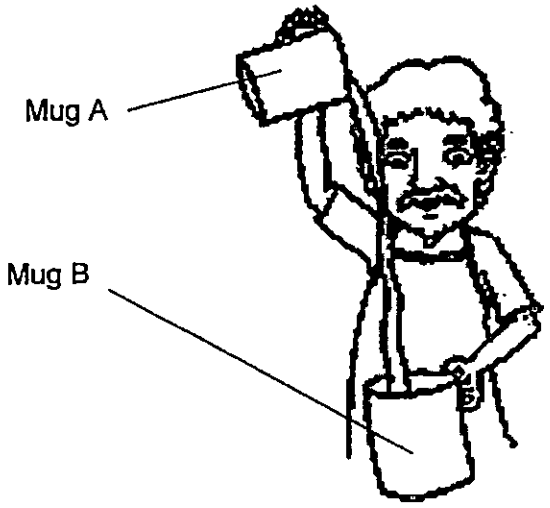
22. Raju saw a stall holder pour hot tea from Mug A to Mug B. Then he poured the hot tea from Mug B to Mug A. He repeated his actions a few times.



The purpose of transferring the hot tea from Mug A to Mug B is to _____.

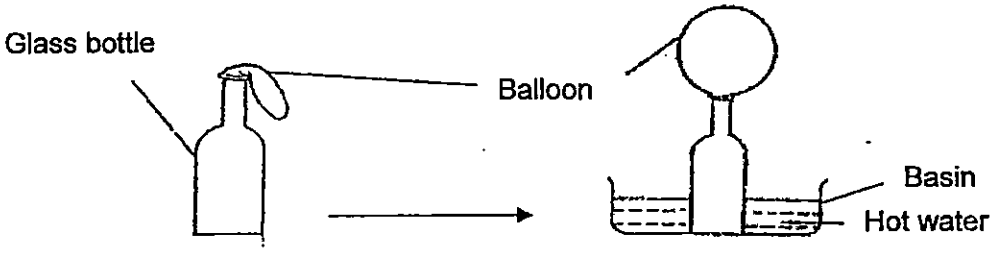
(1) transfer heat from the hot tea to his hand

(2) increase the amount of hot tea in the mug

(3) decrease the amount of hot tea in the mug

(4) transfer heat from the hot tea to the surrounding air

23. A balloon is placed over the mouth of a glass bottle. When the glass bottle is placed in a basin of hot water, it becomes inflated as shown in the diagram below.



Which one of the following statements explains why the balloon is inflated?

(1) The balloon loses heat to the hot water.

(2) The hot water conducts heat away from the balloon.

(3) Hot air in the glass bottle expands and inflates the balloon.

(4) Hot air in the glass bottle contracts and inflates the balloon.

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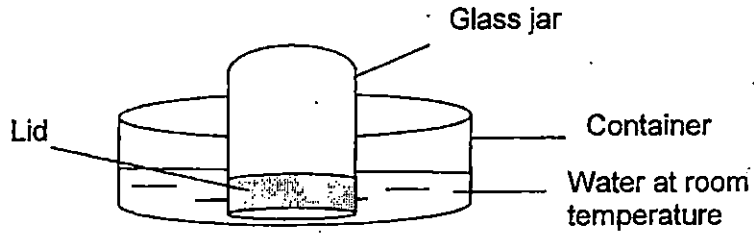
24. Cindy tried opening the tight lid of a glass jar by putting it into a container filled with water. After a while, she still wasn't able to open the lid. What should she do to open the lid of the glass jar?



A She should use a bigger container.

B She should remove some water from the container.

C She should replace the water at room temperature with hot water.

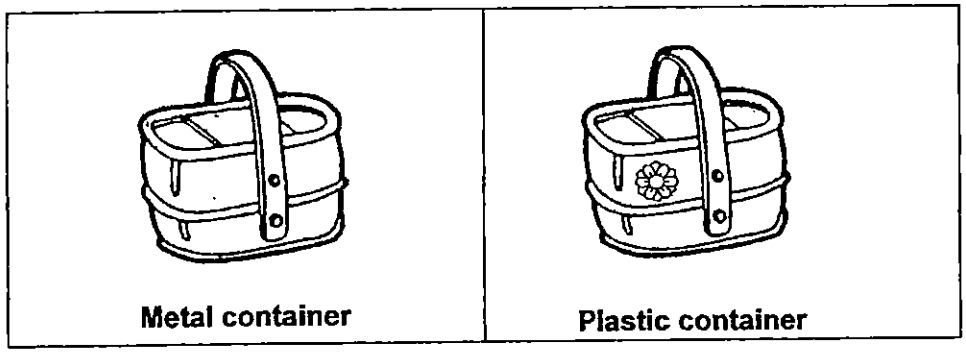
(1) A only

(2) C only

(3) B and C only

(4) A and B only

25. Mrs Lim wanted to pack some hot soup for her husband to bring to work. However, she is confused which material is more suitable to keep the soup warm for a longer period of time.



Which explanation below would help her to decide which container to pack the hot soup in?

(1) Metal is lighter than plastic.

(2) Heat can easily pass through metal but not plastic.

(3) The plastic container would float on water but the metal container would sink.

(4) The design of the plastic container is more attractive than the metal container.

End of Booklet A

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Anglo-Chinese School (Junior)

SEMESTRAL ASSESSMENT 2 (2015)

PRIMARY 4

SCIENCE

BOOKLET B

Wednesday **4 November 2015** **1 hr 30 min**

Name: _____ ( ) Class: 4.( ) Parent's Signature: _____

INSTRUCTIONS TO PUPILS

- Do not turn over the pages until you are told to do so.
- Follow all instructions carefully.
- There are 14 questions in this booklet.
- Answer ALL questions.
- The marks are given in the brackets [ ] at the end of each question or part question.

Booklet	Possible Marks	Marks Obtained
A	50	
B	40	
PBA	10	
Total	100	

This question paper consists of 15 printed pages (inclusive of cover page).

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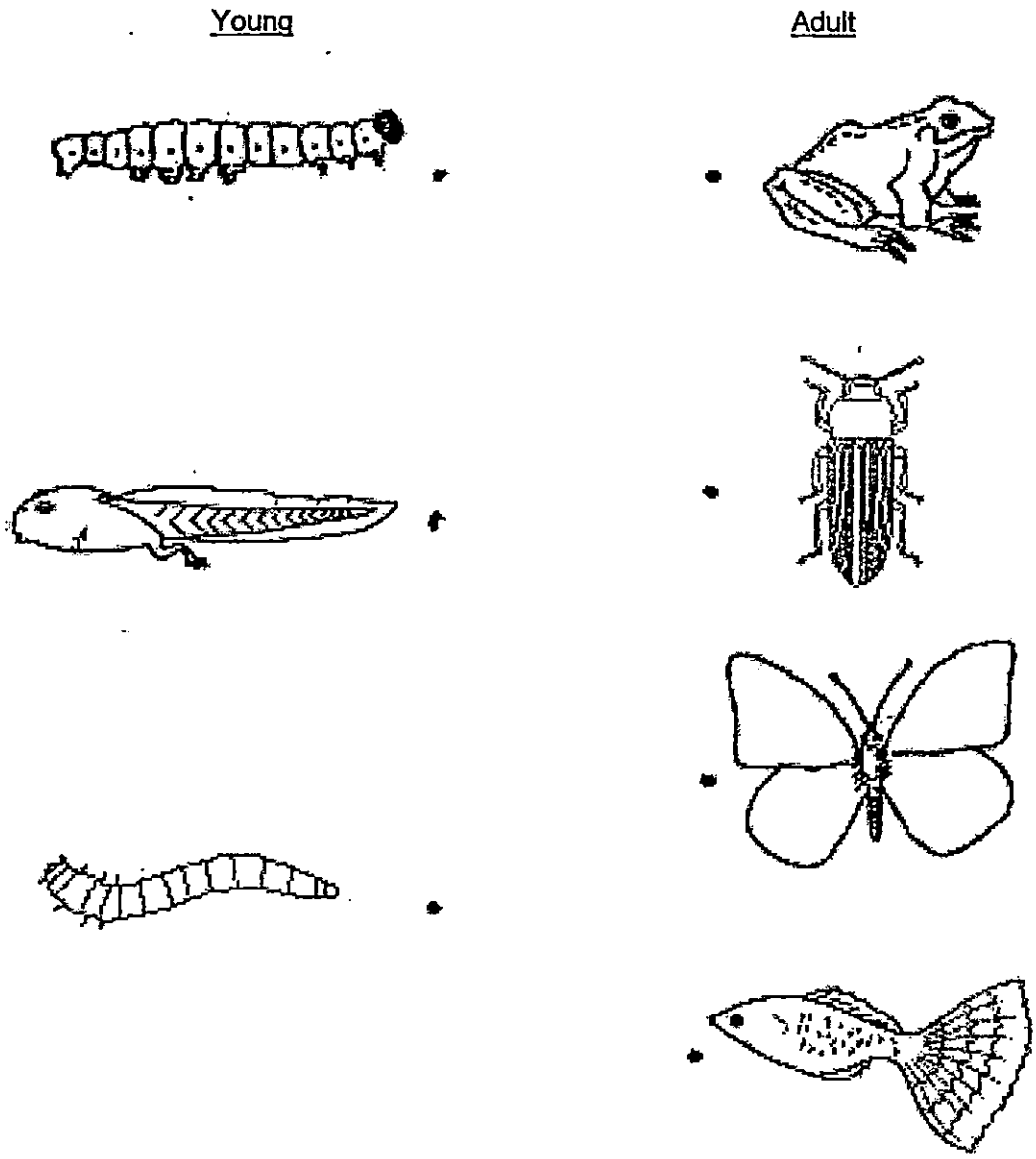
Booklet B (40 marks)

For questions 26 to 39, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

26. The diagram below shows the young and adult of some organisms.
Draw lines to match the young with the correct adult. [3]



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SCORE	/ 3

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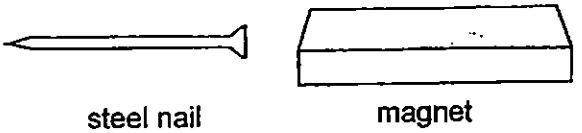
27. Paul placed a magnet near a steel nail as shown below. The steel nail moved towards the magnet.



(a) Fill in the blank with a suitable word.

[1]

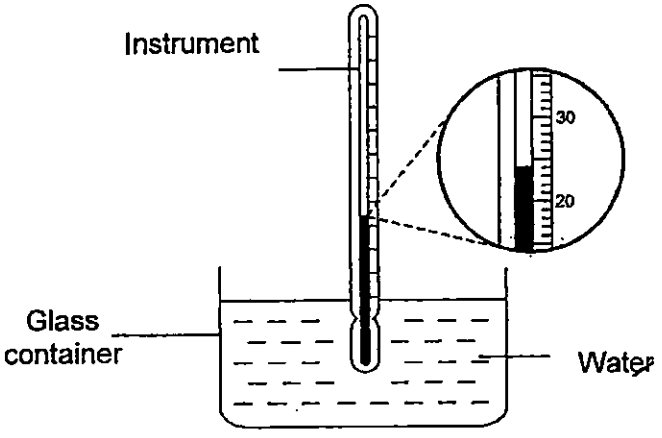
The magnet exerted a _____ on the steel nail.

(b) Choose the correct word from the box to fill in the blank below.

hard	magnetic	strong

Paul's observation shows that steel is a _____ material. [1]

28. Jane used an instrument to measure the temperature of water in a glass container.



(a) What is the instrument called? _____ [1]

(b) What is the temperature of the water in the glass? _____ [1]

(Go on to the next page)

SCORE	/ 4

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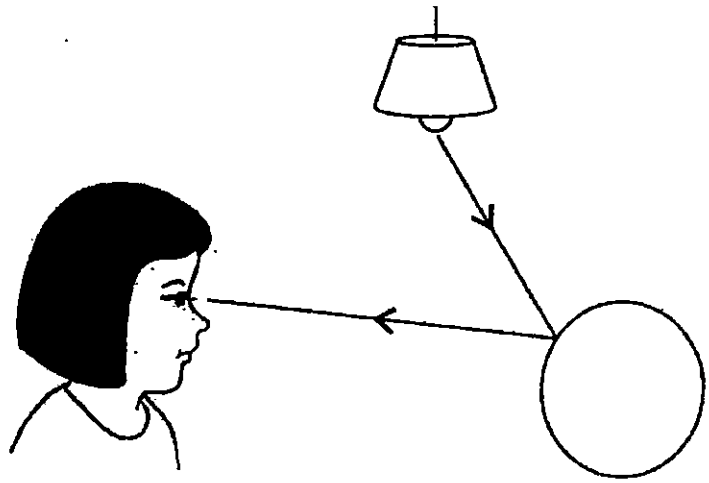
(c)



The diagram below shows how Mary sees the ball. The light from the lamp is _____ by the ball and enters Mary's eye. [1]

(Go on to the next page)

SCORE	1

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29. Fill in the boxes with the correct plant parts. [2]

(a)

Functions of plant parts	Plant parts
It holds the plant upright.	
It obtains water for the plant.	

(b) Zack recorded the characteristics of three different types of plants M, N and O in the table below. A tick (✓) indicates that the plant has the characteristic.

	Characteristics				
Types of Plants	Reproduces from seeds	Reproduces from spores	Bears fruit	Flowers grow singly	Flowers grow in clusters
Plant M	✓		✓	✓	
Plant N		✓			
Plant O	✓		✓		✓

Unknown plant

Which plant M, N or O best describes the above unknown plant? [1]

_____

(Go on to the next page)

SCORE	/ 3

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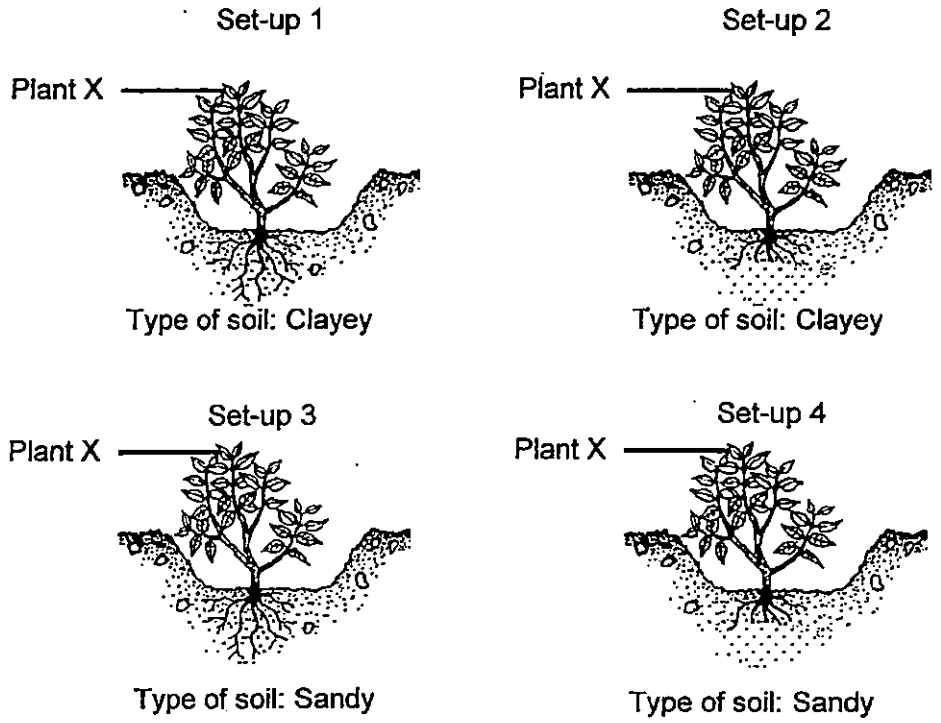
30. Roy wanted to find out which type of soil is more suitable for Plant X to grow well. He prepared the set-ups shown below in his garden and watered the plants daily.



(a) Which pair of set-ups should he use to conduct the experiment? [1]

_____

(b) Explain your choice in (a). [1]

_____

_____

(c) If Roy conducted a second experiment with set-up 3 and 4, what is the aim of Roy's experiment? [1]

_____

_____

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SCORE	/ 3

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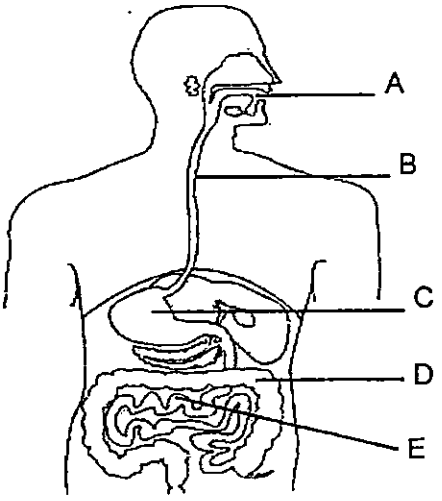
31. The diagram below shows the human digestive system.



(a) Which parts in the above diagram contain digestive juices? [1]

_____

(b) Explain how digestive juices help in digestion. [1]

_____

_____

(c) What happens to the digested food in Part E? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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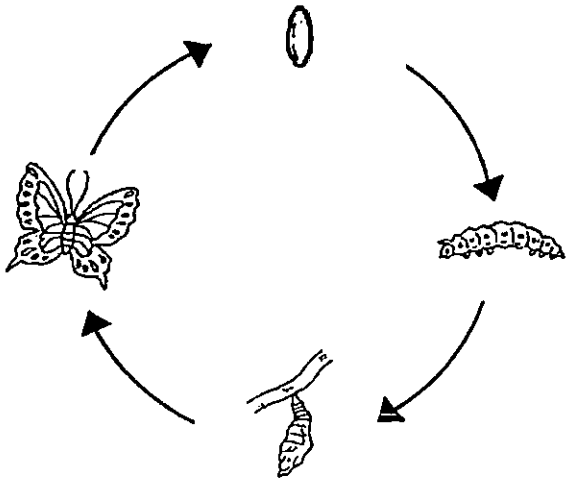
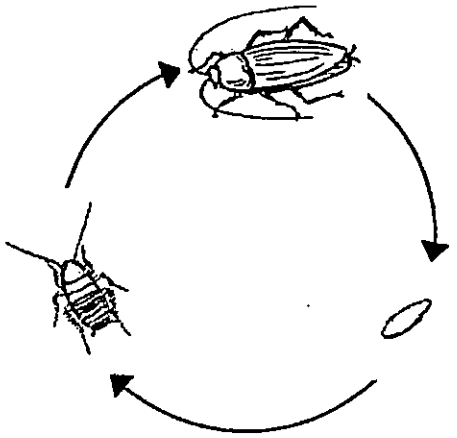
32. The following diagrams show the life cycle of a butterfly and a cockroach.

Life cycle of Butterfly



Life cycle of Cockroach



(a) State a difference between the life cycles of the butterfly and the cockroach. [1]

_____

_____

(b) State a similarity in the way the adult of the butterfly and the adult of the cockroach move. [1]

_____

_____

(c) Why is the young of the butterfly harmful to plants? [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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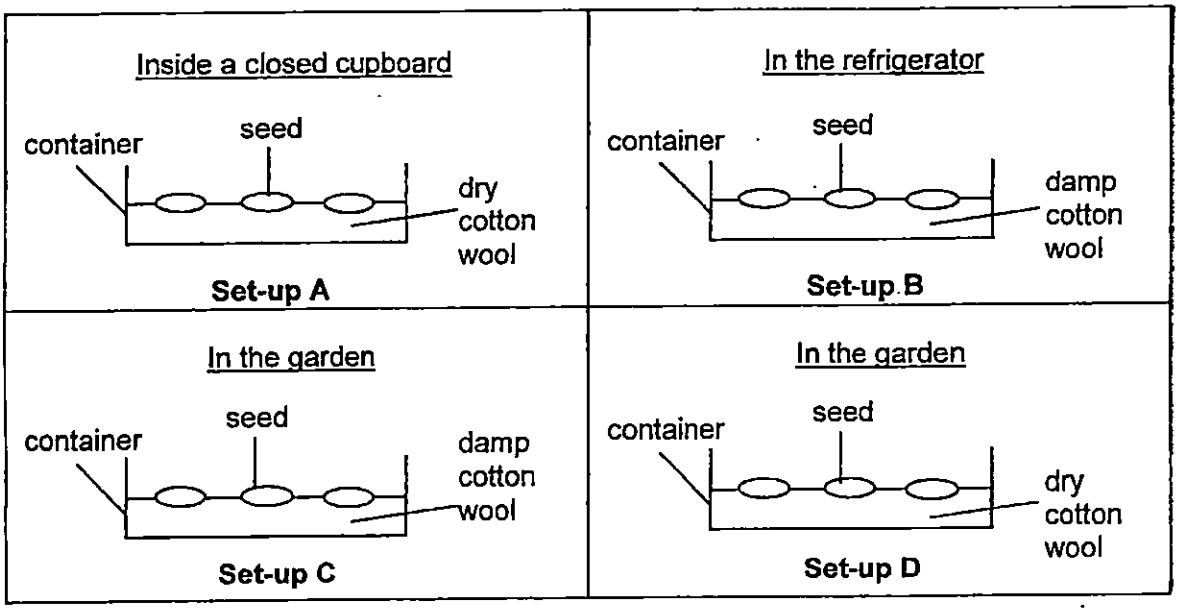
33. Albert prepared four identical containers with three seeds of the same type and size in each container. He then placed them at different locations as shown in the diagram below.



(a) Albert wanted to conduct two experiments to test if seeds need water and warmth to germinate. Which two set-ups should he use for comparison for each experiment? [1]

	Changed Variable	Set-ups
(i)	Water	_____ and _____
(ii)	Warmth	_____ and _____

(b) What other condition(s) must the seeds have to germinate? [1]

_____

(c) A few days after the seeds germinated, Albert saw that the seed leaf had dropped. Explain why. [1]

_____

_____

(Go on to the next page)

SCORE	/ 3

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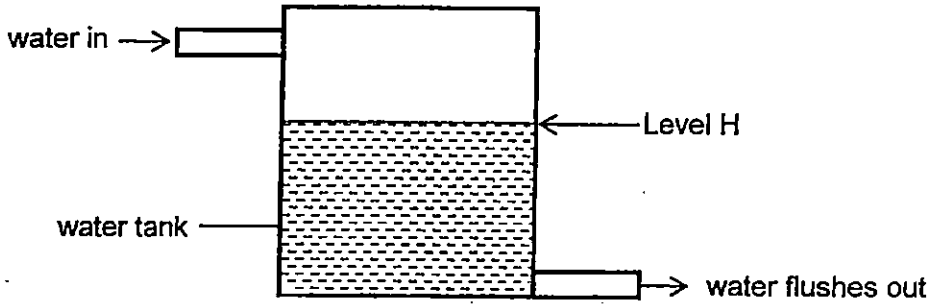
34. A water tank is shown below. After all the water is flushed out, water enters and re-fills the tank. The tank will stop filling once the water reaches level H.



John wants to use less water every time the water is flushed out of the tank. Nathan suggests placing a plastic bottle filled with stones into the water tank.

(a) Explain how Nathan's suggestion will help to reduce the amount of water used each time the water is flushed out of the tank. [1]

_____

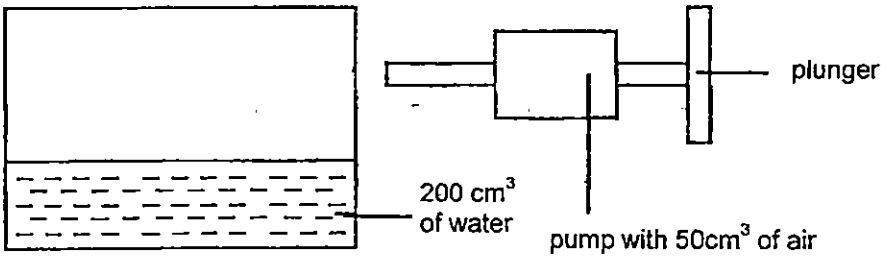
_____

(b) Nathan's method is based on a property of matter. State this property. [1]

_____

_____

(c) John uses another water tank with a volume of $500cm^3$. It contained $200cm^3$ of water. He connected a pump containing $50cm^3$ of air to the water tank as shown in the diagram below.



What is the volume of the air in the water tank after the plunger of the pump is pushed in completely? [1]

_____

(Go on to the next page)

SCORE	/ 3

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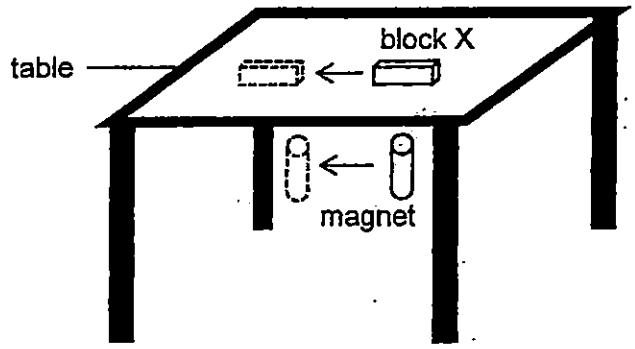
35. Robert conducted an experiment as shown in the diagram below.
Robert placed block X on a table and held a magnet under it as shown in the diagram below.



He noticed that block X moved in the same direction as the magnet when he moved the magnet as shown in the diagram.

(a) Give an example of a material that the table and block X could be made of in order to obtain the results above. [1]

Table: _____

Block X: _____

(b) If Robert replaced the table with a steel table, will block X move when he moves the magnet as shown in the diagram? Explain your answer. [1]

_____

_____

(c) If Robert replaced block X with a glass block, will the glass block move when he moves the magnet as shown in the diagram? Explain your answer. [1]

_____

_____

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SCORE	/ 3

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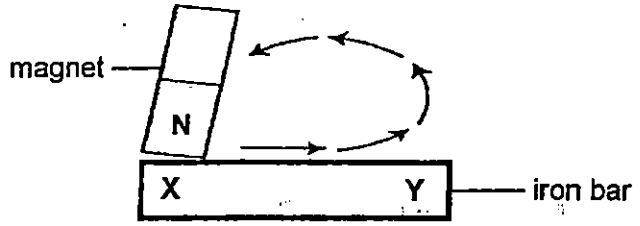
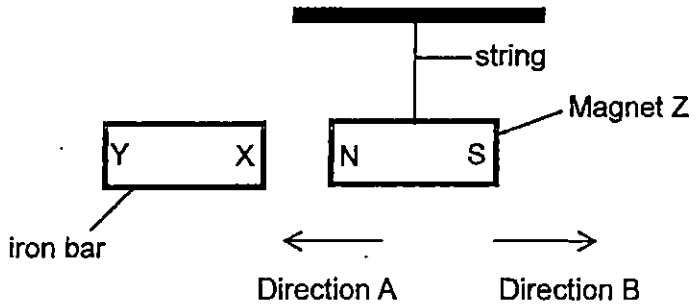
36. Alex made a temporary magnet using the stroke method as shown below.



Alex then brought the temporary magnet near Magnet Z that was freely hung from a string as shown in the diagram below.



(a) In which direction, A or B, will the freely hung magnet move? Explain your answer. [1]

_____

_____

(b) Without adding or removing anything from the set-ups above, state what Alex can do to make Magnet Z move further in the same direction as in part (a). [1]

_____

_____

(c) State a way to make Magnet Z move in the opposite direction from that in part (a). [1]

_____

_____

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SCORE	

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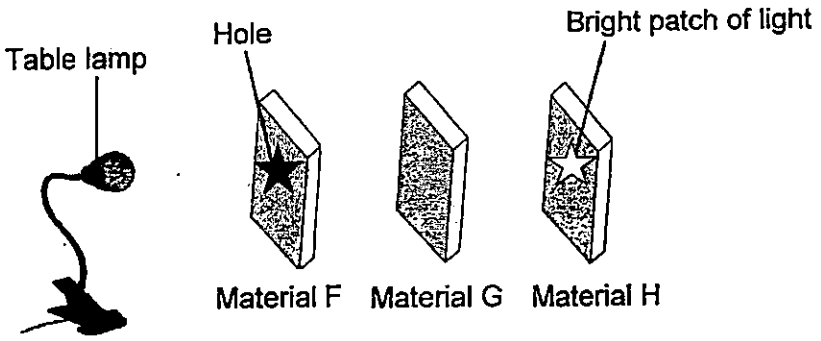
37. Jasmine carried out the experiment below in a very dark room.

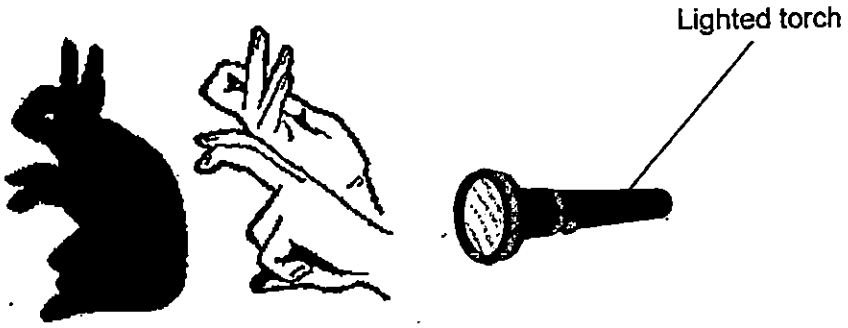


The materials F, G and H were arranged in a straight line. When the table lamp was switched on, a bright patch of light was seen on Material H only.

(a) Put a tick (✓) in the box that correctly describes the properties of the materials F, G and H. [2]

Properties of material	True	False
F is an opaque material		
G is an opaque material		
G is a transparent material		
H is an opaque material		

(b) Jasmine wanted to form a hand puppet shadow for her Show and Tell lesson. She used her fingers to create the shadow of a rabbit on the wall as shown below.



She wanted to make the shadow smaller. State one thing that she could do to make the shadow appear smaller (the position of light source remains unchanged). [1]

_____

_____

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SCORE	/ 3

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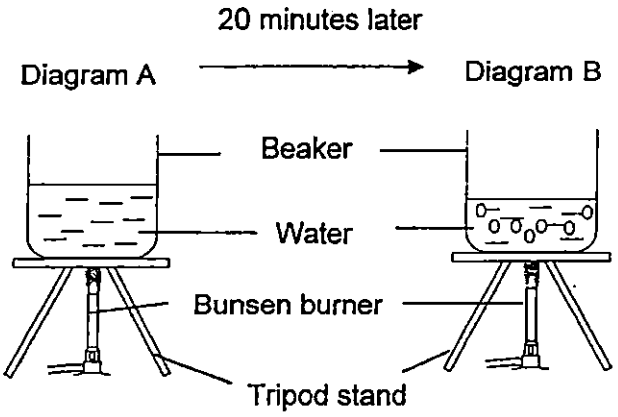
38. Liza wanted to observe what happens when water boils.



(a) After 20 minutes, she noticed that the water level in the beaker had decreased. Explain why. [1]

_____

_____

(b) State one thing Liza could have done to allow a smaller decrease in the water level in the beaker at the end of 20 minutes. [1]

_____

_____

(Go on to the next page)

SCORE	/ 2

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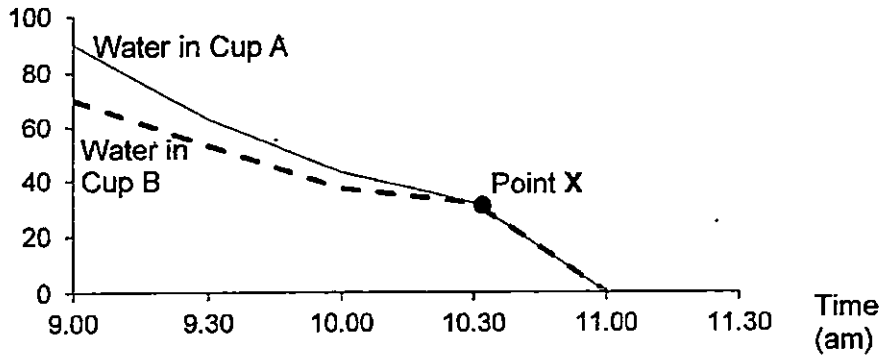
39. Zack cooled two identical cups marked A and B, containing equal amounts of warm water. The temperature of water in both cups is different at the start of the experiment. He plotted the line graph below to record the changes in the temperature of water in both cups over a period of time.



(a) Based on the graph above, which cup, A or B, is a better conductor of heat? Explain why. [1]

_____

_____

(b) Explain why the water in both cups reach the same temperature after some time at around 10.30 a.m. [1]

_____

_____

(c) What did Zack do at point X that caused temperature of water in both cups to decrease to 0°C? [1]

_____

_____

End of Booklet B

SCORE	/ 3

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	1	3	1	4	1	1	3	2	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
1	2	2	3	1	4	4	3	3	3
Q21	Q22	Q23	Q24	Q25					
2	4	3	2	2					

Q26. **SEE PICTURE (NEXT PAGE)**

Q27a. pull Q27b. magnetic

Q28a. Thermometer Q28b. 24° Q28c. reflected

Q29a. stem , roots Q29b. Plant M

Q30a. Set up 2 and Set up 4

Q30b. The type of soil is clayey at set up 2, the type of soil is sandy at set up 4 and they both have the same amount of roots too.

Q30c. To find out if plants with more roots grow longer.

Q31a. A, C and E

Q31b. Digestive juices helps us to breakdown food faster.

Q31c. It gets absorbed into the bloodstream.

Q32a. The life cycle of a butterfly has a four stage life cycle but the life cycle of cockroach has three stage life cycle.

Q32b. Both can fly.

Q32c. They will eat the leaves of the plant and cause the plant to die.

Q33a. (i) C and D Q33a (ii) C and B

Q33b. Seeds also need air.

Q33c. The seed leaf supplies nutrients for the plant to germinate but once it is used up, it falls off.

Q34a. The plastic bottle will take up space / there will be less space for the water to fill up.

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Q34b. All matter occupies space. Q34c. $300cm^3$

Q35a. Table : Wood Q35b. Block X: Steel

Q35b. No. Steel is a magnetic material and magnetism cannot pass through magnetic materials.

Q35c. No. Glass is a non-magnetic material so it will not be attracted to the magnet.

Q36a. Direction B, X was the north pole and repelled the like pole.

Q36b. He could stroke the iron bar more times.

Q36c. Turn the iron bar around.

Q37a. **SEE PICTURE** Q37b. She can move her hands closer to the wall.

Properties of material	True	False
F is an opaque material	✓	
G is an opaque material		✓
G is a transparent material	✓	
H is an opaque material	✓	

Q38a. When water is heated, it gains heat and changes from liquid to gas.

Q38b. Cover the beaker with a lid.

Q39a. Cup A. The decrease in temperature was greater than that of Cup B during that time.

Q39b. Both cups reached the room temperature and lose heat to the surrounding.

Q39c. He put it in the freezer.

THE END

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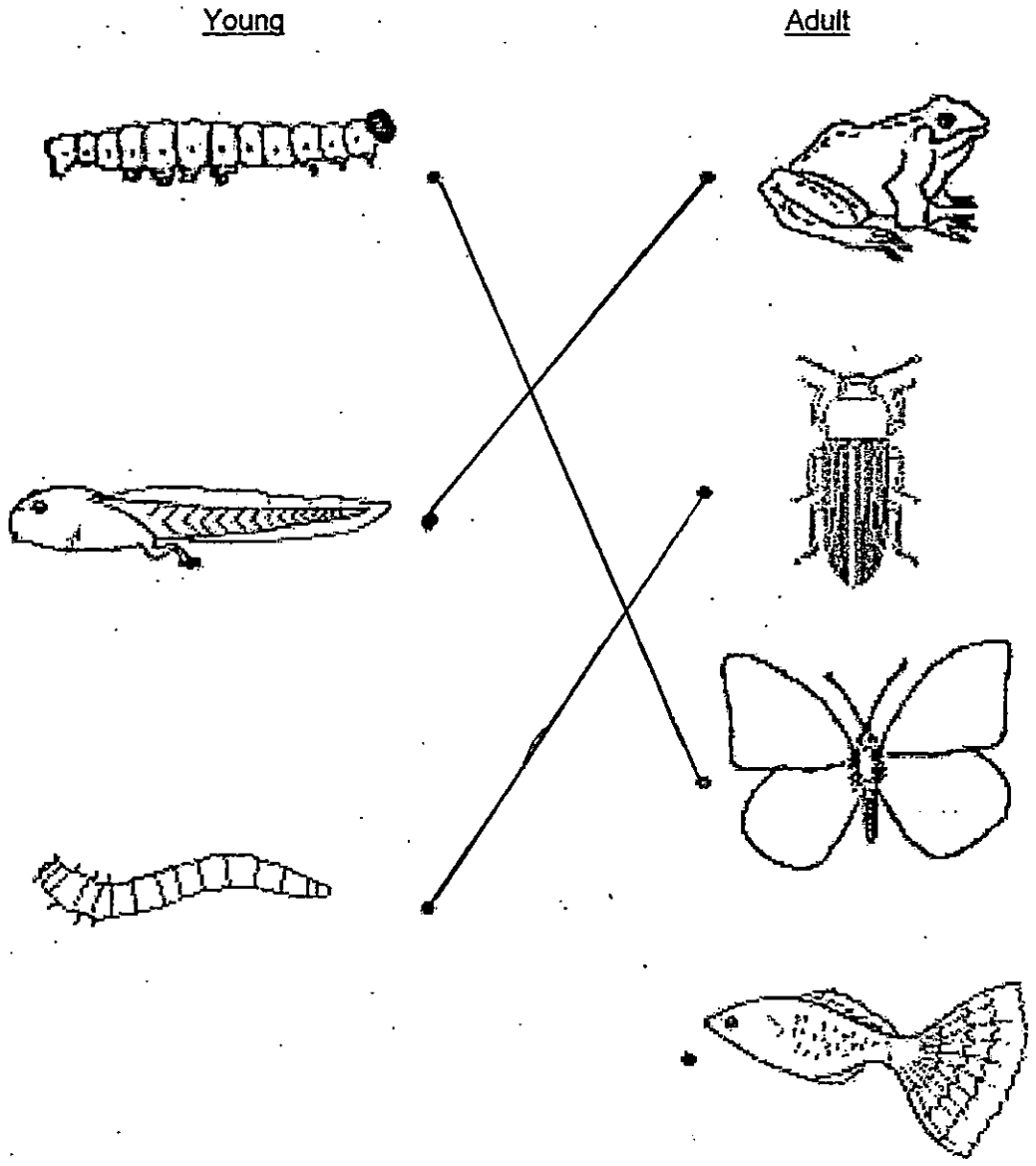
26. The diagram below shows the young and adult of some organisms.
Draw lines to match the young with the correct adult. [3]



3

END

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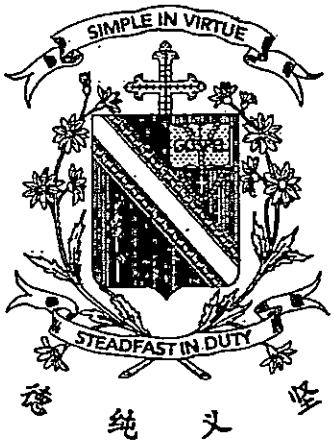
Name: _____ ( )

Class: Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4

Semestral Assessment 2 – 2015

SCIENCE

Booklet A

29 October 2015

Total Time for Booklets A and B: 1 hour 45 minutes

30 Questions

60 Marks

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Answer all questions.

This booklet consists of 25 printed pages.

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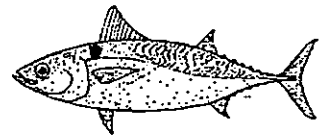
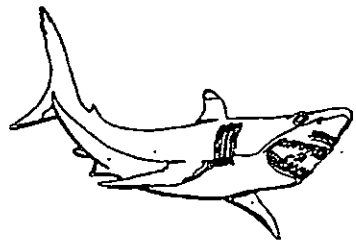
SECTION A (MULTIPLE–CHOICE QUESTIONS) [30 x 2 marks = 60 marks]

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.**

---

1. Study the classification table below.

Group A	Group B
Penguin	 Tuna
Bat	 Shark

Which one of the following headings best represents Group A and Group B?

	Group A	Group B
(1)	Bird	Fish
(2)	Can fly	Cannot fly
(3)	Has feathers	Has scales
(4)	Breathes through lungs	Breathes through gills

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2. Ahmad observed four organisms, A, B, C and D, during a trip to the zoo and recorded his observations in the table below. A tick (✓) shows the characteristic that the organism has.

Characteristic	Organisms			
	A	B	C	D
It lays eggs.		✓	✓	✓
It has scales.			✓	✓
It has two legs.		✓		
It breathes through lungs.	✓	✓		✓

Which one of the above organisms is most likely a snake?

(1) A

(2) B

(3) C

(4) D

3. Which one of the following characteristics can be used to tell the similarity between amphibians and mammals?

(1) All amphibians and mammals have moist skin.

(2) All amphibians and mammals have 2 pairs of legs.

(3) Both amphibians and mammals can only survive on land.

(4) Both amphibians and mammals can breathe through lungs.

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4. Which one of the following statements is true for **all** insects?

(1) They have wings.

(2) They live on land.

(3) They have feelers.

(4) They have 3 body parts.

5. Study the classification table below.

Living Things	
K	L
Rose Plant Hibiscus Plant Morning Glory Plant	Bread Mould Bracket Fungus Toadstool

Based on the classification table above, which one of the following headings best represents K and L?

	K	L
(1)	Cannot make food	Can make food
(2)	Flowering plant	Non-flowering plant
(3)	Plants	Micro-organisms
(4)	Flowering plant	Fungi

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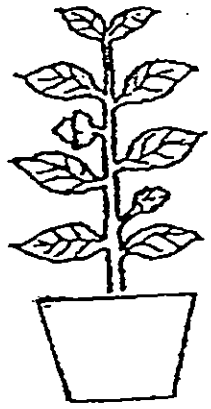
6. The diagram below shows a Bird's Nest Fern and a Balsam plant.

Bird's Nest Fern



Balsam Plant

Based only on what is observable from the diagram above, which one of the following best describes both the Bird's Nest Fern and the Balsam plant?

(1) Both bear fruits.

(2) Both bear flowers.

(3) Both reproduce by spores.

(4) Both can make their own food.

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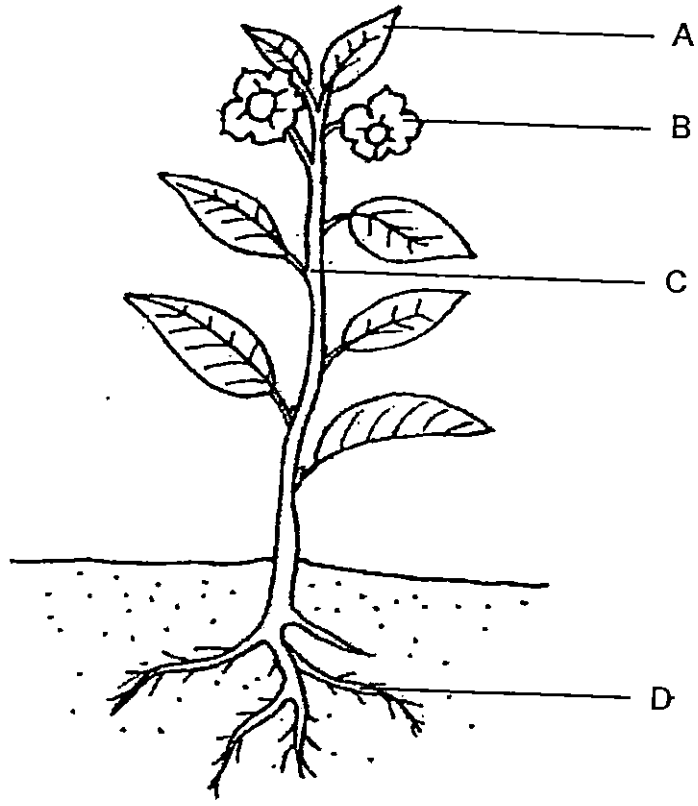
7. The diagram below shows a plant.



Which one of the following parts, A, B, C or D, would hold the plant upright?

(1) A

(2) B

(3) C

(4) D

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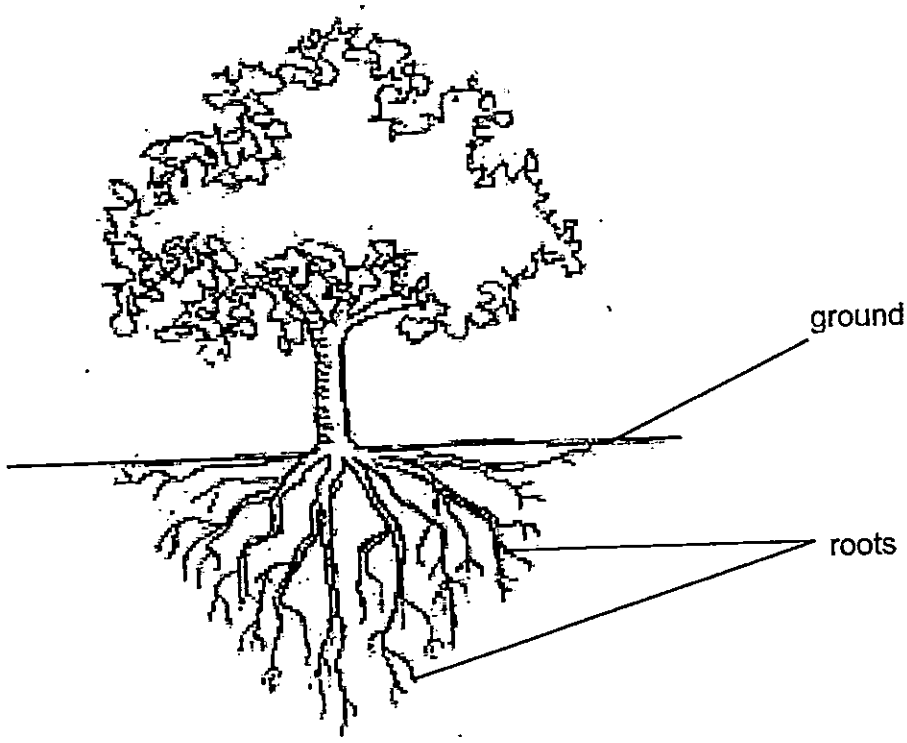
8. The diagram below shows a tree.



Which of the following statements best describe the roots of the tree?

A Roots anchor the tree to the ground.

B Roots transport water to all other parts of the tree.

C Roots provide support for the tree to stand upright.

D Roots spread out into the ground to reach for more water and mineral salts.

(1) A and B only

(2) A and D only

(3) B and C only

(4) C and D only

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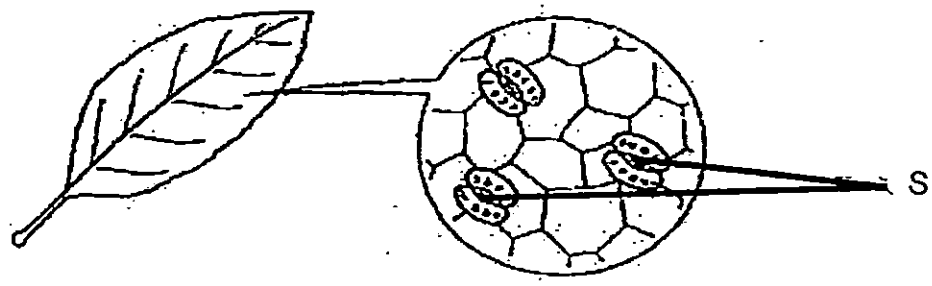
9. The diagram below shows the magnified picture of a leaf.



Leaf

Magnified Picture of a Leaf

Which one of the following best describes the function of the part labelled S?

(1) They absorb water for the plants.

(2) They carry food to other parts of the plant.

(3) They trap sunlight for the plant to make food.

(4) They help the plants to take in and give out gases.

10. In which part of the human digestive system is water removed from undigested food?

(1) Gullet

(2) Stomach

(3) Small Intestine

(4) Large Intestine

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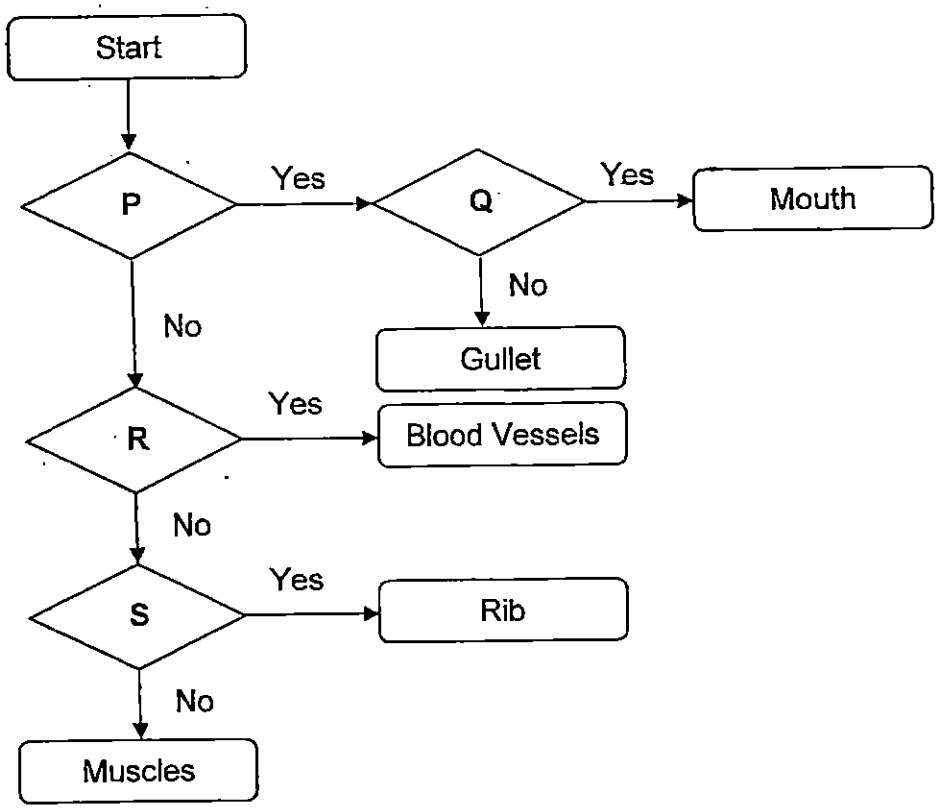
11. Study the flowchart below carefully.



With reference to the above flowchart, which one of the following best represents **P**, **Q**, **R** and **S**?

	P	Q	R	S
(1)	Is it part of the skeletal system?	Is it part of the digestive system?	Is it part of the human body system?	Is it part of the circulatory system?
(2)	Is it part of the human body system?	Does it break down food?	Is it part of the skeletal system?	Is it part of the circulatory system?
(3)	Is it part of the digestive system?	Does it break down food?	Is it part of the circulatory system?	Is it part of the skeletal system?
(4)	Does it break down food?	Is it part of the digestive system?	Is it part of the circulatory system?	Is it part of the skeletal system?

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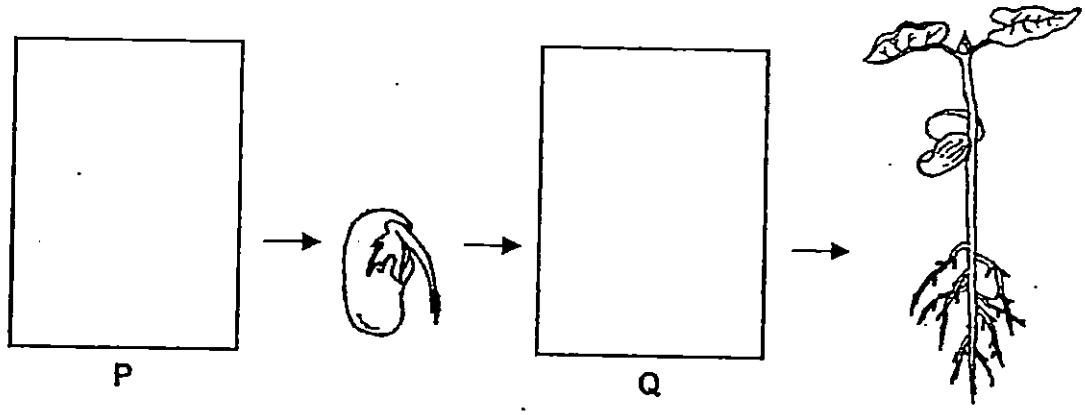
12. The diagram below shows the growth of a young plant with two missing stages, **P** and **Q**.



Which one of the following shows the correct stages for **P** and **Q**?

	P	Q
(1)		
(2)		
(3)		
(4)		

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13. Jean observed the life cycles of Animal X and Animal Y. She then recorded her observations in the table below.

Observation	Animal X	Animal Y
Eggs are laid in water.	✗	✓
It has a three-stage life cycle.	✓	✓
Each egg is covered with a shell.	✓	✗

Which of the following best represents Animal X and Animal Y?

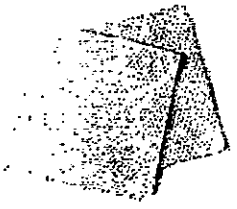
	Animal X	Animal Y
(1)	Toad	Frog
(2)	Butterfly	Toad
(3)	Penguin	Frog
(4)	Toad	Mosquito

14. Which one of the following objects can be bent easily without breaking?

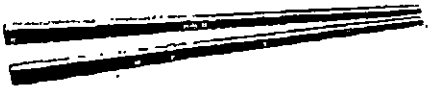
(1) Ceramic Vase

(2) Metal Spoon

(3) Tissue Paper



(4) Wooden Chopsticks



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15. Which one of the following is <u>not</u> a matter?

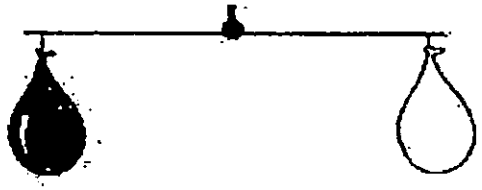
(1) Air

(2) Sand

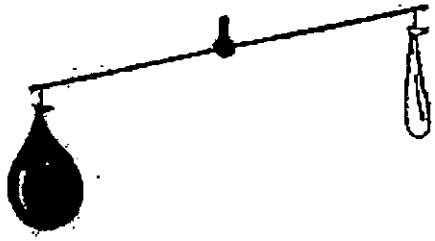
(3) Water

(4) Shadow

16. Two inflated balloons are balanced as shown below.



The white balloon is then deflated.



What can be concluded from this experiment?

(1) Air has mass.

(2) Air has no definite volume.

(3) The mass of the black balloon has increased.

(4) Different coloured balloons have different masses.

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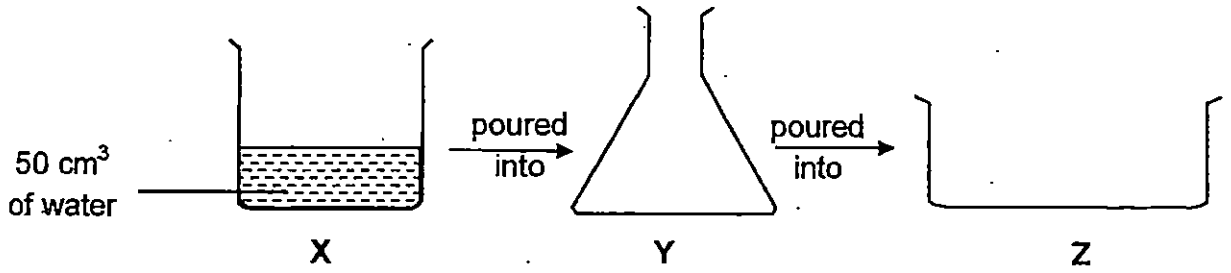
17. The diagram below shows 3 containers, X, Y and Z, of different shapes and sizes. Agnes pours 50 cm^3 of water into X. Then, she pours that amount of water from X to Y and finally from Y to Z.



Which one of the following statements best explains what Agnes could have observed as she was pouring the water from X to Y and from Y to Z?

(1) The volume of the water increases.

(2) The volume of the water decreases.

(3) The water takes the shape of the container it is in.

(4) The level of the water is the highest in container Y.

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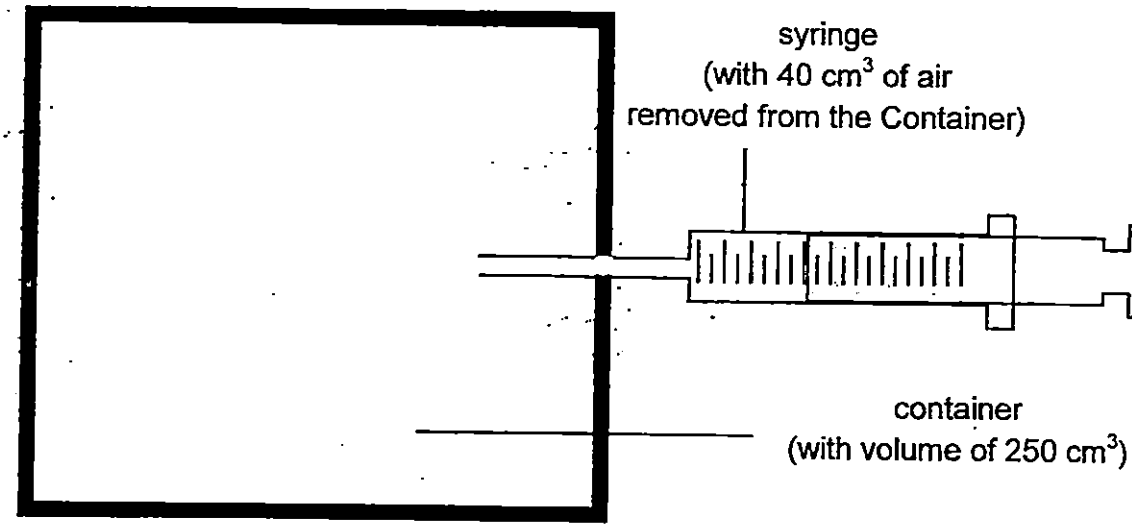
18. The diagram below shows a container which has a volume of 250 cm^3. A syringe is then attached to the side of the container and 40 cm^3 of air was then removed from the container as shown below.



What is the final volume of air in the container?

(1) 200 cm^3

(2) 210 cm^3

(3) 250 cm^3

(4) 290 cm^3

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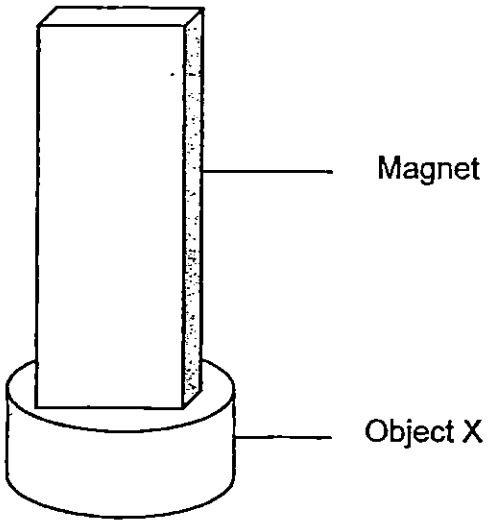
19. An object X was attracted to a magnet, as shown in the diagram below.



Object X is made of _____.

(1) Steel

(2) Plastic

(3) Copper

(4) Aluminium

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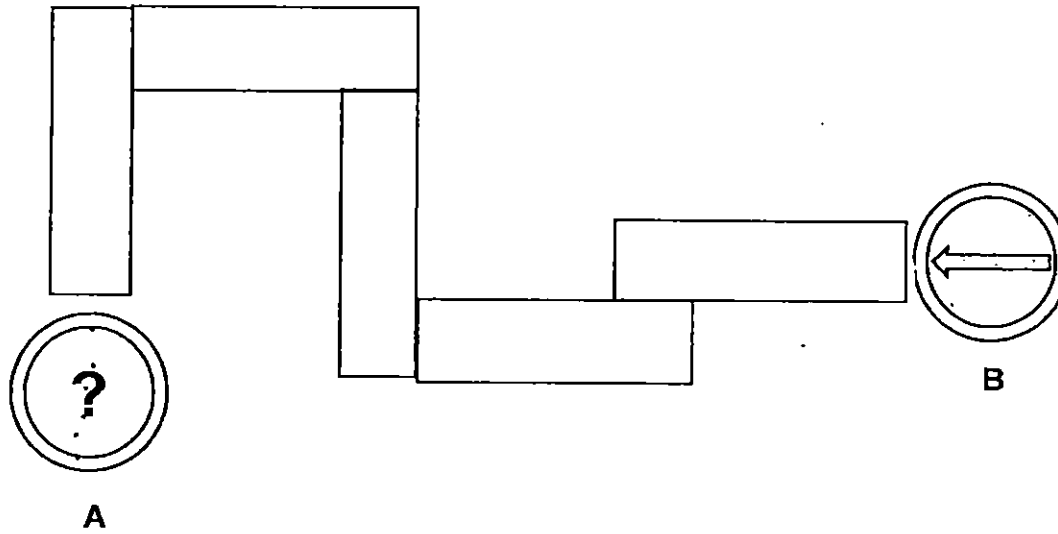
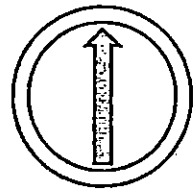
20. Five identical bar magnets and two similar compasses, A and B, were arranged as shown in the diagram below.

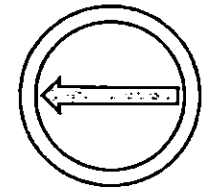


Which one of the following shows the direction of the compass needle at **A**?

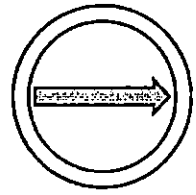
(1)



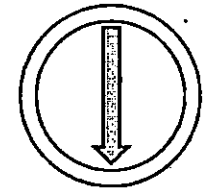
(2)



(3)



(4)



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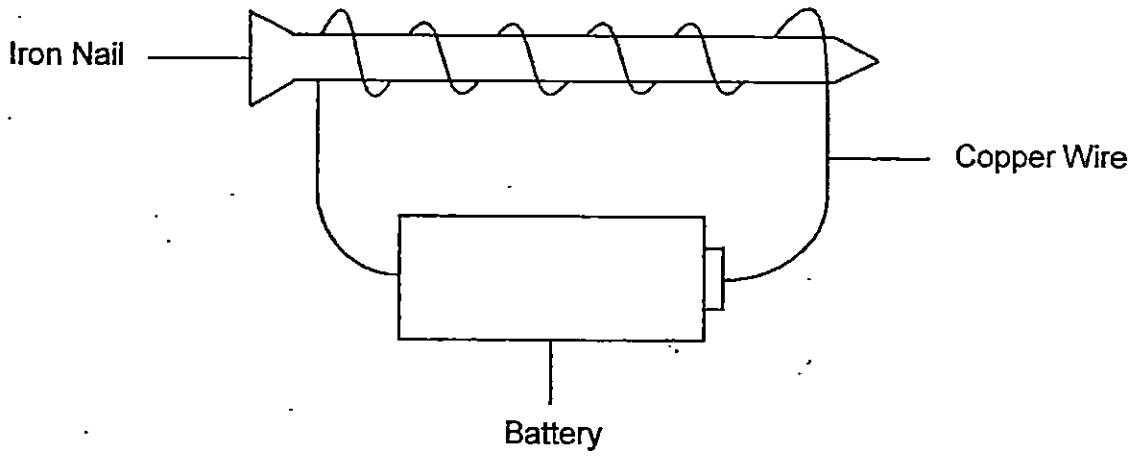
21. The diagram below shows a set up to create an electromagnet. The iron nails, wires and batteries used in each set up, A, B, C and D, are identical.



The number of coils around each nail in each set up is different as shown in the table below.

Set-up	Number of coils around the nail
A	20
B	50
C	10
D	25

Arrange the magnetic strength of the electromagnets in the four set ups from the strongest to the weakest.

(1) A, D, B and C

(2) B, D, A and C

(3) C, A, D and B

(4) D, A, B and C

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22. Which one of the following is **not** a source of light?

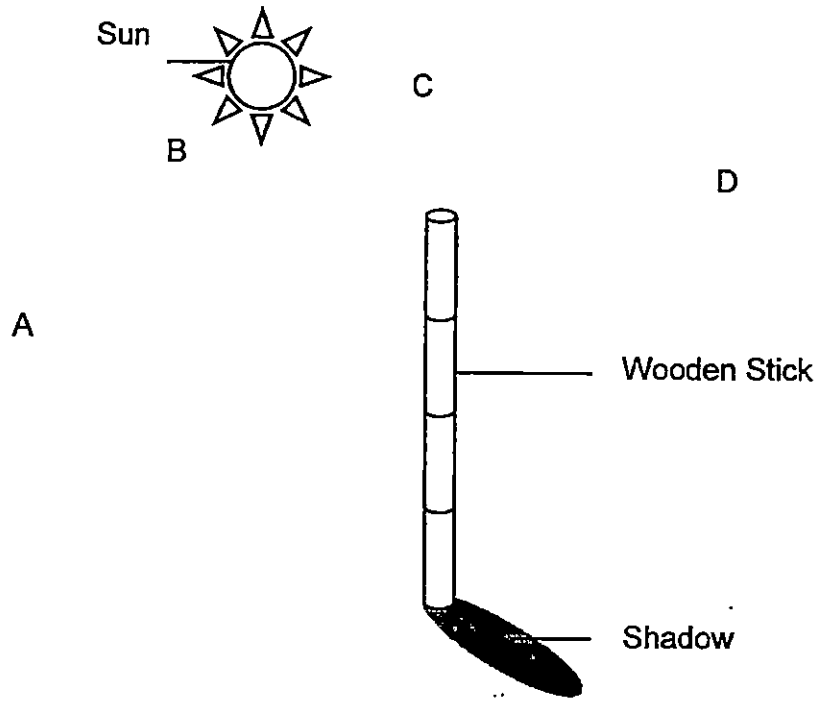
(1) Sun

(2) Lamp

(3) Moon

(4) Candle Flame

23. The diagram below shows a wooden stick that was placed in the middle of the school field. The length of the shadow cast by the wooden stick was measured at different times of the day.



At which point, A, B, C or D, was the Sun's position when the shadow of the wooden stick was the shortest?

(1) A

(2) B

(3) C

(4) D

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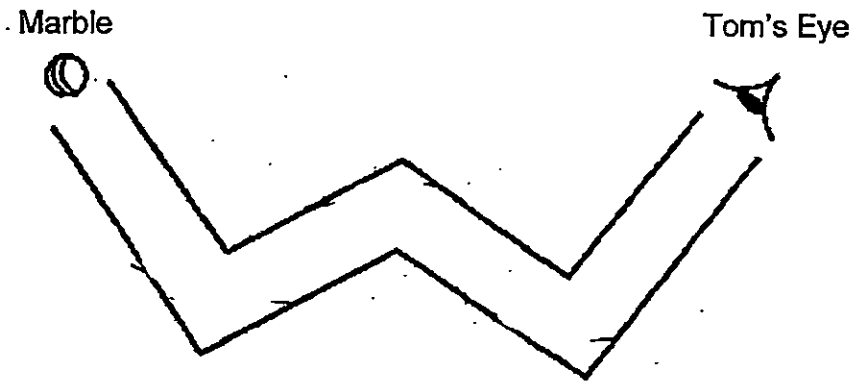
24. The diagram below shows a bent tube.



What is the least number of mirrors that has to be placed inside the bent tube so as to enable Tom to see the marble?

(1) 2

(2) 3

(3) 4

(4) 5

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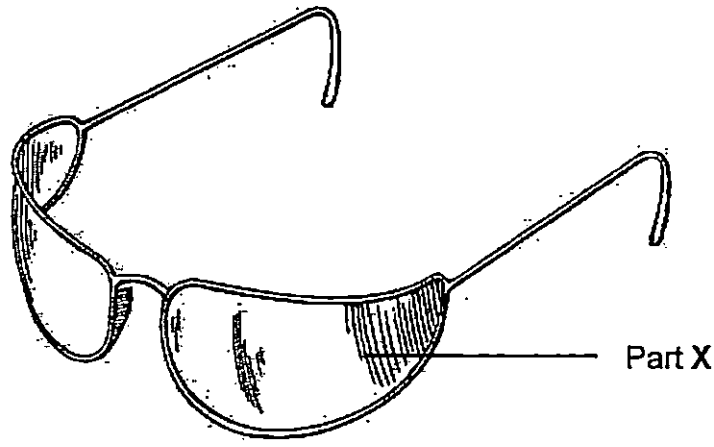
25. Bernice conducted an experiment to measure the amount of light that can pass through a material. Inside a dark room, she used a torch and a datalogger that is connected to a light sensor to test four different materials, P, Q, R and S. She then recorded her results in the table below.

Material	Amount of light (lux) that passes through the material
P	30
Q	40
R	20
S	15

Based only on the results shown in the table above, which one of the materials, P, Q, R or S, is most suitable to be made into part **X** of the pair of spectacles shown below?



A Pair of Spectacles

(1) P

(2) Q

(3) R

(4) S

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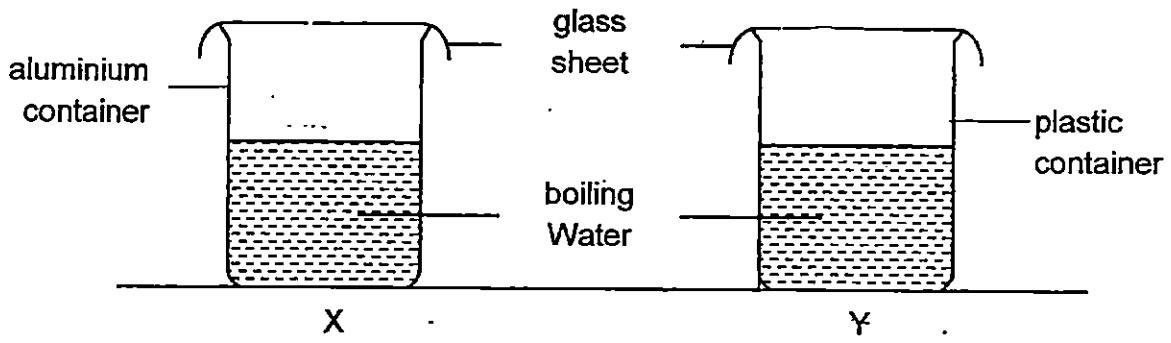
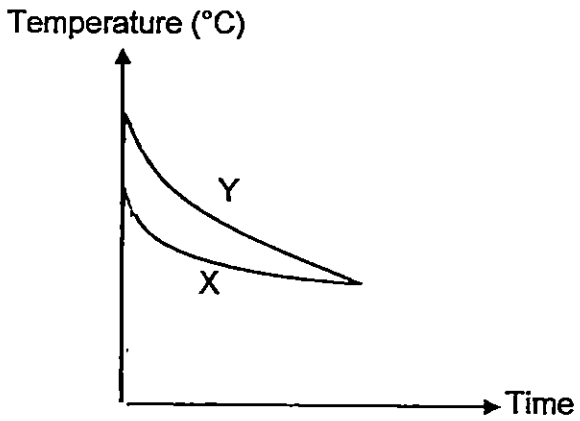
26. Kumar filled two containers, X and Y, with 500 ml of boiling water each as shown in the diagram below. He then covered each container with a sheet of glass and left them in a room for 30 minutes.

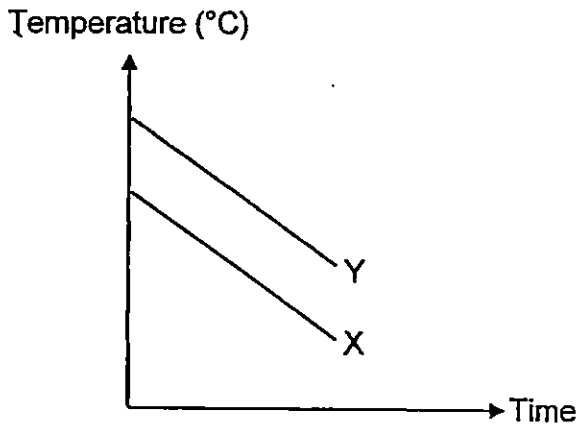


Which one of the following line graphs best represents the changes in the temperature of the water in the two containers above?

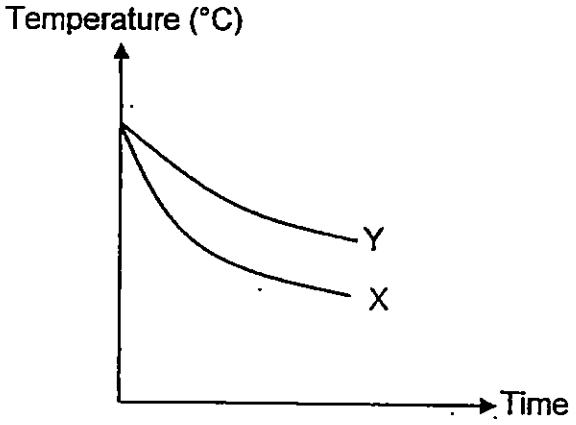
(1)



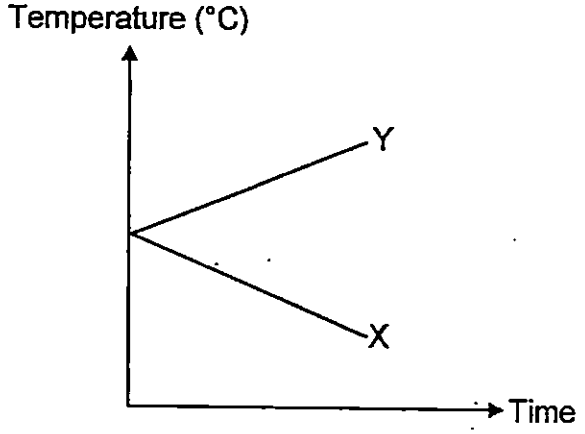
(2)



(3)



(4)



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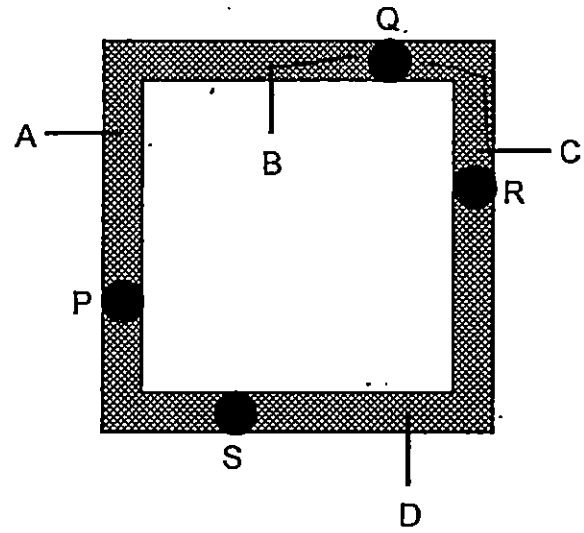
27. The diagram below shows a square metal frame. Four drops of wax were attached at points, P, Q, R and S, along the square metal frame as shown below.



Square Metal Frame

Taufik heated the square metal frame at a certain point along the frame and recorded the time taken for each drop of wax to melt in the table below.

Position of the drop of wax	Time taken (s) for the drop of wax to melt
P	48
Q	12
R	35
S	90

Based only on the results shown in the table above, at which point, A, B, C or D, did Taufik most likely heat the metal frame?

(1) A

(2) B

(3) C

(4) D

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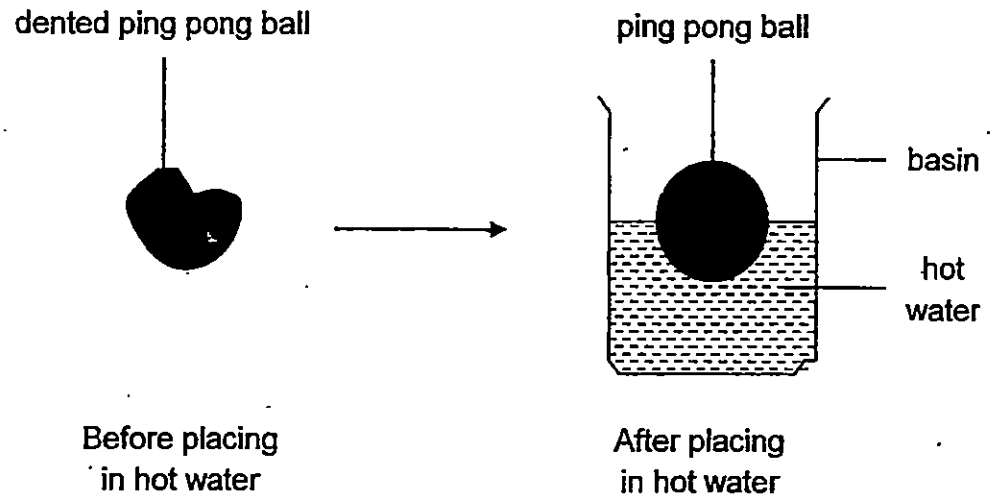
28. The diagram below shows what happened to a dented ping pong ball before and after it was placed in a basin of hot water.



Which one of the following statements best explains the above observation?

(1) The ping pong ball lost heat and contracted.

(2) The ping pong ball gained heat and expanded.

(3) The air trapped in the ping pong ball lost heat and contracted.

(4) The air trapped in the ping pong ball gained heat and expanded.

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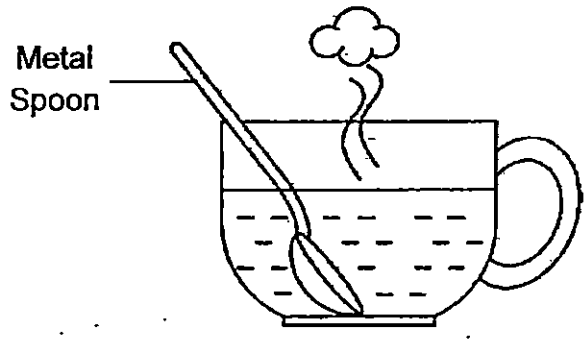
29. Ronald placed a metal spoon in a cup of hot tea as shown below.



A Cup of Hot Tea

After 10 minutes, he touched the handle of the spoon and realised that it was hot. Which one of the following statements best explains the above observation?

(1) The cup lost heat to the hot tea.

(2) The spoon lost heat to the hot tea.

(3) The spoon gained heat from the hot tea.

(4) The hot tea gained heat from the spoon.

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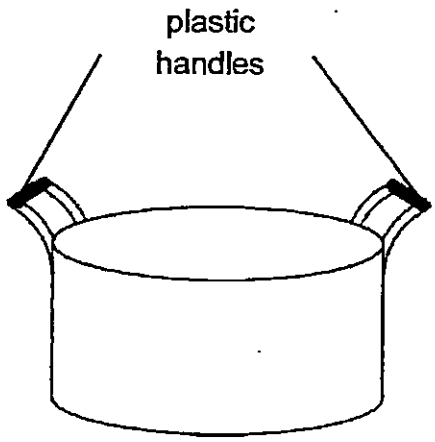
30. Hisham boiled some water in the pot as shown below.



pot containing boiling water

He was given 4 materials, A, B, C and D, whose properties are shown in the table below.

Material	Property of Material Given	
	Can bend easily without breaking	Can conduct heat easily
A	Yes	Yes
B	Yes	No
C	No	No
D	No	Yes

Based only on the results in the table above, which material is most suitable for making the plastic handles that would allow Hisham to hold the pot of boiling water without getting burnt?

(1) A
(2) B
(3) C
(4) D

END OF BOOKLET A

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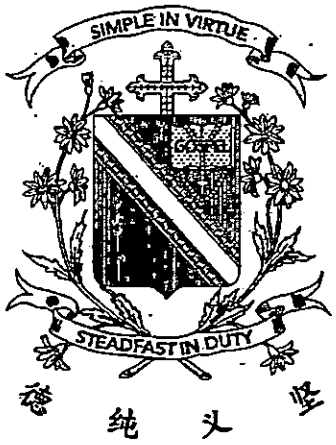
Name: _____ ( )

Class: Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4

Semestral Assessment 2 – 2015

SCIENCE

Booklet B

29 October 2015

Total Time for Booklets A and B: 1 hour 45 minutes

14 Questions

40 Marks

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Answer all questions.

This booklet consists of 16 printed pages.

Booklet A	60
Booklet B	40
Total	100
	Parent's Signature / Date

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SECTION B (OPEN–ENDED QUESTIONS) [40 marks]

For questions 31 to 44, write your answers in this booklet. The number of marks available is shown in the brackets [ ] at the end of each question or part question.

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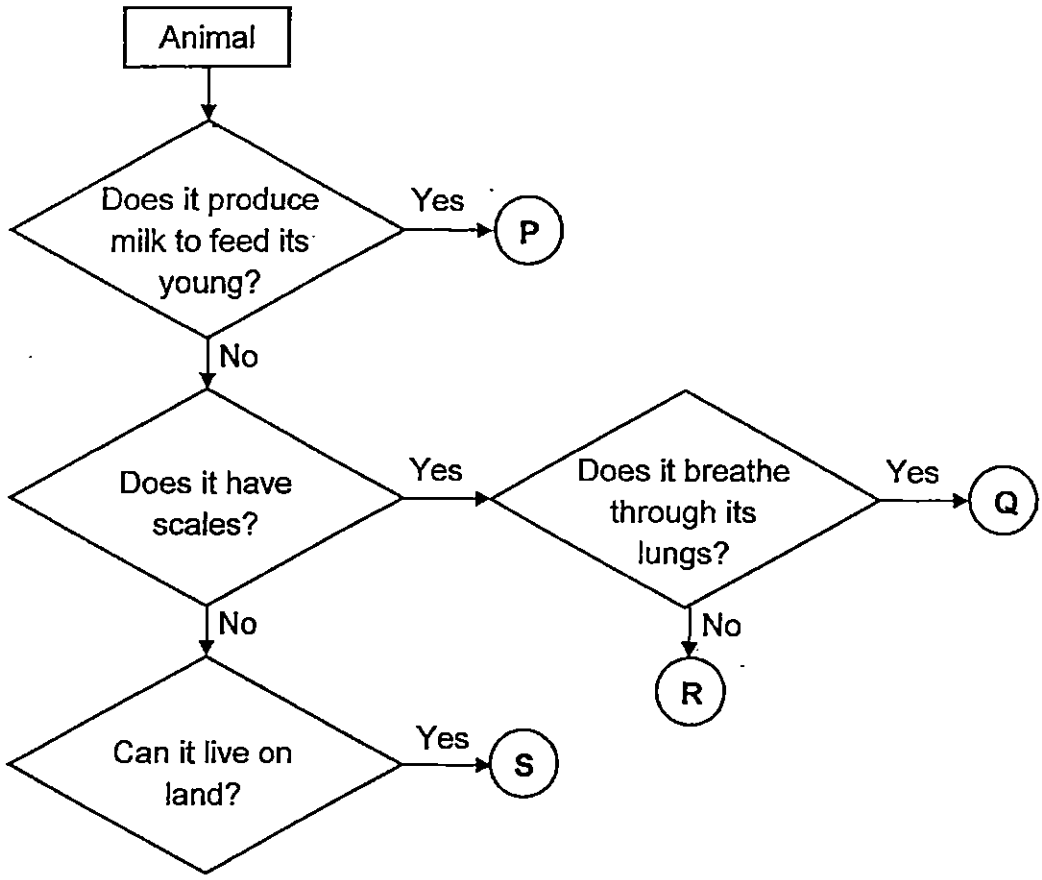
31. Study the flowchart given below.

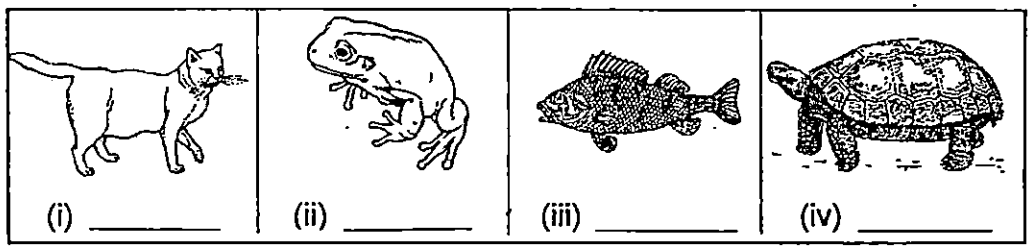


(a) Using the flowchart above, state the **similarities** between **Q** and **R**. [2]

_____

_____

(b) Using the flowchart above, which of the above letters, **P**, **Q**, **R** or **S**, best represents the animals shown below? (Write only the letters.) [2]



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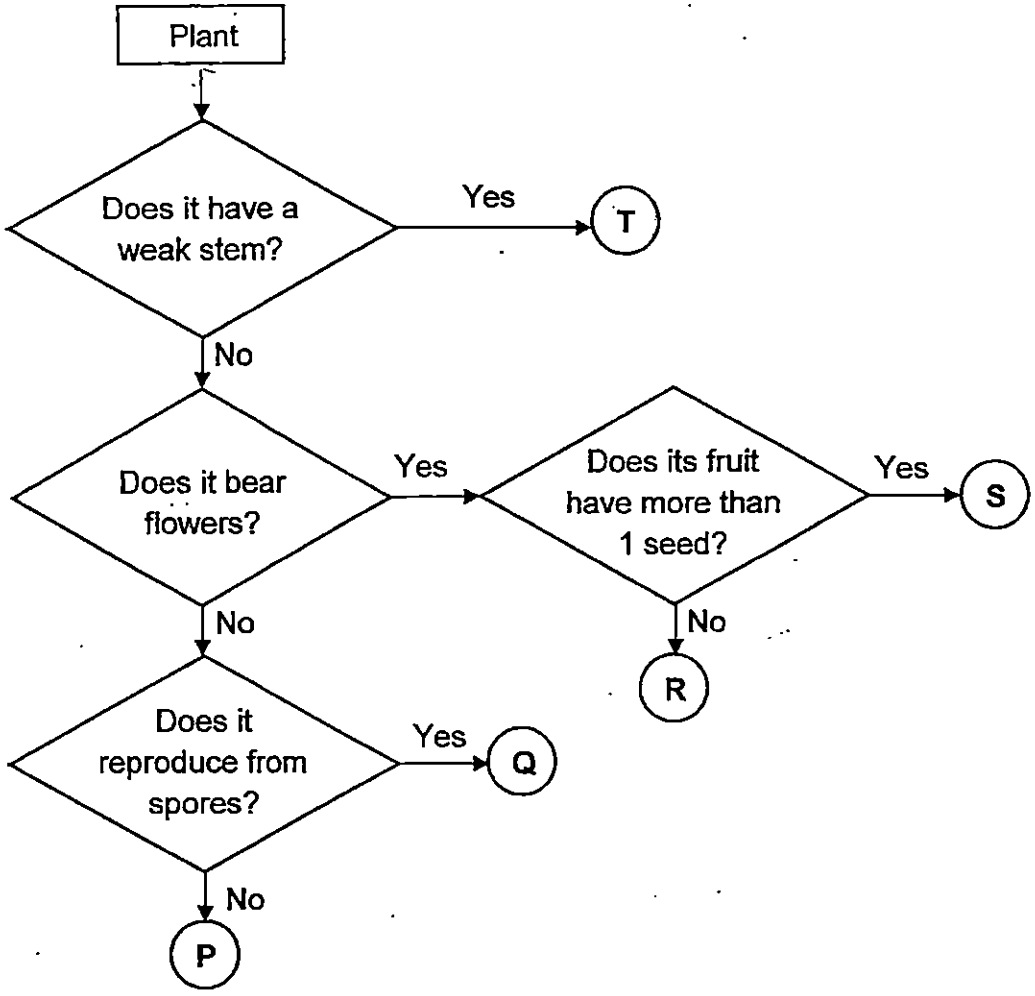
32. Study the flowchart given below.



(a) Using the flowchart above, identify the following organisms. Write the correct letters, P, Q, R, S or T, in the boxes provided below. [2]

Mango: ☐ Moss: ☐

Tomato: ☐ Money Plant: ☐

(b) Based on the flowchart above, can a mushroom also be represented by the letter Q? Explain your answer. [1]

_____

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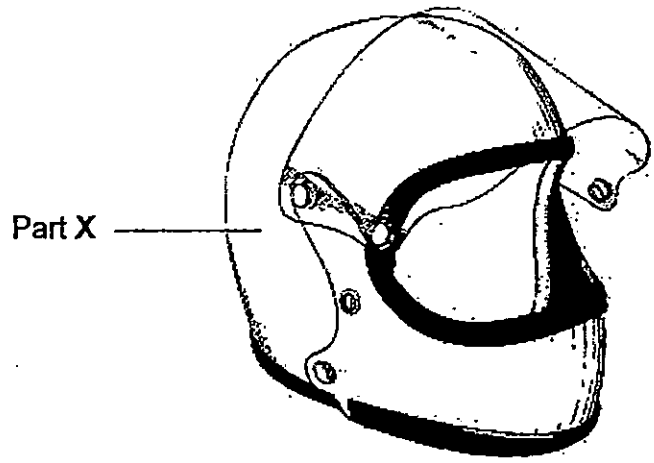
33. The diagram below shows a motorcycle helmet. The part of the helmet that covers the rider's head is indicated by part **X**.



Motorcycle Helmet

(a) Name the human body system that performs the same function as part **X** of the helmet. [1]

_____ System

(b) State **one** similarity between the function of the human body system stated in (a) and part **X** of the helmet. [1]

_____

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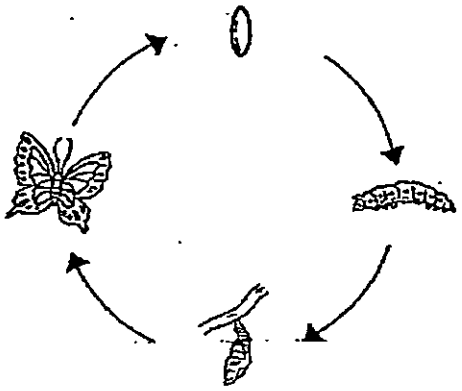
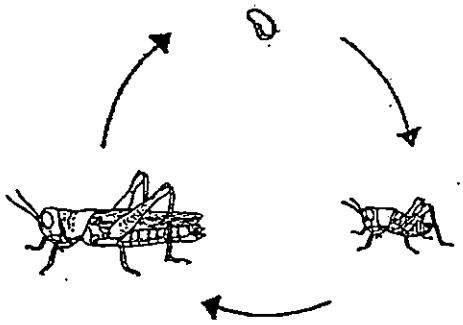
34. The diagrams below show the life cycles of a grasshopper and a butterfly.



Life Cycle of a Butterfly



Life Cycle of a Grasshopper

(a) State one difference between the life cycle of a grasshopper and the life cycle of a butterfly. [1]

_____

(b) At which stage of the life cycle of a butterfly is the organism considered a pest to farmers? [1]

_____

(c) Give one reason for your answer in (b). [1]

_____

_____

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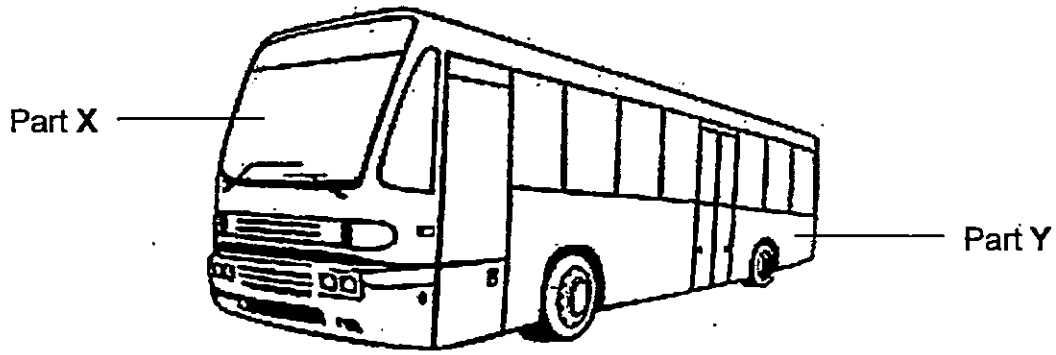
35. The diagram below shows a bus.

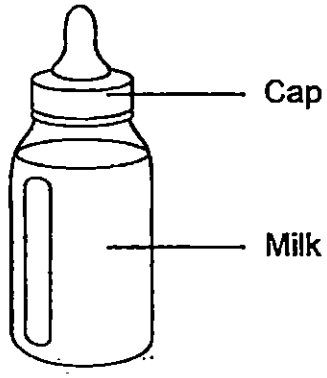


Bus

(a) Part **X** is made of glass because it allows _____ to pass through so that the bus driver can see the road. [1]

(b) Part **Y** is made of _____ because Y has to be strong. [1]

36. The diagram below shows a baby's milk bottle.



Baby's Milk Bottle

Circle the correct state of matter for the following items.

(a) Cap: Solid / Liquid / Gas [1]

(b) Milk: Solid / Liquid / Gas [1]

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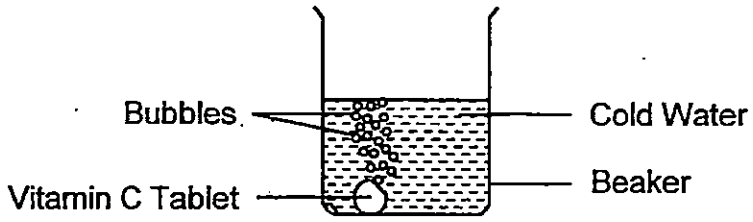
37. During Science Week, Angela learnt that she was able to construct a self-made mini rocket using a Vitamin C tablet. When this tablet was put into a beaker of cold water, many bubbles were produced immediately. She also noticed that the tablet eventually became smaller and disappeared.



(a) What change in state of matter has taken place in the Vitamin C tablet after it has been put into the beaker of cold water? [1]

_____

(b) Angela then decided to launch her mini rocket into the air with different amounts of tablet. She repeated this experiment three times and the results were recorded in the table shown below.

Amount of Vitamin C Tablet Used		Time taken (s) for the mini-rocket to launch		
		1st Attempt	2nd Attempt	3rd Attempt
Half		11	10	10
Three-Quarter		8	7	8
Whole		5	5	4

(i) What is the relationship between the amount of Vitamin C tablet used and the time taken for the mini rocket to launch? [1]

_____

_____

(ii) Predict the time taken for the mini rocket to launch if she used **two** whole Vitamin C tablets. [1]

_____ seconds

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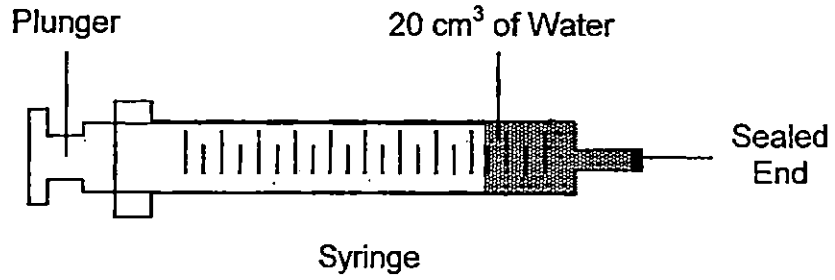
38. Richard used a syringe to collect 20 cm^3 of water as shown in the diagram below. He sealed the end of the syringe and then tried to push in the plunger.



(a) What would Richard observe about the volume of water in the syringe when he tried to push in the plunger? [1]

_____

(b) The volume of water in the syringe was later replaced with 20 cm^3 of air. What would Richard observe about the volume of air when he then tried to push in the plunger? [1]

_____

(c) Explain your observation in (b). [1]

_____

_____

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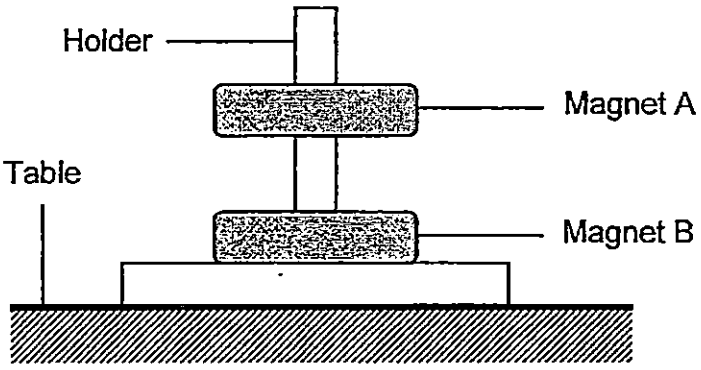
39. Alice placed two ring magnets, A and B, through a holder as shown below.



(a) The holder is made of wood. Suggest a reason why the holder did not attract the magnets? [1]

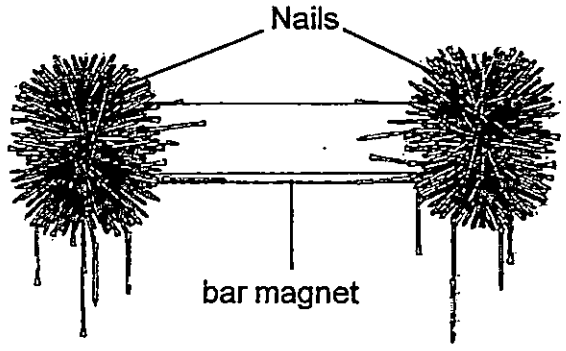
_____

(b) Magnet A was observed 'floating' above magnet B. Explain this observation. [1]

_____

_____

In another experiment, Alice dropped a bar magnet into a box of nails. When she picked up the magnet, she observed that most nails were attracted to the **ends** of the magnet as shown in the diagram below.



(c) Explain Alice's observation. [1]

_____

_____

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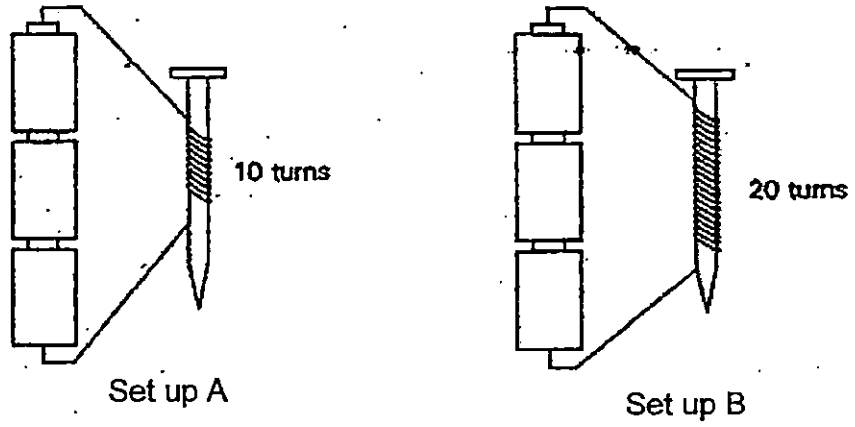
40. Peter wanted to find out if the number of batteries affected the strength of the electromagnet. He had two set ups, A and B, as shown below.



Peter's teacher said that he did **NOT** conduct a fair test.

Suggest two ways in which Peter could do to ensure that he conducted a fair test. [2]

Suggestion 1 :

_____

_____

Suggestion 2:

_____

_____

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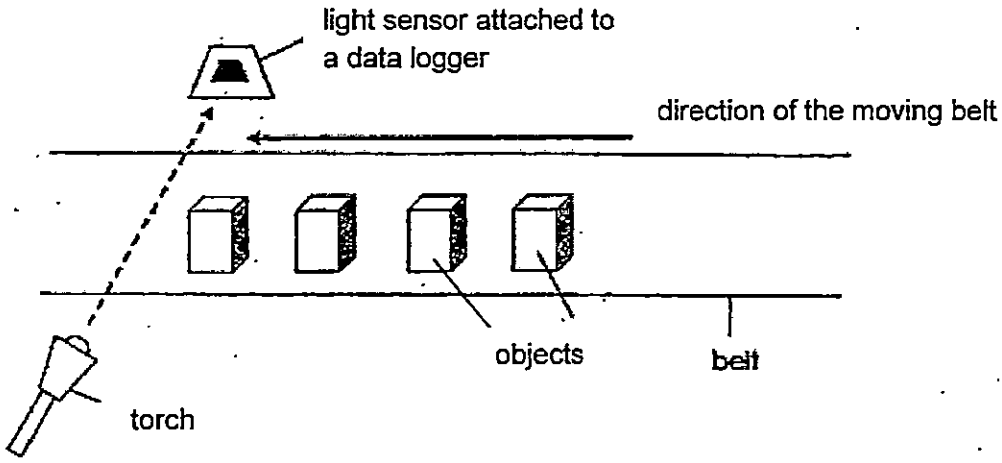
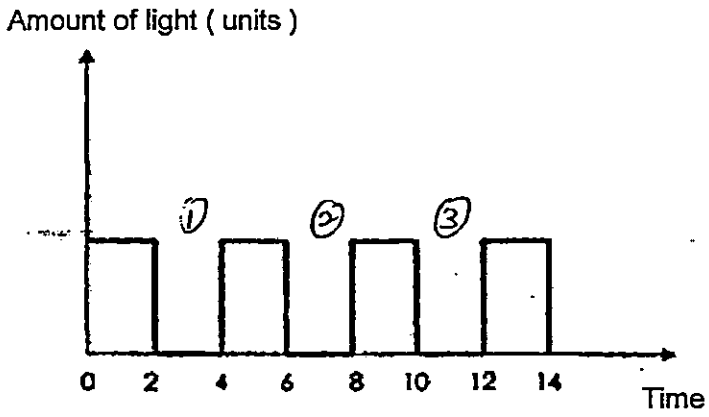
41. The set up below uses a light sensor to count the number of identical objects on a moving belt.



The belt moves at a constant speed. When the object is between the torch and the light sensor, it blocks the light from reaching the light sensor. The data recorded is shown in the graph below.



(a) Based on the graph, how many objects passed the light sensor in 14 seconds? [1]

_____

(b) The set up can count 20 objects in a minute when the belt is moving at its maximum speed. State one way to count more than 20 objects in a minute without changing the speed of the belt. [1]

_____

(c) The set up cannot be used to count objects made of glass. Explain why.

_____

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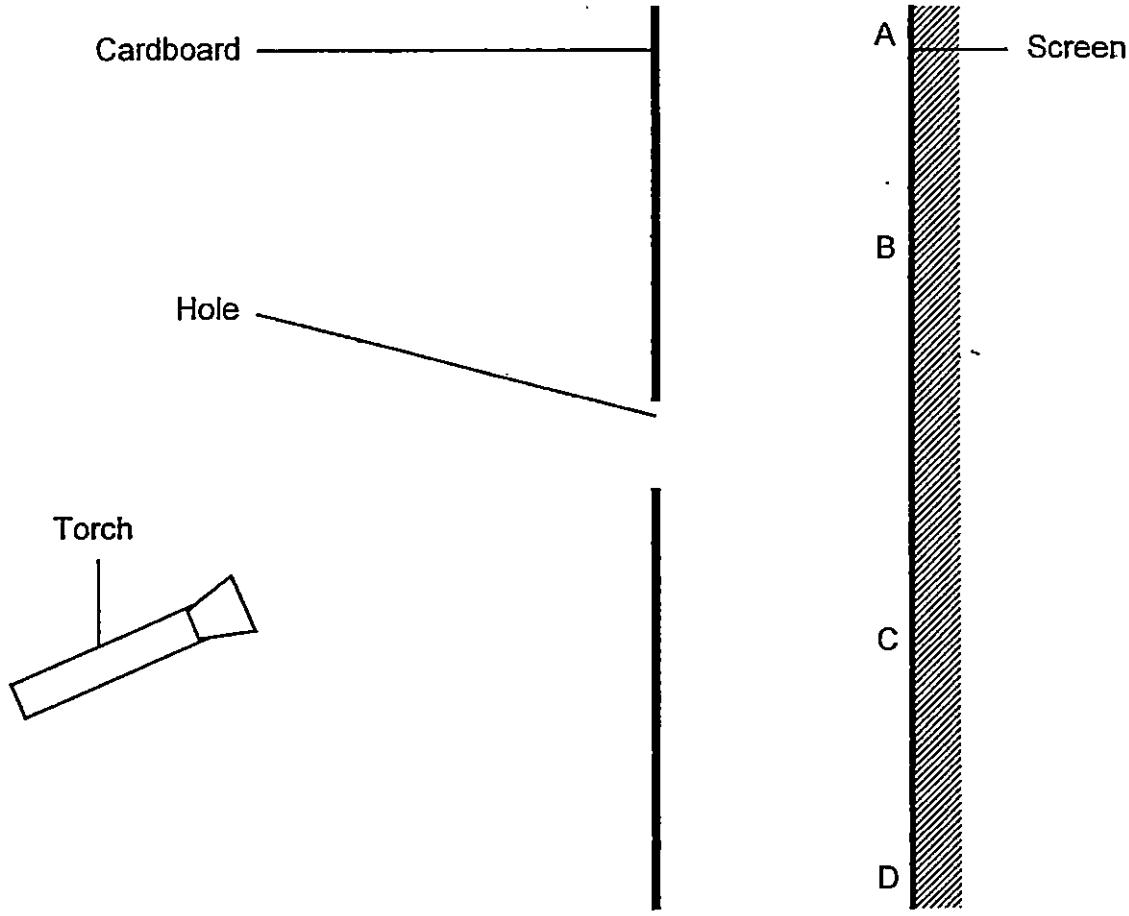
42. In a dark room, John placed a torch and a cardboard with a hole in front of a screen as shown below. He then switched on the torch and a bright spot was observed on the screen.



(a) State which point on the screen, A, B, C or D, was the bright spot most likely observed? [1]

_____

(b) John also noticed that there were no bright spots observed on the **other points** on the screen. Explain this observation. [1]

_____

_____

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(c) John later replaced the cardboard with a toy dinosaur. The toy dinosaur was placed at the same position as where the hole of the cardboard was. Upon switching on the torch, he observed a dark shadow of the toy dinosaur on the screen.

(i) Explain how the dark shadow of the toy dinosaur was formed. [1]

_____

_____

(ii) Describe how the **size** of the dinosaur's dark shadow will change if John moves his dinosaur **closer** to the screen. [1]

_____

_____

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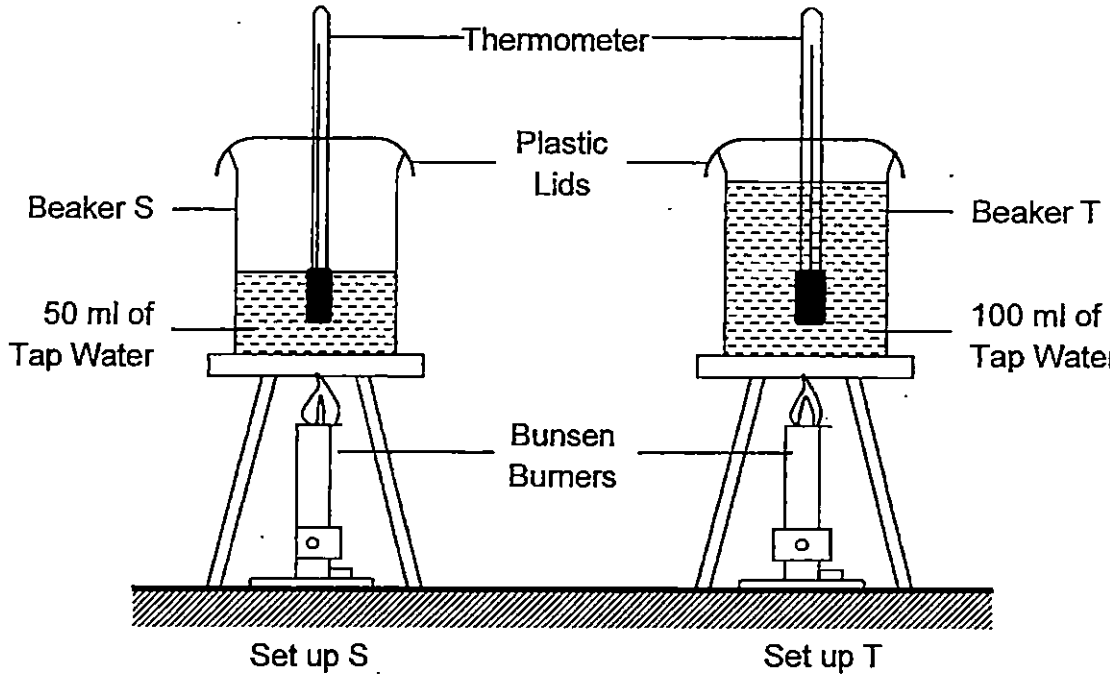
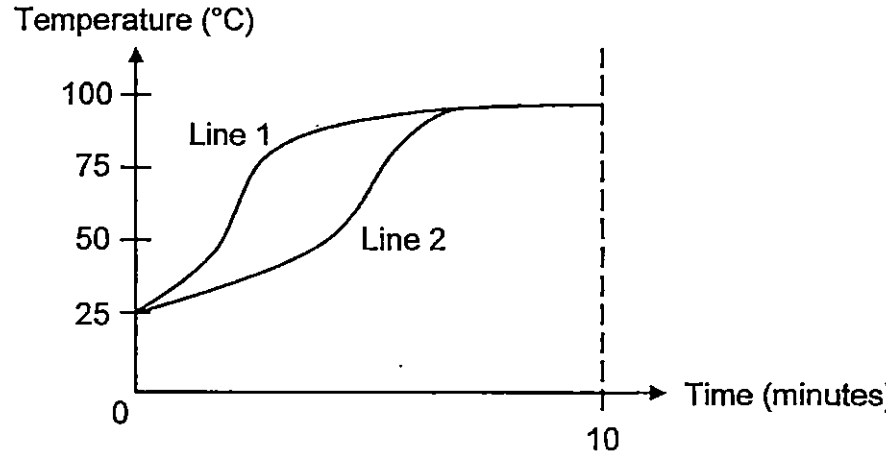
43. The diagram below shows 2 set ups, S and T. The beakers were placed above two bunsen burners and heated for 10 minutes.



The temperatures of the water in both beakers were recorded and shown on the graph below.



(a) State which line, 1 or 2, of the graph above, would represent beakers S and T. [1]

Line 1: ☐ Line 2: ☐

☐

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(b) Based on your answer in (a), compare and explain the difference in the changes in temperature shown by the graph up to the 10th minute. [2]

After the 10th minute, the water in beaker T was still being heated continually. It was observed that the temperature of the water in beaker T was starting to decrease gradually.

(c) **Without** the removal of any water from beaker T, suggest what could have been done that might have resulted in the above observation? [1]

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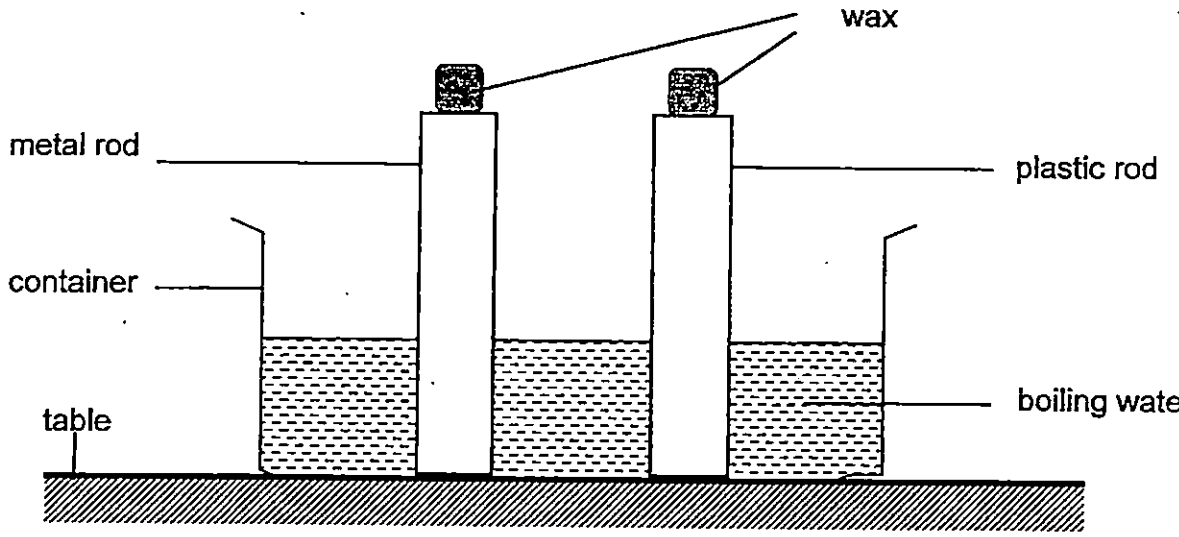
44. Larry placed equal amounts of wax at the ends of two rods, a metal rod and a plastic rod. He then placed both rods into a container of boiling water as shown in the diagram below.



(a) State on which rod, metal or plastic, would the wax melt first. [1]

_____

(b) Give a reason for your answer in (a). [1]

_____

_____

_____

_____

END OF BOOKLET B

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LEVEL : PRIMARY 4
SCHOOL : CHIJ ST NICHOLAS GIRLS' SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
4	4	2	4	4	4	3	2	3	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
3	4	3	3	4	1	3	3	1	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	3	3	2	2	3	2	4	3	3

Q31a. They both do not produce milk to fee their young and they have scales.

Q31bi) P Q31bii) S Q31biii) R Q31civ) Q

Q32a. Mango: R , Tomato : S , Moss: Q Money Plant : T

Q32b. No. A mushroom is a fungi and not a plant.

Q33a. Skeletal system Q33b. They both protect the inner organs.

Q34a. The butterfly has a four stage life cycle, while the grasshopper has a three stage life cycle. Q34b. The larvae stage

Q34c. When it is at the larva stage, it will eat a lot of leaves in preparation for the pupa stage, but without the leaves, the plant cannot survive, so it will die.

Q35a. light Q35b. metal Q36a. solid Q36b. liquid

Q37a. From solid to gas Q37bi) As the amount of Vitamin C tablet used increases, the less amount of time is taken for the rocket to launch. Q37bii) 2 seconds

Q38a. It would remain the same. Q38b. The volume of air will decrease .

Q38c. Air can be compressed, so when Richard pushed in the plunger, the volume of air in the syringe changed.

Q39a. Wood is not a magnetic material, so it will not get attracted to the magnet.

Q39b. The like poles of magnet A and B were facing each other, thus they repelled.

Q39c. The magnetic strength of the bar magnet is strongest at its poles which ar its end of the bar magnet.

Q40. Suggestion 1: He could make the number of coils the same.

Q40. Suggestion 2: Have the same number of coils around the rod in both set.

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Q41a. 3 objects Q41b. He could place the objects closer together, so that he can add more.

Q41C. Glass is transparent, all the light can pass through it, thus the light sensor cannot sense any objects made of glass.

Q42a. Point B. Q42b. No bright spots were observed on other points on the screen, since light travels in a straight line, it will not pass through the other parts of the cardboard.

Q42c i) The toy dinosaur is opaque, so it blocked the path of light, thus a shadow is formed.

Q42c ii) It will become smaller.

Q43a. Line 1 : S Line 2 : T

Q43b. Beaker T contains more water thus it would require more heat energy and a longer time to raise its temperature as shown by line 2 at the graph.

Q43c. He could remove the bunsen burner.

Q44a. The metal rod.

Q44b. Metal is a good conductor of heat, while plastic is a poor conductor of heat, so the metal rod conducted heat faster to the wax, thus the wax on the metal rod melted first.

THE END

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HENRY PARK PRIMARY SCHOOL
2015 SEMESTRAL EXAMINATION 2
SCIENCE
PRIMARY 4

/ 100

Duration of Paper: 1 h 45 min

Name: _____ ( )

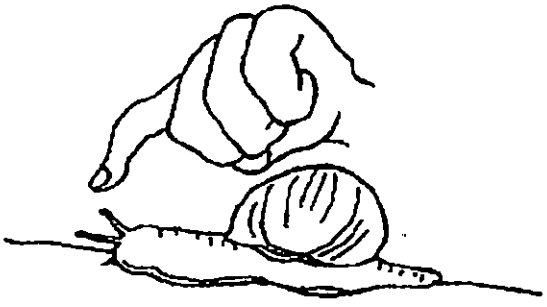
Parent's Signature: _____

Class: Primary 4 _____

Part A: Multiple-Choice Questions (30 X 2 = 60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. A snail hides itself in its shell when touched.



This shows that the snail is a living thing because it can _____.

(1) die
(2) grow
(3) breathe
(4) respond

( )

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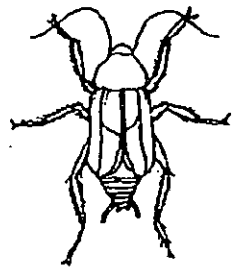
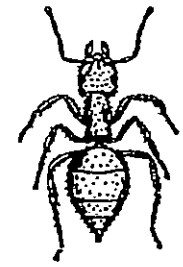
2. Which one of the animals shown below is **NOT** an insect?

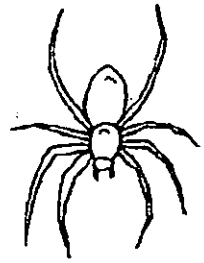
(1)



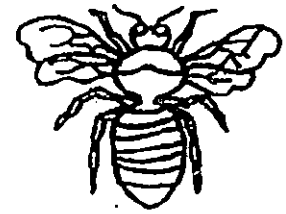
(2)



(3)



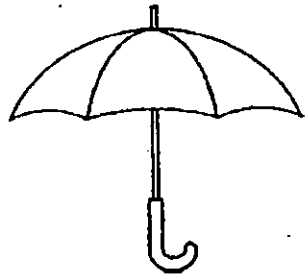
(4)



( )

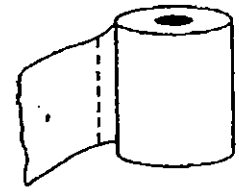
3. Which of the following objects is **NOT** made of waterproof material?

(1)



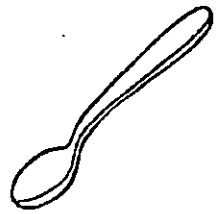
plastic umbrella

(2)



toilet paper

(3)



metal spoon

(4)

rubber gloves

( )

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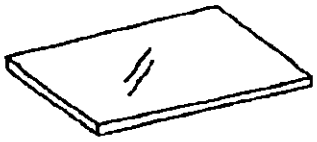
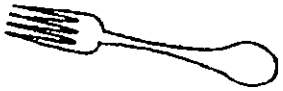
4. Which one of the following objects can be bent easily without breaking?

(1)



A sheet of glass

(2)

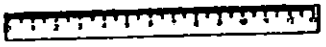


plastic fork

(3)

towel

(4)



wooden ruler

( )

5. Which animal has a pupa as a stage in its life cycle?

(1) frog
(2) butterfly
(3) chicken
(4) cockroach

( )

6. Matter is anything that has mass and occupies space.
Which one of the following is **NOT** matter?

(1) air
(2) water
(3) sand
(4) shadow

( )

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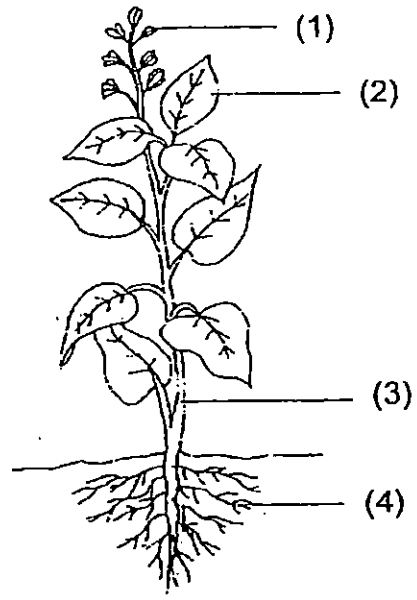
7 Which part, (1), (2), (3) or (4), takes in water for the plant?



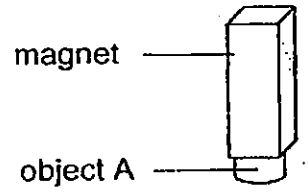
( )

8. In which part of the digestive system is food absorbed into the blood?

(1) gullet
(2) mouth
(3) small intestine
(4) large intestine

( )

9. Object A was attracted to a magnet, as shown below.



Object A is made of _____.

(1) iron
(2) glass
(3) plastic
(4) rubber

( )

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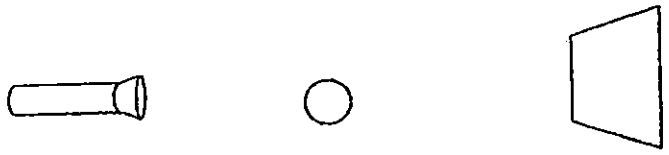
10. The set-up below shows light shining on a rubber ball.

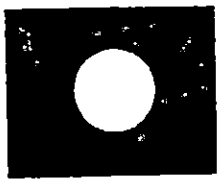


torch rubber ball screen

Which one of the following would likely be seen on the screen?

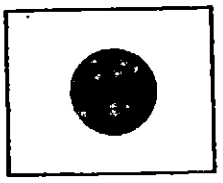
(1)

(2)



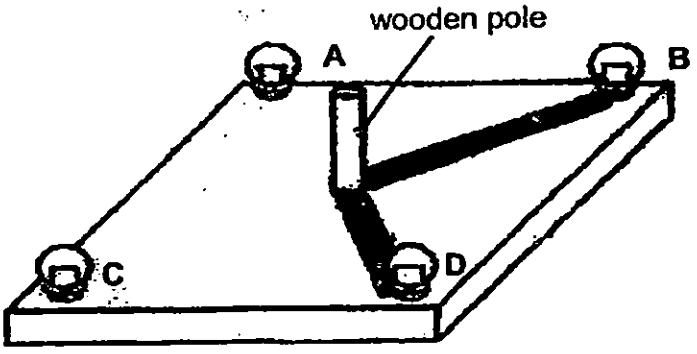
(3)

(4)



( )

11. The diagram below shows a wooden pole placed in the middle of a square board. 4 bulbs (A, B, C and D) are placed at each corner of the board.



Which of the bulbs have to be switched on at the same time so that the shadows of the wooden pole are formed as shown in the diagram above?

(1) A and B only
(2) A and C only
(3) B and C only
(4) B and D only

( )

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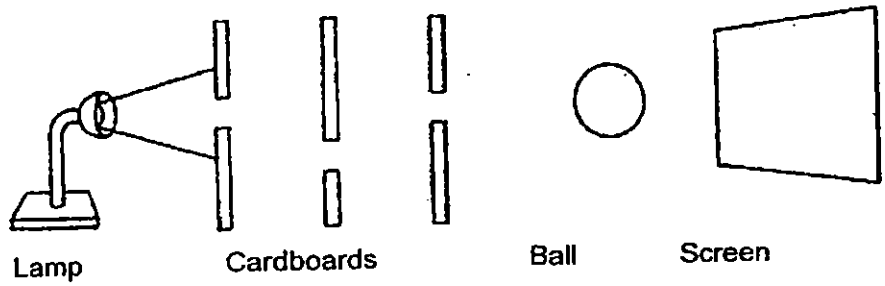
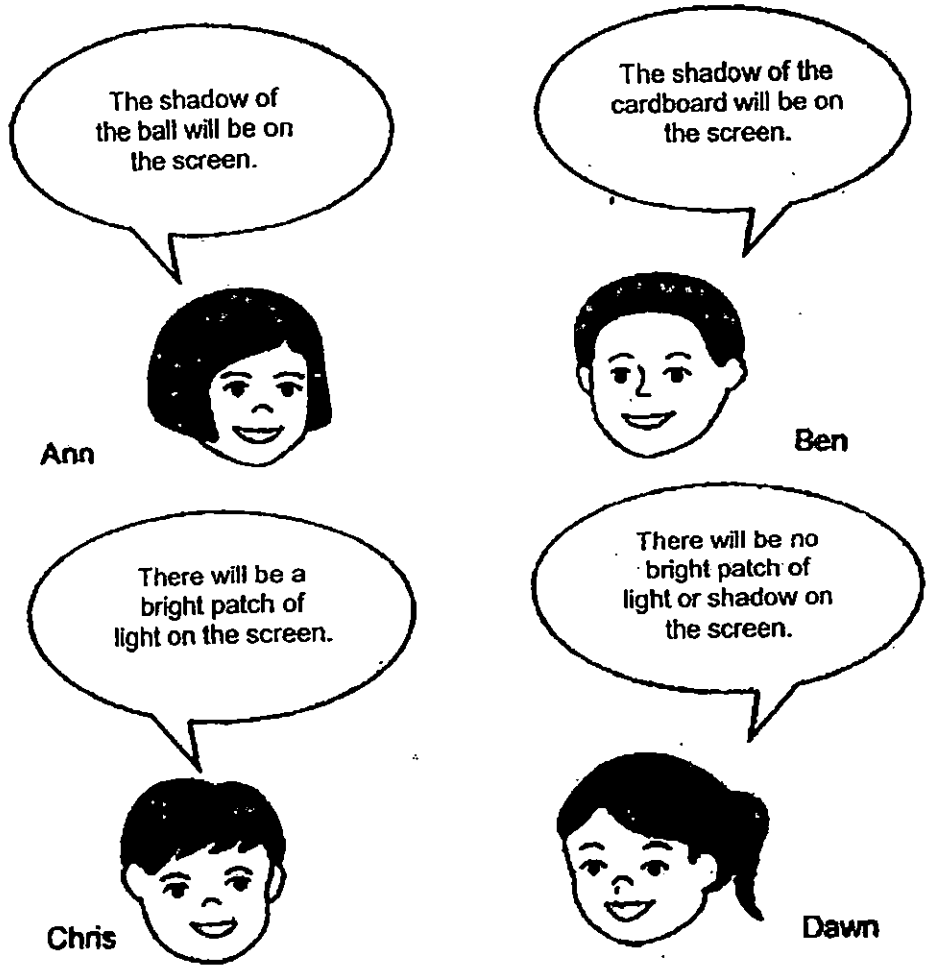
12. The diagram below shows an experimental set-up.



4 students, Ann, Ben, Chris and Dawn, each makes a statement based on the set-up.



Whose statement is correct?

(1) Ann
(2) Ben
(3) Chris
(4) Dawn

( )

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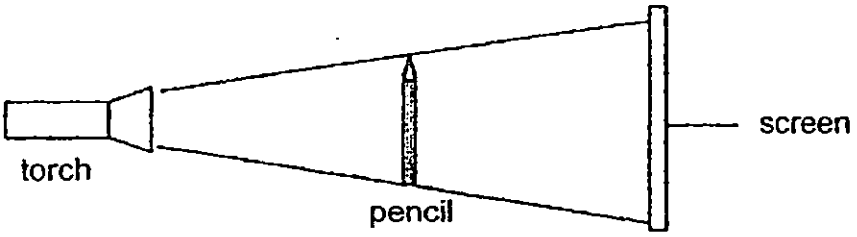
13. Jerry placed a pencil between a torch and a screen as shown below.



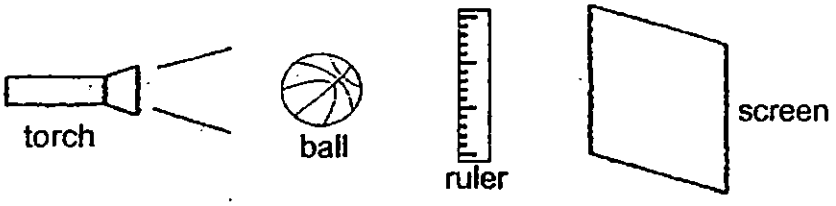
If Jerry wants to get a bigger shadow, what should he do?

A Move the pencil nearer to the torch.
B Move the pencil nearer to the screen.
C Move the screen further from the pencil.

(1) A only
(2) B only
(3) A and C only
(4) B and C only

( )

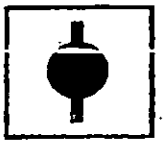
14. Ahmad shone a torch on a rubber ball and a wooden ruler which are placed in a straight line as shown below.

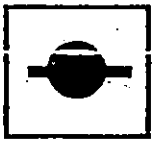


Which one of the following shadows would he observe?

(1)

(2)

(3)


(4)


( )

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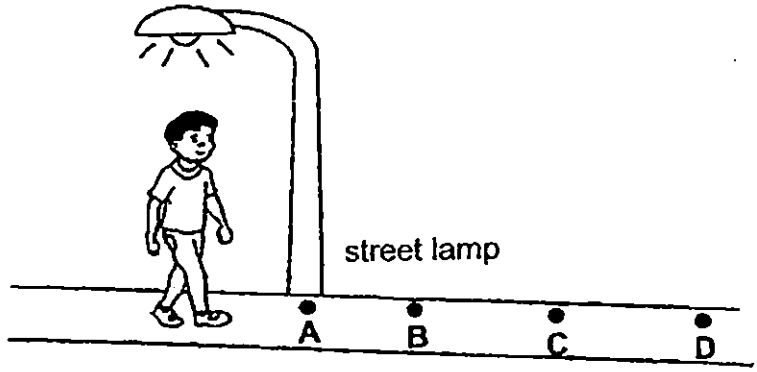
15. Jimmy is walking under a street lamp at night as shown below.

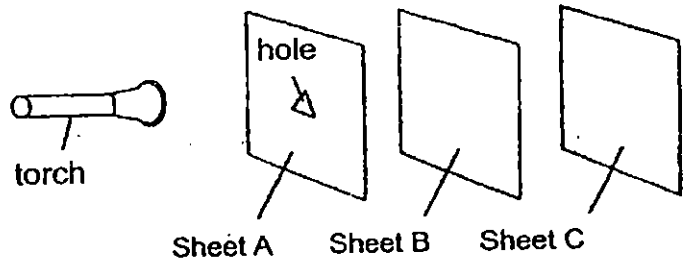


At which point will his shadow be the longest?

(1) A
(2) B
(3) C
(4) D

( )

16. Raju carried out the experiment shown below in a dark room.



Sheets A, B and C are arranged in a straight line. When the torch is switched on, a bright triangular patch of light is seen on Sheet C only.

Which one of the following correctly describes the properties of the materials that sheets A, B and C are made of?

	Allows light to pass through	Does not allow light to pass through
(1)	A	B and C
(2)	B	A and C
(3)	A and B	C
(4)	A and C	B

( )

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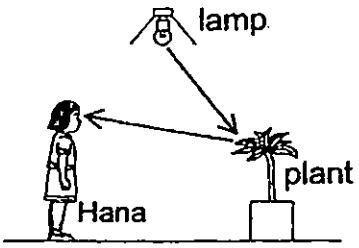
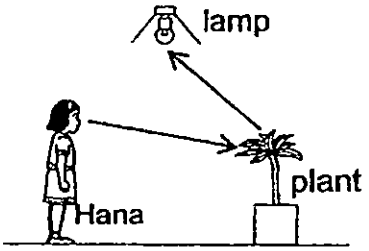
17. Which one of the following diagrams shows correctly the path of light that makes it possible for Hana to see the plant?

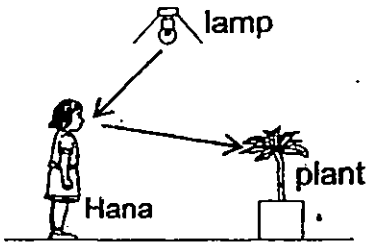
(1)



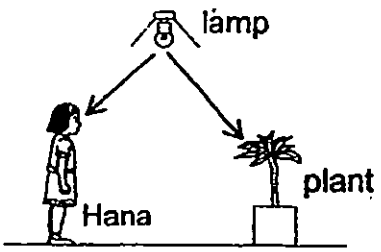
(2)



(3)

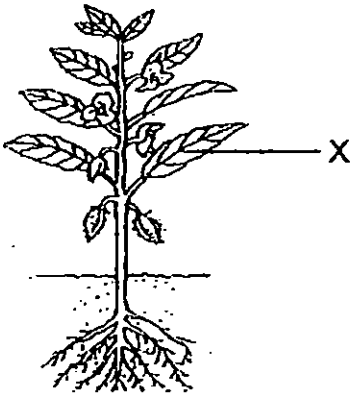


(4)



( )

18. The diagram below shows a plant.



What will happen if Part X of the plant is removed?

A The plant cannot make food.
B The plant cannot remain upright.
C Water cannot be transported to the plant.

(1) A only
(2) C only
(3) A and C only
(4) B and C only

( )

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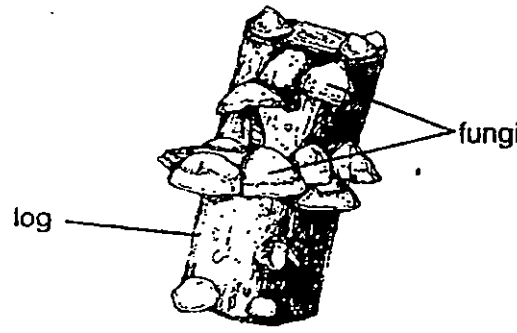
19. Lisa was walking in a park and she saw some fungi growing on a dead log as shown below.

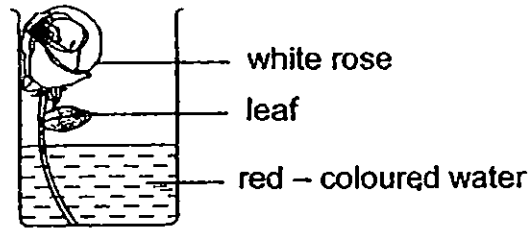


Which of the following statements about the fungi is correct?

(1) The fungi reproduce by seeds.
(2) The fungi make food for the log.
(3) The fungi depend on the dead log for food.
(4) The fungi are plants that grow on dead logs.

( )

20. Claire placed a white rose into a beaker of red - coloured water.



After a few hours, she noticed that some parts of the rose and the leaf turned red.

Based on the above experiment, which of the following statements are correct?

A Water is taken in by the leaf.
B Water is transported to the leaf.
C Water is transported to the rose.
D Water is carried through the stem.

(1) A and C only
(2) B and D only
(3) B, C and D only
(4) A, B, C and D

( )

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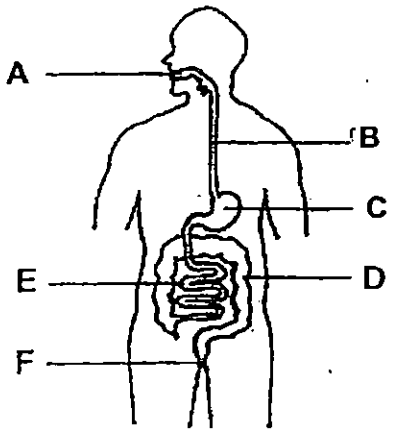
21. The diagram below shows the digestive system of a human body.



Which parts of the above system produce digestive juices to digest the food we eat?

(1) A, B and F only
(2) A, C and E only
(3) C, D and E only
(4) B, C and F only

( )

22. Study the groups below.
Which one of the following groups consists of only matter?

(1) glue, paint, pebble
(2) music, light, paper
(3) sugar, shadow, soap
(4) syrup, shoe, thunder

( )

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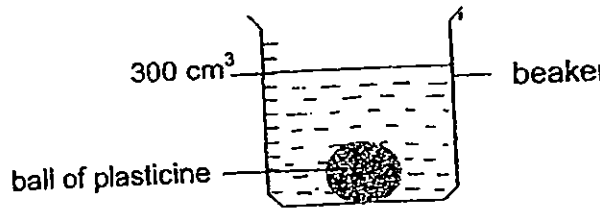
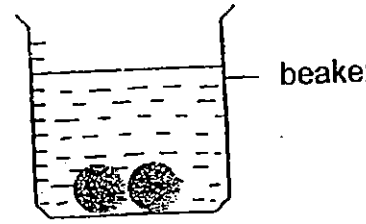
23. A ball of plasticine was placed into a beaker of water. The total volume of water and ball of plasticine was 300 cm^3 as shown below.



The plasticine was removed from the beaker of water and cut into two pieces. They were dropped into the same beaker of water again as shown below.



What would the total volume of water and plasticine be now?

(1) 150 cm^3
(2) 200 cm^3
(3) 300 cm^3
(4) 600 cm^3 ( )

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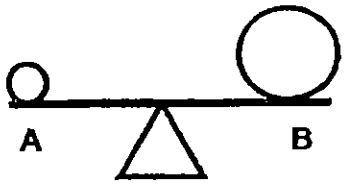
24. Two objects, A and B, are placed on a balance as shown below.
They are equally balanced.



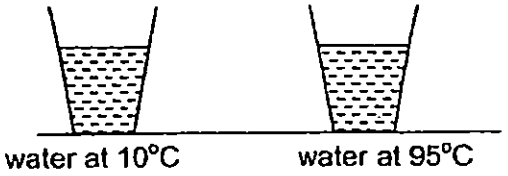
Which of the following statements about the two objects are correct?

A A has a smaller mass than B.
B A and B have the same mass.
C B has a greater volume than A.
D A and B have the same volume.

(1) A and C only
(2) B and C only
(3) A and D only
(4) B and D only

( )

25. Susan had 2 similar glasses of water at different temperatures as shown below.



She poured the two glasses of water into a basin in a room at 30°C and mixed the water well.

Which one of the following correctly shows the temperature of water in the basin immediately and 6 hours later?

Temperature of water in the basin (°C)

	Immediately	6 hours later
(1)	105	30
(2)	95	30
(3)	50	30
(4)	50	20

( )

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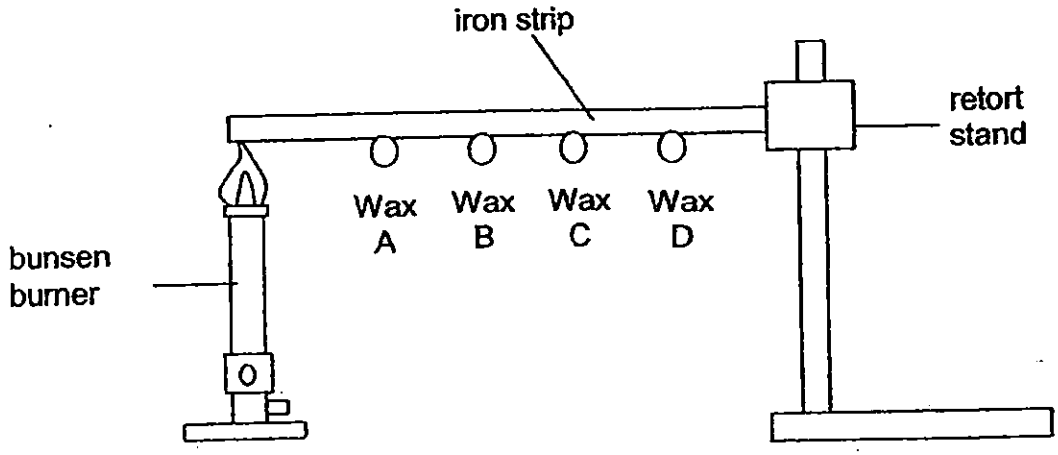
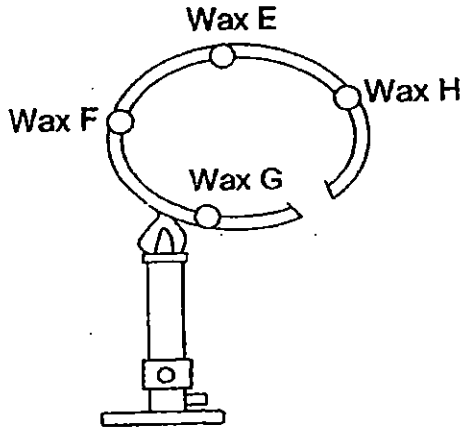
26. An iron strip with four similar drops of wax, A, B, C and D, was heated at one end as shown in the diagram below.

Wax A melted and dripped off first, followed by B, C and D.



The strip was bent into a ring and heated with another four similar drops of wax as shown below.



In which order would the wax melt and drip off?

(1) E, F, G, H
(2) G, E, F, H
(3) G, F, E, H
(4) H, E, G, F

( )

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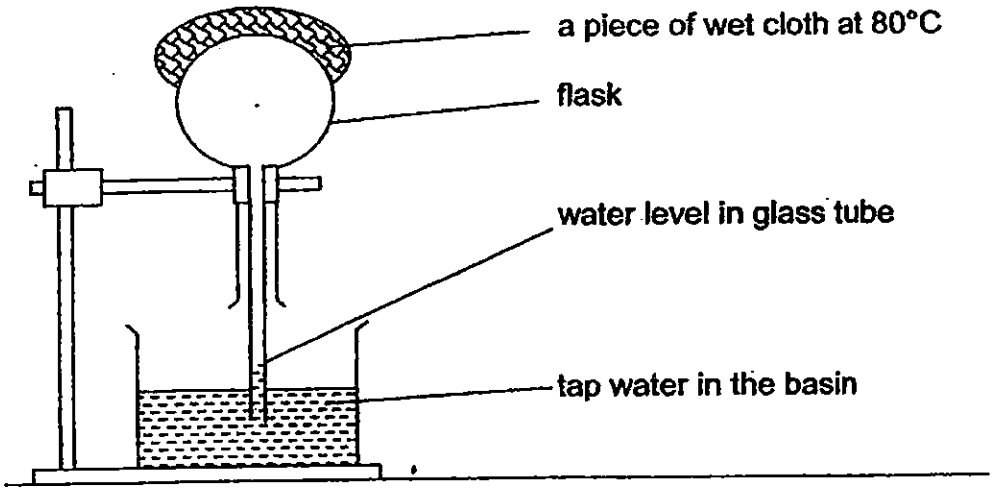
27. Teresa wrapped the flask with a piece of wet cloth at 80°C.



Which of the following is/are possible observation(s) of the set-up 2 minutes after the cloth was placed on the flask?

A Water level in the glass tube dropped.
B Water level in the glass tube rose.
C Small bubbles escaped through the glass tube into the basin of tap water.

(1) A only
(2) B only
(3) A and C only
(4) B and C only

( )

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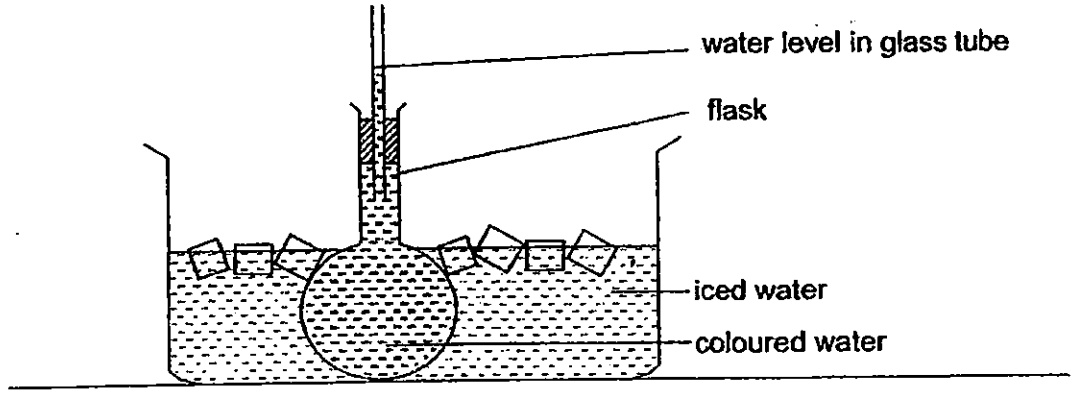
28. Terence conducted an experiment as shown below.



Which of the following correctly describe what Terence would observe 2 minutes after placing the flask into the iced water and its explanation?

	Observation	Explanation
(1)	Water level in the glass tube fell.	Water in the flask lost heat and contracted.
(2)	Water level in the glass tube fell.	Water in the flask gained heat and expanded.
(3)	Water level in the glass tube rose.	Water in the flask gained heat and expanded.
(4)	Water level in the glass tube rose.	Water in the flask lost heat and contracted.

( )

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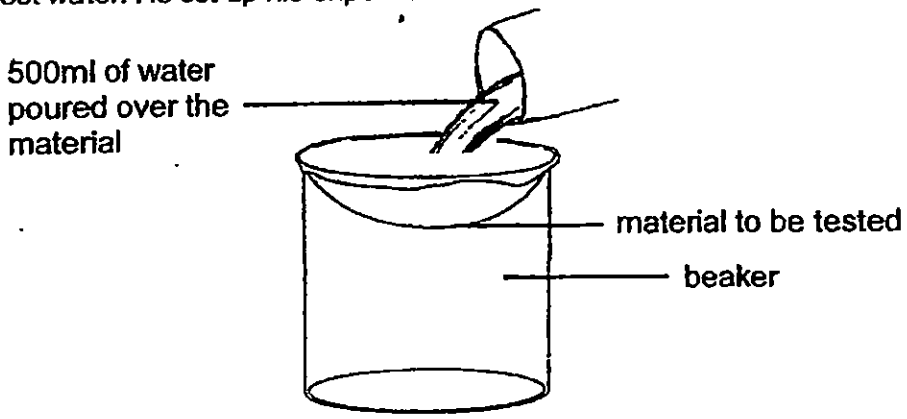
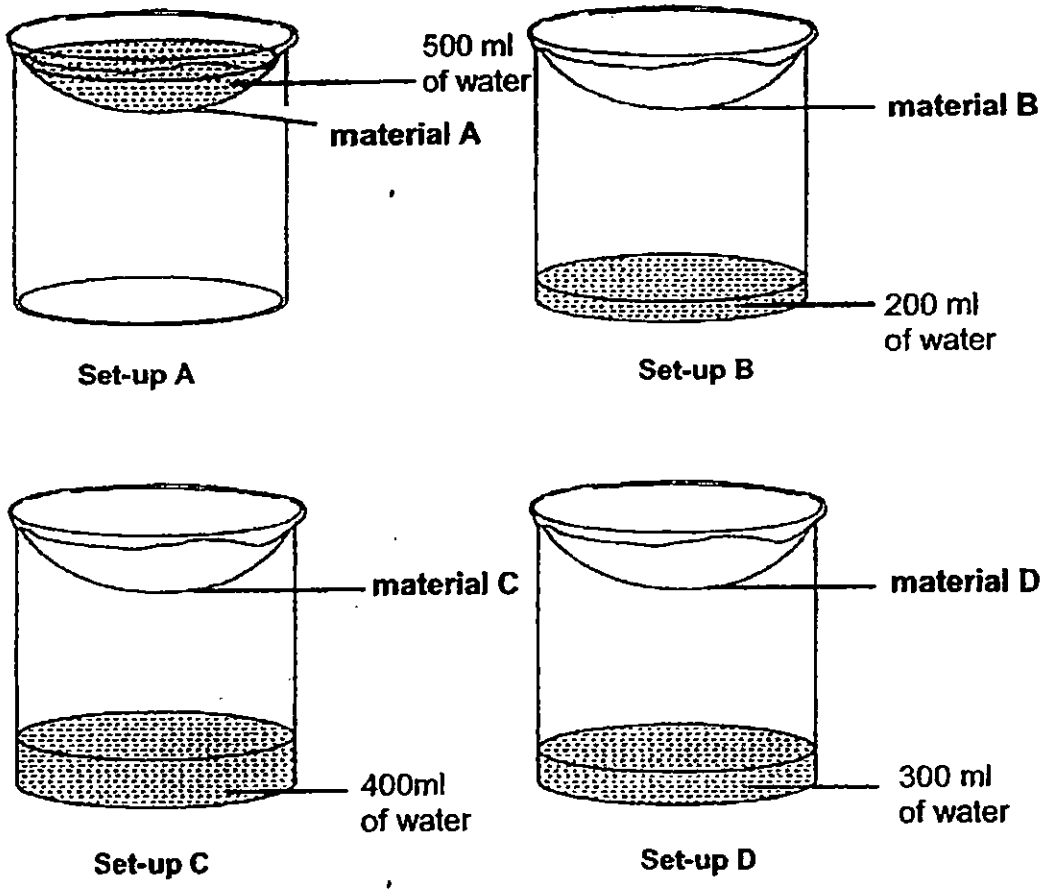
29. David carried out an experiment to find out which material (A, B, C or D) absorbs the most water. He set up his experiment as shown below.



The diagrams below show his results.



A bath towel is used to dry yourself after a shower.

Which is the most suitable material to make a bath towel?

(1) Material A
(2) Material B
(3) Material C
(4) Material D

( )

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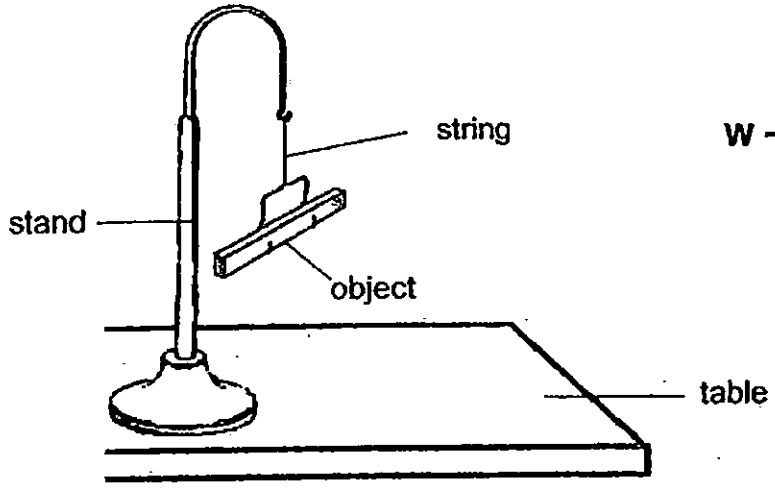
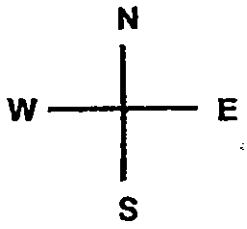
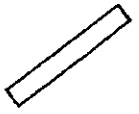
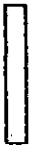
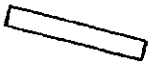
30. Fazal hung 4 objects, P, Q, R and S, on a stand as shown below.

Each object came to rest at different positions. He recorded his findings in the table below.





Object	Resting position
P	
Q	
R	
S	

Based on the table, which of the following is a magnet?

(1) Object P
(2) Object Q
(3) Object R
(4) Object S

( )

End of Booklet A

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HENRY PARK PRIMARY SCHOOL
2015 SEMESTRAL EXAMINATION 2
SCIENCE
PRIMARY 4

40

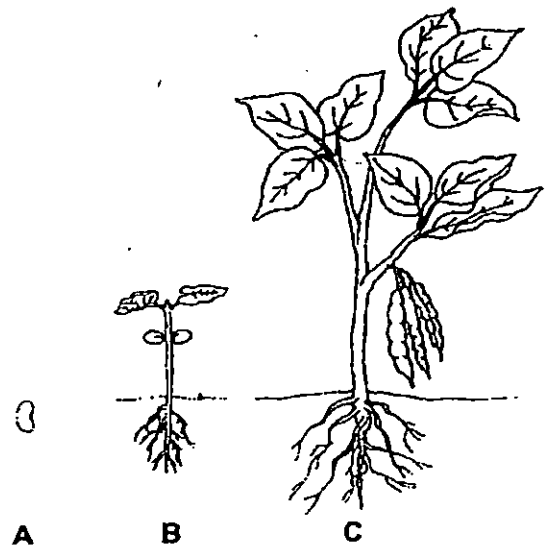
Name: _____ ( )

Class: Primary 4 _____

Part B Open - Ended Questions (40 marks)

Write your answers to questions 31 to 44 in the spaces given.

31. The diagram below shows the stages in the life cycle of a plant.



egg	seed	adult plant	young plant

Name the stages **A** and **C** in the life cycle of the plant. [2m]

A: _____

C: _____

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32. Classify the following into matter and non-matter in the table below.

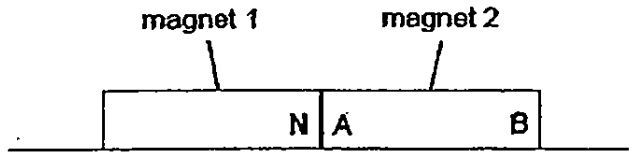
air	soil	light

[2m]

Matter	Non - Matter

33. Two magnets are placed together as shown below.

The north pole of magnet 1 is labelled N.



Name the poles labelled A and B on magnet 2. [2m]

A: _____

B: _____

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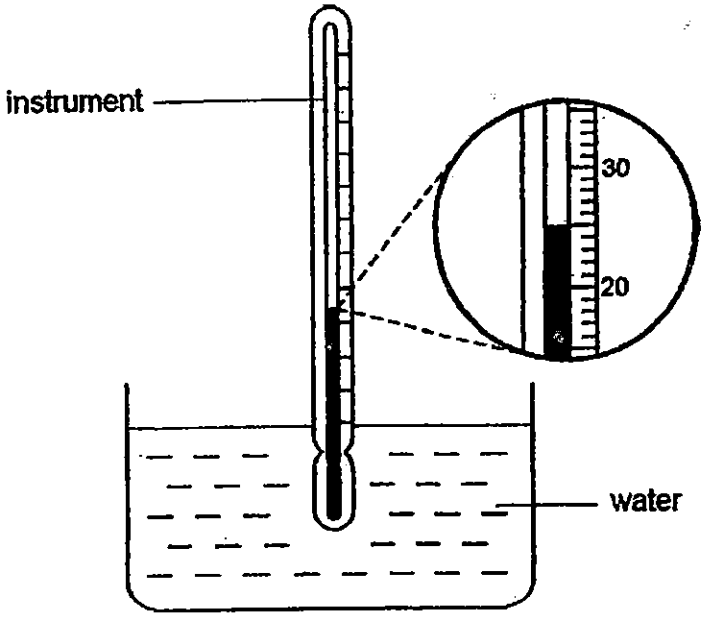
34. Jane used an instrument to measure the temperature of water in a beaker.

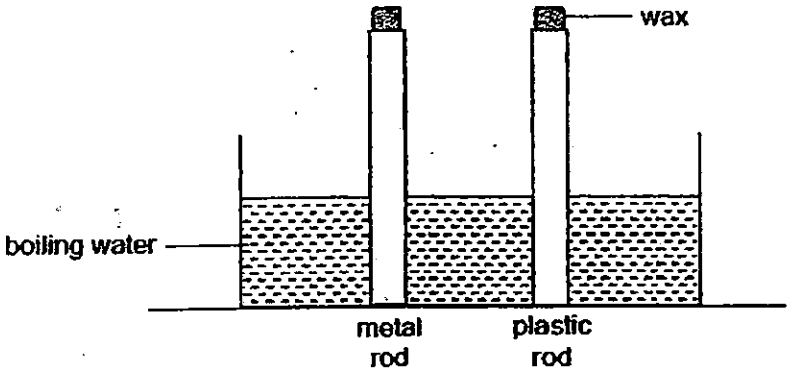


(a) What is the instrument called? _____ [2m]

(b) What is the temperature of the water in the beaker? _____ ^{0}C

35. James placed a metal rod and a plastic rod into a tank of boiling water as shown below.

Equal amounts of wax were put on both rods.



What would he observe and why? [2m]

The wax on the plastic rod melted _____ than the wax on the metal rod, as plastic is a _____ conductor of heat than metal.

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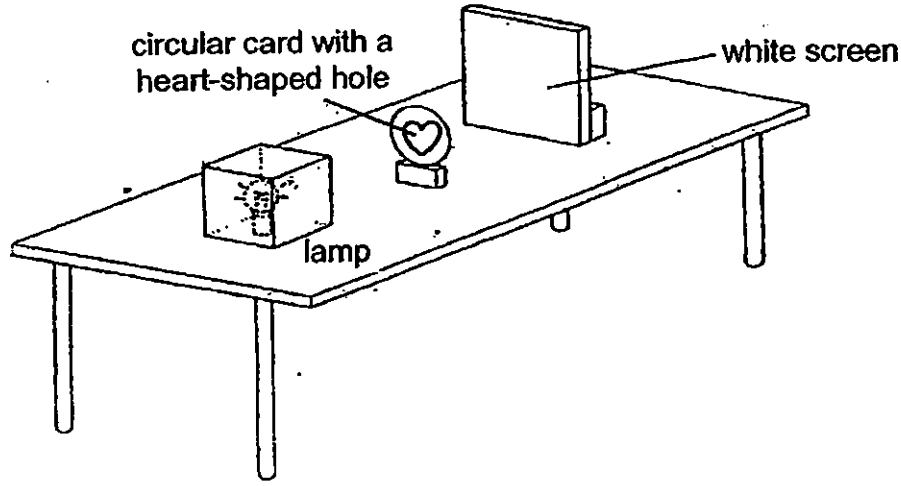
36. Carol set up an experiment as shown below.



A shadow was formed on the screen.

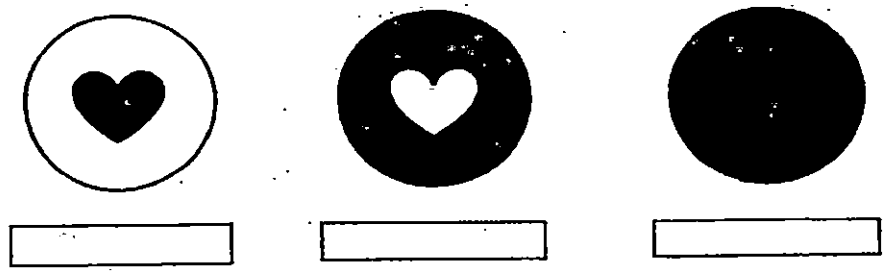
(a) Explain why the shadow was formed. [1m]

_____

_____

(b) What will be the shadow formed on the screen?

Put a tick (✓) in the correct box below. [1m]



(c) As the circular card is moved away from the lamp, state 2 changes in the shadow Carol would see on the screen. [2m]

(i) _____

(ii) _____

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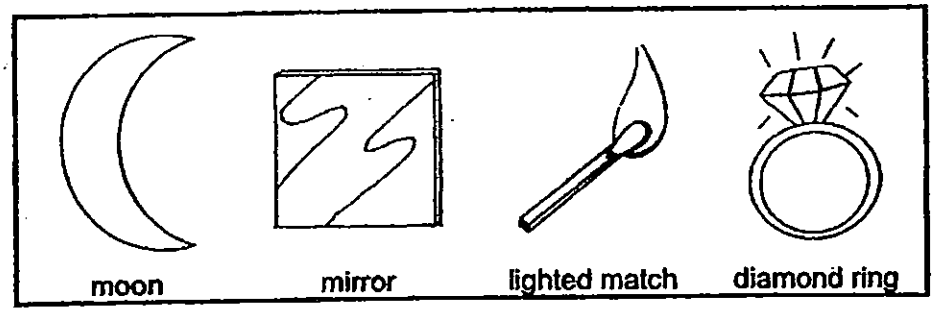
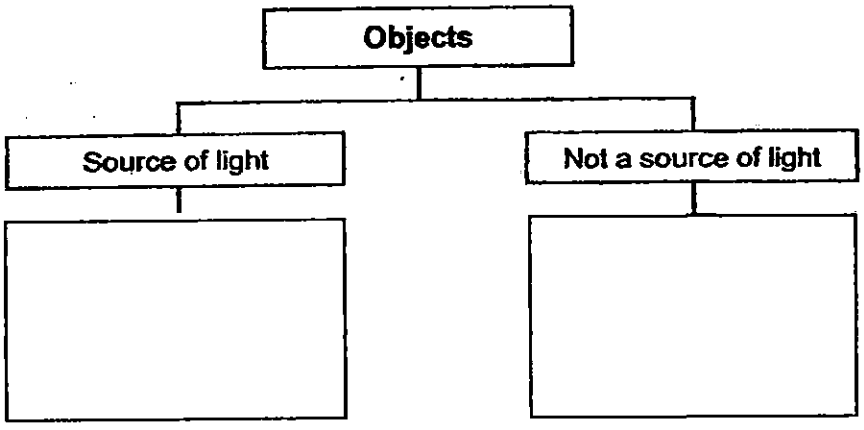
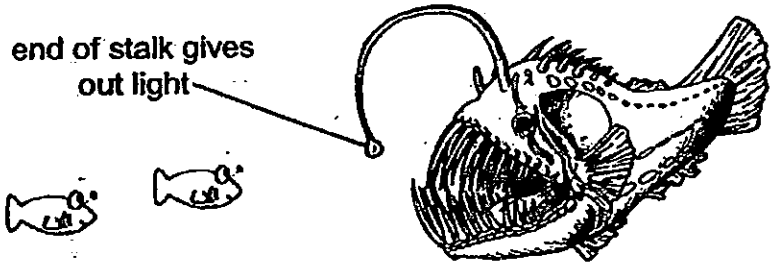
37. The diagram below shows some objects.



(a) Classify the objects by filling in their names in the correct boxes of the classification chart below. [2m]



The diagram below shows the angler fish which lives in the deep ocean where it is very dark.



The end of the stalk on its head gives out light to attract other fish. The angler fish then feeds on them when they come closer.

(b) Explain how the other fish are able to see the light of the angler fish in the darkness. [1m]

_____

_____

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38. Ahmad removed all the leaves of plant A shown below.

Plant A

(a) What will happen to plant A after a few weeks? [1m]

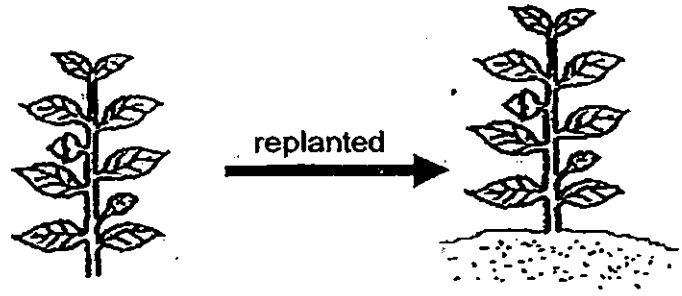
_____

(b) Explain your answer in (a). [2m]

_____

_____

Ahmad had another plant, Plant B. He removed all the roots of Plant B and replanted it in a garden shown below.



Plant B

He noticed that plant B toppled easily.

(c) Explain why. [1m]

_____

_____

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39. John eats 90 g of food during his tea break at 3 p.m.

The table below shows the amount of undigested food in 3 different parts of the digestive system at different times.

Amount of undigested food in **X** at 3 p.m. (g)	Amount of undigested food in **Y** at 4 p.m. (g)	Amount of undigested food in **Z** at 5 p.m. (g)
88	40	10

(a) Which part (X, Y or Z) is likely to represent the mouth? [1m]

_____

(b) What happens to the digested food in the small intestine? [1m]

_____

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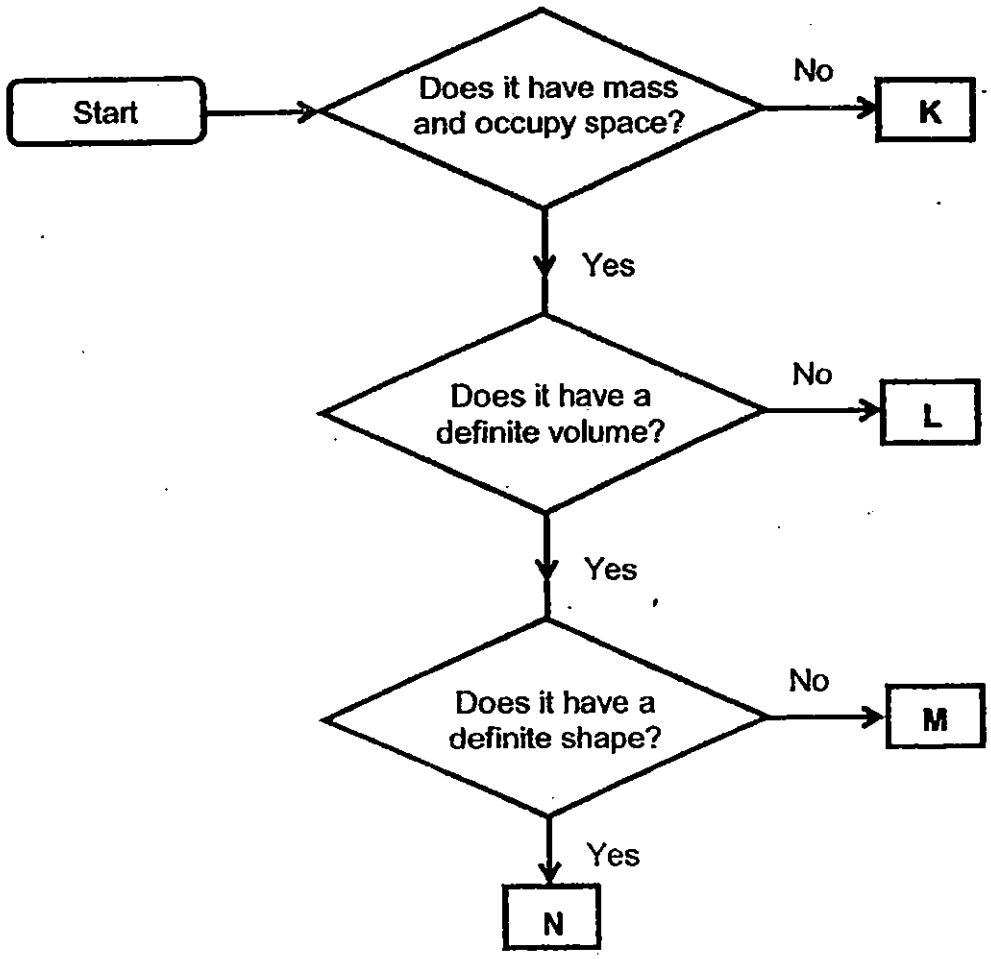
40. Study the flow chart below and answer the questions that follow.



(a) Name 2 examples of K. [1m]

_____

(b) Circle the state of L. [1m]

Solid **Liquid** **Gas**

(c) State one similarity and one difference between M and N. [2m]

Similarity: _____

_____

Difference: _____

_____

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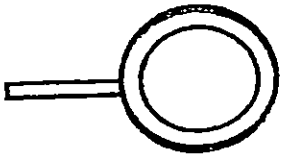
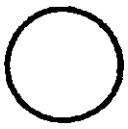
41. The ring is made of metal and the ball is made of glass.



metal ring



glass ball

At room temperature, the ball was unable to pass through the ring.
Susan dipped the ring into a beaker of hot water and the ball into a beaker of ice.
After which, the ball can pass through the ring.

(a) Explain clearly what has happened to the metal ring and the glass ball that enables the ball to pass through the ring. [2m]

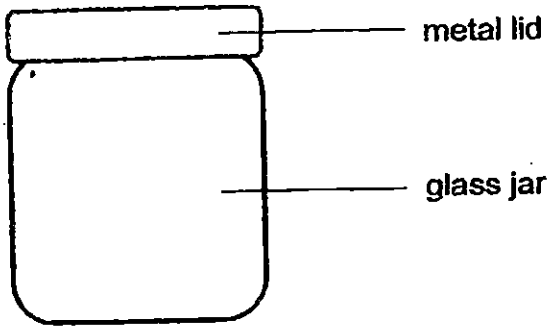
(i) Metal ring: _____

_____

(ii) Glass ball: _____

_____

Susan had a glass jar with a metal lid.



(b) She wanted to remove the lid from the jar but could not. What should she do to the metal lid and the glass jar? [2m]

(i) Metal lid: _____

_____

(ii) Glass jar: _____

_____

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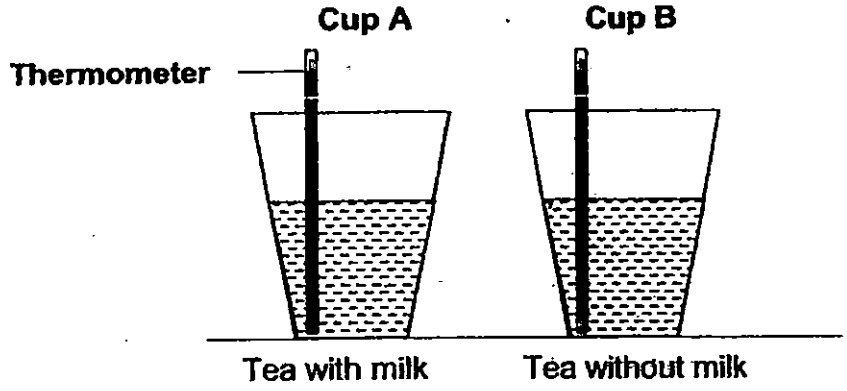
42. Benjamin wanted to find out **how adding milk to tea affects the time taken for the tea to cool down.**

He had 2 similar cups of tea, A and B, each with a temperature of 80°C. He added milk into cup A but not into cup B.

He measured the temperature of tea in cups, A and B, at five-minute intervals for 20 minutes.



The table below shows the results of the experiment.

Time (min)	Temperature of Tea (°C)	
	Cup A	Cup B
0	80	80
5	70	60
10	60	55
15	50	45
20	40	30

(a) Put a tick (✓) in the correct columns in the table below to indicate the type of variables in this experiment. [2m]

Variables	Keep the same	Independent variable	Dependent variable
Amount of milk			
Material of the cup			
Temperature of tea			
Thickness of the cup			

(b) What can Benjamin conclude from the results of the experiment? [1m]

_____

_____

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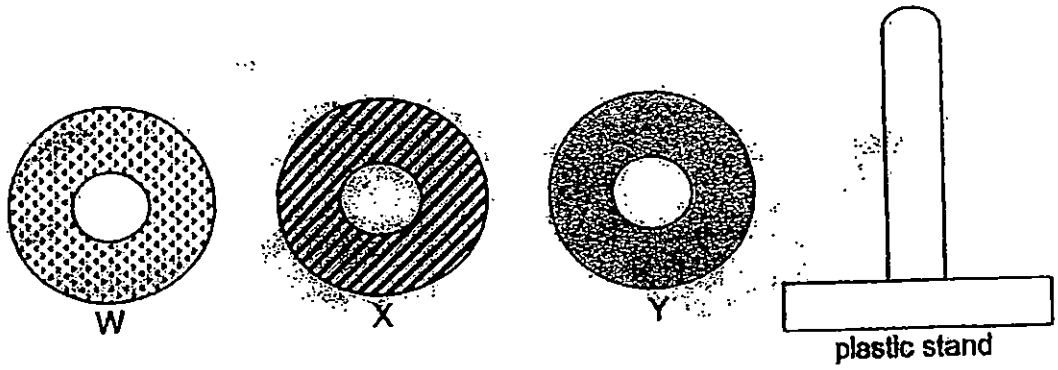
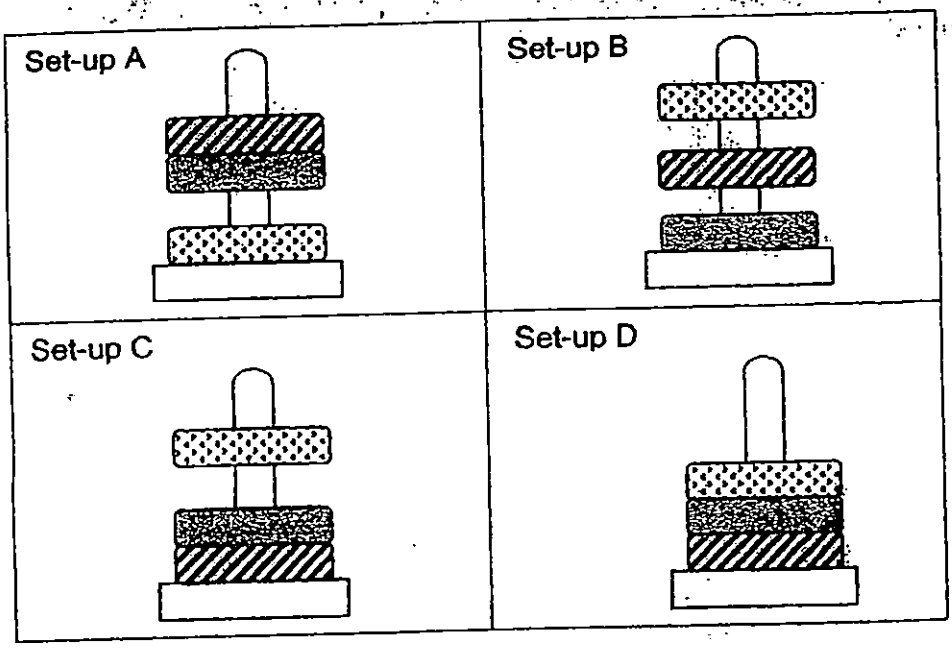
43. The diagram below shows a plastic stand and three discs, W, X, Y, of similar size, each with a hole in the centre. Only two of the discs are magnets.



The diagrams below show the positions of the three discs when they are placed on top of one another through the plastic stand.



(a) Based on the information provided, which one of the above set-ups would **not** be possible? [1m]

_____

(b) Explain clearly your answer in (a). [2m]

_____

_____

_____

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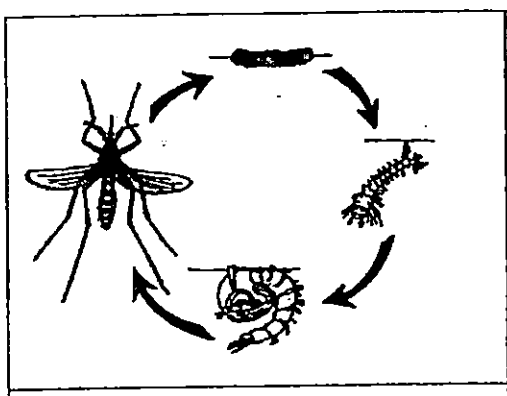
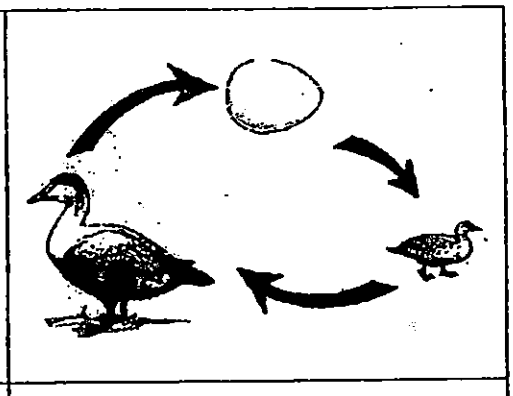
44. The diagrams below show the lifecycle of organism M and N.

	
Life cycle of Organism M	Life cycle of Organism N

State the **differences** between the life cycles of organisms **M** and **N** for the following: [3m]

(a) Number of stages	
(b) Where the eggs are laid	
(c) Appearance of the young and the adult	

End of Booklet B

Setters: *Ms Evelyn Tan, Mr Yuan Kee King, Ms Peh Yunn Chyn & Mdm Nadia Abu Bakar*

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : HENRY PARK PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
4	3	2	3	2	4	4	3	1	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
2	4	3	3	4	2	1	1	3	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	1	3	2	3	3	3	1	2	3

Q31. A: Seed Q31. C: adult plant

Q32. Matter – air , soil Q32. Non – matter – light

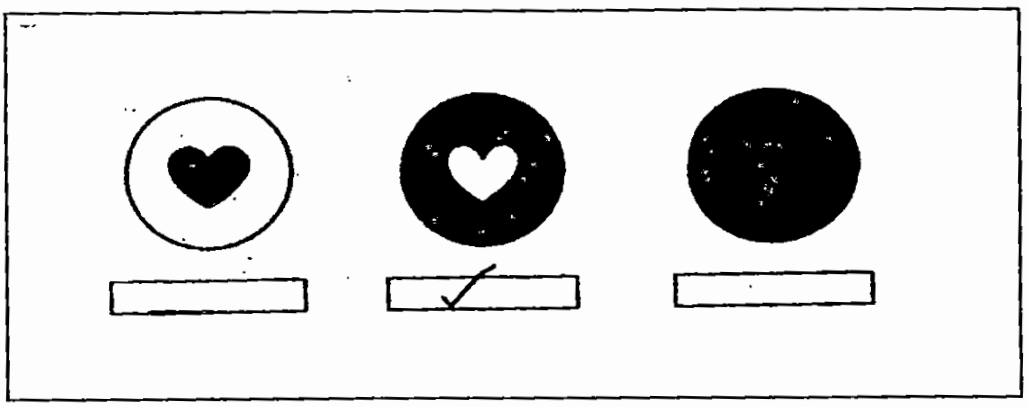
Q33. A: south Q33 B: north

Q34a. Thermometer Q34b. 25°C

Q35. The wax on the plastic rod melted **slower** than the wax on the metal rod, as plastic is a **poor** conductor of heat than metal.

Q36a. Because the light of the lamp was blocked by the object so a shadow will be formed on the screen.

Q36b. **SEE PICTURE** Q36c. (i) The shadow becomes darker. (ii) The shadow would be smaller.



Q37a. source of light – lighted match
Q37a mirror, diamond ring , moon

Q37b. The light from the stalk reaches the eyes of the fish.

Q38a. It will die.

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Q38b. Because the leaves makes food for the plant but Ahmad removed all the leaves of the plant and so it cannot make food for the plant and it will die.

Q38c. Because the roots of the plant hold the plant firmly to the ground, but when it is removed, it cannot hold the plant firmly to the ground and it will topple easily.

Q39a. Part X. Q39b. Digested food will be absorbed into the bloodstream.

Q40a. Shadow and sunlight. Q40b. Gas

Q40c. Similarity : Both M and N have mass and occupies space.
Q40c. Difference : N has a definite shape but M does not has a definite shape.

Q41a. (i) Metal ring : Because when the ring was dipped into a beaker of hot water, it gained heat and expanded.

Q41a. (ii) Glass ball: Because when the ball was dipped into a beaker of ice, it lose heat and contract.

Q41b. (i) Metal lid: Place the metal lid in a hot water.

Q41b (ii) Glass jar : Place the glass jar in a cold water.

Q42a. Amount of milk – independent variable
Q42a. Material of the cup- Keep the same
Q42a. Temperature of tea – Dependent variable
Q42a. Thickness of the cup – Keep the same.

Q42b. Tea with milk added takes a long time.

Q43a. Set up B.

Q43b. Because only magnets can repel and there is only two magnets, but all of the discs in set-up B repel, so it should be set-up B.

Q44a. Organism M has four stages of life cycle but organism N has only three stages of life cycle.

Q44b. Organism M lay their eggs in water but organism n lay their eggs on land.

Q44c. The young of organism N looks alike, but the young of organism M does not look alike to its adult.

THE END

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MAHA BODHI SCHOOL

2015 SEMESTRAL ASSESSMENT 2

PRIMARY 4

SCIENCE

(BOOKLET A)

Name : _____ ( )

Class : Primary 4 _____

Date : 3 November 2015

Total Duration for Booklets A and B: 1 h 30 min

INSTRUCTIONS TO CANDIDATES:

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers in the Optical Mark Sheet (OMS) provided.

This booklet consists of **14** printed pages.

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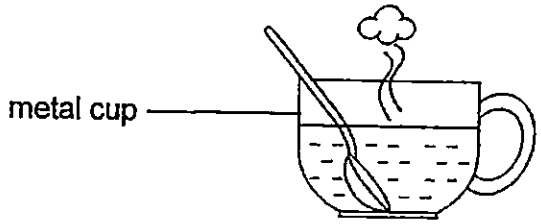
BOOKLET A : [27 x 2 marks = 54 marks]

For each question from 1 to 27, four options are given. One of them is the correct answer. Make your choice and shade the oval (1, 2, 3 and 4) on the Optical Mark Sheet (OMS).

---

1. Oliver pours some hot water into a metal cup. The metal cup becomes hotter after ten minutes.



Which one of the following explains why the metal cup became hot?

(1) The metal cup loses heat to the hot water.
(2) The hot water loses heat to the surrounding.
(3) The metal cup gains heat from the hot water.
(4) The hot water gains heat from the surrounding.

2. Which one of the following is a source of light?

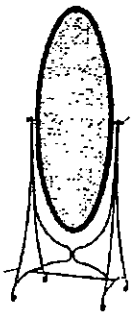
(1)

The moon

(2)

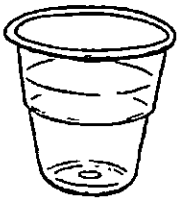
A campfire

(3)



A mirror

(4)



A cup

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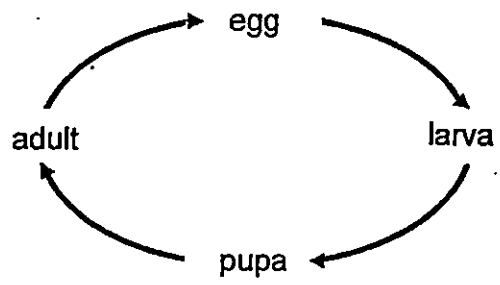
3. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle shown above?

(1) Frog
(2) Chicken
(3) Butterfly
(4) Cockroach

4. Which of the following has a definite volume but no definite shape?

(1) Ice
(2) Air
(3) Ruler
(4) Water

5. Which of the following is a matter?

(1) Air
(2) Heat
(3) Light
(4) Shadows

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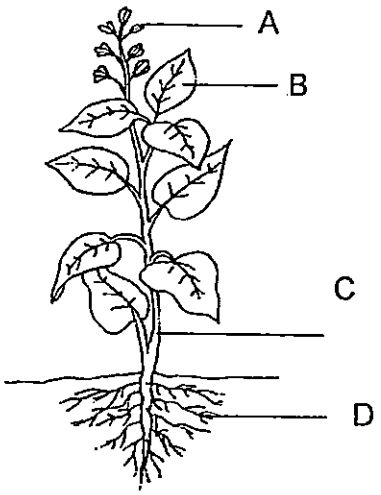
6. Study the diagram below.



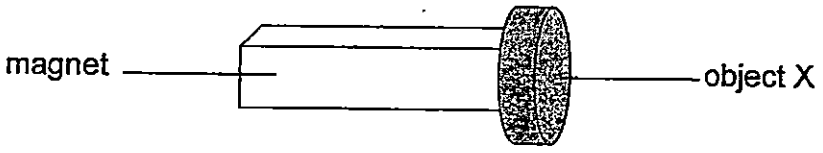
Which part, A, B, C or D, helps the plant to take in and give out gases?

(1) A
(2) B
(3) C
(4) D

7. In which part of the digestive system is food absorbed into the blood?

(1) mouth
(2) stomach
(3) small intestine
(4) large intestine

8. Object X was attracted to a magnet, as shown in the diagram below.



Object X is made of _____.

(1) steel
(2) glass
(3) wood
(4) plastic

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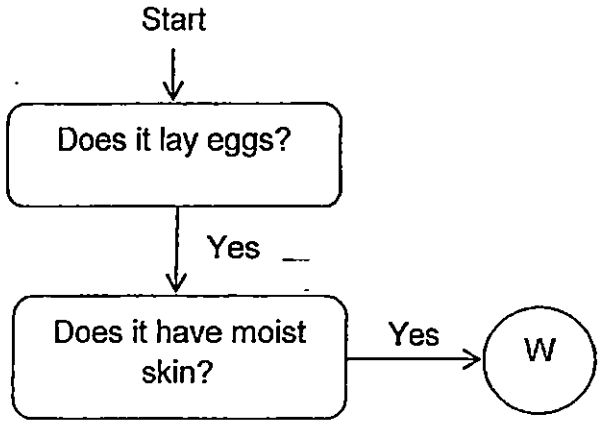
9. Study the flowchart below.



Which animal group could W belong to?

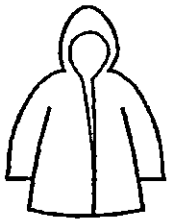
(1) Insect
(2) Reptile
(3) Mammal
(4) Amphibian

10. Which of the following is not made of material that is waterproof?

(1)

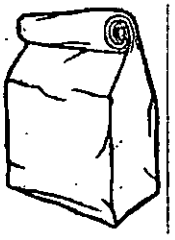
a metal fork

(2)



a raincoat

(3)



a paper bag

(4)

a sheet of glass

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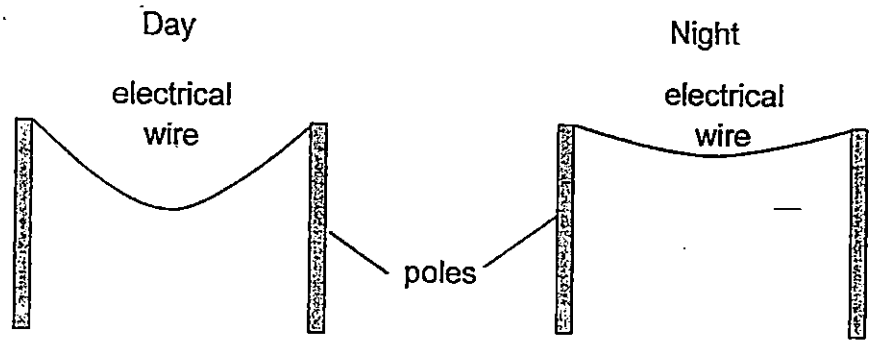
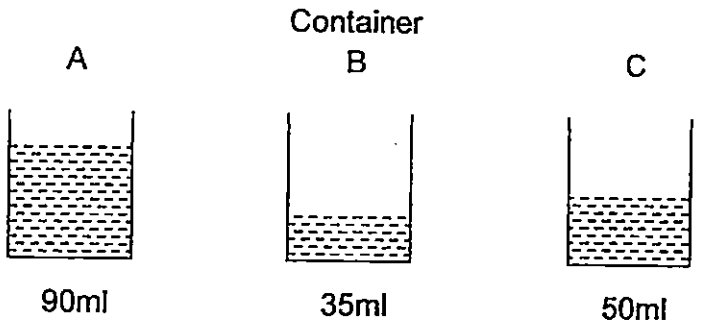
11. Hassan observes the electrical wire hanging on poles along the street in the day and night as shown in the diagram below.



Which of the following statement is correct?

(1) In the day, the electrical wire loses heat and contracts.
(2) In the day, the electrical wire gains heat and expands.
(3) In the night, the electrical wire gains heat and contracts.
(4) In the night, the electrical wire loses heat and expands.

12. Ahmad filled three similar containers A, B and C with different amounts of water and heated them up until they reached a temperature of 80°C.



Arrange the containers according to the amount of heat it contains.

	most amount of heat →		least amount of heat
(1)	A	C	B
(2)	B	C	A
(3)	C	B	A
(4)	B	A	C

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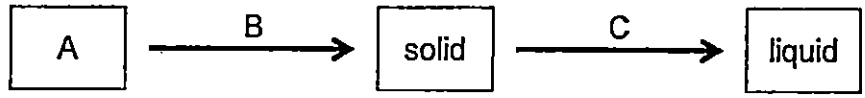
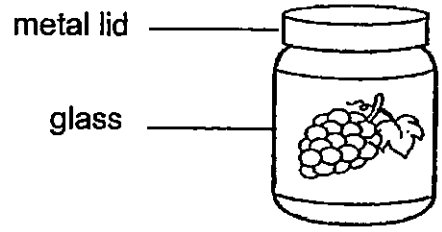
13. Study the diagram below.



Which of the following best represents A, B and C?

	A	B	C
(1)	solid	lose heat	gain heat
(2)	solid	gain heat	lose heat
(3)	liquid	gain heat	lose heat
(4)	liquid	lose heat	gain heat

14. Sally placed a bottle of jam into the refrigerator after using it. The next day, she tried to open it again but was unable to do so.



What should Sally do so that she is able to open the bottle of jam?

A. Heat up the metal lid over a small flame.
B. Place some ice cubes over the metal lid.
C. Immerse the metal lid in a container of hot water.
D. Immerse half of the glass bottle in a container of hot water.

(1) A and B only
(2) A and C only
(3) B and D only
(4) C and D only

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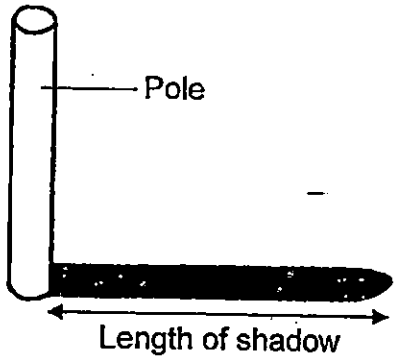
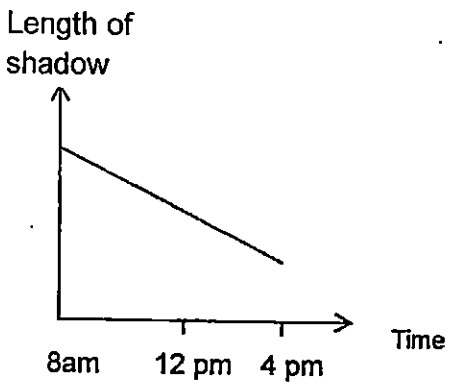
15. Jia En measured the length of the shadow of a pole as shown in the diagram below.

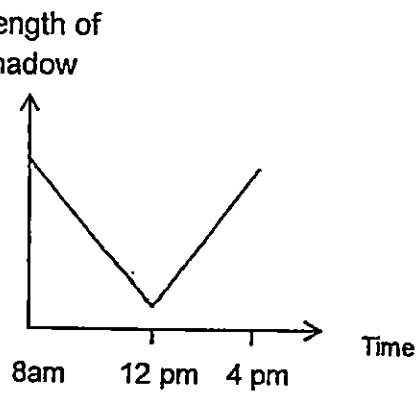


She recorded the length of the shadow at different times of the day and plotted a graph of her results.
Which one of the following shows the graph that Jia En has plotted?

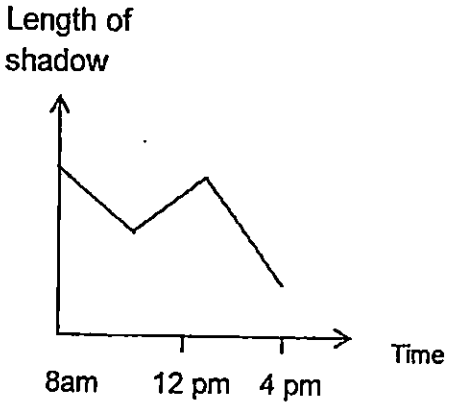
(1)



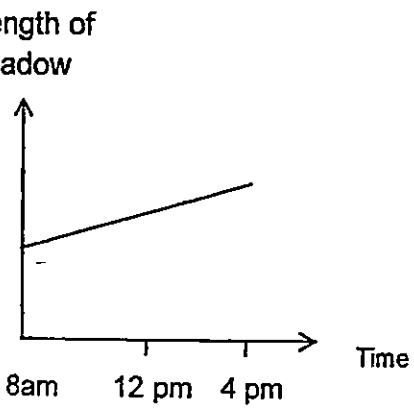
(2)



(3)



(4)



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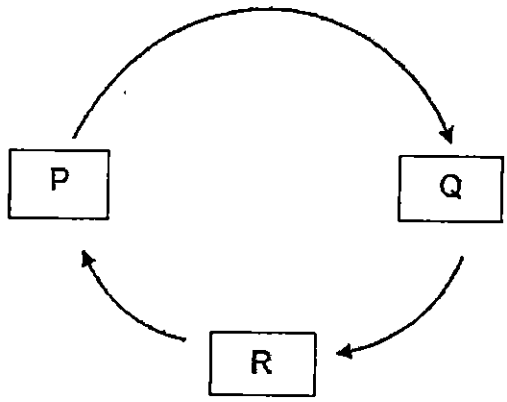
16. Which of the following statement is true about the bean plant?

(1) It has a four-stage life cycle.
(2) Flowers appear when it is a young plant.
(3) The young plant is able to make its own food when leaves develop.
(4) As the seed grows, the shoot grows first. The root grows after some time.

17. The diagram below shows the life cycle of a chicken.



Which of the following statement(s) is/are true if the chicken is able to reproduce at stage R?

A. The chicken looks the similar at stages Q and R.
B. The chicken is also able to reproduce at stage Q.
C. At stage P, chicken is able to move from place to place.

(1) A only
(2) B only
(3) A and C only
(4) B and C only

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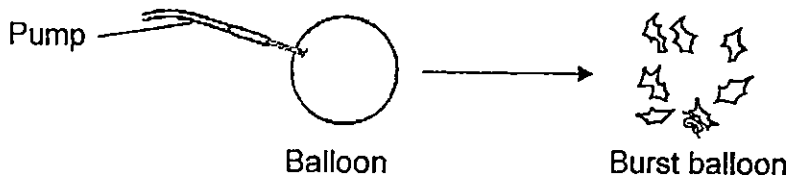
18. Water is pumped into a balloon until it bursts as shown in the diagram below.



What does this experiment show about water?

A. Water takes up space.
B. Water has a definite volume.
C. Water cannot be compressed.
D. Water takes the shape of the balloon.

(1) A only
(2) C only
(3) A and D only
(4) B and C only

19. Objects K and L were each placed into an empty beaker. The beakers were then filled with water to the same level as shown in Figure 1 below. More water was required for the beaker with Object K. The objects were then taken out, dried and then placed onto the weighing scales as shown in Figure 2 below.

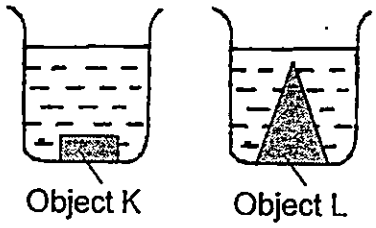


Figure 1

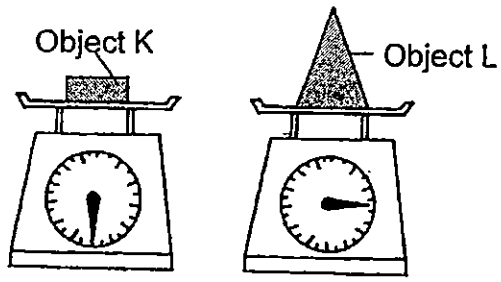


Figure 2

From your observations, what can you conclude about the volume and mass of an object?

(1) If the mass of an object is big, it will have a big volume.
(2) If the mass of an object is small, it will have a small volume.
(3) If the volume of an object is small, it will have a small mass.
(4) If the volume of an object is big, it does not mean it has a big mass.

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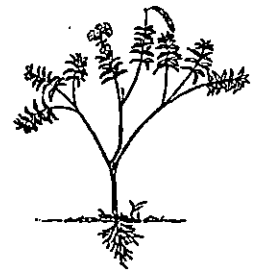
20. Which of the following is a function of the stem of a plant?

(1) Make food for the plant.
(2) Help to support the plant.
(3) Hold the plant firmly in the soil.
(4) Exchange gases with the surroundings.

21. Josh, Tyler, Alan and Tim were asked to describe any part of the plant they wanted as shown in the diagram below.



Josh : It helps the plant get enough sunlight.
Tyler : It prevents the plant from getting uprooted easily.
Alan : It allows the plant to trap light energy from the Sun.
Tim : It allows the plant to exchange gases with the surroundings.

Which two persons were describing the same part of the plant?

(1) Tim and Alan
(2) Tim and Josh
(3) Josh and Alan
(4) Alan and Tyler

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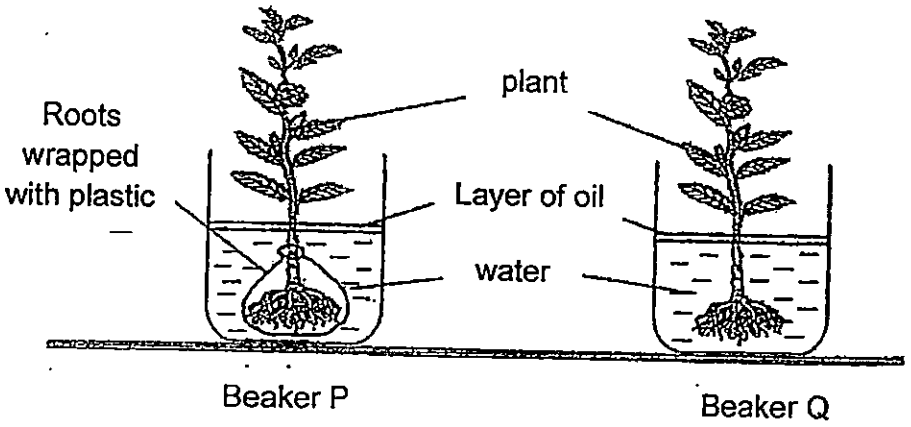
22. Xavier carried out an experiment to investigate the function of the roots. He set up his experiment as shown in the diagram below.



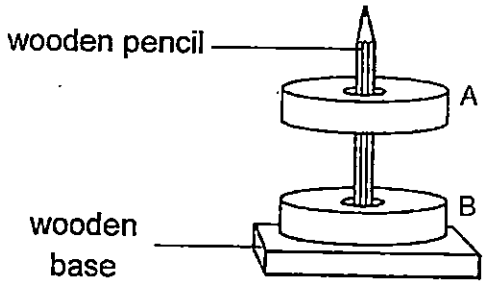
He recorded the amount of water left in each beaker in the table below.

Beaker	Volume of water / ml	
	Day 1	Day 4
P	80	80
Q	80	60

What can Xavier conclude from his experiment?

(1) Roots need air to absorb water.
(2) Roots help plant to stay upright.
(3) Roots help plant to absorb water.
(4) Roots cannot absorb water because of the layer of oil.

23. Two ring magnets, A and B, are put through a wooden pencil with a wooden base as shown below.



Why did magnet A float above magnet B?

(1) Magnet A is stronger than magnet B.
(2) Magnet B is stronger than magnet A.
(3) The like poles of both magnets are facing each other.
(4) The unlike poles of both magnets are facing each other.

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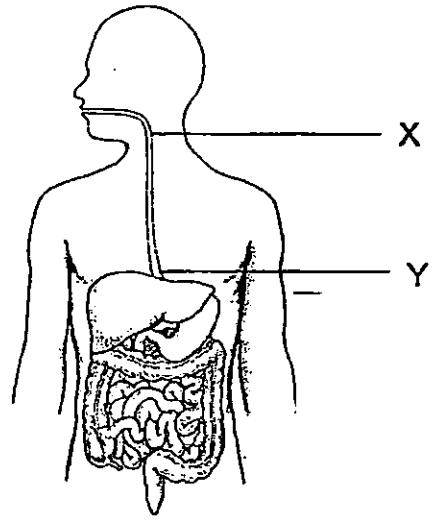
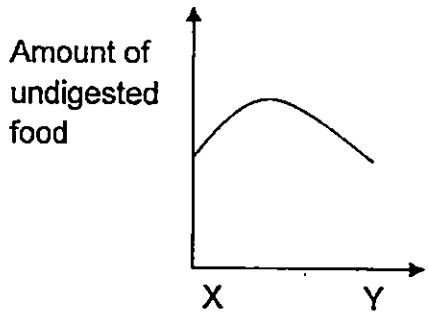
24. The diagram below shows the human digestive system.

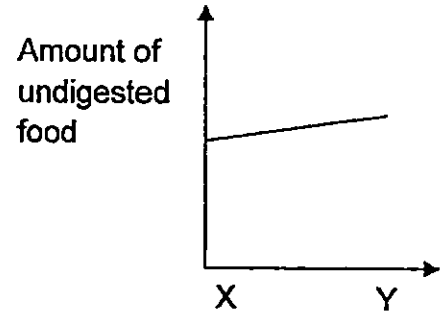


Which of the following graph correctly shows the amount of undigested food from X and Y?

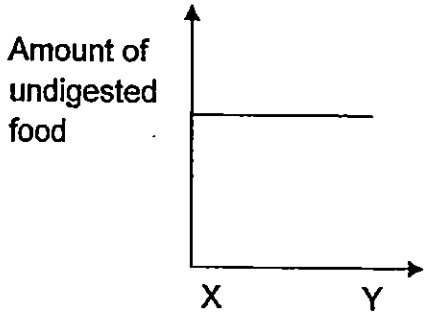
(1)



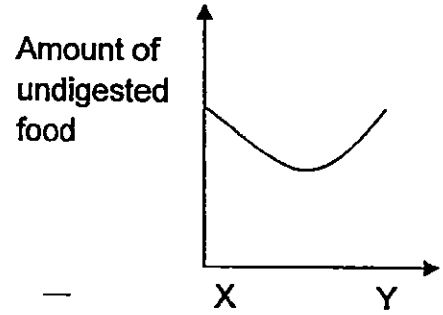
(2)



(3)



(4)



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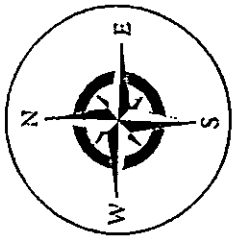
25. Mary found a magnet and wants to find out the poles of the magnet. She placed a compass near one pole of the magnet and observed the following:



compass

magnet

What could A and B possibly be?

	A	B
(1)	north-pole	south-pole
(2)	south-pole	north-pole
(3)	north-pole	north-pole
(4)	south-pole	south-pole

26. Ali, Benjamin, Nina and Gwen were having a discussion about non-flowering plants and fungi. They made the following statements.

Ali: Fungi reproduce by spores while non-flowering plants reproduce by seeds.

Nina: Both fungi and non-flowering plants reproduce by spores.

Gwen: Both fungi and non-flowering plants feed on other organisms.

Benjamin: Fungi do not make their own food while non-flowering plants make their own food.

Which two pupils made the correct statements?

(1) Ali and Nina
(2) Ali and Gwen
(3) Nina and Benjamin
(4) Gwen and Benjamin

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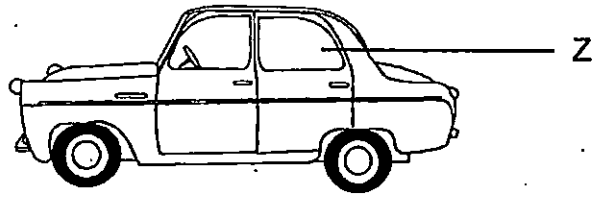
27. The diagram below shows a car.



Which are the possible reasons why part Z is made of glass?

A. It is brittle.
B. It is **waterproof.**
C. **It allows,, light to pass through it.**
D. It sinks in water.

(1) A and D only
(2) A and C only
(3) B and C only
(4) B and D only

END OF BOOKLET A

GO ON TO BOOKLET B

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MAHA BODHI SCHOOL

2015 SEMESTRAL ASSESSMENT 2

PRIMARY 4

SCIENCE

(BOOKLET B)

Name : _____ ( )

Class: Primary 4 _____

Date : 3 November 2015

Total Duration for Booklets A and B: 1 h 30 min

INSTRUCTIONS TO CANDIDATES:

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write all your answer in this booklet.

Booklet	Marks Obtained	Max Marks
A		54
B		36
Practical test		10
Total		100

This booklet consists of **12** printed pages.

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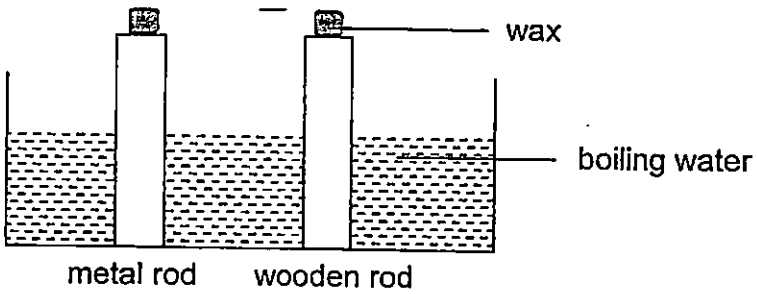
BOOKLET B : [36 marks]
For questions 28 to 41, write your answers in this booklet.

The number of marks available is shown in the brackets [ ] at the end of each question or part-question.

28. Kelvin placed a metal rod and a wooden rod into a tank of boiling water as shown below. Equal amounts of wax were placed at the end of both rods.



Fill in the blanks below with suitable words to explain what Kelvin will observe. [2]

The wax on the metal rod will melt _____ than the wax on the wooden rod, as metal is a _____ conductor of heat than wood.

Marks : / 2

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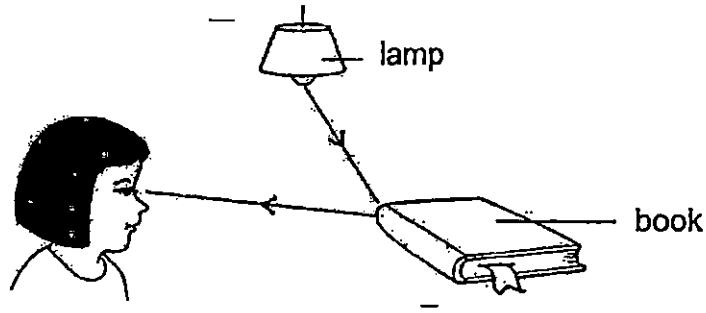
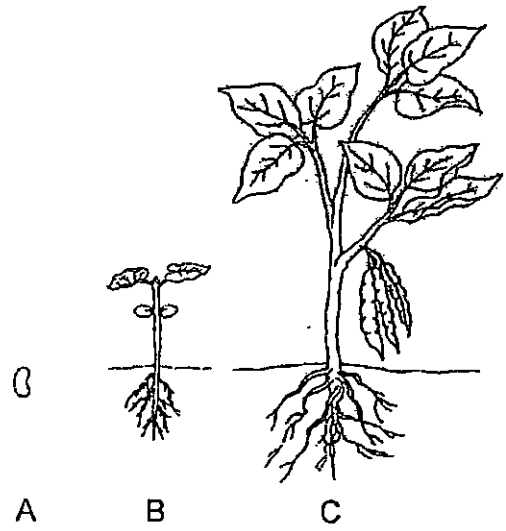
29. The diagram below shows how Shu Min sees the book.



The _____ from the lamp is _____ by the book and enters Shu Min's eyes. [2]

30. The diagram below shows the stages of the life cycle of a plant.



Choose the correct words from the box to answer the question below.

egg	seed	young plant	adult plant

Name the stages A and C in the life cycle of the plant. [2]

A: _____

C: _____

Marks : / 4

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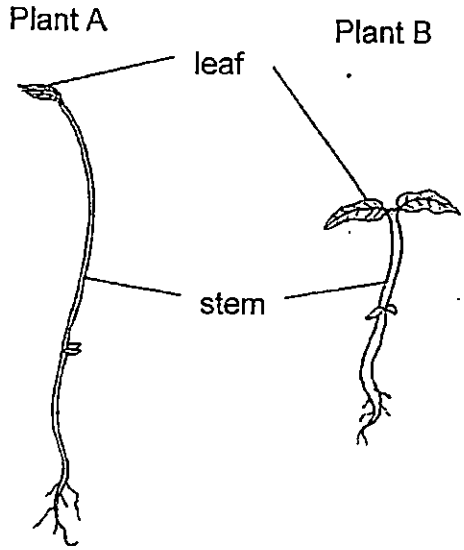
31. The diagram below shows two plants.

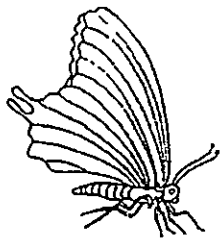


(a) What is one difference between the stem of plant A and the stem of plant B? [1]

The stem of plant A is _____ than the stem of plant B.

(b) The leaves of plants make _____ in the light. [1]

32. Observe the animal in the diagram below.



It is an insect bacause _____. [2]

(tick ☑ 2 boxes)

☐ it can fly

☐ it has wings

☐ it has six legs

☐ it has a pair of feelers

Marks : / 4

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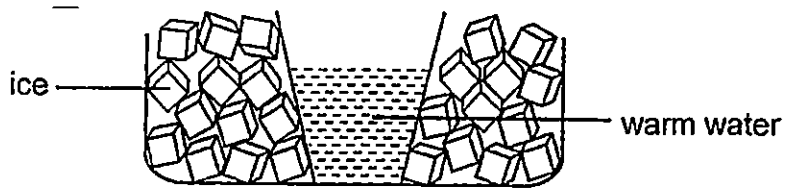
33. Jane places a cup of warm water into a basin of ice.



(a) What can Jane use to measure the temperature of the warm water? [1]

_____

(b) (i) What will Jane observe about the temperature of the cup of warm water after five minutes? [1]

_____

(ii) What will Jane observe about the ice in the basin? Explain your answer. [2]

_____

_____

Marks : / 4

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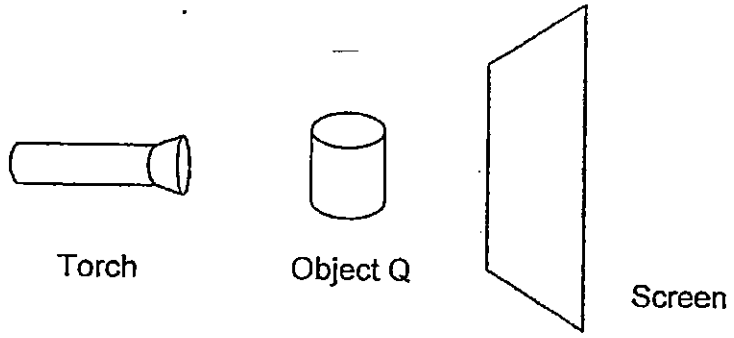
34. Frankie set up a torch to form a shadow of Object Q on a screen as shown on the diagram below.



(a) In the space below, draw the shadow of object Q seen on the screen. [1]

(b) (i) What must Frankie do to make the shadow on the screen appear bigger without moving the screen and torch? [1]

(ii) When Frankie replaced Object Q with Object R that allows some light to pass through it, a shadow still appears on the screen. Explain why. [1]

Marks : / 3

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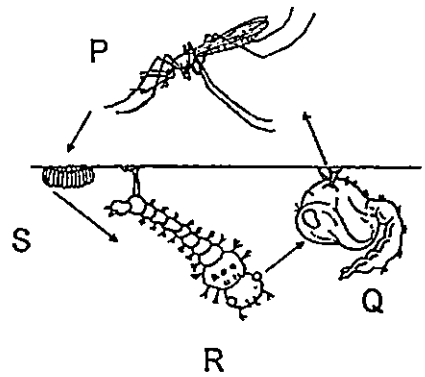
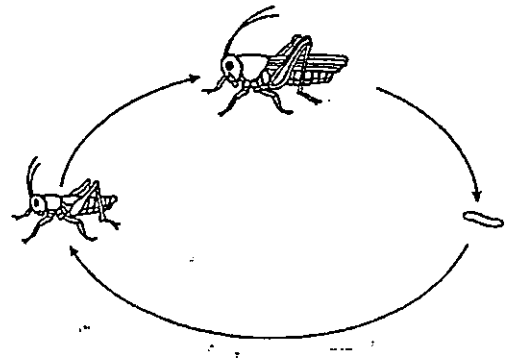
35. The diagrams below show life-cycles A and B.



Life-cycle A



Life-cycle B

(a) State one difference between life-cycles A and B. [1]

_____

_____

(b) At which stage of life cycle A is the animal most difficult to kill? Explain your answer. [1]

_____

_____

Marks : / 2

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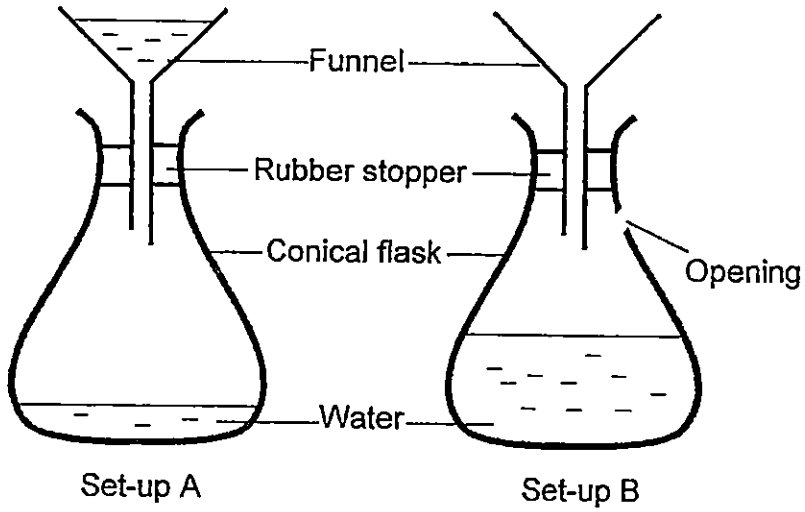
36. Tim poured the same amount of water into the funnels in set-up A and B as shown below.



He observed that water flows into the conical flask in Set-up B much quicker than water in Set-up A. He repeated the experiment many times and had the same observation.

(a) Why did Tim repeat the experiment many times? [1]

_____

_____

(b) Explain why water flowed into the conical flask much quicker in Set-up B as compared to that of Set-up A. [2]

_____

_____

_____

Marks : / 3

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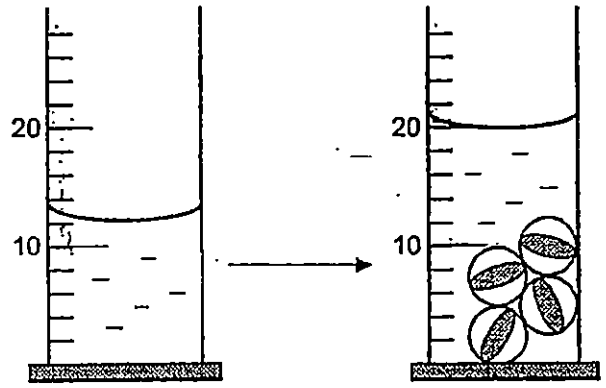
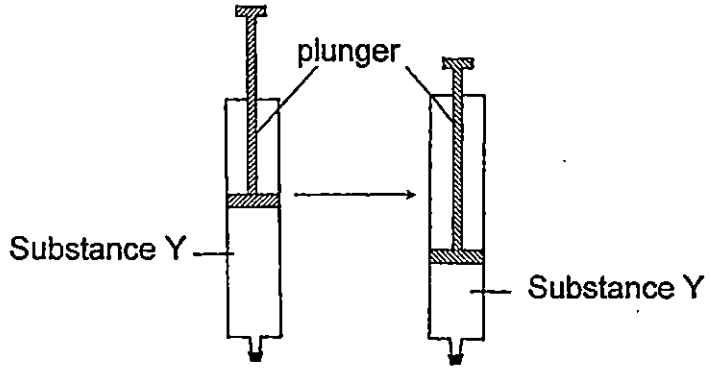
37. James poured some water into an apparatus. The apparatus measures volume in cubic centimetres. He placed some marbles into the apparatus and observed that the water level rose.



(a) The volume of each marble is _____ cm^3 [1]

(b) A syringe is filled with substance Y and is sealed at the end to stop Substance Y from coming out. The diagram below shows what happens to Substance Y when the plunger of the syringe is pressed down.



(i) Based on the observation above, what state of matter is Substance Y? [1]

_____

(ii) The experiment is repeated after Substance Y is replaced with substance Z and the plunger cannot be pushed down. Explain why. [2]

_____

_____

Marks : / 4

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38. The diagram below shows some samples of undigested food collected from different parts of the digestive system.

Sample	1	2	3
size of undigested food			
part of digestive system	X	Y	small intestine

(a) Based on the diagram, which parts of the digestive system do X and Y represent? [1]

Part X: _____

Part Y: _____

(b) Explain why the size of undigested food taken from the small intestine is smaller as compared to sample 1 and 2. [1]

_____

_____

Marks : ___ / 2

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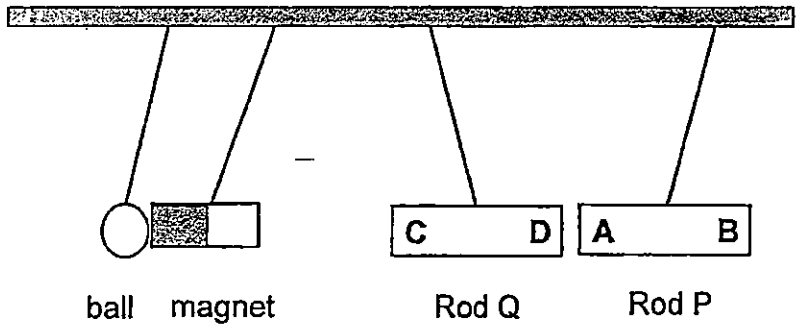
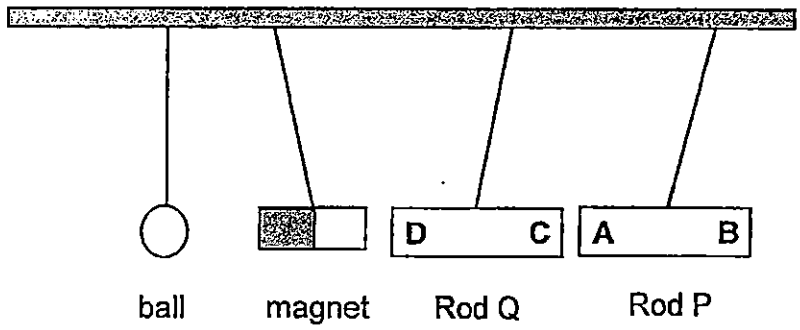
39. Jerome wants to find out which rod, P or Q is a magnet. He hangs a ball, a magnet and two different rods P and Q on a bar. The diagram below shows his observations.





(a) Jerome thinks that ball is made of iron. Do you agree? Explain why. [1]

_____

_____

(b) (i) Which Rod, P or Q is definitely a magnet? [1]

_____

(ii) Explain your answer (i). [2]

_____

_____

Marks : / 4

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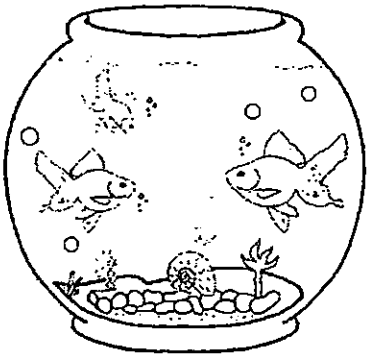
40. Justin placed some fishes in a tank as shown below. He provided it with the same amount of food daily.

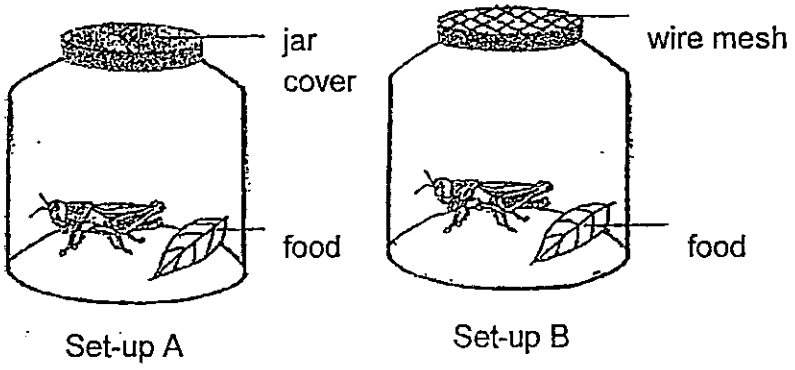


After a few weeks, he realised that even though he did not add any fishes, the number of fishes in the tank increased.

(a) What did Justin's observation shows about the characteristics of living things? [1]

_____

(b) Justin caught two grasshoppers and prepared two set-ups A and B as shown below. He observed the grasshoppers for two days. [1]



Based on the set-ups, what was he trying to find out about the grasshoppers? Explain why. [1]

_____

_____

Marks : / 2

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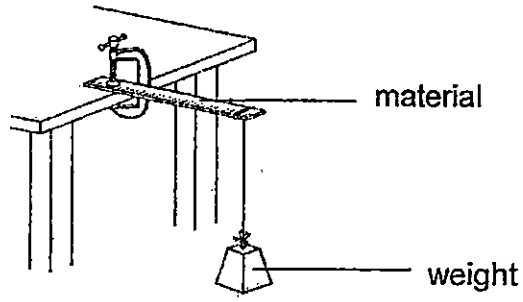
41. Peter wants to make a ladder. He uses three different material, W, X and Y, and carries out an experiment as shown below. He places a weight at the end of the material and records how many weights the material can hold before breaking.



The table below shows his results.

Material	Number of weights
W	3
X	8
Y	5

(a) What property of material is Peter testing? [1]

_____

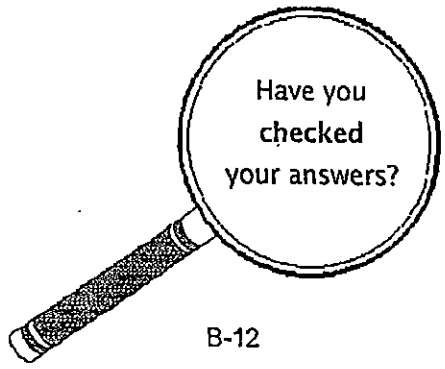
(b) Based on his results, which material should Peter use to make a ladder. Explain your answer. [1]

_____

_____

Marks : /2

~ END OF PAPER ~



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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : MAHA BODHI SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	2	3	4	1	2	3	1	4	3
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
2	1	4	2	2	3	1	1	4	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27			
1	3	3	3	1	3	3			

Q28 faster / better Q29 light / reflected

Q30. A: SEED C: adult plant

Q31a. taller Q31b. food

Q32. It has six legs / it has a pair of feelers

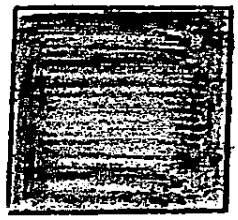
Q33a. Jane can use a thermometer.

Q33b (i) The temperature of the cup of warm water will drop.

Q33b (ii) The ice will melt. The ice gains heat from the warm water causing it to melt.

Q34a. **SEE PICTRUE** Q34b (i) Frankie should move object Q nearer to the torch.

Q34b (ii) Light from the torch is partially blocked by object R.



Q35a. Life cycle a is a four staged life cycle but life cycle B is a three staged life cycle.

Q35b. Stage P is the most difficult to kill. Stage P has wings and can get away easily.

Q36a. Tim wanted to be sure that his observation will be the same.

Q36b. Water needs to take up the space previously occupied by the air in the conical flask. There is no opening in the conical flask in set – up B.

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Q37a. $2cm^3$ Q37b (i) Substance Y is in the gas state.

Q37b(ii) Substance Z could be a solid or liquid. Both solid and liquid have a definite volume and cannot be compressed.

Q38a. Part X: Mouth Q38a. Party Y: Stomach

Q38b. The digestive juices in the small intestine have digested most of the digested food.

Q39a. I do not agree. Iron is a magnetic material. But the ball is not made out of the magnet beside it.

Q39b. (i) Rod Q is a magnet.

Q39b (ii) Rod Q repels the magnet and the other pole attracts. Like poles repels, unlike poles attract.

Q40a. Living things reproduce.

Q40b. Justin is trying to find out whether living thins need air to survive. He changed one variable which is set up A, it allows air to enter but set – up B allows air to enter.

Q41a. Peter is testing the strength of the material.

Q41b. Peter should use material X. Based on the chart above, material X holds the most number of weights and it is the strongest.

THE END

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MARIS STELLA HIGH SCHOOL (PRIMARY)

SEMESTRAL ASSESSMENT 2

SCIENCE

29 OCTOBER 2015

BOOKLET A

NAME: _____

CLASS: Primary 4 ( )

30 questions

60 marks

Total Time for Booklets A & B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

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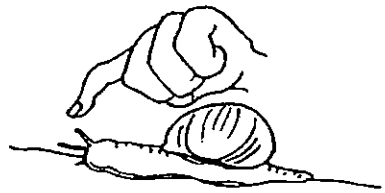
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS). **(60 marks)**

---

1 A snail hides itself in its shell when touched.



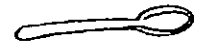
This shows that the snail is a living thing because it can _____.

(1) grow
(2) breathe
(3) reproduce
(4) respond to changes

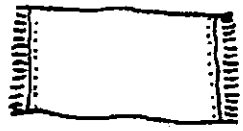
2 Which one of the following objects can be bent easily without breaking?

(1) A sheet of glass

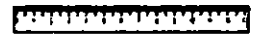
(2) A plastic spoon



(3) A towel



(4) A wooden ruler



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3 In which one of the following will the two magnets push each other away?

(1)	N S N S
(2)	S N N S
(3)	N S N S
(4)	N S S N

(Go on to the next page)

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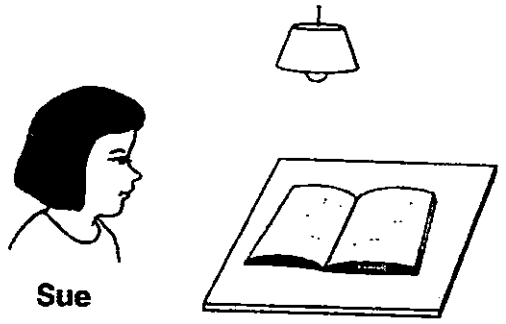
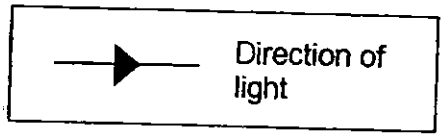
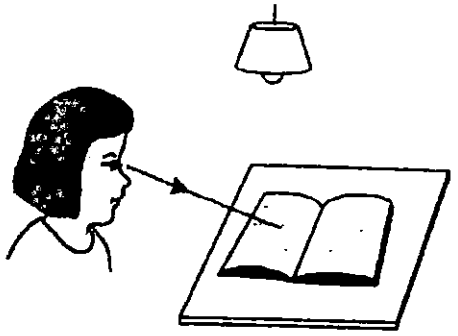
4 Look at the picture below.



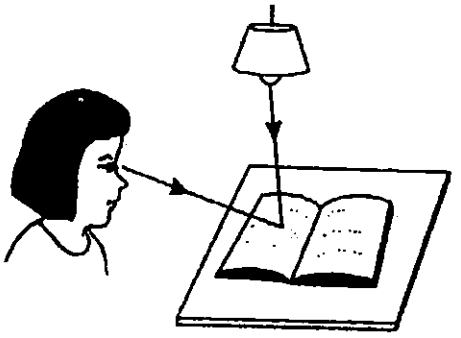
Which one of the following explains why Sue can see the book on the table?



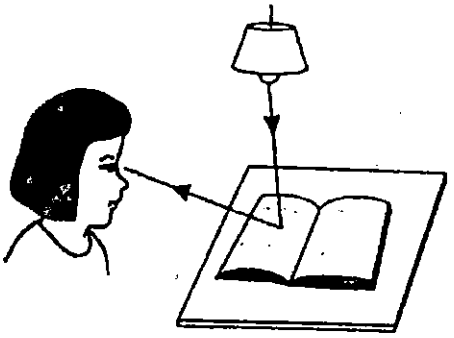
(1)



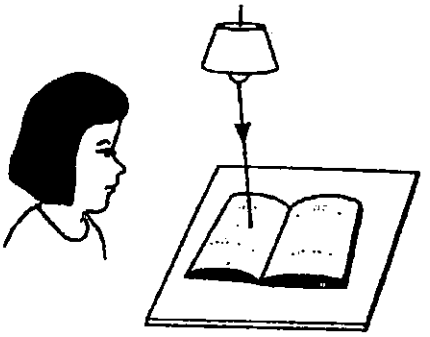
(2)



(3)



(4)



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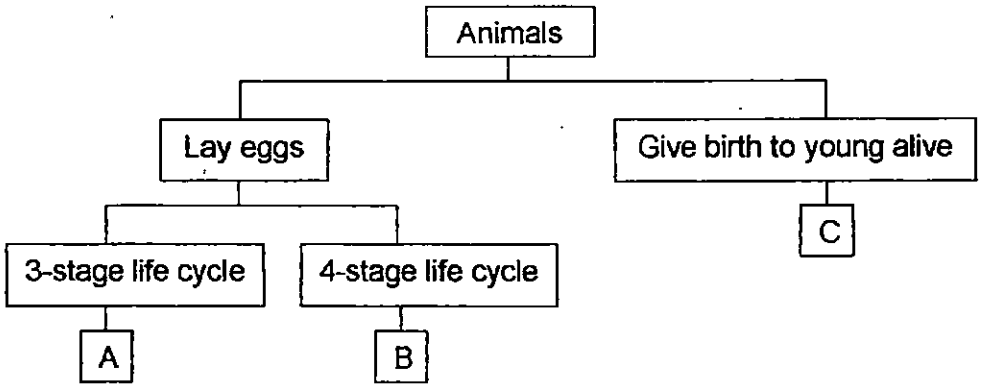
5 In which part of the digestive system is food absorbed into the blood?

(1) gullet
(2) stomach
(3) small intestine
(4) large intestine

6 Matter is anything that has mass and occupies space.
Which of the following is **NOT** a matter?

(1) Air
(2) Soil
(3) Water
(4) Shadow

7 Study the classification table below.



What could A, B and C represent?

	A	B	C
(1)	Chicken	Mosquito	Cockroach
(2)	Mosquito	Cockroach	Dog
(3)	Butterfly	Fish	Cat
(4)	Fish	Mosquito	Horse

(Go on to the next page)

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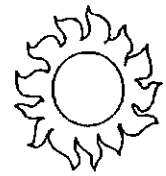
8 Which one of the following is a source of light?

(1)

an orange

(2) 

the sun

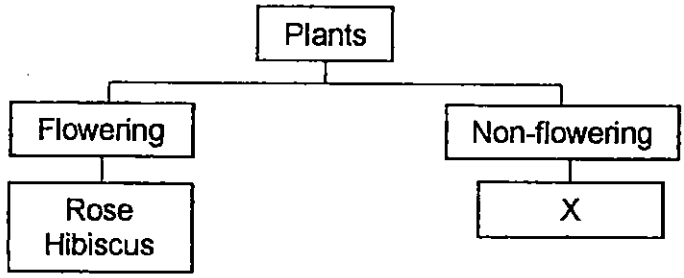
(3)

a match stick

(4)

a leaf

9 Study the chart below.



Which plant could be placed in the box marked "X"?

(1) Mushroom

(2) Orchid plant

(3) Mango plant

(4) Bird's nest fern

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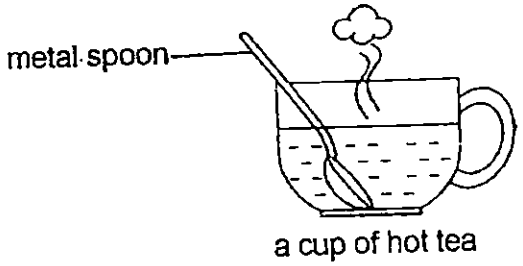
10 Ronald places a metal spoon in a cup of hot tea.



The spoon becomes hotter after a while. Which one of the following explains this?

(1) The cup loses heat to the hot tea.

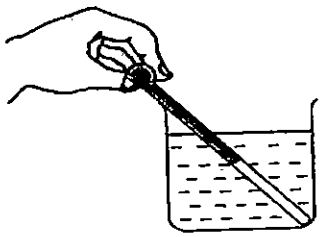
(2) The spoon loses heat to the hot tea.

(3) The spoon gains heat from the hot tea.

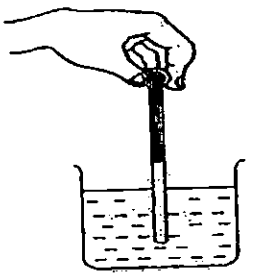
(4) The hot tea gains heat from the spoon.

11 Catherine wants to measure the temperature of hot water in beaker. Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

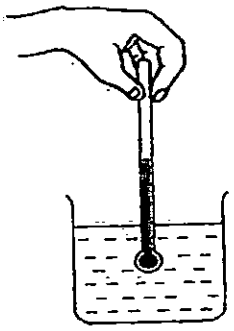
(1)



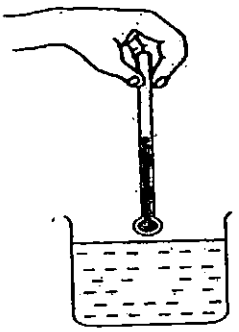
(2)



(3)



(4)



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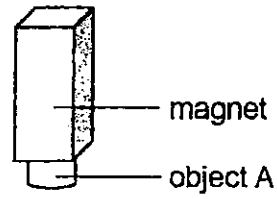
12 An object was attracted to a magnet, as shown in the diagram below.



Object A is made of _____.

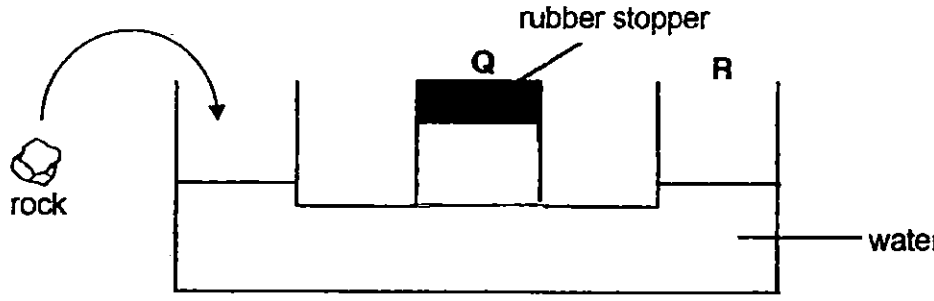
(1) iron

(2) wood

(3) rubber

(4) plastic

13 The diagram below shows a container with some water in it. Part Q of the container is sealed with a rubber stopper.



A piece of rock is then slowly dropped into the container as shown above.

What will happen to the water level at Q and R?

	Q	R
(1)	Decrease	Increase
(2)	Decrease	Decrease
(3)	Remain the same	Decrease
(4)	Remain the same	Increase

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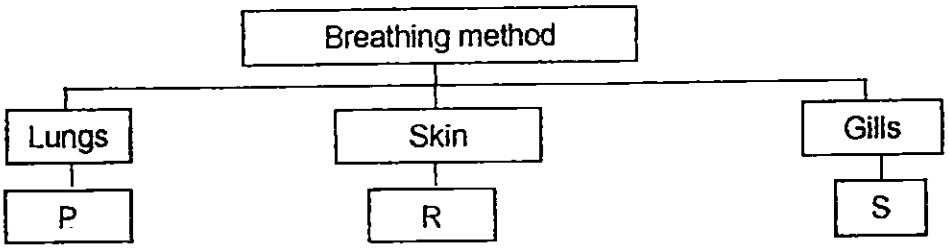
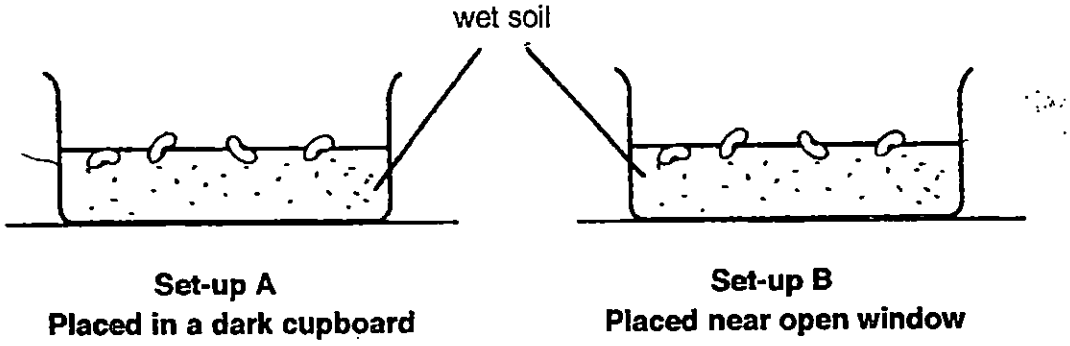
14 The chart below shows the breathing methods of some animals.



Which of the following groups of animals below can be correctly placed in the chart above?

	Animal P	**Animal R**	**Animal S**
(1)	Fish	Reptile	Mammal
(2)	Amphibian	Reptile	Fish
(3)	Mammal	Fish	Reptile
(4)	Mammal	Amphibian	Fish

15 Peter set up 2 dishes to with equal number of green bean seeds to compare the growth of green beans.



What will happen to the green beans in set-ups A and B after 3 days?

(1) Only the green beans in set-up A will germinate.

(2) Only the green beans in set-up B will germinate.

(3) The green beans in both set-ups A and B will germinate.

(4) The green beans in both set-ups A and B will not germinate.

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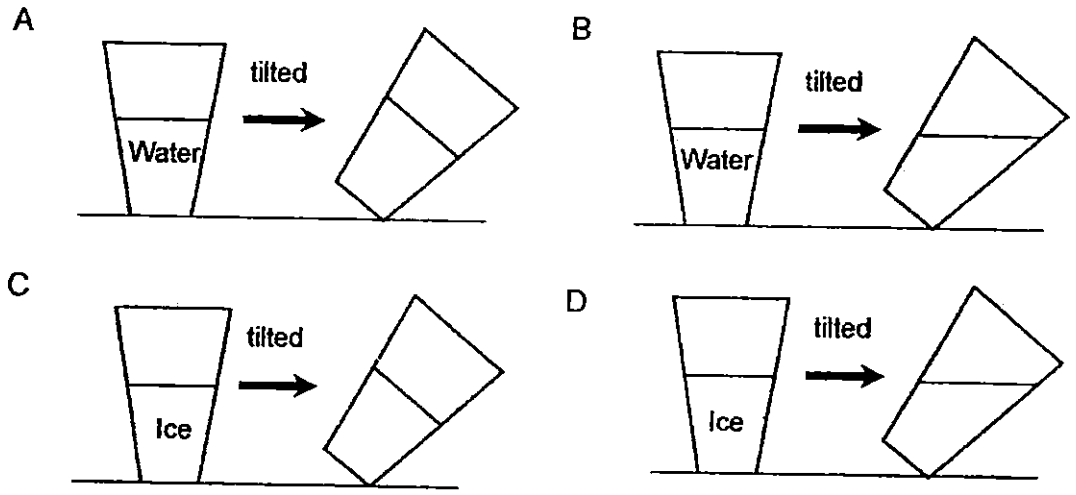
16 Study the diagrams below.



Which of the diagrams above shows the correct observation when a glass of water and a glass of ice are tilted?

(1) A and C
(2) A and D
(3) B and C
(4) B and D

17 Look at the table below.

Group A	Group B
Snake	Monkey
Frog	Cat

This animal in Group A and Group B are different in terms of _____.

(1) what they eat
(2) how they move
(3) where they live
(4) how they reproduce

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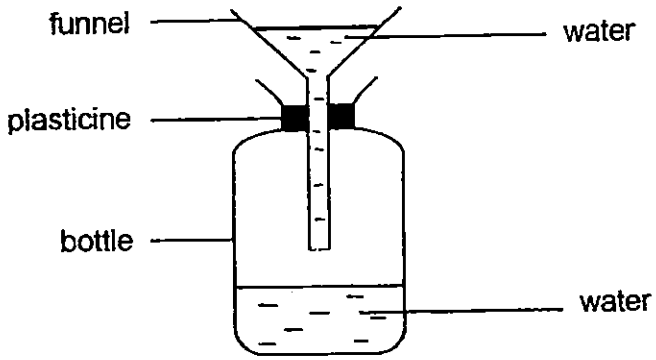
18 Some water was poured into the funnel.



Why was some of the water unable to flow into the bottle?

(1) The air in the bottle takes up space.

(2) The water in the bottle takes up space.

(3) The air in the bottle can be compressed.

(4) The water in the bottle can be compressed.

19 Study the diagram below.

Which of the following statements explain why the gardener has to use a lot of energy to pull the plant out of the soil?

(1) The plant has many leaves.

(2) The plant has many branches.

(3) The plant has strong woody stem.

(4) The plant has roots to hold it firmly to the ground.

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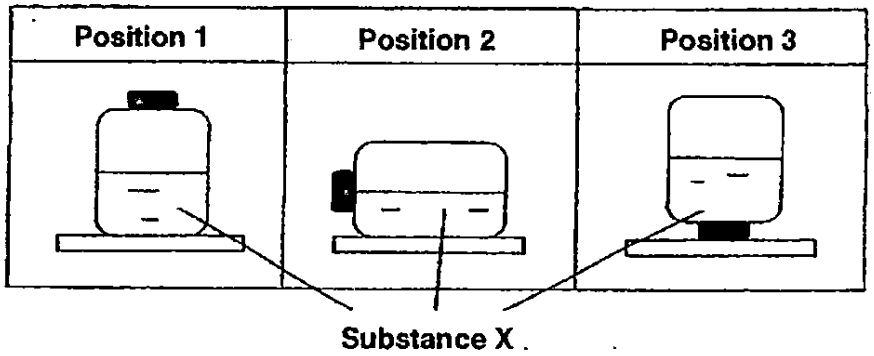
20 The diagram below shows a container with substance X. The container was placed in different positions as shown.



Based on the diagram, what can you conclude about substance X?

A Substance X occupies space

B Substance X can be compressed

C Substance X takes the shape of the container

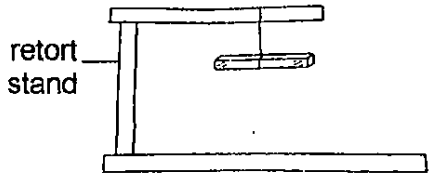
(1) B only

(2) A and B only

(3) A and C only

(4) A, B and C

21 The diagram below shows a bar magnet hung on a retort stand such that it is able to move freely.



In which direction will the bar magnet come to rest?

(1) East-West

(2) North-East

(3) South-East

(4) North-South

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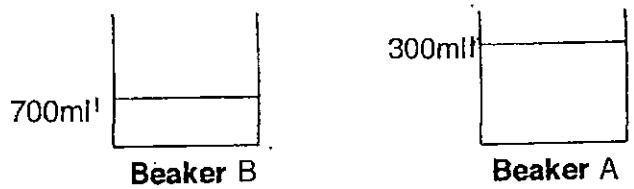
22 Two beakers, A and B, contain different amounts of water of the same temperature. Beaker A contains 700ml of water at 70°C Beaker B contains 300ml of water at 70°C Both beakers are placed on a table in a classroom.



Which of the following statements are true of the water in beakers A and B?

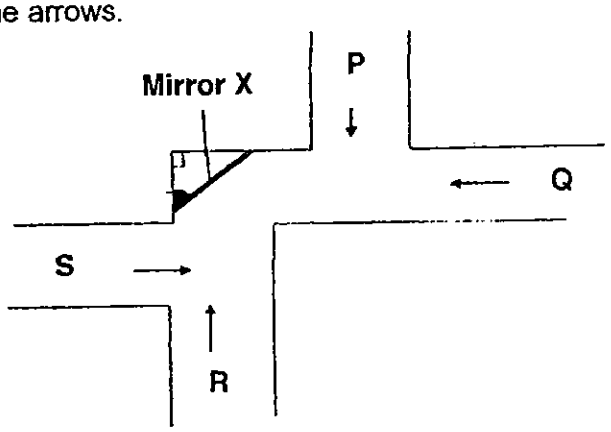
(1) Both beakers of water will gain heat from the surrounding.

(2) Water in beaker A has less heat energy than water in beaker B.

(3) Water in beaker A has more heat energy than water in beaker B.

(4) Water in beaker A will lose heat to the surrounding but water in beaker B gain heat from the surrounding.

23 The diagram below shows four boys, P, Q, R and S, travelling in the directions shown by the arrows.



Which two boys can see each other in mirror X?

(1) P and Q

(2) P and S

(3) Q and R

(4) R and S

(Go on to the next page)

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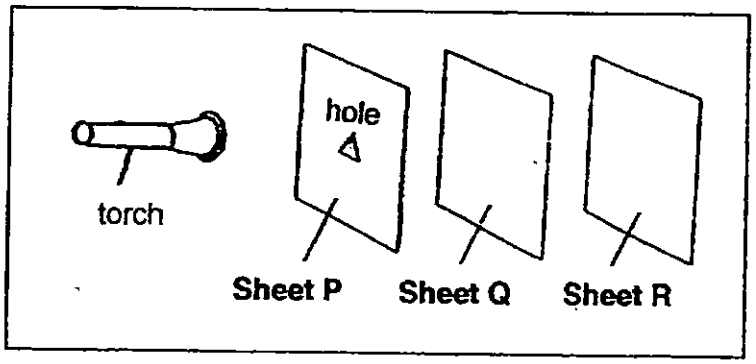
24 Steven carried out an experiment as shown below in a dark room. He placed three sheets, P, Q and R, neatly in a straight line.



He observed that a bright triangular patch of light was only seen on sheet R when the torch was switched on.

Which of the following provides the most suitable answer regarding the properties of the materials that the three sheets are made of?

	Sheet P	Sheet Q	Sheet R
(1)	Opaque	Opaque	Translucent
(2)	Opaque	Transparent	Opaque
(3)	Transparent	Translucent	Opaque
(4)	Transparent	Opaque	Transparent

25 Peter found the animal below in a garden.

Which of the following statements about the animal is true?

(1) It is not an insect because it has no wings.

(2) It is not an insect because it has three body parts.

(3) It is not an insect because it has a pair of pincers.

(4) It is not an insect because it has more than six legs.

(Go on to the next page)

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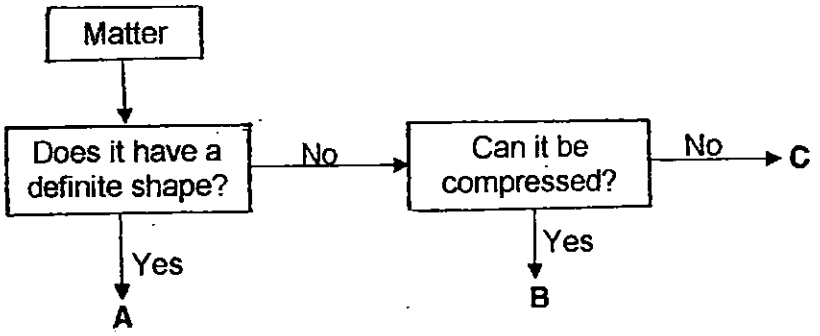
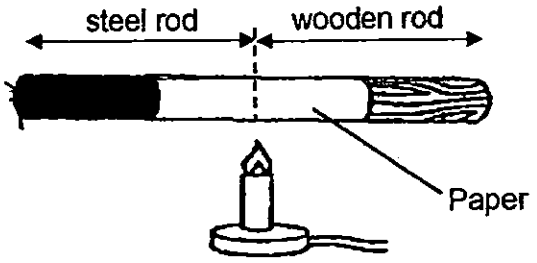
26 Study the chart below.



Which one of the following correctly represents A, B and C?

	A	B	C
(1)	milk	sand	oxygen
(2)	sand	milk	oxygen
(3)	oxygen	milk	sand
(4)	sand	oxygen	milk

27 Amy attached a wooden rod to a steel iron rod. She wrapped a piece of paper tightly round both materials at the center of the rod. After that, she placed the rod over a flame as shown in the diagram below.



What will she observe?

(1) Only the paper on the steel rod is burnt.

(2) Only the paper on the wooden rod is burnt.

(3) The papers on both side of the rod are burnt.

(4) The papers on both side of the rod are not burnt.

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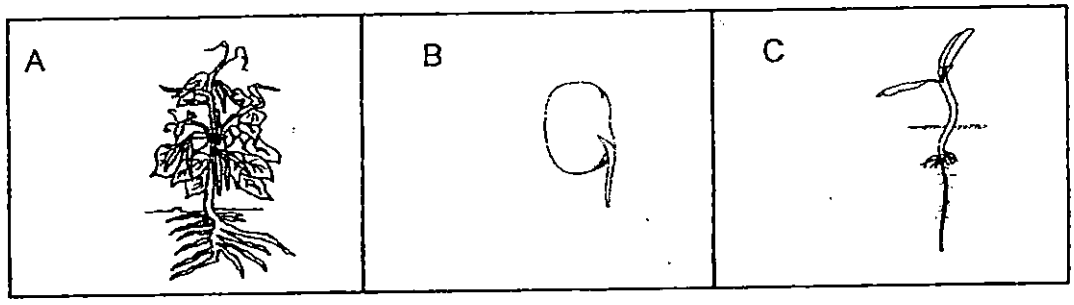
28 The diagram shows the different stages in the life cycle of a flowering plant.



Which of the following shows the correct sequence in the life cycle of a flowering plant?

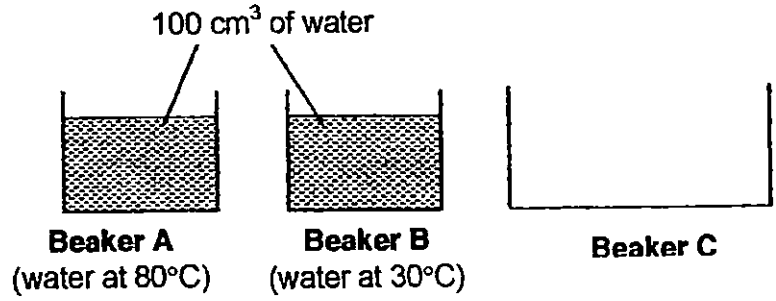
(1) A → B → C

(2) A → C → B

(3) B → A → C

(4) C → B → A

29 John filled two identical beakers, A and B, with the same amount of water. The temperature of the water in beakers A and B was 80°C and 30°C respectively.



John poured the water in beakers A and B into beaker C and measured the temperature to water in beaker C.

What could the temperature of water in beaker C be?

(1) 30°C

(2) 60°C

(3) 80°C

(4) 110°C

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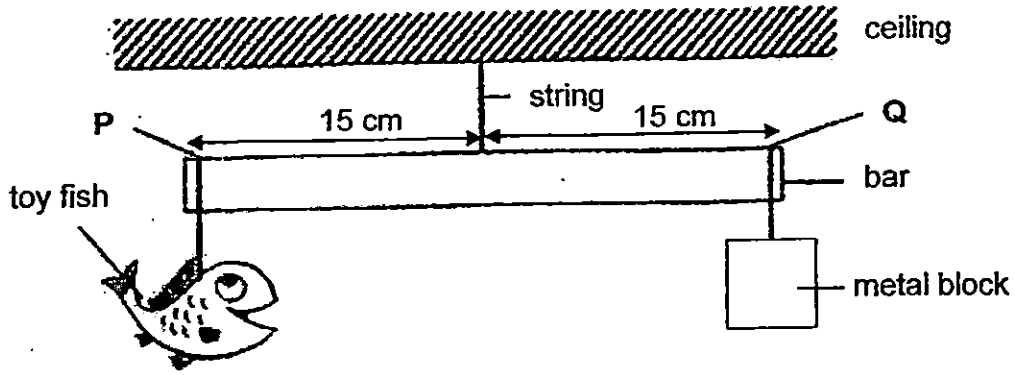
30 The diagram below shows a decorative item. It consists of a plastic toy fish hung at end P and a metal block hung at end Q.



The bar was balanced on both sides.

Which of the following statements is/are **incorrect**?

A The plastic toy fish has the same mass as the metal block.

B The plastic toy fish has the same volume as the metal block.

C If the metal block was removed, end Q would be lower than end P.

D If another identical metal block was added to both ends P and Q, the bar would still be balanced.

(1) C only

(2) A and D only

(3) B and C only

(4) A, B and D only

End of Booklet A

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MARIS STELLA HIGH SCHOOL (PRIMARY)

SEMESTRAL ASSESSMENT 2

SCIENCE

29 OCTOBER 2015

BOOKLET B

NAME: _____

CLASS: Primary 4 ( )

14 questions

40 marks

Total Time for Booklets A & B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

BOOKLET A:	_____	/60
BOOKLET B:	_____	/40
TOTAL:	_____	/100

PARENT'S SIGNATURE: _____

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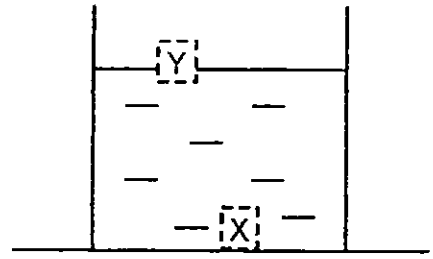
For questions 31 to 44, write your answers in this booklet. The number of marks available is shown in brackets [ ] at the end of each question or part question. **(40 marks)**

---

31 Alex placed two blocks of the same size and mass, P and Q, into a beaker of water as shown below.



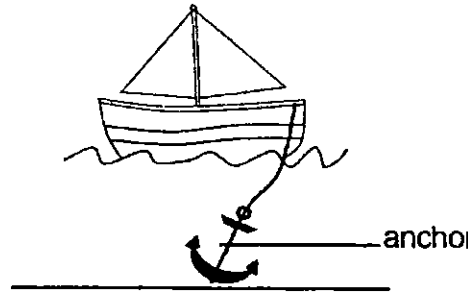
Block P was found at position Y, while block Q was found at position X.

(a) Fill in the blanks using the correct words in the box. [2]

contracts	expands	floats	sinks

This shows that block P _____ in water, and block Q _____ in water.

Alex wants to make an anchor for his ship.



One of the materials used to make the blocks (P and Q) can be used to make the anchor.

(b) The material from block _____ can be used to make an anchor.

	3

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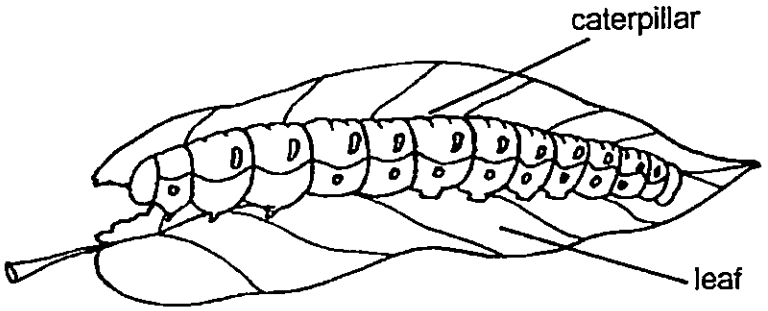
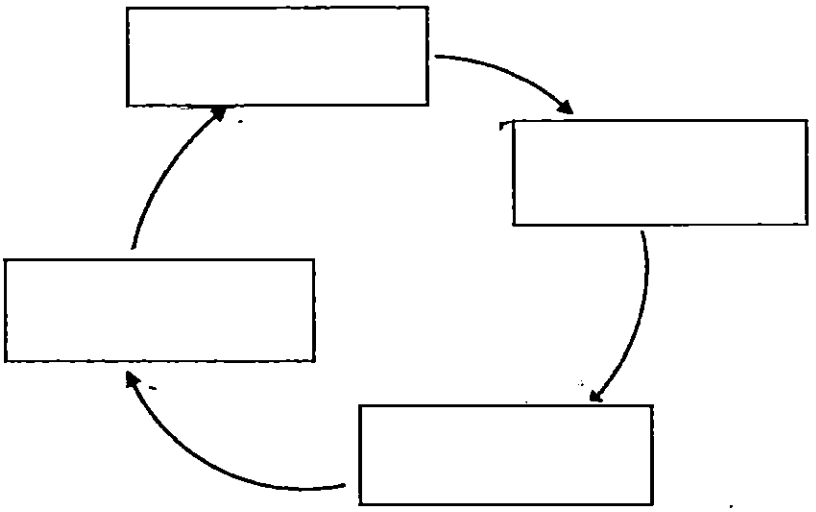
32 Fill in the blank with a correct word.



(a) The caterpillar needs food, water and _____ to stay alive. [1]

(b) The caterpillar eats leaves and becomes longer after sometime. This shows that it can _____ [1]

(c) Fill in the stages of the life cycle of the butterfly in the chart below. [1]



	3

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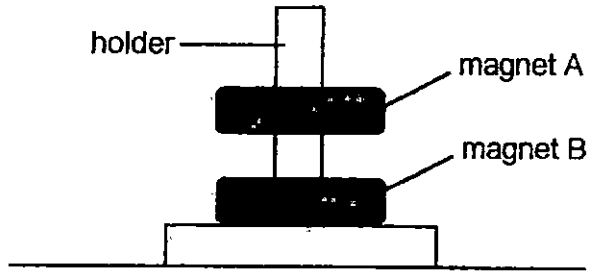
33 Alice placed two ring magnets, A and B, through a holder as shown below.



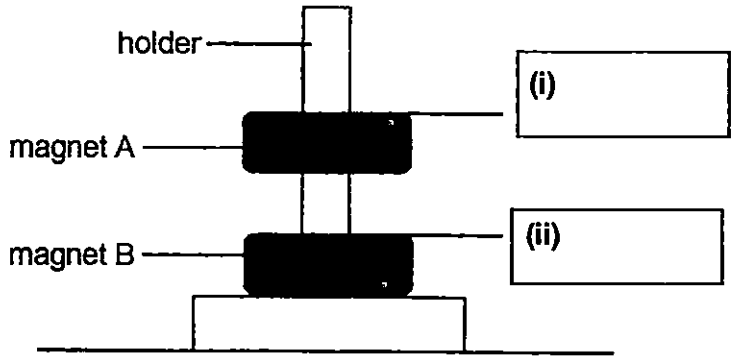
(a) The holder was made of wood and did not attract the magnets. [1]

Wood is a _____ material.

(b) Why was magnet A floating above magnet B? [1]

Magnet A was _____ magnet B.

(c) Label the poles of magnets A and B in the boxes provided below. [1]



	3

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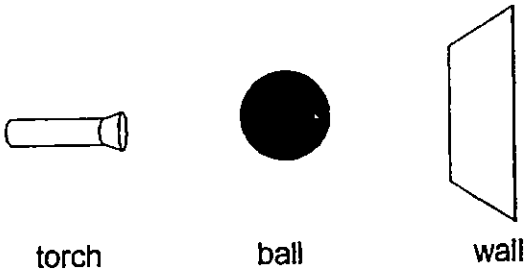
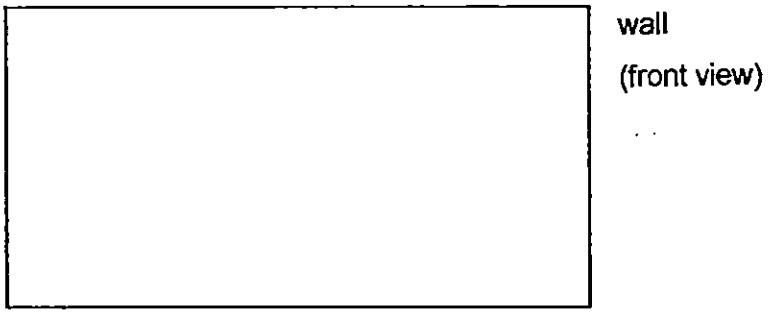
34 Elena shines a torch on a ball and a shadow is formed on a smooth wall.



(a) A shadow is formed when light is _____ by an object. [1]

(b) Draw the shadow of the ball that is formed on the wall. [1]



(c) What Elena can do to increase the size of the shadow formed on the wall? [1]

_____

	3

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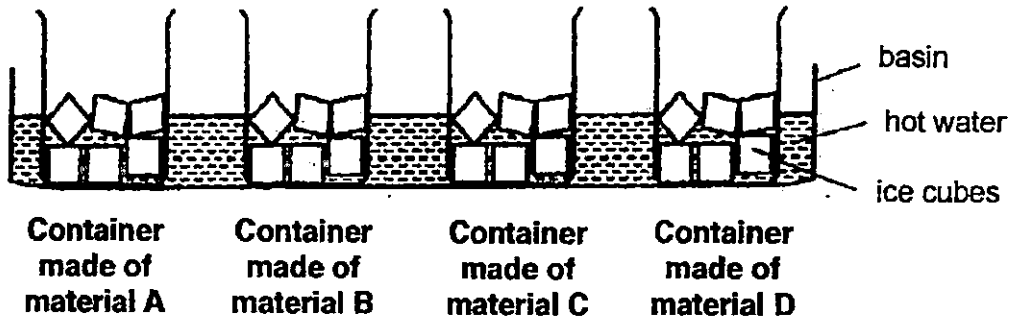
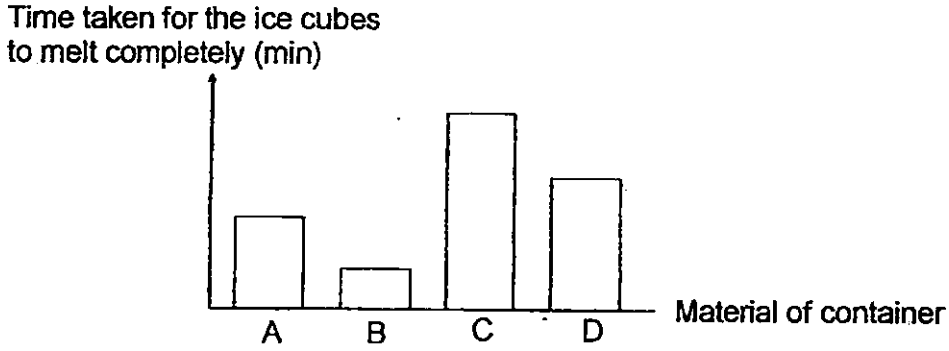
35 John had four similar containers made of four different materials, A, B, C and D. He put an equal amount of ice cubes into each container. He then placed all the containers into a basin of hot water as shown in the diagram below.



John measured the time taken for the ice cubes to melt completely in each container and recorded the results in the graph below.



(a) Which material (A, B, C or D) is the best conductor of heat? [1]

_____

(b) Give a reason for your answer in (a). [1]

_____

_____

2

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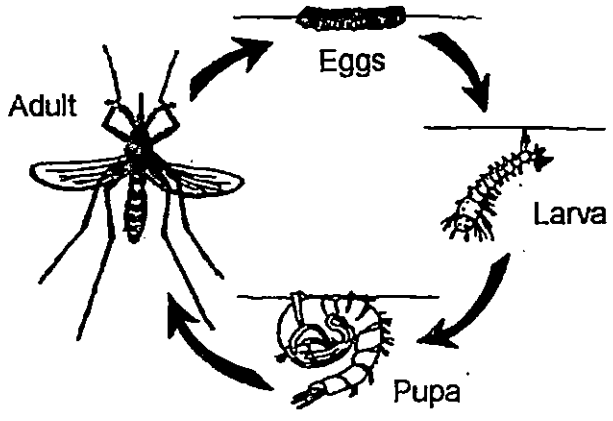
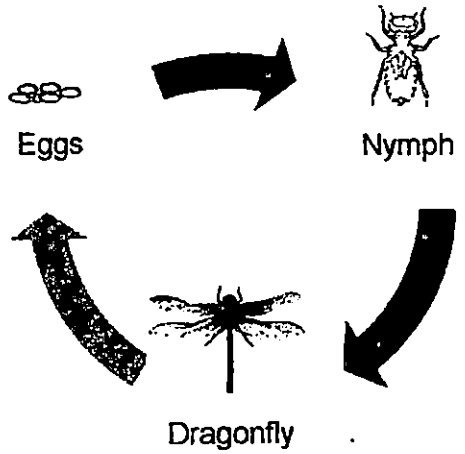
36 Study the two life cycles below.



Life cycle of mosquito



Life cycle of dragonfly

(a) State one similarity and difference between the two life cycles. [2]

(i) Similarity: _____

_____

(ii) Difference: _____

_____

(b) At which of the stages would it be easiest to get rid of the mosquito? [1]

_____

_____

3

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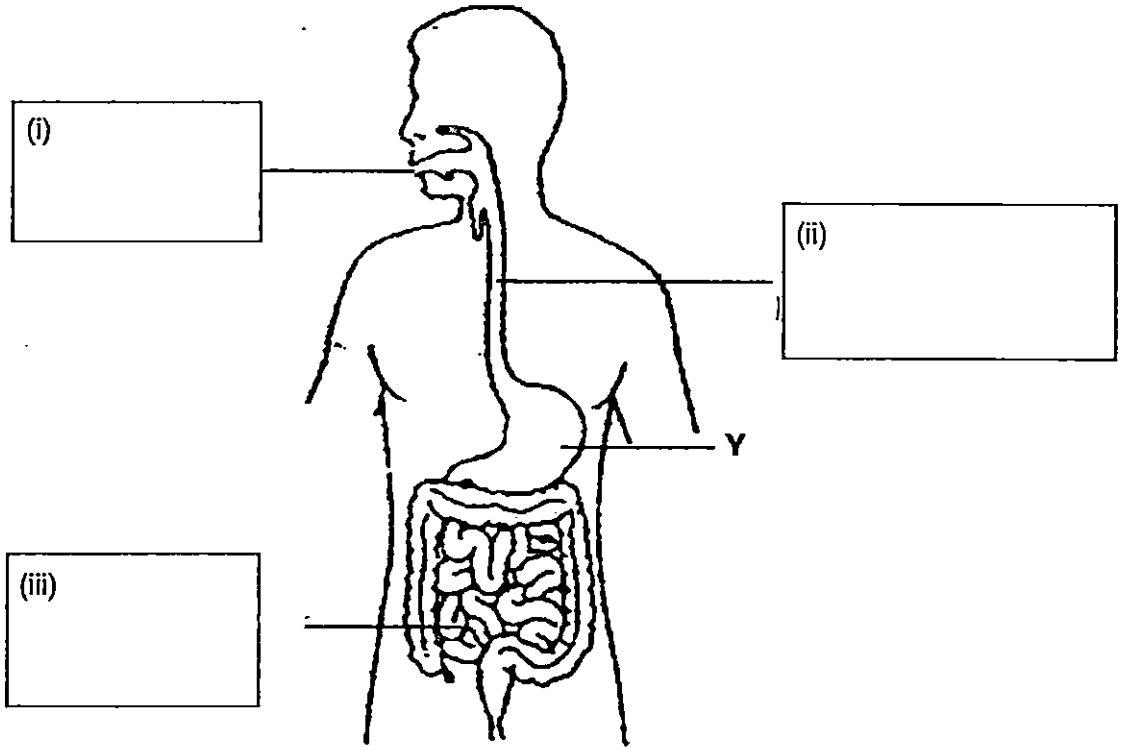
37 The diagram below shows the human digestive system.



(a) In the diagram above, name **only** the parts where digestion takes place. [1]

(b) What is the name of part Y? [1]

_____

(c) What is the main function of part Y? [1]

_____

	3

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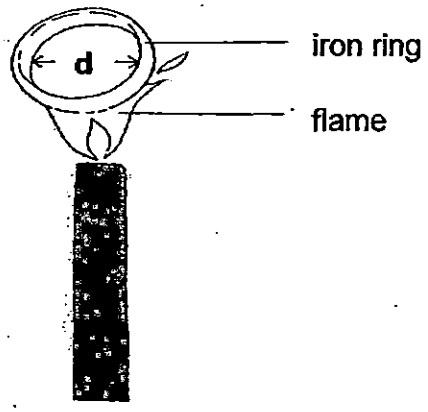
38 An iron ring was heated over the flame.



d is the width of the ring.

(a) Will ***d*** ***increase, decrease*** or ***remain the same*** after heating? [1]

_____

(b) Give a reason for your answer in (a). [1]

_____

_____

(c) Suggest one way to decrease ***d.*** [1]

_____

3

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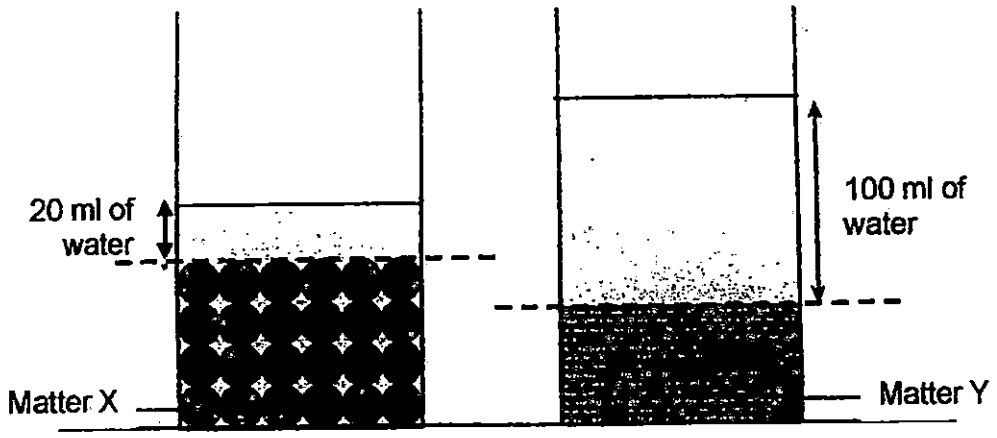
39 Mark placed an equal mass of Matter X and Matter Y into 2 similar containers. He then poured 100 ml of water into each container.

The diagram below shows what he observed after pouring the water into the containers. The mass of both materials and volume of water he poured into the containers remained the same at the end of the experiment.



Indicate with a tick (√) if each statement is true or false. [3]

	Statement	True	False
(a)	Matter X has a definite shape.		
(b)	Matter X is a solid but Matter Y is a gas.		
(c)	Water occupied the air spaces in between Matter X but not Matter Y.		

3

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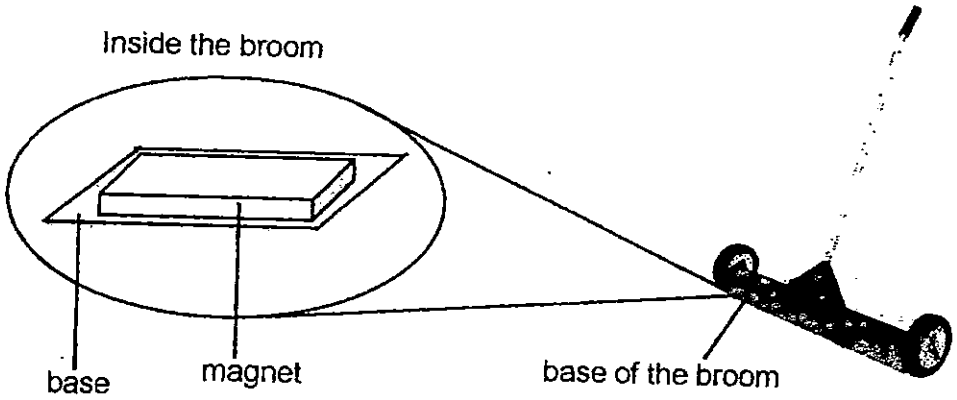
40 Calvin used the magnetic broom, as shown below, in his steel factory. Calvin observed that the base of the broom will attract steel pieces when it is being pushed around the floor. Inside the base of the broom, there is a magnet attached to it.



(a) Based on his observation, what can Calvin conclude about magnet? [1]

_____

Calvin later lent the broom to his friend who had an aluminum factory. His friend wanted to use it to attract the aluminium pieces on the floor.

(b) Will the aluminium pieces be attracted by the magnetic broom? Give a reason for your answer. [1]

_____

	2

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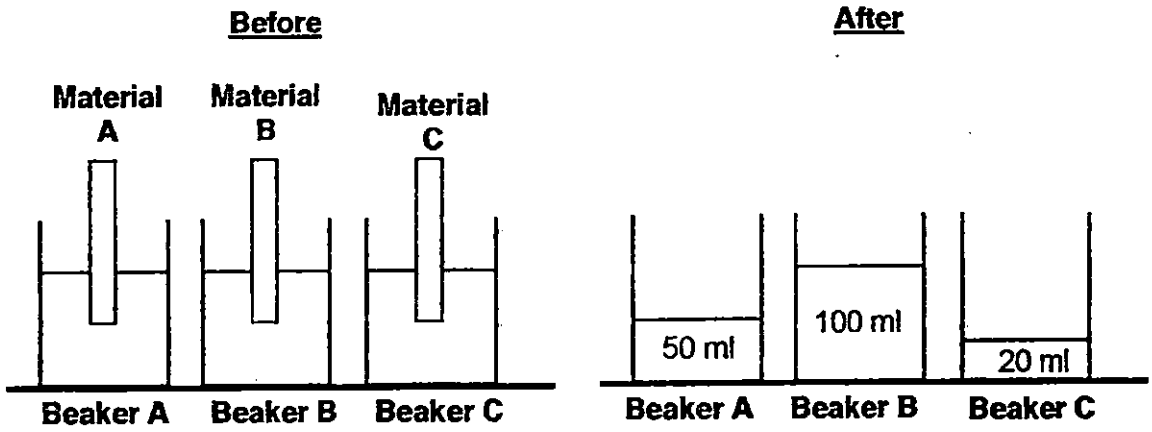
41 Three different pieces of materials, A, B and C, of equal lengths and thickness were put into 3 identical beakers of water as shown below. Each beaker contained 100 ml of water. After 10 minutes, materials A, B and C were removed from the beaker and the amount of water left in the beakers was measured.



(a) State the following variables for this experiment. [2]

(i) Changed variable: _____

(ii) Responding variable: _____

(b) What is the aim of this experiment? [1]

_____

_____

(c) State an important variable that must be kept the same for the experiment to be fair. [1]

_____

	4

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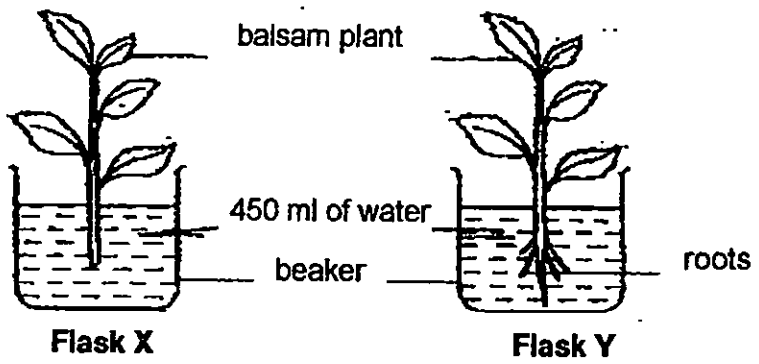
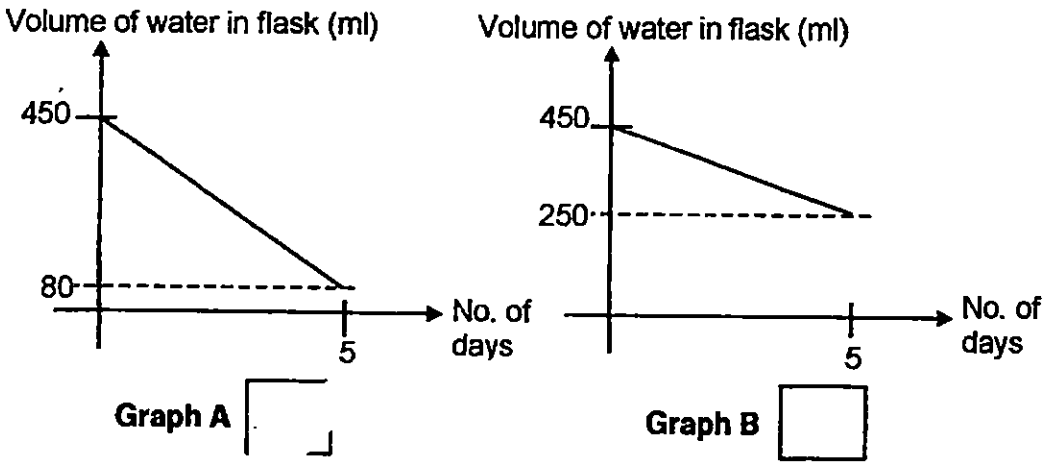
42 Siti puts one balsam plant each into Flask X and Flask Y. She removed only the roots of the balsam plant in Flask X.
Both flasks were then left in the open at the same location and the volume of water in each flask was measured and recorded over 5 days.



The graphs below shows the change in the volume of water in both flasks over a period of 5 days.

(a) Study the 2 graphs shown below. Which graph best represents the change in volume of water in **Flask Y** over a period of 5 days? Tick (√) your answer. [1]



(b) Give a reason for your answer in (a). [1]

_____

2

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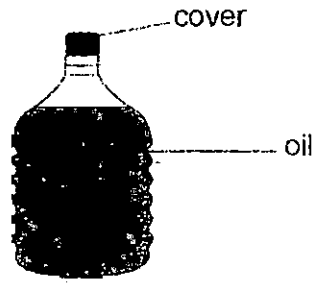
43 Mark has a bottle of cooking oil.

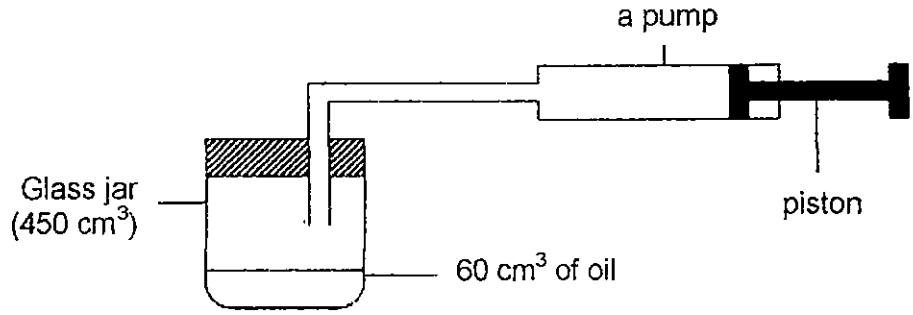


(a) Complete the sentences to state if the parts are solid, liquid or gas.

(i) The cover is a _____ [1]

(ii) Oil is a _____ [1]

Later, Mark poured the oil into a glass jar that has a capacity of 450 cm^3 and connected a pump to it as shown below.



(b) 50 cm^3 of air is pumped into the jar when the piston is completely pushed in. What is the volume of air in the jar after one pump? [1]

_____

(c) Give a reason for your answer in (b). [1]

_____

_____

	4

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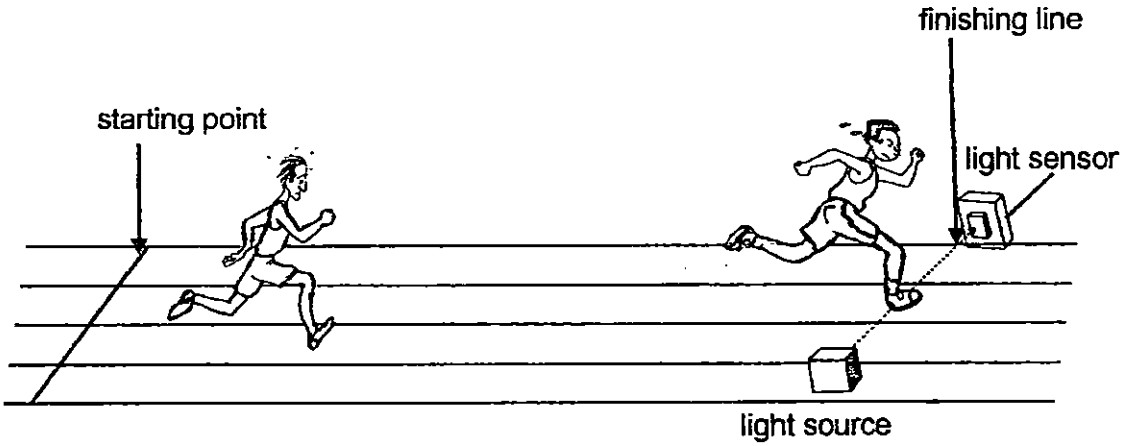
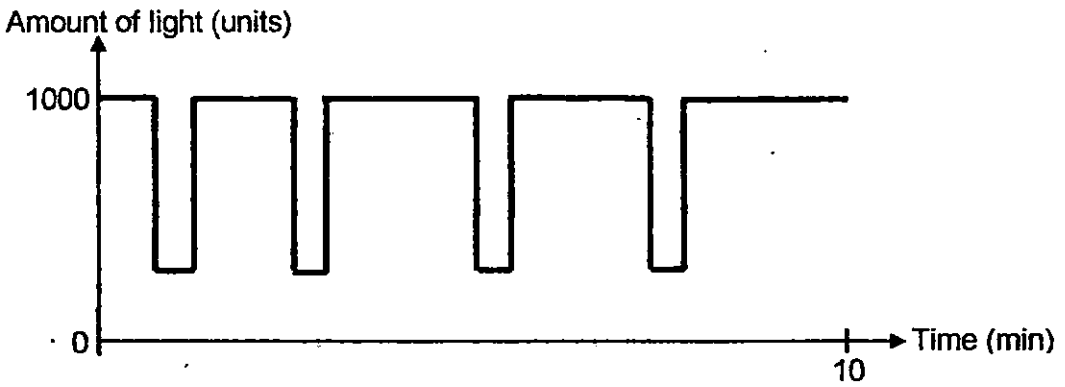
44 Mr Song used a strong beam of light and a light sensor connected to a data-logger to record the number of students running pass the finishing line in 10 minutes.



The data-logger records the brightness of light as 1000 units when the beam of light shines into the sensor.

The light graph below shows the amount of light entering the light sensor during the 10 minutes run.



(a) Based on the graph, how many students crossed the finishing line during10 minute? [1]

_____

(b) State a characteristic of light that is demonstrated here. [1]

_____

End of Booklet

2

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : MARIS STELLA HIGH SCHOOL(PRIMARY)
SUBJECT : SCIENCE
TERM : SA2

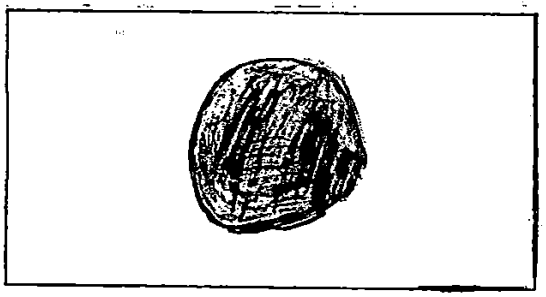
Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
4	**3**	**3**	**3**	**3**	**4**	**4**	**2**	**4**	**3**
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
3	**1**	**4**	**4**	**3**	**3**	**4**	**1**	**4**	**3**
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	**3**	**3**	**2**	**4**	**4**	**2**	**1**	**2**	**3**

Q31a floats / sinks Q31b. Q

Q32a. air
Q32b. grow
Q32c. egg➔ lava ➔ pupa ➔adult

Q33a. non – magnetic Q33b. repelling
Q33c i) north Q33c ii) south

Q34block Q34b. **SEE PICTURE** Q34c. Bring the torch nearer to the ball

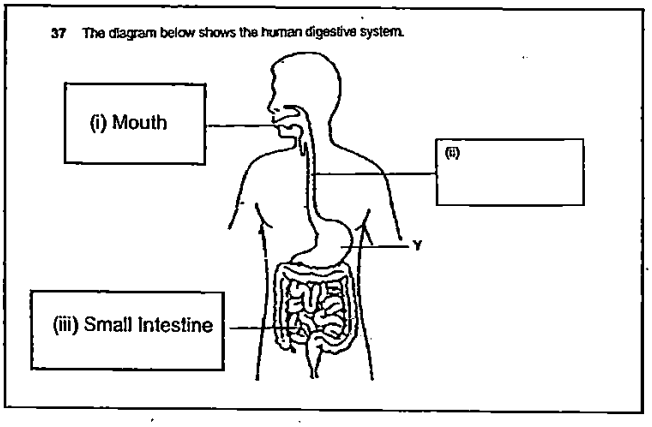


wall
(front view)

Q35a. B Q35b. The ice took the shortest time to melt completely.

Q36a. (i) Both the mosquito and the dragonfly have an egg stage
Q36a. (ii) The mosquito has a 4 stage life cycle while the dragonfly has a 3-stage life cycle.
Q36b. Egg stage.

Q37a. **SEE PICTURE** Q37b. Stomach Q37c. To digest food into simpler substances



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Q38a. D will increase after heating.
Q38b. The fire from the flame causes the iron ring to expand when heated.
Q38c. Put the ring in cold water.

Q39a. TRUE Q39b. FALSE Q39c. TRUE

Q40a. Magnet can attract a magnetic material.
Q40b. No. Aluminum is not a magnetic material so the magnet broom cannot attract the aluminum pieces.

Q41a (i) different type of material
Q41a (ii) The amount of water absorbed.

Q41b. To find out if the type of material will affect the amount of water left in the beaker.

Q41c. Thickness of material.

Q42a. Graph A
Q42b. Flask Y has roots to absorb the water.

Q43a(i) solid
Q43a(ii) liquid

Q43b. $390cm^3$
Q43c. Air can be compressed.

Q44a. 4
Q44b. Light travels in straight line.

THE END

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METHODIST GIRLS' SCHOOL

Founded in 1887

END-OF-YEAR EXAMINATION 2015
PRIMARY 4
SCIENCE

BOOKLET A1

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 4. _____

Date : 30 October 2015

This booklet consists of 11 printed pages including this page.

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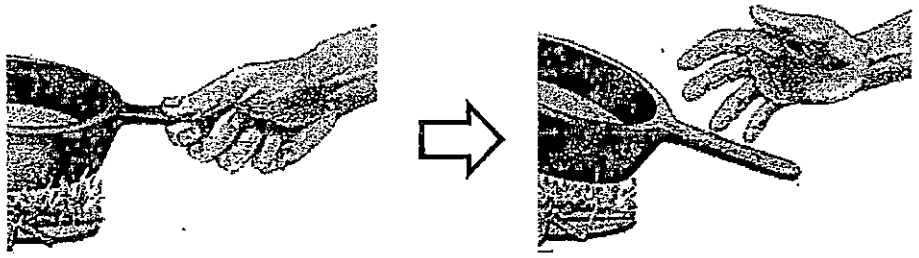
For each question from 1 to 15, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

[30 marks]

---

1. Bentley touched the handle of the pot as shown below. He let go of the hot pot immediately after touching it.



This shows that Bentley is a living thing because he can _____.

(1) grow

(2) breathe

(3) respond

(4) reproduce

2. Which one of the following statements is false for **ALL** birds?

(1) They can fly.

(2) They have a beak.

(3) They have feathers.

(4) They have two legs.

(Go on to the next page)

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3. Samy made the following observations on the life cycle of an animal.

- There are three stages in the life cycle.
- The young does not look like the adult.

Which animal was Samy observing?

(1) frog

(2) beetle

(3) butterfly

(4) grasshopper

4. Which part of the digestive system does digestion of food begin?

(1) gullet

(2) mouth

(3) small intestine

(4) large intestine

(Go on to the next page)

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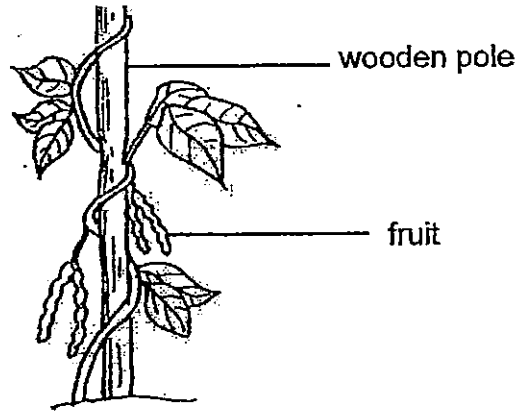
5. The picture below shows a plant.



Which of the following statement(s) is/are **false**?

A: It has a woody stem.

B: It requires a support.

C: It is a non-flowering plant.

(1) A only

(2) C only

(3) A and C only

(4) B and C only

(Go on to the next page)

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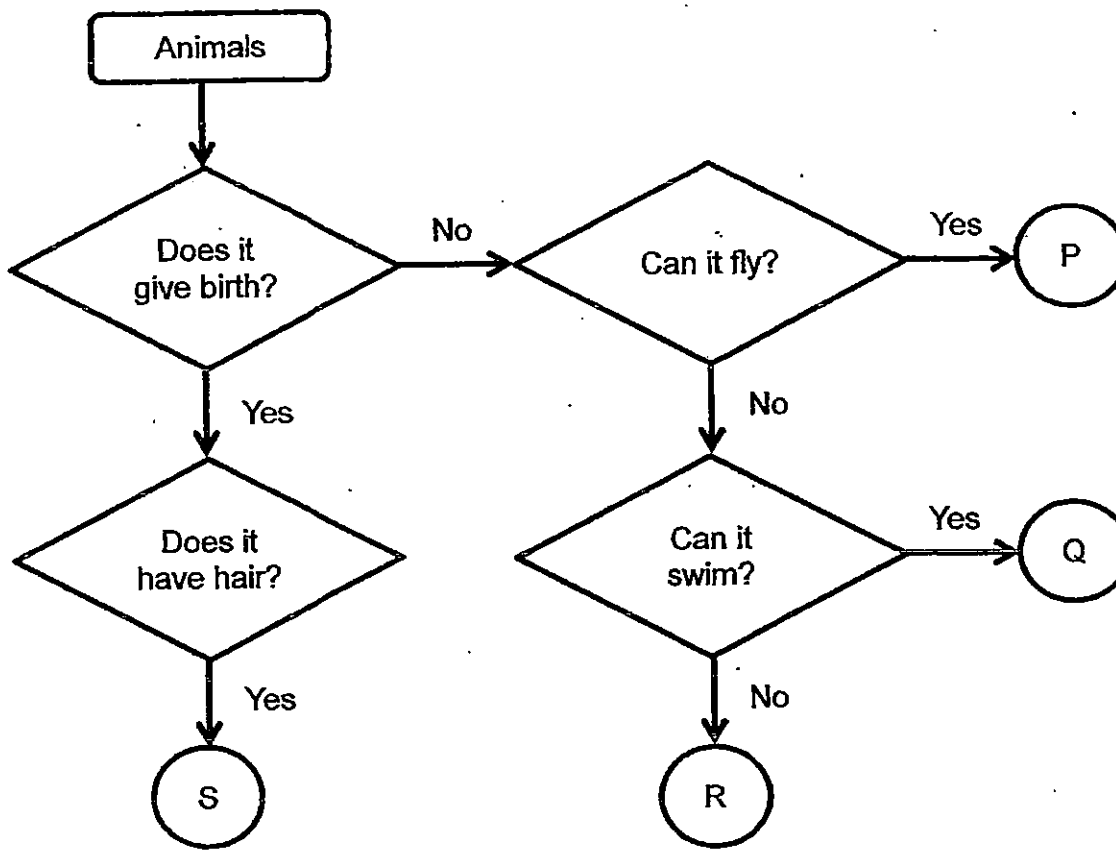
6. Study the flow chart carefully.



Which of the following animals can letters, P, Q, R and S represent?

	P	Q	R	S
(1)	bat	guppy	penguin	dog
(2)	penguin	goldfish	eagle	housefly
(3)	butterfly	penguin	ostrich	bat
(4)	eagle	goldfish	dolphin	monkey

(Go on to the next page)

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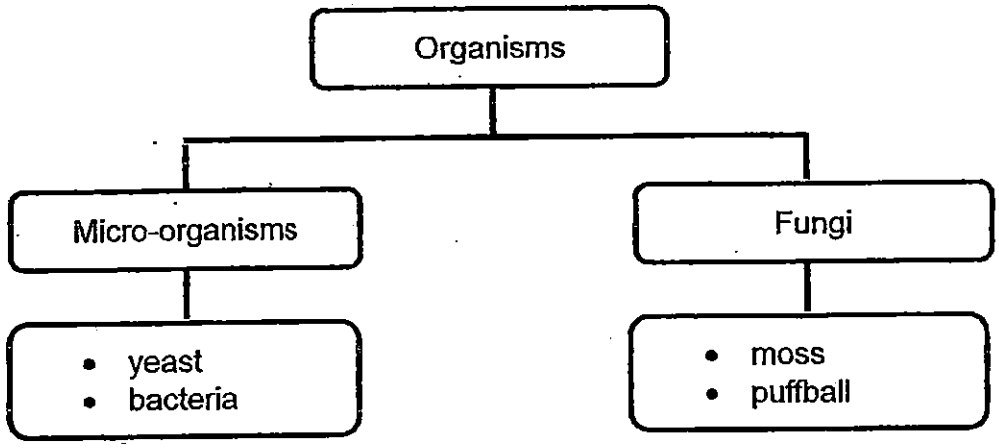
7. Study the classification chart below.



Which one of the following organisms is classified wrongly?

(1) moss
(2) yeast
(3) bacteria
(4) puffball

8. Maureen examined the life cycle of two animals, J and K. She then presented her observations in the table as shown.

Observation	Animal J	Animal K
It has three body parts.	Yes	No
Eggs are laid in water.	No	Yes
There are four stages in the life cycle.	Yes	No

Which of the following could be animals J and K?

	Animal J	Animal K
(1)	ant	turtle
(2)	beetle	turtle
(3)	butterfly	frog
(4)	mosquito	frog

(Go on to the next page)

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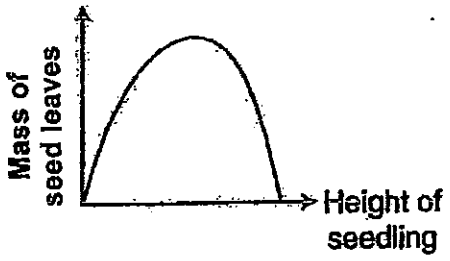
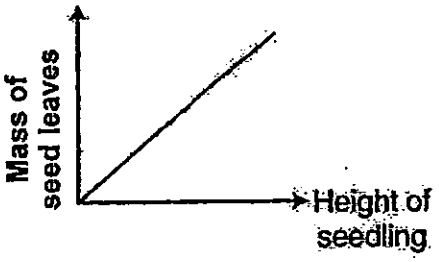
9. Ahmad planted a seed in a pot and he plotted a graph based on his daily observations of the seedling. Which one of the following graphs correctly shows the relationship between the mass of the seed leaves and the height of the seedling?

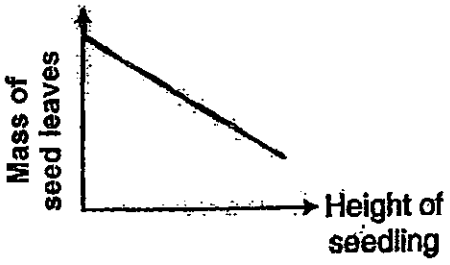
(1)



(2)



(3)



(4)

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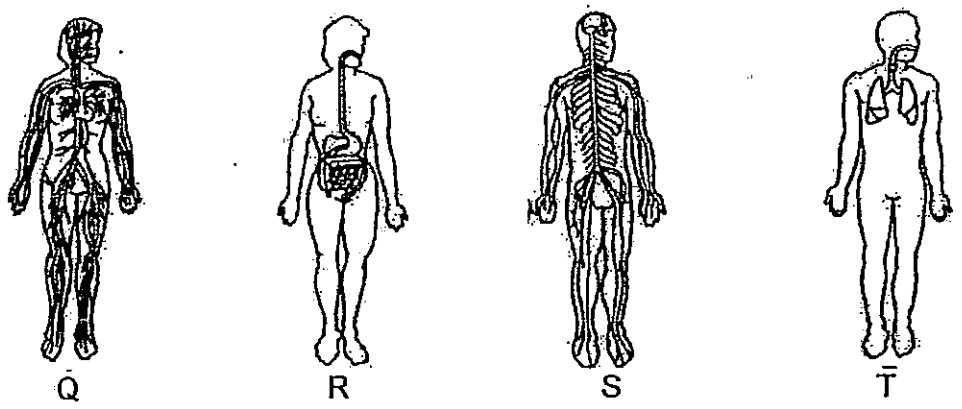
10. Study the diagrams, Q, R, S and T below.



Which of the diagrams show the circulatory system and respiratory system?

(1) Q and R

(2) R and S

(3) S and T

(4) Q and T

11. Ming Hua was chased by a dog and he reacted as shown in the diagram below.

Which of Ming Hua's body system(s) was/were involved to allow him to climb up the tree?

(1) muscular system only

(2) muscular and skeletal systems

(3) digestive and circulatory systems

(4) digestive and respiratory systems

(Go on to the next page)

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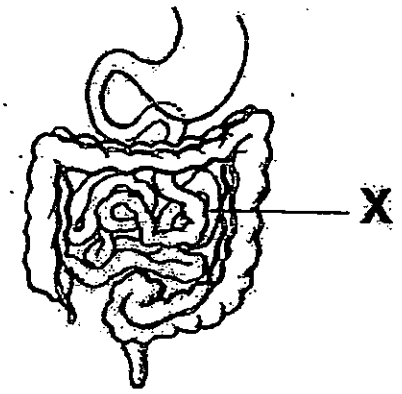
12. Study the picture below.



Which of the following correctly identifies organ X and its function?

	X	Function
(1)	small intestine	Digested food particles enter the bloodstream.
(2)	small intestine	Gets rid of excess water.
(3)	large intestine	Food is completely digested here.
(4)	large intestine	It stores undigested food.

13. After a Science lesson, some pupils made the following statements.

Liz: The roots anchor the plant firmly to the ground.

Vik: Some plants can store excess food in their roots.

Sue: The roots transport water and minerals to the other parts of the plant.

Which of the student(s) has/have stated the correct function of the plant parts?

(1) Sue only

(2) Sue and Liz

(3) Sue and Vik

(4) Vik and Liz

(Go on to the next page)

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14. Rachel bought two identical pots of plants. She put them in two different places. The table below shows the living conditions provided for the plants.

	Type of soil	Volume of fertilizer (ml)	Volume of water (ml)	Location of the plant
Plant W	sandy	8	60	under direct sunlight
Plant X	sandy	8	60	in the shade

After one week, Rachel observed that Plant W looked unhealthy while Plant X remained healthy.

Based **only** on the information provided, which of the following conclusions can be made about this type of plant at the end of the experiment?

(1) These plants need water to survive.

(2) These plants grow well in the shade.

(3) These plants need sunlight to make food.

(4) These plants grow well under direct sunlight.

(Go on to the next page)

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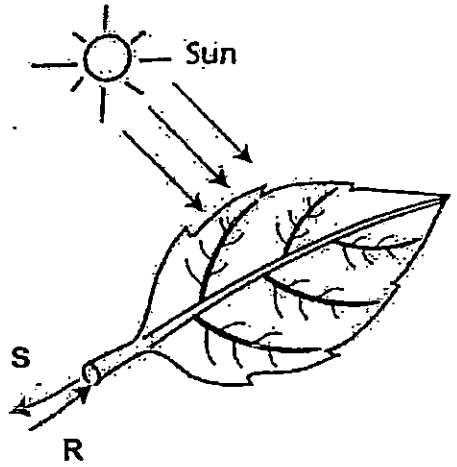
15. The diagram below shows a leaf which is exposed to sunlight.



Substance S is being transported out of the leaf to the stem while Substance R is being transported into the leaf from the stem.

What could Substance S and R be?

	Substance S	Substance R
(1)	mineral salts	water
(2)	food	water
(3)	mineral salts	food
(4)	water	food

End of Booklet A1

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BOOKLET A2

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 4. _____

Date : 30 October 2015

This booklet consists of 10 printed pages including this page.

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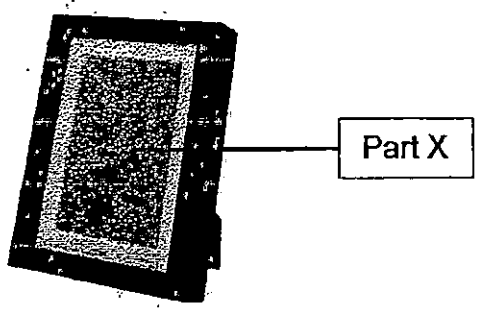
For each question from 16 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

[30 marks]

---

16. The diagram below shows a photo frame.



Glass is used to make Part X of the photo frame because glass _____.

(1) is waterproof
(2) is transparent
(3) can sink in water
(4) does not break easily

17. Which one of the following can be attracted by a magnet?

(1) steel
(2) wood
(3) plastic
(4) aluminium

18. Which of the following properties is **true** for both oil and air?

(1) They can be seen.
(2) They take up space.
(3) They have fixed volume.
(4) They have fixed shapes.

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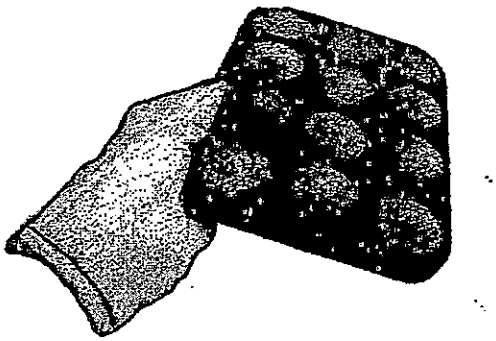
19. Jamie baked some cupcakes and took the tray of cupcakes out of the oven as shown below.



She was able to hold the hot tray of cupcakes using a glove. This is because the fabric is a _____.

(1) light material

(2) flexible material

(3) poor conductor of heat

(4) good conductor of heat

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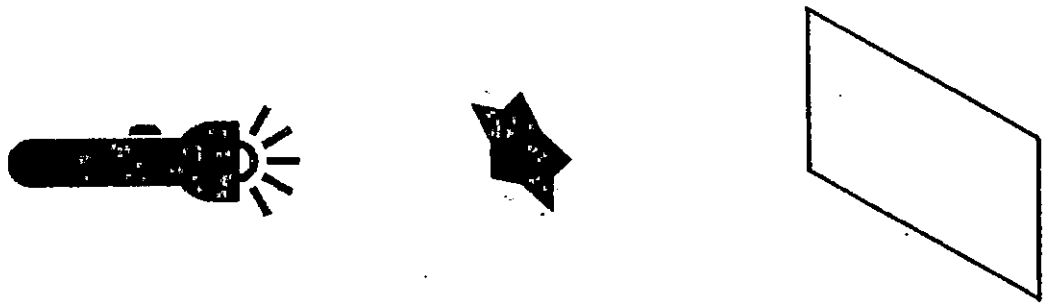
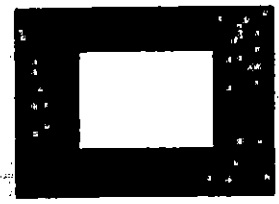
20. The set-up below shows light shining on a metal star-shaped object.

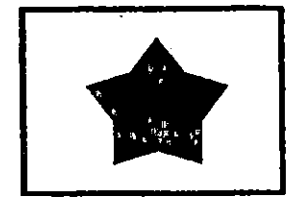


Which one of the following would likely be seen on the screen?

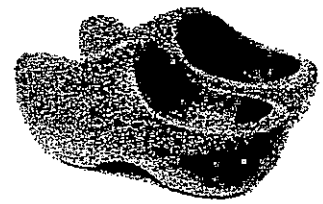
(1) 

(2)

(3)

(4) 

21. Sherry bought a pair of wooden clogs as shown below.



She commented that it was very difficult to walk while wearing the wooden clogs. Based on what you have learnt about the properties of materials, what could be the reason?

(1) It is stiff.

(2) It is strong.

(3) It is opaque

(4) It is waterproof.

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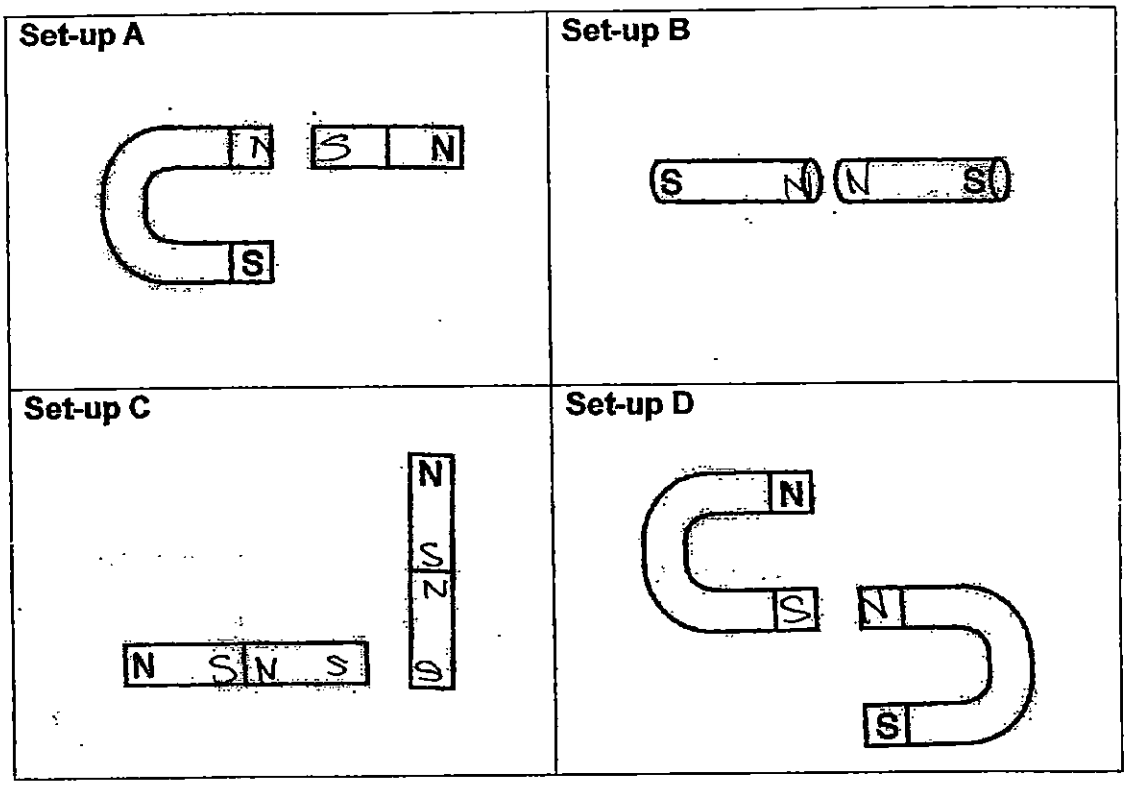
22. Study the following set-ups below.



In which set-ups will the magnet attract each other?

(1) A and B

(2) B and C

(3) C and D

(4) A and D

(Go on to the next page)

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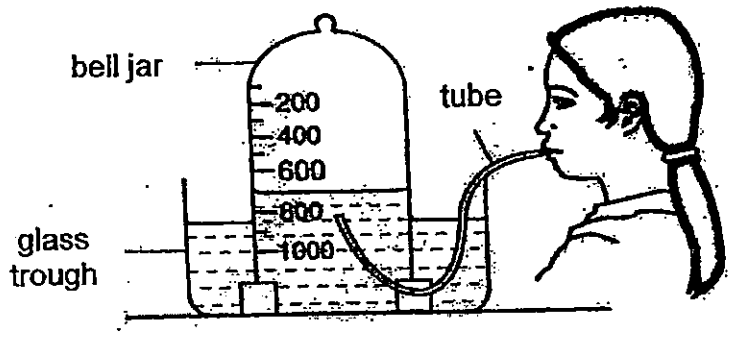
23. Syarifah set up an experiment as shown below.



What would happen after she had blown air into the tube ten times?

A: The water level in the bell jar would increase.

B: The water level in the glass trough would increase.

C: The volume of water in the experiment would decrease.

D: The volume of water in the experiment would remain the same.

(1) B only

(2) A and C

(3) A and D

(4) B and D

24. The table below shows the capacity of the tank and the amount of air pumped into the tank. Which one of the tanks has the greatest volume of air in it?

	Tank	Capacity of tank (cm^3)	Amount of air pumped into the tank (cm^3)
(1)	A	450	420
(2)	B	325	300
(3)	C	550	500
(4)	D	500	600

(Go on to the next page)

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25. Roger scooped some ice-cream into a bowl and left it on the table. After five minutes, he observed that some of the ice-cream melted and the spoon was cold.

Which of the following could be the possible explanation(s) for his observations?

W: The spoon lost heat to the ice-cream.

X: The spoon gained heat from the ice-cream.

Y: The ice-cream lost heat to the surrounding air.

Z: The ice-cream gained heat from the surrounding air.

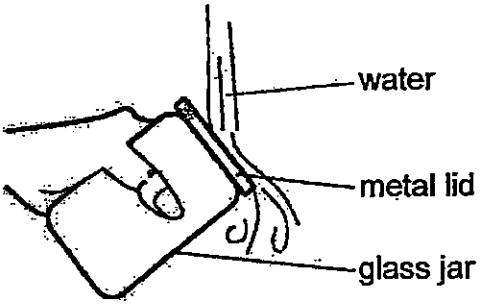
(1) Z only

(2) W and Y

(3) W and Z

(4) X and Y

26. Imran was unable to open the metal lid of a glass jar. He then poured some water on the metal lid as shown below.



What should the temperature of water be so that Imran could remove the lid from the glass jar?

(1) water at 4°C

(2) water at 10°C

(3) water at 25°C

(4) water at 80°C

(Go on to the next page)

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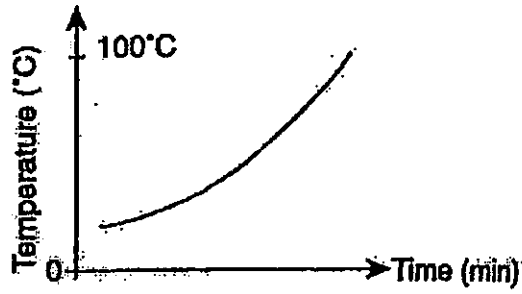
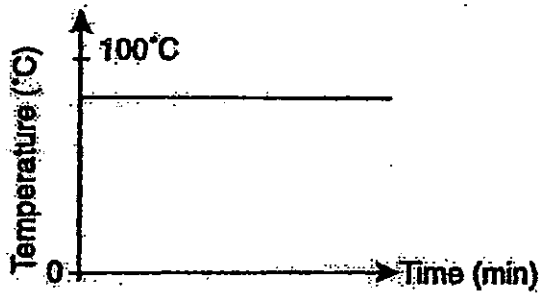
27. Weiling boiled some water in a kettle and left it in a room for two hours. Which of the following graphs best represents the changes in the water temperature after it has been boiled?

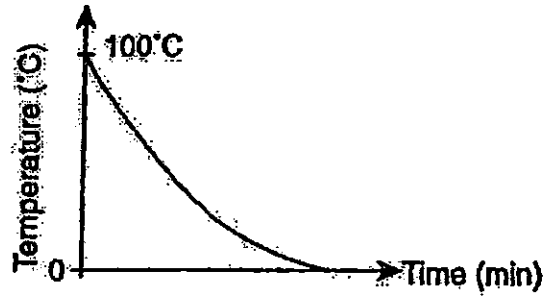
(1)



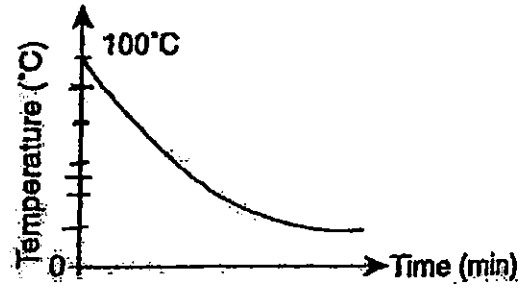
(2)



(3)



(4)



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28. Which of the following is a source of light?

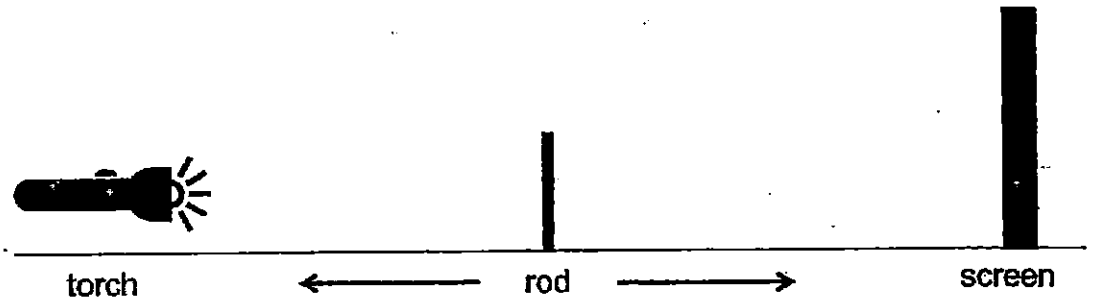
(1) moon

(2) mirror

(3) firefly

(4) metal spoon

29. Arif set up an experiment as shown below.



What should Arif do if he wants the shadow of the rod to be larger?

E: Move the rod closer to the torch.

F: Move the torch away from the rod.

G: Move the rod closer to the screen.

H: Move the screen away from the rod.

(1) E and G only

(2) E and H only

(3) F and G only

(4) F and H only

(Go on to the next page)

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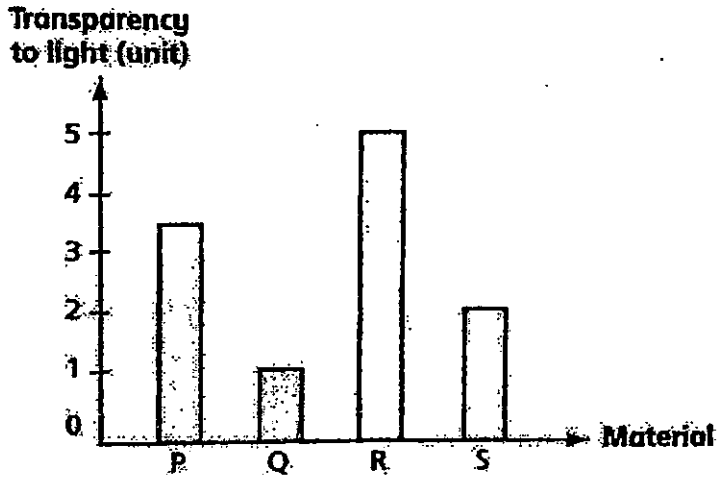
30. Brindha wanted to investigate the degree of transparency of four materials, P, Q, R and S. Before she began measuring the transparency of the four materials, she noted that the transparency of a clear plastic sheet is 10 units. The results of her experiment are shown in the graph below.



Which one of the materials will cast the lightest shadow when the torchlight is shone on it in a dark room?

(1) Material P

(2) Material Q

(3) Material R

(4) Material S

End of Booklet A2

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BOOKLET B1

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 4._____

Date : 30 October 2015

This booklet consists of 6 printed pages including this page.

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For questions 31 to 35, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[15 marks]

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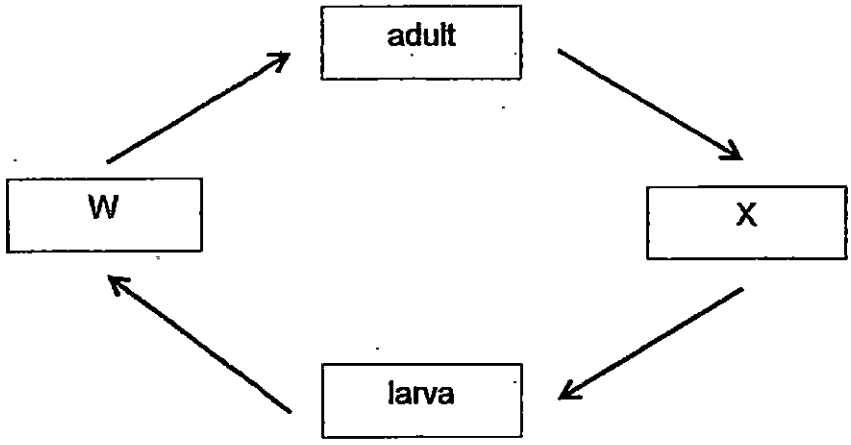
31. The diagram below shows the stages in the life cycle of a mosquito.



Choose the correct words from the box to answer the question below.

egg	pupa	seed	wriggler

Name the two stages **W** and **X**. [2]

W : _____

X : _____

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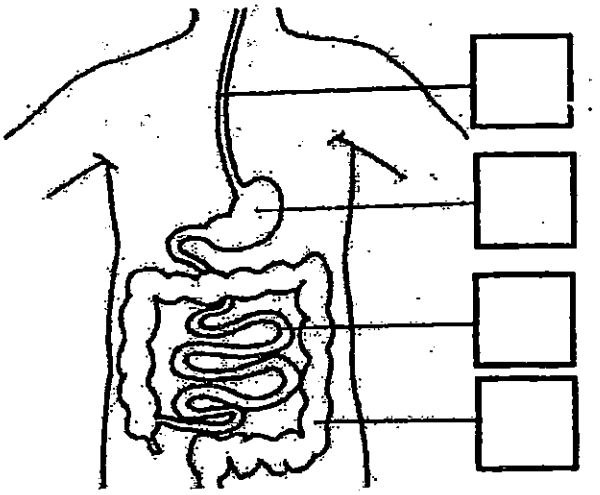
32. The diagram below shows part of the human digestive system.

(a) Tick (✓) one box to show where the gullet is. [1]



(b) Fill in the blank using the following helping words. [1]

mouth	large intestine	stomach	small intestine

Food from the gullet is next passed on to the _____

2

(Go on to the next page)

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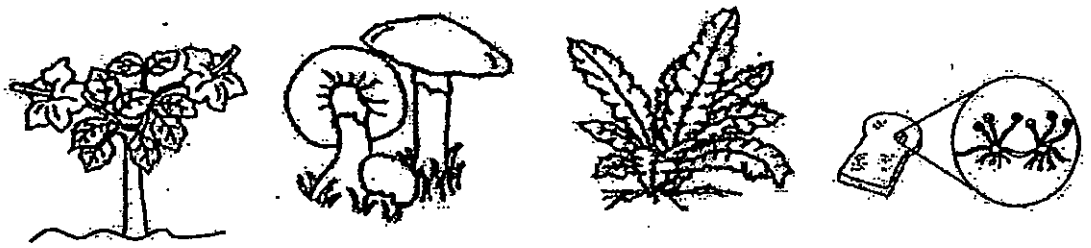
33. Tammy found some organisms as shown below.



hibiscus plant mushroom fern mould

She classified them in two groups of living things.

Group A	Group B
fern hibiscus plant	mushroom mould

(a) Identify the heading for Group A and Group B. [2]

Group A: _____

Group B: _____

(b) How do the fern and mould reproduce? [1]

_____

(c) How do the fern and mould obtain their food? [1]

_____

_____

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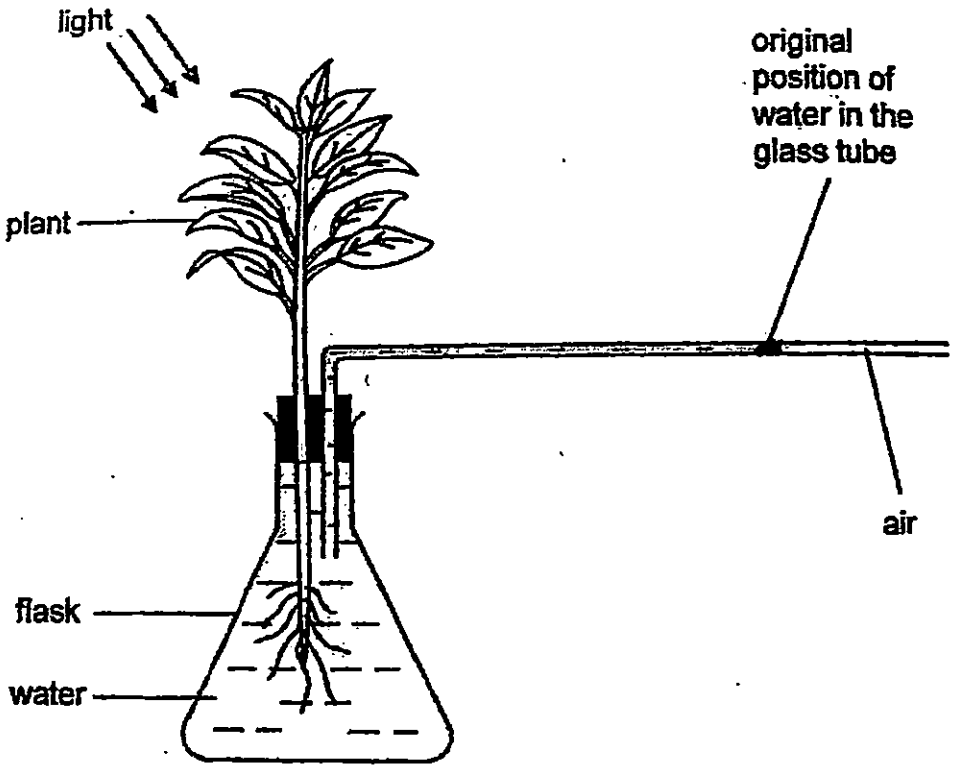
34. Fairoz placed the following set-up in a bright place.



Three hours later, the water in the glass tube moved.

(a) **Circle** one of the arrows below to show the direction in which the water in the glass tube moved. [1]

(b) Explain why the water in the glass tube moved from its original position. [2]

_____

_____

_____

3

(Go on to the next page)

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35. Meilan had some food for lunch. The table below shows the amount of undigested food after it passes through some parts of the digestive system.

Parts of the digestive system	Amount of undigested food left (units)
Mouth	90
Small intestine	20
Large intestine	X

(a) What is the amount of undigested food that remains in the large intestine? [1]

X: _____ units

(b) Was there a change in the amount of undigested food in the small intestine and large intestine? Explain your answer. [1]

_____

_____

Four hours after her lunch, Meilan decided to play tennis with her friends.

(c) How does Meilan's body obtain the nutrients to play tennis from the digested food in the small intestine? [2]

_____

_____

_____

_____

4

End of Booklet B1

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BOOKLET B2

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 4._____

Date : 30 October 2015

Booklet A	60
Booklet B B1 B2	30
Total	90
Parent's Signature	

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For questions 36 to 42, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[15 marks]

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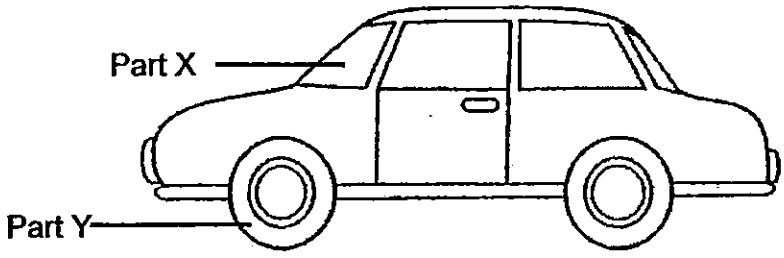
36. The diagram below shows a car.

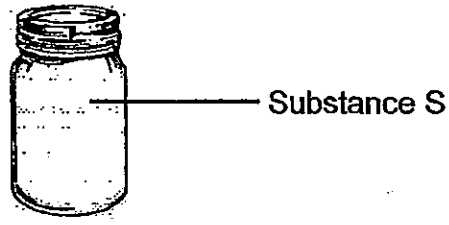


Fill in the blanks with a suitable word.

(a) Part X is made of glass. It allows _____ to pass through in order for the driver to see the road clearly. [1]

(b) Part Y is made of _____ because it must be flexible. [1]

37. The picture below shows a clear glass jar which looks empty. It contains Substance S which is transparent.



Circle the correct state for Substance S. [1]

solid liquid gas

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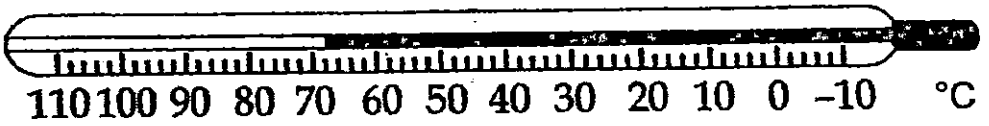
38. Vanessa used an instrument as shown below to measure the temperature of a liquid.



(a) What is the instrument called? [1]

_____

(b) What is the temperature of the liquid shown on the instrument? [1]

_____ °C

2

(Go on to the next page)

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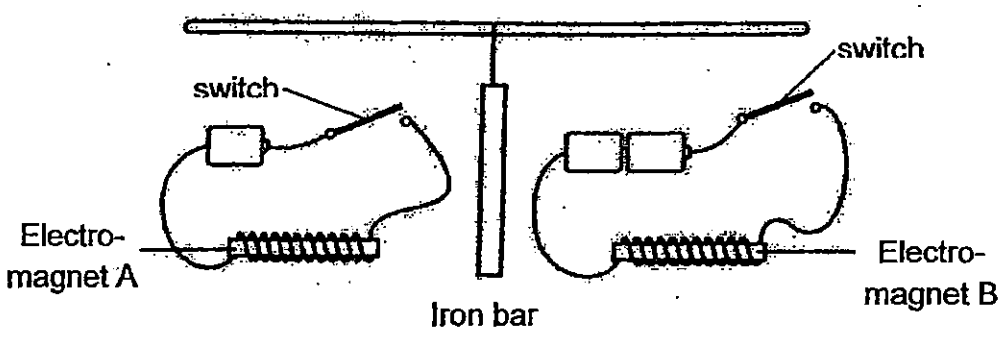
39. The diagram below shows an iron bar between two electromagnets.



(a) What will happen to the iron bar when the switches are closed for both the circuits of the electromagnets? [1]

_____

(b) Explain your answer in (a). [1]

_____

_____

(c) What will happen if the iron bar was replaced with an aluminium bar? Explain your answer.

_____

_____

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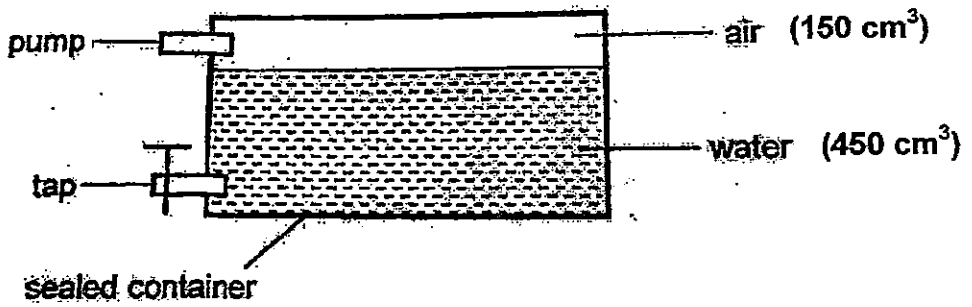
40. Sue set up an experiment as shown below.



She used the tap to remove 70 cm^3 of water. She then used the pump to add 90 cm^3 of air into the container.

(a) What was the final volume of air in the container? [1]

_____

(b) Which properties of water and air did you use to obtain your answer in (a)? [2]

_____

_____

3

(Go on to the next page)

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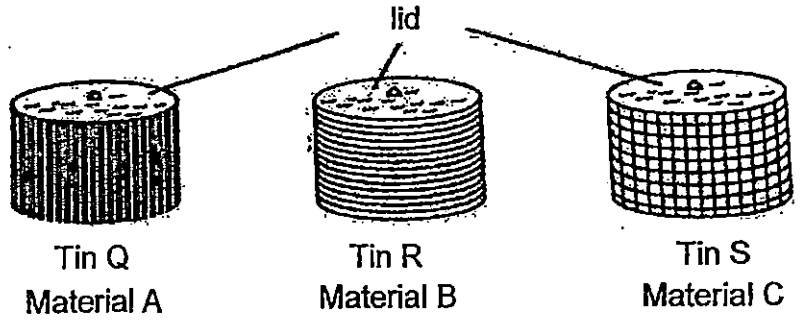
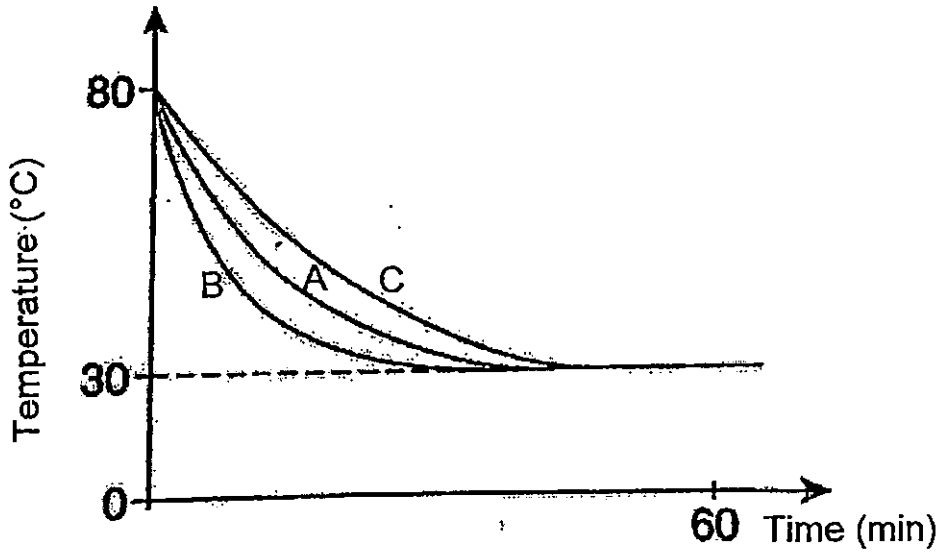
41. Kiat Meng placed three identical tins, Q, R and S on the table. He filled each tin with the same amount of hot water and covered it with a lid. He then wrapped each tin with three types of material, A, B and C as shown below.



He recorded the temperature of the water in each of the tin every 5 minutes for an hour. The graph below shows the results that Kiat Meng had obtained.



Based on the results, which material would Kiat Meng choose to make a flask which can keep a drink cold for the longest amount of time? Explain your choice. [2]

_____

_____

_____

(Go on to the next page)

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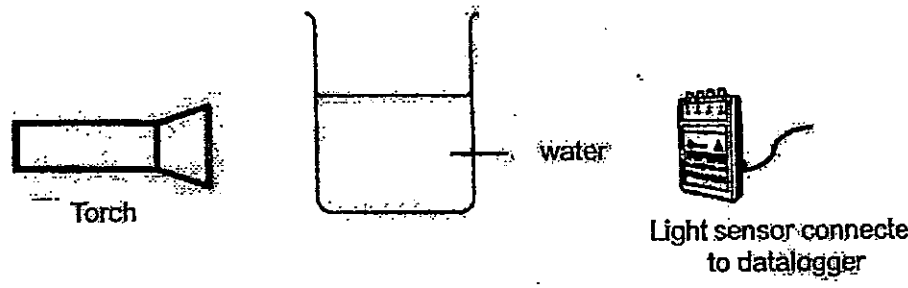
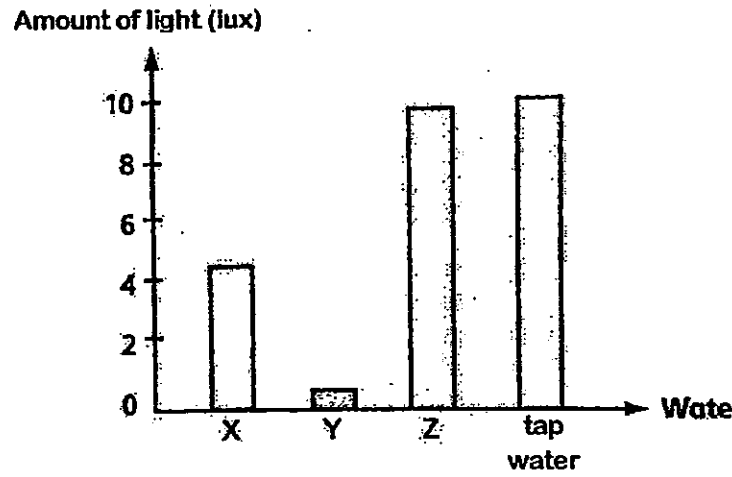
42. Merryl collected water samples from three different parts of a river, X, Y and Z. A light sensor connected to a datalogger was used to measure the amount of light that passed through the water samples when light was shone with a torch as shown below.



The bar graph shows the results of the three water samples in comparison with the tap water.



(a) Which part of the river, X, Y or Z would be best for Merryl to see the organisms in the water most clearly? [1]

_____

(b) Explain your answer in (a). [1]

_____

2

End of paper

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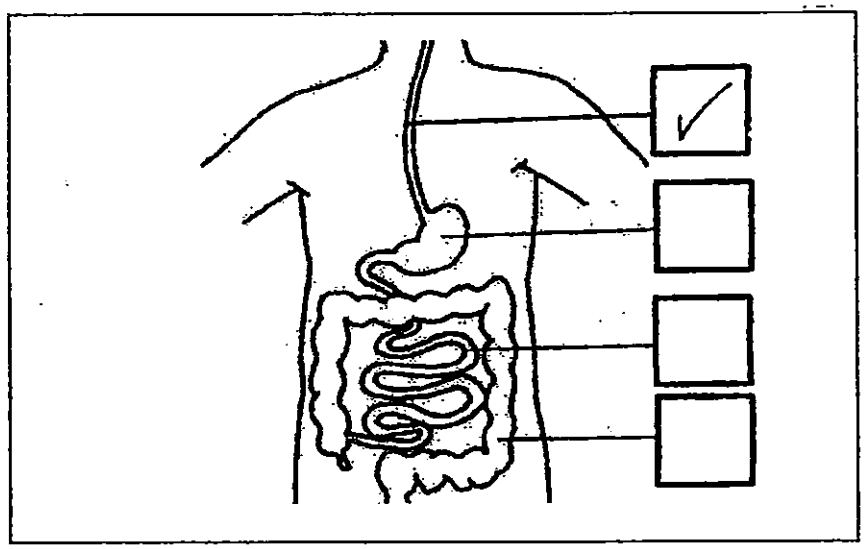
EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : METHODIST GIRLS' SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	1	1	2	3	3	1	3	3	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
2	1	4	2	2	2	1	2	3	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	4	4	2	3	4	4	3	2	3

Q31. W: pupa Q31. X : egg

Q32a. **SEE PICTURE** Q32b. Stomach



Q33a. Group A : Plants Group B : Fungi

Q33b. They produce by spores.

Q33c. The fern traps sunlight to make food during photosynthesis while mould fees on food dead and decayed or living things.

Q34a. **SEE PICTURE**

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Q34b. As the plant was photosynthesizing, it needed water to make food. Absorbing some of the water by the roots in the flask, there was space for more water to enter the flask. As the water entered the flask, it displaced some water, and causes the hot water to move forward.

Q35a. X : 20units

Q35b. No. As the small intestine digest the food until it could not digest anymore, and as digestion ends at the small intestine, no more food could be further digested, and all the undigested food just goes into the large intestine.

Q35c. Digested food will pass through the walls of the small intestine and enter the bloodstream, and as the digestive system has finished digesting into simpler substances which is the nutrients for her to play tennis which will then be carried by the blood to all parts of the body.

Q36a. light Q36b. rubber

Q37 gas Q38a. thermometer Q38b. 68°C

Q39a. It would move towards Electromagnet B.

Q39b. As iron is a magnetic material, it can be attracted, but the electromagnets have different amounts of magnetic strengths, and electromagnet B would have a greater magnetic strength as it has one more battery than A, and the iron bar would be attracted to the one which has more magnetic strength, B.

Q39c. Nothing would happen. Aluminum is not a magnetic material and only magnetic materials can be attracted by magnets.

Q40a. 220cm^3 Q40b. Air has no definite volume and water has a definite volume.

Q41. Material C. Based on the results, C took the longest amount of time to reach room temperature, it shows that it is the poorest conductor of heat and poor conductors of heat conduct heat to or away the water the slowest, thus he should choose Material C to make a flask which can keep a drink cool for the longest amount of time.

Q42a. Z. Q42b. As it allowed the most light to pass through out of the three and with light, he would be able to see the organisms in the water most clearly.

THE END

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2015
PRIMARY 4

SCIENCE

BOOKLET A

30 Multiple Choice Questions (60 marks)

Total Time for Booklets A and B : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

Marks Obtained

Booklet A		/ 60
Booklet B		/ 40
Total		/ 100

Name: _____ ( ) **Class: P 4** _____

Date : 30 October 2015 **Parent's signature:** _____

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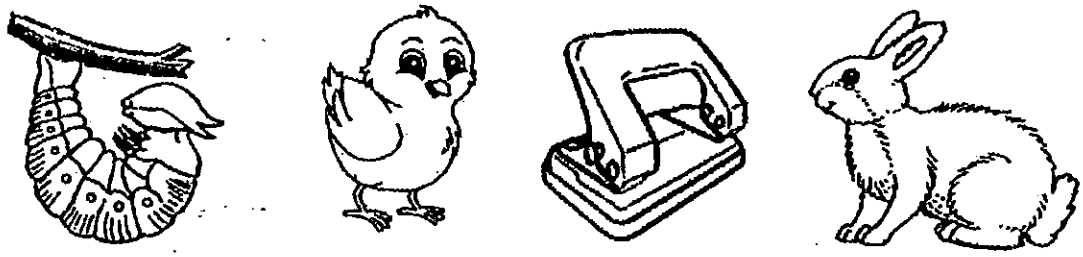
Section A: (30 x 2 marks = 60 marks)
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

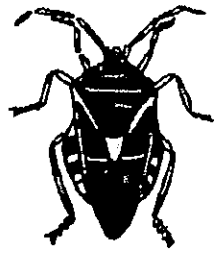
1. Which one of the following is **NOT** a living thing?



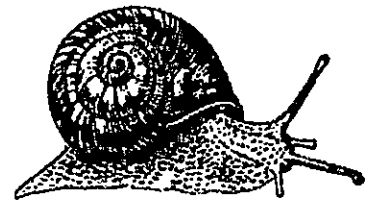
(1) (2) (3) (4)

2. Which one of the animals shown below is an insect?

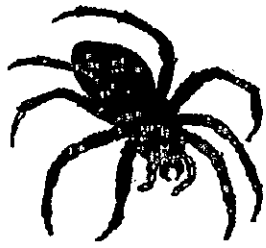
(1)



(2)



(3)



(4)

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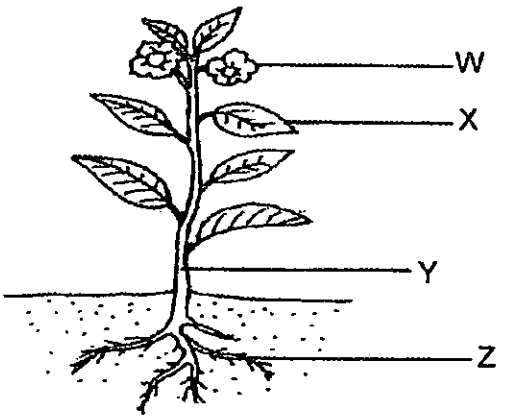
3. The diagram below shows a dining chair.

Metal is used to make the legs of the chair because it _____.

(1) is shiny
(2) is strong
(3) sinks in water
(4) conducts heat well

4. The diagram below shows a plant.



Which part holds the plant firmly to the ground?

(1) W
(2) X
(3) Y
(4) Z

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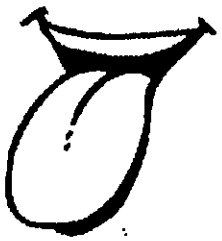
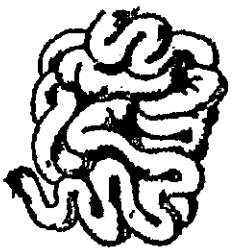
5. In which part of the digestive system is food absorbed into the blood?

(1)



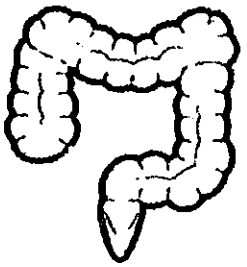
Tongue

(2)



Small intestine

(3)

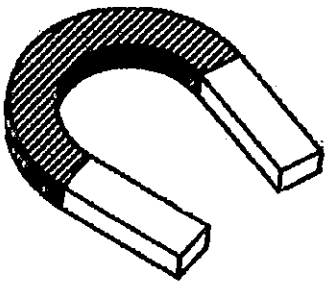


Large intestine

(4)

Stomach

6. Which one of the following can be attracted by a horseshoe magnet as shown below?



(1) iron tray
(2) silver tray
(3) plastic tray
(4) wooden tray

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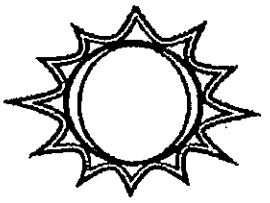
7. Which of the following is **NOT** a source of light?

(1)

a lit bulb

(2)

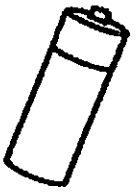


the sun

(3)

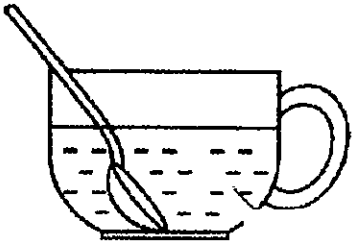
a bottle of fireflies

(4)



a battery

8. Eva places a spoon in a cup of cold tea. The spoon becomes colder after a while.



Which one of the following explains this?

(1) The cold tea loses heat to the spoon.
(2) The spoon loses heat to the cold tea.
(3) The cold tea gains heat from the cup.
(4) The spoon gains heat from the cold tea.

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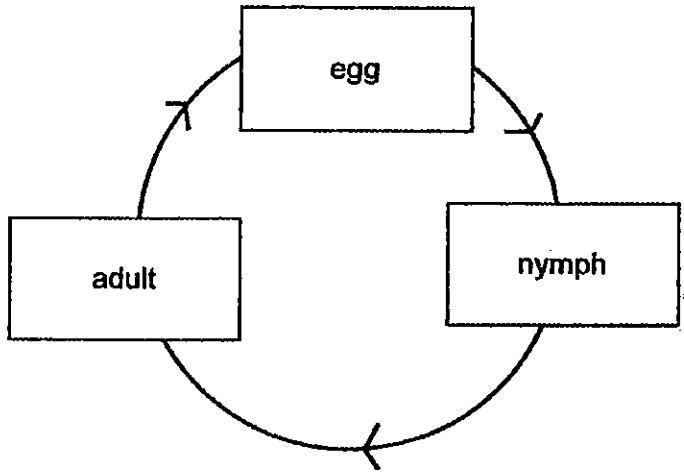
9. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle as shown above?

(1) beetle
(2) chicken
(3) mosquito
(4) grasshopper

10. Matter is anything that has mass and occupies space.

Which one of the following is matter?

(1) heat
(2) clouds
(3) thunder
(4) shadow

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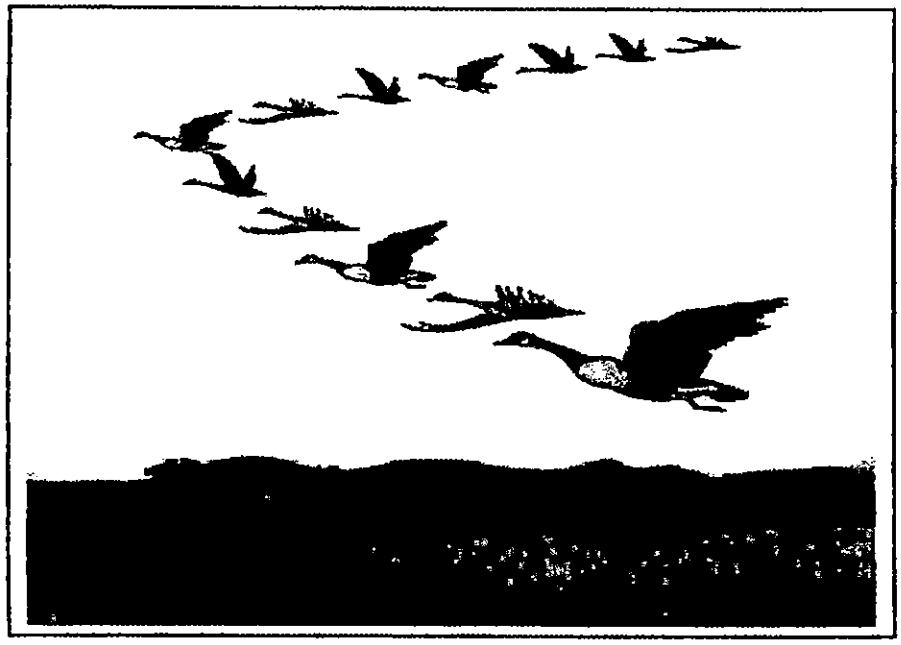
11. The diagram below shows a flock of geese travelling to other warmer places with abundance of insects and small fishes before winter sets in.



What characteristics of living things are shown in this behavior?

A Living things respond to changes.
B Living things need food to survive.
C Living things need sunlight to survive.
D Living things travel to warmer places to reproduce.

(1) A and B only
(2) C and D only
(3) A, B and C only
(4) A, B, C and D

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12. The table below shows the characteristics of three animals, X, Y and Z. A tick (✓) shows the presence of the characteristics.

Characteristics	X	Y	Z
Has feathers	✓		✓
Can fly	✓		
Lay eggs	✓	✓	✓

What could X, Y and Z be?

	X	Y	Z
(1)	parrot	butterfly	eagle
(2)	bat	guppy	platypus
(3)	eagle	platypus	ostrich
(4)	butterfly	bat	guppy

13. John is participating in a toy competition. He has decided to create a toy for young children to play with on the beach and in the sea. The table below shows the properties of four materials, A, B, C and D.

Properties	A	B	C	D
Light	Yes	No	No	Yes
Sink in water	No	Yes	No	Yes

Based on the table, which material is most likely to be used by John to make the toy?

(1) A
(2) B
(3) C
(4) D

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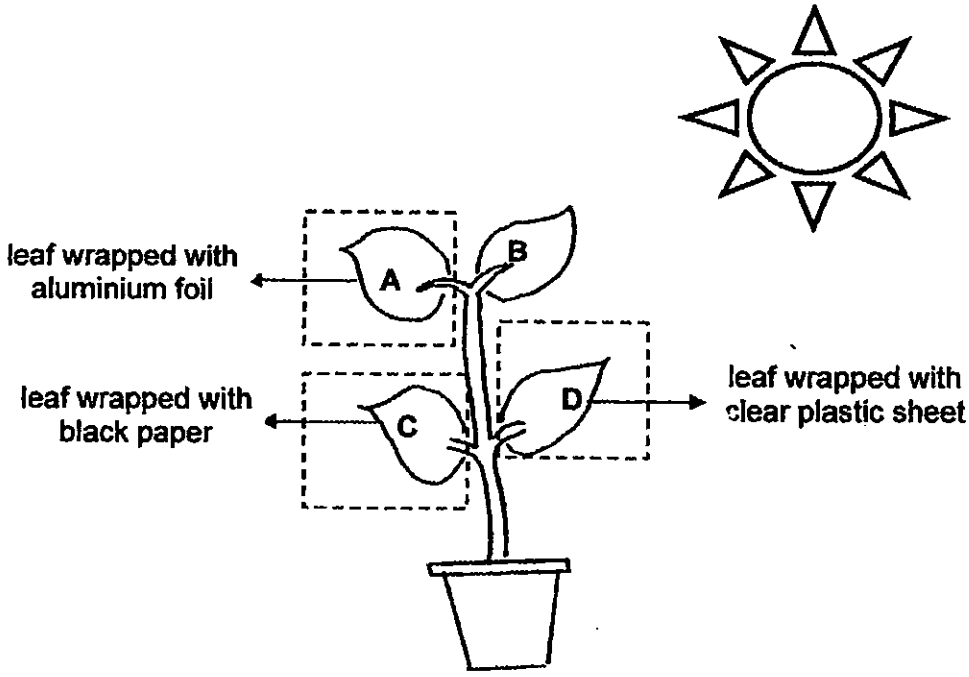
14. Eunice has a potted plant in her garden. She remembered that her Science teacher taught her that the leaves of the plant trap sunlight to make food. She wraps three of the leaves with different materials and pierced a few very tiny holes in all the materials for air to enter.



Which leaf/leaves would most likely not be able to make food for the plant?

(1) B only
(2) A and C only
(3) B and D only
(4) A, C and D only

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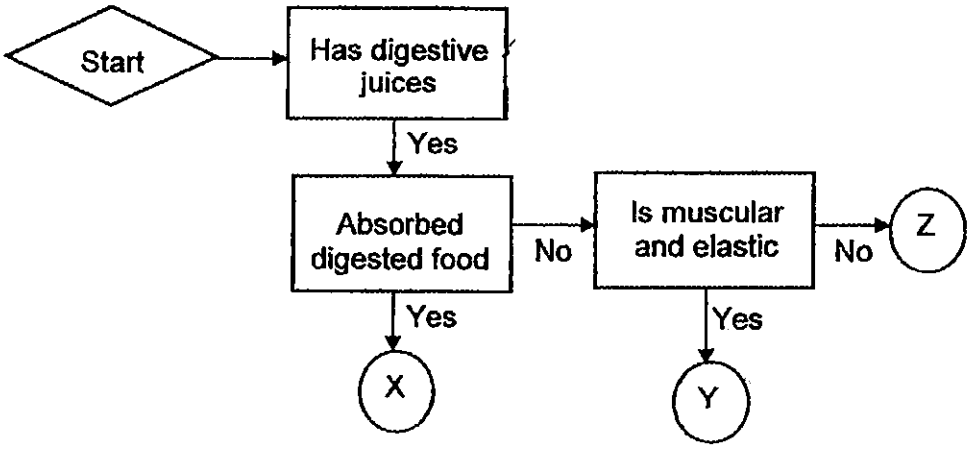
15. The flow chart below represents the organs in the human digestive system.



Which of the following best represents organs X, Y and Z?

	X	Y	Z
(1)	small intestine	gullet	stomach
(2)	small intestine	stomach	mouth
(3)	stomach	gullet	large intestine
(4)	large intestine	stomach	small intestine

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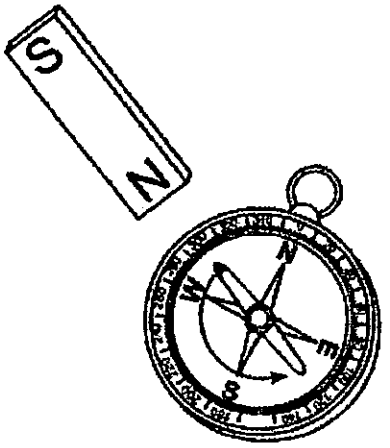
16. The diagram below shows a magnet and a compass. Jasmine brought the magnet near to the compass and observed that the compass needle moved away from the magnet as shown by the arrow in the diagram.



Which of the following best explains her observation?

(1) The magnet attracted the needle which is magnetic.
(2) The N-pole of the needle was repelled by the N-pole of the magnet.
(3) The N-pole of the needle was attracted by the N-pole of the magnet.
(4) The needle which is magnetic moved and pointed to the N-S direction.

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17. Jerald's teacher gave him three different objects wrapped with black paper and told him to use a magnet to interact with the objects. Jerald recorded his observations in the table below for every object that the magnet is in contact with.

Objects	Observations
P	It moved away from the magnet.
Q	It did not move.
R	It moved towards the magnet.

Based on the above observations, which of the following are most likely objects P, Q and R?

	P	Q	R
(1)	plastic ruler	magnet	steel rod
(2)	magnet	steel rod	plastic ruler
(3)	steel rod	magnet	plastic ruler
(4)	magnet	plastic ruler	steel rod

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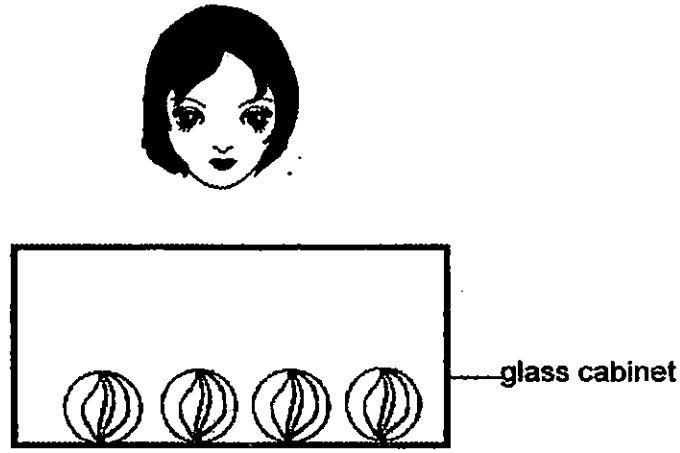
18. Four identical marbles are placed in a glass cabinet. Sally looks at them from the top of the cabinet and is able to see all the marbles.



Which of the following explains why Sally can see all the marbles?

A Light travels in all directions.
B The marbles give out light which enters into her eyes.
C The glass cabinet is transparent and the reflected light from the marbles can pass through the glass cabinet to enter her eyes.

(1) A only
(2) B only
(3) A and C only
(4) B and C only

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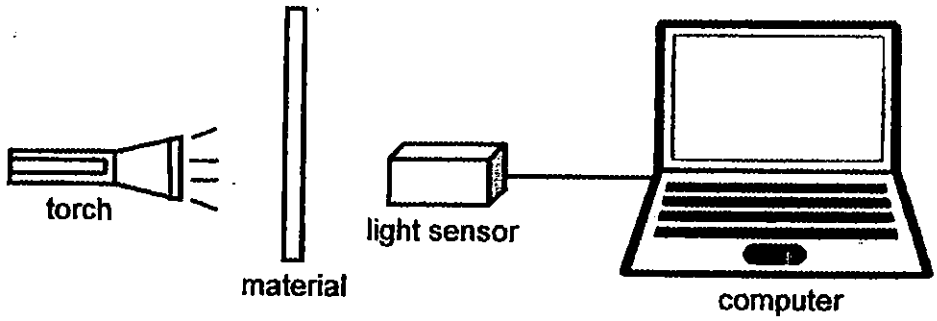
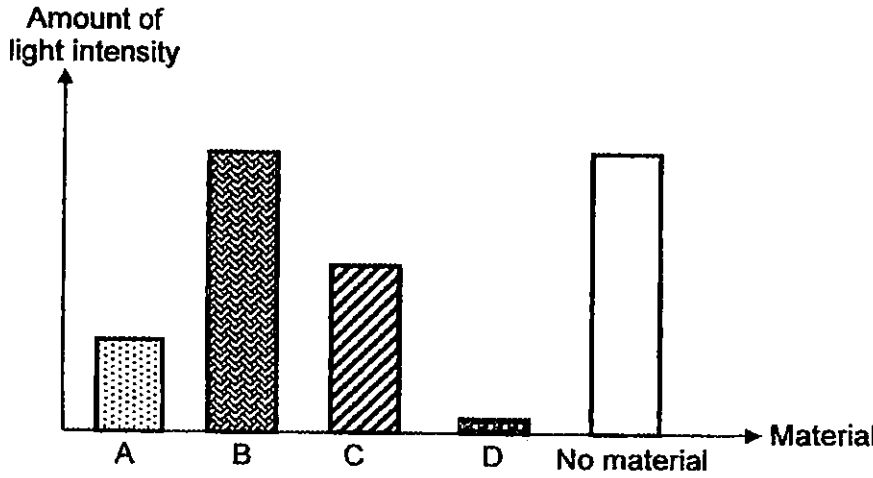
19. Tom carried out an investigation on four different materials. He placed each material between a torch and a light sensor and recorded the amount of light passing through each material.



He plotted a bar graph to represent the amount of light intensity recorded as shown below.



Which material should Tom choose to make a fish tank?

(1) A
(2) B
(3) C
(4) D

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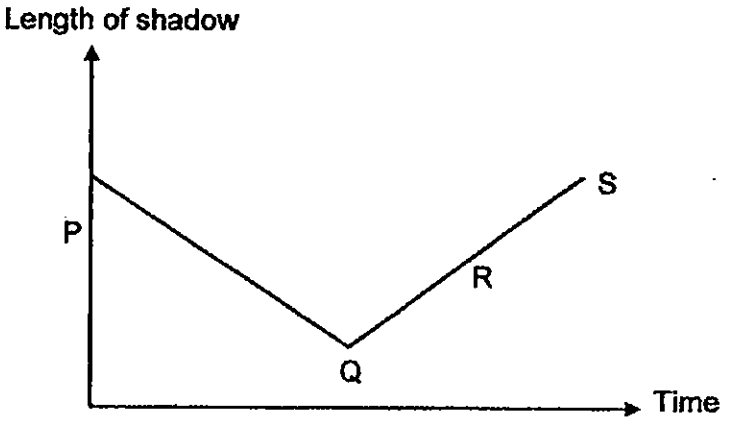
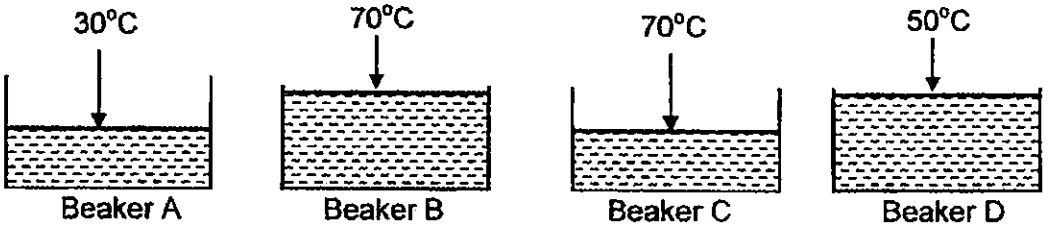
20. Mrs. Tan placed an object under the Sun over an 8-hour period and observed the shadow of the object. Based on her observations, she plotted a line graph to represent the relationship between the length of the shadow and the time of the day as shown below.



Which part of the graph represents noon time?

(1) P
(2) Q
(3) R
(4) S

21. There are four beakers of water, A, B, C and D, with different set-ups as shown below.



Which of the following two set-ups should be used to find out if the amount of water affects the amount of heat in the beaker of water?

(1) A and B
(2) A and C
(3) B and C
(4) C and D

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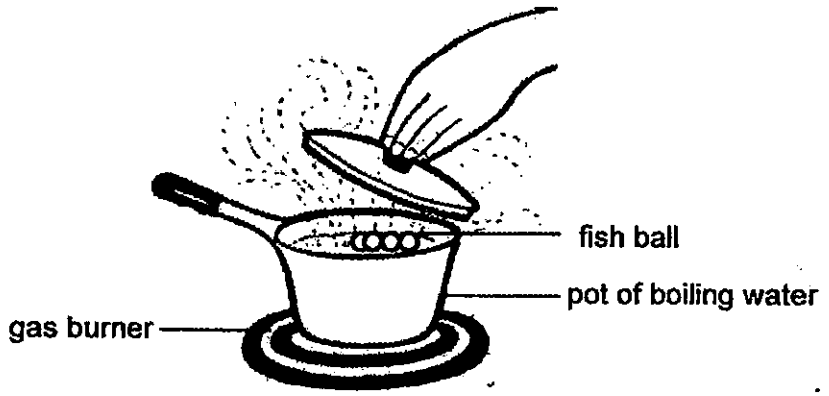
22. Jones heated a pot of tap water over a burner until it boils. Then he took out some fish balls from the refrigerator and put them into the pot of boiling water.



Which of the following statements correctly describes what happened to the temperature of water when Jones added the fish balls?

(1) It increased as the fish balls lost heat to the water.
(2) It decreased as the water lost heat to the fish balls.
(3) It decreased as the water gained heat from the fish balls.
(4) It remained the same as the water has reached the boiling point.

23. Mrs. Lee conducted an experiment to find out the heat conductivity of four cups made of different materials, A, B, C and D. She poured equal amounts of hot water from a kettle into the cups and recorded the temperature of the water at four equal intervals over a period of 20 minutes in the table as shown below.

	Temperature (°C)			
Cup	5 mins	10 mins	15 mins	20 mins
A	65	55	50	40
B	65	50	45	30
C	65	55	50	45
D	65	60	55	50

Based on the results in the table, which cup should Mrs. Lee use to serve ice cream for her guests so that the ice cream will melt the slowest?

(1) A
(2) B
(3) C
(4) D

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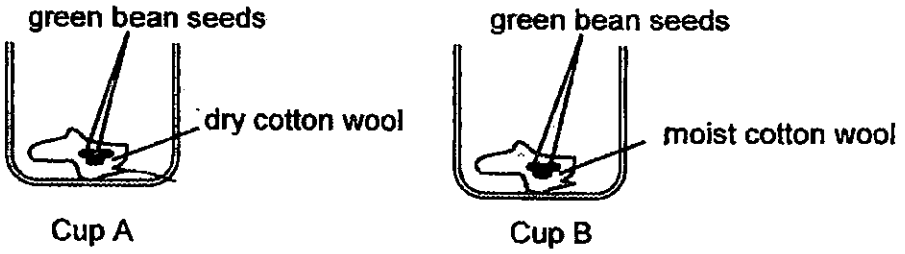
24. The table below shows the comparisons between the life cycles of a frog and a chicken.

	Description	Frog	Chicken
A	Has a 3-stage life cycle?	No	Yes
B	Feed on a lot of leaves when young?	No	No
C	Spends part of its life cycle in water?	Yes	Yes
D	Resembles its parent in many ways when young?	Yes	No

Which of the following comparisons between the life cycles of the two organisms is/are **not** correct?

(1) A only
(2) A and D only
(3) B and C only
(4) A, C and D only

25. Joe placed two cups of green bean seeds, cup A and cup B, in the kitchen. After three days, the seeds in cup B grew but the seeds in cup A did not grow.



His father explained to him that the seeds in cup A did not grow because they did not get any_____.

(1) soil
(2) light
(3) water
(4) warmth

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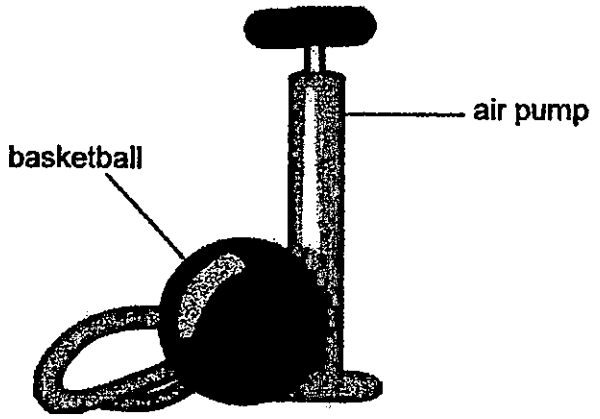
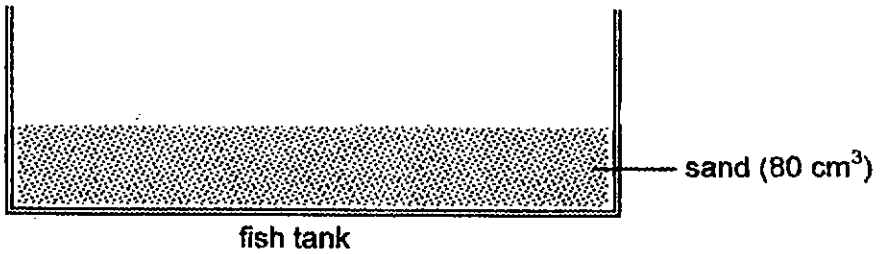
26. The flattened basketball becomes bigger when air is pumped into it.



What does this tell us about air?

(1) Air has mass.
(2) Air cannot be seen.
(3) Air occupies space.
(4) Air cannot be compressed.

27. Ken bought a new fish tank. He filled it with sand up to 80 cm^3 as shown in the diagram below.



The next day, he poured 100 cm^3 of water into the tank. What will be the water level in the tank with the sand?

(1) 100 cm^3
(2) 180 cm^3
(3) More than 180 cm^3
(4) Between 100 cm^3 and 180 cm^3

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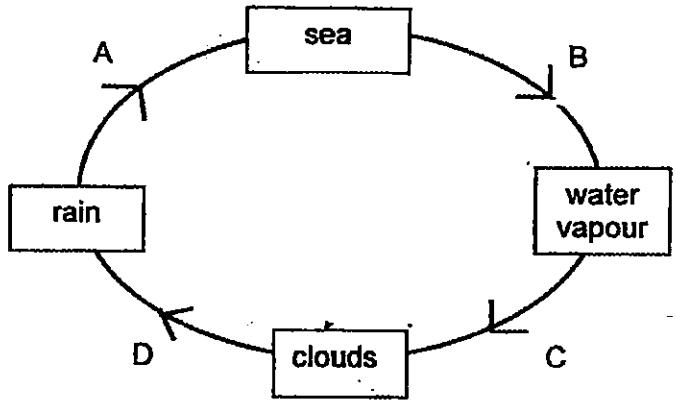
28. The diagram below represents the water cycle.



At which stage does the water change from liquid stage to gaseous state?

(1) A
(2) B
(3) C
(4) D

29. Although about 70% of the Earth's surface is covered with water, it is still important to educate people to conserve water in Singapore. What are the possible reason(s) to conserve water?

A Not all of the Earth's water is fresh water.
B Water cannot be recycled and will soon run out.
C Water is important for the survival of all living things.
D Singapore is surrounded by sea but the seawater cannot be used directly.

(1) A only
(2) B and C only
(3) A, C and D only
(4) A, B, C and D

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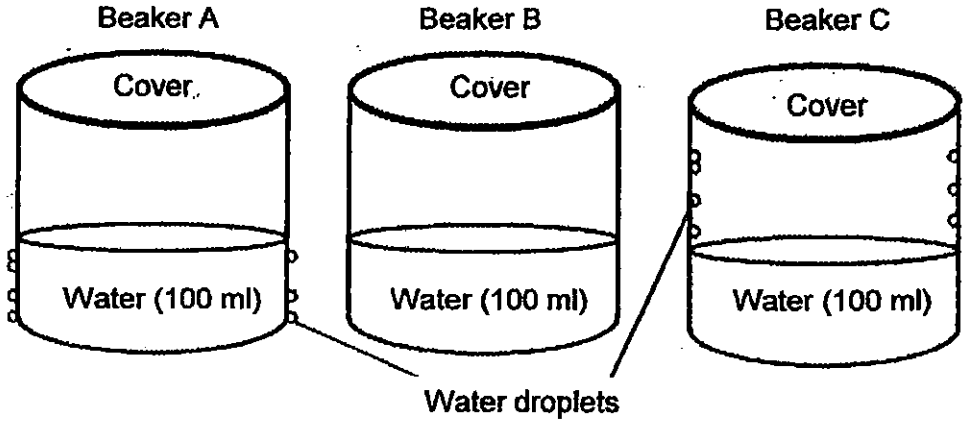
30. Three beakers of water at different temperatures were placed in a room with the room temperature of 30°C.

The diagram below shows what happened after some time.



Which one of the following options correctly shows the temperature of the water in the beaker?

	Beaker A	Beaker B	Beaker C
(1)	80°C	30°C	5°C
(2)	5°C	30°C	80 °C
(3)	30°C	5°C	80°C
(4)	5°C	80°C	30°C

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2015
PRIMARY 4

SCIENCE

BOOKLET B

14 Open-ended questions (40 marks)

Total Time for Booklets A and B : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B		/ 40

Name: _____ ( ) **Class: P 4** _____

Date : 30 October 2015 **Parent's Signature:**_____

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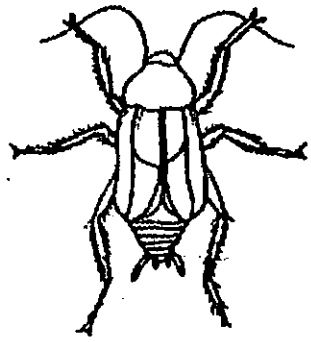
Section B: (40 marks)
Write your answers to questions 31 to 44. The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. Look at the diagram below and tick (✓) the correct box(es).



It is an insect because it _____. [2]

☐ can fly

☐ has 6 legs

☐ has feathers

☐ has 3 body parts

Score	/ 2

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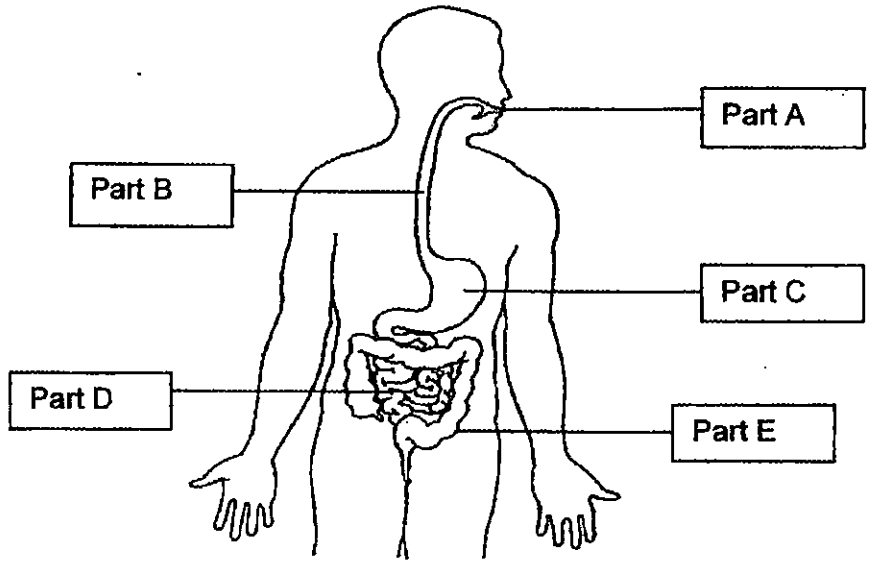
32. The diagram below shows the human digestive system.



Identify the parts where digestion does not take place

(a) Part _____ [1]

(b) Part _____ [1]

Score	/ 2

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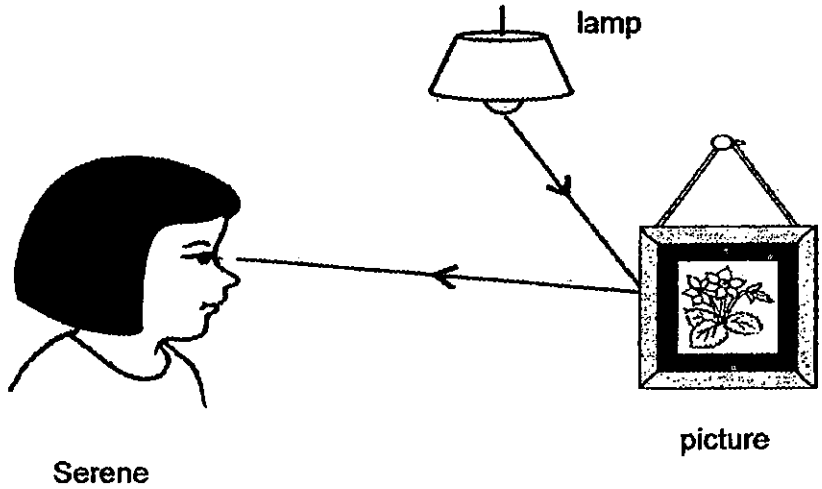
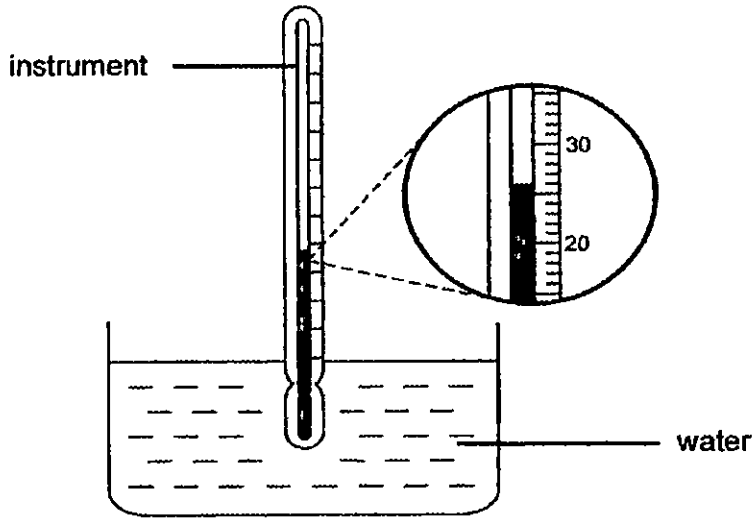
33. The diagram below shows how Serene sees the picture.



The _____ from the lamp is _____ by the picture and enters Serene's eyes. [2]

34. Jane used an instrument to measure the temperature of water in a plastic container.



(a) What is the instrument called? [1]

_____

(b) What is the temperature of the water in the plastic container? [1]

_____ °C

Score	4

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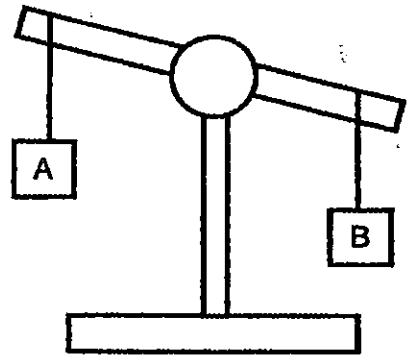
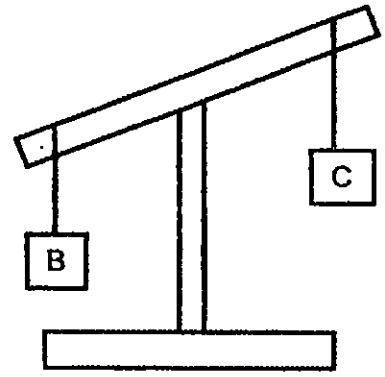
35. Ali compares the mass of three boxes.
Study the diagrams below and tick (✓) the correct box for part (a) and (b).



(a) Box A _____ Box B. [1]

- ☐ is lighter than
- ☐ has the same mass as
- ☐ is heavier than



(b) Box B _____ Box C. [1]

- ☐ is lighter than
- ☐ has the same mass as
- ☐ is heavier than

Score	/ 2

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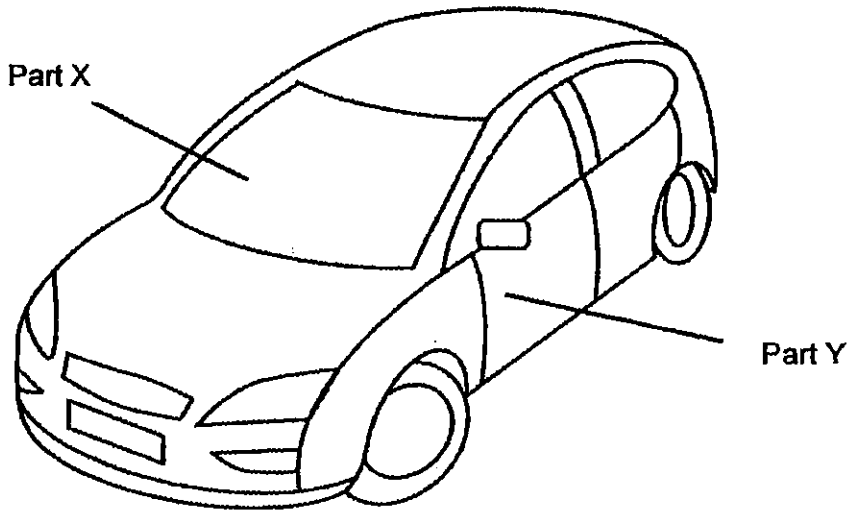
36. The diagram below shows a car.



(a) What material should Part **X** be made of? Explain your answer. [2]

_____

_____

(b) Name two properties of the material which Part **Y** is made of. [2]

_____

_____

Score	/ 4

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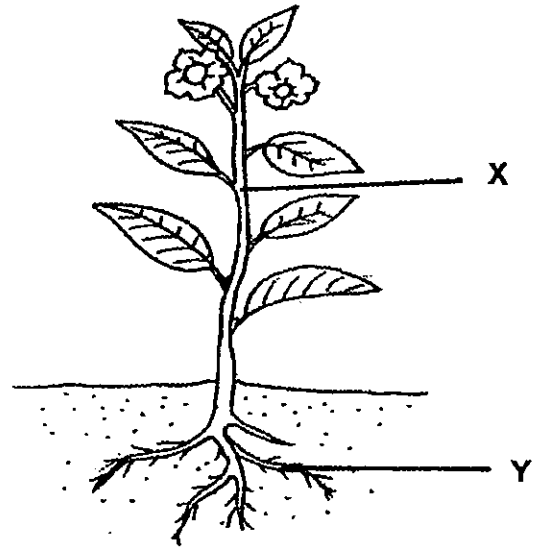
37. The diagram below shows a plant.



(a) State 2 functions of part X. [2]

i) _____

_____

ii) _____

_____

(b) What will happen to the plant after some time if Part Y is removed from the plant? Explain. [1]

_____

_____

Score	/ 3

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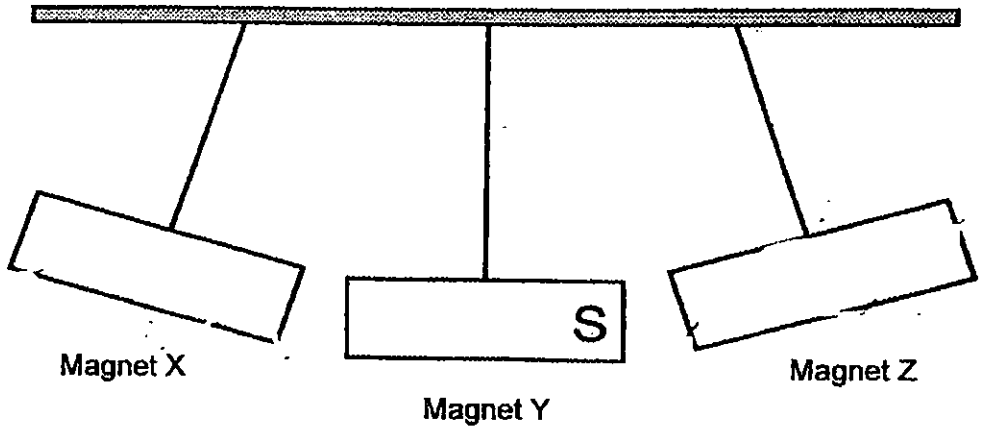
38. The diagram below shows what happens when 3 magnets, X, Y and Z, are suspended.



(a) In the diagram, **label** the poles of Magnets X and Z, with the letters 'N' and 'S'. [2]

(b) What will happen to magnets X and Z if Magnet Y is removed from the set-up? [1]

_____

_____

Score	/ 3

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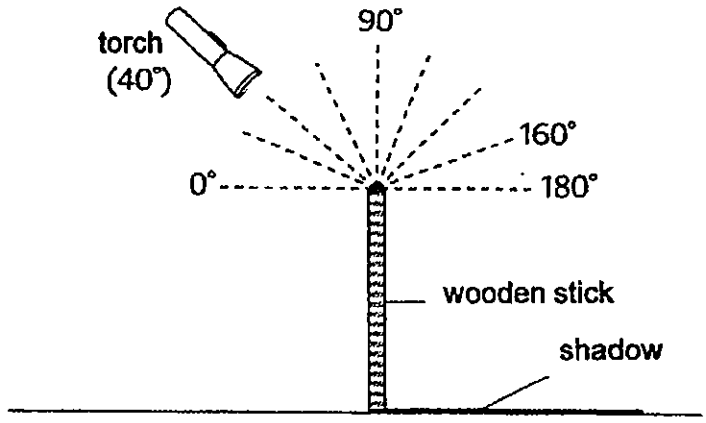
39. An experiment was set up in a dark room as shown in the diagram. A torch was shone at an upright wooden stick from different angles. The length of the shadow formed at different angle was recorded in the following table.



Angle of Torch (°)	Length of Shadow (cm)
40	20
50	16
60	12
70	8
80	4
90	2
100	4
110	8
120	A
130	B
140	20

(a) What are the likely values for A and B? [1]

A : _____ cm

B : _____ cm

(b) What is the relationship between the angle of the torch and the length of the shadow? [2]

_____

_____

Score	/ 3

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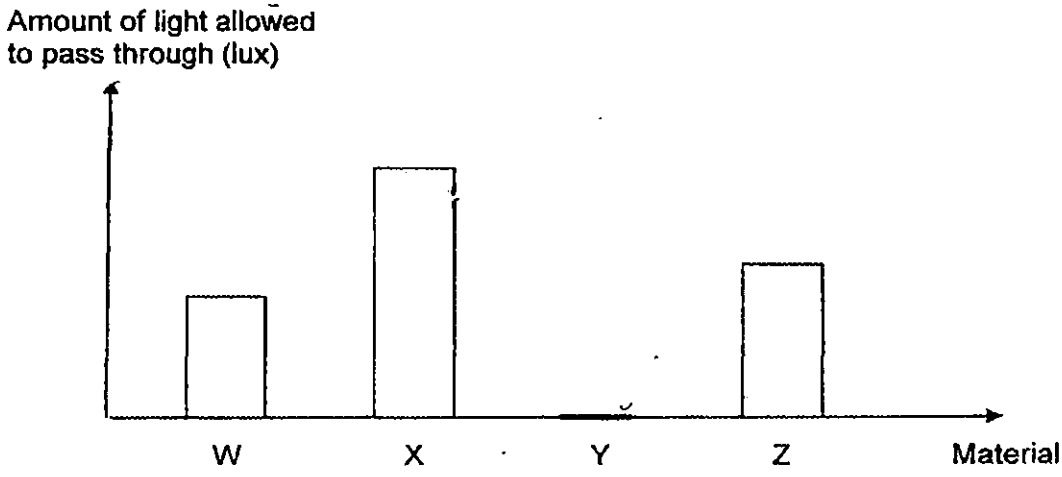
40. Lee Wee wanted to find out how much light could pass through the 4 different types of materials, namely W, X, Y and Z. The amount of light that passed through each material was measured using a light sensor and the findings are shown in the graph below.



(a) Arrange the 4 materials, W, X, Y and Z, according to their degree of transparency in the boxes below. [1]

Transparent → **Opaque**

(b) From the graph, which material, W, X, Y or Z, should Lee Wee choose for making a safe for keeping the valuables? Why? [2]

_____

_____

Score	/ 3

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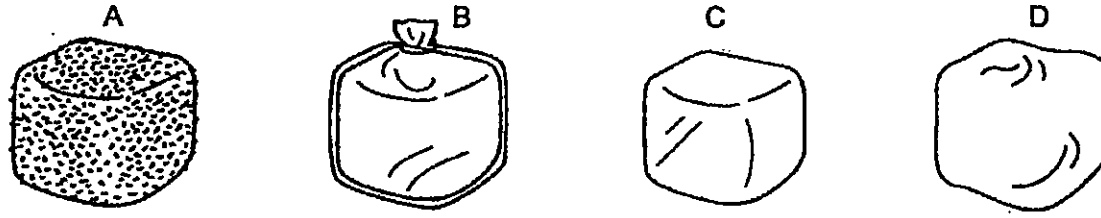
41. Ms Lim wanted her students to find out which is the best material to slow down the melting rate of ice. She conducted an experiment with her class as shown in the diagram below. She wrapped ice blocks A, B and D with different materials and leave ice block C unwrapped. She then left them in the open to melt completely.



sawdust | plastic bag | uncovered ice | thin cloth

(a) Based on Ms Lim's experiment, identify the variables in her experiment.

Put a tick (✓) in the correct boxes below. [2]

Variables	Variable changed (Independent Variable)	Variable measured (Dependent Variable)	Variable kept the same (Constant Variable)
Material used to wrap the ice block			
Size of ice block at the start of the experiment			
Time taken for the ice to melt completely			
Location of the experiment			

(b) Which ice block, A, B, C or D, will take the shortest time to melt completely? Explain why it is so. [1]

_____

_____

Score	/ 3

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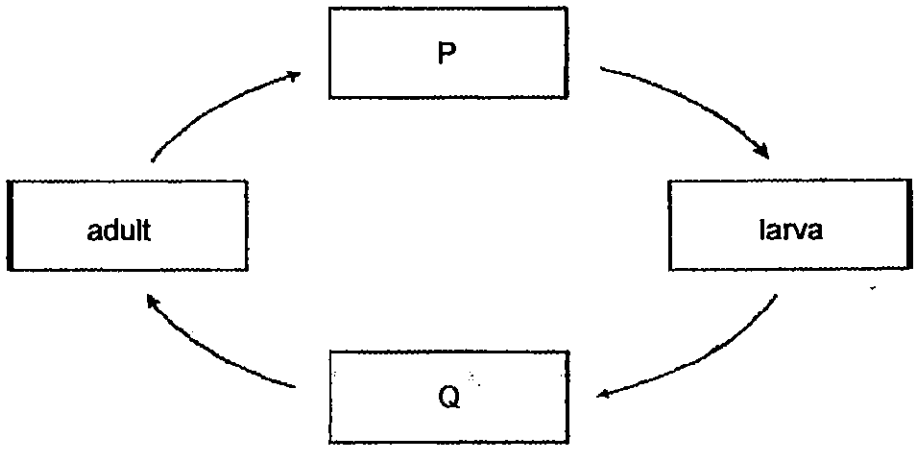
42. The diagram below shows the stages in the life cycle of a ladybug. The ladybug has a similar life cycle as the mealworm beetle.



(a) Identify stages **P** and **Q** in the life cycle. [1]

P _____ **Q** : _____

(b)

Larva

Adult

Based on the pictures above, state **1 observable similarity** and **1 observable difference** between the larva and the adult stages of the ladybug. (Do not compare the size, shape, colour and pattern) [2]

Similarity: _____

_____

Difference: _____

_____

(c) Besides the mealworm beetle, name another insect which undergoes similar stages in their cycle. [1]

_____

Score	/ 4

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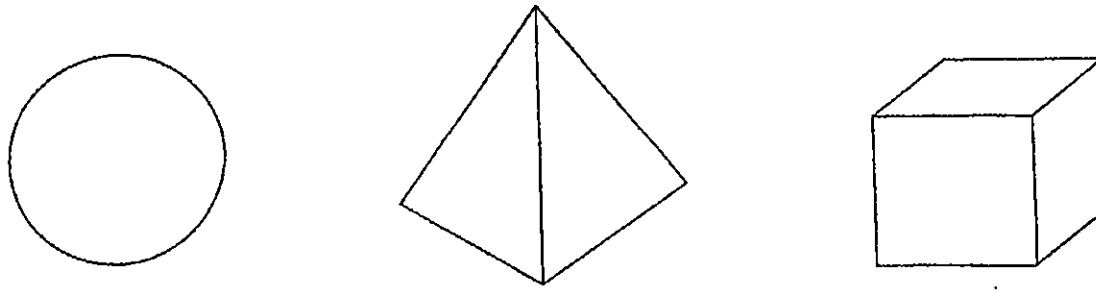
43. Jennifer moulded a piece of plasticine into a sphere, a pyramid and a cube, one at a time. She measured the mass and the volume of each shape.



Sphere Pyramid Cube

At the end of the experiment, Jennifer drew the following conclusions.

X : Plasticine can be compressed.
Y : The mass and volumes of the sphere, pyramid and cube are similar.

(a) Which of Jennifer's conclusions, X or Y, is incorrect? Explain. [1]

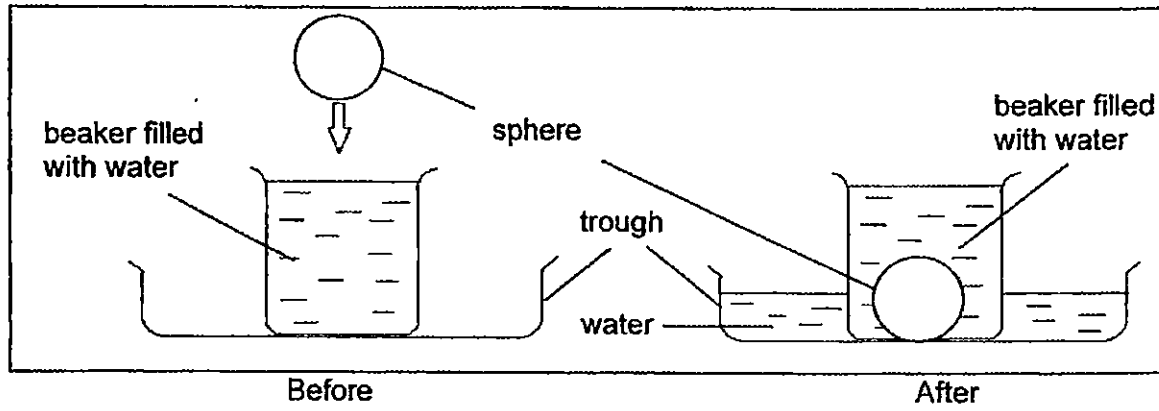
_____

_____

(b) What property of the plasticine was changed when it was being moulded? [1]

_____

(c) Jennifer decided to take the experiment a step further. She prepared a beaker full of water. She then dropped the sphere gently into the beaker and noticed that some water overflow from the beaker to the trough as shown in the diagram.



Based on the diagrams above, what does the experiment show about the property of the sphere? [1]

_____

Score	/ 3

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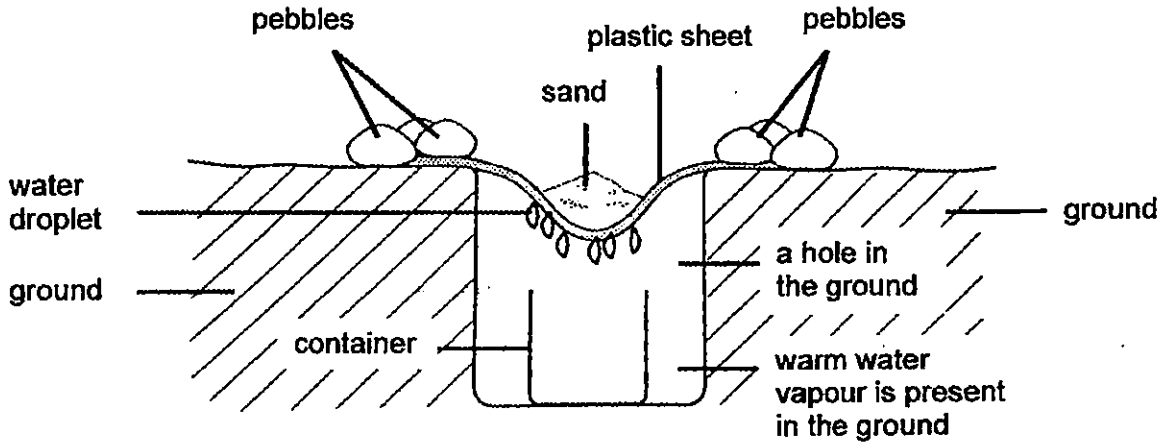
44. Ian was stranded in a desert. The temperature of the desert was high in the day and low at night. He managed to find a container, a plastic sheet, some pebbles and sand, and came up with an idea to use them to obtain some water for survival. He dug a hole in the ground and set everything up as shown in the diagram below.



(a) The next morning, Ian found some water in the container. Explain how the water droplets were formed? [2]

_____

_____

_____

_____

(b) State one function of the plastic sheet in the set-up? [1]

_____

_____

(c) What knowledge did Ian make use of to obtain the water in the desert? Put a tick (√) against the correct answer(s). [1]

	Knowledge required by Ian	Tick
i.	Melting	
ii.	Boiling	
iii.	Evaporation	
iv.	Condensation	

End of paper

Score	/ 4

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : NAN HUA PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	2	4	2	1	4	2	4	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	3	1	2	2	2	4	3	2	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	2	4	4	3	3	4	2	3	2

Q31. It has 6 legs Q31. It has 3 body parts.

Q32a. Part B Q32b. Part E

Q33. Light , reflected

Q34a. Thermometer Q34b. 26°C

Q35a. is lighter than Q35b. is heavier than

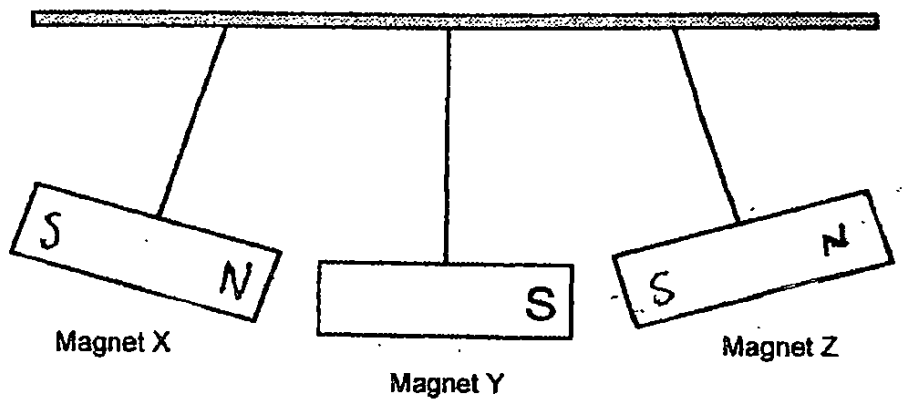
Q36a. Part X is made of glass. Glass allows all (most) light to pass through so the river can see the road.

Q36b. Hard and strong / not reflexible.

Q37a (i) It transports food and water to the rest of the plant.
Q37a (ii) It supports the leaves for the leaves to trap sunlight.

Q37b. The plant will fall as it is unable to hold itself firmly to the ground.

Q38a. **SEE PICTURE** Q38b. Magnet X and Z will attract to each other.



Q39a. A: 12cm Q39a. B: 16cm

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Q39b. When the angle of the torch increases between 40° and 90°, the length of the shadow decreases. When the angle of the torch increases between 90° and 180°, the length of the shadow decreases .

Q40a. X S W Y

Q40b. Material Y. It is opaque and does not allow any of the light to pass through, hence the valuables could not be seen.

Q41a. **SEE PICTURE .** Q41b. Block C. There is no material around the ice to slow down the transfer of heat from the surrounding to the ice.

Variables	Variable changed (Independent Variable)	Variable measured (Dependent Variable)	Variable kept the same (Constant Variable)
Material used to wrap the ice block	✓		
Size of ice block at the start of the experiment			✓
Time taken for the ice to melt completely		✓	
Location of the experiment			✓

Q42a. P: Egg Q: Pupa

Q42b. Similarity : Both have six legs.
Q42b. Difference : The adult has wings but the young does not has wings.

Q42c. Butterfly.

Q43a. X is incorrect. The plasticine is a solid and solids cannot be compressed.

Q43b. The shape of the plasticine.

Q43c. The sphere has a definite volume.

Q44a. The water vapour condenses when it loses heat upon touching the cooler surface of the plastic sheet.

Q44b. To allow water vapour to condense. To prevent the water vapour from escaping into the air.

Q44c. Evaporation Q44c. Condensation

THE END

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NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 2
2015

BOOKLET A

Date : 27 October 2015
Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 4 ( )

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet A consists of 20 printed pages including this cover page.

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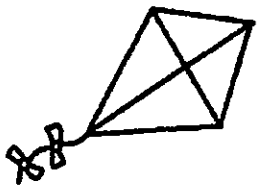
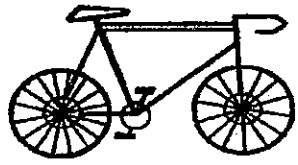
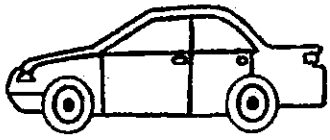
Section A (30 x 2 marks = 60 marks)

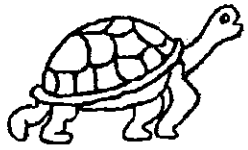
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. Which one of the following is a living thing?

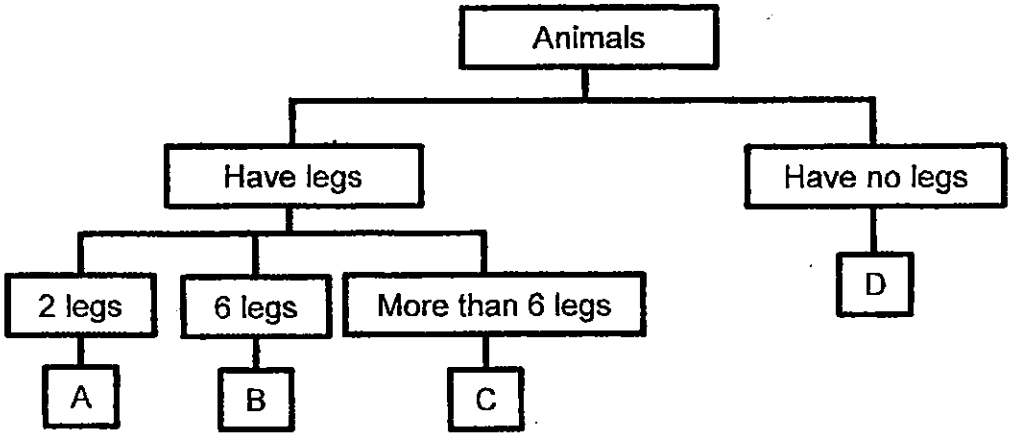
(1) 

(2) 

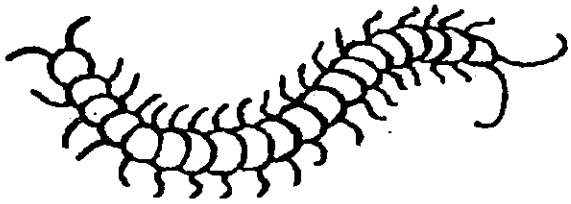
(3) 

(4) 

2. Study the chart below.



Where would you put this animal in the chart above?



(1) A
(2) B
(3) C
(4) D

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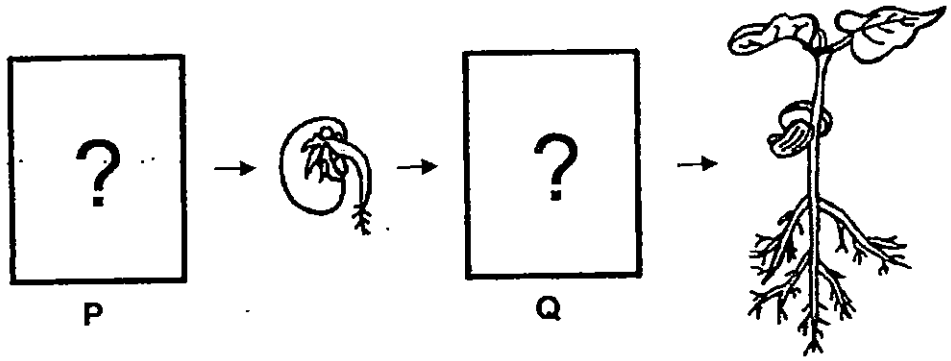
3. The diagram below shows the growth of a young plant with two missing stages P and Q.



Which one of the following shows the correct stages for P and Q?

	P	Q
(1)		
(2)		
(3)		
(4)		

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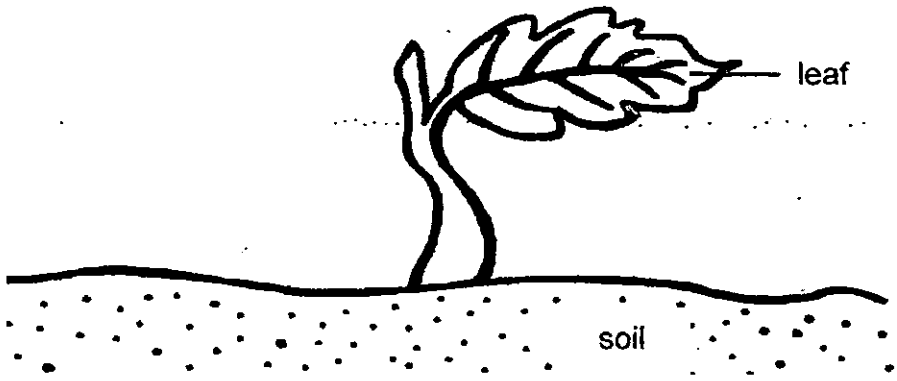
4. The diagram below shows a young plant.



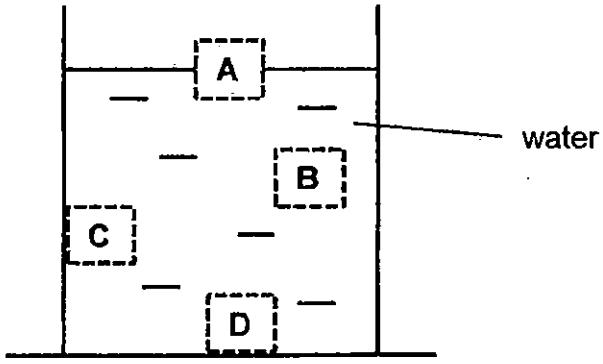
The leaf helps the plant to _____ .

(1) make food
(2) grow upright
(3) absorb water
(4) absorb nutrients

5. In which part of the digestive system is food absorbed into the blood?

(1) gullet
(2) stomach
(3) large intestine
(4) small intestine

6. Azman put a solid metal block into a container of water.
At which position, A, B, C or D, would the block most likely to be found?



(1) A
(2) B
(3) C
(4) D

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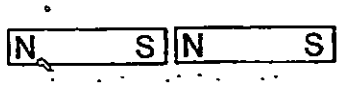
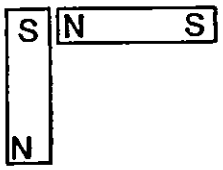
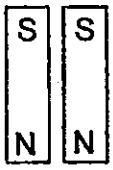
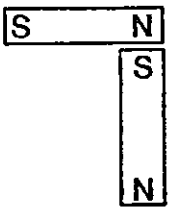
7. In which one of the following diagrams will the two magnets push each other away?

(1) 

(2) 

(3) 

(4) 

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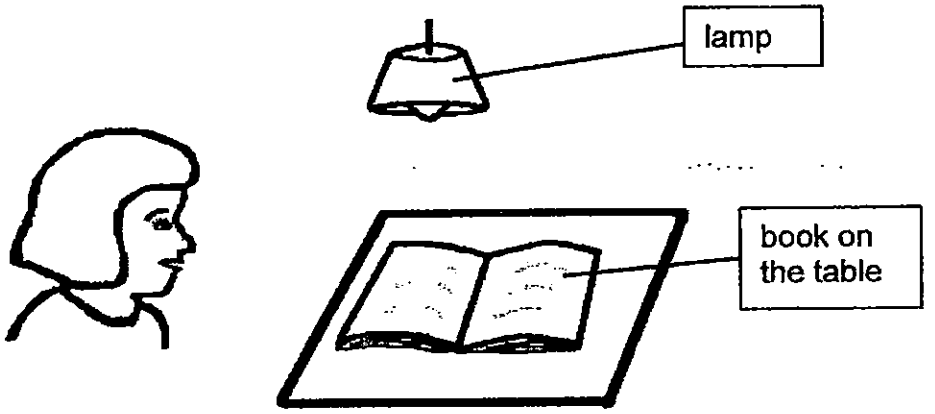
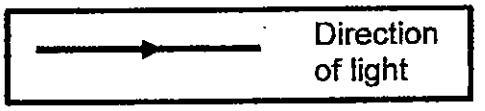
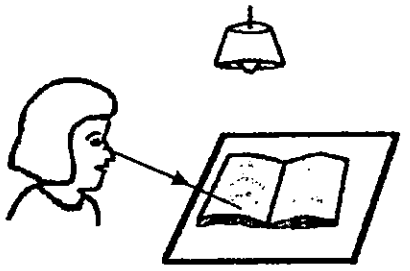
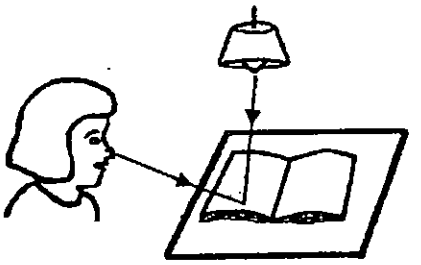
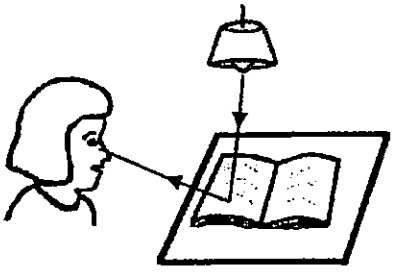
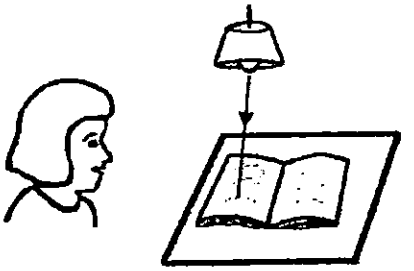
8. Look at the picture below.



Which one of the following explains why Mei Li can see the book on the table?



(1)		(2)	
(3)		(4)	

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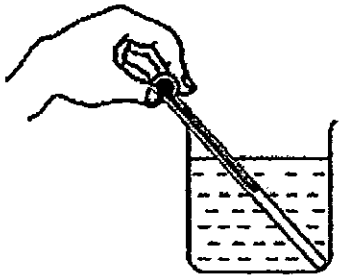
9. Which one of the following properties is true for both air and a pencil?

(1) They can be seen.
(2) They take up space.
(3) They have definite shapes.
(4) They have definite volumes.

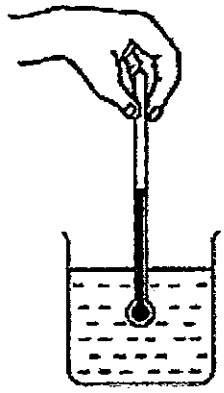
10. Mathew wants to measure the temperature of hot water in a beaker.

Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

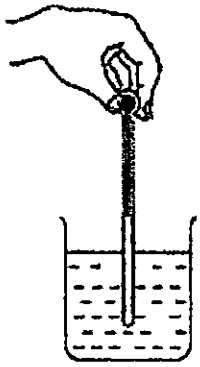
(1)



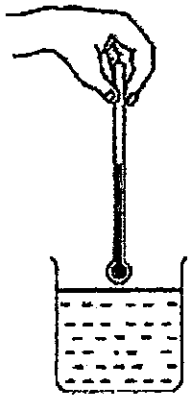
(2)



(3)



(4)



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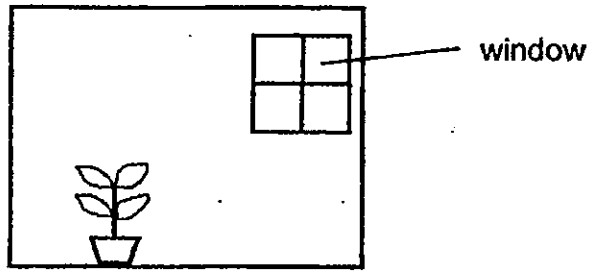
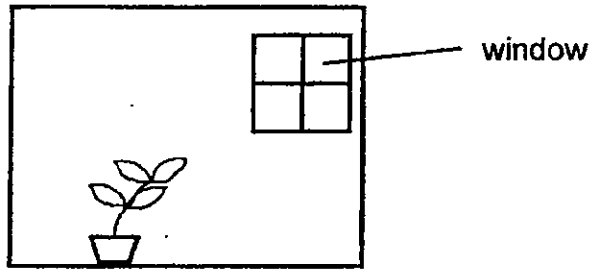
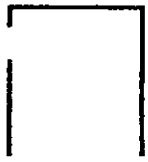
11. Ali placed a pot of plant in a room and the only light source was from the window as shown below.



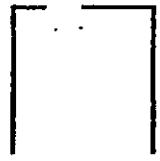
He then covered the plant in a box that had a small opening. After 1 week, the plant looked like this.



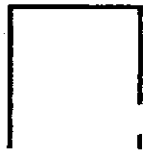
Which box had he used to cover the plant for 1 week?

(1) 

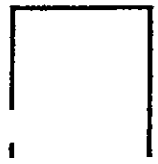
metal box

(2) 

wooden box

(3) 

cardboard box

(4) 

glass box

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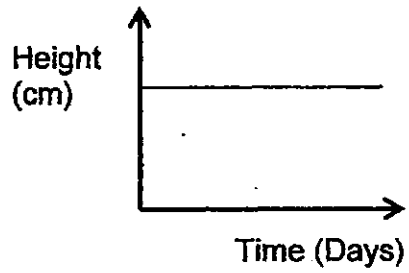
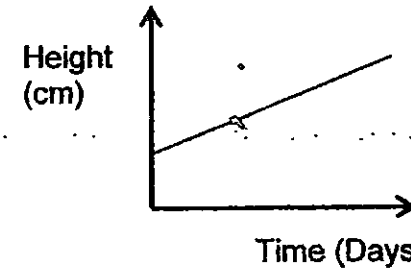
12. Baba observed P and Q for a week and recorded their height in the graphs as shown below.



P



Q

Based only on the graphs above, what is/are the possible conclusion(s) Baba could make about P and Q?

A Q is a living thing.
B Q grows more healthily than P.
C P does not need air, food and water.
D P can respond to changes around it.

(1) A only
(2) D only
(3) A and C only
(4) B and C only

13. Study the table below.

Living Things	Non-living Things
bat goldfish penguin	moss rock yeast

Which two of the above are **wrongly** grouped?

(1) rock and bat
(2) moss and yeast
(3) bat and yeast
(4) rock and moss

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14. Elsa observed an animal in her garden and wrote down the following observations.

- It can swim.
- It has four legs.
- It has a hard shell.
- It does not have hair.

Based on the observations above, she made the following conclusions.

A Only animals with no hair can lay eggs.
B It can swim so it must be an amphibian.
C It is a reptile because only reptiles have four legs..
D It is an insect because it has a hard outer covering.

Which statement(s) is/are **wrong**?

(1) C only
(2) B and D only
(3) A, B and C only
(4) A, B, C and D

15. Four pupils went to the garden and saw a plant in the pond. Their teacher only wanted them to record an **observation**. They studied it for a while and recorded the following statements.

Anna : The leaves are waxy and oval in shape.
Bala : It is a non-flowering plant because it has no flowers.
Cola : The roots are thick and so they grow deep into the ground.
Dora : It is not a water plant as it is floating on the water and not fully submerged.

Who had stated an observation?

(1) Anna
(2) Bala
(3) Cola
(4) Dora

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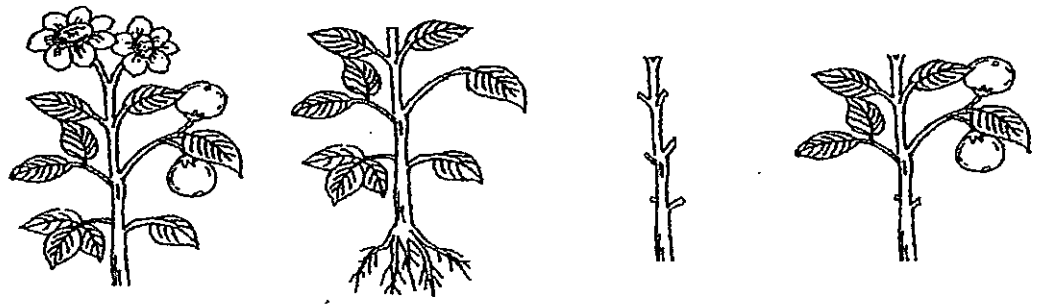
16. Ferby wanted to conduct an experiment to find out if moisture was required for mould to grow.

Setups	Location	Bread
A	beside an open window	toasted
B	in the freezer	toasted
C	beside an open window	sprinkled with water
D	in the freezer	sprinkled with water

Which two of the above setups should she use?

(1) A and B
(2) A and C
(3) B and C
(4) C and D

17. Minnie cut various parts from four similar plants as shown below. Then she put each of them into a pot of soil to grow.



roots removed	flowers and fruits removed	leaves, roots and flowers removed	roots and some leaves removed
A	B	C	D

Which plant is most likely to grow healthily after two weeks?

(1) A
(2) B
(3) C
(4) D

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18. Which one of the following function(s) correctly matches the organ system?

	Organ System	Function
A	skeletal system	protect the heart
B	muscular system	gives the body its shape
C	respiratory system	carries only oxygen to all parts of the body
D	circulatory system	passes waste materials out of the body

(1) A only
(2) B only
(3) C and D only
(4) A, B, and D only

19. How are the life cycles of a mealworm beetle and a butterfly similar?

A Their young resemble their adults.
B They moult several times during the larval stage.
C They start to fly when they are in the pupal stage.
D The young and adult both feed on the same type of food.

(1) B only
(2) A and C only
(3) C and D only
(4) A, B and D only

20. Study the table below.

	Organisms		
Characteristic	S	T	U
Has a pupal stage	✓	×	×
Its young moults	✓	×	✓
Spends at least one stage of its life cycle in water	✓	✓	×

Based on the information above, which of the following statements are true about organisms S, T and U?

A S can be a mosquito.
B U lays its eggs in water.
C T is definitely an insect.
D S has four stages in its life cycle.

(1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

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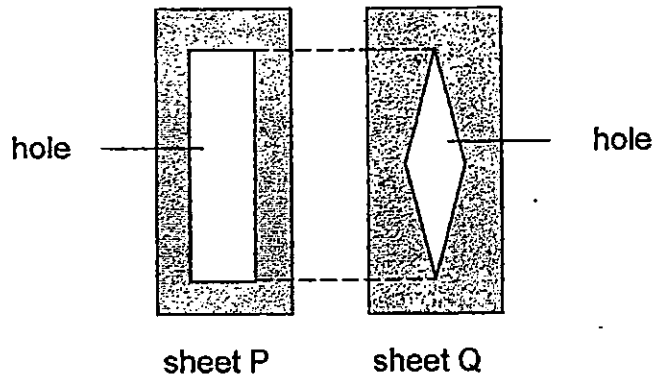
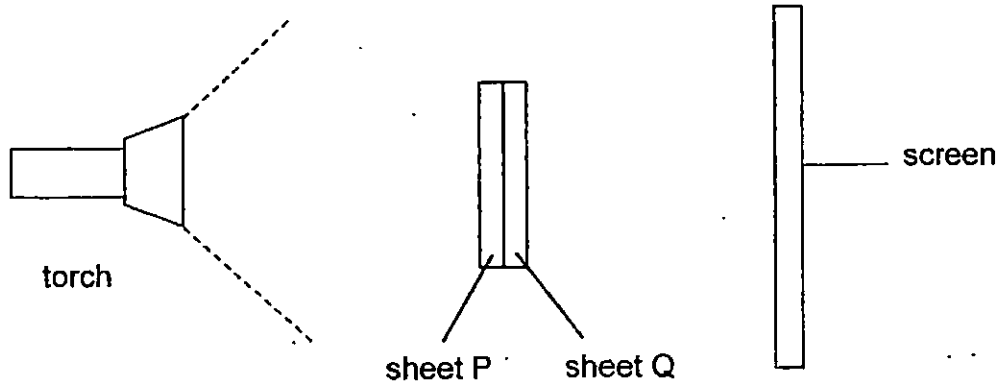
21. Ahmad cut out a rectangle and a diamond from 2 identical cardboard sheets as shown below. The two sheets are of the same size.



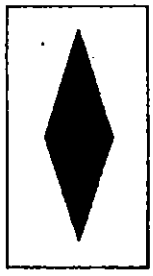
Front view of cardboard sheets

The 2 cardboard sheets, P and Q, were placed together in a straight line between the screen and the torch as shown below.

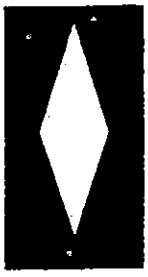


Which one of the following could most likely be the shadow cast on the screen?

(1)

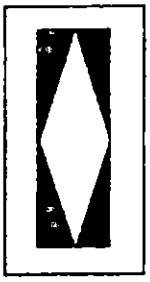


(2)



(3)

(4)



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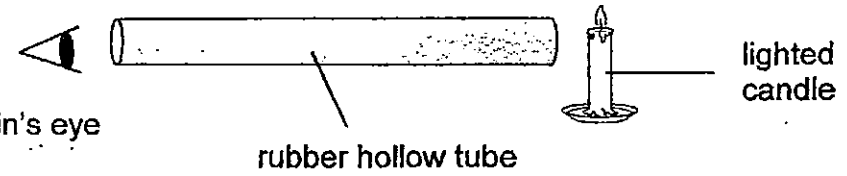
22. Kai Pin used a hollow rubber tube to look at a lighted candle.

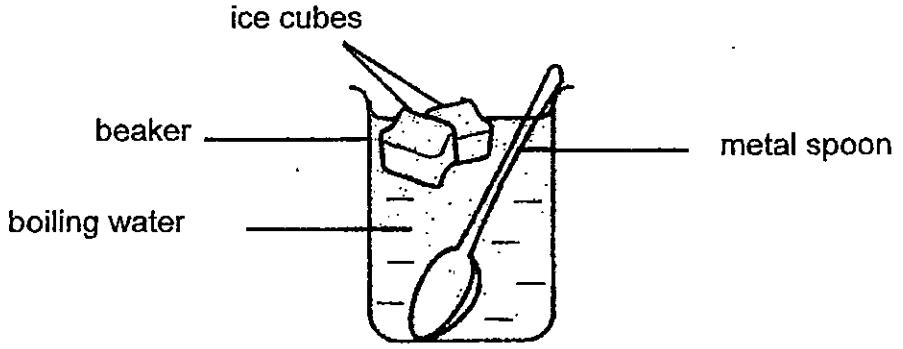


Which of the following statements explained why Kai Pin was able to see the lighted candle at the end of the hollow rubber tube?

A Light is entering his eyes.
B Light travels in a straight line.
C Light is given out by the lighted candle.
D Light cannot pass through the rubber hollow tube.

(1) A and B only
(2) C and D only
(3) A, B and C only
(4) B, C and D only

23. The diagram below shows a beaker of boiling water with some ice cubes.



The metal spoon was placed into the beaker. Which one of the following correctly shows whether heat is gained or lost by the ice cubes, boiling water and metal spoon during the next five minutes?

	ice cubes	boiling water	metal spoon
(1)	lose heat	gain heat	lose heat
(2)	gain heat	lose heat	gain heat
(3)	lose heat	lose heat	gain heat
(4)	gain heat	gain heat	lose heat

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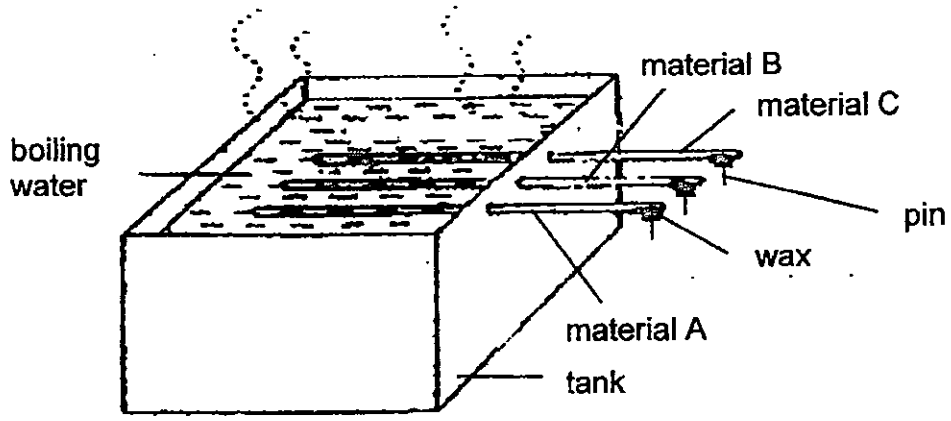
24. Zi Ying coated the same amount of wax on the ends of 3 rods made of 3 different materials, A, B and C. She also attached 3 identical pins to the wax as shown in the diagram below. She then placed them in a tank of boiling water at the same time.



She recorded the time taken for the pins to drop in the table below.

Material	Time taken for pins to drop (min)
A	8
B	14
C	3

Based on the results above, which of the statements is/are **true**?

A Material B is the best conductor of heat.
B Material C is a better conductor of heat than material A.
C Material A is most suitable to make into handles of cooking pots.

(1) A only
(2) B only
(3) A and C only
(4) B and C only

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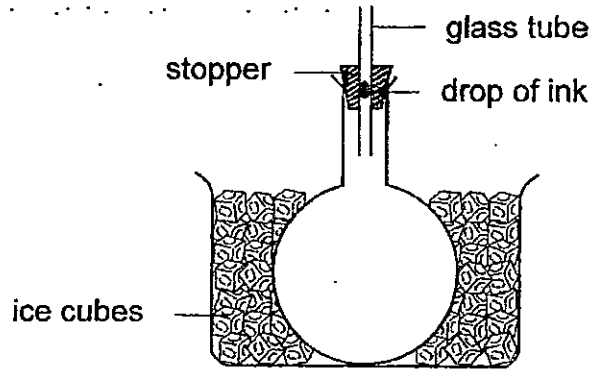
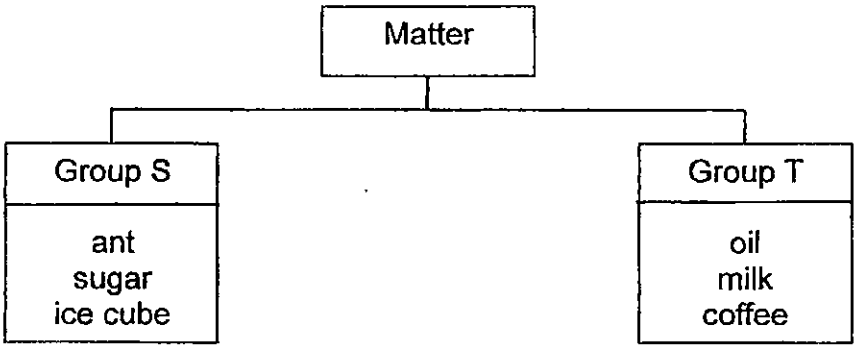
25. Jerry placed an empty round-bottom flask into a basin of ice cubes. The flask was fitted with a stopper where a glass tube was attached. He added a drop of ink into the glass tube. After 5 minutes, he observed that the drop of ink had moved down.



Which one of the following explains his observation?

(1) The glass tube gained heat and expanded.
(2) The basin of ice cubes lost heat and contracted.
(3) Air in the flask lost heat to the ice cubes and contracted.
(4) Air in the flask gained heat from the ice cubes and expanded.

26. Study the classification table below.



Which one of the following statements describes a common property of the items in groups S and T?

(1) They occupy space.
(2) They can be compressed.
(3) They have a definite shape.
(4) They have no definite volume.

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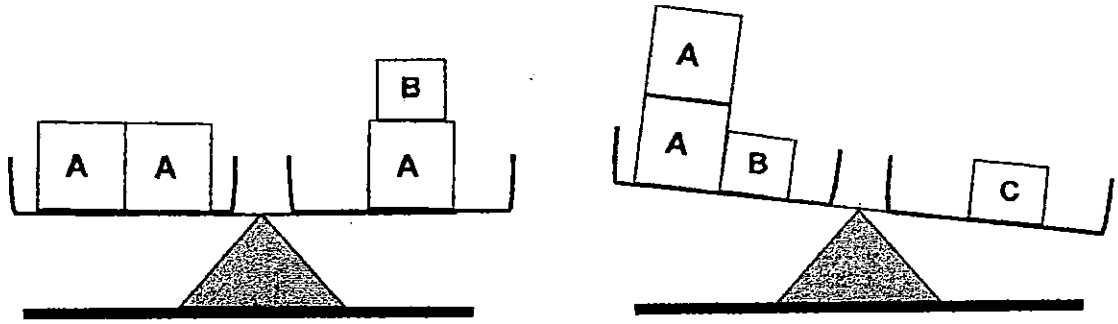
27. Objects A, B and C are placed on two beam balances as shown below.



Based on the diagrams above, which one of the following conclusions can be made?

(1) Object A has the greatest mass.
(2) Object B has the same mass as object A.
(3) Object B has a greater mass than object C.
(4) Object C has the same mass as two objects A.

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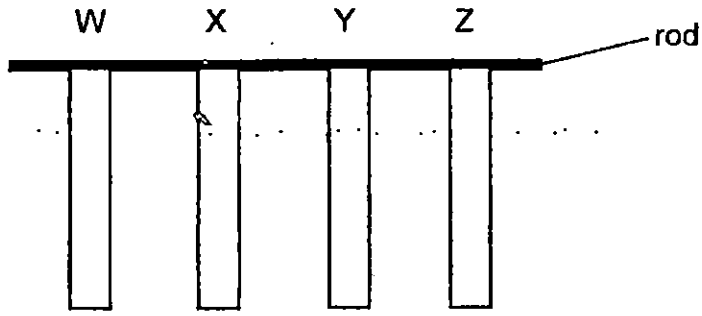
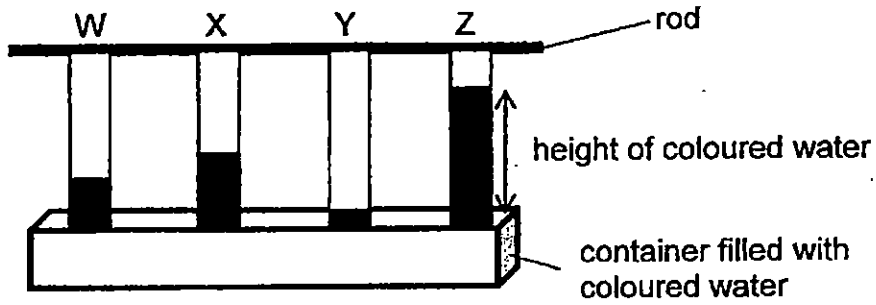
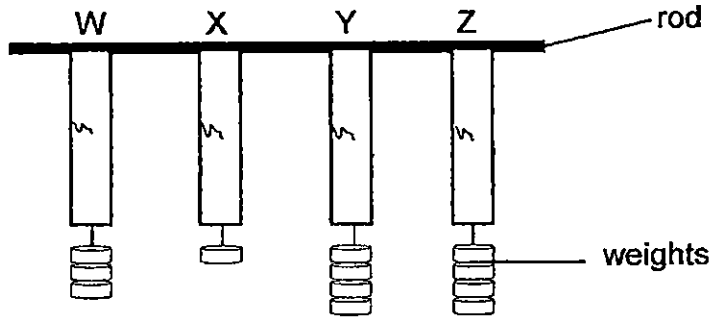
28. Jelly suspended 4 strips of different materials, W, X, Y and Z, from a rod as shown below.



For the first experiment, she dipped them into coloured water and observed the height of coloured water absorbed by the strips.



For the second experiment, she hung weights one by one at the end of each strip until it started to tear. The diagram below showed the maximum number of weights hung.



Based on her results, which material should she choose to make a school bag?

(1) W
(2) X
(3) Y
(4) Z

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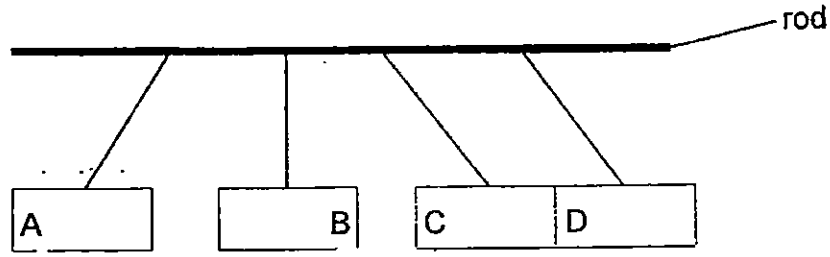
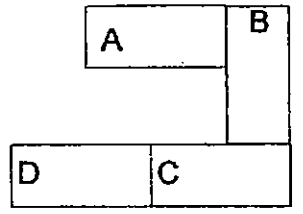
29. Four objects with only one end labelled A, B, C and D were hung from a rod as shown below.



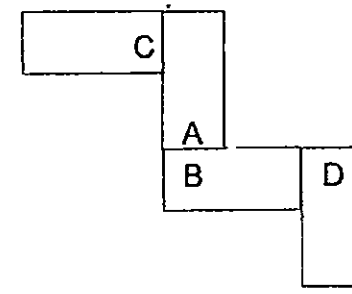
Lemmy took down all four objects and rearranged them.

Which one of the following arrangements is most likely to be correct?

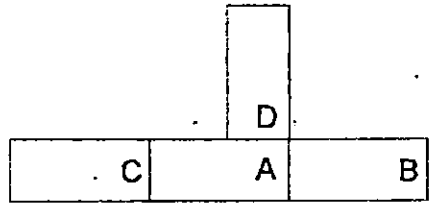
(1)



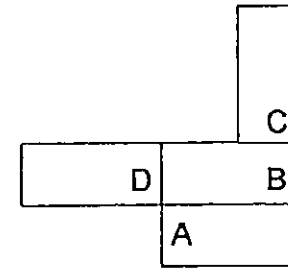
(2)



(3)



(4)



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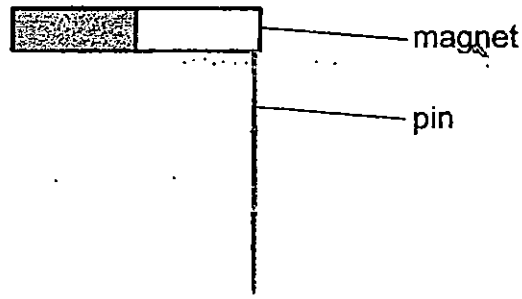
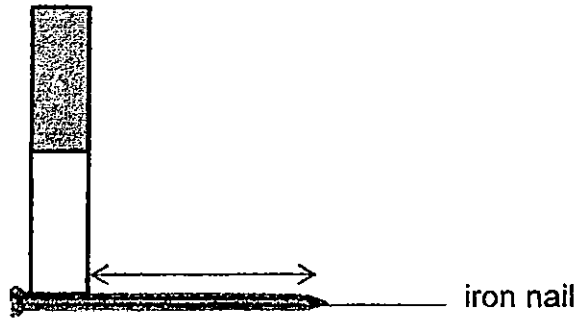
30. Mani decided to make a temporary magnet with a magnet and an iron nail, using the stroking method. Before he started, he observed that the magnet could attract 3 pins with one end of the magnet.



Then he began to stroke the nail with the magnet in the directions as shown in the diagram below.



How many pins could his temporary magnet attract?

(1) 0
(2) 2
(3) 3
(4) 5

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NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 2
2015

BOOKLET B

Date : 27 October 2015

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 4 ( )

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Any query on marks awarded should be raised by _____. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

Parent's signature: .....

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet B consists of 15 printed pages including this cover page.

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Section B (40 marks)
Write your answers to questions 31 to 44 in the spaces provided.

31. Fill in the correct parts of a plant in the table. [2]

Functions of plant parts	Plant parts
It holds the plant upright.	
It obtains water for the plant.	

32.

(a) Leila places a magnet near an iron rod. The iron rod moves towards the magnet. [1]

The magnet exerts a _____ . on the rod.

(b) Choose the correct word from the box to answer the question below. [1]

flexible magnetic strong

Leila's observation shows that iron is a _____ material.

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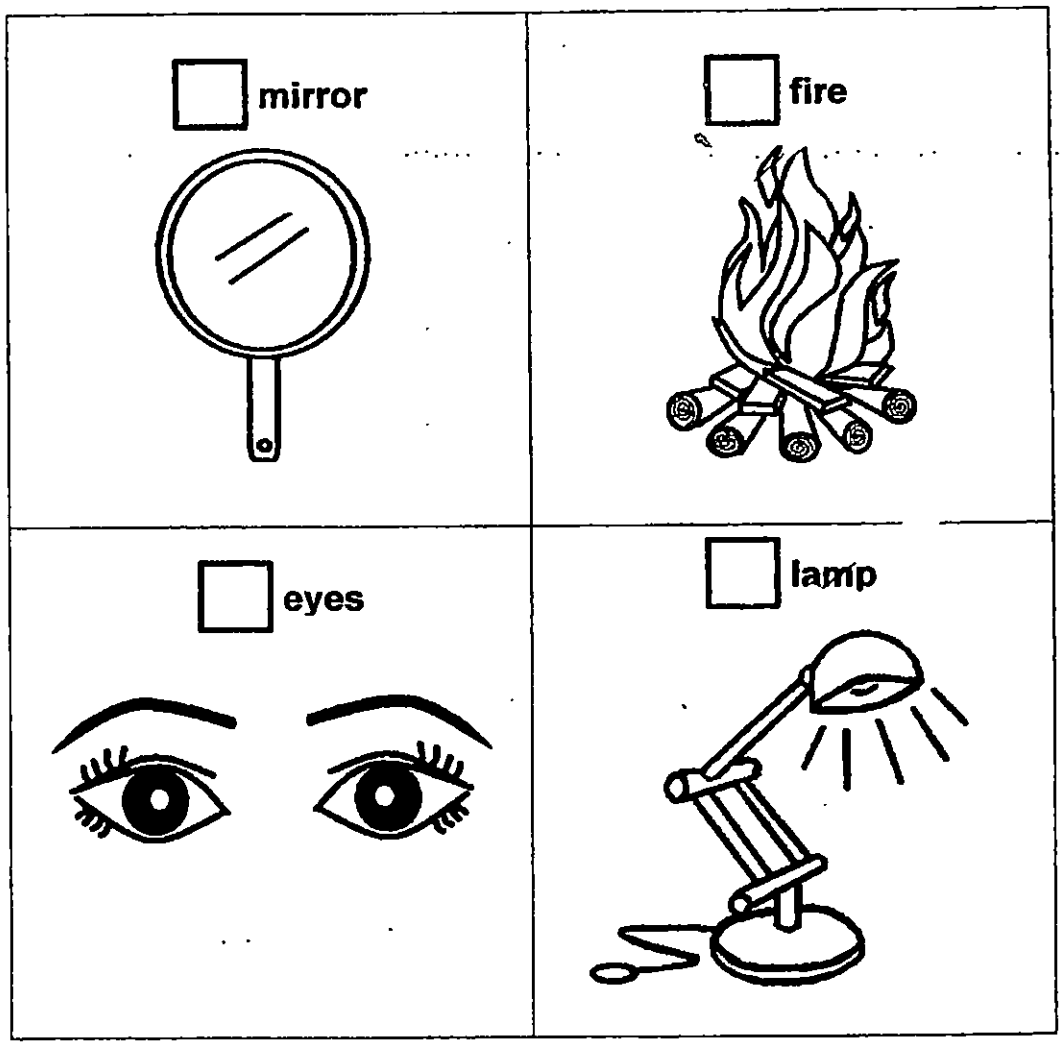
33. Look at the pictures. Tick (√) the sources of light. [2]



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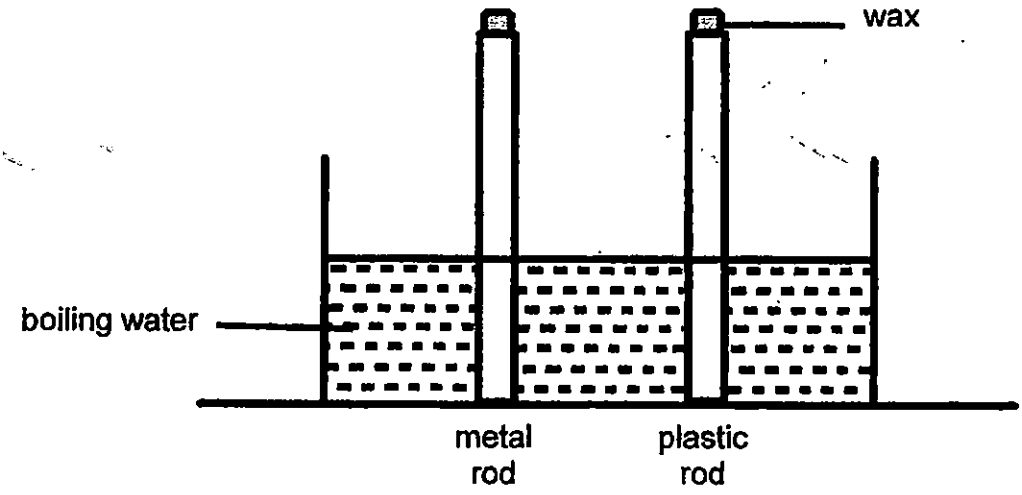
34. Muthu placed a metal rod and a plastic rod into a tank of boiling water as shown below. [2]

Equal amounts of wax were placed on one end of each rod.



What would he observe and why?

The wax on the metal rod melted _____ than the wax on the plastic rod as metal is a _____ conductor of heat than plastic.

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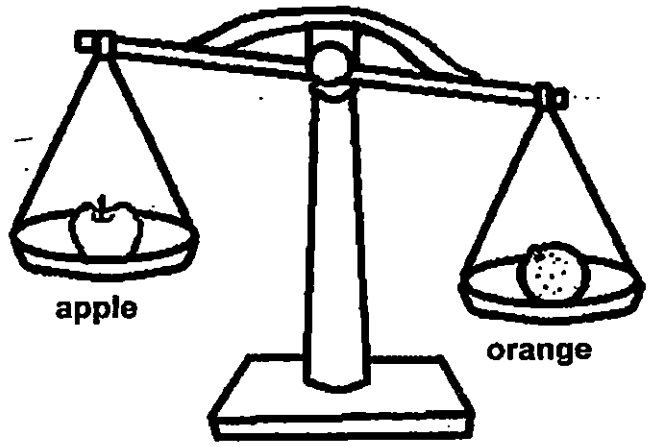
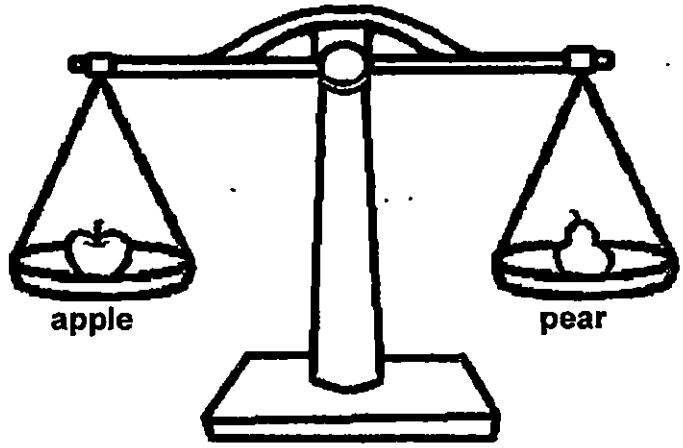
35. Terry compares the mass of three fruits. [2]

Study the diagrams below and circle the correct comparison.



(a) The apple (is heavier than / has the same mass as / is lighter than) the orange.



(b) The apple (is heavier than / has the same mass as / is lighter than) the pear.

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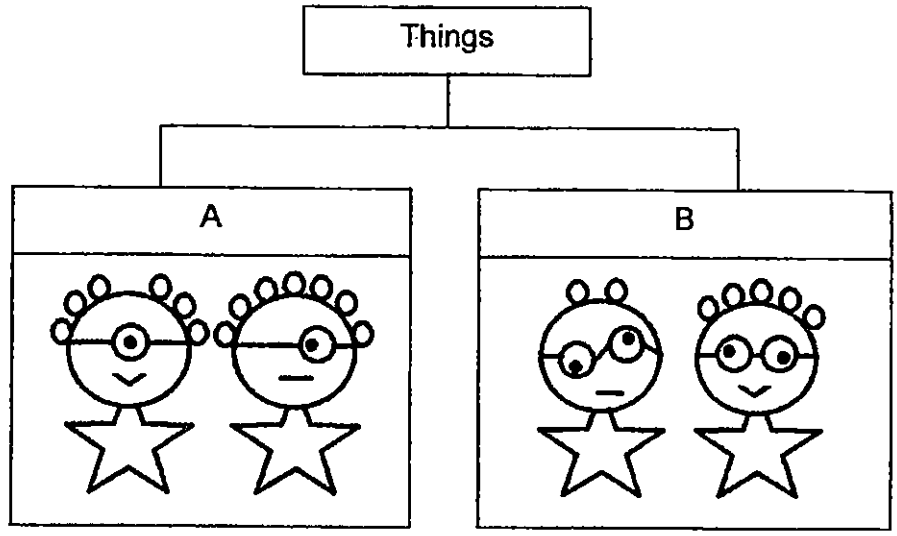
36. Study the classification chart below.



(a) Give a header for A and B. [1]

A: _____

B: _____

(b) What could Tom do to find out if the things above were living things? Give a reason for your answer. [2]

_____

_____

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37. Study the diagram below.

Jerry studied the leaf shown above and immediately concluded that it belonged to a non-flowering plant.

(a) What could he have observed on the leaf for him to make this conclusion? [1]

_____

_____

(b) Give an example of a non-flowering plant. [1]

_____

(c) Draw the life cycle of a flowering plant in the box below [1]

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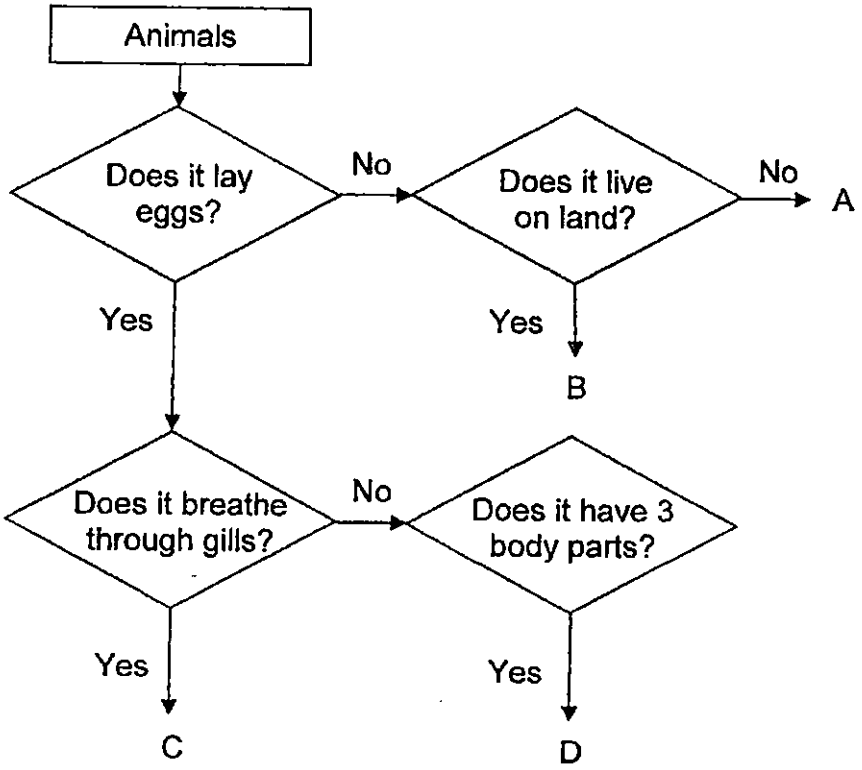
38. Study the flowchart below.



(a) Based on the flowchart, state **all** the characteristics of animal D. [1]

_____

_____

(b) Based on the flowchart, state a difference between animals C and D. [1]

_____

_____

(c) Organism X is warm-blooded and it suckles its young. It needs to rise to the water surface to breathe after several minutes.

i) Which organism A, B, C or D can represent organism X? [1]

_____

ii) Give an example of organism X. [1]

_____

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39. Study the table below carefully.

Based on the information given, identify and match the correct letter to the animals stated in the box below. [2]

Animal	Has a 4-stage life cycle	Young resembles the adult	Adult lay eggs in water
A	Yes	No	Yes
B	No	No	Yes
C	Yes	No	No
D	No	Yes	No

frog	chicken	ladybird beetle	mosquito

A: _____

B: _____

C: _____

D: _____

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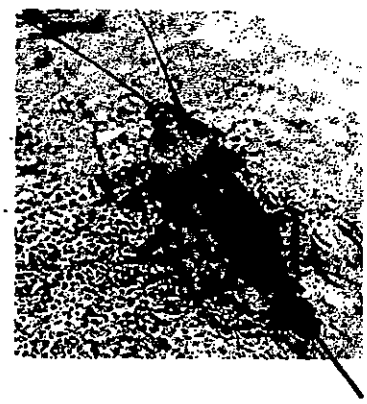
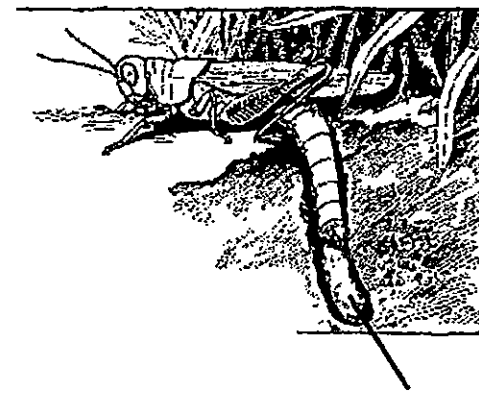
40. Study the pictures below.





(a) The cockroach lays its eggs in an egg case in dark places and a grasshopper lays its eggs in the soil. Explain why the female adults lay their eggs in such places. [1]

_____

_____

(b) Why is it important for these insects to reproduce? [1]

_____

_____

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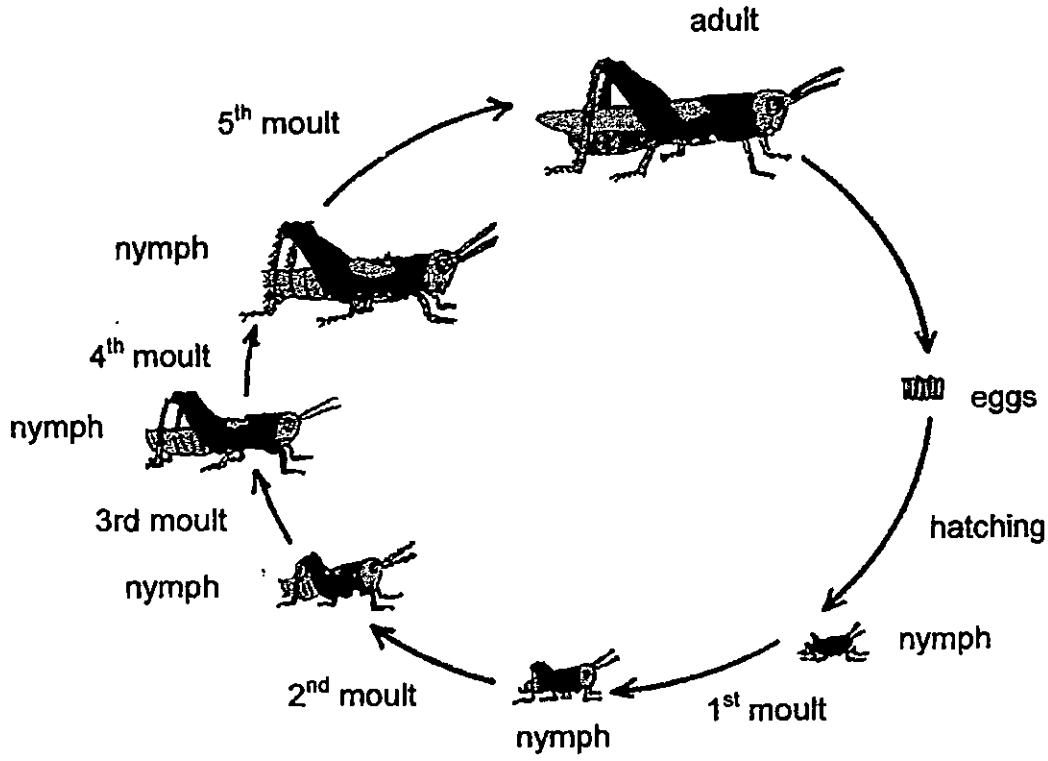
The diagram below shows the life cycle of a grasshopper. Use it to answer parts (c) and (d).



(c) Based on the diagram given, how many stages are there in the life cycle of a grasshopper? [1]

_____

(d) What is one change that happens to the grasshopper each time it moults? [1]

_____

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41. Mickey wanted to make a magnet using the electrical method.

(a) Other than a battery, what other items would he need? [1]
Tick the correct box(es).

magnet	
steel rod	
nylon string	
copper wire	

When he tested the electromagnet that he had made, he obtained the following results.

	Silver Pins	Steel Pins
Number of pins attracted	0	4

(b) He re-constructed his electromagnet and tested again. The number of steel pins attracted increased. Predict the number of silver pins attracted by writing your prediction in the space provided. [1]

	Silver Pins	Steel Pins
Number of pins attracted	_____	8

(c) Without replacing any of the items or adding new items, what had he done to the electromagnet in order to attract 8 steel pins? [1]

_____

_____

(d) State one other way that he could make a stronger electromagnet. [1]

_____

_____

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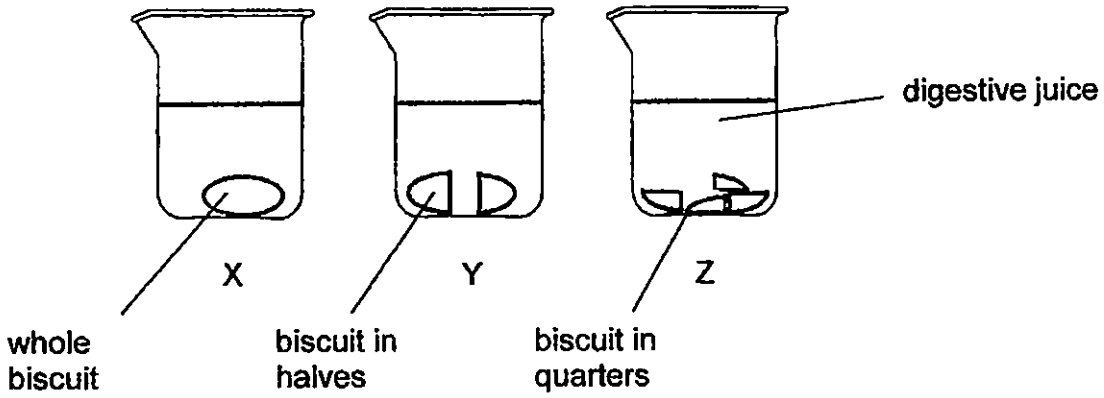
42. Donald conducted an experiment to find out how the size of the biscuits would affect the rate at which they were broken down. There were 20g of biscuits and 50ml of digestive juice in each set-up.

Start of the experiment



After an hour, he observed that the biscuits in set-up Z were broken down the most and the biscuit in set-up X was broken down the least.

(a) What is the relationship between the size of the biscuit and the rate at which it is broken down? [1]

_____

_____

Donald was always reminded by his mother to chew his food slowly and thoroughly.

(b) How does chewing his food thoroughly help him with the digestion of food in his stomach? [1]

_____

_____

(c) Explain what happened to the food in the large intestine. [1]

_____

_____

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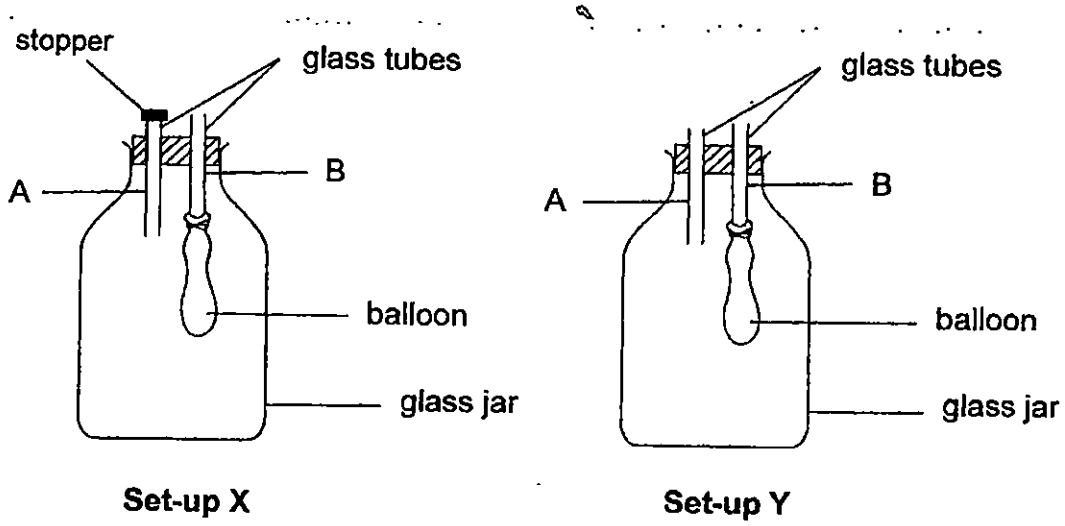
43. Chloe prepared two set-ups, X and Y, as shown in the diagrams below. She placed a stopper over the mouth of plastic tube A in set-up X. She wanted to find out what would happen to the balloons when she blew into plastic tube B of both setups.



(a) What would Chloe observe about the size of the balloon in Set-up X and Y? [1]

_____

_____

(b) Explain your answer in (a). [2]

_____

_____

_____

_____

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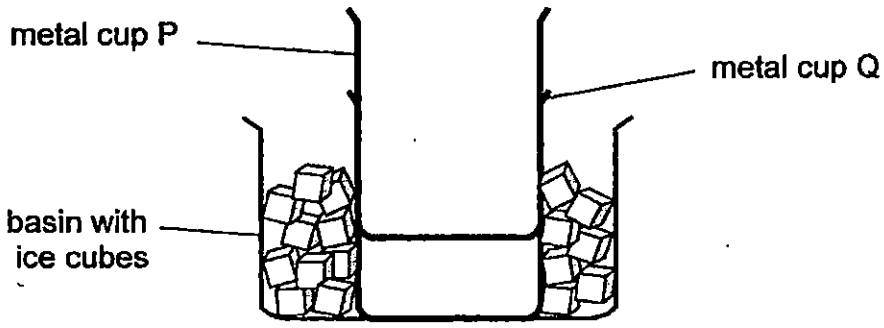
44. Samuel scooped some ice cream into a cup. He felt that the cup was cold to his touch.

(a) After leaving the ice cream on the dinner table for five minutes, he observed that the ice cream started to turn into a liquid.
Give a reason for his observation. [1]

_____

_____

Two metal cups, P and Q, were stacked together and could not be separated. Samuel placed the cups in a basin filled with ice cubes as shown in the diagram below. He realised that the cups still remained stuck together. His mother suggested that he should also use hot water.



(b) Using both the ice cubes and hot water, what could Samuel do to separate the two metal cups? [1]

_____

_____

(c) Explain your answer in (b). [2]

_____

_____

_____

_____

END.

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LEVEL : PRIMARY 4
SCHOOL : NANYANG PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
4	3	4	1	4	4	3	3	2	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
4	1	2	4	1	2	2	1	1	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	3	2	2	3	1	2	3	3	1

Q31. Stem / roots Q32a attraction Q32b magnetic

Q33 fire / lamp Q34 faster / better

Q35a. is lighter than Q35b has the same mass

Q36a. A: one – eyed doll Q36a. B: Two – eyed doll

Q36b. He can touch or poke them to see if they respond. Living things can respond to changes.

Q37a. He observed spores under the leaves. Q37b. Bird-nest fern

Q37c. seed ➔ young plant ➔ adult plant

Q38a. It lays eggs, it does not breath through gills and it has 3 body parts.

Q38b. Animal C breathes through gills while animal D does not breathe through gills.

Q38c. (i) Organism A Q38c (ii) Dolphin

Q39. A: mosquito B: frog C: ladybird beetle D: Chicken

Q40a. They want to protect their eggs from predators.

Q40b. It is important for these insects to reproduce to make sure its species does not go extinct. Q40c. 3 stages. Q40d. It becomes bigger each time.

Q41a. steel rod / copper wire Q41b. silver pins – 0

Q41c. He increased the number of coils around the rod. Q41d. Add more batteries.

Q42a. The smaller the size of the biscuit, the faster it is broken down into.

Q42b. Chew food breaks it into smaller pieces for digestion to take place faster.

Q42c. Water is removed from the undigested food in the large intestine.

Q43a. The balloon in Y would be bigger than the balloon in x.

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Q43b. Air occupies space. In set up X, there is a stopper so air blown into B cannot occupy the space inside the glass jar as air inside cannot escape. In set up Y, air inside can escape and allow space for the balloon to inflate.

Q44a. The ice – cream gained heat from the surrounding.

Q44b. He should pour hot water into the basin, and put ice cubes into metal cup P.

Q44c. Cup P loses heat to the ice cubes and contracts. Cup Q gains heat from the hot water and expands.

THE END

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PEI HWA PRESBYTERIAN PRIMARY SCHOOL

SEMESTRAL ASSESSMENT 2

PRIMARY 4

SCIENCE

(BOOKLET A)

29 OCT 2015

Name: _____ ( )

Class: Teamwork _____

Total time for Booklets A and B: 1 h 30 min

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

This booklet consists of 17 printed pages, excluding the cover page.

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For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice and shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet provided. (60 marks)

1 Sarah took a photograph of plant X at the beginning and at the end of the month as shown below.

Beginning of month

End of month

What could Sarah conclude about plant X based on her photographs?
Plants can _____.

(1) grow
(2) breathe
(3) respond
(4) reproduce

2 Rena made the following observations on the life cycle of an animal.

- The young does not look like the adult.
- There are three stages in the life cycle.

Which animal was likely to be observed by Rena?

(1) Frog
(2) Beetle
(3) Butterfly
(4) Cockroach

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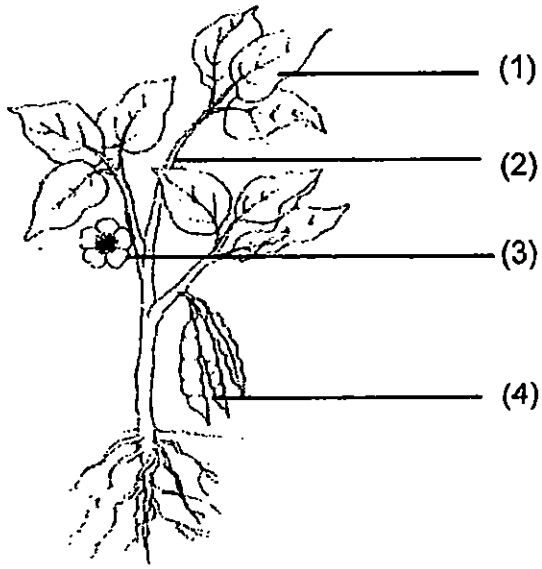
3 In the human digestive system, food is absorbed into the blood in the _____.

(1) gullet
(2) stomach
(3) large intestine
(4) small intestine

4 Bethany pulled out a plant from her school garden. Which part, (1), (2), (3) or (4) helps the plant to stay upright?



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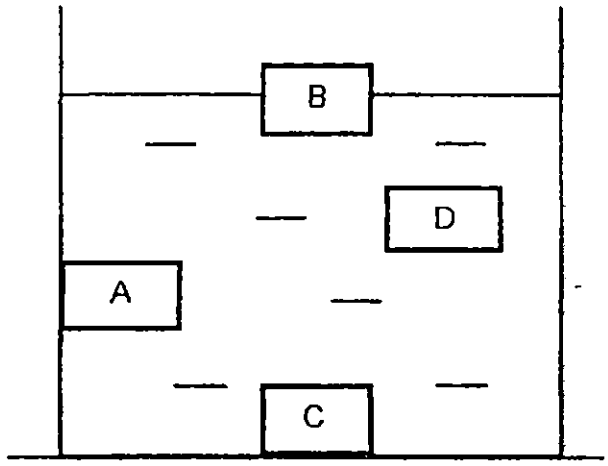
5 Benny put a solid metal block into a container of water.



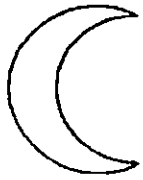
At which position (A, B, C or D) would the solid metal block most likely to be found?

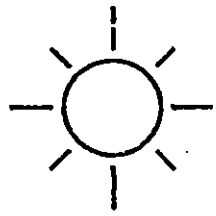
(1) A
(2) B
(3) C
(4) D

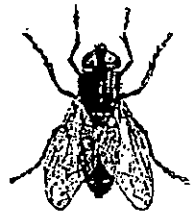
6 Which of the following objects can be bent easily without breaking?

(1) A plastic spoon
(2) A handkerchief
(3) A wooden chopstick
(4) A sheet of glass

7 Which of the following is a source of light?

(1)

Moon

(2)

Sun

(3)

Fly

(4)

Magnifying glass

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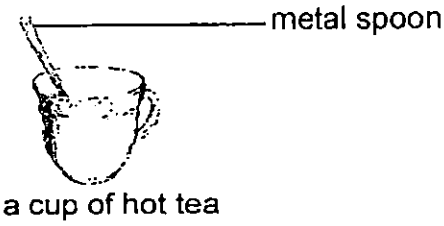
8 Ronald places a metal spoon in a cup of hot tea.

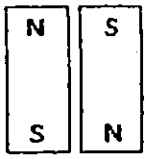


The spoon becomes hotter after a while. Which of the following explains this?

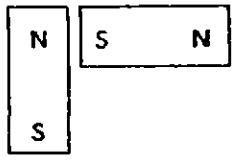
(1) The cup loses heat to the spoon.
(2) The spoon loses heat to the hot tea.
(3) The hot tea gains heat from the spoon.
(4) The spoon gains heat from the hot tea.

9 In which one of the following will the two magnets push each other away?

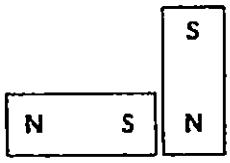
(1)



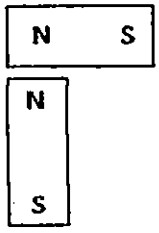
(2)



(3)



(4)



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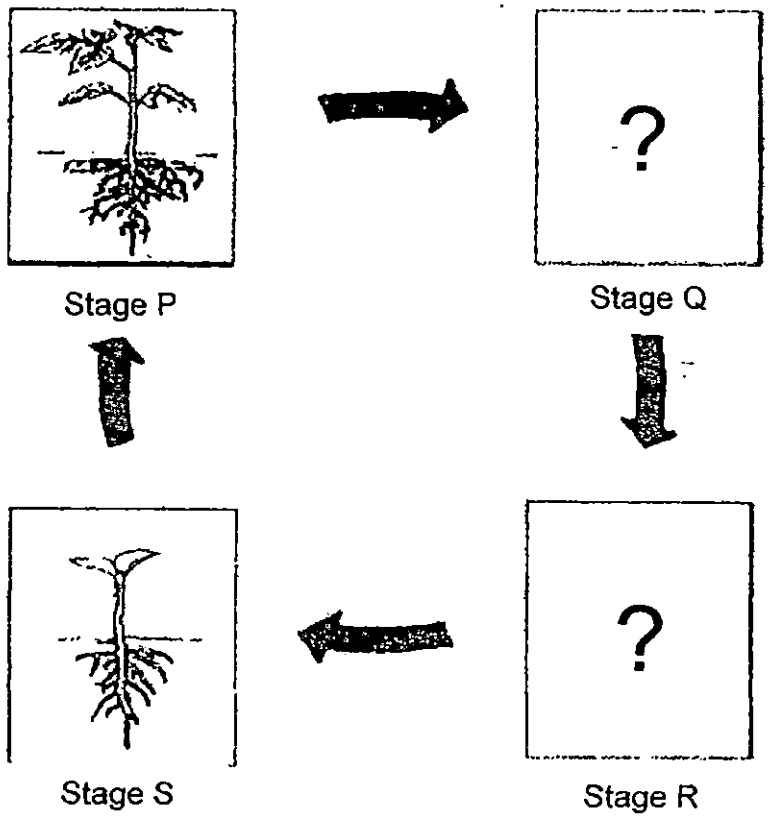
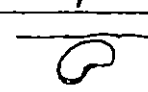
Study the diagram below and answer questions 10 to 11.

10 Kathryn planted a seed and observed the various stages of its life cycle. The diagram below shows the growth of her young plant, with two missing pictures at stages Q and R.



Which one of the following pictures shows the correct stages for Q and R?

	Q	R
(1)		
(2)		
(3)		
(4)		

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11 At which stage in the above life cycle will the plant start to require light to make food?

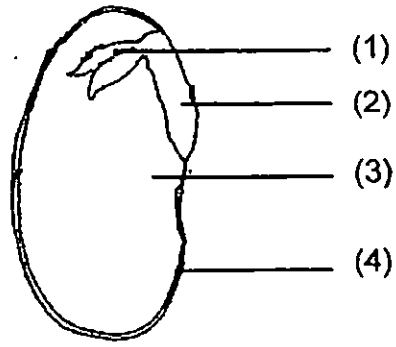
(1) P

(2) Q

(3) R

(4) S

12 Before the plant requires light to make food, which part of the seed (1, 2, 3 or 4) labelled below provides the seedling with energy to grow?



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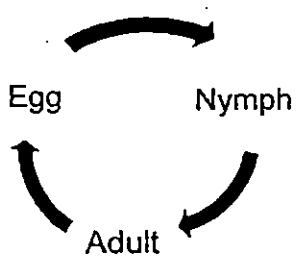
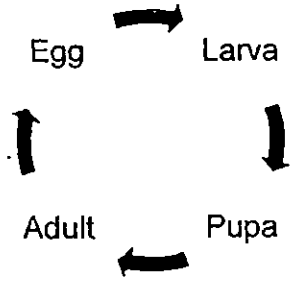
13 Study the life cycles of two different animals, Animals X and Y, below.



Animal X



Animal Y

Which of the following statements are correct about the life cycles of Animals X and Y?

A The young of animal Y looks like the adult.
B Both animals have an egg stage in their life cycles.
C Animal Y does not feed or move from place to place at the pupa stage.
D The life cycle of Animal Y takes place in water while the life cycle of Animal X takes place on land.

(1) A and B only
(2) B and C only
(3) A, B and C only
(4) A, B, C and D

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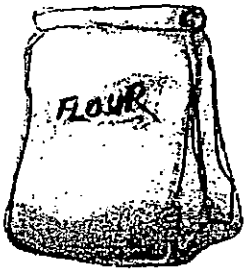
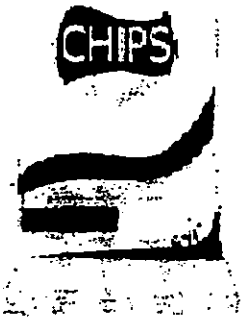
14 Dinah bought the following items from the supermarket.

250g



250g



250g

All the items have the same _____.

A mass
B shape
C volume

(1) A only
(2) B only
(3) A and B only
(4) A, B and C

15 George placed a magnet near three different objects A, B and C and recorded his observations in a table below.

Objects	Attracted to a magnet?	Repelled by a magnet?
A	Yes	No
B	No	No
C	Yes	Yes

Based on the information in the table, which of the three objects is/are likely to be another magnet?

(1) A only
(2) C only
(3) A and C only
(4) A, B and C

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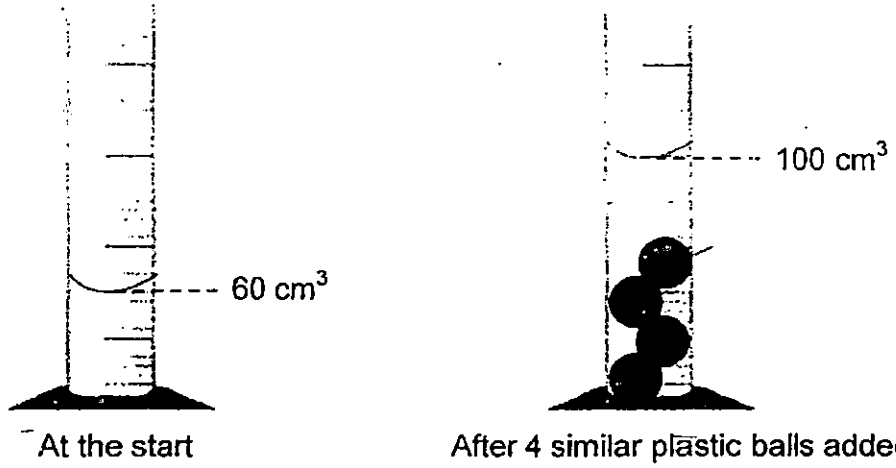
Study the diagrams below and answer questions 16 and 17.

16 Elena conducted an experiment shown below.



Which of the following statements about the experiment are correct?

A The balls sink in the water.
B There is only 60 cm^3 of water in the measuring cylinder.
C The water level rises when the balls are dropped into the measuring cylinder.

(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

17 If all the balls are of identical size and made of the same material, what is the volume of each ball?

(1) 10 cm^3
(2) 40 cm^3
(3) 60 cm^3
(4) 100 cm^3

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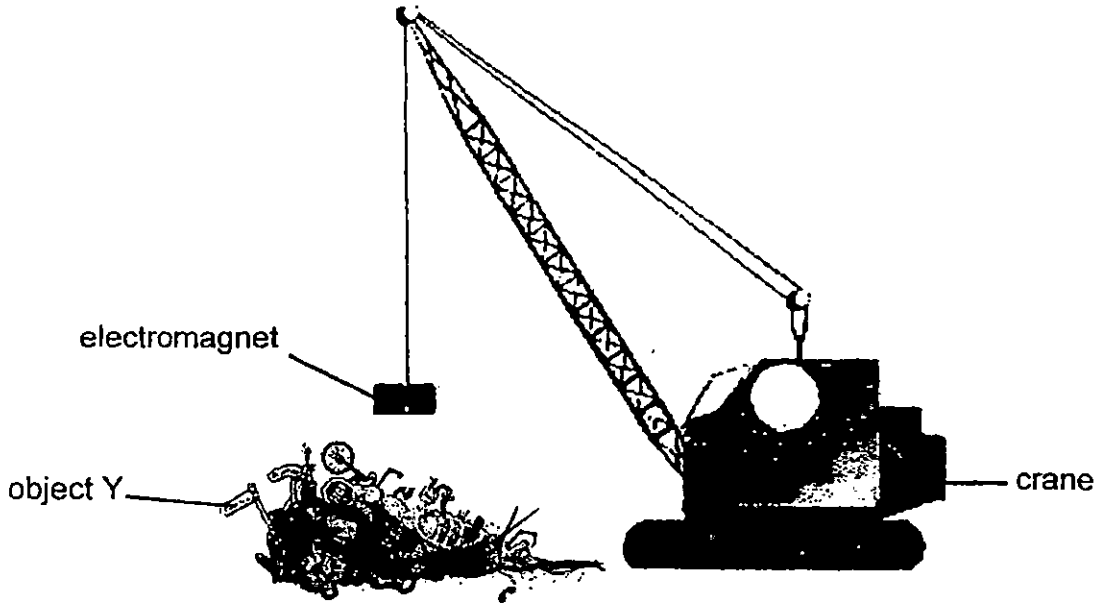
18 The picture below shows a crane using an electromagnet to pick up object Y for recycling.



Which of the following is the most likely materials used to make Object Y?

(1) Iron
(2) Wood
(3) Plastic
(4) Copper

19 The young of a grasshopper goes through a process known as moulting. Which of the following statements about this process is <u>not</u> correct?

(1) The nymph moults more than once.
(2) The nymph moults to become a pupa.
(3) The nymph moults so that it can grow bigger.
(4) The nymph sheds its old body covering and grows a new one.

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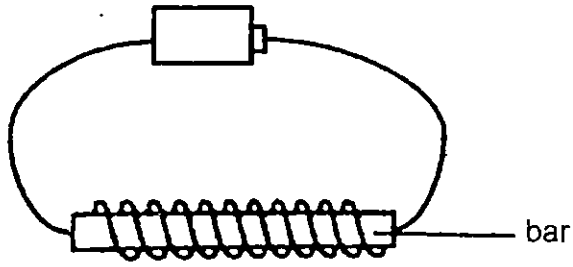
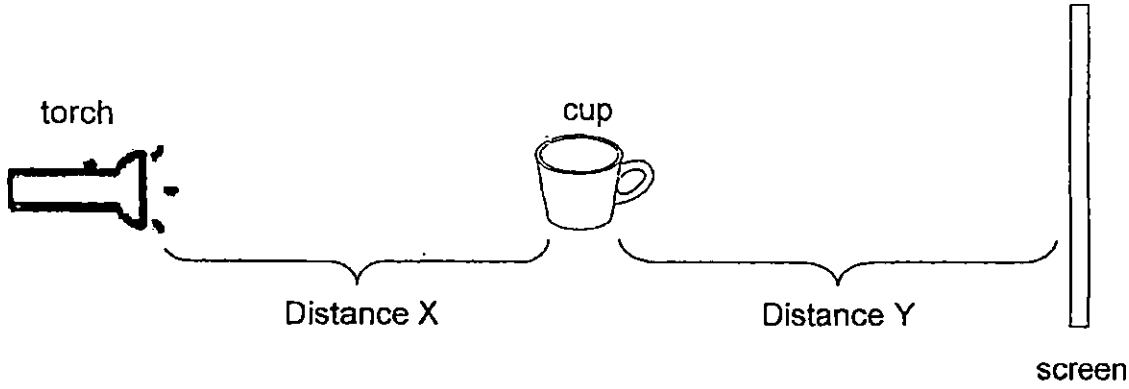
20 Hannah set up the following to make an electromagnet to attract some iron nails.



However, she found that the bar did not attract any iron nails that were brought near to it. Which of the following is the correct reason?

(1) The bar should not be coiled with wires.
(2) Two bars should be used instead of one.
(3) Steel nails should be used instead of iron nails..
(4) A non-magnetic material had been used for the bar.

21 James set up an experiment shown below to find out how the distance between the torch, the cup and the screen would affect the size of shadow the cup cast on the screen.



Which two of the following actions will cause the shadow of the cup to increase in size?

A Increase the distance X.
B Increase the distance Y.
C Decrease the distance X.
D Decrease the distance Y.

(1) A and B
(2) A and D
(3) B and C
(4) B and D

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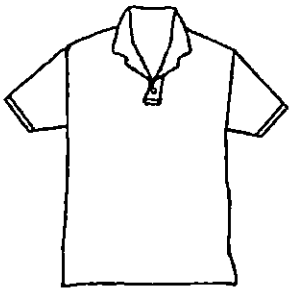
22 Adam wanted to make a new uniform.



Which of the following properties listed is/are the reason(s) why a material is chosen to make the uniform?

A It is strong.
B It is flexible.
C It allows light to pass through.

(1) A only
(2) C only
(3) A and B only
(4) A, B and C

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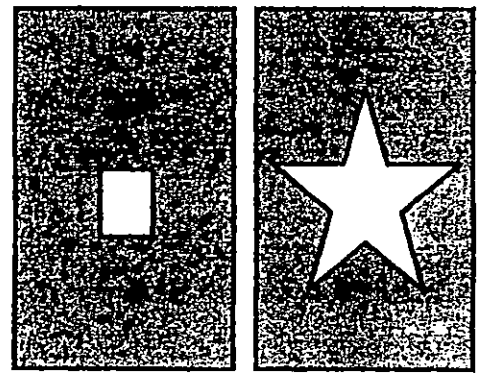
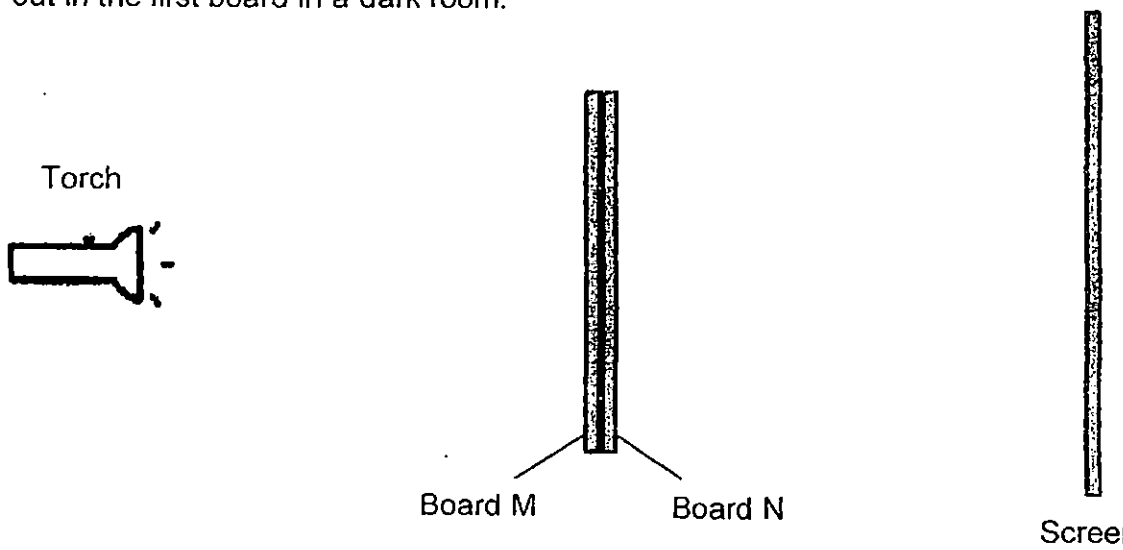
23 Jill set up the following experiment using two pieces of wooden boards M and N with cut-outs as shown below.



Board M Board N

She placed the two boards in a straight line and shone a torch through the cut-out in the first board in a dark room.

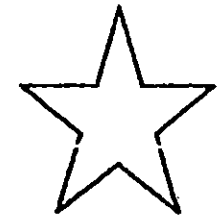


What is the shape of the light patch on the wall?

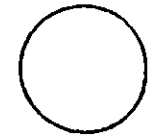
(1)

(2)

(3)



(4)



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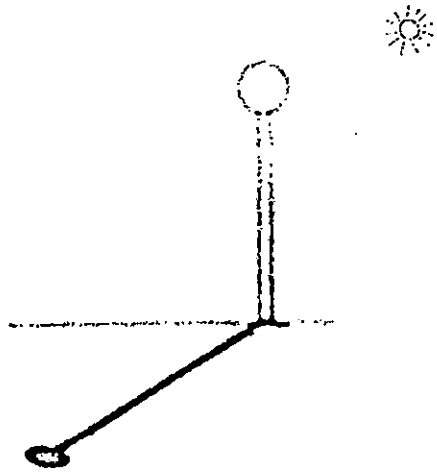
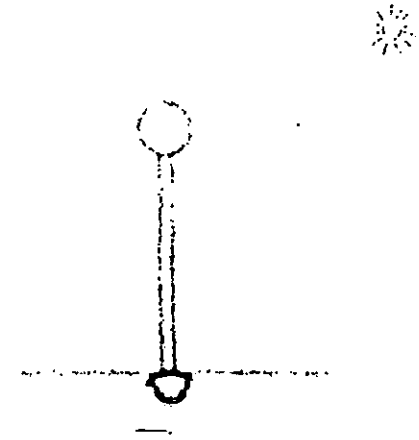
24 One day, Adam was playing in the playground in the late afternoon when the sun was setting. He noticed that the lamp post cast a shadow on the ground.

Which of the following diagram shows the shadow of the lamp post correctly?

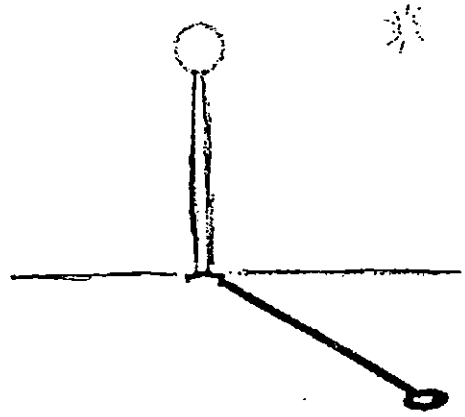
(1)



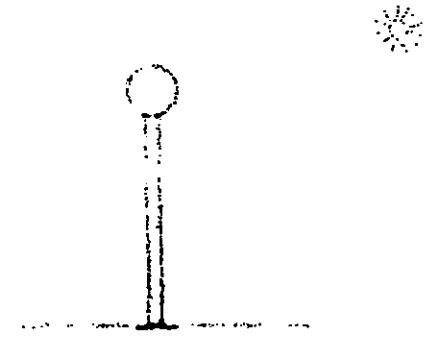
(3)



(2)

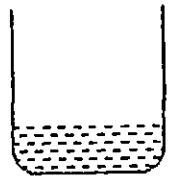


(4)



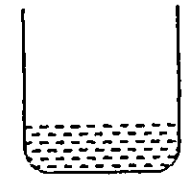
25 The beakers below contain water at different temperatures. Which of the following beakers contains water with the most heat energy?

(1)



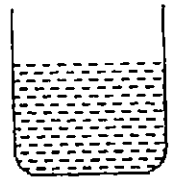
1000 mℓ at 20°C

(2)



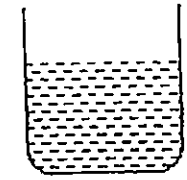
1000 mℓ at 30°C

(3)



2000 mℓ at 40°C

(4)



2000 mℓ at 80°C

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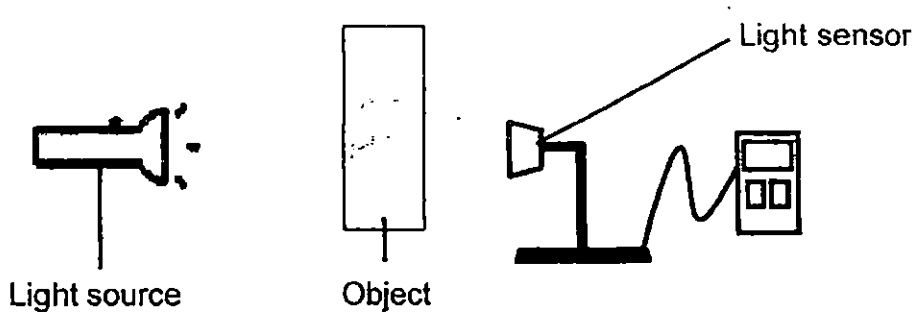
26 A light sensor has a scale from 0 to 5. Objects that do not block light will show the highest reading 5, while objects that block light will show the reading 0.



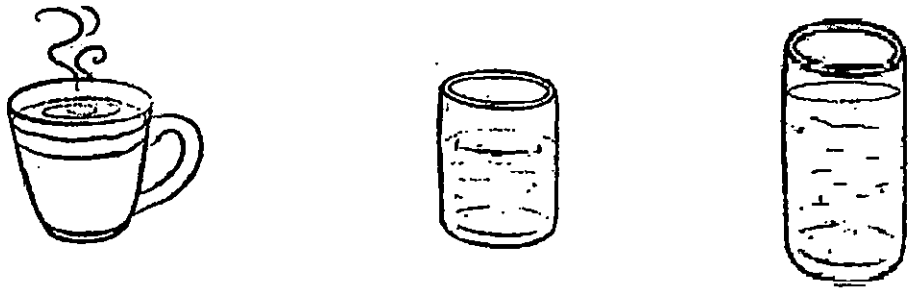
The table below shows the result on the sensor when light was shone on four objects, K, L, M and N.

Object	**K**	**L**	**M**	**N**
Reading on sensor	3	1	0	5

Based on the results above, which two of the objects are made of materials which are <u>not</u> suitable to make the glass walls of a fish bowl?

(1) K and M
(2) M and N
(3) L and M
(4) L and N

27 Sarah made a cup of tea with water at 95 °C and realised that it was too hot to drink. She poured the tea into a bigger glass and mixed in an equal amount of cold water at 5 °C so that it is not too hot for her to drink.



Hot tea at 95°C Cold water at 5 °C Tea Mixture

What was the possible temperature of the tea mixture?

(1) 100°C
(2) 95°C
(3) 45°C
(4) 5°C

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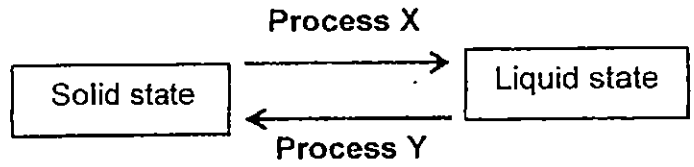
28 Water in the solid state can be changed into the liquid state through Process X. It can then be changed from liquid state back to the solid state through Process Y.



Which of the following correctly describe what happen in Processes X and Y?

	Process X	Process Y
(1)	Heat gained by solid	Heat gained by liquid
(2)	Heat gained by solid	Heat lost by liquid
(3)	Heat lost by solid	Heat lost by liquid
(4)	Heat lost by solid	Heat gained by liquid

29 Newborn babies are often wrapped in cotton blankets to keep them warm.

This is because cotton is_____.

A able to trap air
B a source of heat
C a poor conductor of heat

(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

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30 The classification table below shows how materials are classified into two groups.

Group E	Group F
Gold ring Copper pot Aluminium tray	Paper bag Plastic cup Cotton blanket

What are the most suitable headings for Groups E and F?

	Group E	Group F
(1)	Non-metals	Metals
(2)	Magnetic objects	Non-magnetic objects
(3)	Good conductors of heat	Poor conductors of heat
(4)	Objects made from things that come from the ground	Objects made from things that come from plants or animals

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PEI HWA PRESBYTERIAN PRIMARY SCHOOL

SEMESTRAL ASSESSMENT 2

PRIMARY 4

SCIENCE

(BOOKLET B)

29 OCT 2015

Name: _____ ( )

Class: Teamwork _____

Parent's Signature

Total time for Booklets A and B: 1 h 30 min

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

Marks (Booklet A) :	60
Marks (Booklet B) :	40
Total Marks (Booklets A & B) :	100

This booklet consists of 12 printed pages, excluding the cover page.

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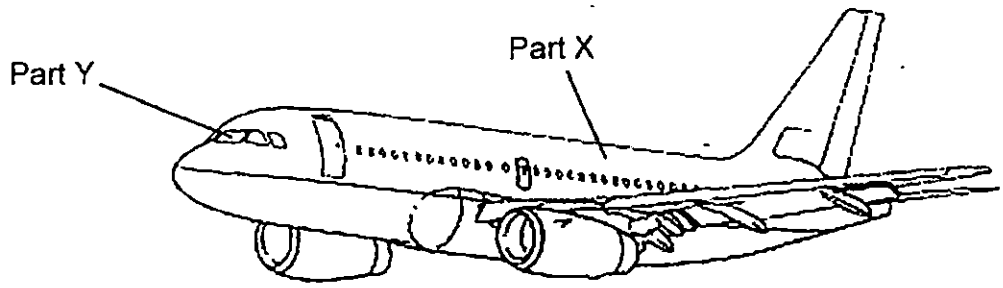
Write your answers to the questions 31 to 44 in the spaces provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question. (40 marks)

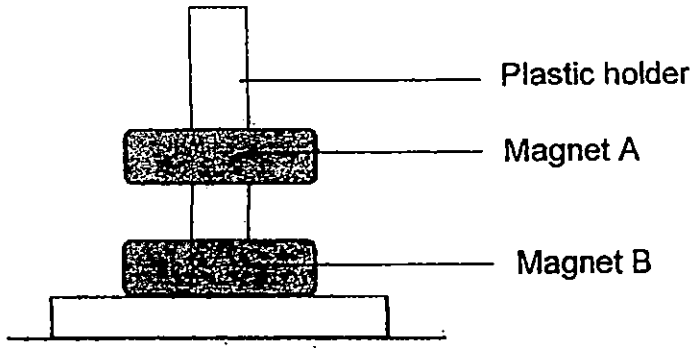
31 The diagram shows an aeroplane.



(a) Part X is made of _____ because Part X has to be strong. [1]

(b) Part Y is made of glass because it allows _____ to pass through so that the pilot can see out. [1]

32 Alice placed two ring magnets, A and B, through a plastic holder as shown below.



(a) The holder was made of plastic and did not attract the magnets.

Plastic is a _____ material. [1]

(b) Why was magnet A floating above magnet B?

Magnet B was _____ Magnet A. [1]

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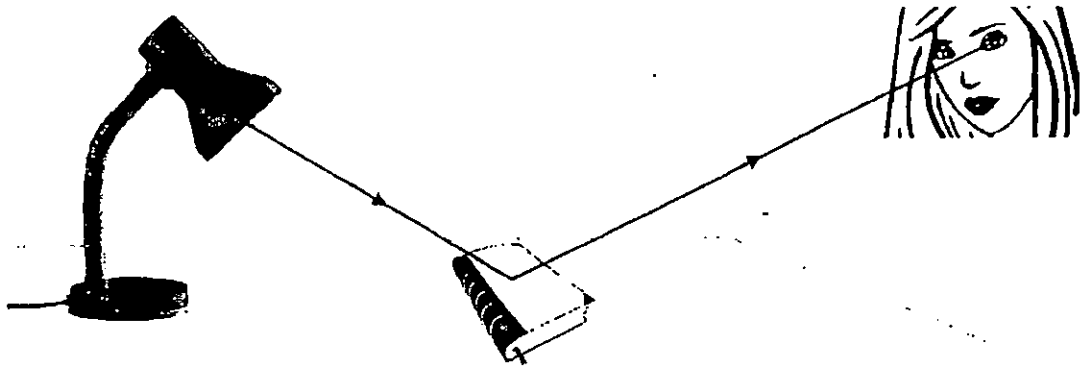
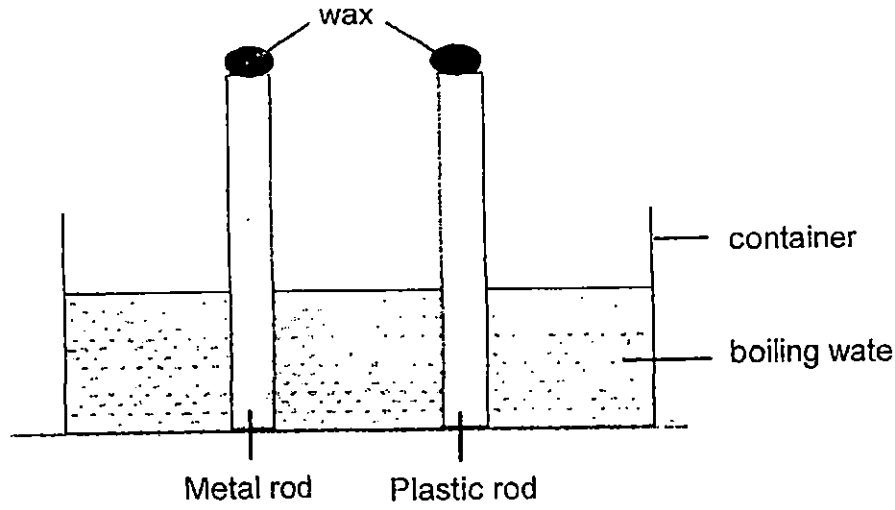
33 Nisha can see the book on the table when she switches on the table lamp on her desk.



The _____ from the lamp is _____ by the book and enters Nisha's eyes. [2]

34 Ken placed a metal rod and a plastic rod into a container of boiling water as shown below. Equal amounts of wax were put on the tip of both rods.



The wax on the metal rod melted _____ than the wax on the plastic rod, as metal is a _____ conductor of heat than plastic. [2]

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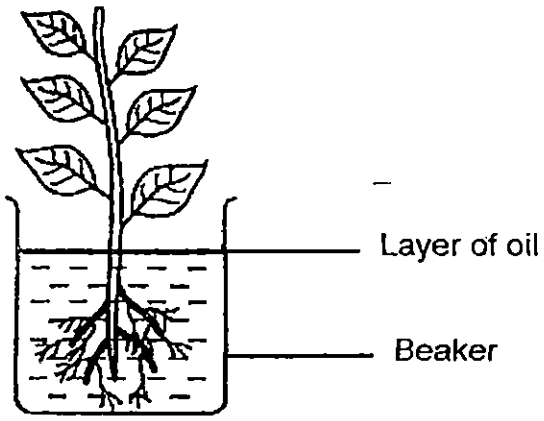
35 (a) Fill in the correct parts of a plant in the table below. [2]

Functions of plant parts	Plant parts
Makes food for the plant	
Obtains water for the plant	

(b) Kenneth placed a whole plant into a beaker of water. He then placed a layer of oil on the surface of the water.



After 2 days, he observed that the water level in the beaker dropped. Give a reason why the water level dropped. [1]

_____

_____

(c) Kenneth's mother said that the oil prevented the loss of water to the surrounding air. Explain why this is important in the experiment. [1]

_____

_____

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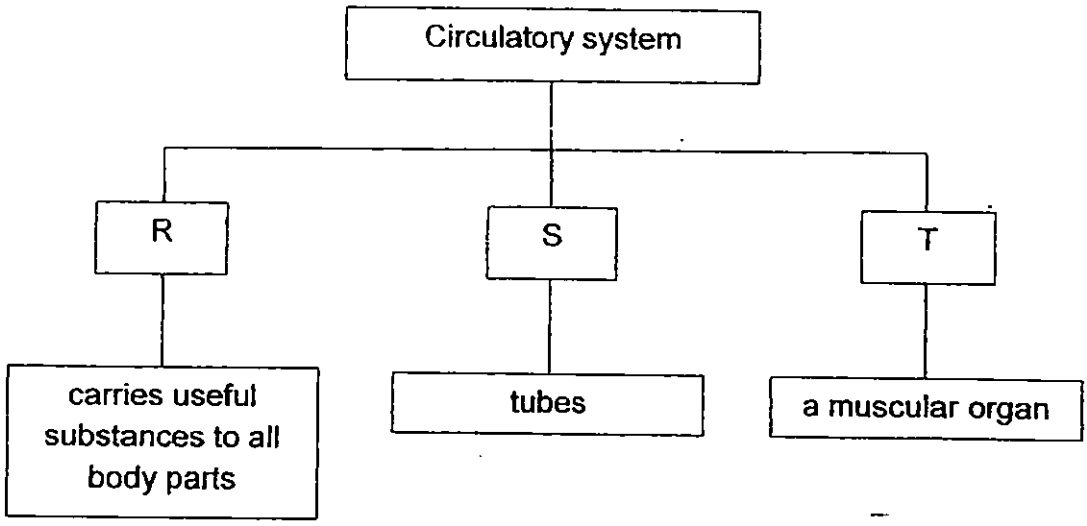
35 36. Study the classification chart below. R, S and T are parts of the circulatory system.



(a) Identify the parts of the circulatory system, R, S and T by completing the following table. [$1\frac{1}{2}$]

	R	S	T
Parts of the circulatory system			

(b) Name 2 useful substances to the body that are carried by R. [1]

_____

(c) Describe the function of T. [1]

_____

(d) Which part of the skeletal system protects T? [$\frac{1}{2}$]

_____

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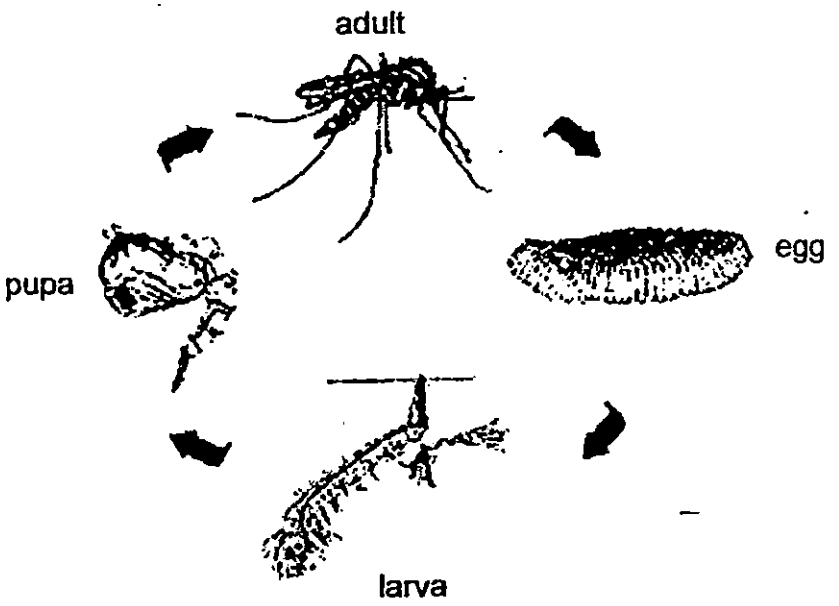
37 Study the following life cycle of a mosquito.



(a) State two differences between the mosquito at the larva stage and the pupa stage. (Do not compare size, shape or colour) [2]

(i) _____

(ii) _____

(b) Mosquitoes are pests because they spread diseases to Man. Suggest one thing we can do to prevent mosquitoes from breeding in our houses. [1]

_____

_____

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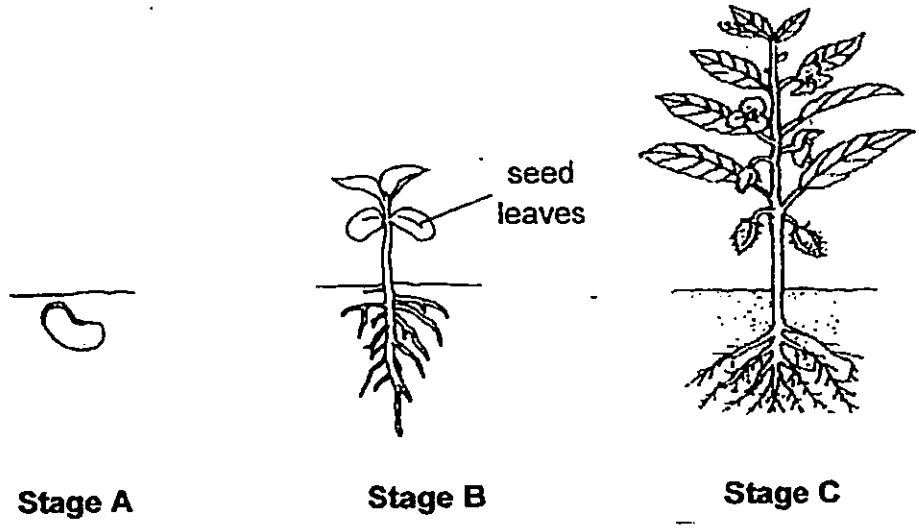
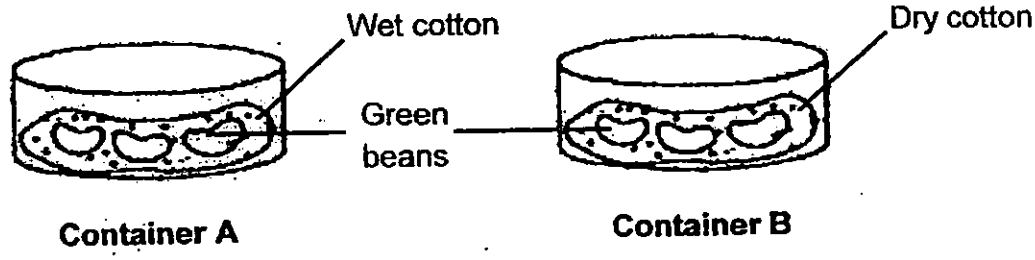
38 The diagram below shows the stages in the life cycle of a plant.



(a) Name the stages A and B in the life cycle of the plant. [2]

A : _____ B : _____

(b) Leslie placed some green beans in two containers, Container A and Container B. He placed both containers in a warm area. After a few days, the green beans in Container A germinated but those in Container B did not.



Suggest a reason why the green beans in Container B did not germinate. [1]

_____

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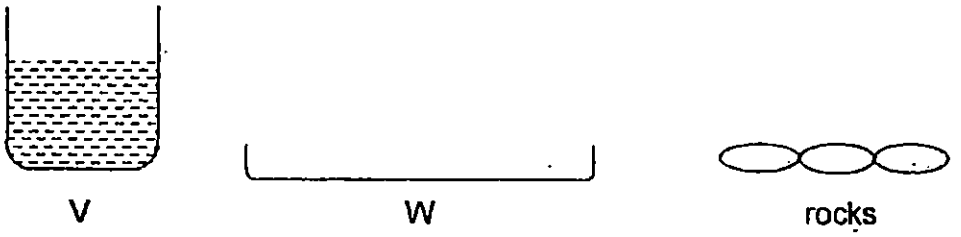
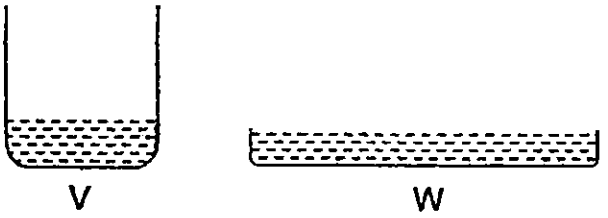
39 Mr Tan had two containers, Containers V and W and some rocks. Container V contained some water but Container W was empty.



He wanted to pour all the water from Container V into Container W. He realised he could not as the water had reached the brim of Container W as shown below and he had to stop pouring.



(a) Based on this experiment, state a property of matter shown by water and Container W. [2]

		Property of matter
(i)	**Water**	
(ii)	**Container W**	

(b) He then took the rocks and put them into Container W and the water overflowed. Explain why the water overflowed. [1]

_____

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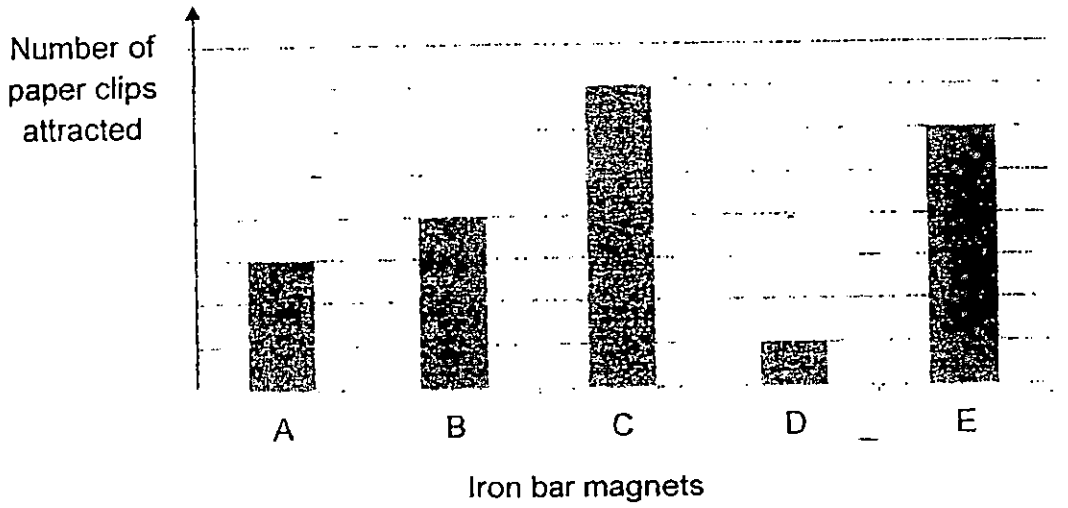
40 Mary used the 'stroke' method to make five magnets using a magnet and 5 similar iron bars. The following bar graph shows the number of paper clips that were picked up by the 5 iron bar magnets.



(a) Mary was given a table to match the number of strokes with the magnets. Complete the table with the correct magnet by writing **A, C, D** and **E** into the boxes below. [2]

Number of strokes	5	10	15	20	25
Iron Bar Magnet			B		

(b) What is the relationship between the number of 'strokes' and the strength of the iron bar magnet produced? [1]

_____

_____

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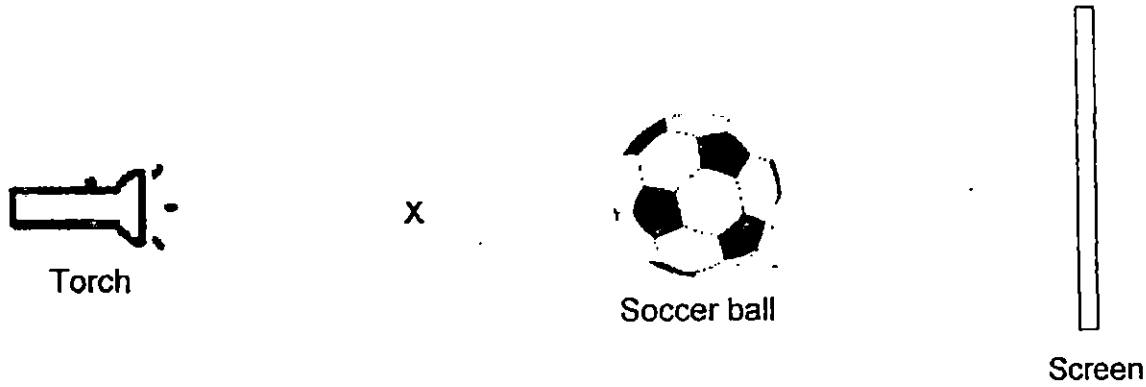
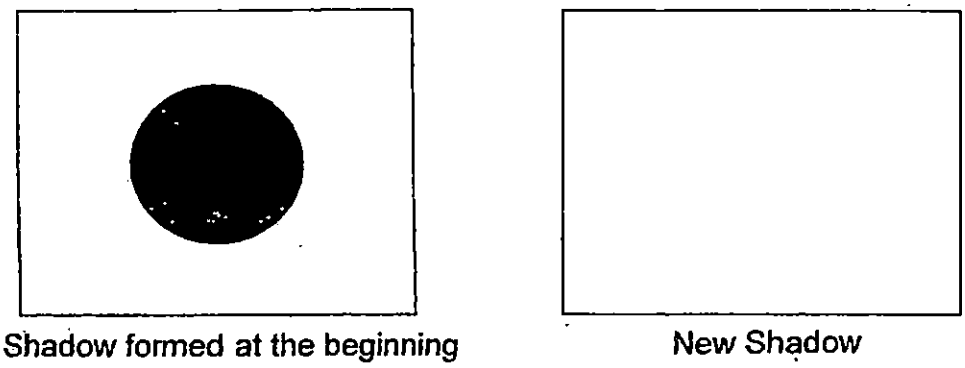
41 Travis switched on a torchlight in a dark room. He observed that when he placed a soccer ball in the path of the light as shown below, a shadow is formed on the screen.



(a) State the property of light that explains why the shadow was formed. [1]

_____

(b) If Travis moved the torchlight to position X, draw the shadow of the soccer ball which would be formed in the box below. [1]



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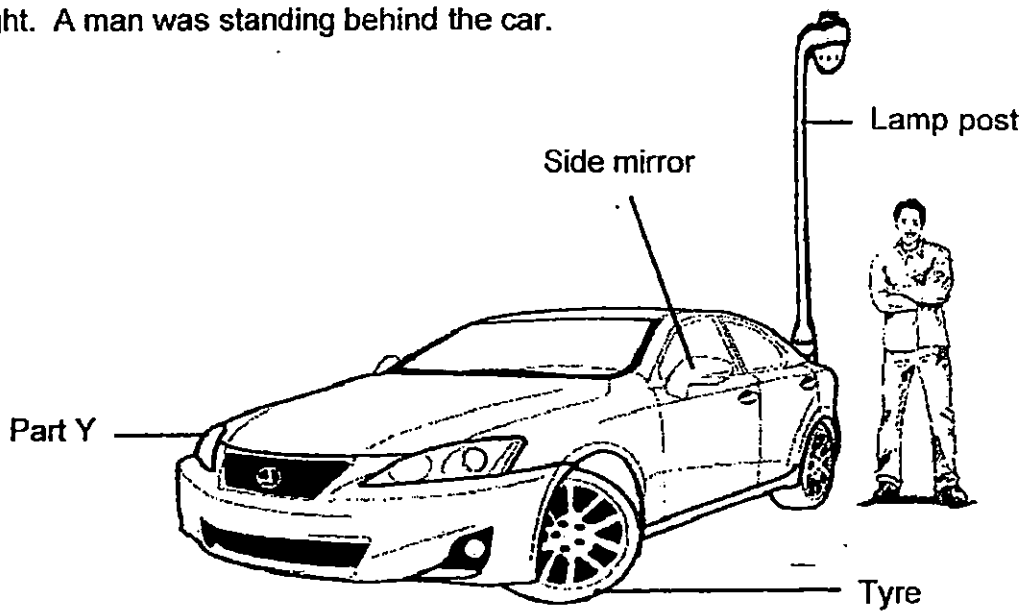
42 The diagram below shows a car stopping at a road side near a lamp post at night. A man was standing behind the car.



(a) How does the side mirror of the car help the driver see the man standing behind the car at night? [2]

_____

_____

(b) Part Y covers the light bulb of the head lamps of the car. State the property of material that is suitable to make Part Y. [1]

_____

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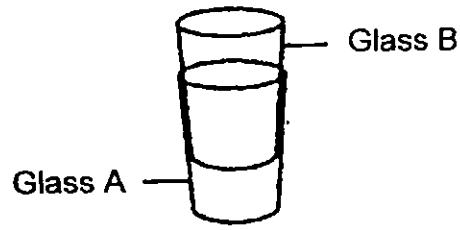
43 Mrs Tan needed help to separate two of her glasses which were stuck together. She was not able to pull them apart.

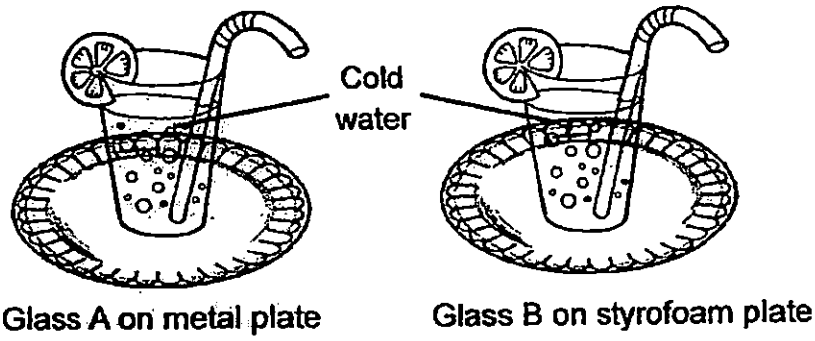


(a) State two things you would do to help Mrs Tan separate the glasses without breaking them. [2]

(i) _____

(ii) _____

(b) Mrs Tan used the glasses to hold the same amount of cold water of the same temperature. Then, she placed the glasses on two plates made of two different materials and left them on a warm kitchen table.



(i) Which glass (A or B) would contain water of a lower temperature than the other after ten minutes? [1]

_____

(ii) Give a reason for your answer in (b)(i). [1]

_____

_____

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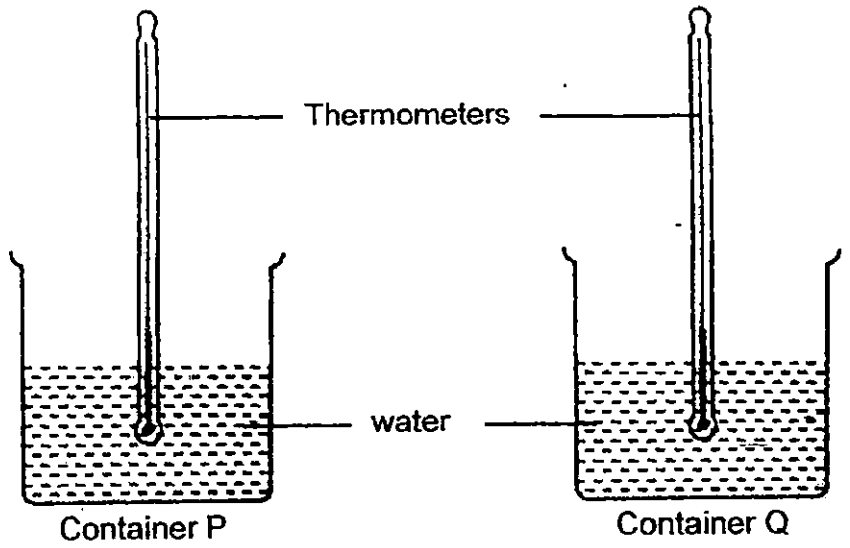
44 Raja placed the same amount of water in two containers of the same size, Containers P and Q. At first, the temperature of the water was 100°C. He put each container in different parts of the room. The room temperature was 30°C.



The table below shows the temperature reading of the water in each container after thirty minutes.

Container	P	Q
Temperature	75°C	50°C

(a) David said that the water had lost heat to the surroundings. Which container of water had lost more heat to the surroundings? [1]

_____

(b) Give a possible reason why the container in (a) lost more heat to the surrounding. [1]

_____

(c) What do you think would be the temperature of the water in both containers after one day? [1]

_____

– END OF PAPER –

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : PEI HWA PRESBYTERIAN PRIMRY SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
1	1	4	2	3	2	2	4	4	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
4	3	2	1	2	4	1	1	2	4
Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30
3	3	1	1	4	3	3	2	2	3

Q31a. metal Q31b. light

Q32a. non-magnetic Q32b. repelled

Q33. Light / reflected Q34. Faster / better

Q35a. leaves / roots

Q35b. The roots of the plant absorbed water for the plant.

Q35c. It is to ensure that the drop in water level is caused by the roots.

Q36a. R: blood S: Blood vessels T: Heart

Q36b. They are digested food and water.

Q36c. The muscular organ permits movement of the body, maintains posture, and circulates blood throughout the body. Q36d. Rib cage

Q37a (i) The larva moves from place to place but the pupa does not move from place to place

Q37a. (ii) The larva moults to grow bigger but the pupa does not moult to grow bigger.

Q37b. Pour away all stagnant water.

Q38a. A: Seed B: Young plant

Q38b. There was no water for the seeds to germinate. Thus, the green beans in container B did
not germinate.

Q39a(i). Water - It does not has a definite volume
Q39a (ii). Container W: It has a definite shape.

Q39b. Sold takes up space that were previously occupied by water thus displacing the water.

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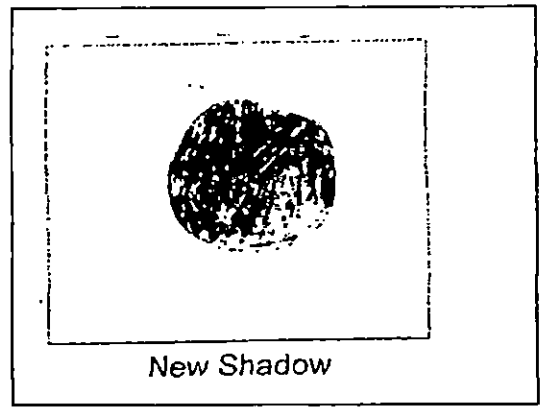
Q40a. D / A / B / E / C

Q40b. The more the number of strokes, the strength of the iron bar magnet produced is stronger.

Q41a. Light travels in a straight line.

Q41b. **SEE PICTURE**



Q42a. Light from the lamp post shine on the man and then from the mirror into the driver' s eyes.

Q42b. It allows all light to pass through.

Q43a (i) Pour cold water into Glass B.

Q43a (ii) Dip glass A into hot water.

Q43b (i) Glass B

Q43b (ii) Styrofoam is a poorer conductor of heat so the water in Glass B will not gain heat from the warm table as quickly.

Q44a. Container Q.

Q44b. Container Q is a better conductor of heat.

Q44c. 30°C

THE END

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RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (2)
2015

	50
Section B	40
Your score out of 90	
Parent's signature	

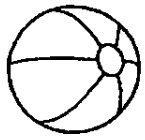
Name : _____ Index No: ___Class: P4___

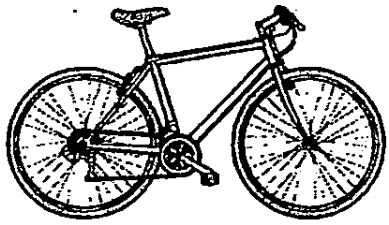
27 October 2015 – SCIENCE Att: 1 h 30 min

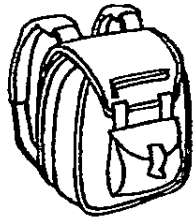
SECTION A (25 x 2 marks)

For each question from 1 to 25, four options are given.
One of them is the correct answer. Make your choice (1, 2, 3 or 4).
Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1. Which one of the following is a living thing?


(1)


(2)


(3)

(4)

2. Which statement is true about most mammals?

(1) They can swim.
(2) They have wings.
(3) They produce milk.
(4) They have four legs.

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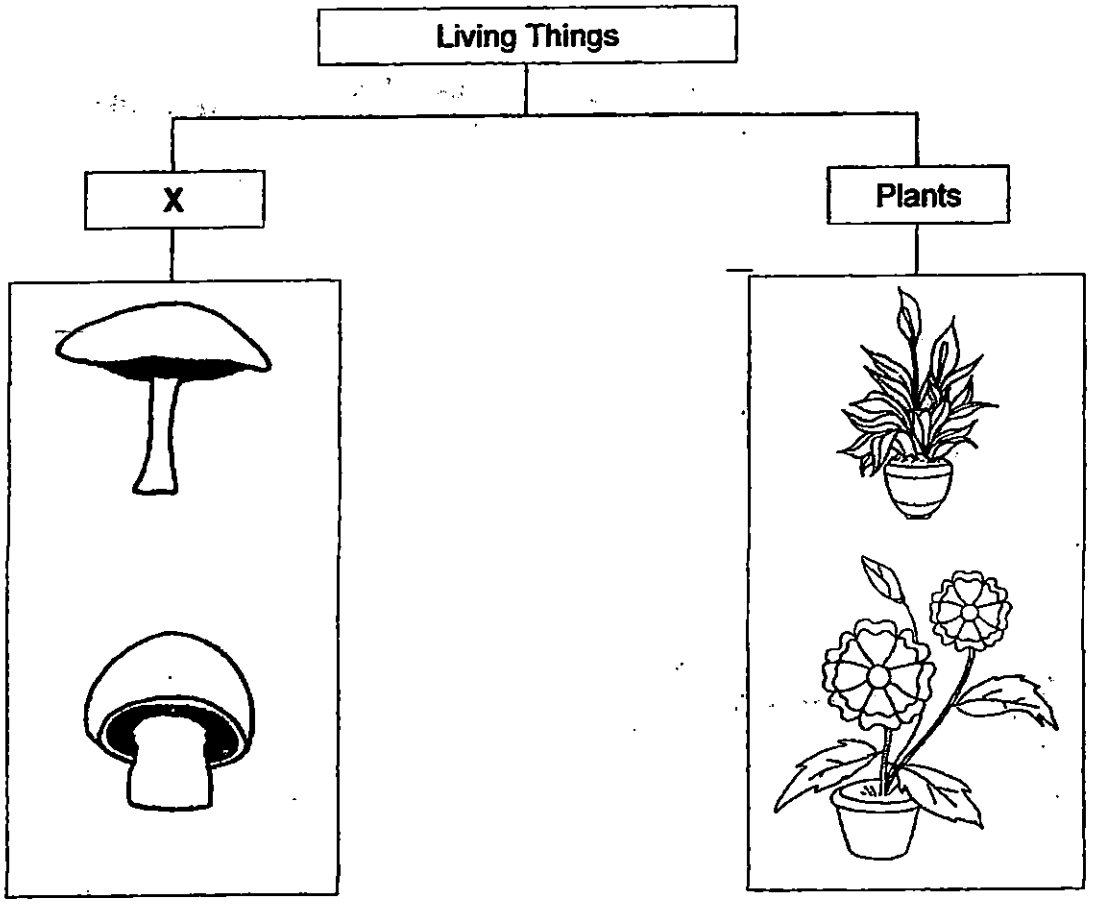
3. The table below shows how some living things can be grouped.



Which one of the following is the most suitable heading for group **X**?

(1) fish

(2) fungi

(3) insects

(4) bacteria

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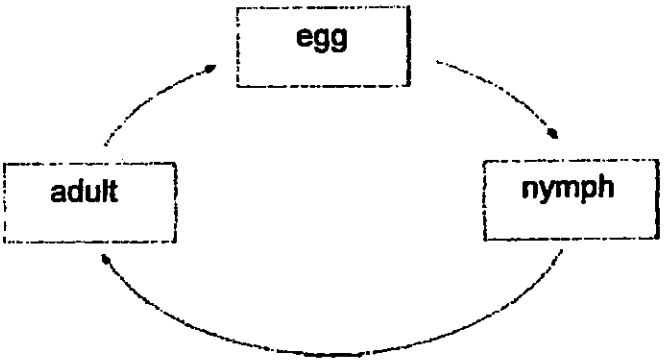
4. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle as shown above?

(1) chicken
(2) butterfly
(3) mosquito
(4) cockroach

5. In which part of the digestive system is food completely digested?

(1) gullet
(2) stomach
(3) small intestine
(4) large intestine

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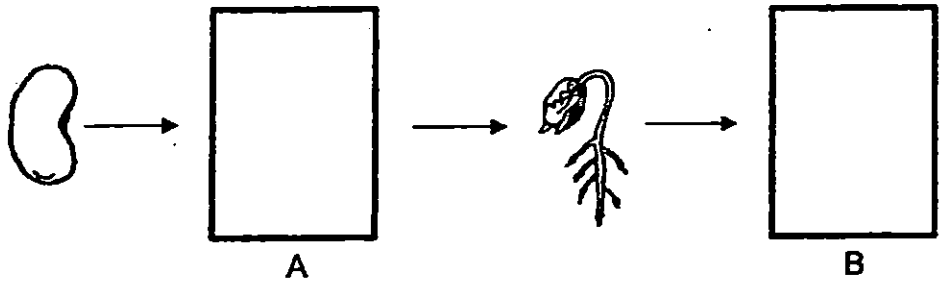
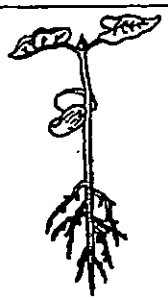
6. The diagram below shows the growth of a young plant with two missing stages A and B.



Which one of the following shows the correct stages for A and B?

	A	B
(1)		
(2)		
(3)		
(4)		

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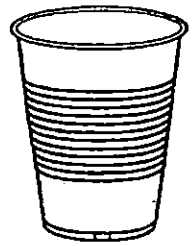
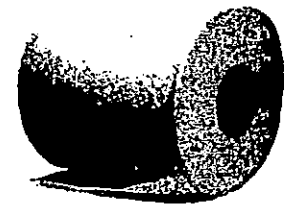
7. Which of the following objects is **not** made of waterproof material?

(1)



plastic cup

(2)



toilet paper

(3)

metal spoon

(4)

rubber boots

8. Which one of the following properties is true for both oxygen and a ruler?

(1) They can be seen.
(2) They take up space.
(3) They have fixed shapes.
(4) They have fixed volumes

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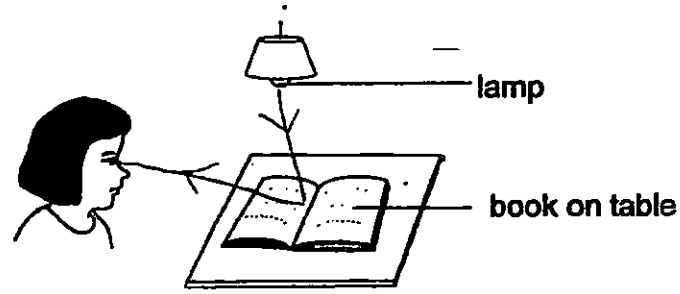
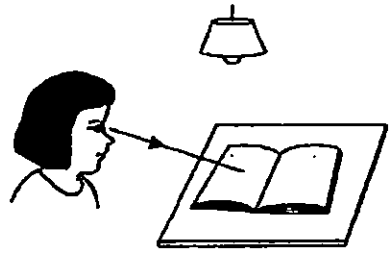
9. Look at the picture below

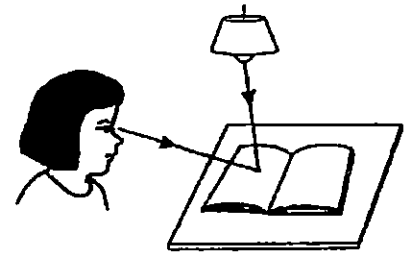


Which one of the following explains why Sue can see the book on the table?

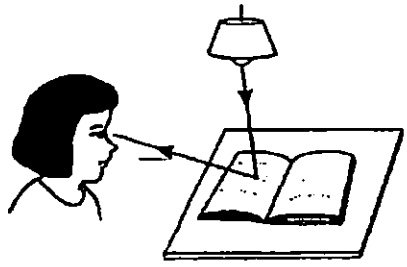
(1)



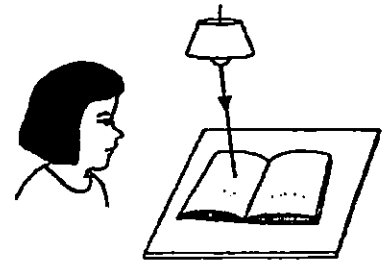
(2)



(3)



(4)



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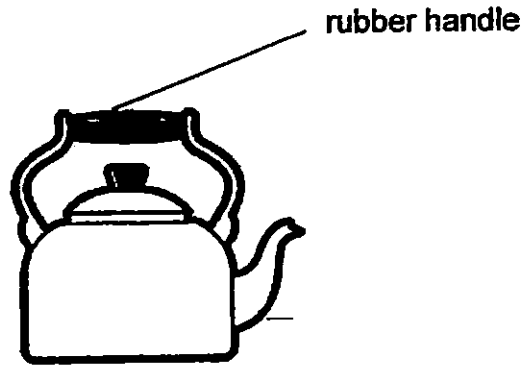
10. Hashim boiled some water in the pot shown below.



He is able to hold the pot of boiling water using the rubber handle. This is because rubber is a _____.

(1) light material
(2) flexible material
(3) good conductor of heat
(4) poor conductor of heat

11. Which one of the following statements about seeds is true?

(1) Seeds can germinate without air.
(2) Seeds need fertiliser to germinate.
(3) Seeds need moisture to germinate.
(4) Seeds which are exposed to sunlight will not germinate.

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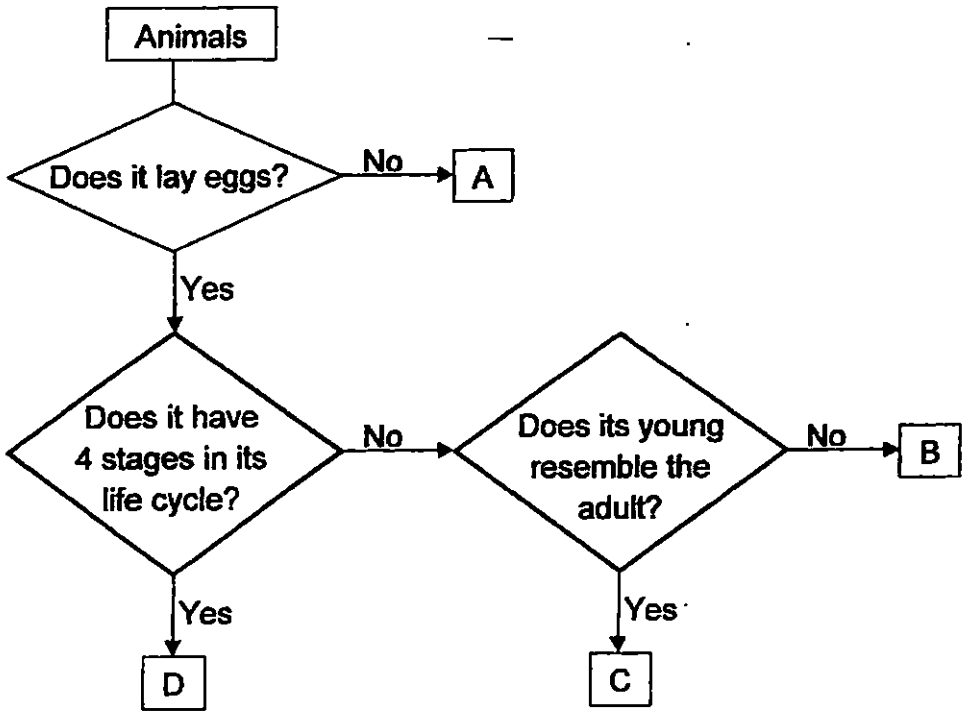
12. The flow chart below shows how animals A, B, C and D are grouped.



Based on the information above, which one of these animals will represent a frog?

(1) A

(2) B

(3) C

(4) D

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13. Kai Jin wanted to conduct an experiment to find out if the change in the amount of digestive juice would affect the digestion of cooked rice.
He prepared the following set-ups for this experiment.

Dish	Amount of digestive juice (ml)	Amount of cooked rice (g)	Temperature of cooked rice (°C)	Duration of experiment (min)
A	5	20	28	20
B	5	40	28	20
C	10	20	28	20
D	10	40	25	30

Which of these set-ups should Kai Jin use to conduct a fair test for his experiment?

(1) A and B only
(2) A and C only
(3) B and C only
(4) C and D only

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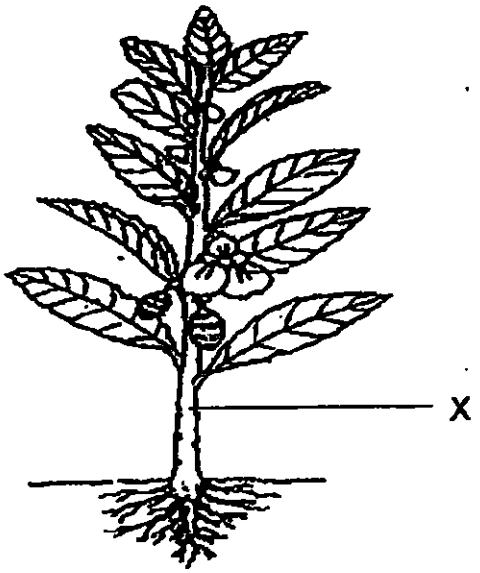
14. The diagram below shows a plant.



Which of the following statements state the function(s) of the part labelled X?

A	It makes food for the plant.
B	It supports the leaves and branches.
C	It takes in water and mineral salts from the soil.

(1) B only

(2) C only

(3) A and B only

(4) A and C only

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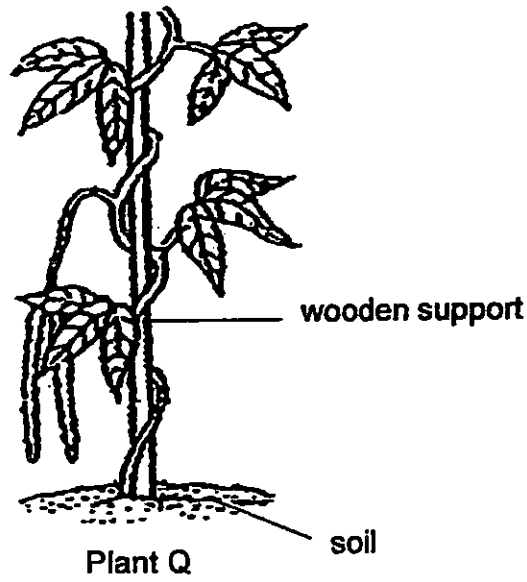
15. The diagram below shows Plant Q



Based on the above observation, which of the following statement(s) about Plant Q is/are correct?

A	Plant Q has a weak stem.
B	Plant Q is a non-flowering plant.
C	Plant Q uses its leaves to cling onto the wooden support to reach for sunlight.

(1) A only
(2) B only
(3) A and C only
(4) B and C only

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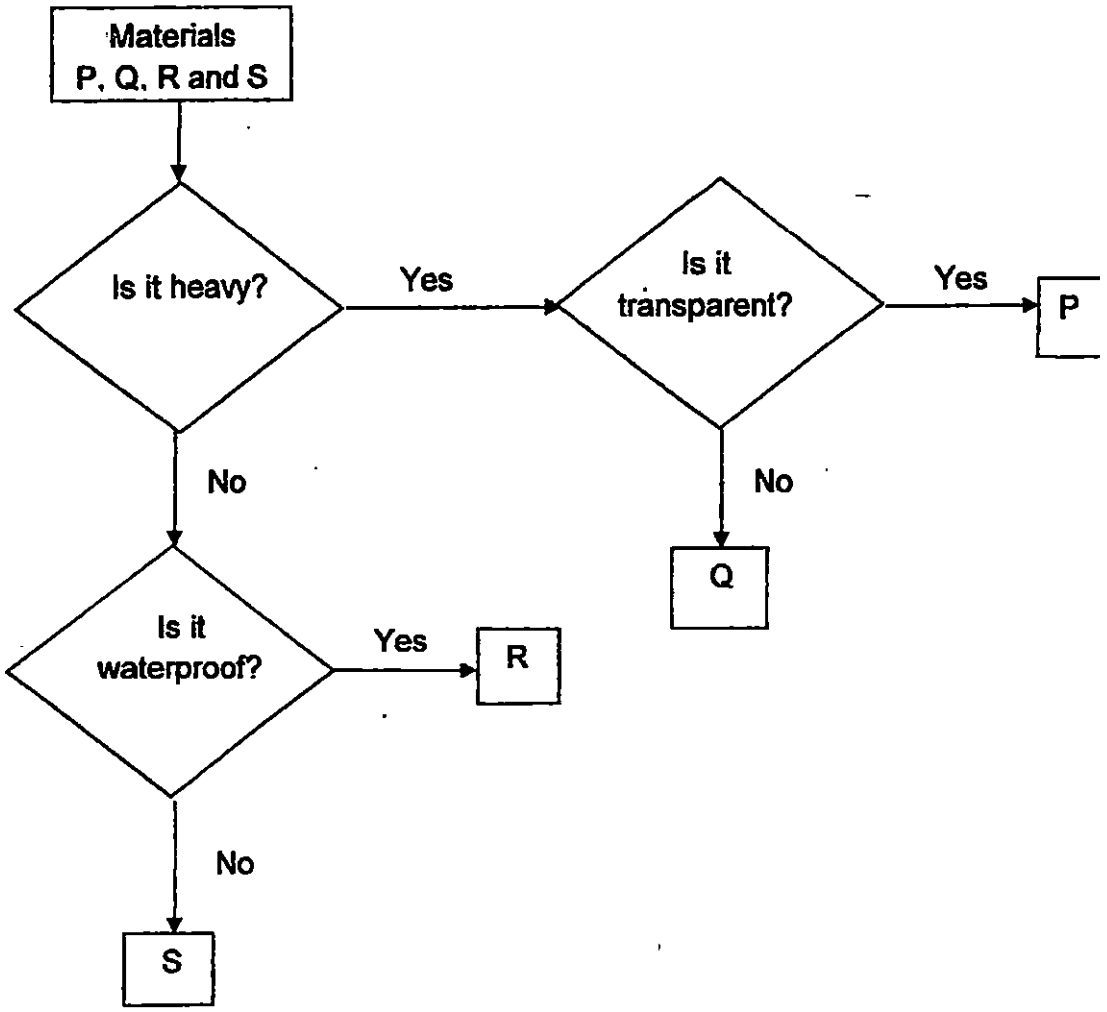
16. The flow chart below shows how 4 materials, P, Q, R and S, are being grouped.



Roy is going for a hike. He wants to wear a pair of boots which is light and keeps his feet dry on rainy days.

Which material is best suited to make his boots?

(1) P

(2) Q

(3) R

(4) S

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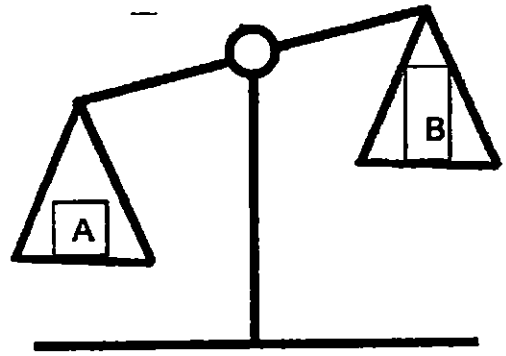
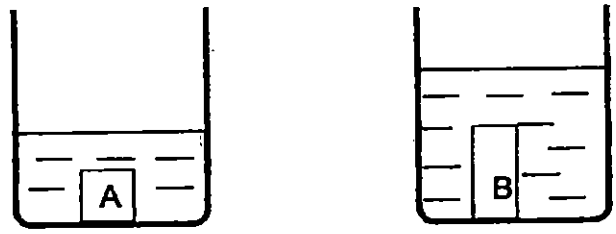
17. Two cubes A and B were placed on a balance as shown below.



Next, the cubes were put into two beakers containing the same amount of water as shown below.



Based on the observations above, which boys made the correct observations:

Andy : Cube A has greater mass than Cube B

Bob : Cube B occupied more space than Cube A

Calvin : The greater the mass of the cube, the greater the amount of space it occupies.

(1) Andy and Bob only
(2) Bob and Calvin only
(3) Andy and Calvin only
(4) Andy, Bob and Calvin

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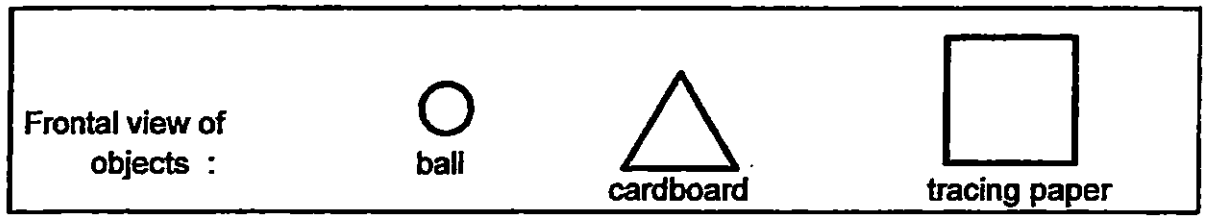
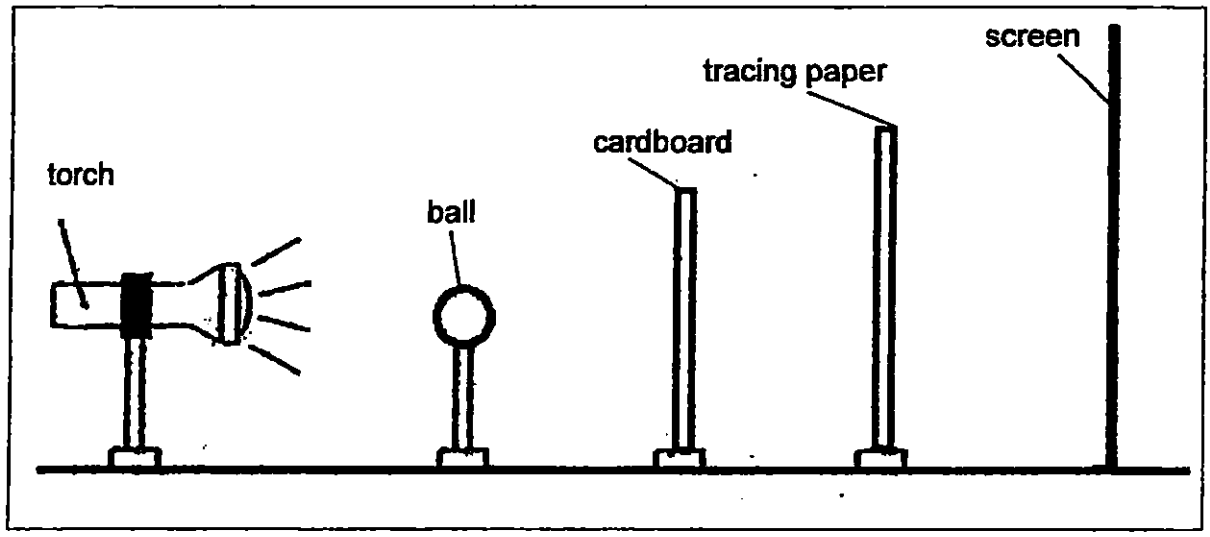
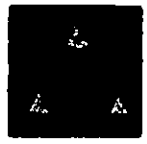
18 Jamie placed a rubber ball, a triangle cardboard and a square tracing paper as shown below between a lighted torch and a screen as shown below.



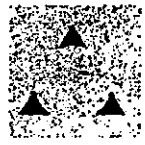


Which one of the following most likely shows the shadow cast on the screen?

(1)

(2) 

(3)

(4) 

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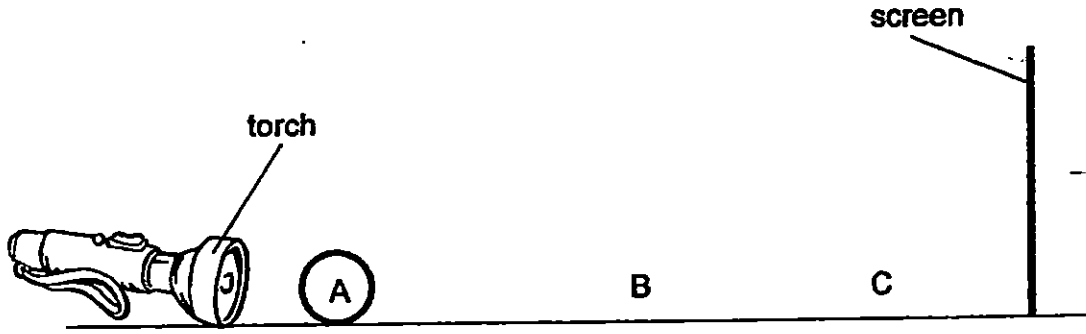
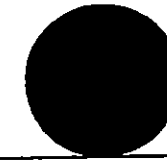
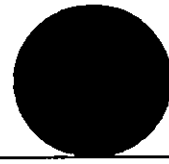
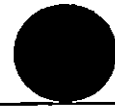
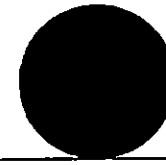
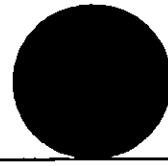
19. A ball was placed on position A as shown below. The torch was then turned on and a shadow was cast on the screen. The ball was then moved to positions B and C.



Which one of the following shows the shadow cast by the ball at the different positions?

	A	B	C
(1)			
(2)			
(3)			
(4)			

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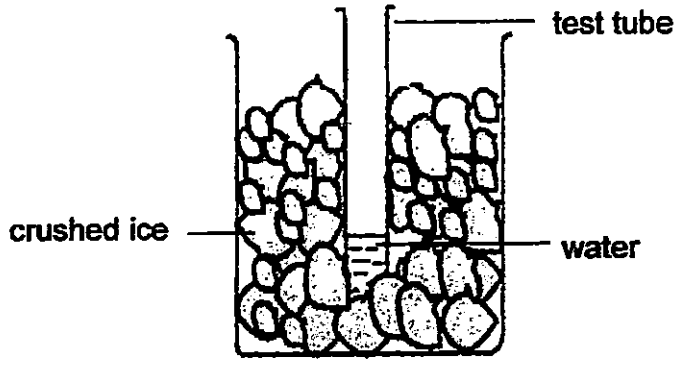
20. Minah put a test tube of water with a temperature of 60 °C in a beaker of crushed ice in the living room as shown below.



Which one of the following did Minah identify correctly?

	water in test tube	crushed ice
(1)	lost heat	lost heat
(2)	lost heat	gained heat
(3)	gained heat	lost heat
(4)	gained heat	gained heat

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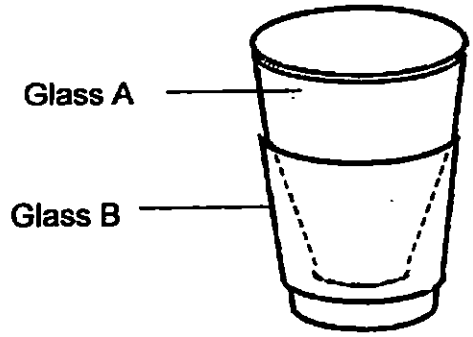
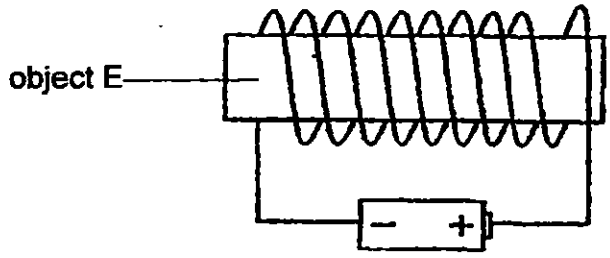
21. The diagram below shows two glasses, A and B, which are stuck together.



Bill tries to separate the two glasses but finds it difficult to do so.
What should Bill do in order to separate the two glasses?

(1) Pour iced water into Glass A and put Glass B in iced water.
(2) Pour iced water into Glass A and put Glass B in warm water.
(3) Pour warm water into Glass A and put Glass B in iced water.
(4) Pour warm water into Glass A and put Glass B in warm water.

22. The diagram below shows an electromagnet.



Which of these object could replace object E to make into an electromagnet?

(1) nickel rod
(2) plastic ruler
(3) rubber eraser
(4) wooden chopstick

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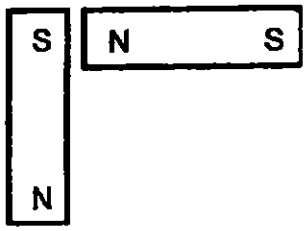
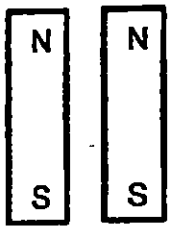
23. In which one of the following will the two magnets push each other away?

(1)

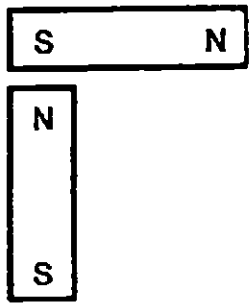
(2)



(3)



(4)



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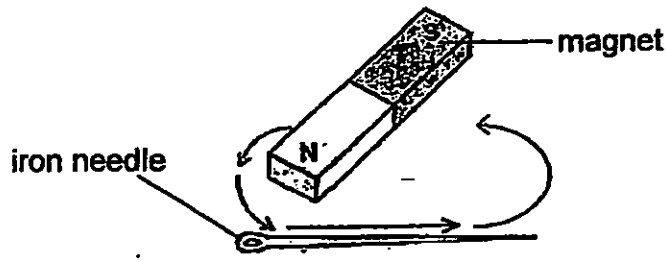
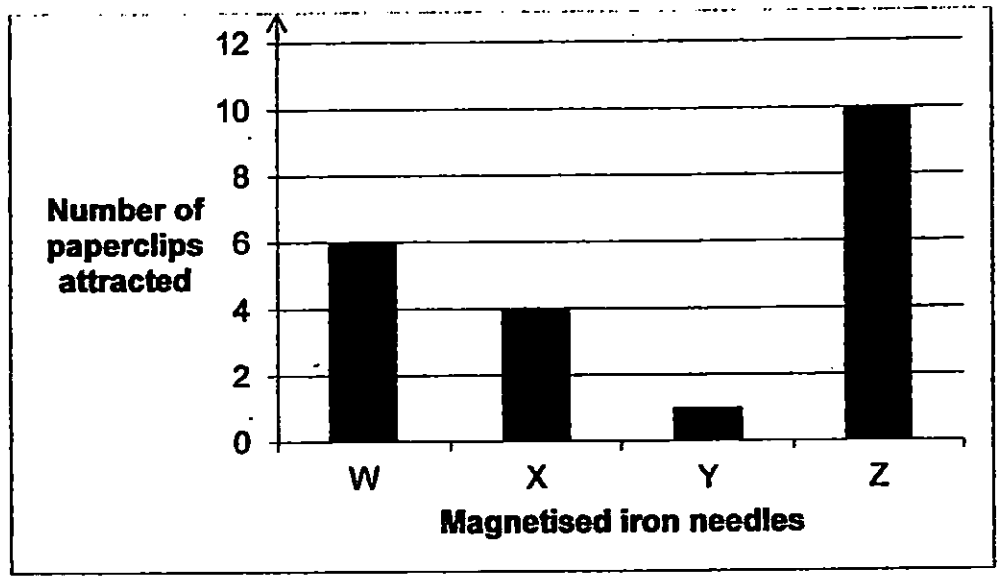
24. Four identical iron needles, W, X, Y and Z, were made into temporary magnets using the stroke method as shown below.



The graph below shows the number of paper clips attracted by each of the magnet.



Which one of the following magnetised iron needles would have been stroked the most number of times?

(1) W
(2) X
(3) Y
(4) Z

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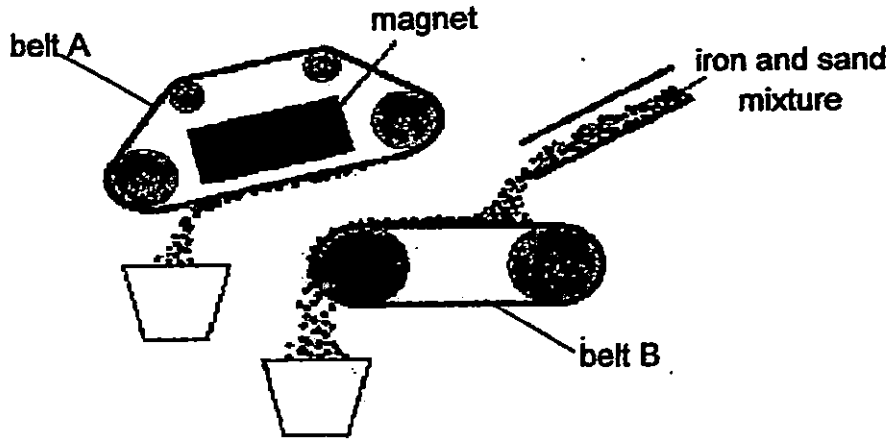
25. The diagram below shows a machine used to separate iron from sand.



Mr Tan bought the machine above to separate iron from sand.
He wanted to separate more mixture in a shorter period of time.
What can Mr Tan do to separate the mixture in a shorter period of time?

(1) Use a bigger magnet.

(2) Move belt A nearer to belt B.

(3) Pour the mixture nearer to belt B.

(4) Move belt B further away from belt A.

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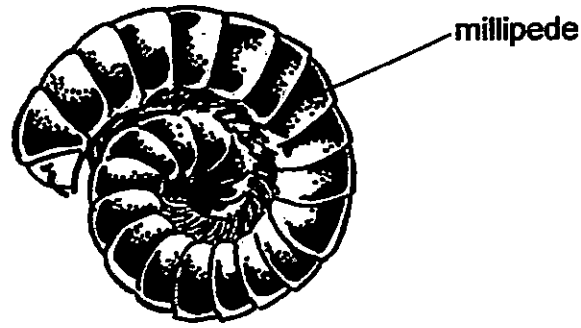
SECTION B (40 marks)

For questions 26 to 39, write your answers clearly in the spaces provided.
The number of marks available is shown in the brackets [ ] at the end of the question or part question.

26.



(a) The millipede needs food, air and _____ to stay alive. [1]

(b) The millipede rolls its body as shown above when touched. [1]

This shows that it can _____

Score	/2

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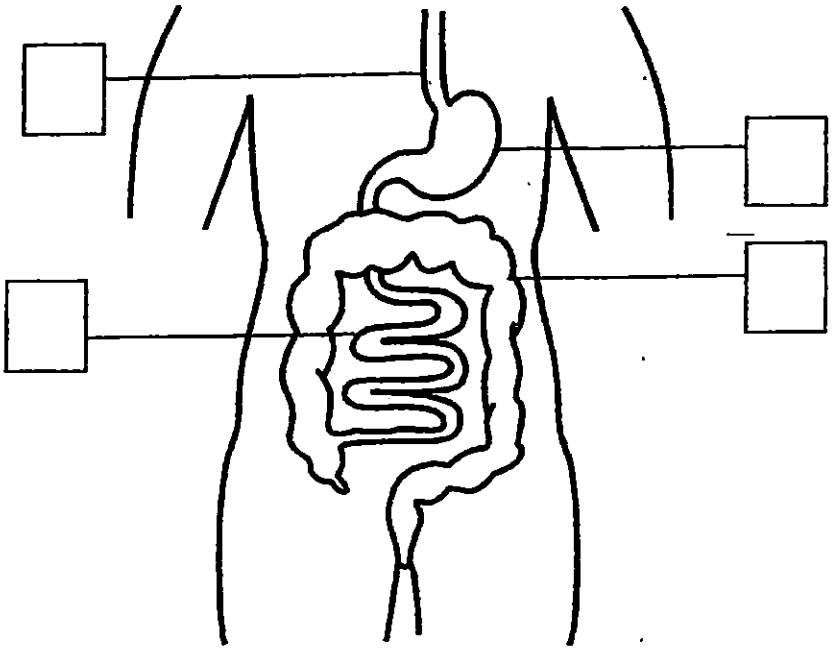
27. (a) The diagram shows part of the human digestive system. [1]
Tick (√) one box to show where the stomach is.



[1]

(b) Fill in the blank using the following helping words.

large intestine	gullet	small intestine	mouth

Food from the stomach is next passed on to the _____

Score	/ 2

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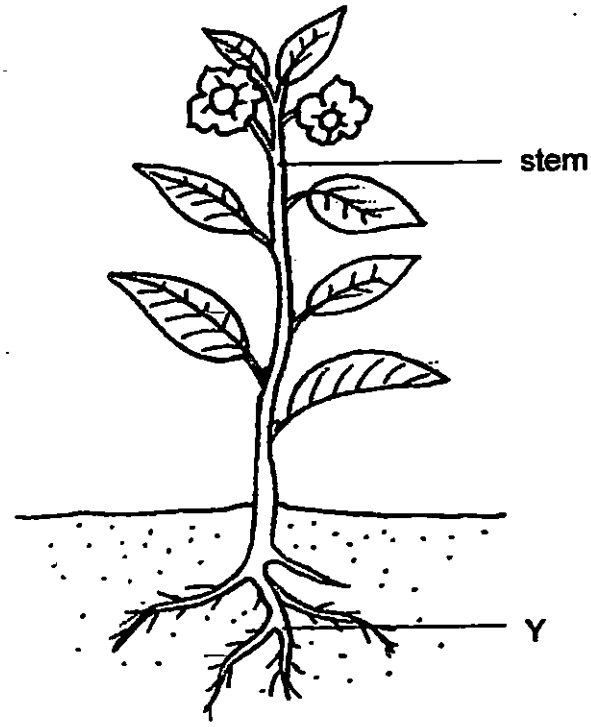
28. The diagram below shows a plant.



(a) (i) Name plant part Y. [1]

Y : _____

(ii) One substance that the stem of plant transports from the leaves to the other parts of the plant is _____ [1]

Continue on Pg 24

Score	/ 2

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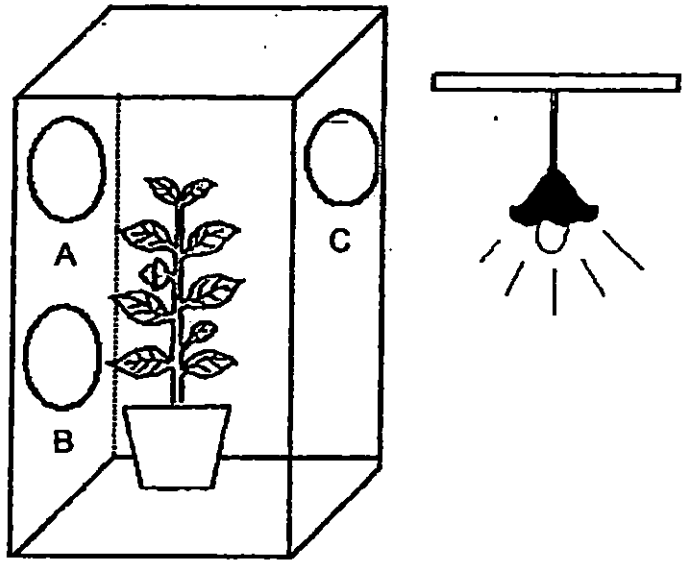
28. (b) Three holes were cut out from a thick cardboard box and a potted plant was placed in it. The box was placed in a dark room. A lamp was lit as shown in the diagram below.



(i) The plant was watered every day. After one week, which one of the holes, A, B or C, would the plant most likely grow towards? Explain your answer clearly. [1]

_____

_____

_____

Score	/ 1

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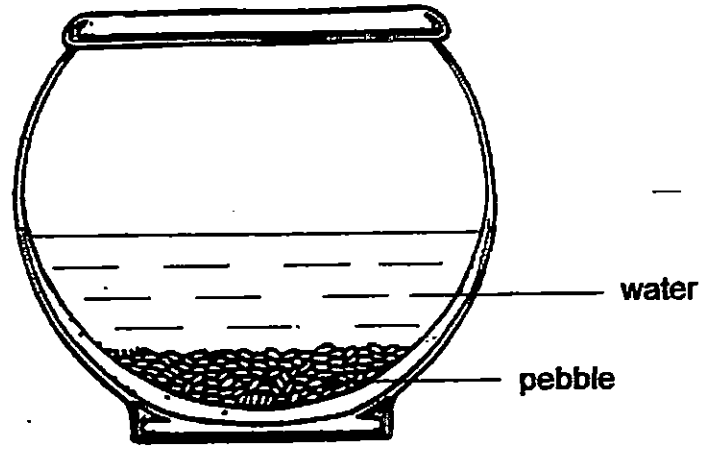
29. The diagram below shows a tank with some water and pebbles.



Complete the sentences to state if the parts are solid, liquid or gas.

(a) The pebble is a _____ [1]

(b) Water is a _____ [1]

Score	/ 2

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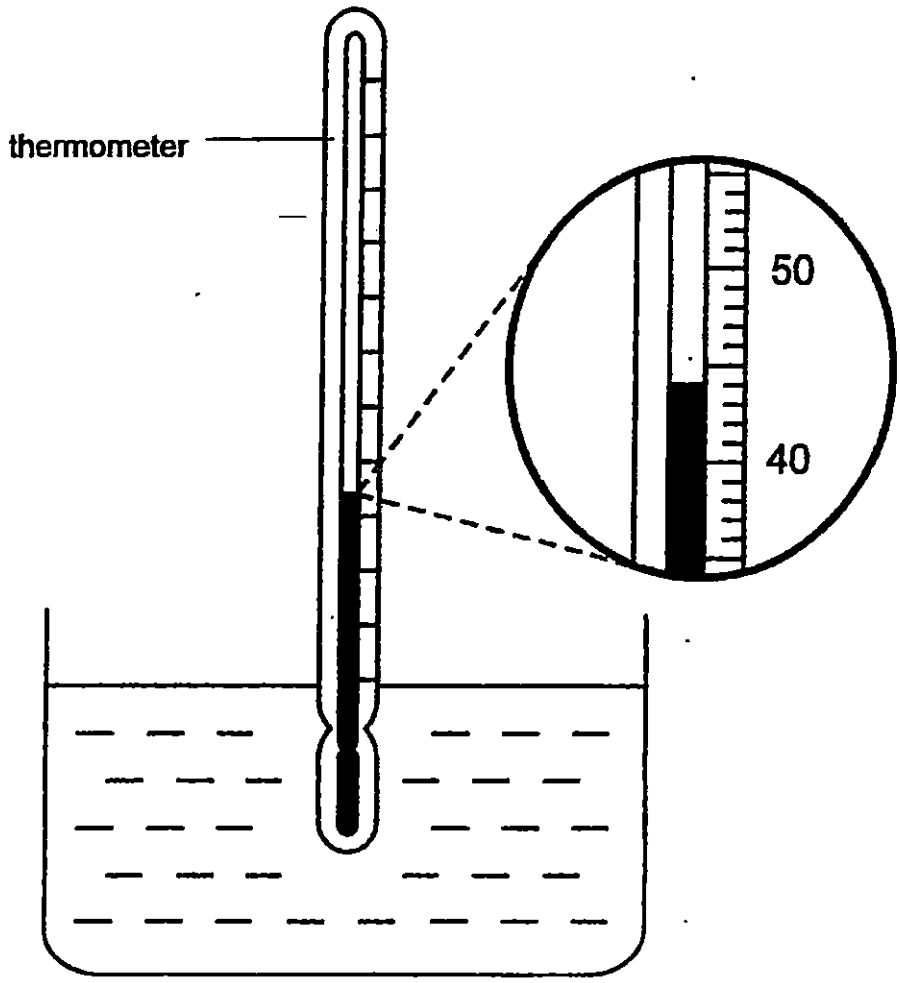
30. Jane placed a thermometer in a beaker of water.



(a) The thermometer is used to measure the _____ of water. [1]

(b) What is the temperature of the water in the glass? [1]

_____ °C

Score	/ 2

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1. Ann planted a seed and measured the mass of the seed leaf over a period of 8 days. She recorded her findings in the table below.

Day	Mass of seed leaf (g)	Height of seedling (cm)
0	2	0
2	1.7	1
3	1.4	1.5
6		4
8	0.5	5.8

(a) Name all the conditions needed for a seed to germinate. [1]

_____

(b) In the table above, write the mass of the seed leaf likely to be observed on Day 6. [1]

(c) Based on the Ann's findings, what can she conclude about the mass of the seed leaf in relation to the height of the seedling? [1]

_____

_____

(d) The diagram below shows an egg. Name and label the part of the egg that has a similar function to the seed leaf. [1]

Score	/ 4

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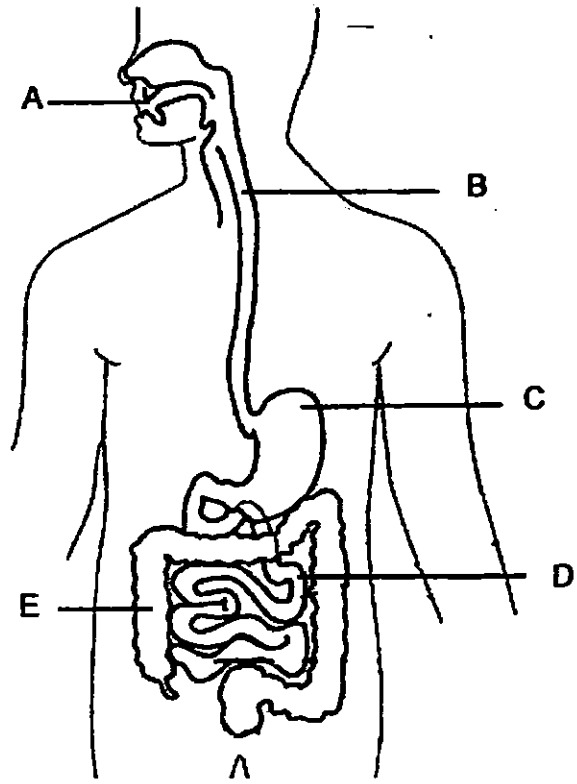

(a) In which part, A, B, C, D or E of the digestive system does digestion first begin? [1]

_____

(b) What is the substance found in the part mentioned in (a) that helps to break down the food in the first stage of digestion? [1]

_____

Score	/ 2

Continue on Pg 29

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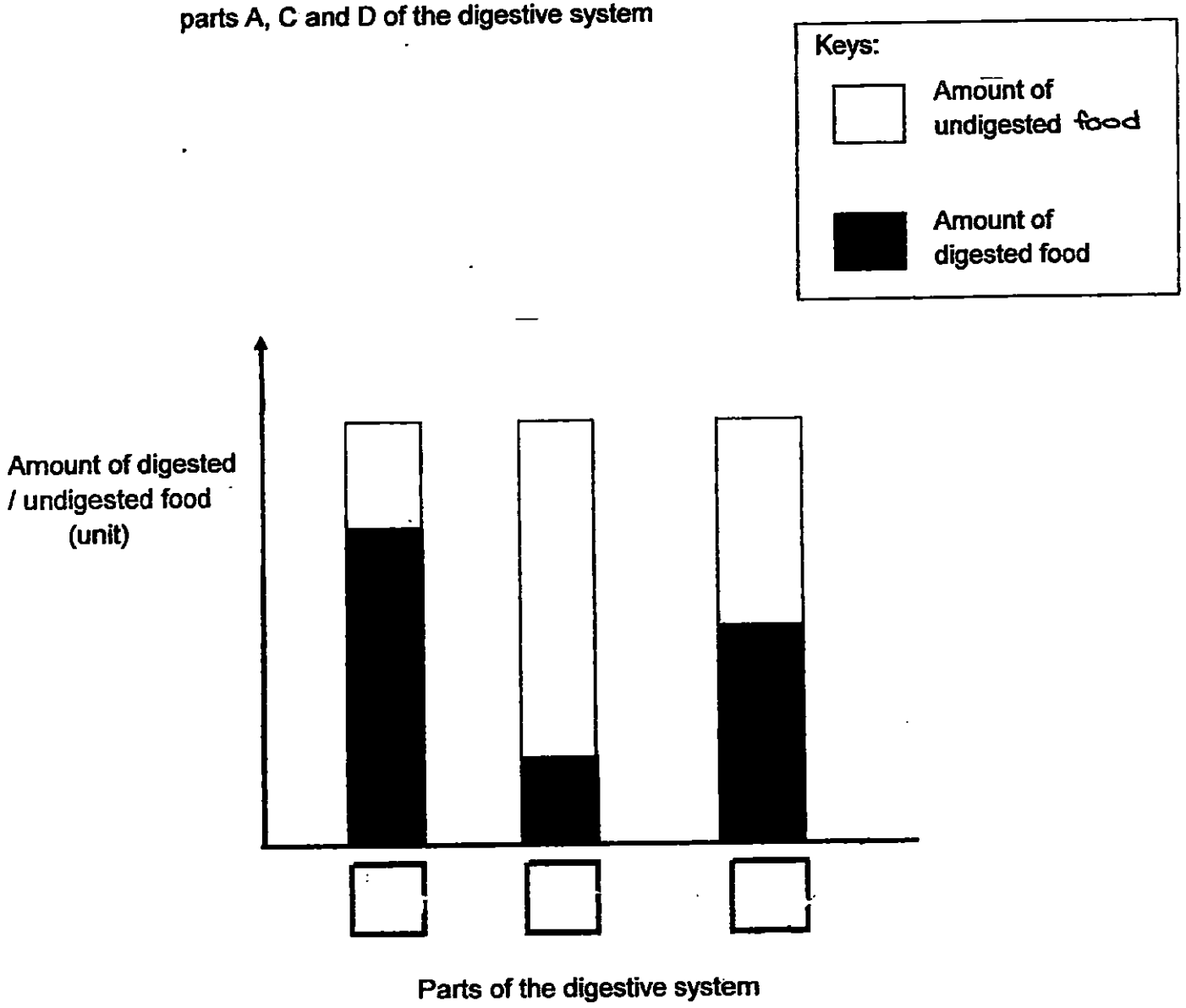
Continue from Pg 28

(c) The graph below shows the amount of digested and undigested food in the parts A, C and D of the digestive system



Write the letters, A, C and D in the respective boxes above. [1]

Score	/ 1

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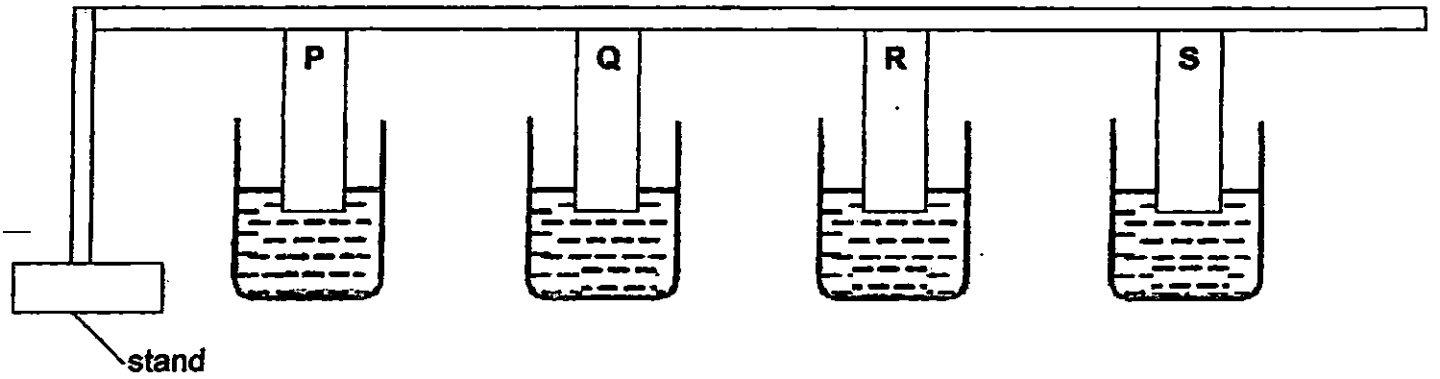
33. Linda wanted to find out how absorbent the four different strips of material, P, Q, R and S, were. She dipped the strips into four beakers each containing 300ml of water as shown below.



Linda left the beakers on the table in the living room. After half an hour, Linda removed the strips and the amount of water left in each beaker was recorded in the table below.

Materials	P	Q	R	S
Amount of water left in the container (ml)	230	125	280	170

(a) Based on the readings above, arrange the strips in order, starting with the strip which is the most absorbent. [1]

most absorbent → least absorbent

(b) Which material is most suited to make a bath towel? Explain your answer clearly. [1]

_____

_____

Score	/ 2

Continue on Pg 31

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Continue from Pg 30

(c) Tick (√) the variable(s) which must be kept the same to ensure that the experiment conducted is a fair test. [2]

	Variables	Tick (√)
(i)	Amount of water in each beaker	
(ii)	Location where the beakers are placed	
(iii)	Materials used to make the four strips of material	
(iv)	Duration for the water to be absorbed by each strip of material	

Score	/ 2

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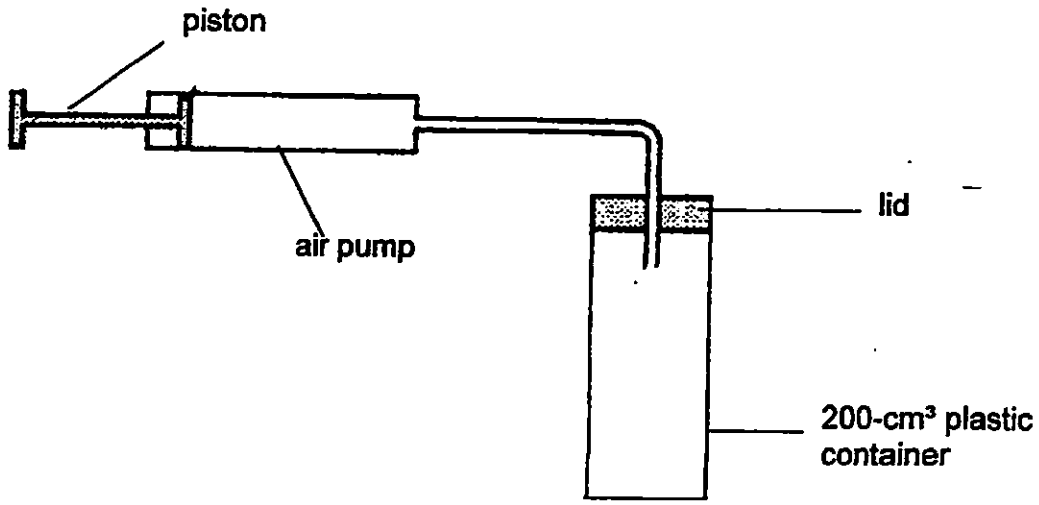
34 Gary attached an air pump into a 200-cm³ plastic container as shown below.



(a) Gary pumped in another 100 cm³ of air into the plastic container. What is the volume of air in the container now? Explain your answer clearly. [2]

_____

_____

(b) Gary filled the plastic container with 200cm³ of water Then he tried to pump in 100 cm³ of air into the plastic container. Would he be able to do so? Explain your answer clearly. [1]

_____

_____

_____

Score	/ 3

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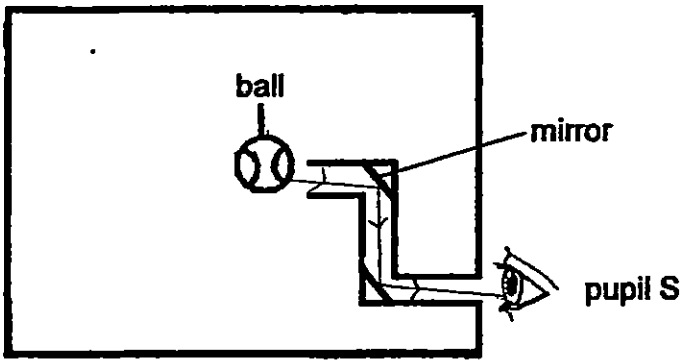
35. A ball was placed in the middle of a metal box with tubes. Two mirrors were also placed at the corners of the tube as shown below.



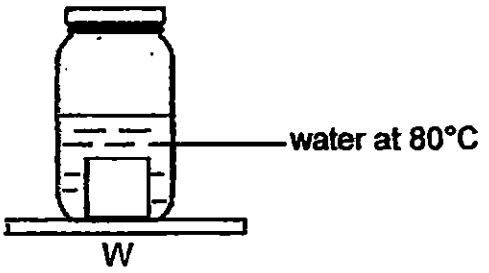
(a) **In the diagram above, draw** the direction of the path of light with lines and arrows to show how pupil S is able to see the ball. [1]

(b) Explain how the mirrors helped pupil S to see the ball. [2]

_____

_____

36. Ali filled a jar with some water with a temperature of 80°C and placed an ice cube into it as shown in the diagram below.



(a) What will be the temperature of the water after 2 minutes? Tick (√) the correct box. [1]

Temperature of water	Tick(√)
more than 80°C	
80°C	
less than 80°C	

Score	/ 4

Continue on Pg 34

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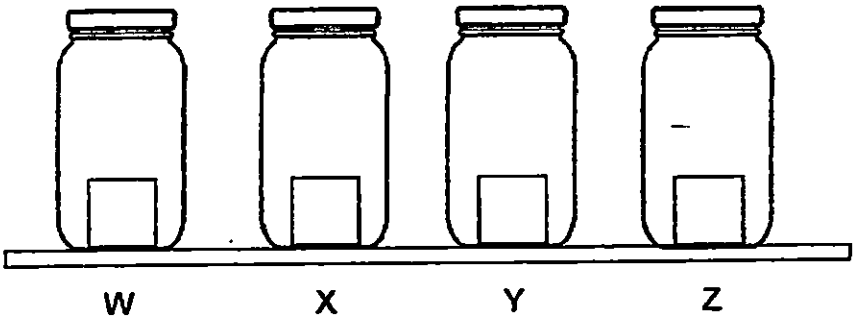
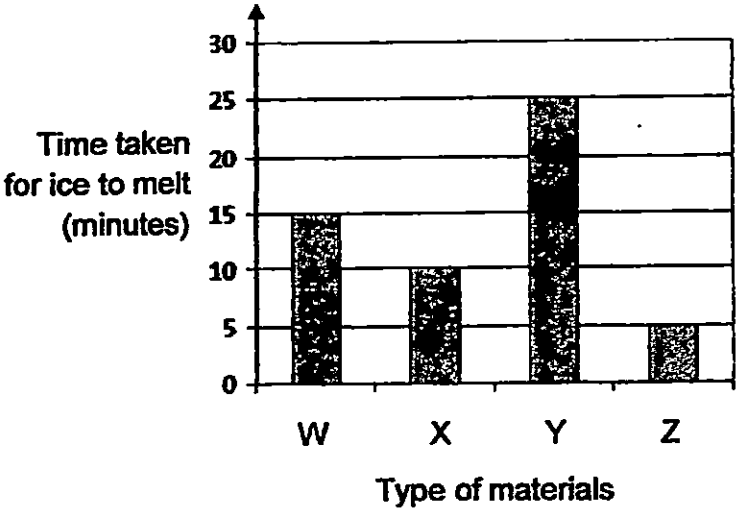
Ali placed 4 similar ice cubes in four jars, W, X, Y and Z. The jars are of similar thickness and size but made of different materials. He left the jars on a table in a living room with a constant room temperature as shown below.



Ali recorded the time taken for the ice to melt completely and plotted the readings in the graph below.



(b) Which material is most suitable to make into an ice cream container so that the ice cream will not melt so quickly? Explain your answer clearly. [2]

_____

_____

Score	/ 2

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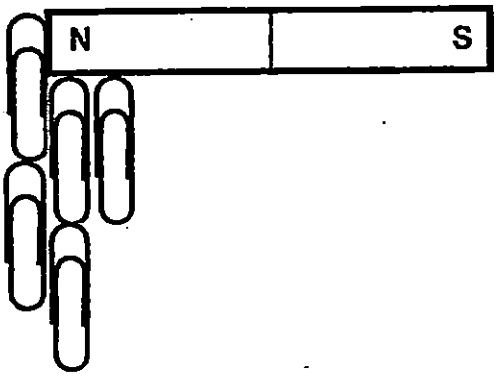
37. John placed a magnet 30cm above a tray of paper clips and it was observed that 5 paper clips were attracted to the magnet as shown in the diagram below.



He repeated the experiment by heating the N-pole of the same magnet for 5 minutes and then placed it 30 cm above a tray of paper clips. After that, he observed the number of paper clips attracted to magnet P.

Would John observe more than 5, less than 5 or same number of paper clips attracted to magnet P? Explain your answer clearly. [2]

Score	/ 2

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38. Four bars, A, B, C and D were brought close to each other to see how they interacted with one another. The table below shows the interactions between the rods.

Rods	Observation
A B	Move towards each other
A D	Move away from each other
C B	No reaction
C D	No reaction

(a) Which of the rod(s) is/are definitely magnet(s)? Explain your answer clearly. [2]

_____

_____

_____

(b) If rod C was made of silver, what would you observe when A and C are brought near each other? [1]

_____

_____

Score	/ 3

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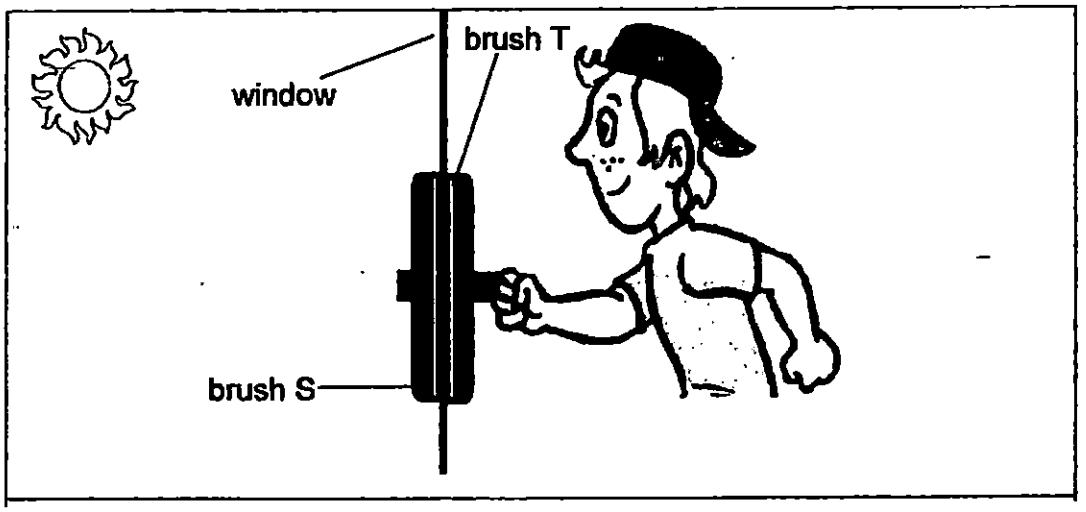
39 The diagram below shows a magnetic window cleaner.



The magnetic window cleaner consists of two brushes, S and T, with a magnet attached to each of them, which can be used to clean both sides of a window at the same time. When brush T is moved, brush S would move in the same direction as brush T.

(a) Explain clearly why was brush S able to stay on the window instead of falling off? [2]

_____

_____

(b) Jack tried to clean his steel cupboard door using the cleaner above. He placed brush T on the outside of the steel cupboard and brush S on the inside. When Jack moved brush T, he noticed that brush S did not move.

Explain why brush S did not move with brush T. [2]

_____

_____

_____

Score	/ 4

-End Of Paper-

2015 P4 Science SA2

Setters: Mdm Lim See Peng, Ms Kandoth Shaheena

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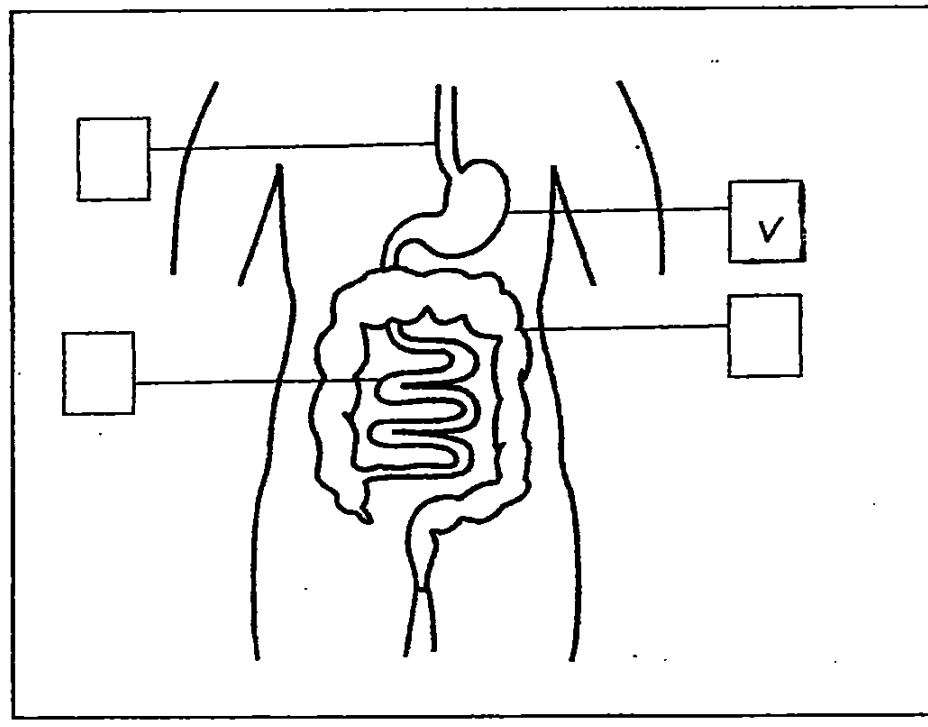
EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : RAFFLES GIRLS' PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	3	2	4	3	3	2	2	3	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	2	2	1	1	3	1	3	2	2
Q21	Q22	Q23	Q24	Q25					
2	1	3	4	2					

Q26a. Water Q26b. respond to changes around it.

Q27a. SEE PICTURE Q27b. small intestine



Q28ai) Y: roots Q28aii) food

Q28bi) Hole C. As the plant is a living thing, it responds to changes around it. As the light source is outside the hole C, it will grow toward the light source as it needs to make food through the process called photosynthesis.

Q29a. solid Q29b. liquid

Q30a. temperature Q30b. 44°C

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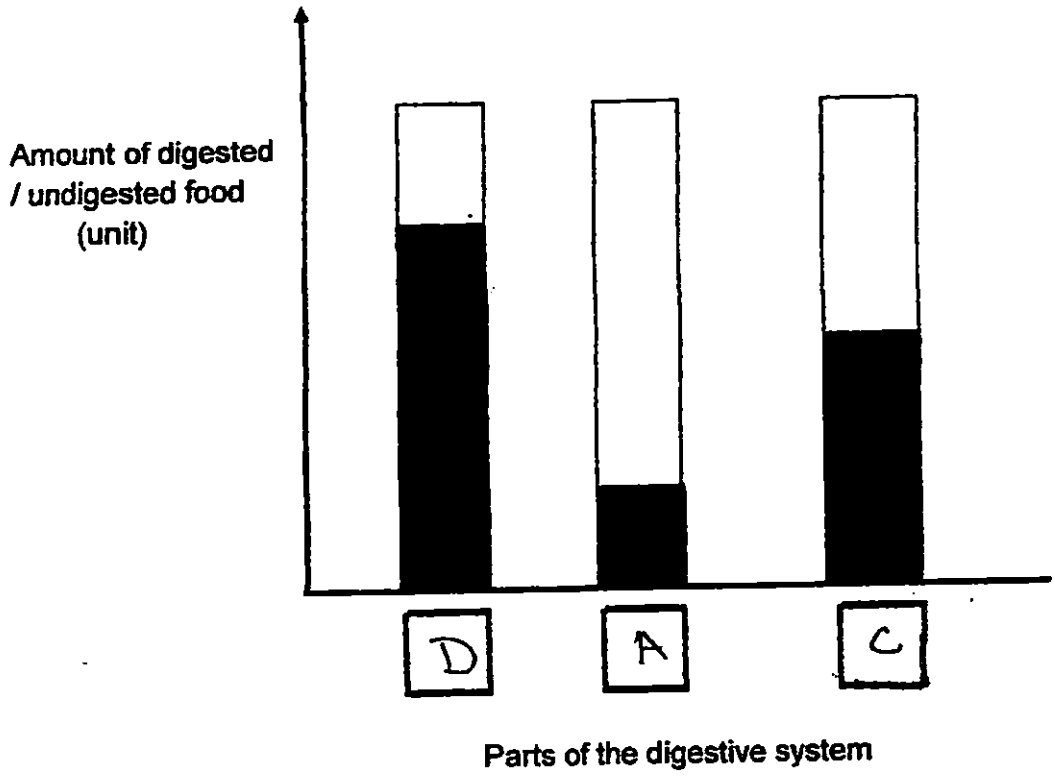
Q31b. 1.0 Q31c. The more the height of the seedling, the lesser the mass of the seed leaf.

Q31d. **SEE PICTURE**

Q32a. Part A Q32b. Saliva found in part A helps to break down the food in the first stage of digestion.

Q32c. **SEE PICTURE**



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Q33a. Q (most absorbent) → S → P → R

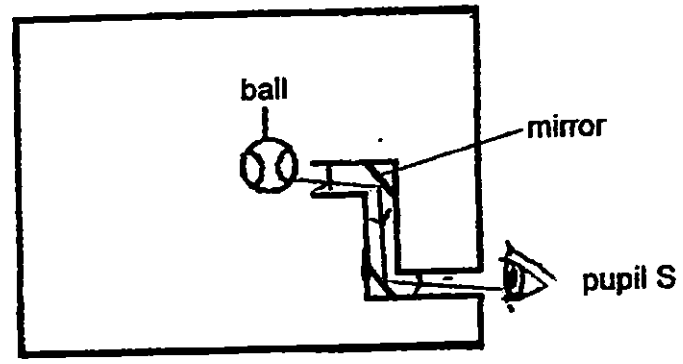
Q33b. Q. It is the most absorbent material and will soak up most amount of water on the body when compared to S,P and R.

Q33c. Tick on i) , ii) and iv)

Q34a. 200cm³. Air has no definite volume and can be compressed.

Q34b. No. Water cannot be compressed so the 100cm³ of air will not be able to be pump back in.

Q35a. **SEE PICTURE**



Q35b. Light from the ball travels in straight line and can be reflected, so it will be reflected by the mirror and into pupils' eyes.

Q36a. Less than 80°c

Q36b. Y is the poorest conductor of heat and will reduce most heat gain by the ice-cream.

Q37. He would observe that less than 5 paper clips were attracted to the magnet as heating a magnet makes a magnet lose some of its magnetism.

Q38a. A&D. Only magnets can repel, like poles of A and D are facing each other an they repelled each other.

Q38b. There will be no reaction.

Q39a. The magnet attracted to T attracts the magnet attached to S, so instead of falling of when T is moved, it moves together as the magnets attract and magnetism can pass through non-magnetic materials, like glass.

Q39b. Steel is a magnetic material. When the magnet of S attracts the steel, it no longer has any contact with Magnet T and magnetism cannpt pass through magnetic material.

THE END

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RED SWASTIKA SCHOOL

2015 SEMESTRAL ASSESSMENT 2
SCIENCE
PRIMARY 4

Name : _____ ( )

Class : Primary 4/ _____

Date : 2 November 2015

BOOKLET A

Total time for Booklets A & B: 1h 30 min

Booklet A: 30 questions (60 marks)

Note:

1. Do not open the booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the booklet.
3. Do not waste time. If the question is too difficult for you, go on to the next question.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
   a. Page 1 to Page 22
   b. Questions 1 to 30

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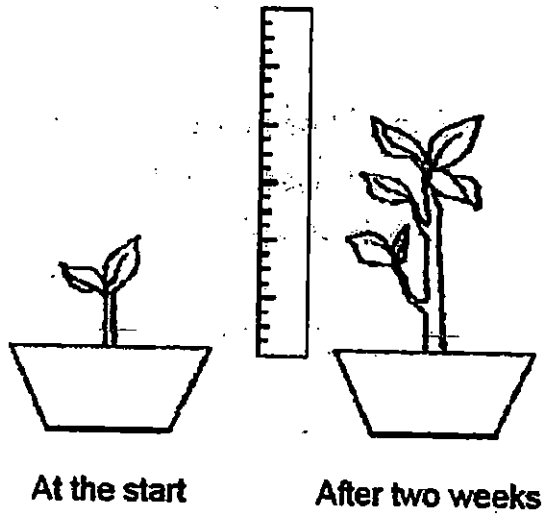
Section A

For Questions 1 to 30, choose the most suitable answer and shade its number in the OAS provided.

1. Marie found a pot of plant in the garden and measured its height. After two weeks, she measured its height again.



From her observation, Marie concluded that the plant is a living thing because it can _____.

(1) die
(2) grow
(3) reproduce
(4) respond

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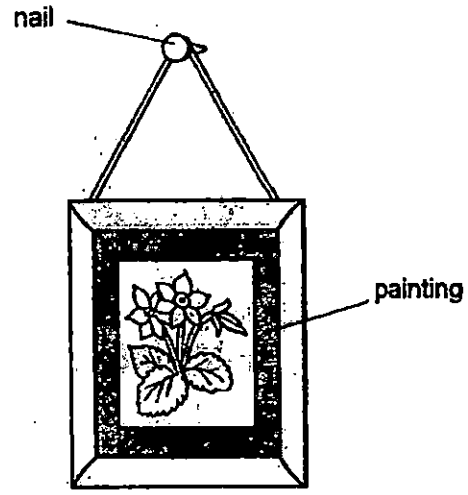
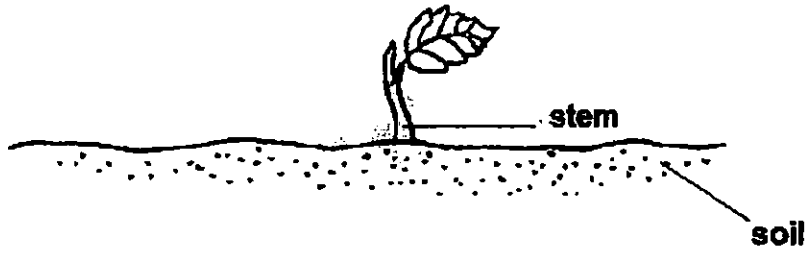
2. The diagram shows a painting hanging on a wall.



Steel is used to make nails because steel _____.

(1) is a magnetic material
(2) is strong
(3) is shiny
(4) sinks in water

3. The diagram below shows a young plant.



The stem helps the plant to _____.

(1) absorb nutrient
(2) absorb water
(3) grow upright
(4) make food

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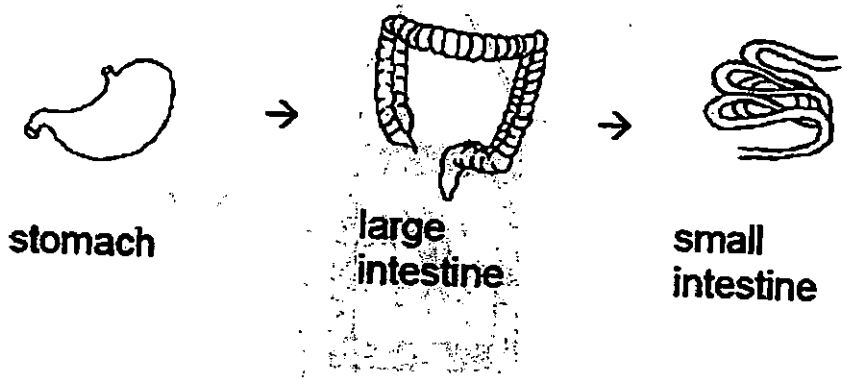
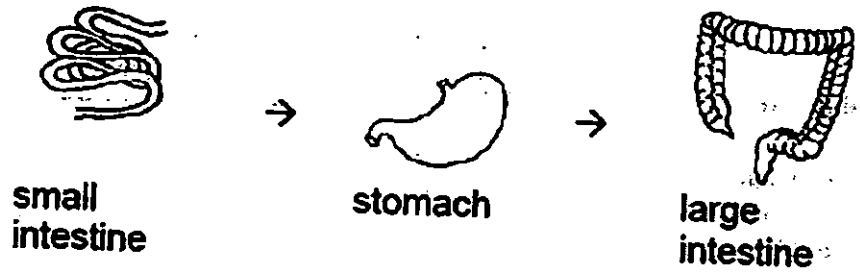
4. Which one of the following shows the correct order when food moves through some parts of the digestive system?

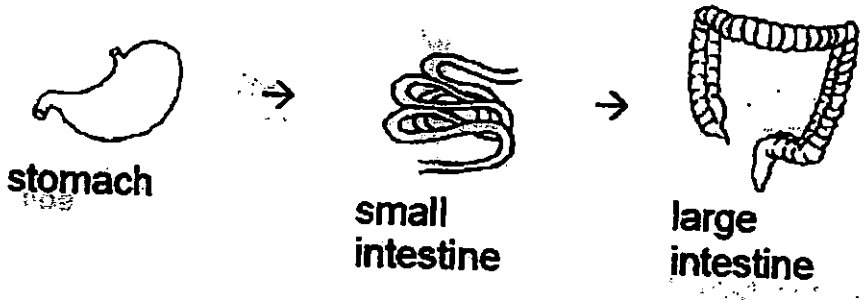
(1)



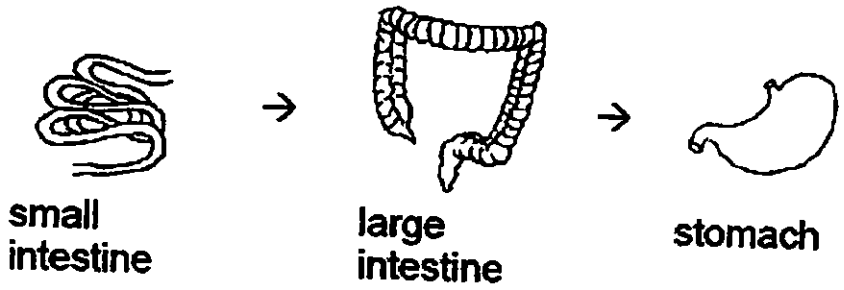
(2)



(3)



(4)



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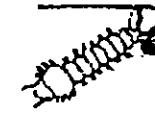
5. **A, B, C** and **D** are the various stages in the life cycle of a mosquito.

A

B

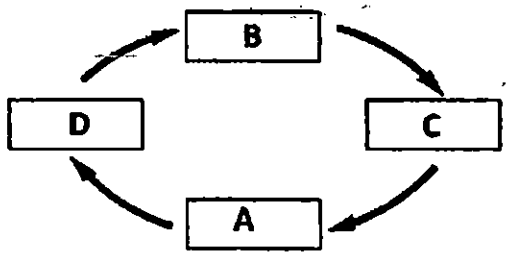
C



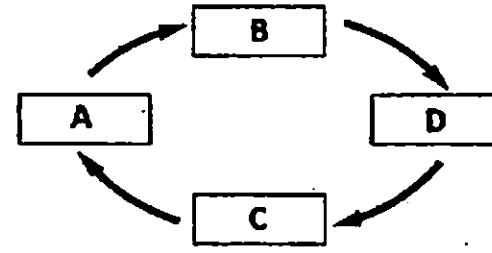
D

Which of the following correctly shows the life cycle of a mosquito?

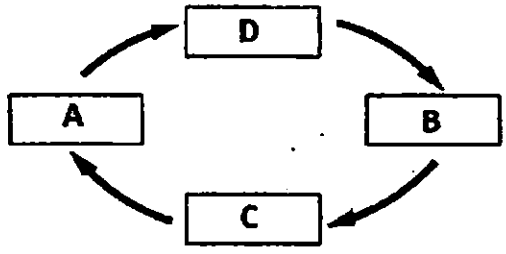
(1)



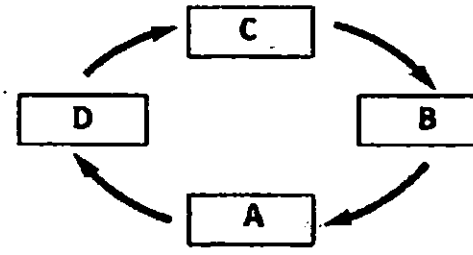
(2)



(3)



(4)



6. Which animal has a larva as a stage in its life cycle?

(1) frog

(2) beetle

(3) chicken

(4) cockroach

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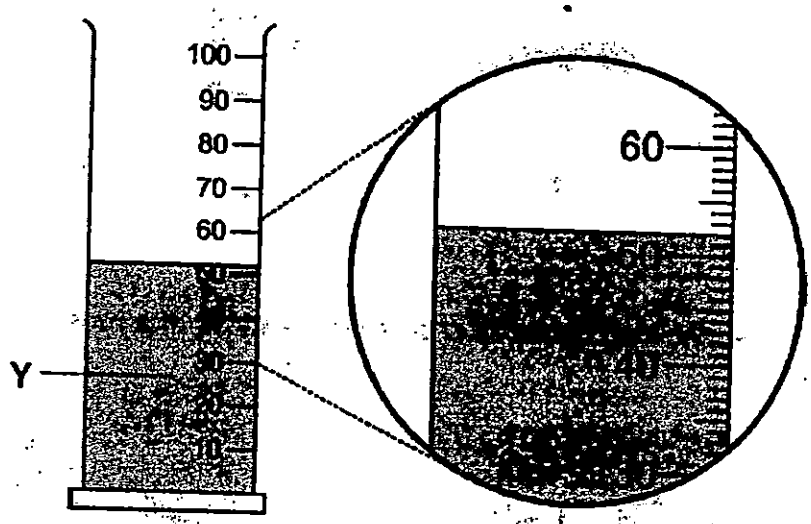
7. In the diagram, what is the volume of liquid Y?



(1) 50 ml

(2) 52 ml

(3) 62 ml

(4) 68 ml

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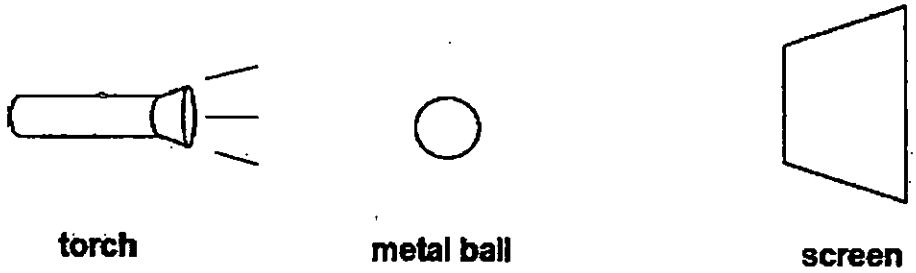
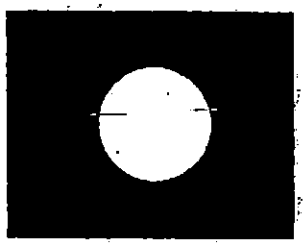
8. The set-up below shows light shining on a metal ball.



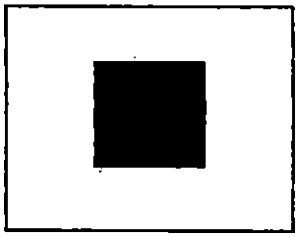
Which one of the following would likely be seen on the screen?

(1)

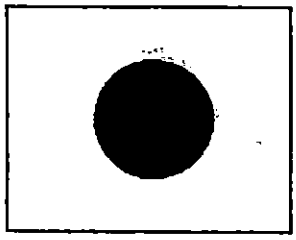
(2)



(3)



(4)



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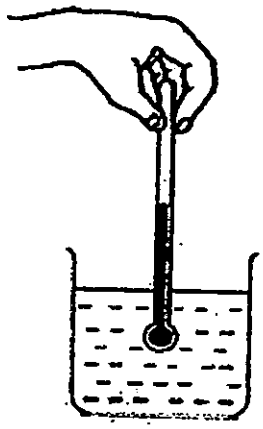
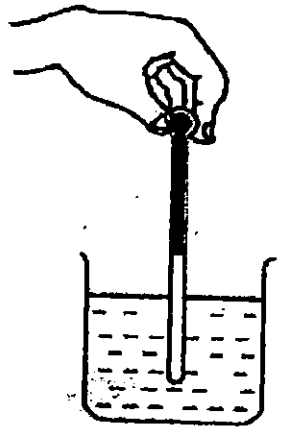
9. Amanda wants to measure the temperature of water in a beaker. Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

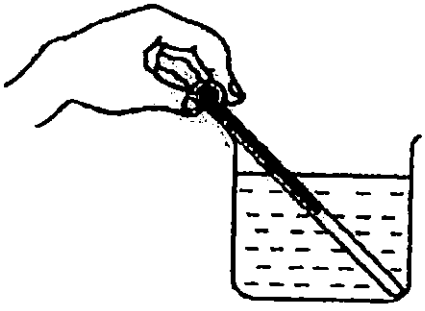
(1)



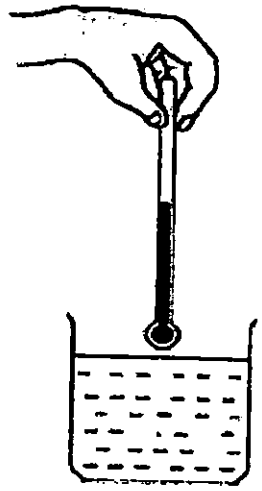
(2)



(3)



(4)



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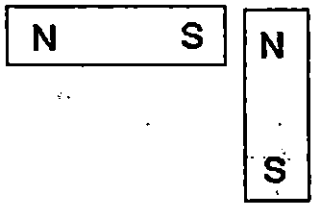
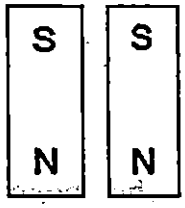
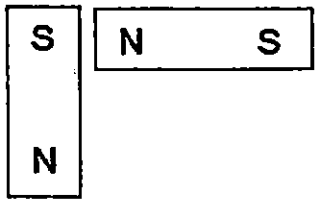
10. In which one of the following will the two magnets repel?

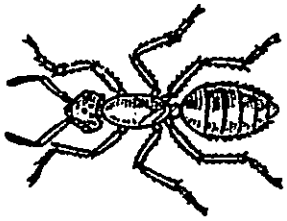
(1)

(2) 

(3) 

(4) 

11. Study the diagram shown.



Which of the following statements about the animal is false?

(1) The animal can fly.

(2) The animal has a hard outer covering.

(3) The animal has more legs than a dog.

(4) The animal has three body parts.

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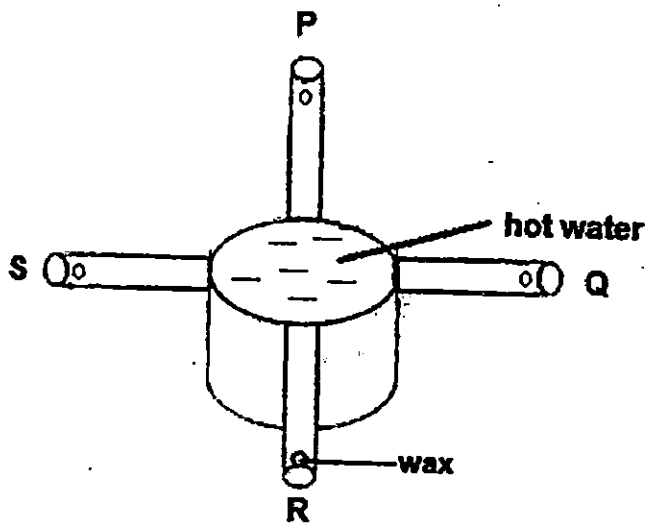
12. Aileen wanted to investigate if the material of a rod affects how fast heat is conducted through it. She had a container of hot water with different rods, P, Q, R and S attached to it. Each rod had a piece of wax placed at its end.



Rod	Material	Length (cm)	Thickness (cm)
P	Copper	7	0.7
Q	Iron	5	0.7
R	Glass	7	0.7
S	Copper	5	0.2

Which of the following rods should be compared to ensure a fair test?

(1) P and R

(2) P and Q

(3) Q and S

(4) R and S

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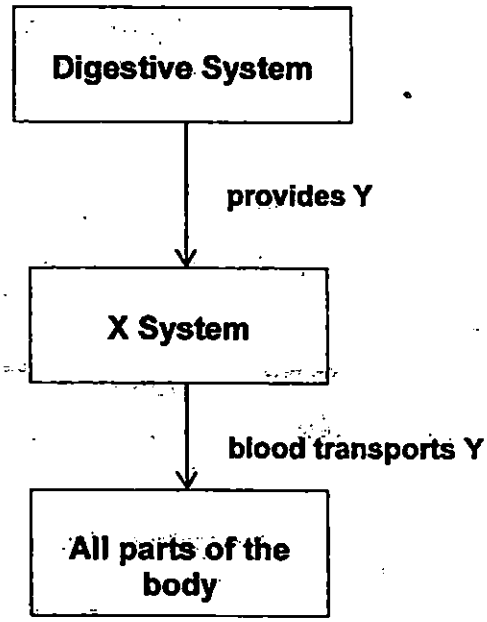
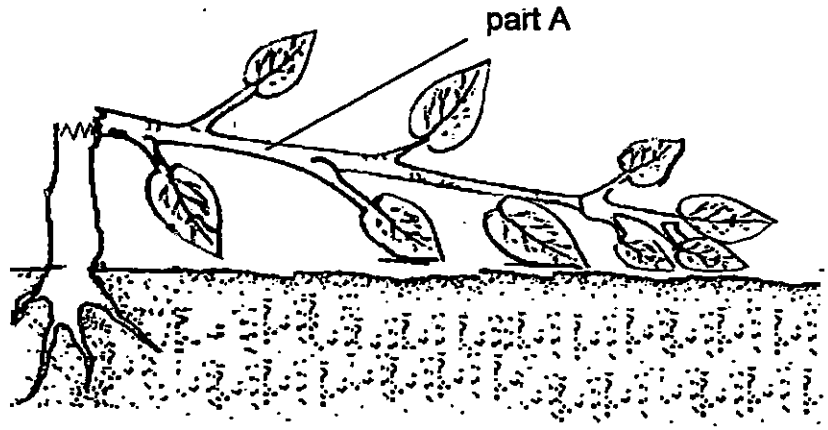
13. The flow chart shows how two human systems work together.



Which of the following best represents X and Y?

	X	Y
(1)	Circulatory	Undigested food
(2)	Muscular	Digested food
(3)	Circulatory	Digested food
(4)	Skeletal	Undigested food

14. Look at the diagram below.



Part A of the plant died after a week because the _____.

(1) roots cannot take in water
(2) leaves cannot trap sunlight to make food
(3) roots cannot hold the plant firmly in the soil
(4) stem cannot transport water from the roots to the upper part of the plant

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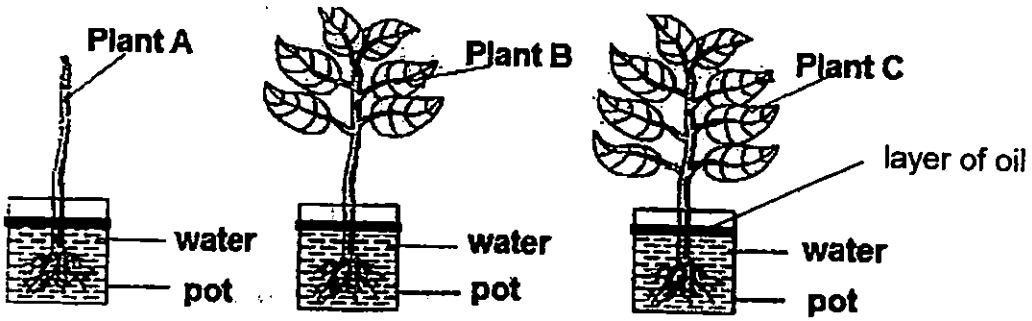
15. Ismail selected three similar plants, A, B and C, for his experiment. He trimmed off all the leaves from plant A and some leaves from plant B. No leaves were trimmed from plant C. Then he placed each plant in a pot containing an equal volume of water. The plants were placed at the same location.



After ten hours, he recorded the volume of water in each pot.

Plant	Volume of water in the pot (ml)
A	500
B	300
C	200

What was the aim of the experiment?

(1) To investigate if the roots of a plant absorb water.

(2) To investigate if the stem of a plant transports water.

(3) To investigate if the leaves of a plant need light to make food.

(4) To investigate if the number of leaves affect the volume of water taken in.

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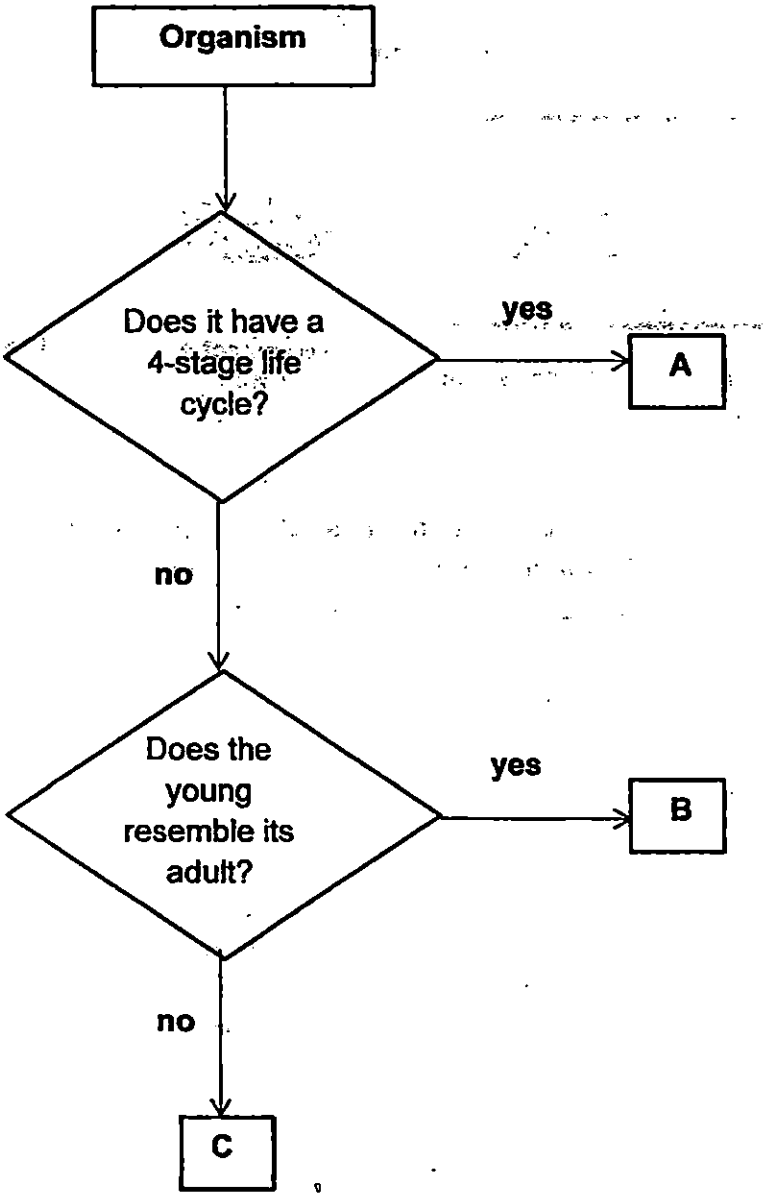
16. Study the flow chart below.



Which of the following is correct?

	A	B	C
(1)	butterfly	cockroach	grasshopper
(2)	mosquito	chicken	bear
(3)	mealworm beetle	dog	frog
(4)	cockroach	chicken	mosquito

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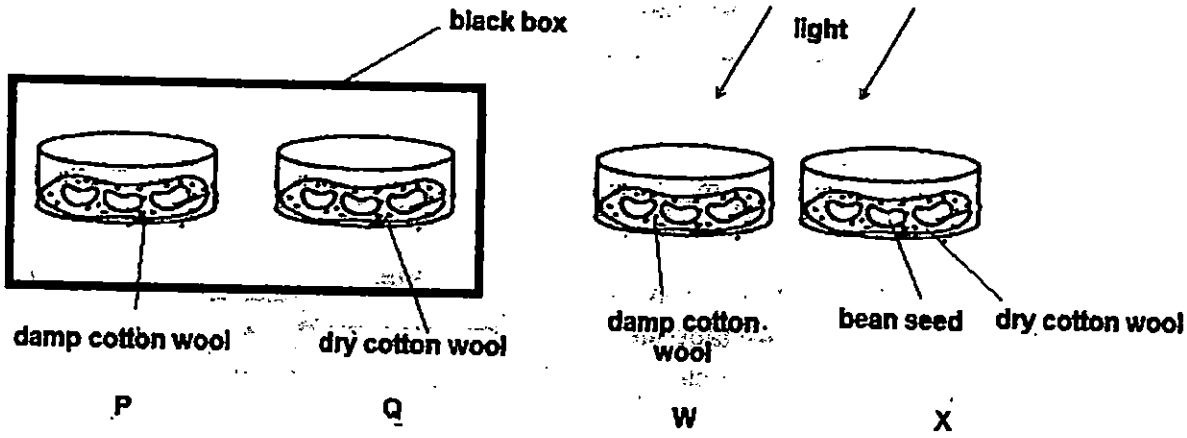
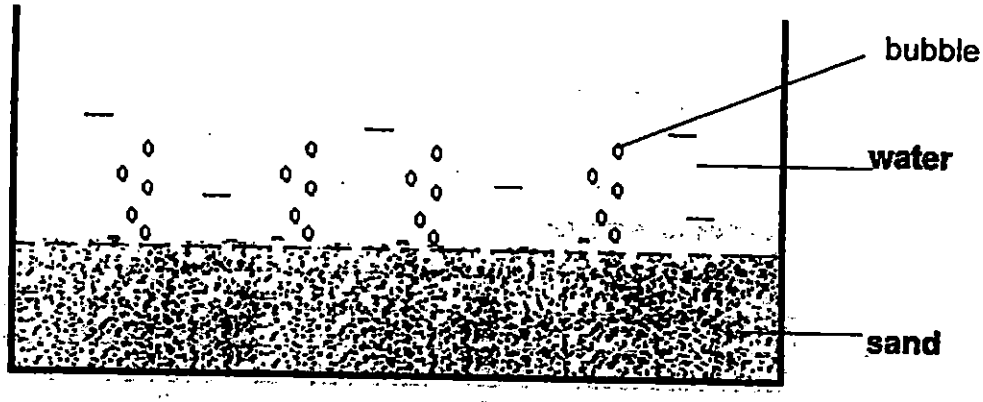
17. Study the set-ups shown below.



Each container contains three bean seeds placed on the same amount of cotton wool. Joshua wants to find out if light is needed for germination to take place. Which two set-ups are most suitable for the fair test?

(1) P and W
(2) Q and W
(3) P and Q
(4) W and X

18. When water is gently poured into the container of sand, bubbles are seen appearing from the sand and moving upwards as shown. The outer surface of the container remained dry. At the end of 30 seconds, the water level is lower than at the start of the experiment. Why is this so?



(1) The container is leaking.
(2) Some water has been compressed.
(3) The air bubbles in the water increased in volume.
(4) The water takes up the space occupied by the air trapped in the sand.

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19. Belinda learnt that water can exist in three states of matter. She wrote down the properties of water at the different states of matter.

A: Definite volume but no definite shape

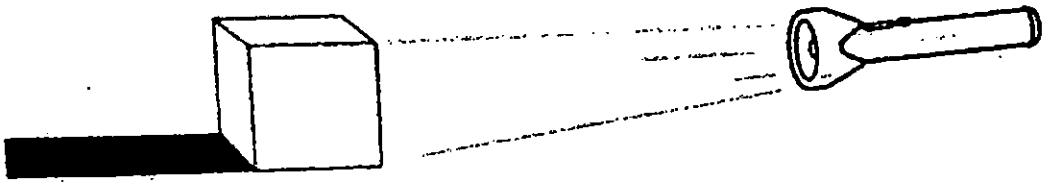
B: No definite volume or shape

C: Definite volume and shape

Which of the following is correct?

	A	B	C
(1)	water vapour	water	ice
(2)	ice	water	water vapour
(3)	water	ice	water vapour
(4)	water	water vapour	ice

20. Rachel observed that a shadow was formed when she placed a wooden cube in the path of the torch as shown below.



Which of the following properties of light best explains why the shadow was formed?

(1) Light can be blocked.
(2) Light can be reflected.
(3) Light is a form of energy.
(4) Light enables us to see things.

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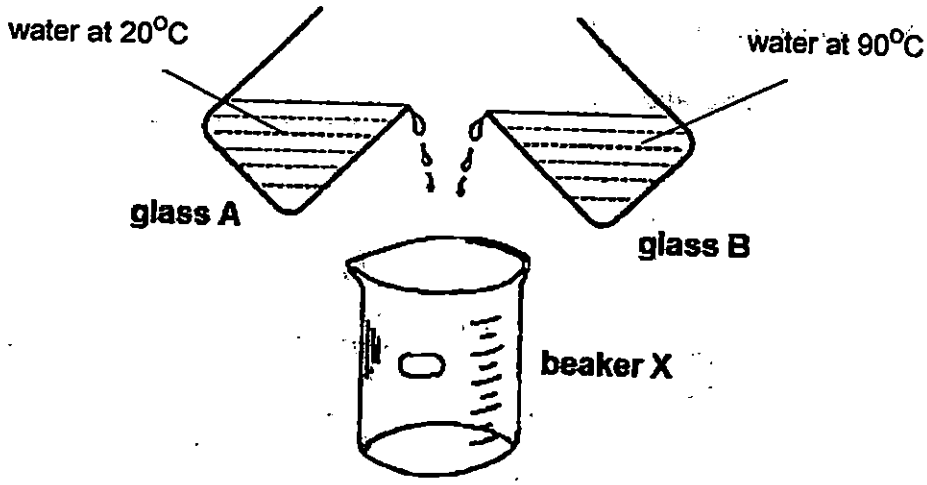
21. Glass A contained water at a temperature of 20°C. Glass B contained water at a temperature of 90°C. Nellie poured an equal amount of water from glass A and glass B into beaker X.



Which of the following statement(s) is/are true?

A. The water in glass A is cooler than the water in glass B.
B. The water in beaker X has a higher temperature than the water in glass A.
C. The water in glass A contains more heat energy than the water in glass B.
D. When water from both glasses is poured into beaker X, heat is transferred from the water in glass B to the water in glass A.

(1) D only
(2) B and C only
(3) A, B and D only
(4) A, B, C and D

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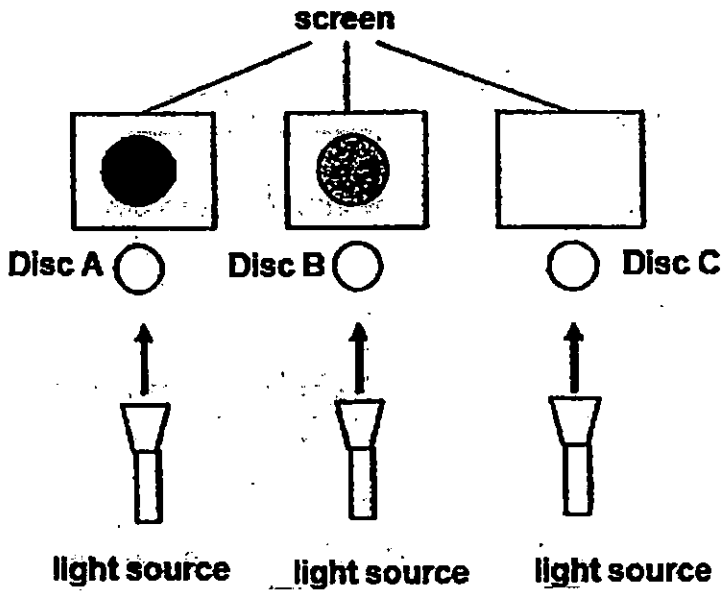
22. Three similar light sources with similar light intensity were shone at three different discs. The results can be seen on the screen as shown below.



What materials can the three discs be made of?

	Disc A	Disc B	Disc C
(1)	wood	clear plastic	metal
(2)	clear plastic	frosted glass	tracing paper
(3)	metal	frosted glass	clear glass
(4)	clear glass	tracing paper	metal

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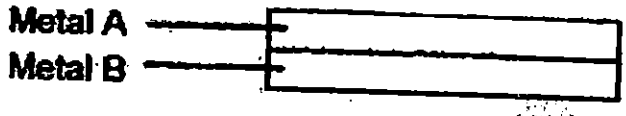
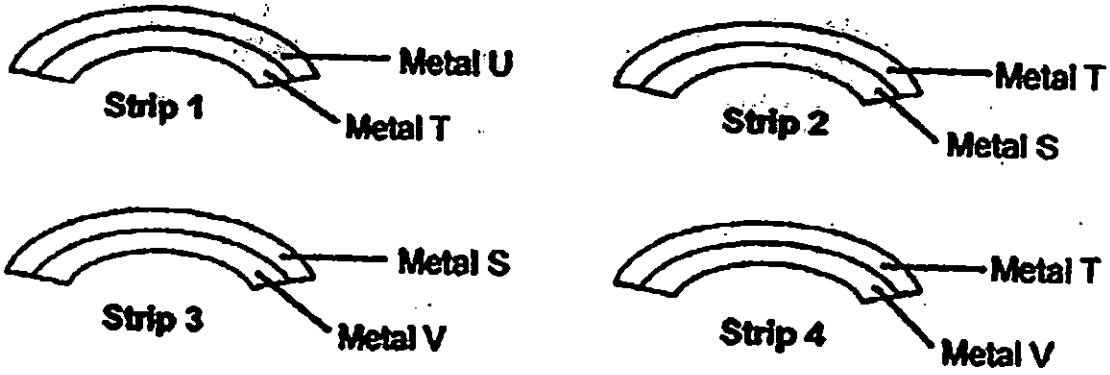
23. A bimetallic strip is formed by joining two different metals together as shown in the diagram below.



When the bimetallic strip is heated, the strip will bend down if metal A expands more than metal B.

Four metals, S, T, U and V, each of equal length were used in different combinations to form four bimetallic strips. The diagrams below show how each strip bent when heated with the same amount of heat for the same length of time.



Based on the diagrams, which of the following shows the expansion of metals, S, T, U and V in the correct order?

Expands least → Expands most				
(1)	T	U	V	S
(2)	U	T	S	V
(3)	V	S	T	U
(4)	S	V	U	T

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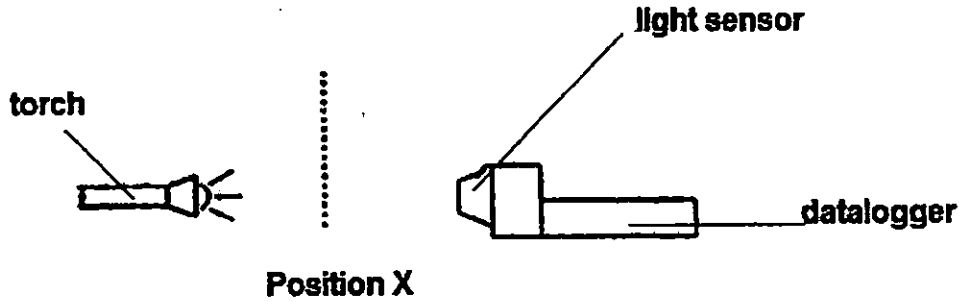
24. Ravi set up an experiment to investigate if the number of sheets of paper between a torch and a light sensor affects the amount of light that can pass through. The papers are placed at position X.



He increased the number of sheets of paper of the same type and recorded his readings in the table below.

Number of sheets of paper	Amount of light recorded by the data logger (lux)
0	80
1	40
2	20
3	10

What is one change that Ravi can make if he wants more light to pass through three sheets of the same type of paper?

(1) Move the torch nearer to the papers.
(2) Move the torch further from the papers.
(3) Move the papers nearer to the light sensor and datalogger.
(4) Move the light sensor and datalogger further from the papers.

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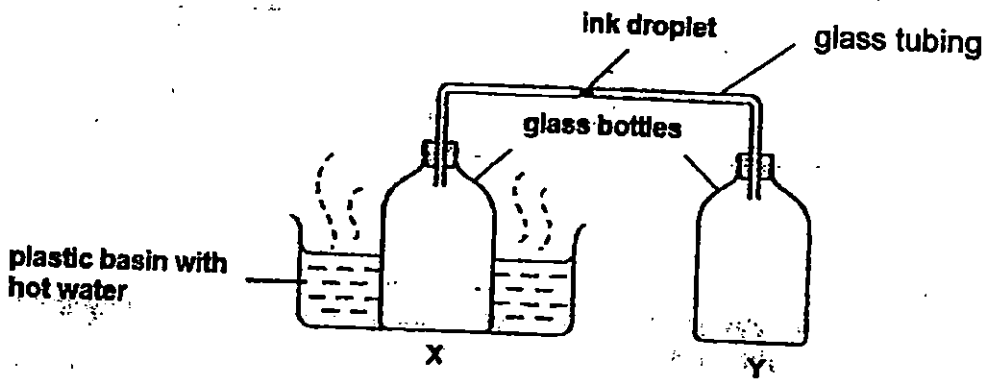
25. Which of the following pairs is incorrect?

	Good conductors of heat	Poor conductors of heat
(1)	steel spoon	plastic cup
(2)	wooden ruler	steel pole
(3)	iron ladle	styrofoam cup
(4)	aluminium tray	ceramic bowl

26. The diagram below shows two identical bottles, X and Y, which are connected by a glass tubing.



When bottle X was placed in hot water, the ink droplet _____.

(1) moved towards bottle X
(2) moved towards bottle Y
(3) moved away from bottle Y
(4) remained at the same position

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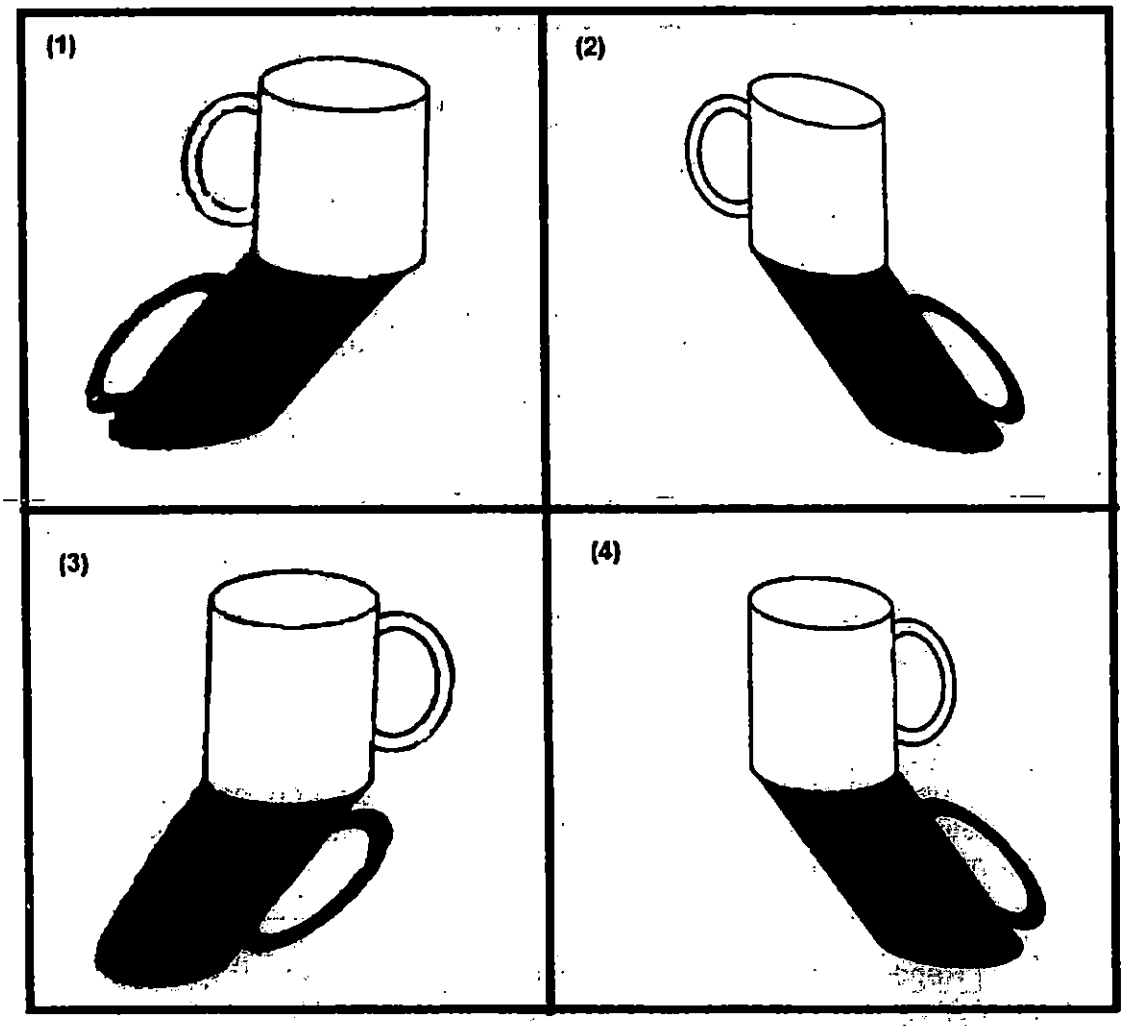
27 For each of the diagrams below, observe the mug and the shadow it casts when light is shone from different directions of different heights and distances. Which of the following is unlikely to be the shadow cast by the mug?



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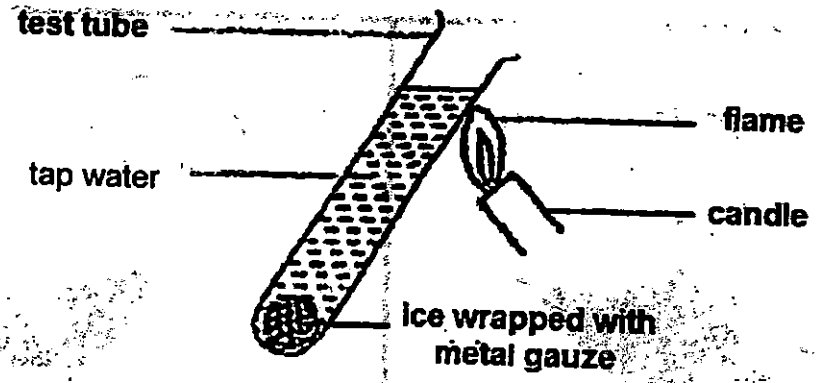
28. An experiment was set up as shown below. After a few minutes, the water at the top of the test tube became warm while the ice at the bottom of the test tube did not melt.



What could be done to enable the ice to melt faster?

(1) Remove the flame.
(2) Place the test tube in the freezer.
(3) Use ice water instead of tap water.
(4) Heat the bottom of the test tube instead of the top.

29. Susan used the stroke method to magnetise an iron nail. She placed the magnetised iron nail near three different objects, X, Y and Z and recorded her observation in the table below.

	X	Y	Z
Repelled by the iron nail	Yes	No	No
Attracted by the iron nail	Yes	Yes	No

Which of the following statements about objects X, Y and Z is/are definitely true?
A: Object X is a magnet.
B: Object Y is made of a non-magnetic material.
C: Object Z is made of a non-magnetic material.

(1) A only
(2) B only
(3) B and C only
(4) A and C only

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30. Jane hung two objects X and Y on each end of a balance. The balance moved downwards on one end as shown in diagram 1.

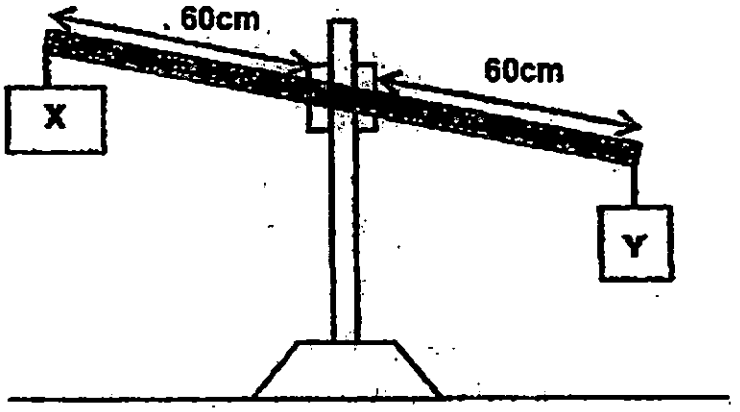

Diagram 1

Next, Jane placed object A directly below object Y and observed the result as shown in diagram 2 below.

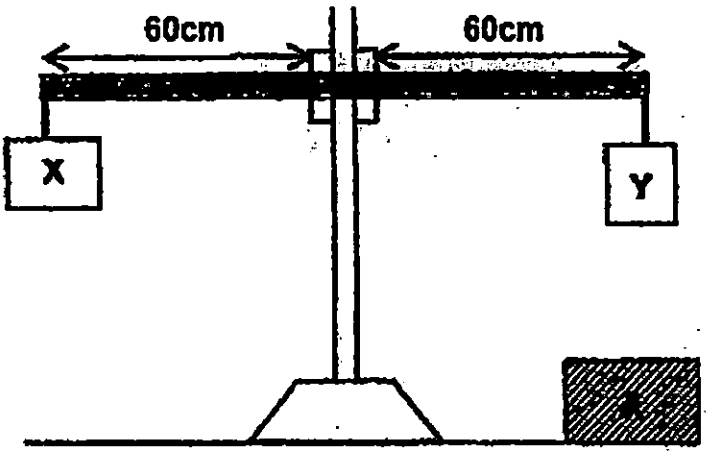

Diagram 2

Which one of the following best explains Jane's observation in diagram 2?

(1) Object Y was lighter than object X.

(2) Object A, X and Y were magnets.

(3) Object X and Y were of the same mass.

(4) Objects A and Y were magnets with like poles facing each other

End of Section A

Please check your answers.

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2015 SEMESTRAL ASSESSMENT 2
SCIENCE
PRIMARY 4

Name : _____ ( )

Class : Primary 4/ _____

Date : 2 November 2015

BOOKLET B

14 Questions
40 Marks

In this booklet, you should have the following:
a. Page 23 to Page 37
b. Questions 31 to 44

MARKS

	OBTAINED	POSSIBLE
BOOKLET A		60
BOOKLET B		40
TOTAL		100

Parent's Signature : _____

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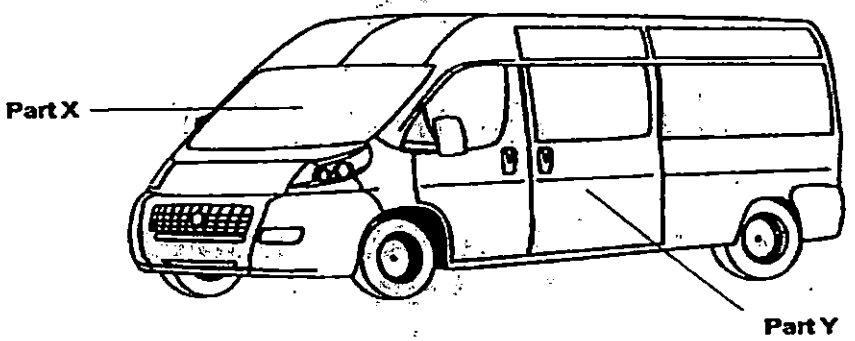
Section B

Answer all the questions in the space provided.

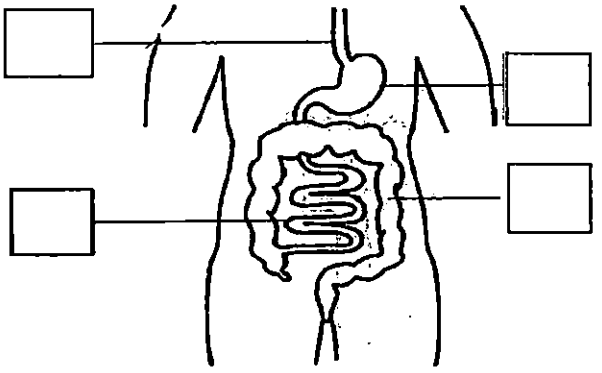
31. The diagram below shows a vehicle.



(a) Part X is made of glass because it allows _____ to pass through so that the driver can see the road. (1m)

(b) Part Y is made of _____ because Y has to be strong. (1m)

32. The diagram shows part of the human digestive system.



(a) Tick one box to show where the gullet is. (1m)

(b) Fill in the blank using the following helping words. (1m)

large intestine	gullet	small intestine	mouth

Food from the small intestine is next passed on to the _____

4

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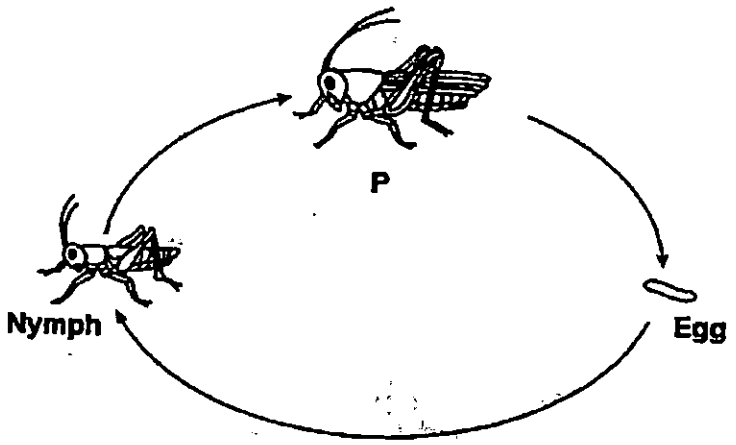
33. The diagram below shows the stages in the life cycle of a grasshopper.



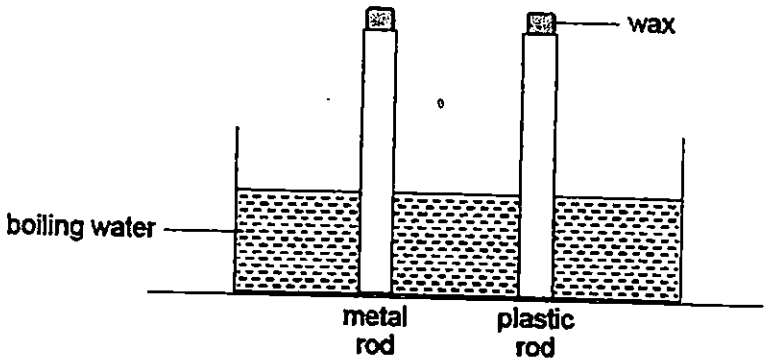
(a) Name stage **P**. (1m)

_____

(b) State one other insect that has a similar life cycle as a grasshopper. (1m)

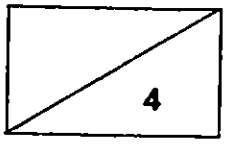
_____

34. James placed a metal rod and a plastic rod into a tank of boiling water as shown below. Equal amounts of wax were put on both rods.



What would he observe and why? (2m)

The wax on the plastic rod melted _____ than the wax on the metal rod, as plastic is a _____ conductor of heat than metal.



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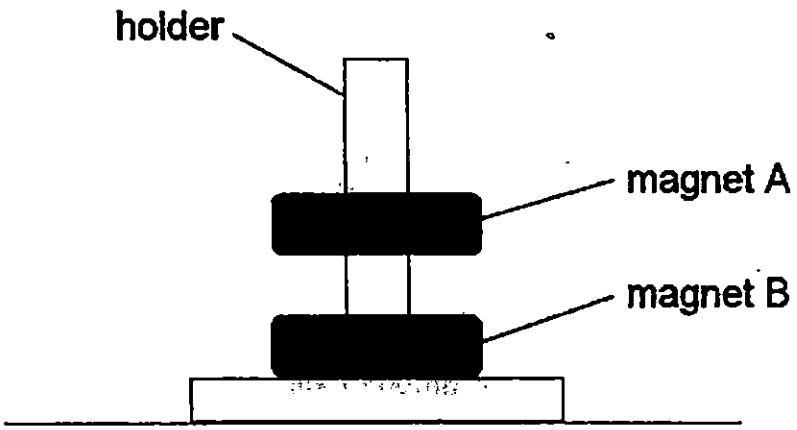
35. Alice placed two ring magnets, A and B, through a holder as shown below.



(a) The holder was made of plastic and did not attract the magnets.

Plastic is a _____ material. (1m)

(b) Why was magnet A floating above magnet B?

Magnet B was _____ magnet A. (1m)

2

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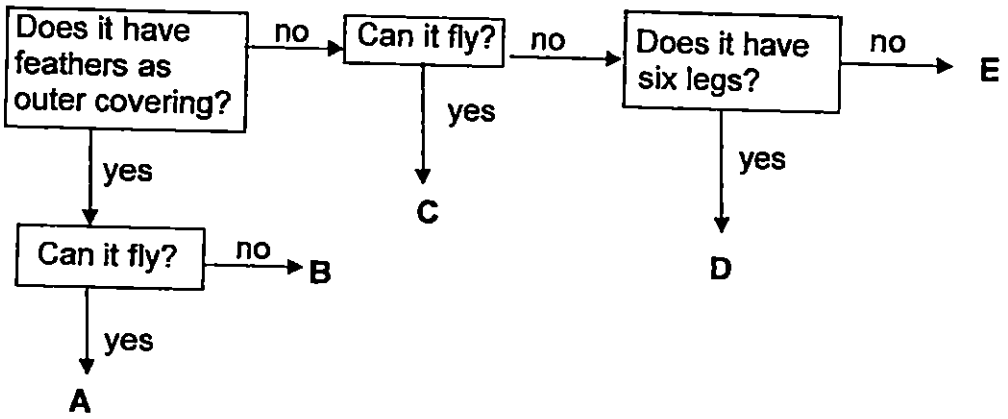
36. Study the flow chart below.



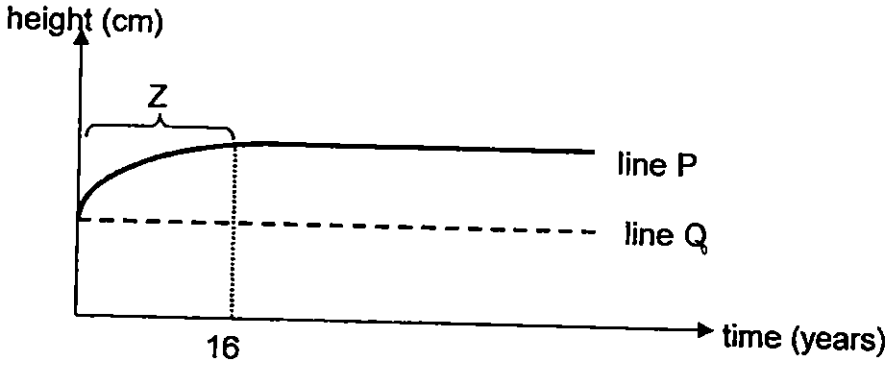
(a) Based on the flow chart, identify the group of animals that the animals in D is classified under. (1m)

_____

(b) Classify the following animals by writing the most suitable letter, A, B, C, D or E, in the blanks provided. (1m)

(i) Pigeon: Group _____ (ii) Crocodile: Group _____

Rahida drew a graph that showed the changes in the height of a metal pole and a young boy over a period of time.



(c) Identify the lines, P and Q, that represent the change in height of the metal pole and the young boy. (1m)

(i) Metal pole : Line _____ (ii) Young boy : Line _____

(d) Which characteristic of a living/non-living thing best matches part Z of line P? (1m)

_____

4

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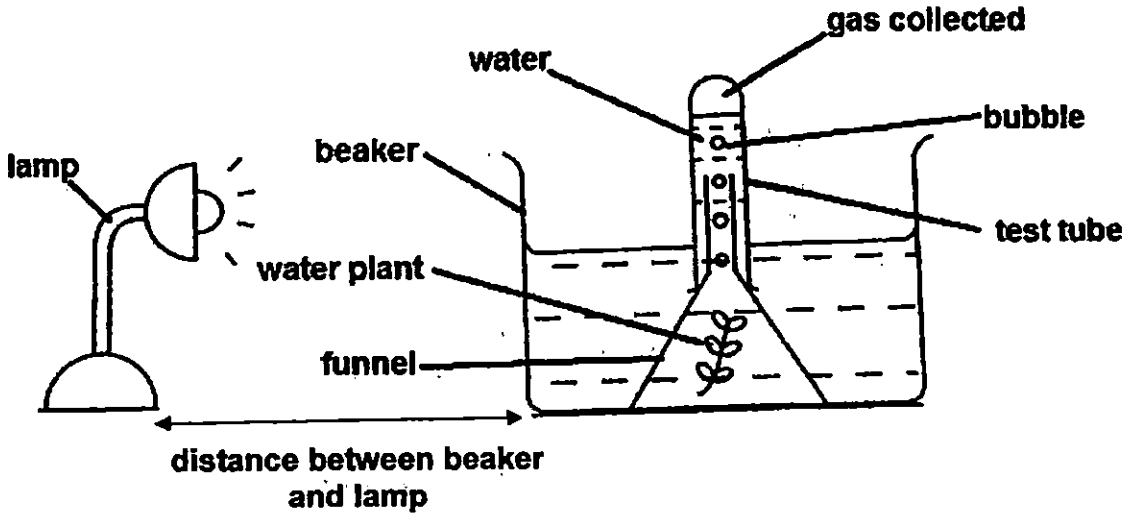
37. Hermione set up the following experiment in a dark room.



She calculated the number of gas bubbles released by the water plant per minute when the beaker was placed at different distances away from the lamp. Her results were as follow:

Distance between beaker and lamp (cm)	5	10	15	20	25
Number of gas bubbles released per minute	15	11	9	?	2

(a) Predict the likely number of gas bubbles released per minute when the distance between the beaker and lamp is 20cm. (1m)

_____

(b) What is the relationship between the distance between the beaker and the lamp and the number of gas bubbles released per minute? (1m)

_____

_____

2

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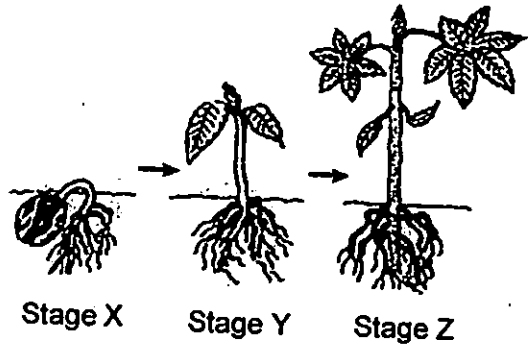
37. The picture shows the growth of a plant.



(c) The plant at stage Y makes less food than the plant at stage Z. Give a reason to explain why. (1m)

_____

_____

1

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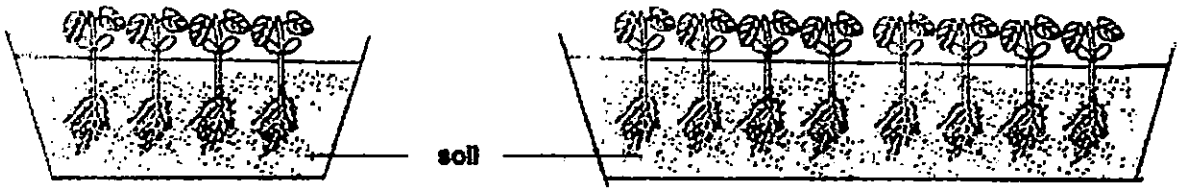
38. Ahmad set up the following experiment to find out how the amount of soil affects the growth of the plants. The same amount of water was given daily.

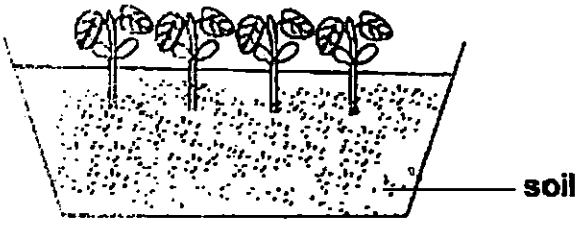


Set-up A (placed in the garden) Set-up B (placed in the classroom)

(a) Ahmad's experiment is not a fair one. Tick two changes he can make to set-up B to make it a fair test. (2m)

Change	Tick (√) the correct answer
Add four plants.	
Remove four plants.	
Use a larger container.	
Place the set-up in the school field.	
Place the set-up in the garden.	

After one week, Ahmad made the following change to set-up A.



A

(b) He found out that the plants died after a few days. Why? (1m)

_____

_____

3

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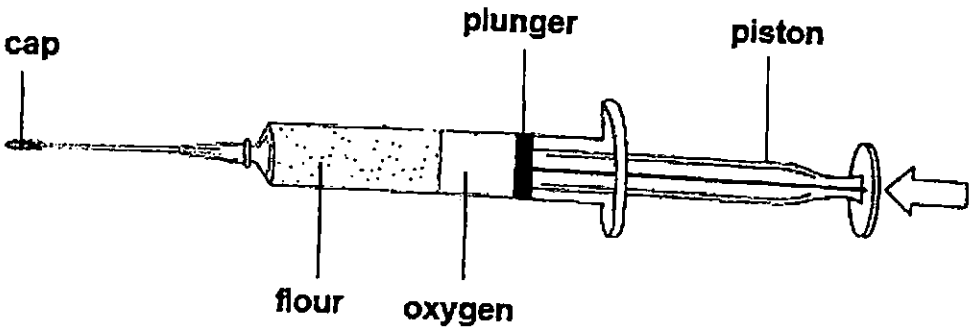
39. Look at the diagram below.



(a) Identify the state of matter for flour. (1m)

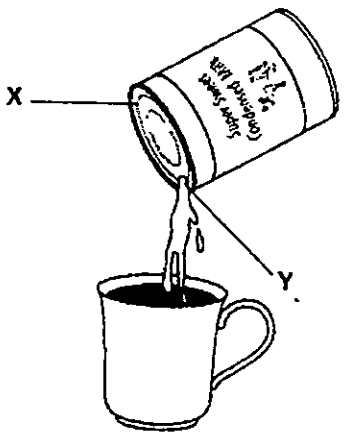
_____

(b) When the piston is pressed, the plunger could move in slightly. Why? (2m)

_____

_____

Nikita is pouring some condensed milk into her coffee through hole Y in the tin as shown. The condensed milk flows very slowly out of the tin.



(c) When she pokes another hole at X, she finds that the condensed milk flows faster from hole Y. Why? (1m)

_____

_____

4

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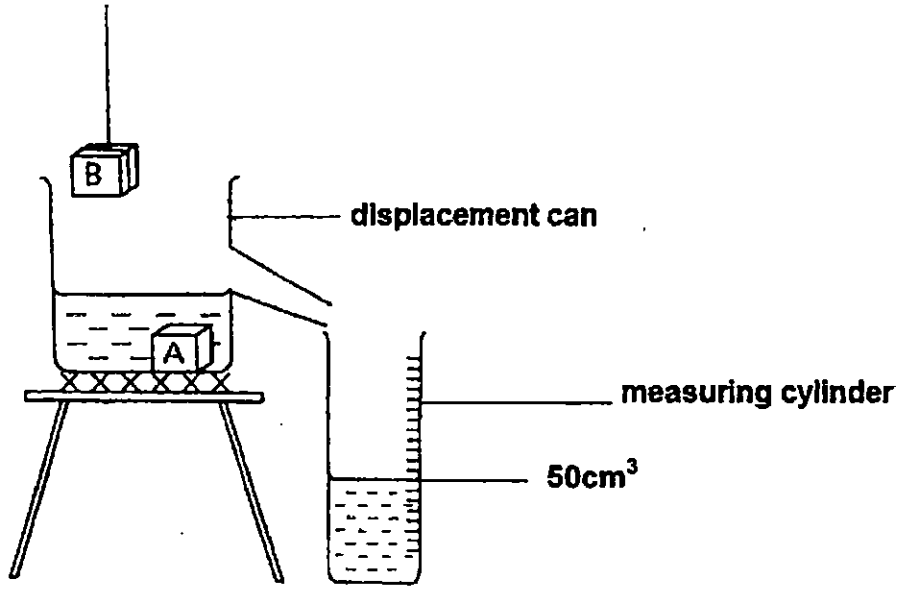
40. Study the diagram carefully.



When block A is lowered into the displacement can, $50cm^3$ of water flows from the can into the measuring cylinder. When block B is lowered into the can, with block A still in the can, the level of water in the measuring cylinder increased to $120cm^3$.

(a) What can be concluded about the volume of block B compared to block A? (1m)

_____

(b) State one property of a solid that can be shown from the experiment. (1m)

_____

_____

(c) Block A was removed from the displacement can and heated evenly over a bunsen burner for five minutes. The volume of block A after heating was $52cm^3$. Explain why. (1m)

_____

_____

3

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41. Devi conducted an experiment in the Science room. She poured 500ml of warm water at 65°C into a metal container and sealed it. The container was then placed in a styrofoam box as shown in diagram 1.

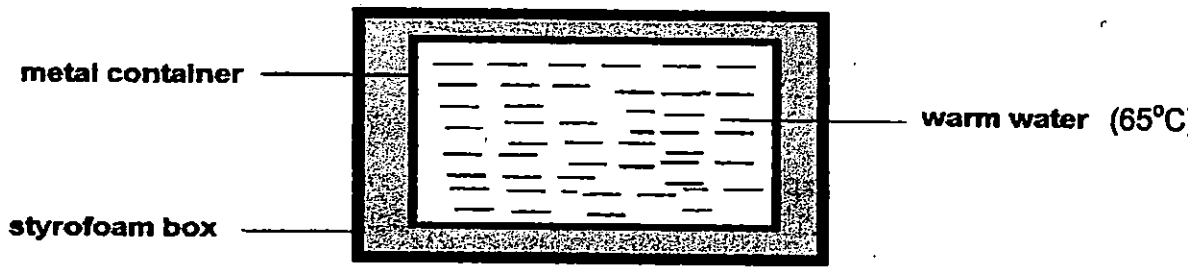
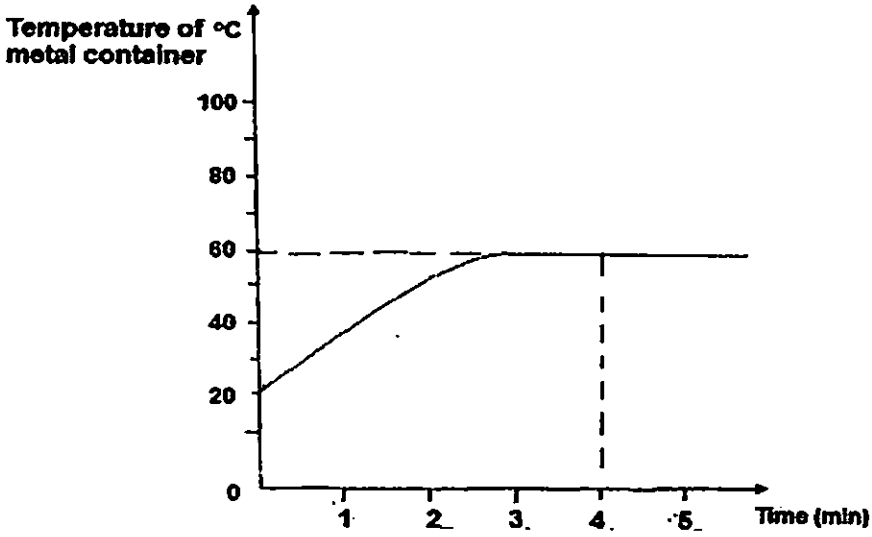


Diagram 1

The temperature of the metal container was taken at regular intervals. The graph below shows the change in the temperature of the metal container over time.



(a) Based on the graph, describe the change in the temperature of the metal container from zero to three minutes. (1m)

_____

_____

(b) Based on the answer for part (a), why did the temperature of the metal container change? (1m)

_____

_____

2

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(c) The temperature of the Science room was 30°C. Why was the styrofoam box able to maintain the temperature of the metal container at 60°C from the third to the fifth minute? (2m)

_____

_____

Devi repeated her experiment with only the metal container as shown. The container was placed in the same location at the Science room.

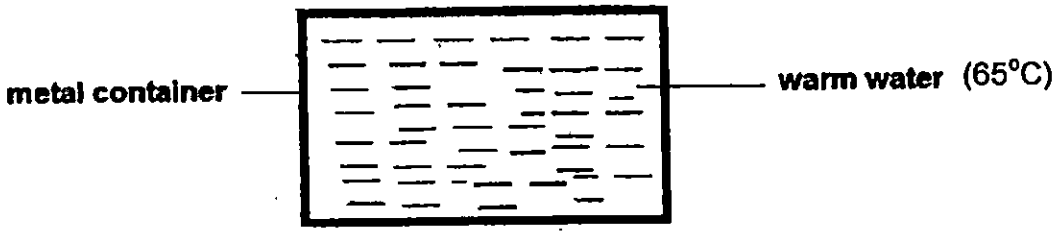

Diagram 2

(d) Would the warm water in the metal container in diagram 2 take a shorter or longer time to reach room temperature than in diagram 1? Why? (1m)

_____

_____

3

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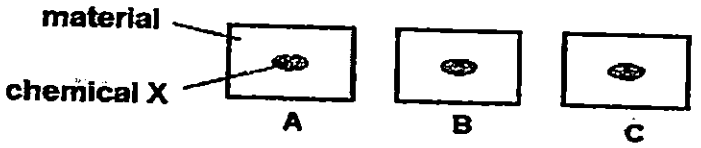
42. Henry carried out an experiment to find out which material could conduct the most heat. Three different materials of the same size were used. A drop of chemical X was placed on each material before they were heated.



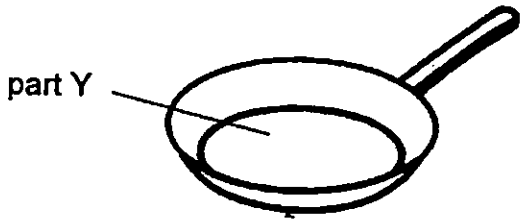
The table below shows how the colour of chemical X changes with different temperature.

Temperature	Colour of chemical X
30°C to 39°C	white
40°C to 50°C	yellow
51°C to 70°C	orange

After the materials were heated for five minutes, Henry recorded his observations in the table below.

Material	Colour of chemical X after 5 minutes
A	orange
B	white
C	yellow

(a) Which material, A, B or C, is most suitable to make part Y of a frying pan? (1m)



_____

(b) Explain your answer in part (a). (1m)

_____

_____

2

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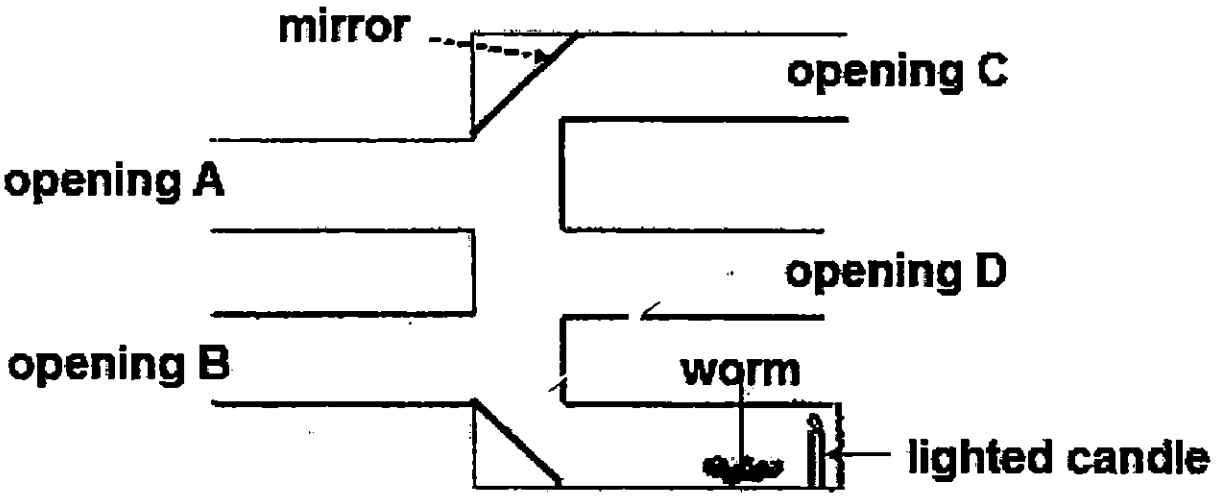
43. Robert carried out an experiment as shown below. There were four openings, A, B, C and D.



(a) Draw a line in the diagram to show where a mirror should be placed so that Robert could see the worm from opening D. (1m)

(b) Which two properties of light are shown in the above experiment? (1m)

_____

_____

2

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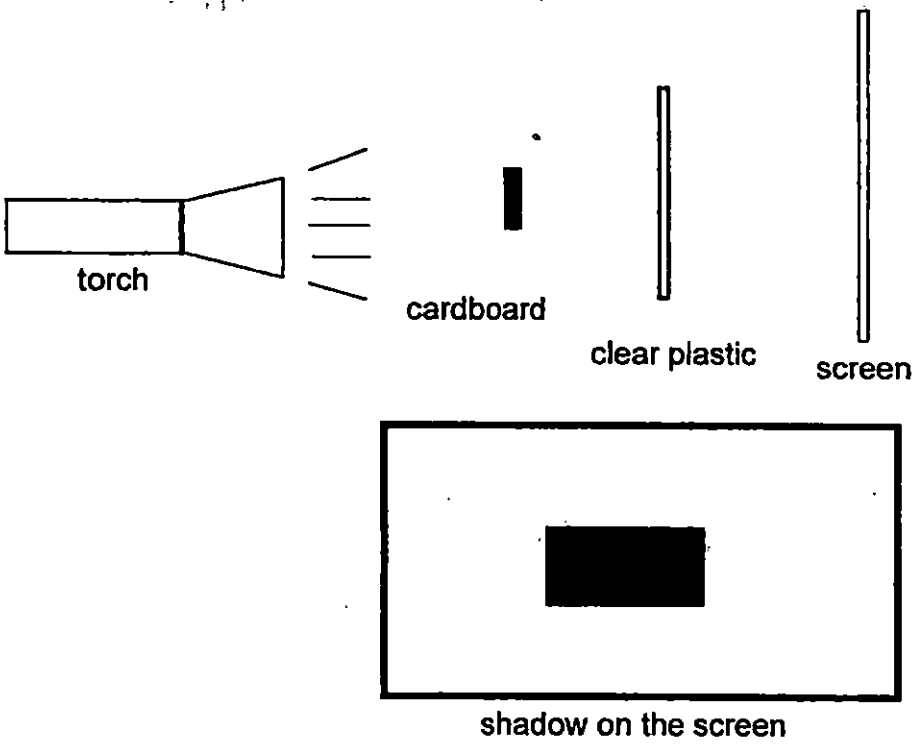
43. Jamie conducted an experiment in a dark room. She shone a torch on the cardboard. A shadow was formed on the screen as shown.



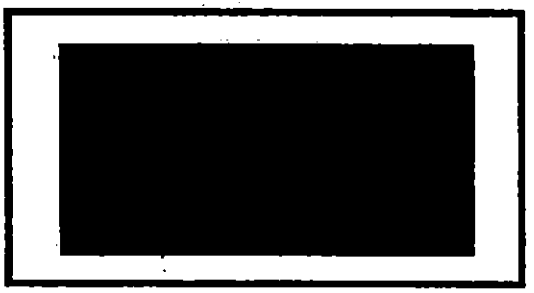
(c) What should Jamie do to decrease the size of the shadow without moving the torch? (1m)

_____

_____

Jamie changed the clear plastic to a wooden board of the same size and thickness. The position of the torch, cardboard, wooden board and screen remained unchanged.

When the torch was turned on, the following shadow was seen on the screen.



(d) Explain why the shadow became bigger. (1m)

_____

_____

2

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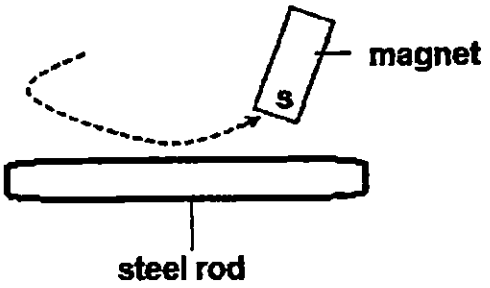
44. Karen was using the stroke method to make a steel rod into a magnet. She noted her observations in the table below.



Number of strokes	20	30	40
Number of paper clips attracted to the steel rod	2	3	5

(a) From the table, what could she conclude about the number of strokes and the magnetic strength of the steel rod? (1m)

_____

_____

(b) Karen repeated the experiment by changing the steel rod into a copper rod. Would the copper rod attract any paper clips? Why? (1m)

_____

_____

2

End of Section B
Please check your answers.

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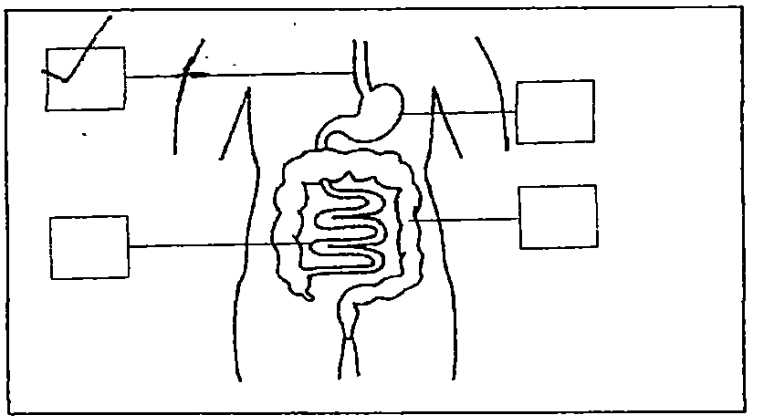
EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : RED SWASTIKA SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
2	2	3	3	2	2	2	4	1	3
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
1	1	3	4	4	3	1	4	4	1
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	3	3	1	2	2	2	4	4	4

Q31a. light Q31b. metal Q32a. **SEE PICTURE** Q32b. large intestine



Q33a. Adult grasshopper Q33b. Cockroach

Q34 slower / poorer

Q35a. non magnetic Q35b. repelling

Q36a. The animals in D is classified under insects.

Q36b (i) Group A Q36b (ii) Group E

Q36c (i) Line Q Q36c (ii) Line P

Q36d. Living things grow in height.

Q37a. The likely number is 7.

Q37b. As the distance between the beaker and the lamp increase, the number of gas bubbles released per minute decrease.

Q37c. Stage Y has lesser leaves than stage Z , therefore stage Y makes less food than the plant at stage Z.

Q38a. Remove four plants. Q38a. Place the set up in the garden

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Q38a. Remove four plants. Q38a. Place the set up in the garden

Q38b. The plant had no roots and could not absorb water.

Q39a. Solid

Q39b. Oxygen can be compressed.

Q39c. Air will enter through hole X to displace the condensed milk at hole Y.

Q40a. Block B have more volume than block A.

Q40b. Solid has definite volume.

Q40c. Block A gained heat from the Bunsen burner and expanded.

Q41a. The temperature from the metal container rises from 20°C to 60°C within zero to three minutes.

Q41b. The metal container gained heat from the warm water in it, so its temperature increased.

Q41c. Styrofoam was a poor conductor of heat and slowed down heat loss from the metal container to the surroundings.

Q41d. Shorter time. Metal is a better conductor of heat which allows heat to be transferred more quickly from the warm water to the surroundings.

Q42a. Material A

Q42b. Material A has the highest temperature at the end of the experiment and, so t is the best conductor of heat as it conducts heat the fastest.

Q43a. **SEE PICTURE - next page**

Q43b. Light moves in straight line, mirror can reflect light.

Q43c. Jamie should move the cardboard further away from the torch.

Q43d. The wooden board was bigger than the cardboard and blocked more light.

Q44a. The greater the number of strokes, the greater the magnetic strength of the magnet.

Q44b. No. Copper is a non – magnetic material and cannot be magnetized.

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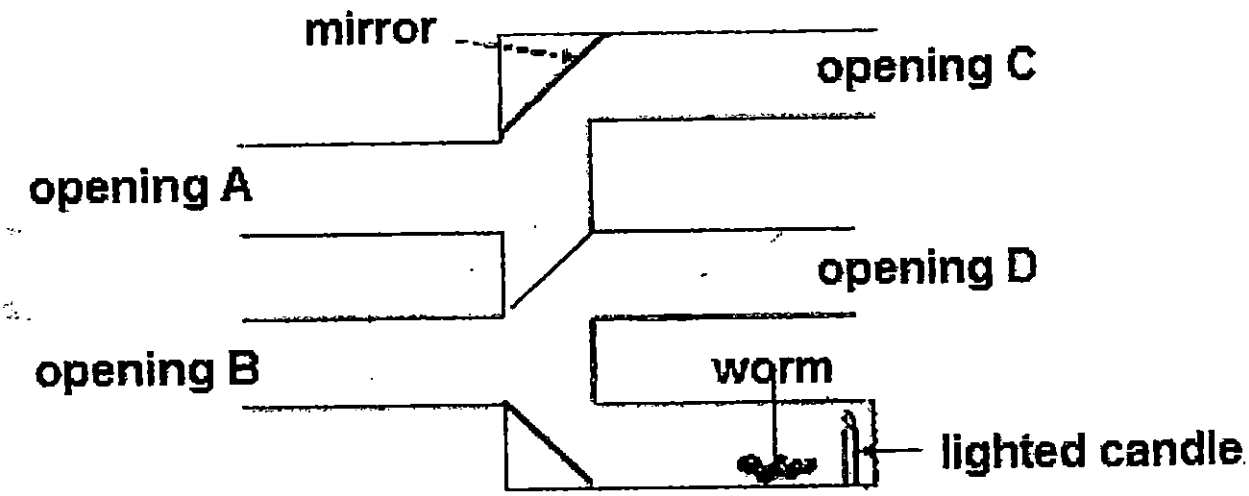
Q43a



THE END

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Rosyth School
Second Semestral Examination for 2015
SCIENCE
Primary 4

Name: _____

Class: Pr 4 - _____ Register No. _____ Duration: 1 h 45 min

Date: 29th October 2015 Parent's Signature: _____

Booklet A

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.

* This booklet consists of 19 pages.

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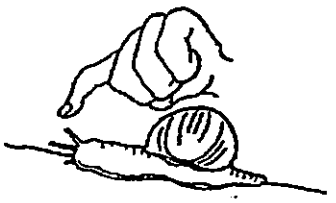
BookletA (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

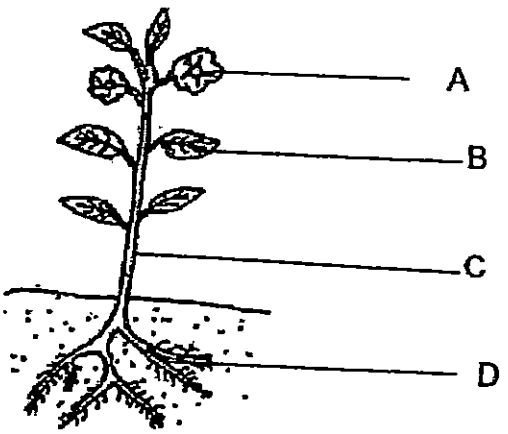
1. When Peter tried to touch the snail in his garden, it hid itself in its shell.



This shows that the snail is a living thing because it can _____.

(1) die
(2) move
(3) reproduce
(4) respond to changes

2. Which part A, B, C or D makes food for the plant?



(1) A
(2) B
(3) C
(4) D

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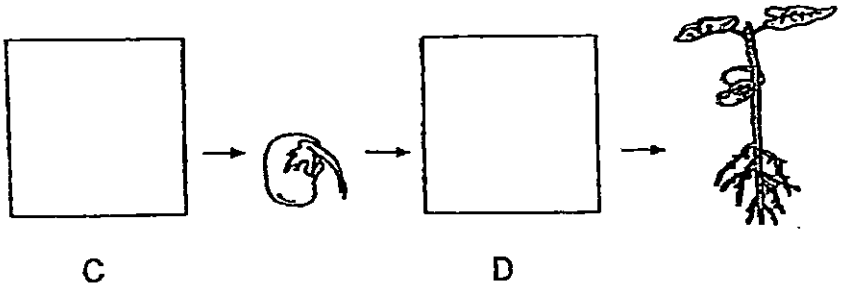
3. The diagram below shows the growth of a young plant with two missing stages, C and D.



Which of the following shows the correct stages for C and D?

	C	D
(1)		
(2)		
(3)		
(4)		

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4. In which part of the digestive system is food absorbed into the blood?

(1) gullet
(2) stomach
(3) small intestine
(4) large intestine

5. Which one of the following objects can be bent easily without breaking?

(1) A wooden ruler

(2) A blanket

(3) A plastic fork

(4) A sheet of glass

6. Which one of the following substances has a fixed shape?

(1) air
(2) oil
(3) water
(4) pencil

7. Which one of the following properties is true for both oxygen and a piece of cloth?

(1) They can be seen.
(2) They take up space.
(3) They have fixed shapes.
(4) They have fixed volumes.

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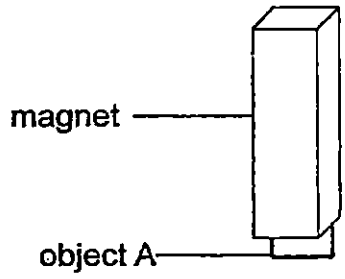
8. An object A was attracted to a magnet, as shown in the figure below.



Object A is made of _____.

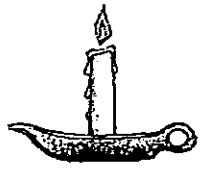
(1) plastic
(2) rubber
(3) wood
(4) iron

9. Which one of the following is a source of light?

(1)

a mirror

(2)



a candle flame

(3)

the moon

(4)

a leaf

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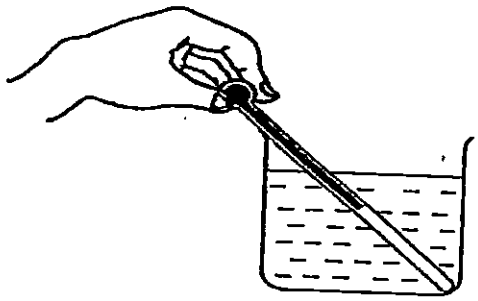
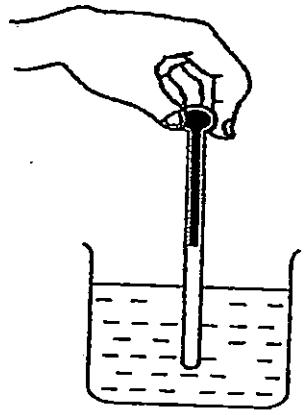
10. Catherine wants to measure the temperature of hot water in a beaker.

Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

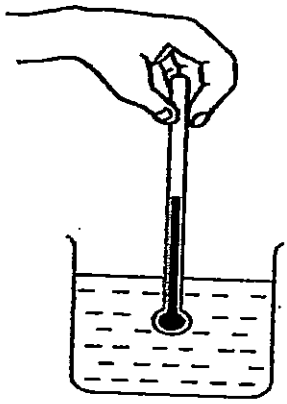
(1)



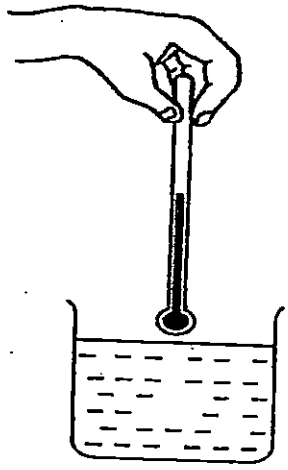
(2)



(3)



(4)



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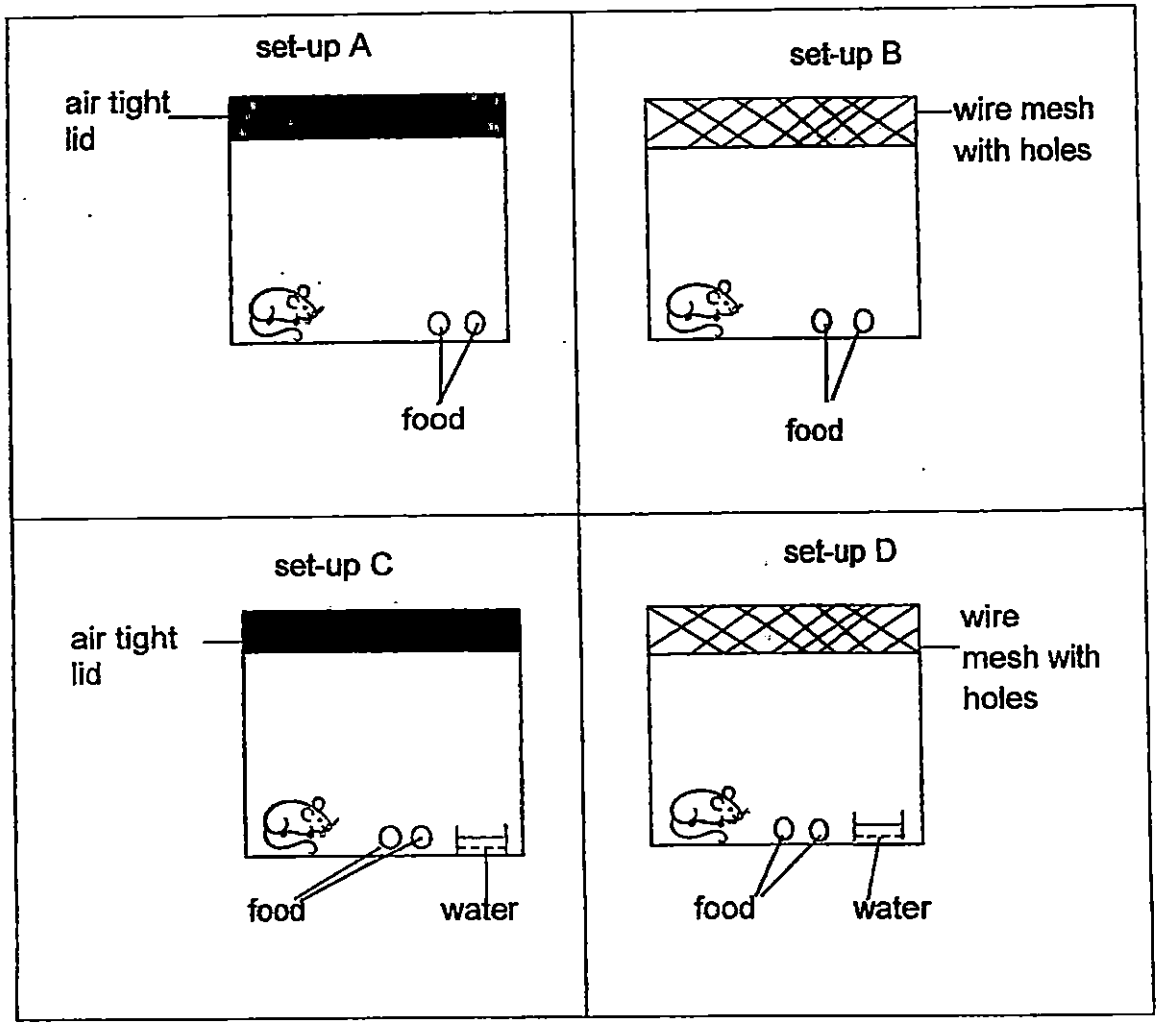
11. Which of the following statement(s) is/are true about mushrooms?

A: Mushrooms feed on decaying matter that they grow on.
B: Mushrooms reproduce by spores found in between the gills.
C: Mushrooms sometimes produce seeds like flowering plants.
D: Mushrooms contain chlorophyll that help them make their own food.

(1) A only
(2) A and B only
(3) A, B and D only
(4) B, C and D only

12. Ali prepared four set-ups as shown below to find out if living things need air to survive.



Which pair of set-ups should Ali choose to conduct a fair test?

(1) set-ups A and C
(2) set-ups B and C
(3) set-ups C and D
(4) set-ups B and D

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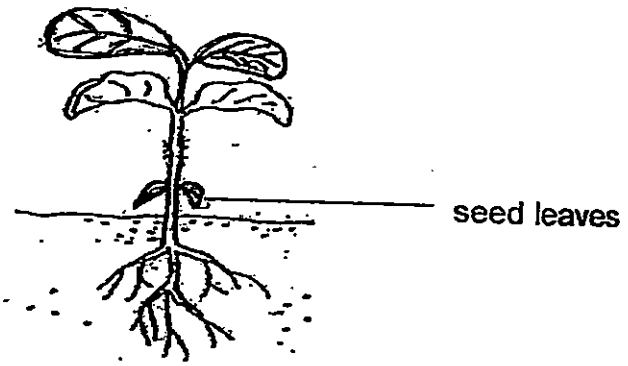
13. The picture below shows a seedling.



Which of the following statements about the plant at this stage of its life cycle are true?

A: It can now reproduce.
B: It can use its leaves to make its own food.
C: It does not use the food from the seed leaves.
D: It does not depend on its roots to obtain water from the soil.

(1) A and C only
(2) B and C only
(3) C and D only
(4) B and D only

4. Mary observed animal A and animal B. She recorded her observations on the checklist shown below. A tick (√) means that the animal has the particular characteristic and a cross (x) means that the animal does not have the particular characteristic.

	animal A	animal B
Eggs are laid in water	√	x
There are 4 stages in its life cycle	x	√
It has six legs	x	√

Which of the following could be animals A and B?

	animal A	animal B
(1)	butterfly	chicken
(2)	butterfly	cockroach
(3)	frog	butterfly
(4)	frog	cockroach

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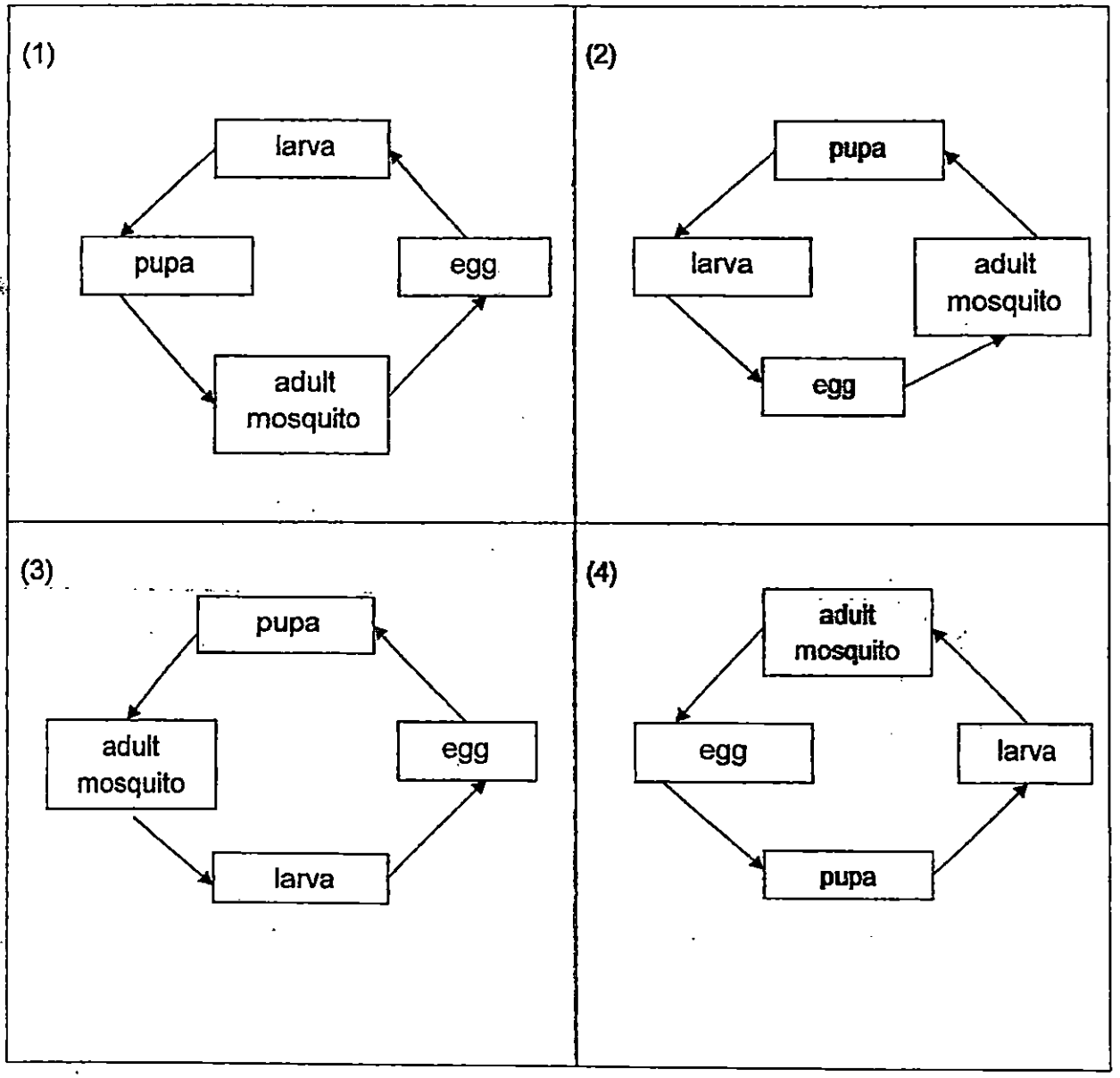
15. Which one of the following shows the stages of the life cycle of the mosquito in the correct order?



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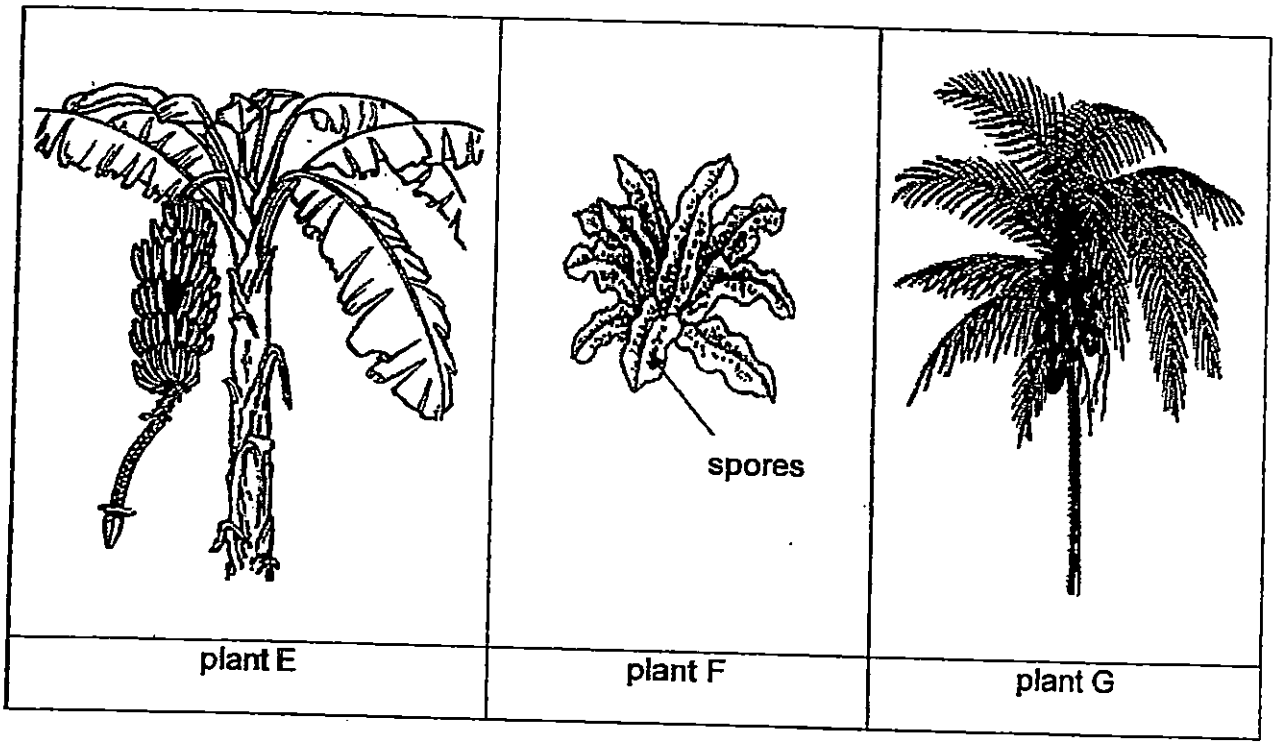
16. Tom observed the growth of a tomato plant from a seed to an adult plant. He took down some notes on different pieces of paper. Help Tom arrange the sequence of the growth of the plant.

A: Flowers appear
B: Shoot appears
C: Leaves appear
D: Fruits appear
E: Roots appear

(1) B, E, C, A, D
(2) E, B, C, D, A
(3) B, A, E, C, D
(4) E, B, C, A, D

17. Peter, Ali and Sue came across three different types of plants E, F and G as shown in the diagram below.



They made the following statements about these plants:

Peter: G is a flowering plant since it bears fruits.
Sue: E, F and G are non-flowering plants as they do not bear flowers.
Ali: F is a non-flowering plant because it makes its own food and reproduces by spores.

Which of these statements(s) is/are correct?

(1) Peter only
(2) Sue and Ali only
(3) Peter and Ali only
(4) Peter and Sue only

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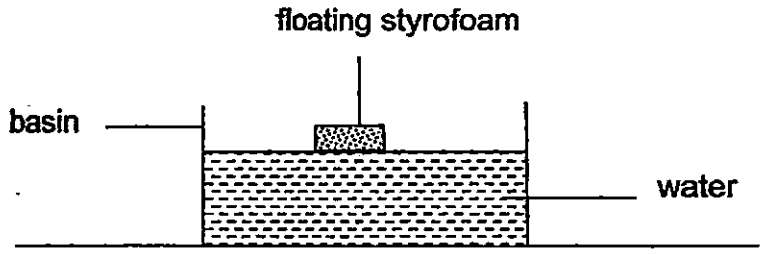
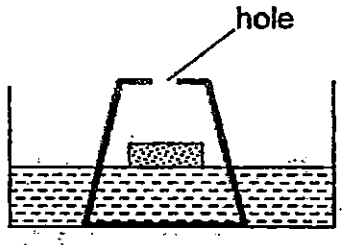
18. The diagram below shows a piece of styrofoam floating in a basin of water.

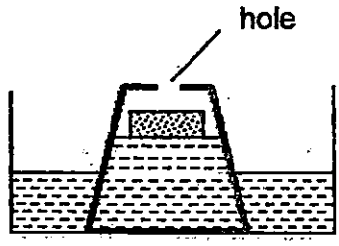


Four plastic cups were inverted over the styrofoam and held down as shown below.

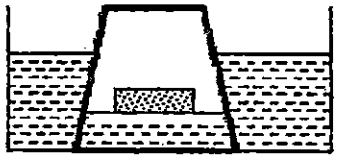
Which of the diagrams show what could possibly happen to the styrofoam and water?



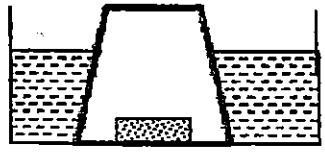
A



B



C



D

(1) A and B only
(2) A and C only
(3) B and D only
(4) C and D only

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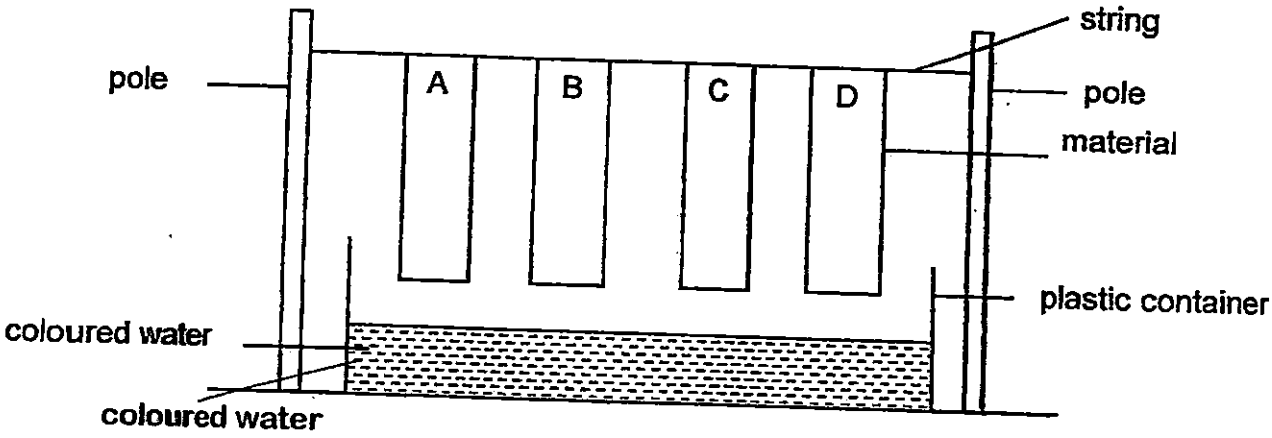
19. Four different materials, A, B, C and D, of the same size and shape were used in the experiment set-up as shown below.



The materials were then lowered into the container with coloured water. The height of the coloured water on the material was measured after 5 minutes and the results were recorded in the table below.

Material	Height of coloured water on the material after 5 minutes (cm)
A	14
B	10
C	0
D	8

Based on the table above, which material is the most suitable for making a raincoat?

(1) Material A
(2) Material B
(3) Material C
(4) Material D

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20. Ali measured the volume and mass of three balls made of different materials. He recorded the results in the table below.

Ball	Volume(cm^3)	Mass(g)
ball A	50	500
ball B	150	300
ball C	200	300

Based on the information given, which one of the following statements is incorrect?

(1) A smaller object occupies less space than a bigger object.
(2) Objects that are of different sizes can have the same mass.
(3) Objects that are of different sizes occupy different amount of space.
(4) Objects that occupy less space are lighter than objects that occupy more space.

21. The table below shows the properties of J, K, L and M. A tick (√) means that the object has the particular property and a cross (×) means that the object does not have the particular property.

	J	K	L	M
It occupies space.	√	√	×	√
It has a fixed shape.	×	√	×	×
It has a fixed volume.	√	√	×	×

Based on the information given above, which one of the following statements is **false**?

(1) M can be compressed.
(2) L does not have mass.
(3) J and M will take the shape of the container.
(4) J, K, L and M are all different states of matter.

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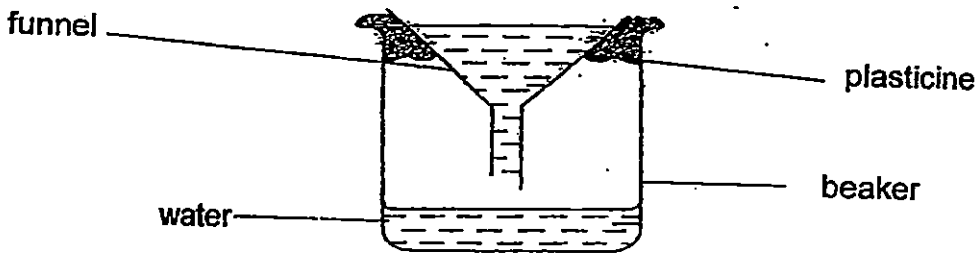
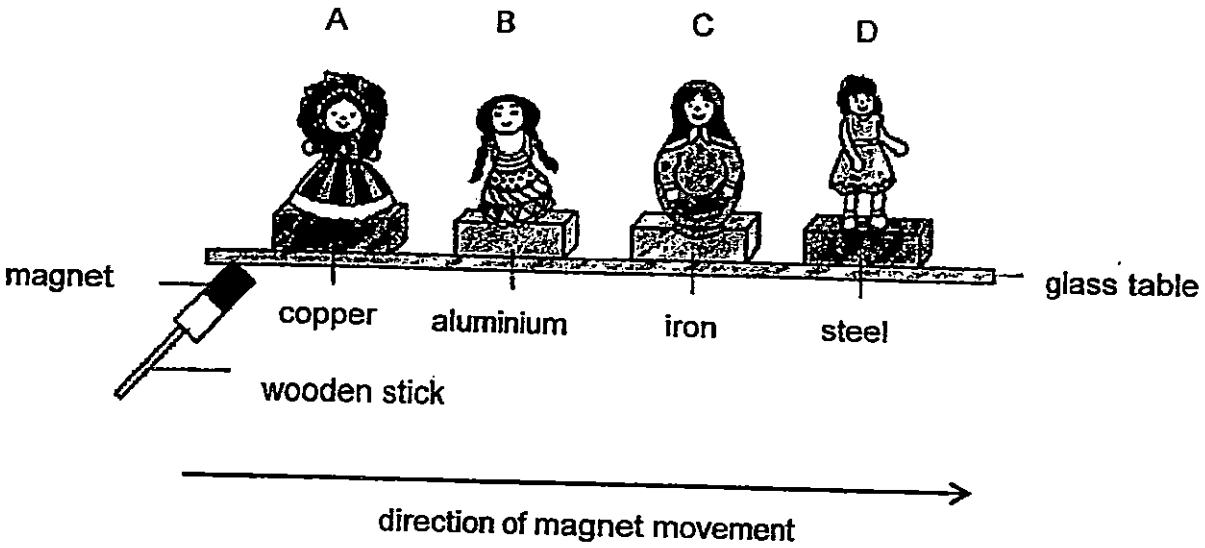
22. Mei Ling poured water into a beaker through the funnel. Gaps between the beaker and the funnel were covered with plasticine. She observed that the water flowed into the beaker slowly at first and then it stopped flowing.



Why did the water stop flowing into the beaker?

(1) The opening of the funnel was too small.
(2) The plasticine stopped the water from flowing in.
(3) The plasticine allowed air in the beaker to escape.
(4) There was no space for the water to flow into the beaker.

23. Sandra had 4 paper dolls. She attached each doll to a different material. Then, she placed the 4 dolls on a glass table as shown below.



Sandra taped a strong magnet to one end of a wooden stick. She then placed it under the glass table to try to move the dolls.

Which dolls would move with the wooden stick?

(1) A and B only
(2) C and D only
(3) A, B and D only
(4) A, B, C and D

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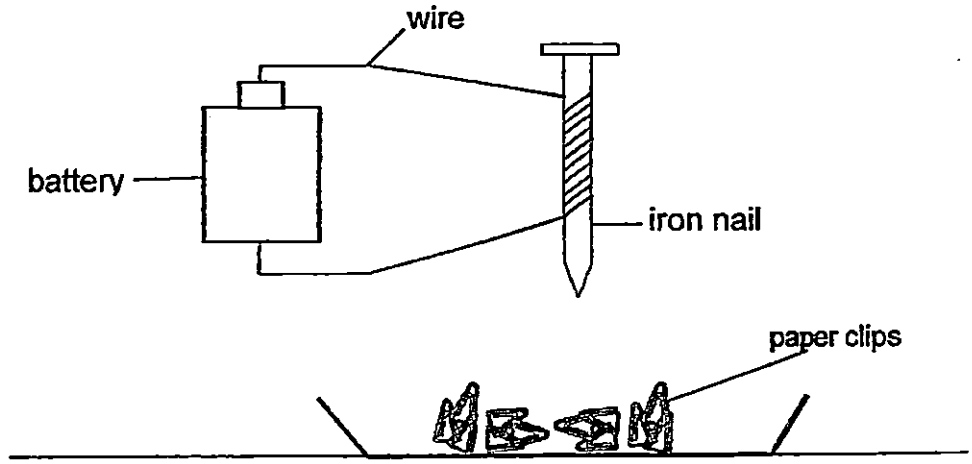
24. Vivian made an electromagnet as shown below.



She changed the number of coils around the iron nail and counted the number of paper clips attracted by the nail. The results were shown in the table below.

	set-up E	set-up F	set-up G	set-up H
Number of coils around the iron nail	5	10	15	20
Number of paper clips attracted by the iron nail	2	5	10	14

Based on the results above, which of the statements are true?

A: The iron nail in set-up E has the weakest magnetism.
B: The strength of the magnet depends on the number of batteries.
C: The iron nail in set-up G is a stronger magnet than the iron nail in set-up F.
D: The strength of the magnet depends on the number of coils around the iron nail.

(1) A and D only
(2) B and D only
(3) A, B and C only
(4) A, C and D only

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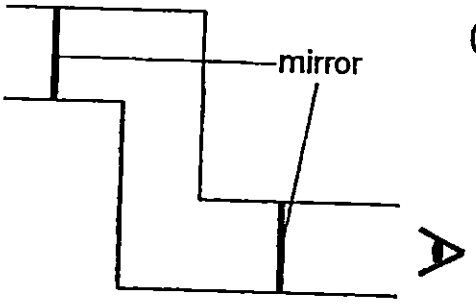
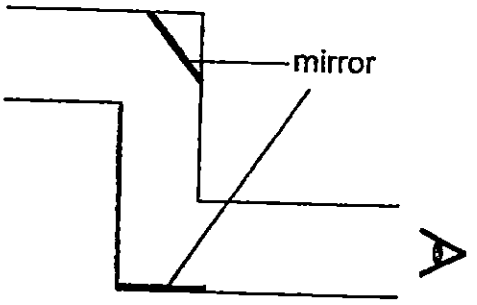
25. Which of the following shows the correct arrangement of mirrors in a periscope?

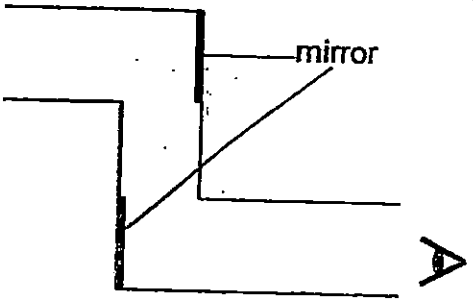
(1)



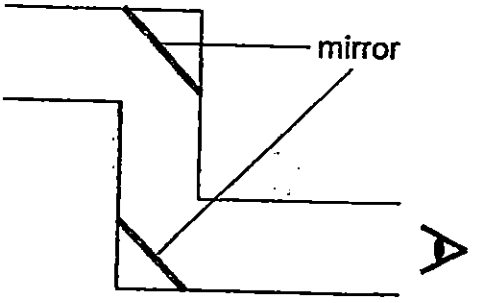
(2)



(3)



(4)



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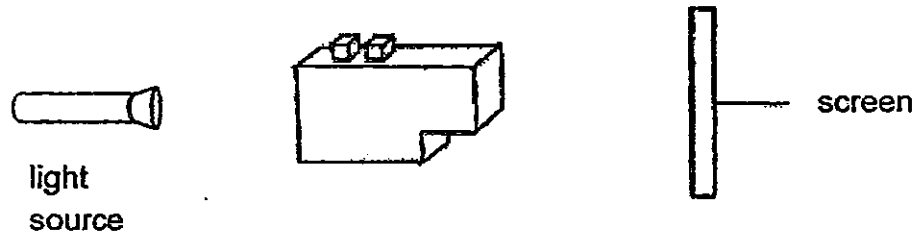
26. A shadow was cast on the screen from a light source as shown in the diagram below.



Which one of the following diagram shows the shadow that is cast on the screen?

(1)

(2)

(3)

(4)

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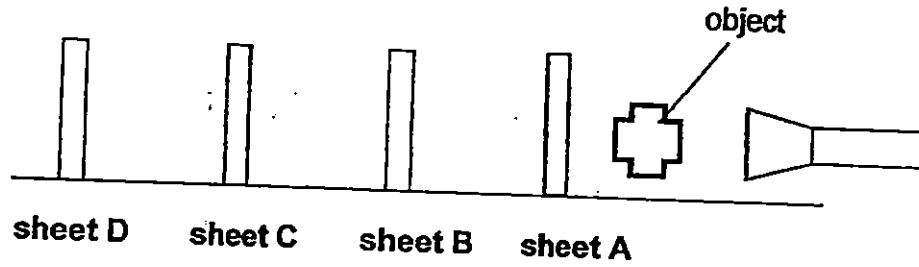
27. The experiment shown below was carried out in a dark room. Sheets A, B, C and D were arranged in a straight line. An object was placed in front of sheet A.



When the torch was switched on, a shadow of the object was formed on sheet C.

Which of the following correctly describes the properties of the materials of sheets A, B, C and D?

	Transparent	Opaque	Not possible to tell
(1)	A and B	C	D
(2)	A	C and D	B
(3)	B	A and C	D
(4)	B and D	C	A

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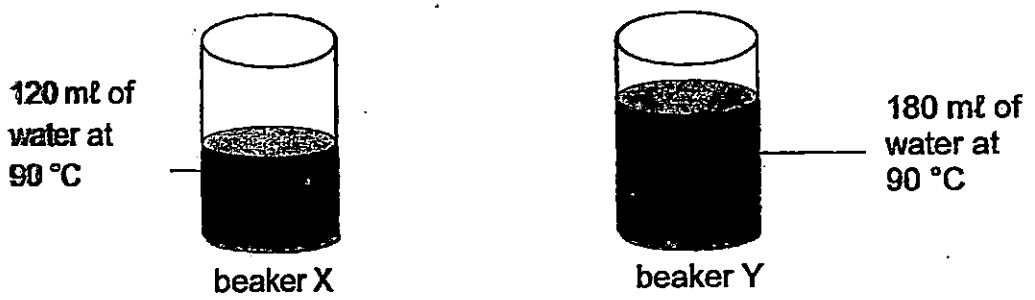
28. The diagram below shows two beakers, X and Y, filled with different amounts of water. The water in both beakers was heated up to 90 °C.



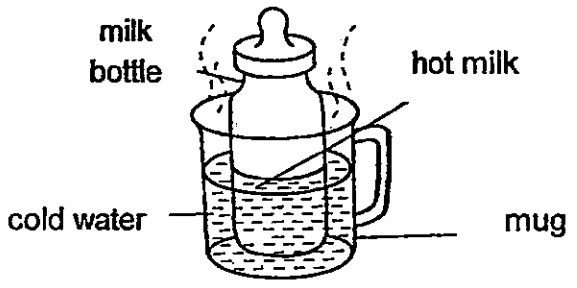
A group of friends then said the following statements about the heat energy in the two beakers.

Billy: Beaker X will have more heat energy as the amount of water is less than beaker Y.
Tom: Beaker Y will have more heat energy as the amount of water is more than beaker X.
Jack: Beaker X will have less heat energy at first but the heat energy will be more than beaker Y after some time.
Sam: The amount of heat energy in both beakers is the same as the temperature of water in both beakers is the same.

Which one of the above statements is true about the amount of heat energy in the two beakers?

(1) Billy
(2) Tom
(3) Jack
(4) Sam

29. Susan wanted to cool down the milk for her daughter. She then placed the milk bottle in a mug of cold water as shown below.



Which of the following correctly shows the objects in the above set-up that had gained heat or lost heat after 10 minutes?

	hot milk	mug	cold water
(1)	lost heat	lost heat	gained heat
(2)	gained heat	gained heat	lost heat
(3)	lost heat	gained heat	gained heat
(4)	gained heat	lost heat	gained heat

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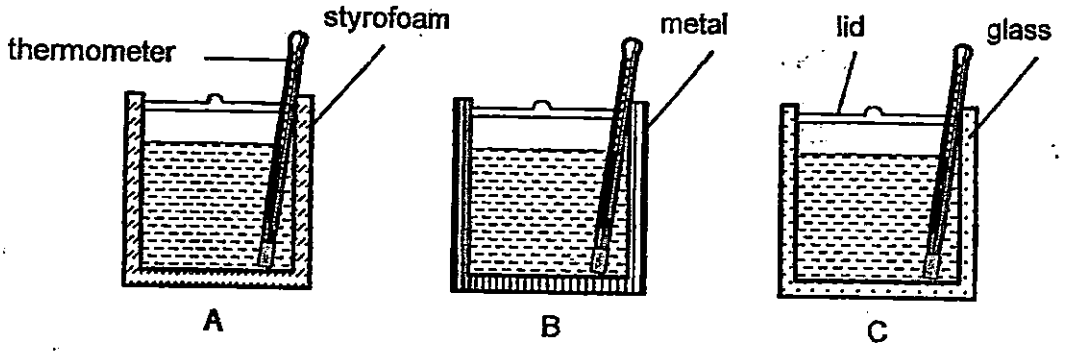
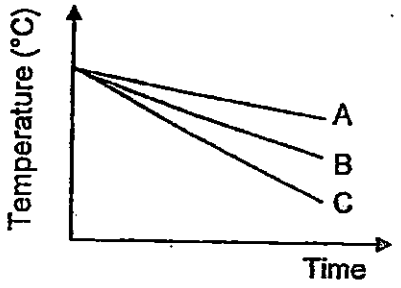
30. Three similar-sized containers A, B and C were filled with 500 ml of boiling water each. The containers were made of different materials. A thermometer was placed in each container. Each container was covered with a lid as shown in the diagram below. The containers were then left on a table for an hour.

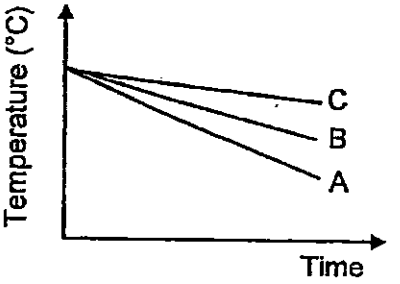


Which one of the following graphs shows the change in the temperature of the water in each container?

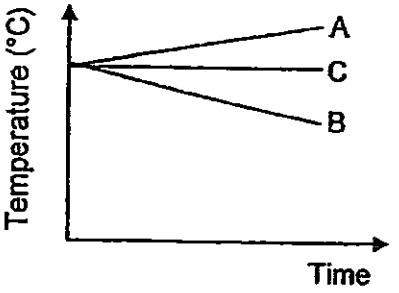
(1)



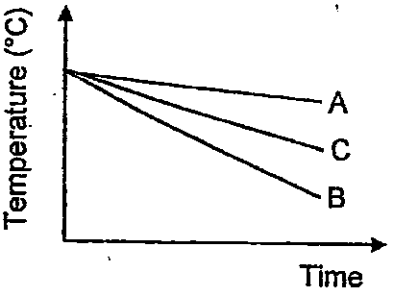
(2)



(3)



(4)



End of Booklet A

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Rosyth School
Second Semestral Examination for 2015
SCIENCE
Primary 4

Total Marks: 100

Name: _____

Class: Pr 4 - _____ Register No. ____ Duration: 1 h 45 min

Date: 29th October 2015 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 44, write your answers in the spaces given in this booklet.

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 15 pages.

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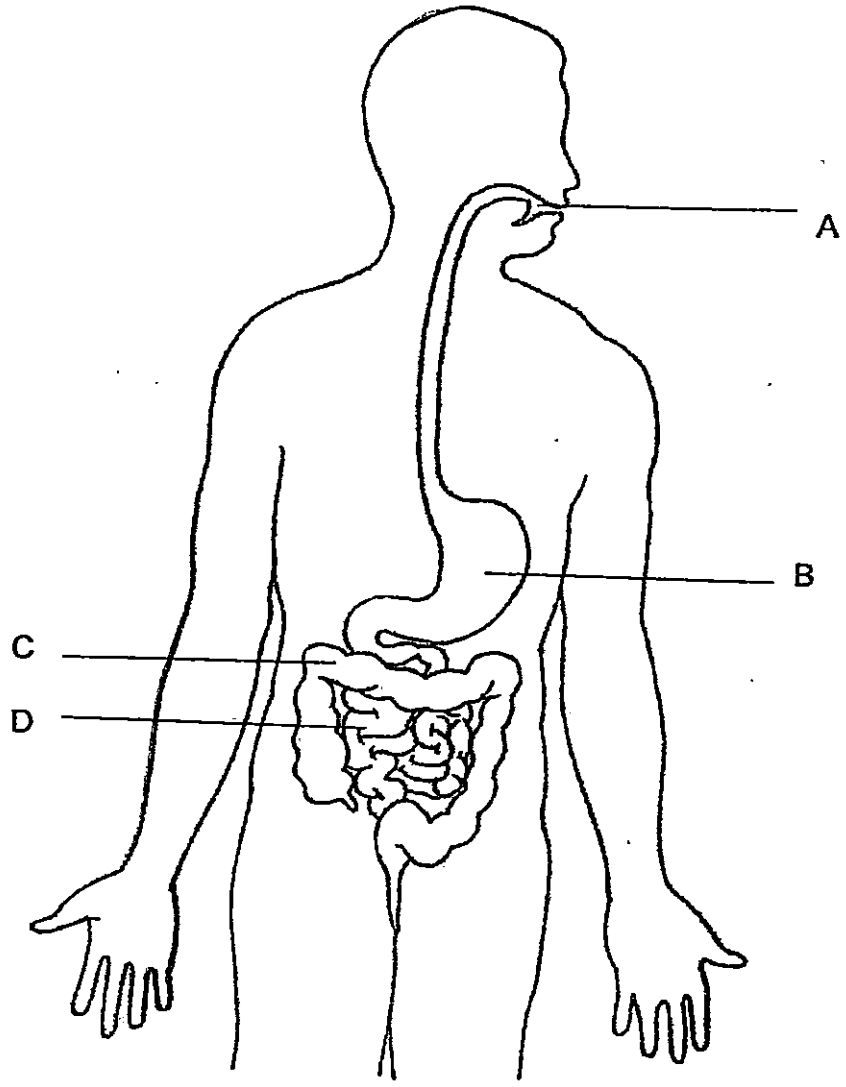
Booklet B (40 marks)

For questions 31 to 44, write your answers in this booklet.

31. The diagram below shows part of the human digestive system.



Identify the part where

(a) digested food is absorbed by the body : _____ (1m)

(b) there is no digestion : _____ (1m)

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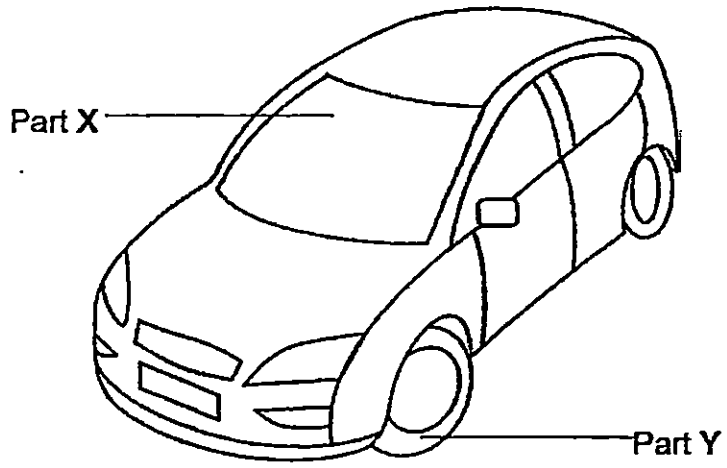
32. The diagram below shows a car.



(a) Part X is made of glass because it allows _____ to pass through so that the driver can see the road. (1m)

(b) Part Y is made of _____ because Y has to be flexible. (1m)

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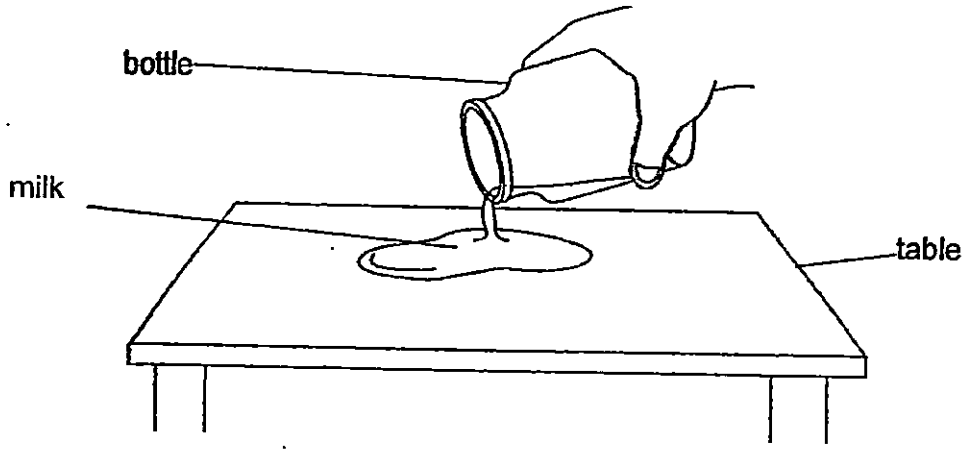
33. Choose the correct words from the box to fill in the blanks below.

solid	liquid	gas

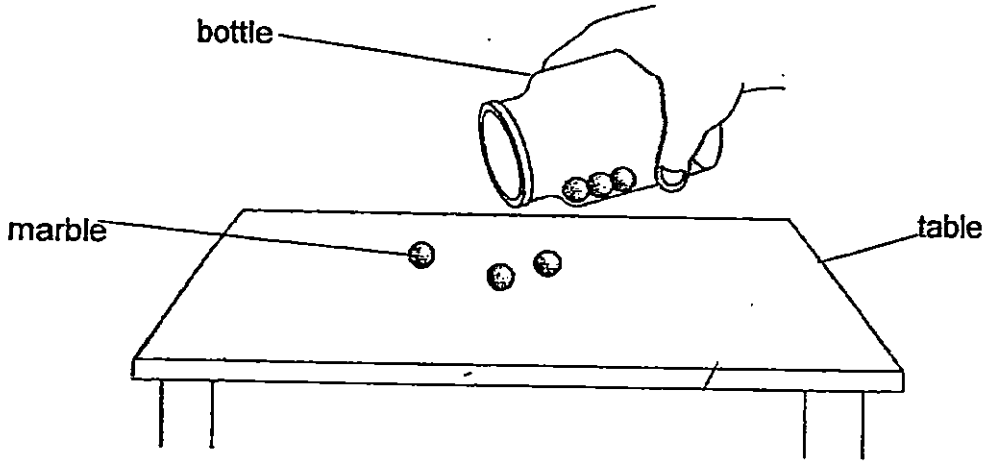
(a) Ali pours milk from a bottle onto a table as shown below.



The volume of milk remains the same but its shape changes.

This shows that milk is a _____ (1m)

(b) Ali pours some marbles from a bottle onto a table as shown below.



The shape and volume of the marbles remains the same.

This shows that a marble is a _____ . (1m)

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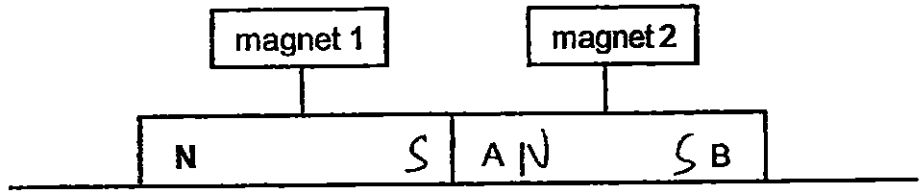
34. Two magnets are placed together as shown below.



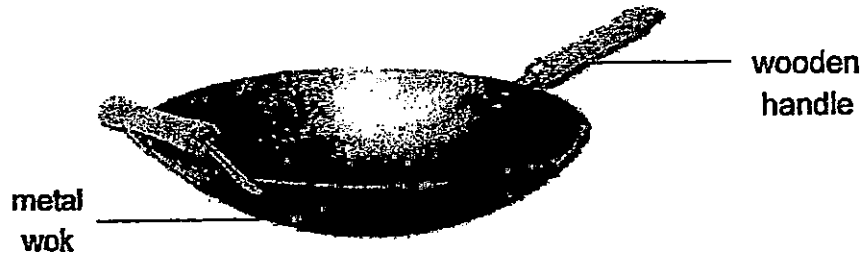
The north pole of magnet 1 is labelled **N**.

Name the poles labelled A and B on magnet 2. (2m)

A: _____

B: _____

35. The diagram below shows a frying wok.



(a) The handle is made of wood because it is a _____ conductor of heat. (1m)

(b) The wok is made of metal because it is a _____ conductor of heat. (1m)

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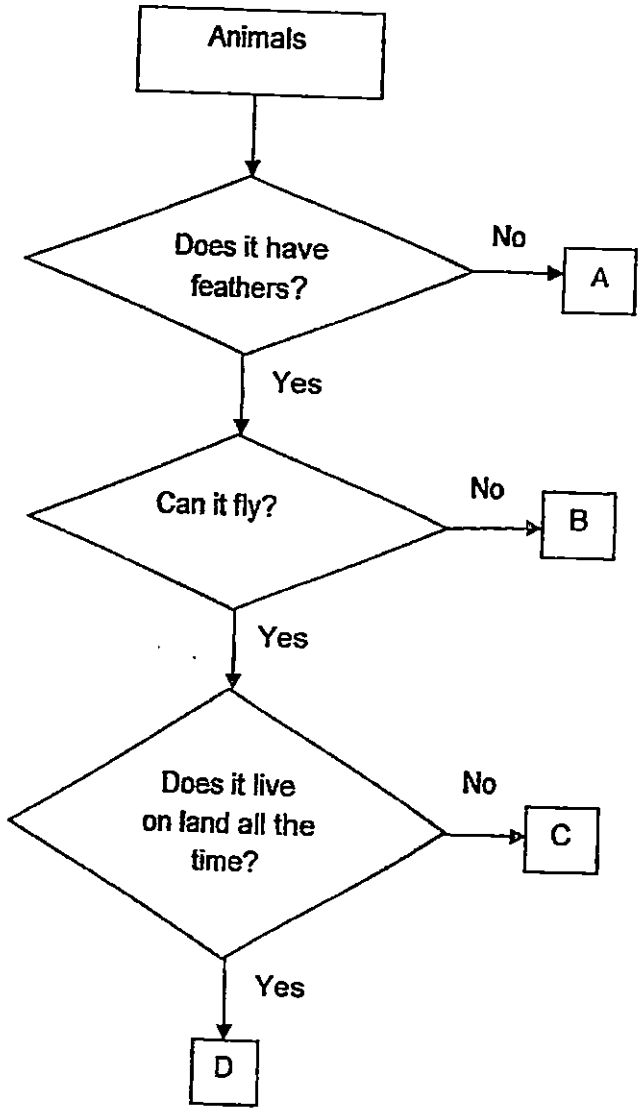
36.



(a) According to the flow chart, state one difference between animals A and B. (1m)

_____

(b) Which of the groups best represents a duck? (1m)

_____

(c) Besides the characteristics shown in the flow chart above, state one other characteristic of animal D. (1m)

_____

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37. Grace had three pieces of bread. The first piece of bread was placed in container W. She sprinkled water on the second piece of bread and placed it in container X. She toasted the third piece of bread and placed it in container Y.

W	X	Y
original bread	bread sprinkled with water	toasted bread

After a few days, she spotted some black spots on bread W and X.

(a) What were the black spots most likely to be? (1m)

_____

(b) Grace noticed that bread Y looked the same as before. Explain how this is possible. (1m)

_____

_____

(c) Name one other condition for the black spots found on the breads to grow? (1m)

_____

(d) Identify the changed variable in the above experiment. (1m)

_____

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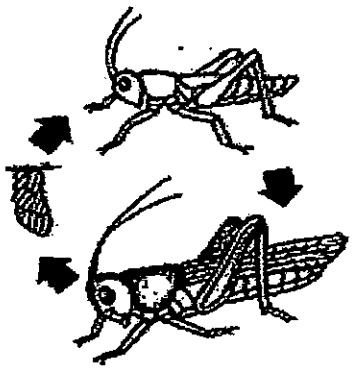
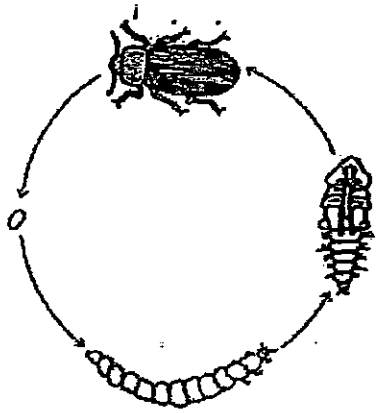
38. Compare the two life-cycles below.



life cycle of a grasshopper



life cycle of a mealworm beetle

(a) Based on the diagrams, state 2 differences between the life cycle of a grasshopper and a mealworm beetle. (2m)

Difference 1: _____

_____

Difference 2: _____

_____

(b) Lina observed that the larva of the mealworm beetle moulted several times.

Explain why the animal has to moult at this stage? (1m)

_____

_____

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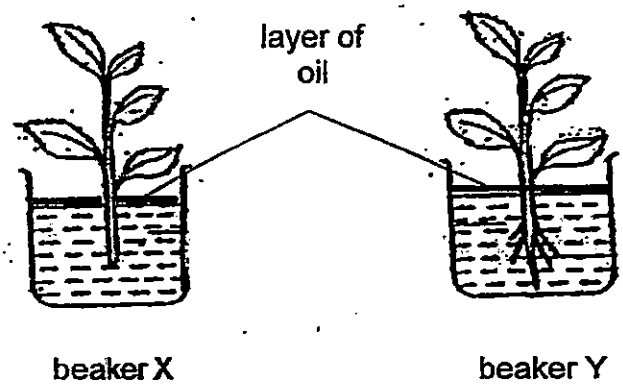
39. Aminah set up an experiment as shown below.



She filled beakers X and Y with water. After this, she poured a layer of oil on top of the water to prevent any loss of water to the surroundings. Both beakers were left in the same location. The volume of water was measured after 5 days.

(a) Describe what Aminah would observe about the water level in beakers X and Y after 5 days. (1m)

Water level in beaker X: _____

_____

Water level in beaker Y: _____

_____

(b) What could be a possible reason for Aminah's observation about the water level in beaker Y? (1m)

_____

(c) Describe the appearance of the leaves on the plant in beaker X on the fifth day? (1m)

_____

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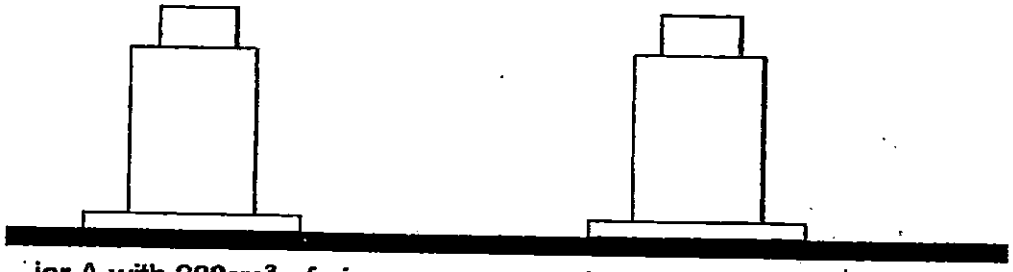
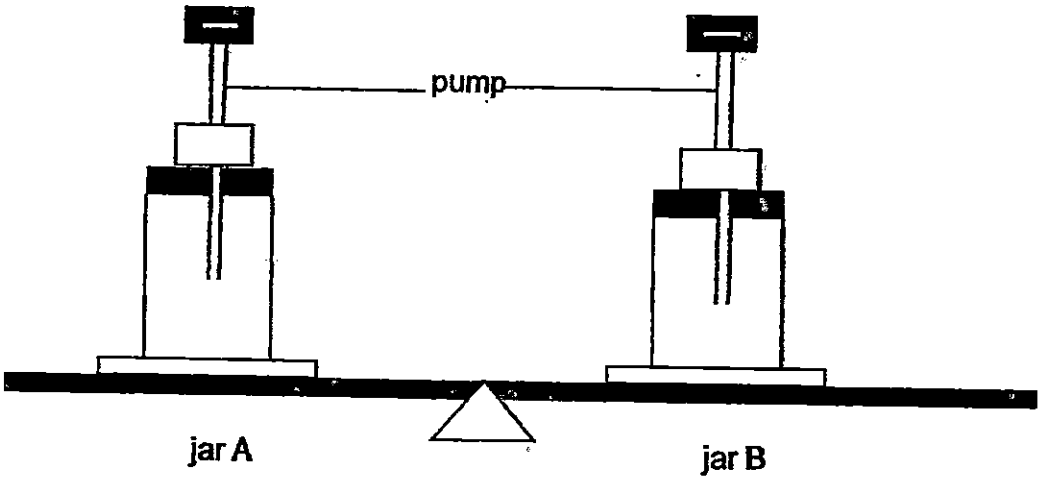
40. The capacity of jar A and B is 200cm³. Each jar contains 200cm³ of air.



jar A with 200cm³ of air jar B with 200cm³ of air

Jenny conducted an experiment and connected a pump to each jar as shown in the diagram below. She pumped another 100 cm³ of air into jar A. Both jars were then placed on a lever balance.



(a) State one observation she would make when 100cm³ of air is pumped into jar A. (1m)

_____

(b) What is the volume of the air in jar A in the end? (1m)

_____

Question 40 continues on page 10

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(c) State two properties of air that are shown in the experiment above. (2m)

Property 1: _____

_____

Property 2: _____

_____

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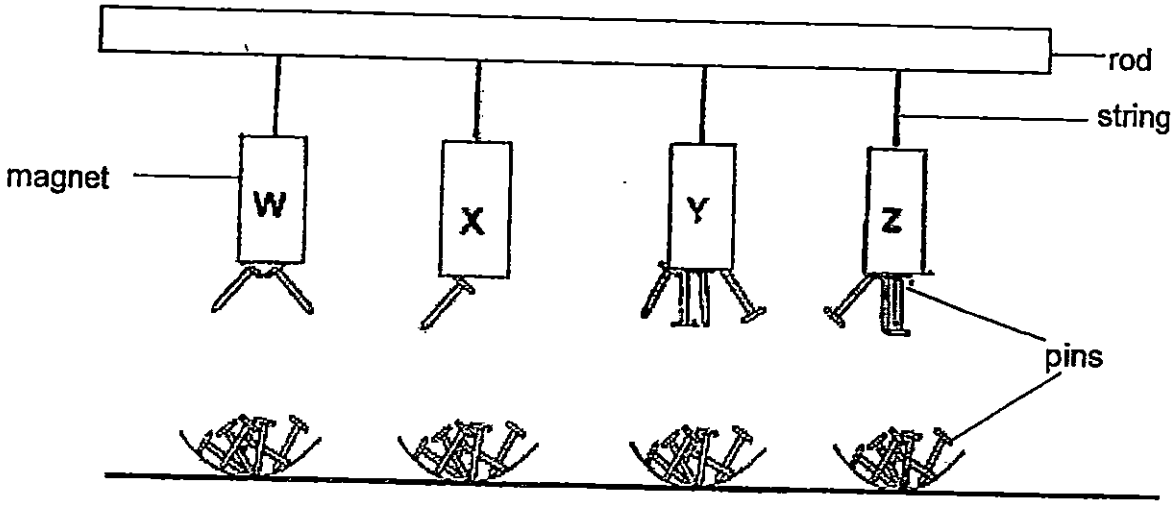
41. John hung four different bar magnets of the same size, W, X, Y and Z as shown below.



(a) What was the aim of his experiment? (1m)

_____

_____

(b) Identify and tick (✓) the correct variables shown in the table below. (2m)

Type of variables	Changed variable	Variable kept the same	Measured variable
(a) Length of strings to hang the magnets			
(b) Bar magnets			
(c) Distance between the magnets and the pins			
(d) The number of pins attracted by the magnets.			

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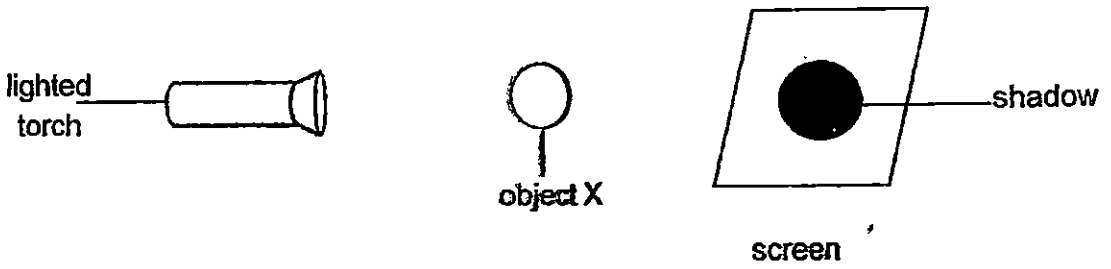
42. Billy conducted an experiment as shown below. He placed object X between a lighted torch and a screen. A dark shadow was formed on the screen.



(a) What would happen to the shadow if object X was moved closer to the screen? (1m)

_____

_____

(b) What should Billy do if he wanted to get a lighter shadow? (1m)

_____

_____

(c) State a property of light which causes a shadow to be formed. (1m)

_____

_____

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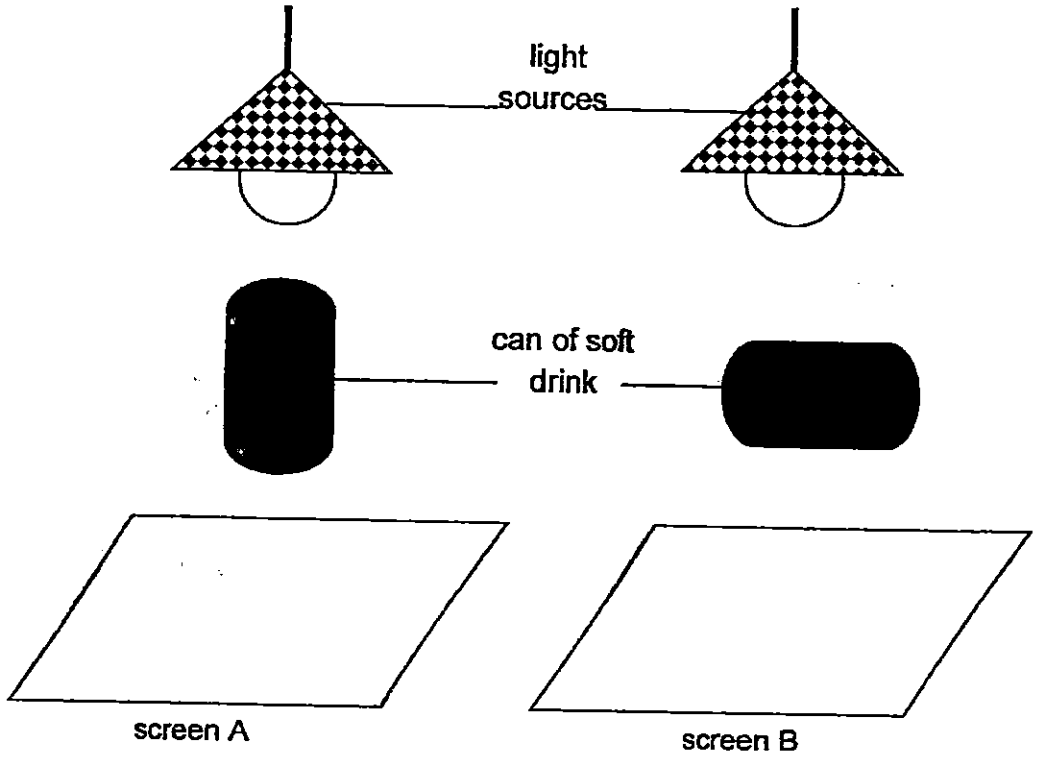
43. Ariel placed two identical cans of soft drink in different positions directly under identical light sources in a dark room as shown in the diagram below. Shadows were formed on screens A and B.



(a) In the table below, draw the shadows that would be observed on screen A and screen B respectively. (2m)

shadow formed on screen A	shadow formed on screen B

Question 43 continues on page 14

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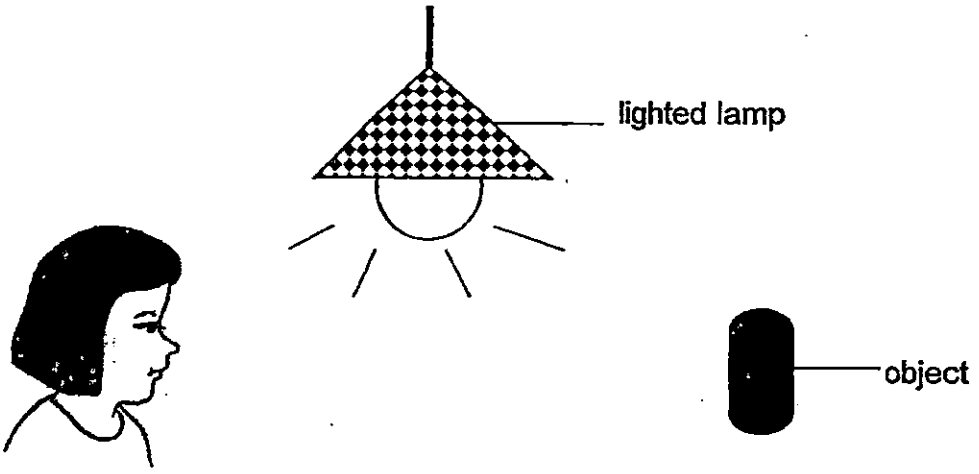
Study the diagram below.



(b) Explain how the lighted lamp and the reflection of light enable Ariel to see the object. (2m)

_____

_____

_____

_____

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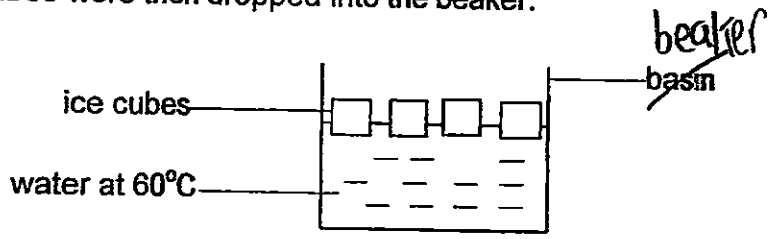
44. Water at 60°C was poured into a ~~basin~~ beaker as shown in the diagram below. A few ice cubes were then dropped into the beaker.



(a) What would happen to the temperature of the water after a few ice cubes were dropped into the beaker? (1m)

_____

(b) Explain your answer for part (a). (1m)

_____

_____

After some time, the temperature of the water in the ~~basin~~ beaker was the same as the room temperature.

(c) State the property of heat that caused the above to happen. (1m)

_____

End of Paper

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LEVEL : PRIMARY 4
SCHOOL : ROSYTH SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
4	2	2	3	2	4	2	4	2	3
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
2	3	2	3	1	4	3	2	3	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	4	2	4	4	2	1	2	3	4

Q31a. D Q31b. C Q32a light Q32b rubber

Q33a. liquid Q33b. solid Q34. A: North pole Q34. B: South Pole

Q35a. poor Q35b. good

Q36a. Animal A has no feathers but Animal B has feathers. Q36b. C

Q36c. It has a beak. Q37a. Mould

Q37b. She toasted the bread, so the water in the bread dries up. In order for mould to grow, it needs water.

Q37c. Food or Air Q37d. The amount of water on the bread.

Q38a. Difference 1 : A meal worm beetle has a four stage life cycle but a grasshopper has a three stage life cycle.

Q38a. Difference 2 : The young of a grasshopper resemble the adult but the young of the meal worm beetle does not resemble the adult.

Q38b. No model answer.

Q39a. X: no change Q39a. Y: lesser water
Q39b. The plant has root and they absorbed water. Q39c. The leaves will wither.

Q40a. The side with jar A tilted downwards. Q40b. 200cm^3

Q40c. Property 1 : It can be compressed. Q40c. Property 2 : It has mass.

Q41a. To find out which magnet is the strongest.

Q41b. a. variable kept the same
Q41b. b. changed variable
Q41b. c. variable kept the same
Q41b. d. measured variable

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Q42b. Use a torch that gives out lesser light.

Q42c. Light travels in a straight line.

Q43a. **SEE PICTURE**

Q43a. **SEE PICTURE**

shadow formed on screen A	shadow formed on screen B

Q43b. The light that is from the lighted lamp fall on the objet, the object then reflect the light into Ariel's eyes.

Q44a. It will decrease. Q44b. The water lose heat to the ice cubes, so the temperature of the water decreases.

Q44c. It travels from a hotter region to a cooler region.

THE END

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Rulang Primary School

SEMESTRAL ASSESSMENT 2
SCIENCE
2015

Name:	_____ ( )	**Marks:**	_____ / 60
Level:	**Primary 4**	**Total Time for Booklets**	
Class:	**Primary 4 ( )**	**A and B:**	**1 h 30 min**
Setter:	**Mdm Sarifah Hasliza**	**Date:**	**3 Nov 2015**

Total Marks: 100

BOOKLET A

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**
2. You are required to answer **all** the questions in this booklet.
3. This question booklet consists of 17 printed pages, including the cover page.

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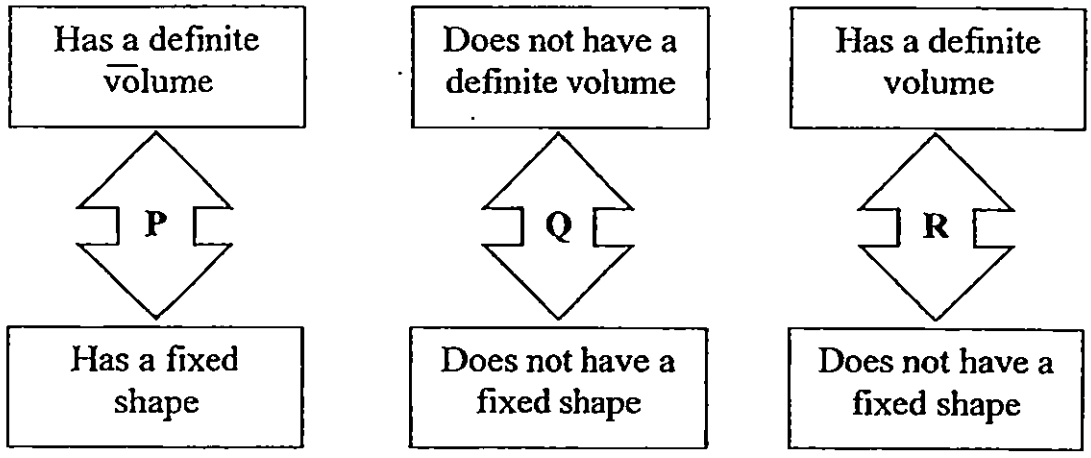
Section A (30 x 2 marks)

For each of the questions from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Matter is anything that has mass and occupies space. Which one of the following is not an example of matter?

   (1) Light
   (2) Bottle
   (3) Oxygen
   (4) Motorcycle

2. Study the diagram below carefully.



Which one of the following sets best fits the properties above?

	P	Q	R
(1)	Cloud	Ice	Steam
(2)	Box	Carbon dioxide	Water
(3)	Milk	Purse	Oxygen
(4)	Paper	Shadow	Sand

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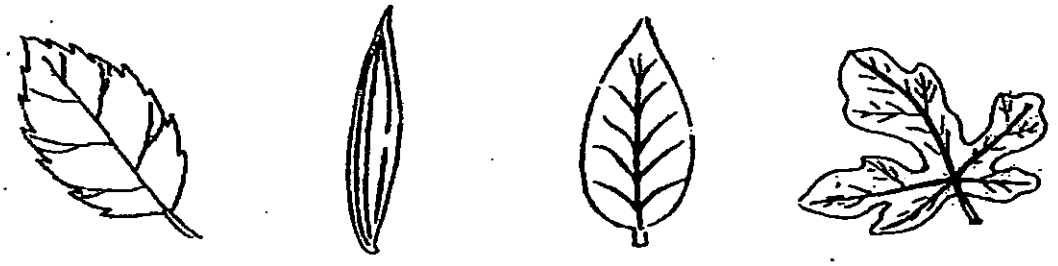
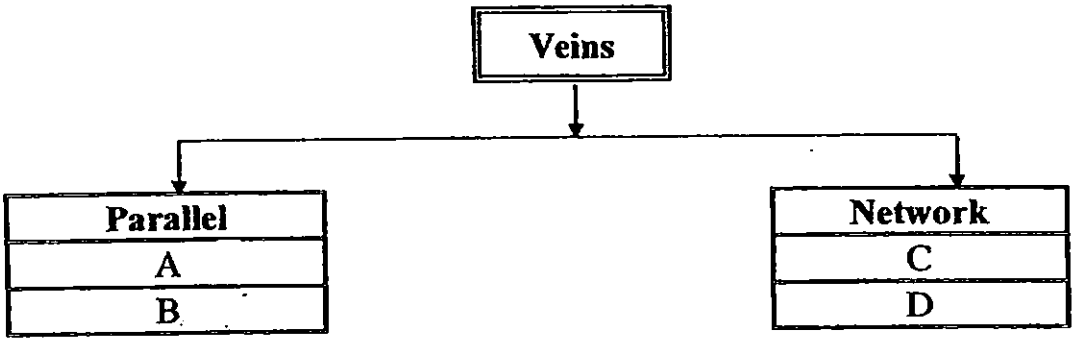
3. Kate plucked four leaves, A, B, C and D, as shown below from the same garden.



A B C D

She then classified the leaves based on their veins as seen below.



Which of the four leaves has / have been classified correctly?

(1) A only
(2) B only
(3) B, C and D only
(4) A, B, C and D

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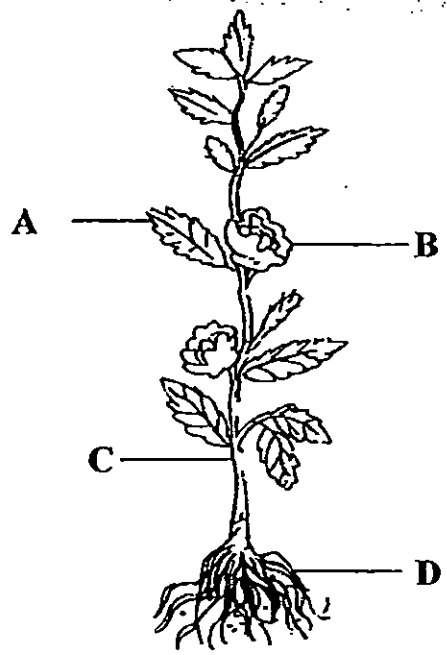
4. The picture below shows a flowering plant.



Which part is the stem?

(1) A
(2) B
(3) C
(4) D

5. Study the classification chart below carefully.

Human body systems

Respiratory	Digestive	Skeletal
Mouth	Large intestine	Skull
Lung	Heart	Backbone

Which one of the following has been classified wrongly?

(1) Heart
(2) Skull
(3) Mouth
(4) Large intestine

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6. Which one of the following shows the correct order when food moves through some parts of the digestive system?

(1)

Stomach **Large intestine** **Small intestine**

(2)

Large intestine **Stomach** **Small intestine**

(3)

Stomach **Small intestine** **Large intestine**

(4)

Small intestine **Large intestine** **Stomach**

7. Which one of the following is a source of light?

(1)

A lighted candle

(2)

A mirror

(3)

The moon

(4)

A pair of spectacles

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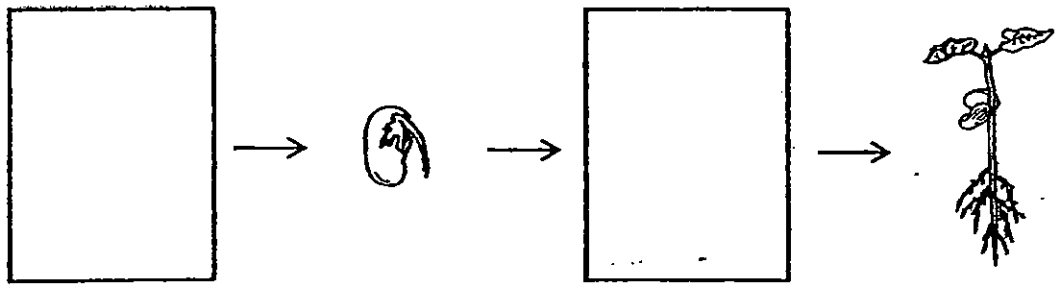
8. The diagram below shows the growth of a young plant with two missing stages, A and B.



A B

Which one of the following sets shows the correct stages for A and B?

	A	B
(1)		
(2)		
(3)		
(4)		

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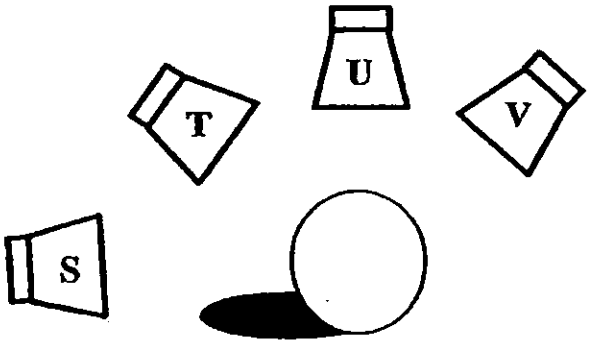
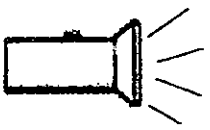
9. The picture below shows the shadow cast by a wooden ball when one of the four lights, S, T, U and V, was switched on.



Which light was switched on?

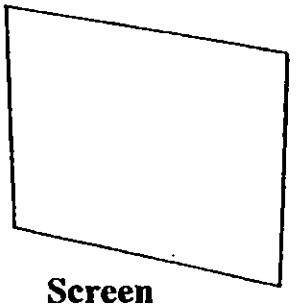
(1) S
(2) T
(3) U
(4) V

10. Leroy placed a metal container between a torch and a screen. There was a star painted on one side of the container.



Torch

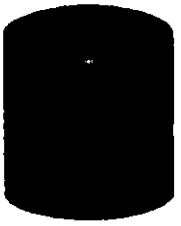
Metal container



Screen

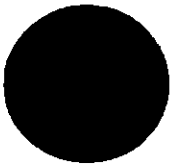
He tried to form shadows of different shapes by turning the container at different angles to face the torch. Which of the following shadows would <u>not</u> be cast on the screen?

(1)



(2)

(3)



(4)

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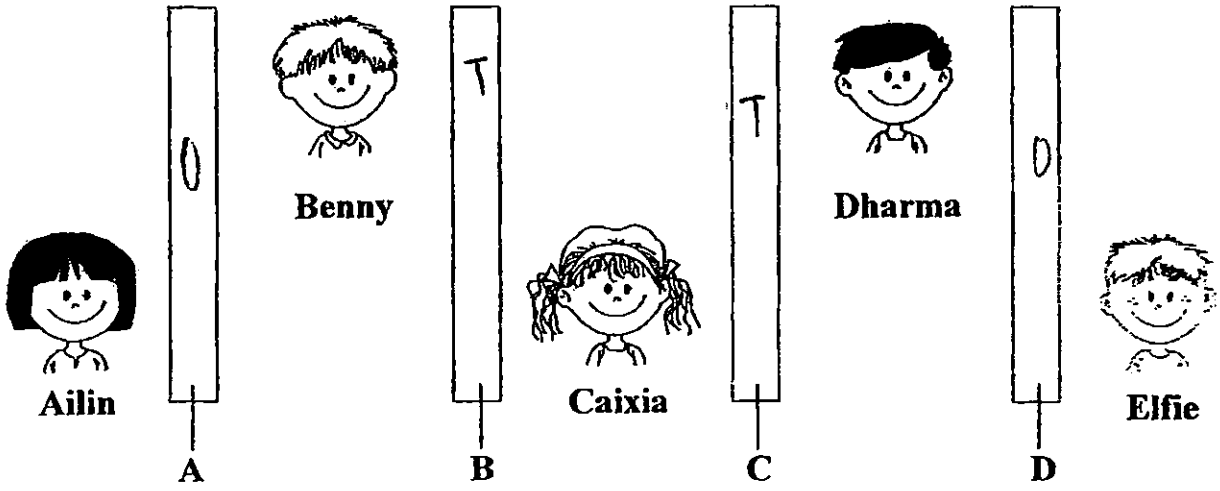
11. A factory made four types of materials, A, B, C and D. The materials were classified in the table below.

Allow light to pass through them	Do not allow light to pass through them
B	A
C	D

Mr Lim chose all the four materials from the above table to build walls for a playroom. He asked five children to stand behind the walls as shown in the diagram below.



Which one of the following statements is true?

(1) Caixia could see Ailin.
(2) Dharma could see Elfie.
(3) Ailin could not see Dharma.
(4) Benny could not see Caixia.

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12. Four pupils made the following comparison between heat and temperature.

Jazz: The temperature of an object is a measurement of how much an object expands or contracts.
Hayden: The temperature of an object is a measurement of its degree of hotness.
Elvin: Heat moves from a cooler object to a warmer object.
Kimberly: Heat can only come from natural sources like the Sun.

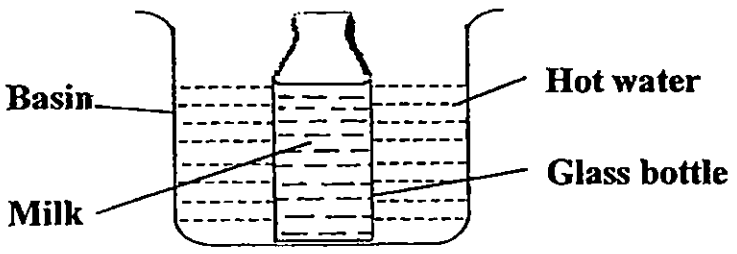
Whose statements is / are correct?

(1) Jazz only
(2) Hayden only
(3) Hayden and Elvin only
(4) Elvin and Kimberly only

13. We feel cool in an air-conditioned room because our body is _____.

(1) too hot
(2) losing heat
(3) gaining heat
(4) not producing heat

14. Elysha wanted to heat up a bottle of milk which was at room temperature. She placed the glass bottle into a basin filled with hot water.



Which one of the following observations would take place?

(1) The hot water lost heat to the milk only.
(2) The temperature of the hot water increased.
(3) The temperature of the glass bottle remained the same.
(4) The temperature of the milk would increase after a while.

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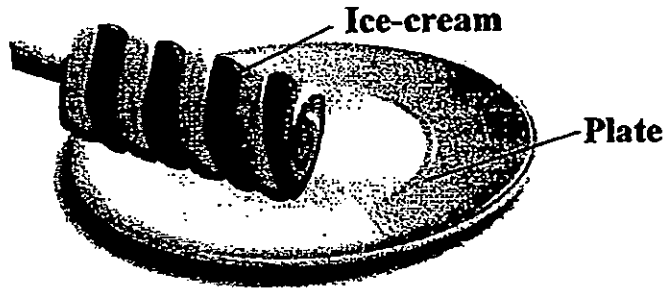
15. Samuel took out an ice-cream from the freezer and placed it on a plate as shown below.

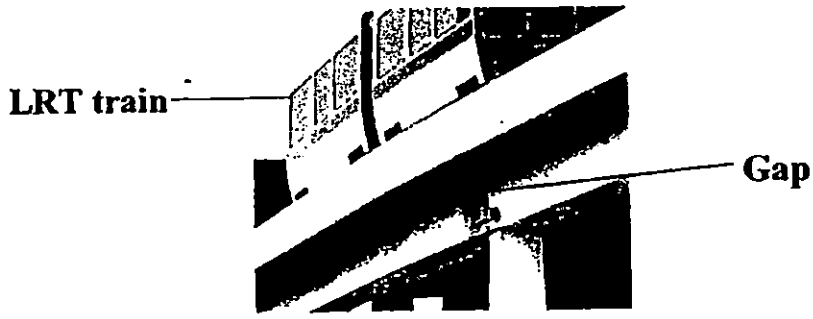


Which of the following statements are true?

A: The plate loses heat to the ice-cream.
B: The surrounding air gains heat from the ice-cream.
C: The ice-cream gains heat from the surrounding air.
D: The temperature of the ice-cream will never reach room temperature.

(1) A and C only
(2) B and C only
(3) B and D only
(4) B, C and D only

16. Karen noticed that there were gaps between the concrete slabs of the track while walking below the LRT tracks.



The purpose of these gaps is to _____.

(1) allow ventilation when the LRT train is travelling
(2) allow for expansion of the concrete slabs on hot days
(3) allow for contraction of the concrete slabs on cold days
(4) reduce the amount of materials required to build the LRT tracks

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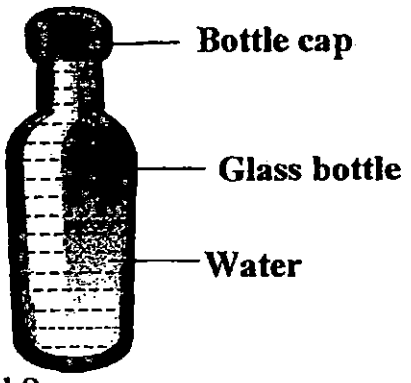
17. Suzy conducted an experiment to keep her porridge warm for as long as possible. She poured the same amount of porridge into four similar bowls made of different materials, A, B, C and D. She measured the temperature of the porridge at the start and end of the experiment.

Material of bowl	Temperature of porridge at start of experiment (°C)	Temperature of porridge at end of experiment (°C)
A	90	50
B	90	40
C	90	30
D	90	35

Which bowls are the best and worst for keeping the porridge warm for the longest time?

	Best for keeping the porridge warm	Worst for keeping the porridge warm
(1)	A	C
(2)	C	A
(3)	D	B
(4)	B	D

18. Jayden capped a glass bottle filled with water to the brim and placed it in a freezer. One day later, he noticed that the water had frozen and the glass had cracked.



What caused the glass to crack?

(1) Water is a poor conductor of heat.
(2) The water expanded when it froze.
(3) The glass bottle expanded faster than the water.
(4) The glass bottle expanded when left in the freezer.

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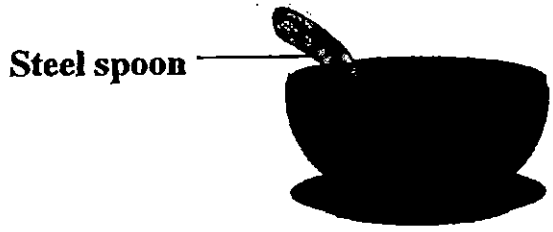
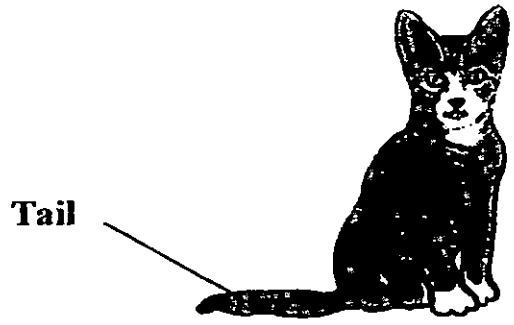
19. Jennifer places a steel spoon in a bowl of hot soup.



The spoon becomes hot after a while. Which one of the following explains this?

(1) The bowl loses heat to the hot soup.
(2) The spoon loses heat to the hot soup.
(3) The hot soup gains heat from the spoon.
(4) The spoon gains heat from the hot soup.

20. Jamal notices that his pet cat will curl its tail whenever he touches it.



This shows that the cat is a living thing because it can _____.

(1) grow
(2) breathe
(3) respond
(4) reproduce

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21. Which one of the following is a flowering plant?

(1)

Mushroom

(2)

Bird's nest fern

(3)

Mimosa plant

(4)

Moss

22. Study the classification chart below carefully.

Animals

Group A	Group B	Group C
Penguin	Guppy	Cockroach
Peacock	Kingfisher	Bee
Chicken	Clownfish	Praying mantis

Which animal is classified <u>incorrectly</u>?

(1) Peacock
(2) Chicken
(3) Kingfisher
(4) Praying mantis

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23. Mushrooms and toadstools are not plants because they _____.

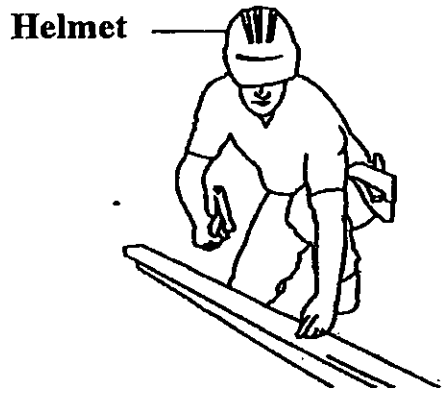
(1) reproduce by spores
(2) feed on living things
(3) cannot make their own food
(4) do not need air, sunlight and water to grow

24. Which of the following statements about flowers are true?

A: They contain chlorophyll.
B: They can grow singly or in clusters.
C: Some of them give off a pleasant smell.

(1) B only
(2) A and B only
(3) A and C only
(4) B and C only

25. The diagram below shows a helmet that is used at a construction site. The helmet is used to protect the head of a construction worker.



Plastic is chosen to make the helmet because it is _____.

(1) strong
(2) flexible
(3) able to float on water
(4) does not allow light to pass through

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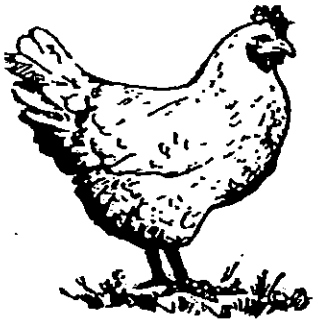
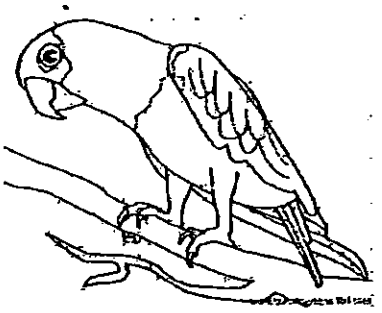
26. Study the animals below carefully.



Animal A



Animal B

Which one of the following is a common observable characteristic of the animals?

(1) They have beaks.
(2) They feed on fish and plants.
(3) They reproduce by giving birth.
(4) They have an outer covering of scales.

27. Which one of the following can be attracted by a magnet?

(1) Zinc
(2) Steel
(3) Plastic
(4) Rubber

28. The table below shows the properties of four objects. A tick (✓) indicates that the object has that particular property.

	Objects			
Property	**Window pane**	**T-shirt**	**Wooden plank**	**Rubber gloves**
X	✓			✓
Floats on water			✓	

Which one of the following is likely to be property X?

(1) Elastic
(2) Flexible
(3) Waterproof
(4) Transparent

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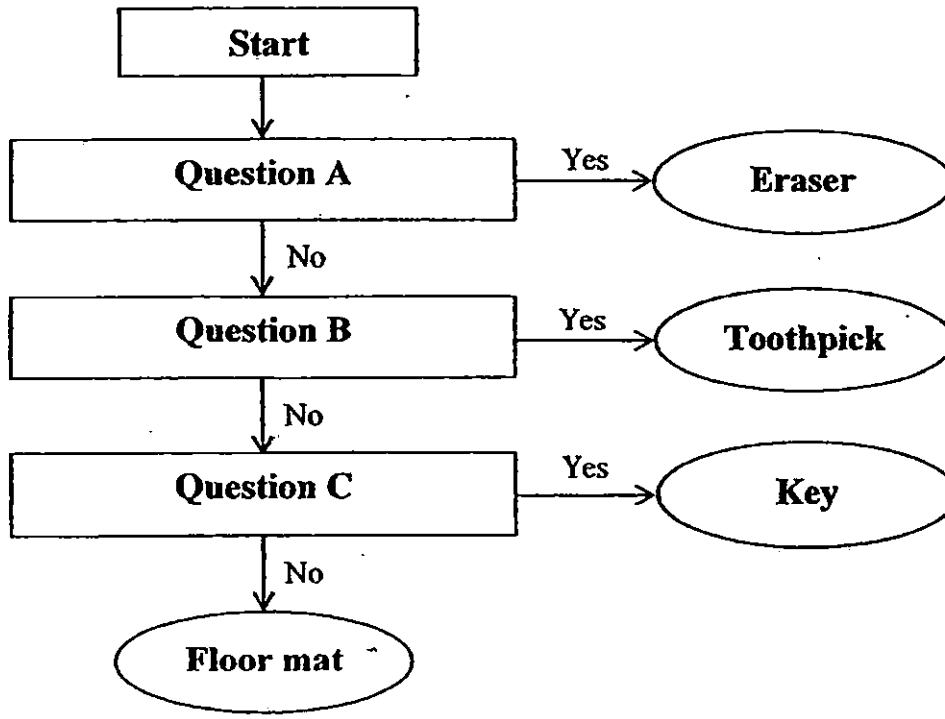
29. Study the flowchart below carefully.



What can questions A, B and C be?

	Question A	Question B	Question C
(1)	Is it made of wood?	Is it made of rubber?	Is it made of metal?
(2)	Is it made of rubber?	Is it made of wood?	Is it made of metal?
(3)	Is it made of metal?	Is it made of wood?	Is it made of rubber?
(4)	Is it made of rubber?	Is it made of metal?	Is it made of wood?

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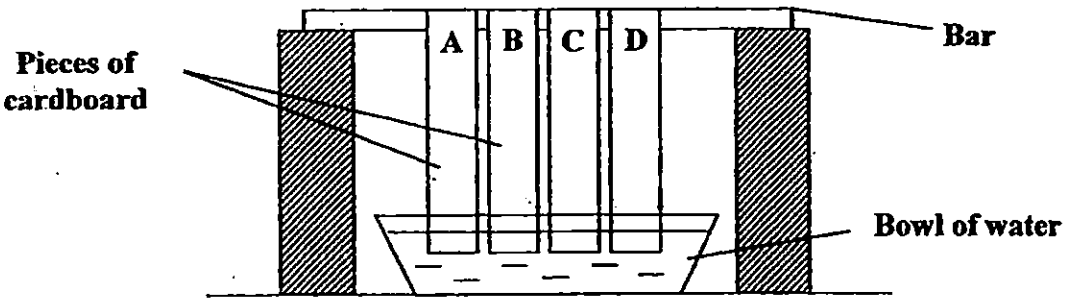
30. Walter prepared four pieces of cardboard, A, B, C and D, of equal length but with different thickness. He hung them on a bar above a bowl of water with one end dipping in the water as shown in the diagram below.



He then noted the time each piece of cardboard took to absorb water completely and recorded the results in the table below.

Cardboard	Thickness	Time taken for cardboard to absorb water completely
A	2 mm	3 minutes
B	8 mm	10 minutes
C	1 mm	1 minutes
D	5 mm	5 minutes

How long would a piece of cardboard of thickness of 6 mm take to absorb water completely?

(1) Less than 5 minutes
(2) More than 10 minutes
(3) More than 3 minutes but less than 5 minutes
(4) More than 5 minutes but less than 10 minutes

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Rulang Primary School

SEMESTRAL ASSESSMENT 2
SCIENCE
2015

Name:	_____ ( )	**Marks:**	_____ / 40
Level:	**Primary 4**	**Date:**	**3 Nov 2015**
Class:	**Primary 4 ( )**	**Parent's Signature:**	_____

– BOOKLET B

Instructions to pupils:

1. **Do not open this booklet until you are told to do so.**
2. You are required to answer **all** the questions in this paper using your own words / expressions as far as possible.
3. All drawings / diagrams must be clearly shown and labelled.
4. Marks will be deducted for wrongly spelt key words.
5. This question booklet consists of **16** printed pages, including the cover page.

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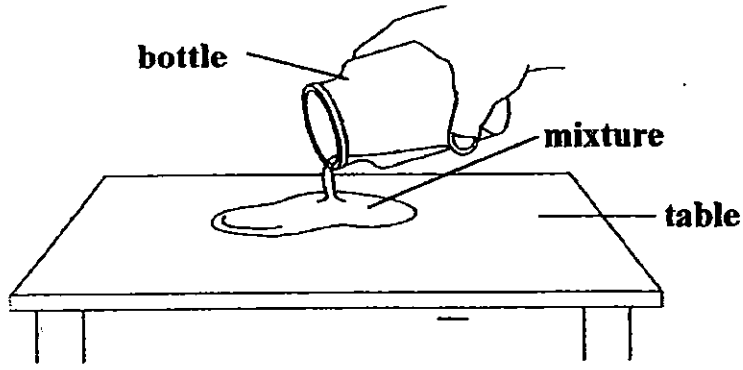
Section B (40 marks)

Write your answers to questions 31 to 44 in this booklet.

31. Choose the correct words from the box to fill in the blanks below.

Solid	Liquid	Gas

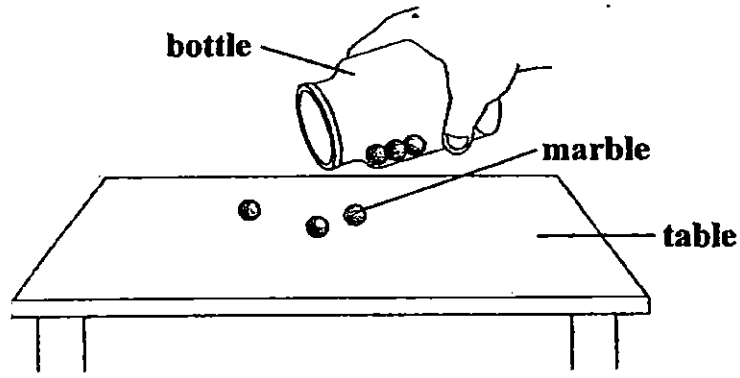
(a) Jonas pours a mixture from a bottle onto a table as shown below.



The volume of the mixture remains the same but its shape changes.

This shows that the mixture is a _____ (1 m)

(b) Jonas pours some marbles from a bottle onto a table as shown below.



The shape and volume of the marbles remain the same.

This shows that the marble is a _____ (1 m)

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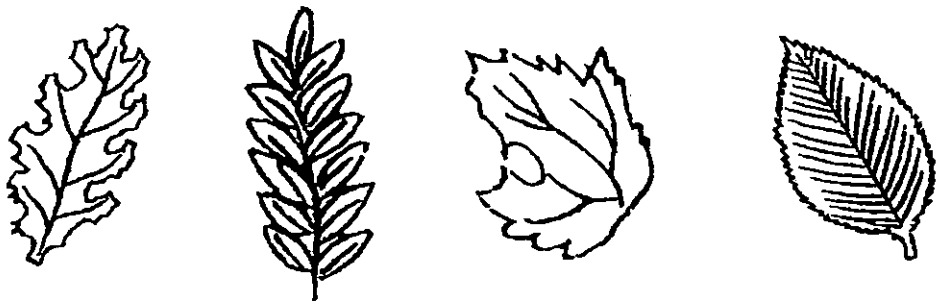
32. The diagram below shows four leaves A, B, C and D.

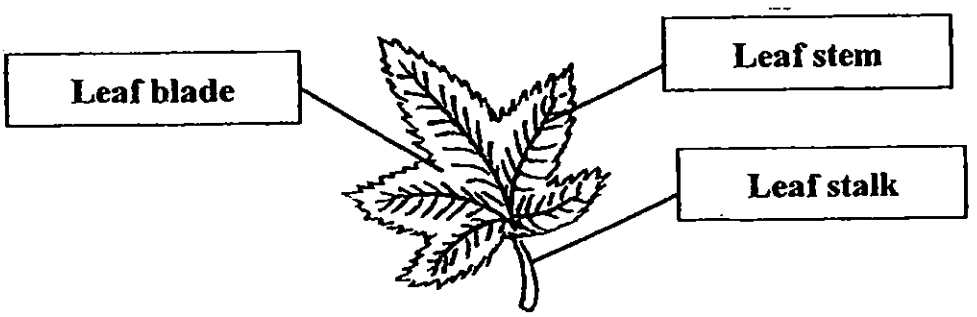


A B C D

(a) Based on the diagrams above, write down the headings of two categories which you can place the leaves under. Then classify leaves A, B, C and D according to the categories in the table below. (3 m)

_____ edges	_____ edges

(b) Shania was given a leaf. She labelled its parts as shown below.



Her teacher told her that she had made an error in identifying one part of the leaf. Identify the part that was labelled wrongly. What should the correct label be? (1 m)

_____

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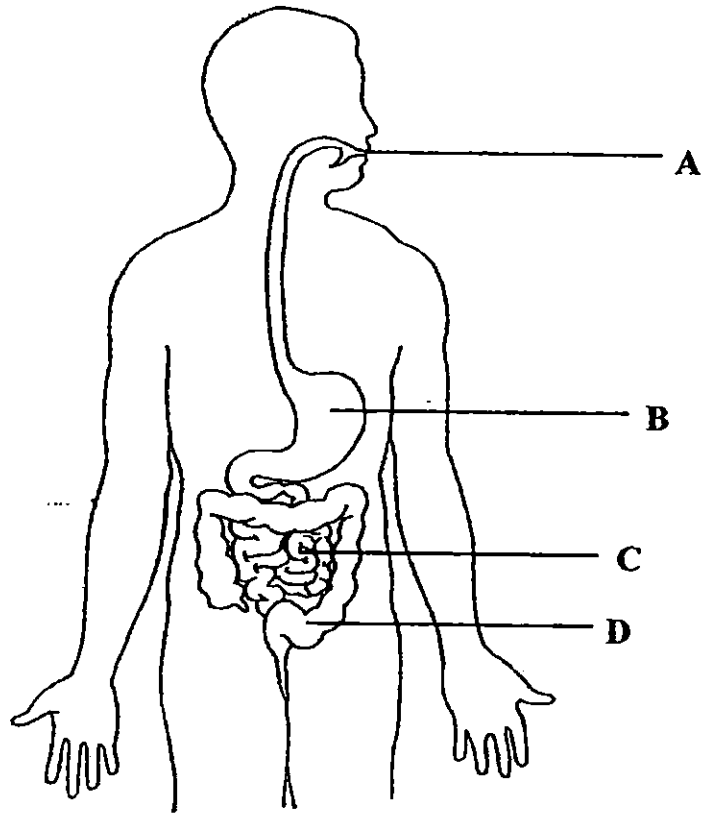
33. The functions of three different human systems are given in the table below. Complete the table by naming the correct human systems to match their functions. (3 m)

Human System	Function
(i)	It protects our vital organs such as the heart and lungs.
(ii)	It helps different parts of the body to move.
(iii)	It transports waste materials and carbon dioxide away from all parts of the body.

34. The diagram below shows the human digestive system.



Identify the parts where:

(a) digestion first takes place: _____ (1 m)

(b) there is no digestion at all: _____ (1 m)

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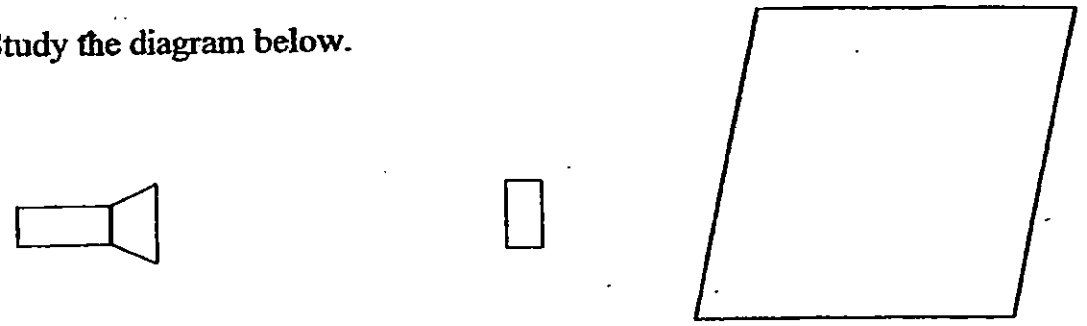
35. Study the diagram below.



Torchlight **Object X** **Screen**

(a) Aishah placed object X between the screen and the torchlight. When she switched on the torchlight, no shadow was formed on the screen. Explain why no shadow was formed on the screen. (1 m)

_____

_____

(b) What should Aishah do to object X in order for it to form a shadow on the screen? (1 m)

_____

_____

(c) When Aishah replaced object X with a tissue box, a shadow was formed. How should she move the tissue box in order to get a bigger shadow? (1 m)

_____

_____

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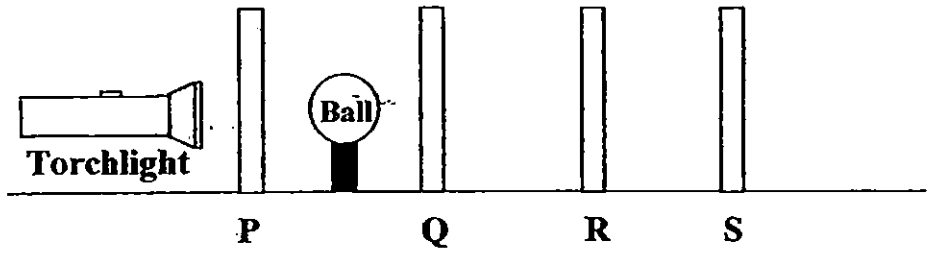
36. Aloysius set up an experiment in a dark room as shown below. A ball was placed in between sheets P and Q. When the torch was switched on, a dark shadow of the ball was cast on sheet R only.



(a) What conclusion could Aloysius draw about sheets P and Q? (1 m)

_____

_____

(b) If Aloysius removed sheet S, what would happen to the shadow formed on sheet R? Explain your answer clearly. (2 m)

_____

_____

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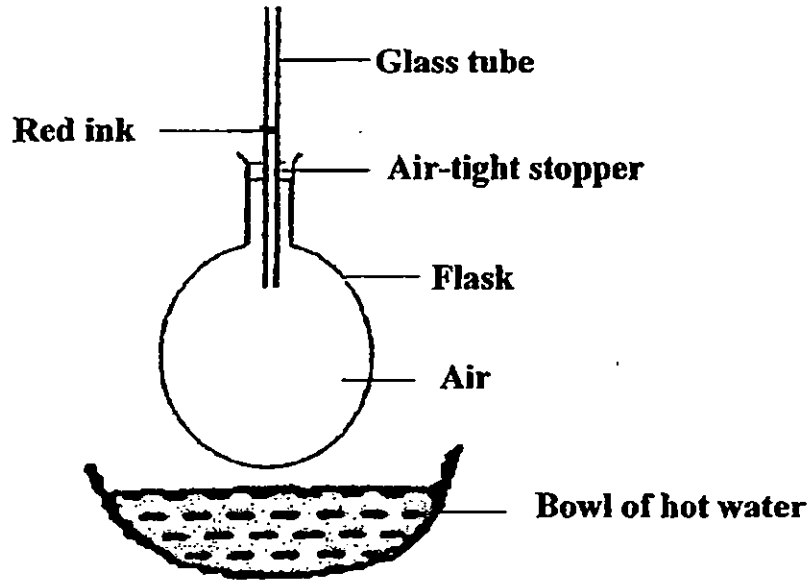
37(a) Jolin set up an experiment as shown below.



(i) What would happen to the red ink after the flask was lowered into the bowl of hot water for 30 seconds? (1 m)

_____

_____

(ii) Explain your answer in (ai) clearly. (1 m)

_____

_____

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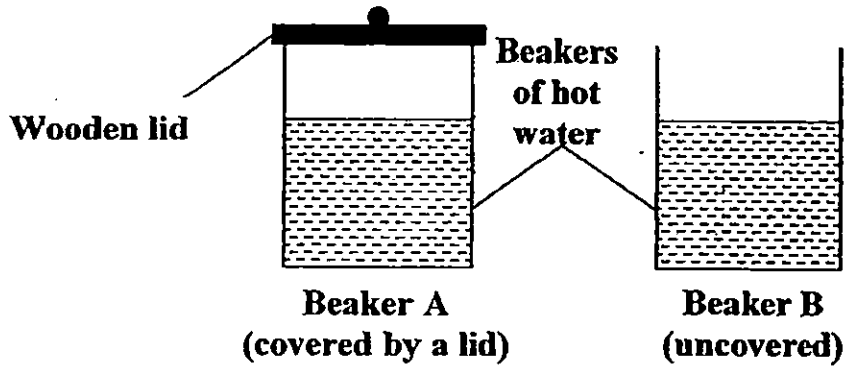
37(b) Jolin carried out another experiment as shown in the diagram below. She filled two similar beakers, A and B, with hot water at 90°C.



She measured the temperature of the water in the two beakers every 2 minutes. The results are shown in the table below.

Time taken (min)	0	2	4	6	8
Temperature of water in Beaker A (°C)	90	87	82	76	70
Temperature of water in Beaker B (°C)	90	84	79	70	59

Explain clearly why there was a difference in the temperatures of water between beakers A and B? (2 m)

_____

_____

_____

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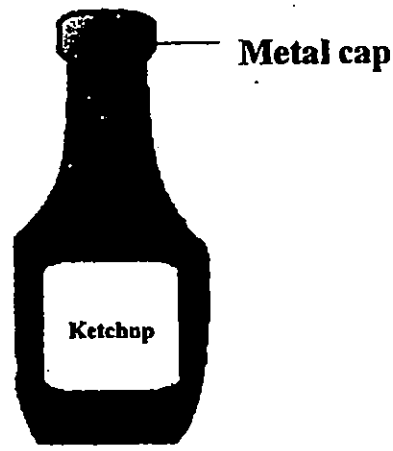
38. Mrs Lee wanted to open a bottle of ketchup that she had just taken out from the refrigerator. She decided to pour some cold water over the metal cap of the bottle. She found that she could not open the bottle.



(a) Why was she unable to open the bottle? Explain your answer. (2 m)

_____

_____

(b) What should Mrs Lee do to open the bottle of ketchup? (1 m)

_____

_____

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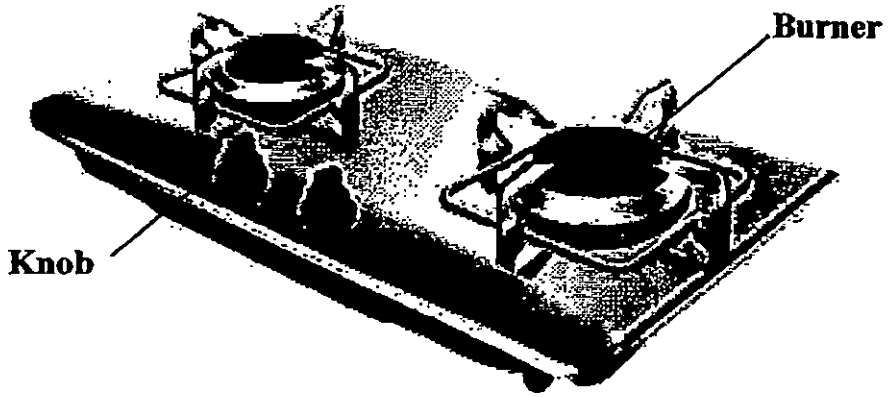
39. The diagram below shows a stove.



(a) The knob is made of plastic because it is a _____ conductor of heat. (1 m)

(b) The burner is made of metal because it is a _____ conductor of heat. (1 m)

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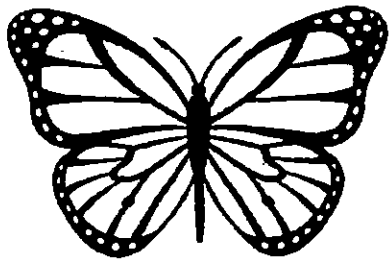
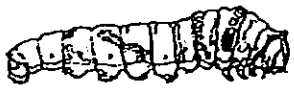
40. Study the two animals shown below carefully. Compare the two animals and complete the graphic organiser below. (3 m)



Butterfly



Caterpillar

Similarity

Where they can be found	(a)

Difference with regard to

the way they move and the food they eat

Butterfly

(b)
(i) the way it moves:

_____

_____

(ii) the food it eats:

_____

_____

Caterpillar

(c)
(i) the way it moves:

_____

_____

(ii) the food it eats:

_____

_____

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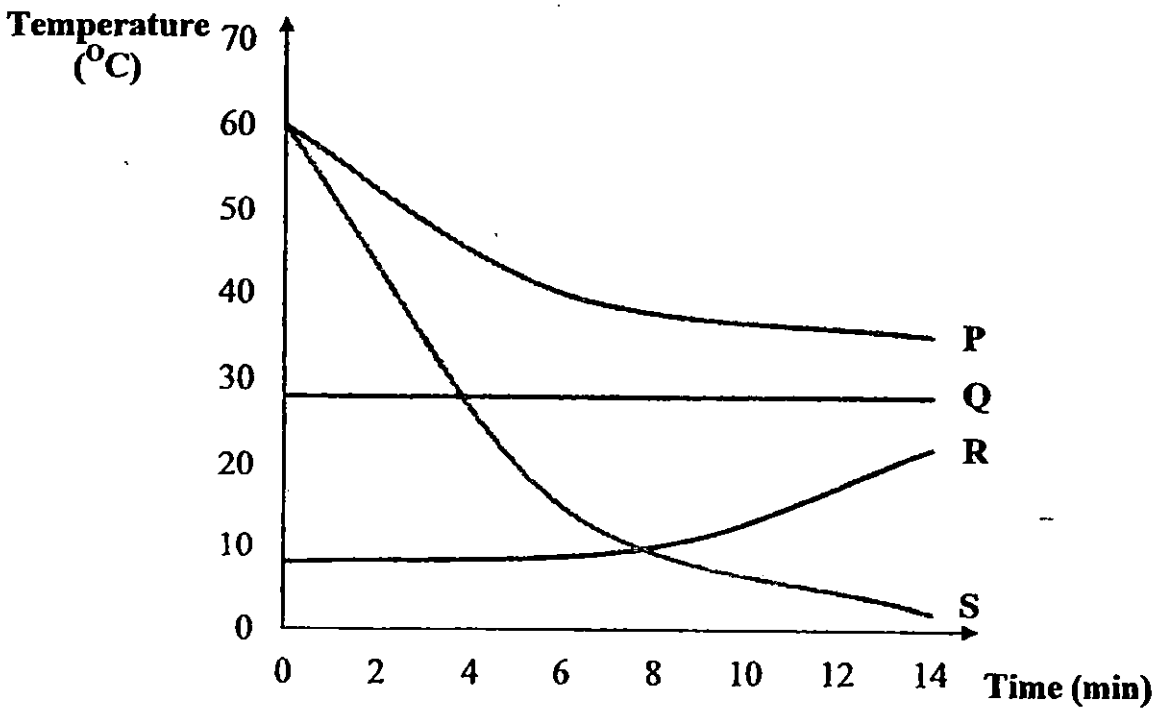
41. The graph below shows the changes in the temperature of 4 beakers of water, P, Q, R and S. The beakers were placed at different locations and had different starting temperatures. The temperatures were recorded over a period of 14 minutes.



(a) Which beaker (P, Q, R or S) in the graph above represents a beaker of water left at room temperature in the living room of a house for 14 minutes? (1 m)

_____

(b) Which beaker was the coolest 14 minutes later? What could have been done to the beaker of water to cool it down the fastest? (2 m)

_____

_____

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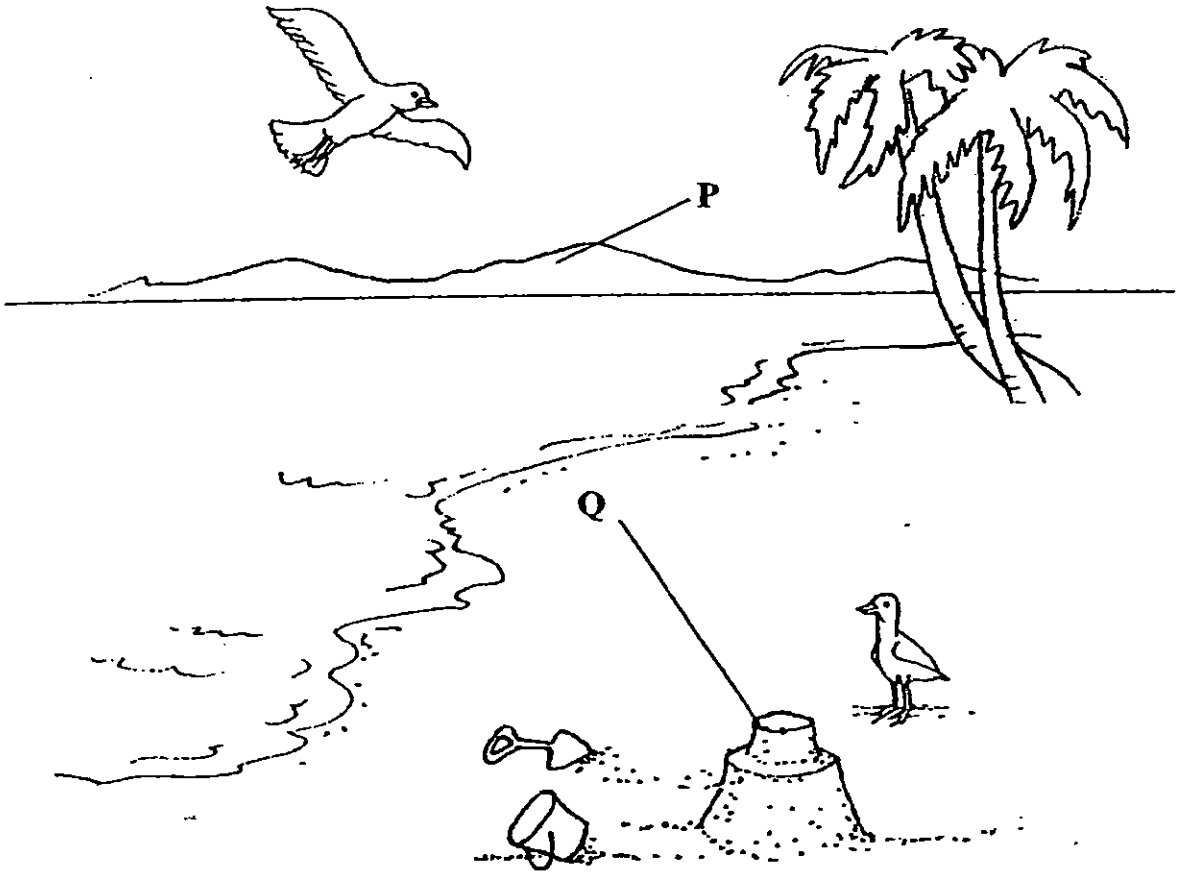
42. Linda saw some living and non-living things on the beach.



State if P and Q are living or non-living things.

(a) P is a _____ (1 m)

(b) Q is a _____ (1 m)

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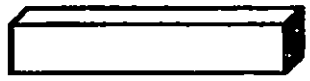
43. Study the diagrams below carefully.

Steel ring



Magnet

(a) Stella places a magnet near a steel ring. The ring moves towards the magnet. This is because the magnet exerts a _____ on the ring. (1 m)

(b) Choose the correct word from the box to answer the question below.

non-magnetic	**magnetic**	**strong**

Stella's observation shows that steel is a _____ material.

(1 m)

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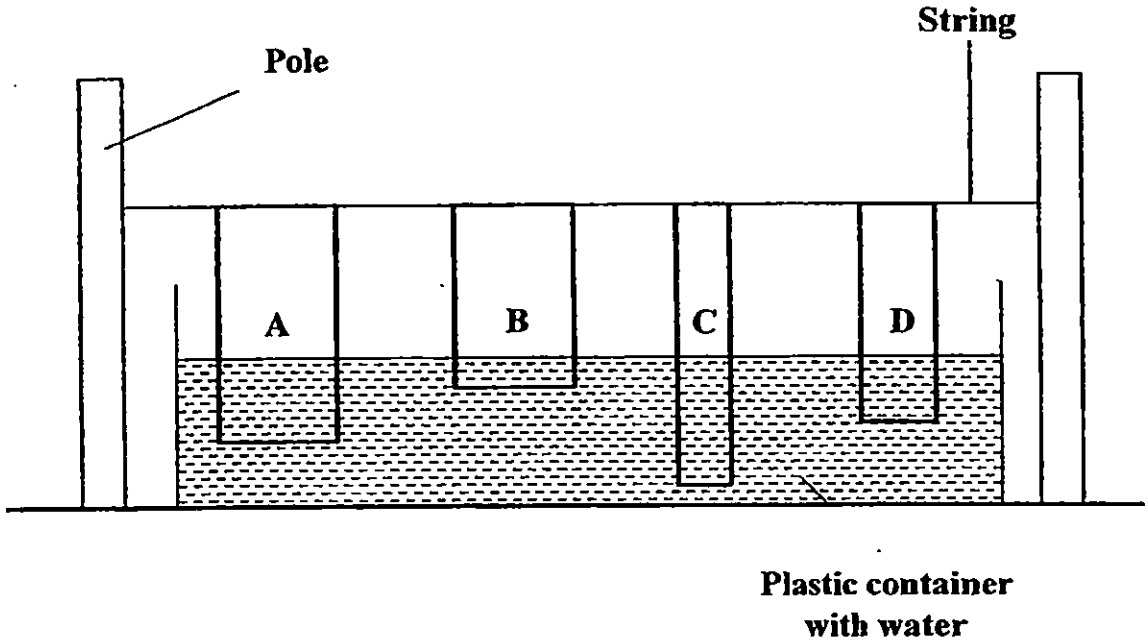
44 Paul wanted to find out which material could absorb the most amount of water. He carried out an experiment using four different materials (A, B, C and D) as shown below.



(a) Paul's teacher told him that his experiment was not a fair one. Suggest two changes that Paul must make to his experiment for it to be a fair one.

(2 m)

(i) _____

_____

(ii) _____

_____

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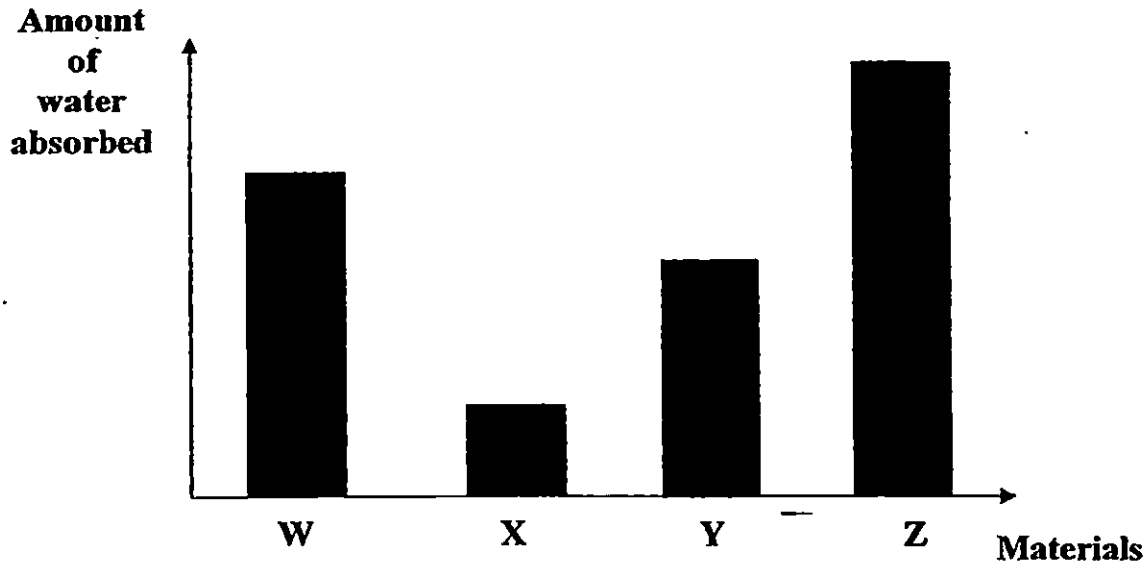
(b) The bar graph below shows the amount of water absorbed by four different materials W, X, Y, and Z.



Based on the information in the graph above, which is the best material to make a raincoat? Explain your answer. (2 m)

_____

_____

END OF PAPER

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : RULANG PRIMARY SCHOOL NANYANG PRIMARY
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
1	2	3	3	1	3	1	3	4	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
3	2	2	4	1	2	1	2	4	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	3	3	4	1	1	2	3	2	4

Q31a. Liquid
Q31b. solid

Q32a. Smooth edges ----- B
Q32a. Jagged edges ----- A , C, D

Q32b. It should be leaf veins

Q33 (i) Skeletal Q33 (ii) Muscular Q33 (iii) Circulatory

Q34a. A Q34b. D

Q35a. Object X was a transparent object, thus it allows most light to pass through so no shadow was formed on the screen.

Q35b. Aishah should change object X into an opaque object like wood.

Q35c. Move the tissue box nearer to the torchlight.

Q36a. Both P and Q are transparent as it allows most light to pass through.

Q36b. The shadow will remain the same as we cannot tell what S is made of and R is opaque so the shadow be casted on it and not let any light to pass through it.

Q37a. (i) The red ink rose

Q37a (ii) The air in the flask gained heat from the hot water and expanded, taking up more space and pushed the red ink upwards.

Q37b. The wooden lid is a poor conductor of heat, so the hot water will lose heat to the surrounding air slower than the hot water in Beaker B as the wooden lid on Beaker A prevented the air from the surroundings to gain heat from the hot water in Beaker A.

Q38a. The metal cap lost heat to the cold water and it contracted.

Q38b. She should place only the metal cap into a basin containing hot water.

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Q39A. POOR Q39b. GOOD
Q40a. They can be found on plants in the garden.

Q40b (I) It flies. Q40b (ii) It feeds on nectar that is found on flowers of plants.

Q40c (i) It crawls. Q40c (ii) It eat leaves.

Q41a. Beaker Q
Q41b. Beaker S was the coolest 14 minutes later. It was put into a basin containing ice.

Q42a. P is a non living thing
Q42b. Q is a non living thing

Q43a. pull Q43b. magnetic

Q44a (i) He must change all the materials to the same length.

Q44a (ii) He must make sure that the length of the material that was put into the water to be the same.

Q44b. Material X. Material X absorbed the least amount of water and is waterproof thus it is the best material to make a raincoat.

THE END

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SINGAPORE CHINESE GIRLS' SCHOOL

SECOND SEMESTRAL ASSESSMENT 2015

Primary 4

NAME: _____ DATE: _____

CLASS: PRIMARY 4 SY / C / G / SE / P

SCIENCE

BOOKLET A

30 questions

60 marks

Total time for Booklets A & B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

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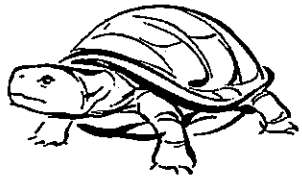
Part I (30 x 2 marks)

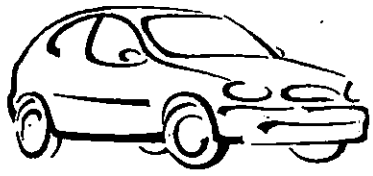
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which one of the following is a living thing?

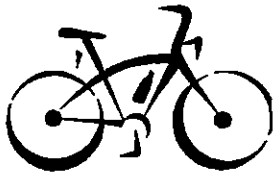
(1)



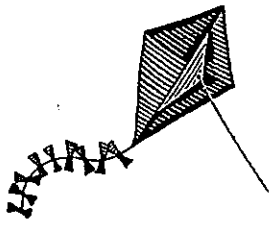
(3)



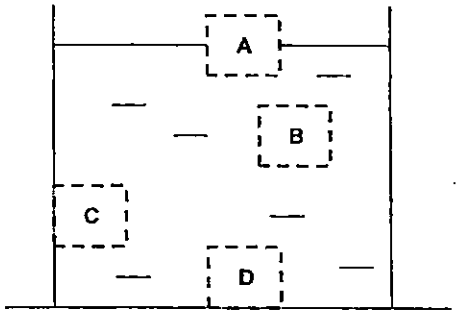
(2)



(4)



2. Bruce put a metal solid block into a container of water.
At which position, A, B, C or D, would the block most likely to be found?



(1) A
(2) B
(3) C
(4) D

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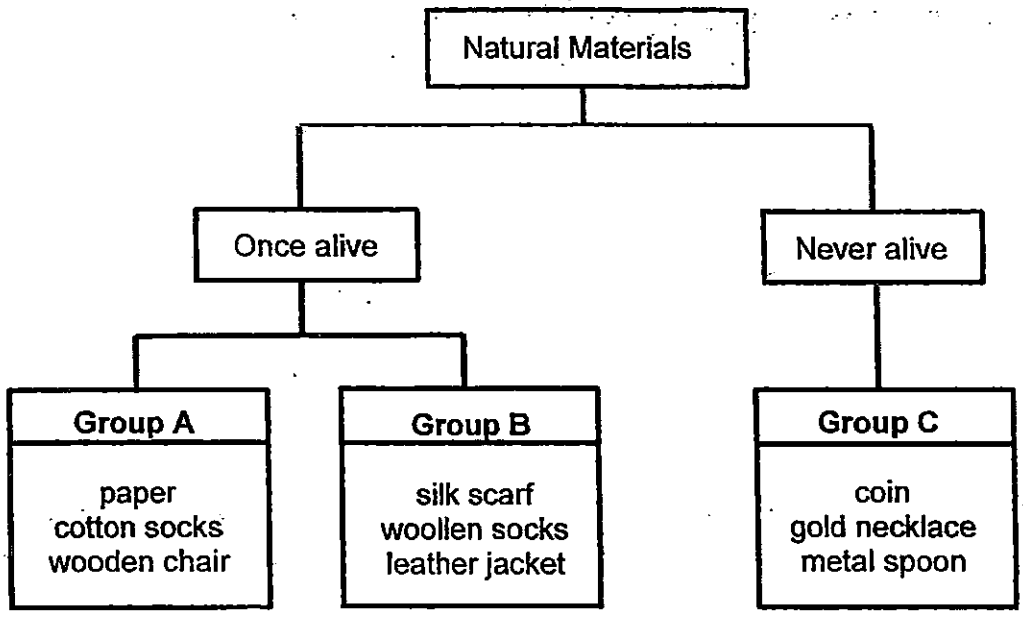
3. Study the classification table below.



In which group would you put a silver key and a pair of rubber gloves?

	Silver key	Rubber gloves
1)	Group A	Group B
2)	Group B	Group A
3)	Group C	Group A
4)	Group B	Group C

4. Which of the following pairs of living things has been correctly classified?

	Non-flowering plants	Fungi
(1)	Mushroom	Mould
(2)	Bird's nest fern	Toadstool
(3)	Banana plant	Bird's nest fern
(4)	Duckweed	Moss

5. In which part of the digestive system is digested food absorbed into the blood?

(1) gullet
(2) stomach
(3) small intestine
(4) large intestine

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6. Which of the following parts belong to the digestive system and respiratory system respectively?

	Digestive System	Respiratory System
(1)	nose	lung
(2)	stomach	nose
(3)	small intestine	gullet
(4)	windpipe	blood vessels

7. Which one of the following is the function of a leaf on a plant?

(1) holds plant upright
(2) takes in mineral salts
(3) makes food
(4) takes in water

8. Which of the following statement(s) about the <u>function of roots</u> is/are correct?

A: Roots anchor the plant firmly to the ground.
B: Roots absorb water and mineral salts.
C: Roots transport water and nutrients to other plant parts.

(1) A only
(2) A and B only
(3) B and C only
(4) A, B and C

9. Study the flow chart representing the flow of air through the human respiratory system.

Air enters → A → B → C

Which one of the following correctly shows what A, B and C represent?

	A	B	C
(1)	Nose	Mouth	Lungs
(2)	Mouth	Lungs	Windpipe
(3)	Nose	Windpipe	Lungs
(4)	Mouth	Windpipe	Nose

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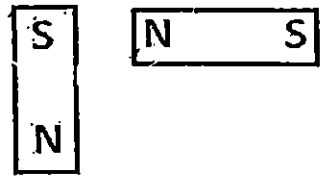
10. Object A was attracted to a magnet as shown in the figure below.

Object A is made of _____.

(1) rubber
(2) steel
(3) wood
(4) plastic

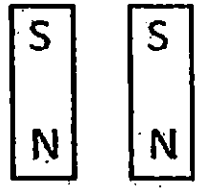
11. In which one of the following will the 2 magnets push each other away?

(1)

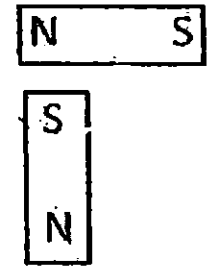


(3)

(2)



(4)



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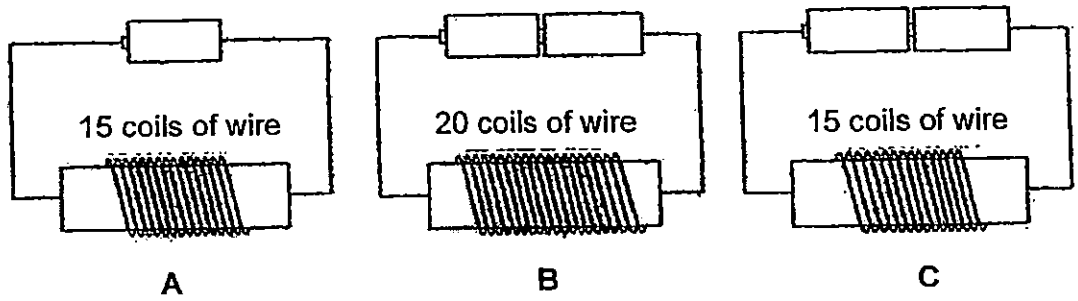
12. Ramesh made some electromagnets with different number of coils of wire and batteries.



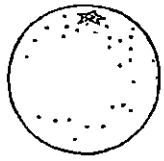
Arrange the electromagnets, **starting from the weakest electromagnet to the strongest electromagnet.**

(1) A, B, C
(2) B, C, A
(3) C, B, A
(4) A,C, B

13. Which one of the following is a source of light?

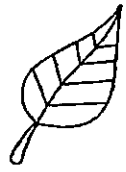
(1)

a candle flame

(2)

an orange

(3)

the moon

(4)

a leaf

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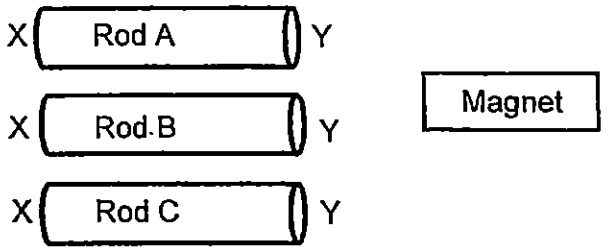
14. Andrea has 3 different rods A, B and C. She carries out an experiment by placing a magnet near each of these 3 rods.



The table below records Andrea's observations.

Rod	Observations
A	X is attracted to both poles of the magnet. Y is attracted to both poles of the magnet.
B	X is attracted to one pole of the magnet. Y is repelled by one of the poles of the magnet.
C	Both X and Y are not attracted to any poles of the magnet.

Which of the following statements about rods A, B and C is most likely to be correct?

(1) Both A and B are magnets.
(2) Both A and B are made of magnetic materials.
(3) C can be made into a magnet.
(4) A cannot be made into a magnet.

15. Which one of the following is the best conductor of heat?

(1) A paper plate
(2) A metal plate
(3) A plastic plate
(4) A wooden plate

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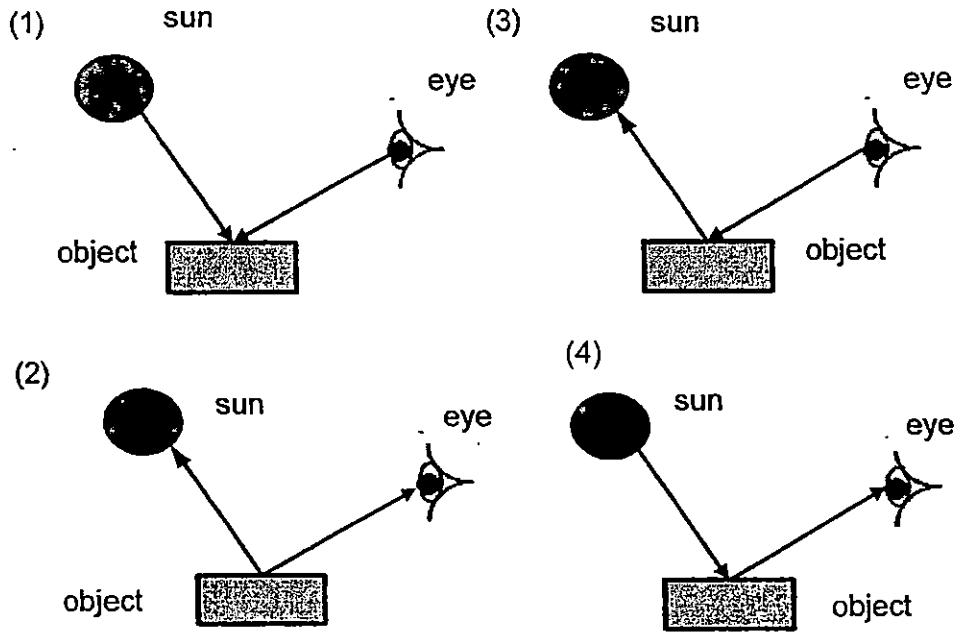
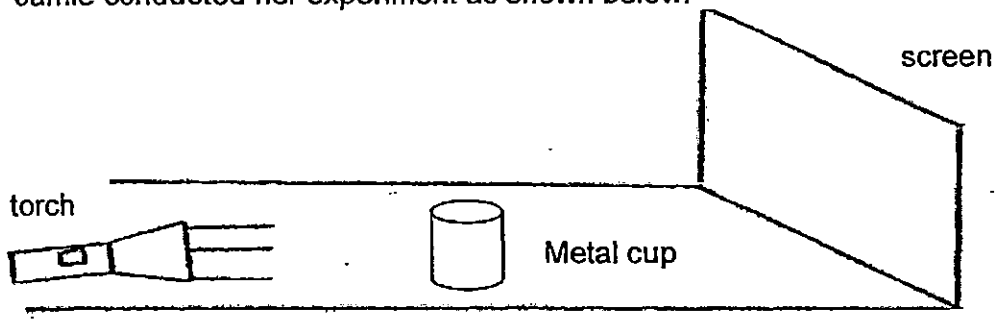
16. Which of the following shows how a person can see the object under the sun?



17. Jamie conducted her experiment as shown below.



Which of the following actions will decrease the size of the shadow?

(1) Moving the torch closer to the metal cup
(2) Moving the metal cup closer to the torch
(3) Moving the screen closer to the metal cup
(4) Moving the screen away from the metal cup

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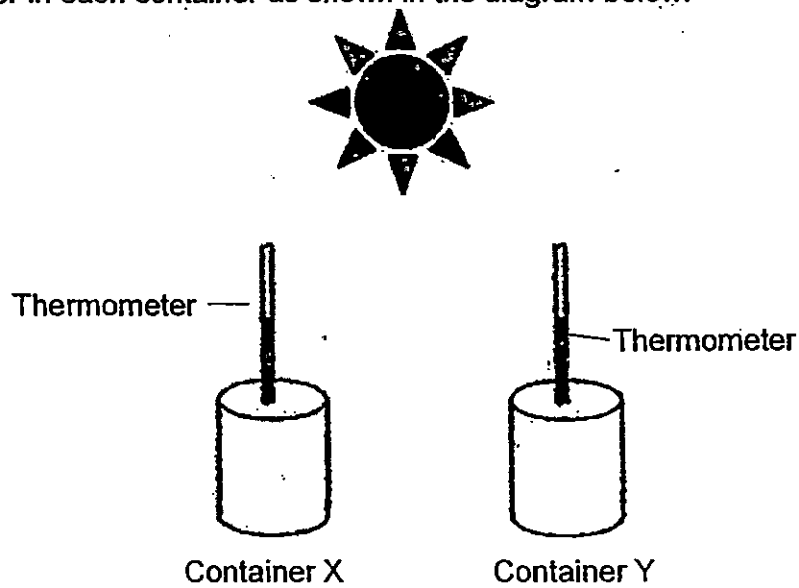
18. Two empty containers, of identical size, were placed under the sun together with a thermometer in each container as shown in the diagram below.



The readings on the thermometers were recorded every 2 minutes as shown in the table below.

Time (min)	2	4	6	8
Thermometer readings in Container X (°C)	28	29	30	32
Thermometer readings in Container Y (°C)	28	31	33	35

Based on the information above, which one of the following statements is a possible explanation for the changes in temperature observed?

(1) Container X gained heat faster than Container Y
(2) Container Y has lost more heat than Container X
(3) Container X has gained more heat than Container Y
(4) Container Y is a better conductor of heat than Container X

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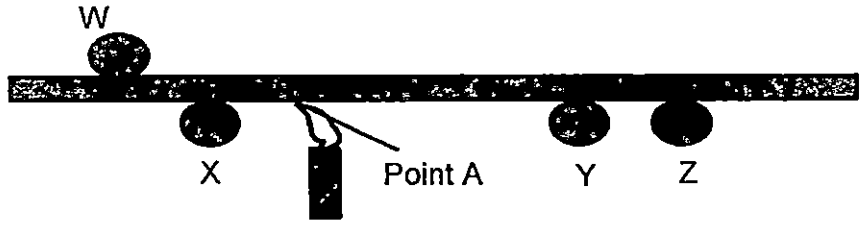
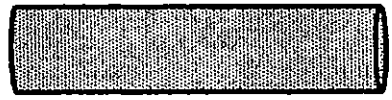
19. Ashley attached 4 wax balls, W, X, Y and Z, to an iron rod as shown in the diagram below. She then heated the rod at Point A.



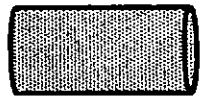
Which one of the following will show the order, from the first to the last, in which the wax balls will melt?

(1) W, X, Y, Z
(2) X, W, Y, Z
(3) X, Y, Z, W
(4) Y, Z, X, W

20. The four metal rods shown below were heated to 100°C.
Which one of the rods contains the most amount of heat?

(1) 

(2)

(3) 

(4)

21. Water can exist in 3 states.
Which of the following processes show water gaining heat?

A: A cup of hot water becoming cooler
B: Ice melts and becomes water
C: Wet clothes become dry
D: Water freezes to become ice

(1) A and B only
(2) B and C only
(3) C and D only
(4) A and D only

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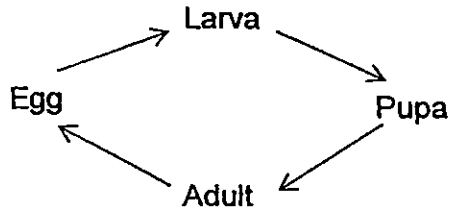
22. A woollen jacket can keep the body warm during winter. It is because the _____.

(1) woollen jacket is a source of heat
(2) woollen jacket is a poor conductor of heat
(3) body can absorb the heat from the woollen jacket
(4) heat from the body is quickly transferred to the jacket

23. Sam made the following observations on the life cycle of an animal.
- There are 3 stages in the life cycle.
- The young looks like the adult.

Which animal was Sam observing?
(1) frog
(2) beetle
(3) butterfly
(4) cockroach

24. The diagram shows the life cycle of an animal.



Which of the following animals go through the life cycle shown above?

A. Butterfly
B. Mealworm Beetle
C. Cockroach
D. Frog

(1) A only
(2) A and B only
(3) A and C only
(4) B and D only

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25. Four identical dishes, P, Q, R and S, each contained the same amount of cotton wool. 10 beans were placed on the cotton wool in each of the dishes for a week. The beans were placed under different conditions as shown below.

Dish	Air	Water	Sunlight	Temperature (°C)
P	Yes	Yes	Yes	30
Q	Yes	Yes	No	30
R	Yes	No	Yes	33
S	No	No	No	33

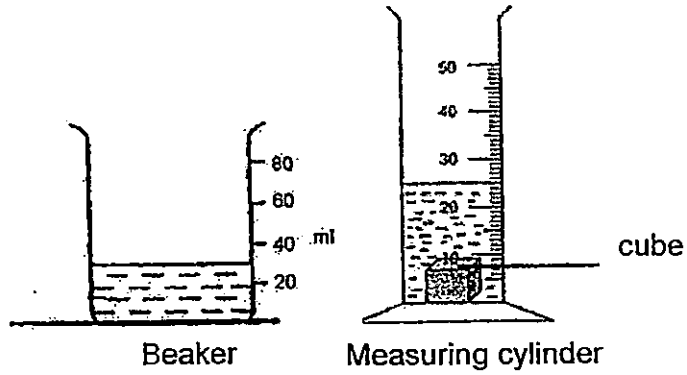
Based on the information in the table above, which dish(es) will have seedlings in a week's time?

(1) P only
(2) P and Q only
(3) R only
(4) Q and S only

26. Matter is anything that has mass and occupies space.
Which one of the following is NOT matter?

(1) air
(2) shadow
(3) soil
(4) water

27. Wilson set up an experiment as shown below.



Which of the following would he observe if he removes the cube from the measuring cylinder and places it into the beaker?

	Water level in the beaker	Water level in the measuring cylinder
(1)	Remain the same	Remain the same
(2)	Decreases	Increases
(3)	Increases	Decreases
(4)	Remain the same	Increases

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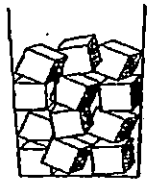
28. The diagram shows ice cubes melting in a cup.

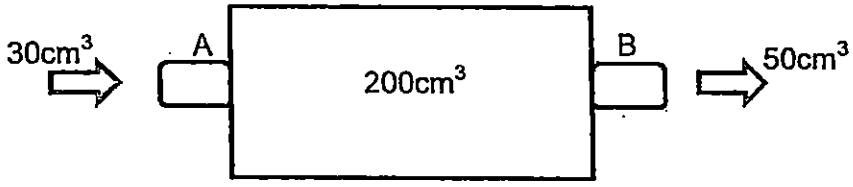


As the ice cubes melt, there is a change of _____.

X: mass
Y: shape
Z: state

(1) Z only
(2) X and Y only
(3) Y and Z only
(4) X, Y and Z

29. Study the diagram as shown below.



$30cm^3$ of air was pumped into a $200cm^3$ metal container through an inlet at Point A. $50cm^3$ of air was pumped out from an outlet at Point B. What was the final volume of air in the metal container?

(1) 200 cm^3
(2) 230 cm^3
(3) 280 cm^3
(4) 180 cm^3

30. At which temperature will the water in the cup evaporate?

P: 100°C
Q: 29°C
R: 5°C

(1) P only
(2) R only
(3) Q and R only
(4) P, Q, R

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SINGAPORE CHINESE GIRLS' SCHOOL
SECOND SEMESTRAL ASSESSMENT 2015
PRIMARY 4
SCIENCE

Name _____ ( ) Date: _____

Class: Primary 4 SY / C / G / SE / P

Components	Marks Obtained	Total Possible Marks
Part I		60
Part II		40
Total		100

BOOKLET B

14 questions

40 marks

Total time for Booklets A & B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

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Part II (40 marks)

Answer all the following questions.

31. Jasmine observed and grouped some things as shown in the table.

F	G
Tiger	Stone
Ant	Cloth
Mushroom	Pen

What are suitable headings for F and G?

Group F: _____ (1m)

Group G: _____ (1m)

2

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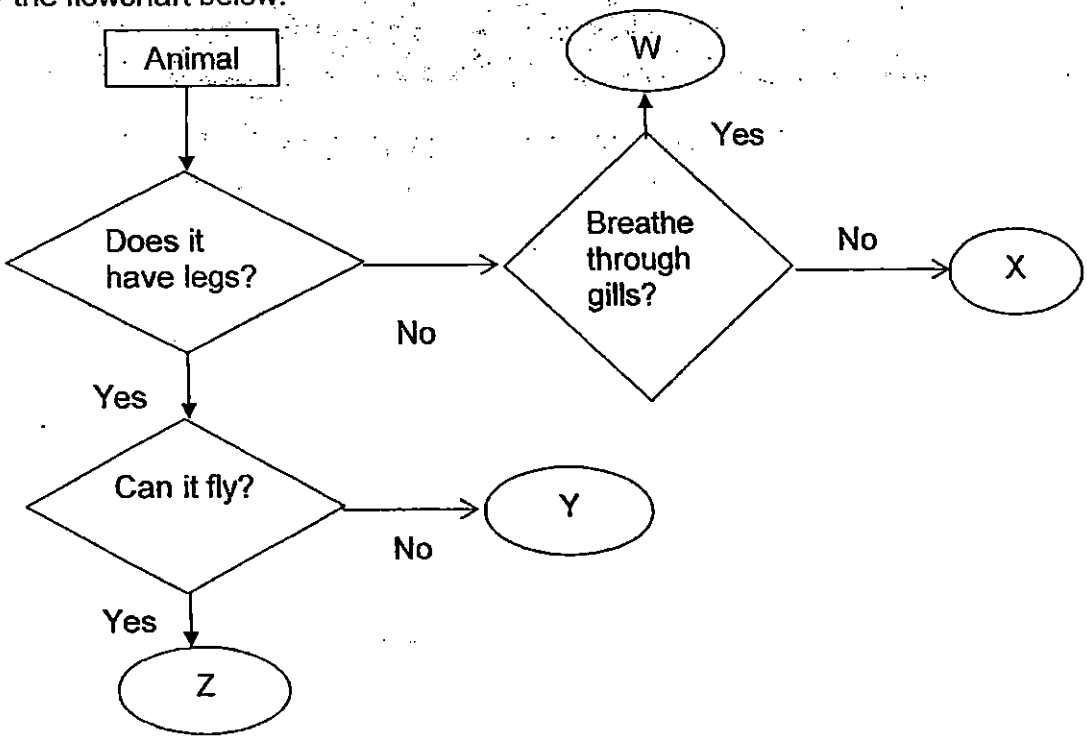
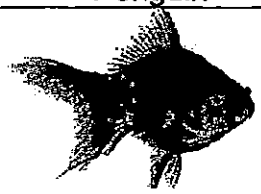
32. Study the flowchart below.



(a) Animal Y and Z are animals. Based on the flowchart above, state another similarity between Animal Y and Animal Z. (1m)

_____

(b) Based on the flowchart above, match the letters (W, X, Y or Z) to the animals shown below. (3m)

	Animal	Letter
(i)	Whale	
(ii)	Penguin	
(iii)	 Fish	

4

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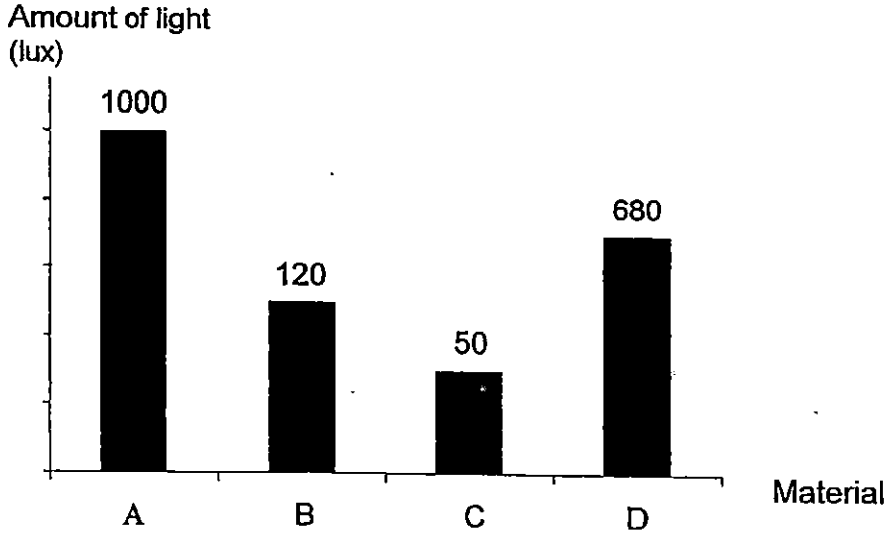
33. Minah wants to find out which of the materials, A, B, C or D, is the most suitable for making a changing room curtain.

(a) Help Minah plan her experiment by putting a tick (√) in the appropriate column to indicate which variables must be kept the same, changed and be measured for the results. (2m)

	Variables	Kept the same	Changed	Measured for the results
(i)	Type of materials			
(ii)	Distance between light source and each material			
(iii)	Amount of light that pass through the material			
(iv)	Thickness of material			

(b) The graph below shows the amount of light that can pass through 4 different materials, A, B, C and D.



Based on the information from the graph, which material, A, B, C or D, is most suitable for making a changing room curtain? Explain your answer using the information in the graph. (2m)

_____

_____

4

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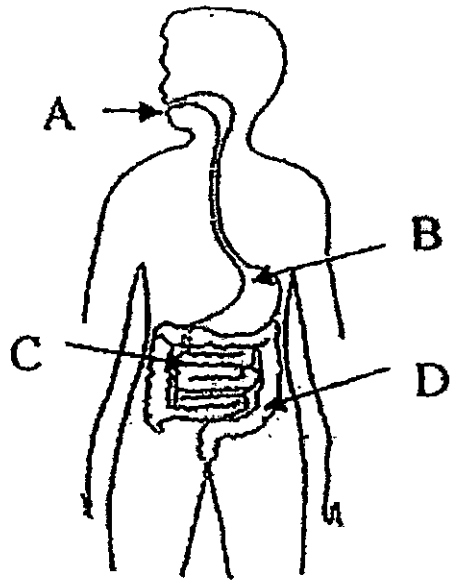
34. Fill in the correct parts of a plant in the table. (2m)

Functions of plant parts	Plant parts
It holds the plant upright.	
It obtains water for the plant.	

35. The diagram below shows the human digestive system.



Identify the part where

(a) digestion first takes place : _____ (1m)

(b) there is no digestion : _____ (1m)

36. Put a tick (✓) in the correct box to indicate if each statement is True or False. (2m)

	Statement	True	False
(a)	A piece of copper can be magnetized by passing electricity through it.		
(b)	The magnetic force of a magnet is the strongest at its poles.		
(c)	A magnet can attract things that are made of iron and steel.		
(d)	A smaller magnet always has a weaker magnetic force than a larger magnet.		

6

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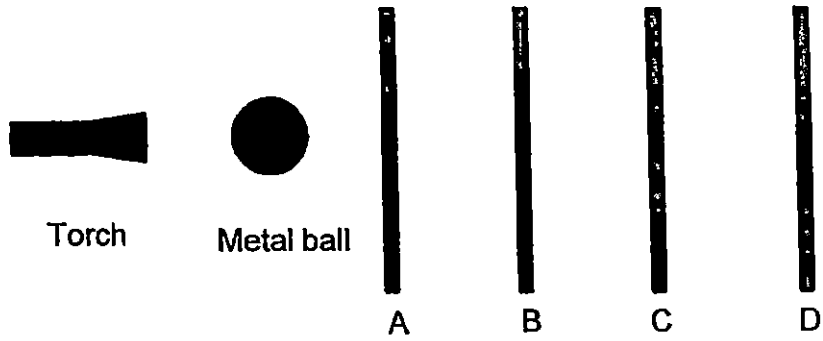
37. Angeline carried out an experiment as shown below in a dark room. Four materials, A, B, C and D, were placed at various distances from the source of light. A metal ball was placed between the torch and Material A.

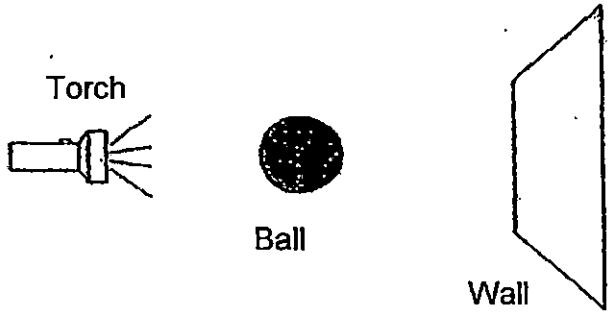


When the torch was switched on, **a clear and dark shadow** was seen on Material C only.

Put a tick (√) in the appropriate column to indicate the statements made based on Angeline's experiment above. (2m)

	Conclusion	True	False	Not possible to tell
(a)	Material A is opaque			
(b)	Material B is transparent			
(c)	Material C is opaque			
(d)	Material D is translucent.			

38. Leena shines a torch on a ball and a shadow is formed on a smooth wall.



(a) A shadow is formed when light is _____ by an object. (1m)

(b) Draw the shadow of the ball that is formed on the wall. (1m)

4

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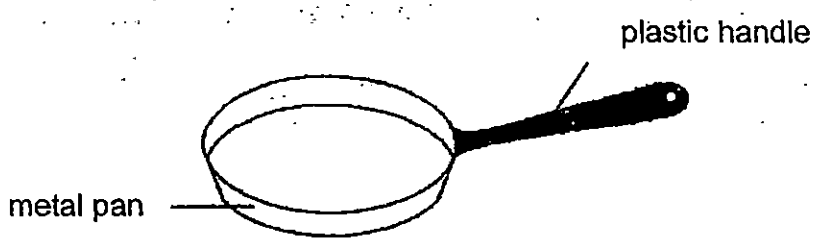
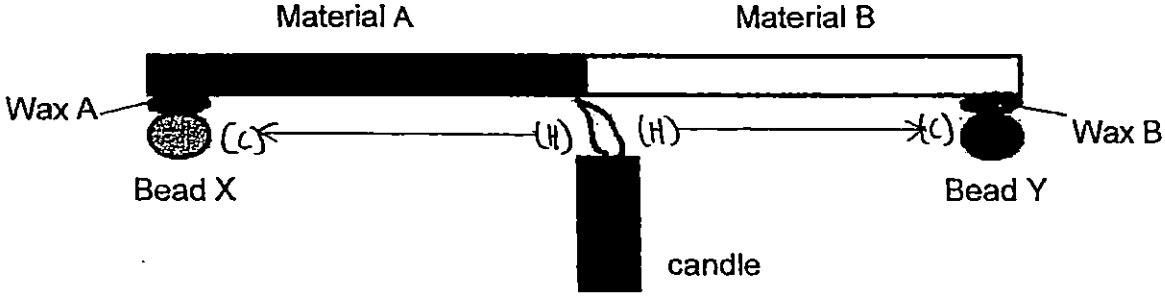
39. The diagram below shows a frying pan. (2m)



(a) The handle is made of plastic because it is a _____ conductor of heat.

(b) The pan is made of metal because it is a _____ conductor of heat.

40. Richard set up an experiment as shown below.



(a) Explain why Wax A and Wax B melted after some time. (1m)

_____

(b) Richard observed that Bead X dropped first. Explain why by completing the following sentence. (The blanks can be filled with more than one word)

Bead X dropped first because Material A is a _____ (1m) conductor of heat than Material B and the heat is transferred _____ (½m) from _____ to _____ (½m) than Material B.

(c) Richard's mother wanted to make a box to keep his food warm for a longer period of time. Which material, A or B, should she use? (1m)

_____

/ 6

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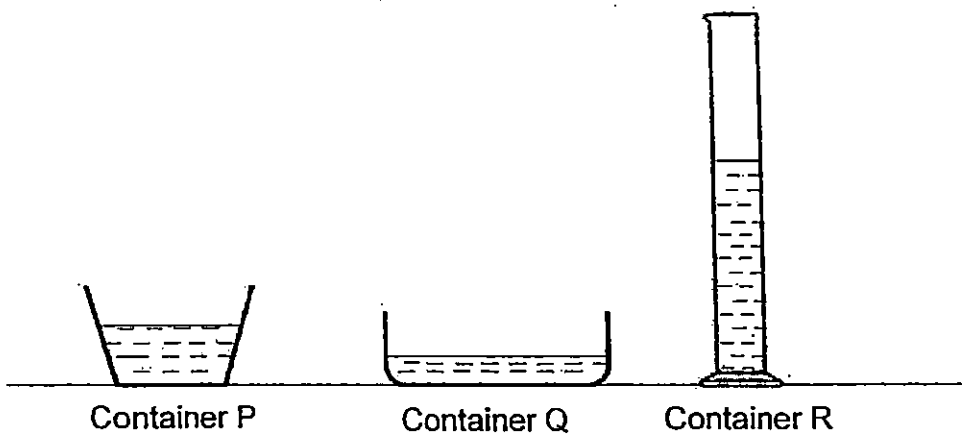
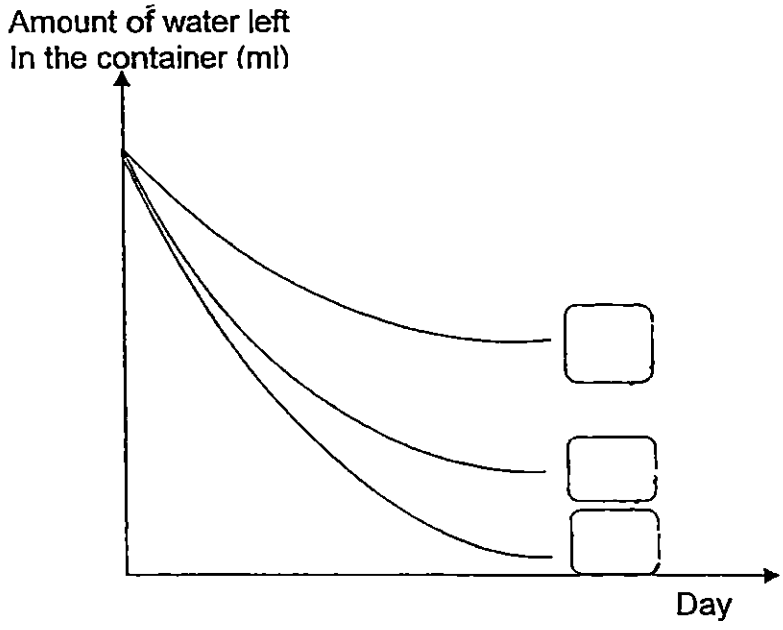
41. Sarimah poured 200ml of water each into 3 different containers, P, Q and R as shown below. She left the containers in a room for a few days.



(a) Arrange the containers, P, Q and R, starting from the one that had the highest rate of evaporation to the one that had the lowest rate of evaporation. (1m)

_____

(b)



Write P,Q and R in the boxes to indicate which curves above represent the amount of water left in the containers P, Q and R after a few days. (1m)

2

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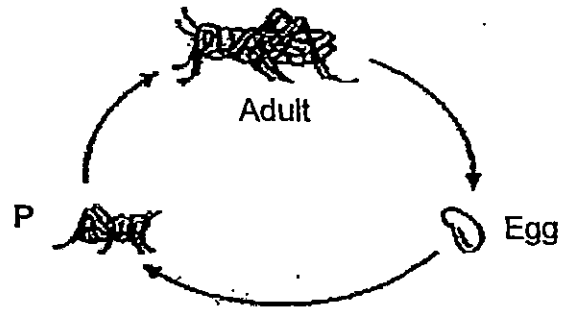
42. The diagram below shows the stages in the life cycle of a grasshopper.



(a) Name stage P. (1m)

_____

(b) State one other animal that has a similar life cycle as a grasshopper.(1m)

_____

(c) State 2 differences between the **life cycle** of a grasshopper and the **life cycle** of a mosquito. (2m)

(i) _____

_____

(ii) _____

_____

4

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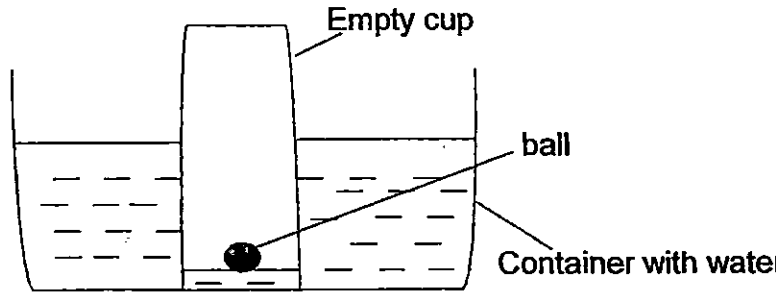
43. Jamie inverted an empty cup with a small ball inside into a container of water until it touched the bottom of the container. She observed that the water level inside the glass was lower than the water level outside. The ball was still floating on the water as shown below.



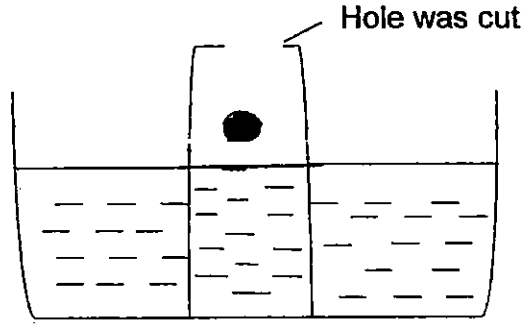
(a) Explain why the water level inside the cup is lower than the water level in the container. (1m)

_____

(b) Explain why some water went into the cup. (1m)

_____

(c) Jamie cut a hole at the base of the cup as shown below. **Draw the water level inside the cup** and the **position of the ball.** (2m)



4

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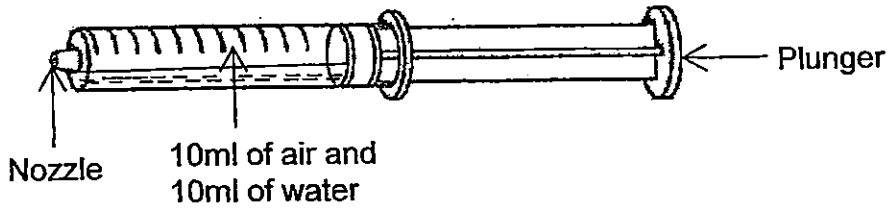
44.

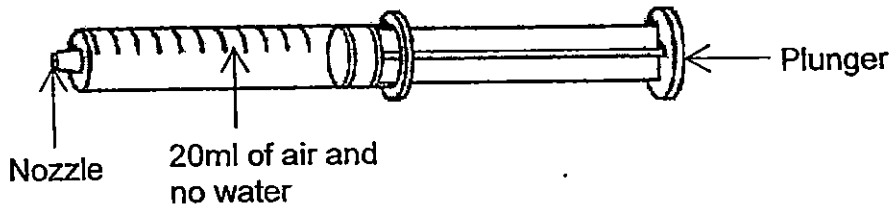
(a) May filled a syringe with 10ml of air and 10ml of water. She placed her thumb over the nozzle and pressed in the plunger till it could not be pressed further.



What is the most likely total volume of air and water in the syringe after May has pressed in the plunger? (1m)

_____

(b) May then removed the water and filled the syringe with 20 ml of air. Again she pressed in the plunger till it could not be pressed further.



How will May be able to push in the plunger this time? (1m)

May will be able to push in the plunger	**Tick (√) only one**
Further in than in (a)	
Less than in (a)	
The same distance as in (a)	

(c) Explain your answer in (b). (2m)

_____

_____

_____

END.

4

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SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)
SECOND SEMESTRAL EXAMINATION 2015
PRIMARY 4 SCIENCE

Part I

1) 1	6) 2	11) 2	16) 4	21) 2	26) 2
2) 4	7) 3	12) 4	17) 3	22) 2	27) 3
3) 3	8) 2	13) 1	18) 4	23) 4	28) 3
4) 2	9) 3	14) 2	19) 2	24) 2	29) 1
5) 3	10) 2	15) 2	20) 1	25) 2	30) 4

Part II

Question No.	Suggested Answer
31.	Group F: living things Group G: non-living things Accept other characteristics that differentiate living and non-living things
32a) 32b)	Both have legs. X, Y, W
33a)	

	Variables	Kept the same	Changed	Measured for the results
(i)	Types of materials		√	
(ii)	Distance between light source and each material	√		
(iii)	Amount of light that pass through the material			√
(iv)	Thickness of material	√		

33b)	Material C. It allows the least amount of light to pass through.
34.	Stem, roots
35a) 35b)	A D
36.	

	Statement	True	False
(a)	A piece of copper can be magnetized by passing electricity through it.		√
(b)	The magnetic force of a magnet is the strongest at its poles.	√	
(c)	A magnet can attract things that are made of iron and steel.	√	
(d)	A smaller magnet always has a weaker magnetic force than a larger magnet.		√

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37.

	Conclusion	True	False	Not possible to tell
(a)	Material A is opaque		√	
(b)	Material B is transparent	√		
(c)	Material C is opaque	√		
(d)	Material D is translucent.			√

38a) blocked
38b)

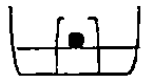
39a) poor/ bad
39b) good

40a) Heat was conducted from the candle (heat source) by ~~the~~ both the materials to the wax to melt the wax.
40b) Material A is a better conductor of heat than Material B and thus heat is conducted faster/more quickly (1/2m) from candle to the Wax A (1/2m) than ~~A~~ Material B
40c) Material B.

41a) Q, P, R
41b) Top – R, Middle – P, Bottom - Q

42a) nymph
42b) cockroach / dragonfly / damselfly
42c) A grasshopper has a 3-stage life cycle but a mosquito has 4-stage life cycle.
OR: A grasshopper spends its entire life cycle on land but a mosquito spends part of its life cycle in water/land.
OR: Young of grasshopper look like its parent/adult but young of mosquito does not.

43a) Air inside the cup occupies space
43b) Air in the cup can be compressed.
43c)



44a) 10.5 to 19.5 ml

44b)

May will be able to push in the plunger	Tick (√) only one
Further in than in (a)	√
Less than in (a)	
The same distance as in (a)	

→ missing information

44c) In part(b), the syringe has only air (and no water) and air can be compressed but in part(a), the syringe has also 10ml of water which has fixed volume/ cannot be compressed.

2

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TAO NAN SCHOOL 道南學校

SINCERITY & PERSEVERANCE

PRIMARY 4 END-OF-YEAR EXAMINATION 2015

Name : _____ . ( ) Date: 30 October 2015

Class : Primary 4 ( ) Time: 7.50 a.m. - 9.15 a.m.

Duration : 1h 25 min

Parent's Signature : _____ Marks: _____ / 50

SCIENCE
BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

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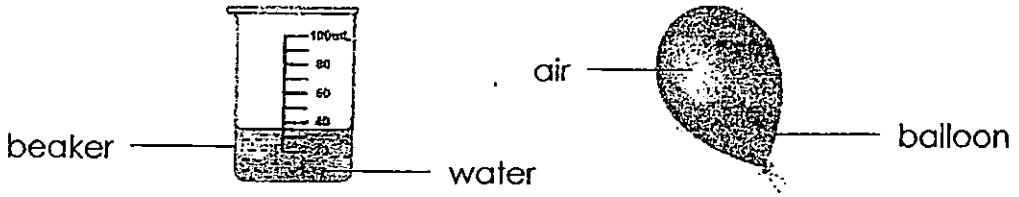
Section A (25 x 2 marks)

For each question, choose the most suitable answer and shade its corresponding oval (1, 2, 3 or 4) on the optical answer sheet.

1. Which one of the following properties is true of the water and air shown below?



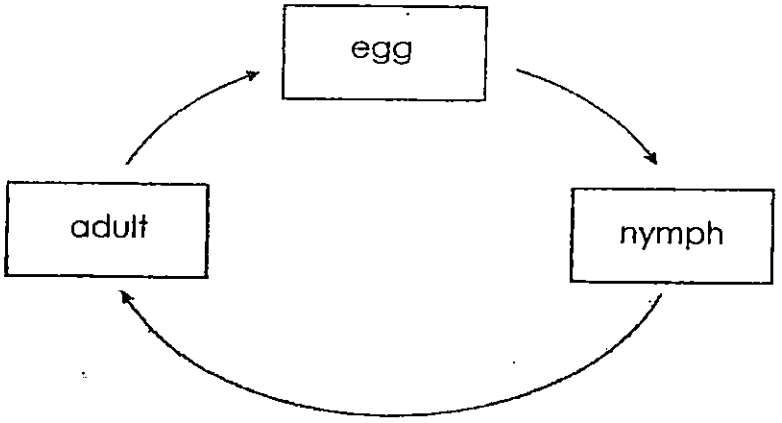
(1) They take up space.

(2) They cannot be seen.

(3) They have fixed shapes.

(4) They do not have fixed volumes.

2. The diagram below shows the life cycle of an animal.



Which one of the following animals is likely to have the life cycle shown above?

(1) frog

(2) butterfly

(3) mosquito

(4) grasshopper

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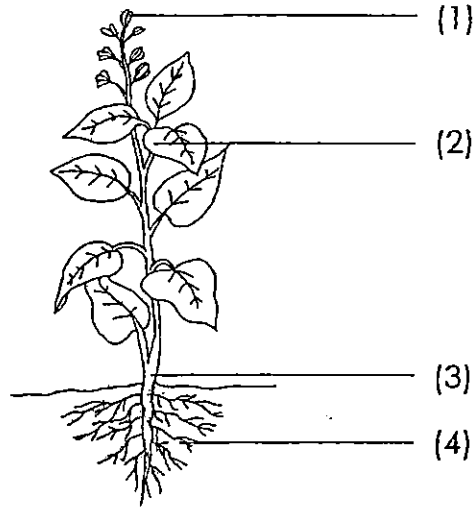
3. Which part, (1), (2), (3) or (4), helps the plant absorb water?



4. Ali ate a piece of cake. Which one of the following shows the correct path taken by the cake as it moves down his digestive system?

(1)	stomach →	large intestine →	small intestine
(2)	large intestine →	stomach →	small intestine
(3)	stomach →	small intestine →	large intestine
(4)	small intestine →	stomach →	large intestine

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5. Which one of the following is a source of light?

(1)

An apple

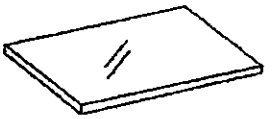
(2)

A candle flame

(3)

A cup

(4)

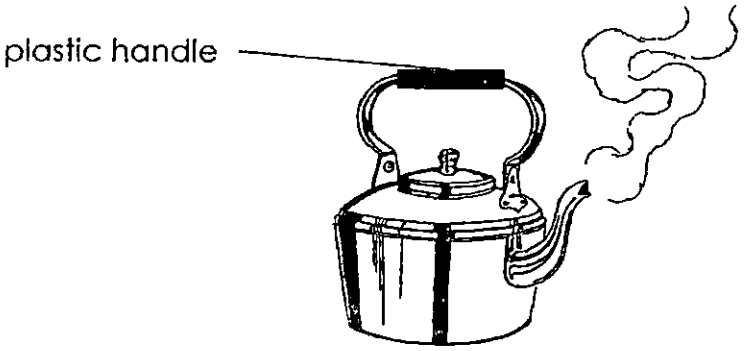


A sheet of glass

6. Which one of the following is NOT a source of heat?

(1) the Sun
(2) a rice cooker
(3) an electric iron
(4) a thermometer

7. Mei Ling boiled some water in the kettle shown below.



She was able to hold onto the plastic handle of the kettle containing boiling water. Her hand was not burnt because plastic is a

_____.

(1) strong material
(2) flexible material
(3) poor conductor of heat
(4) good conductor of heat

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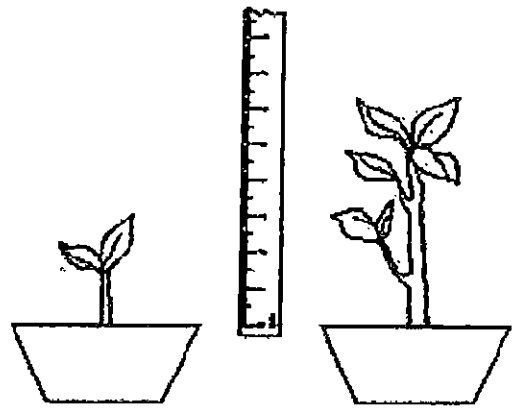
8. Ahmad found a specimen in a garden and measured its height. After a few weeks, he measured its height again and found that its height had increased.



At the start After a few weeks

From his observation, Ahmad concluded that the specimen is a living thing because it can _____.

(1) die
(2) grow
(3) breathe
(4) reproduce

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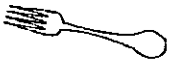
9. Which one of the following objects can be bent easily without breaking?

(1)

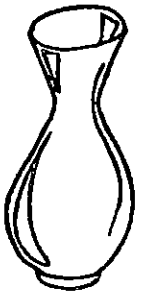


Plastic fork

(2)

Wooden ruler

(3)



Ceramic vase

(4)

Rubber gloves

10. Which one of the following can be attracted by a magnet?

(1) steel spoon
(2) plastic spoon
(3) ceramic spoon
(4) wooden spoon

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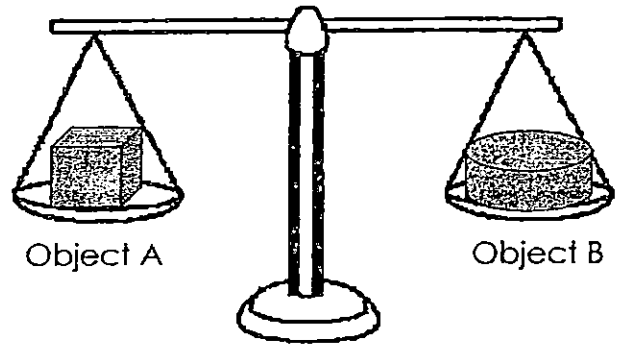
11. Raju placed Object A and Object B of different materials and sizes on a lever balance. He saw that the objects were balanced as shown below.



Based on the above observation, Object A and Object B have

_____.

(1) similar mass

(2) similar volume

(3) definite shape

(4) definite volume

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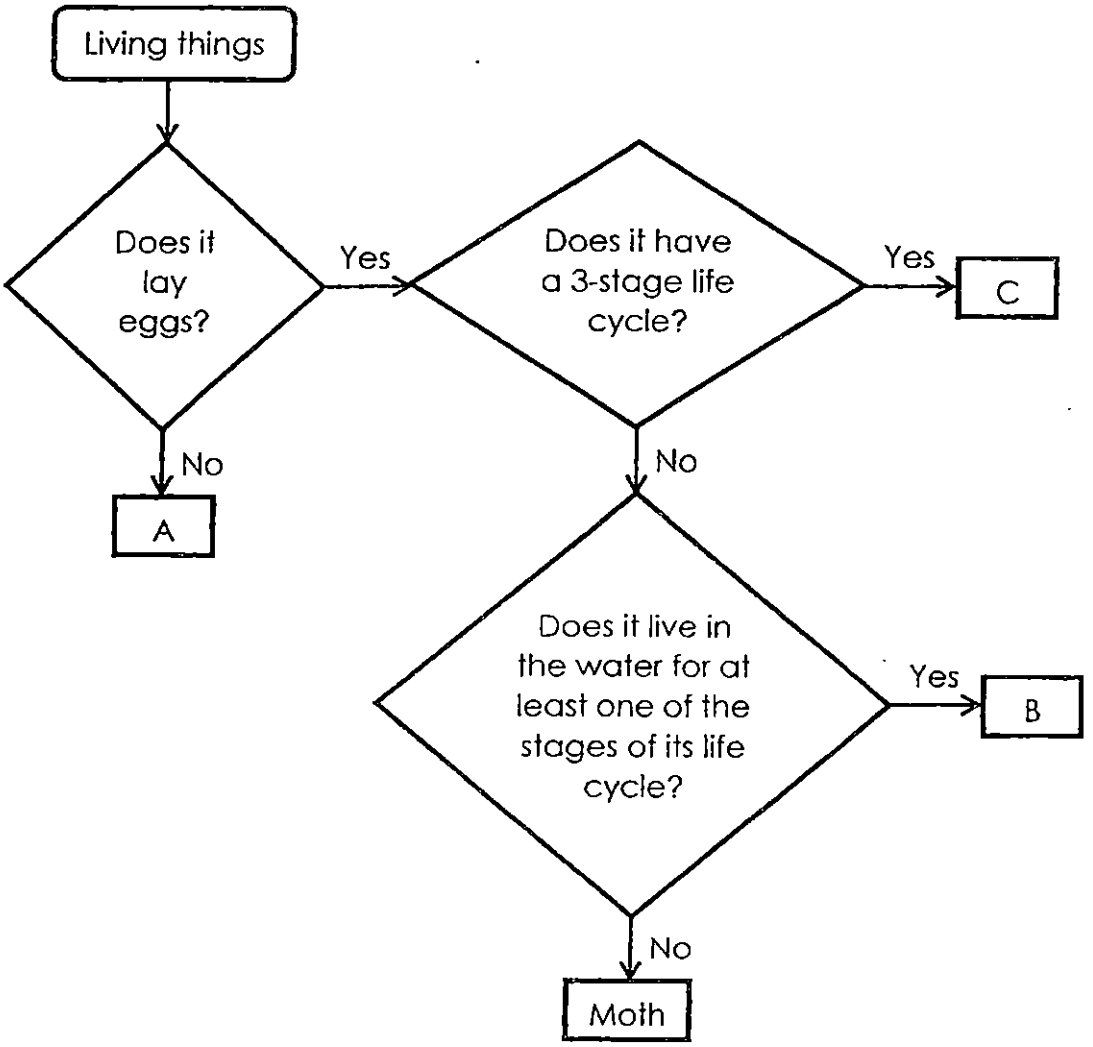
12. Study the flow chart below. A, B and C are living things.



Based on the information given in the flowchart, which one of the following correctly represents animals A, B and C?

	A	B	C
(1)	frog	cockroach	mosquito
(2)	human	mosquito	cockroach
(3)	cockroach	frog	human
(4)	human	cockroach	frog

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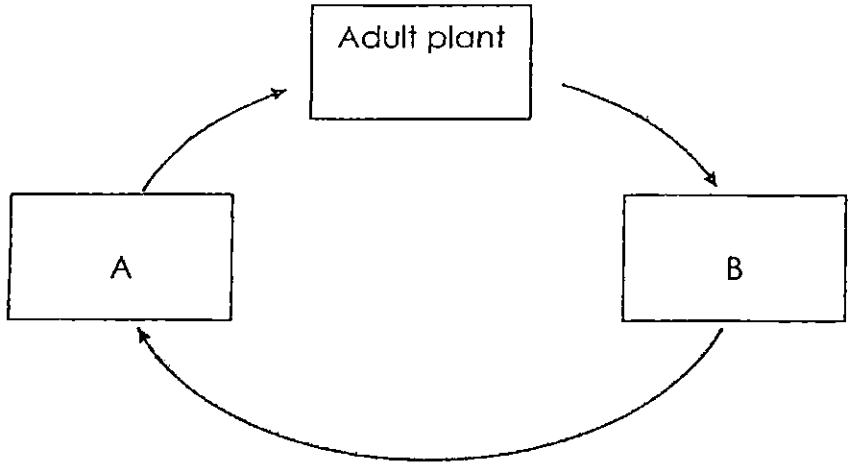
13. The diagram below shows the life cycle of a living thing.



Which of the following correctly represent A and B shown above?

	A	B
(1)	Nymph	Egg
(2)	Young plant	Seed
(3)	Seed	Young plant
(4)	Egg	Nymph

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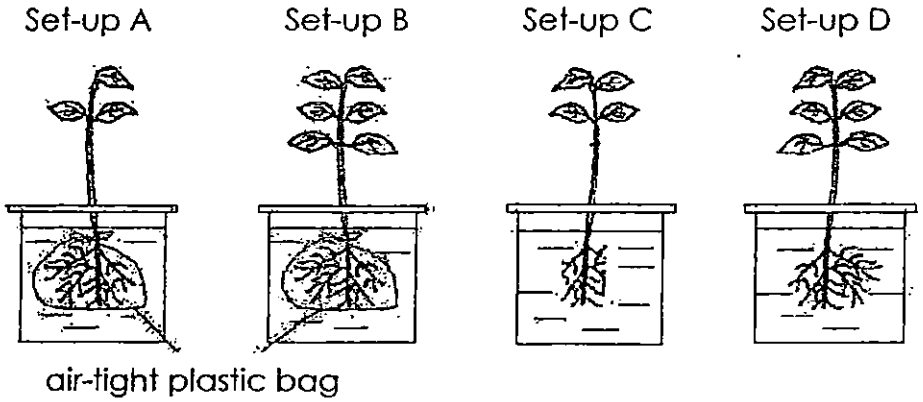
14. Lisa wants to find out if plants take in water through their roots.



Identical beakers with similar amount of water are used for all the set-ups. The roots of the plants in set-up A and set-up B are tied with air-tight plastic bags.

Which of the two set-ups above should she choose to conduct a fair test?

(1) A and C only
(2) A and D only
(3) B and C only
(4) B and D only

15. Which organ does **not** match its function in the table below?

	Organ	**Function**
(1)	Mouth	Breaks food up into small pieces and digests it
(2)	Stomach	Mixes food with digestive juices
(3)	Gullet	Moves food down into the stomach
(4)	Large intestine	Absorbs food into the blood

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16. Study the functions of the three human body systems (A, B and C) given below.

System A	System B	System C
Transports food to different parts of the body.	Protects some of our organs.	Responsible for absorption of food.

Which of the following correctly states the systems described above?

	System A	System B	System C
(1)	Skeletal System	Digestive System	Circulatory System
(2)	Circulatory System	Skeletal System	Digestive System
(3)	Digestive System	Circulatory System	Skeletal System
(4)	Circulatory System	Digestive System	Skeletal System

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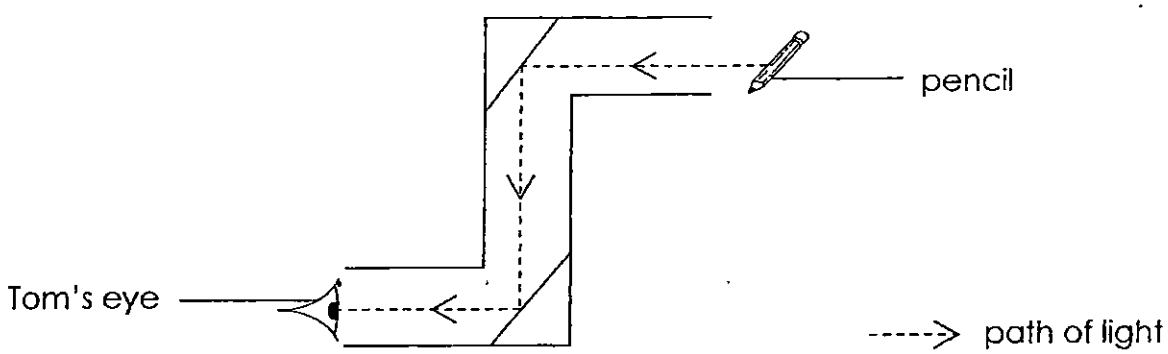
17. The picture below shows how Tom can see a pencil through a periscope.



Which of the following explains why the image of the pencil can be seen by Tom?

A: Light rays can be reflected
B: Light travels in a straight line.
C: The pencil is a source of light.
D: Mirrors are used in the periscope.

(1) A and B only
(2) B and D only
(3) A, B and D only
(4) A, B, C and D

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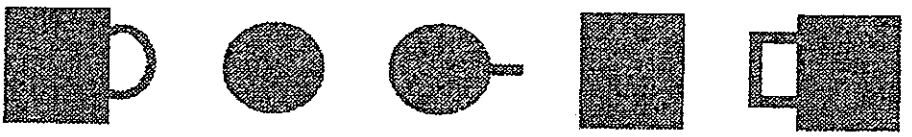
18. In a dark room, Jimmy used a torchlight to cast a shadow of the mug below. He changes the position of the mug several times.

Ceramic mug

Which are the possible shadows cast by the ceramic mug?



A B C D E

(1) A, B and C only
(2) A, B and E only
(3) A, C and D only
(4) C, D and E only

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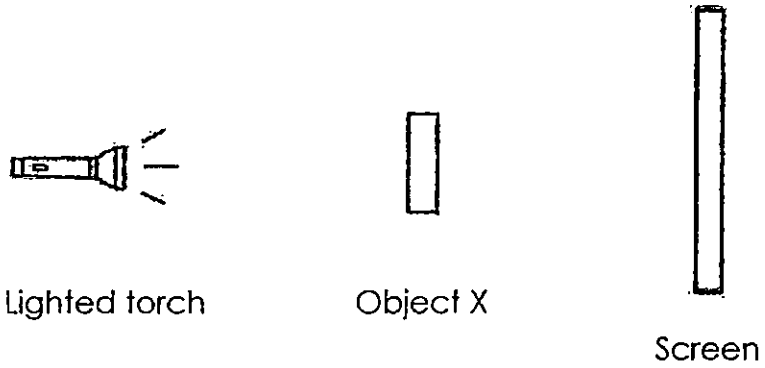
19. Ryan carried out an experiment in a dark room using the set-up shown below.



When he switched on the torch, Ryan did not see a shadow of Object X on the screen.

Based on the experiment above, Object X is _____.

(1) a mirror
(2) opaque
(3) transparent
(4) translucent

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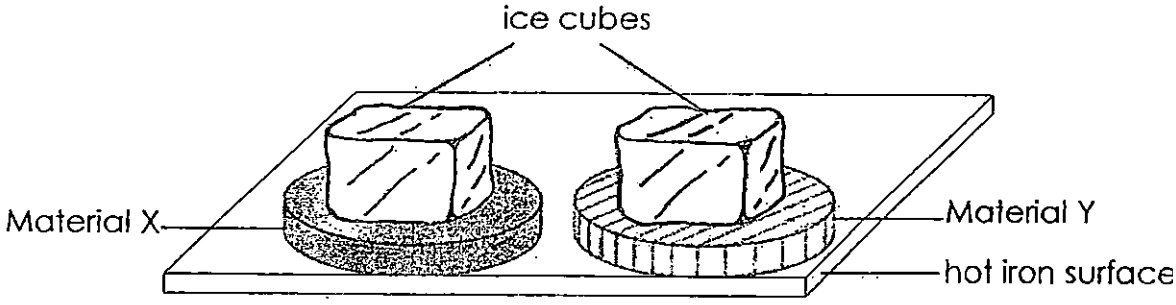
20. Muthu placed similar ice cubes on Materials X and Material Y as shown in the diagram below. Both materials were then placed on a hot iron surface at the same time.



The ice cube on material X took 10 minutes to melt completely but the ice cube on material Y took 25 minutes to melt completely. This is because _____.

(1) Material X conducted heat faster than Material Y.

(2) Material Y is a better conductor of heat than Material X.

(3) The ice cube on Material Y lost heat faster to the surrounding.

(4) The ice cube on Material X gained heat faster from the surrounding.

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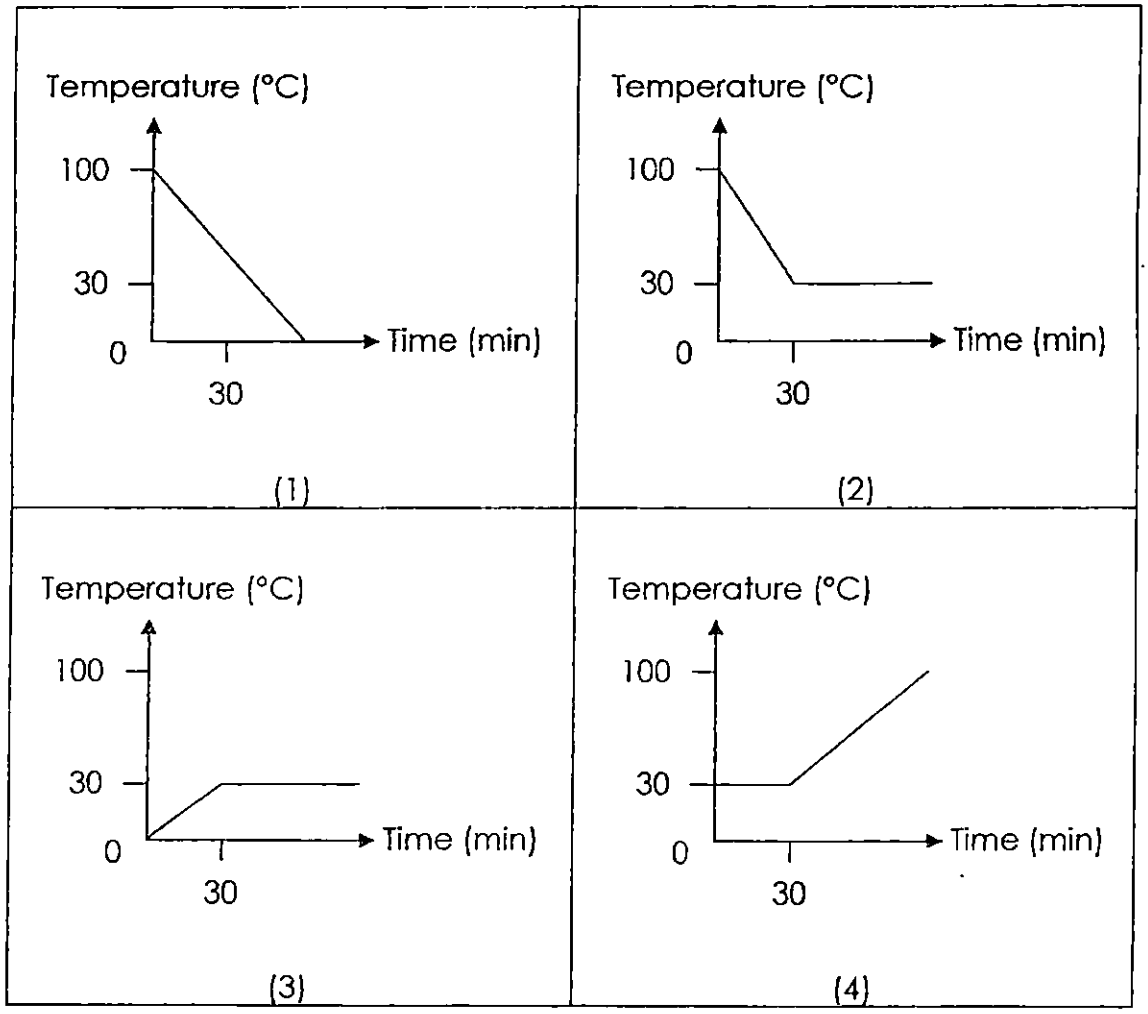
21. Kitty placed a thermometer into a beaker of boiling water. She then allowed the beaker of water to cool down in a room. The water reached room temperature after 30 minutes. Which one of the following graphs best shows Kitty's findings?



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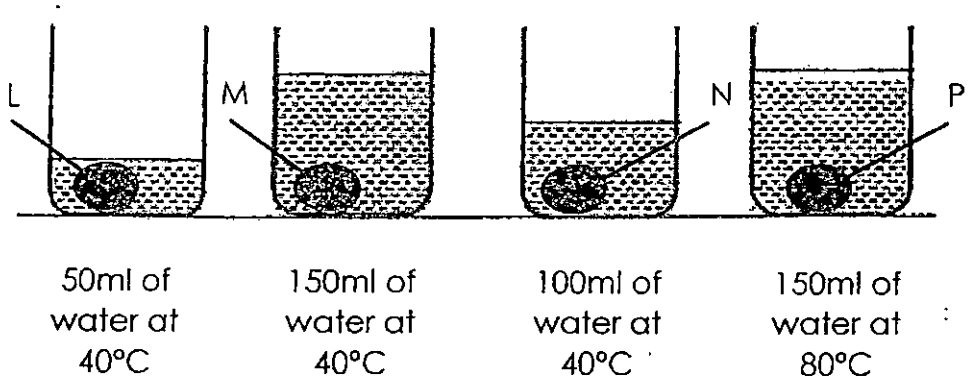
22. 4 similar eggs, L, M, N and P, were each dropped into 4 similar beakers at the same time as shown in the diagram below.



They were left in the beakers for 3 minutes. Then the eggs were taken out and cracked.

Which one of the following shows the correct order of the eggs starting from the most cooked to the least cooked?

(1) P, N, M, L

(2) L, N, M, P

(3) P, M, N, L

(4) L, M, N, P

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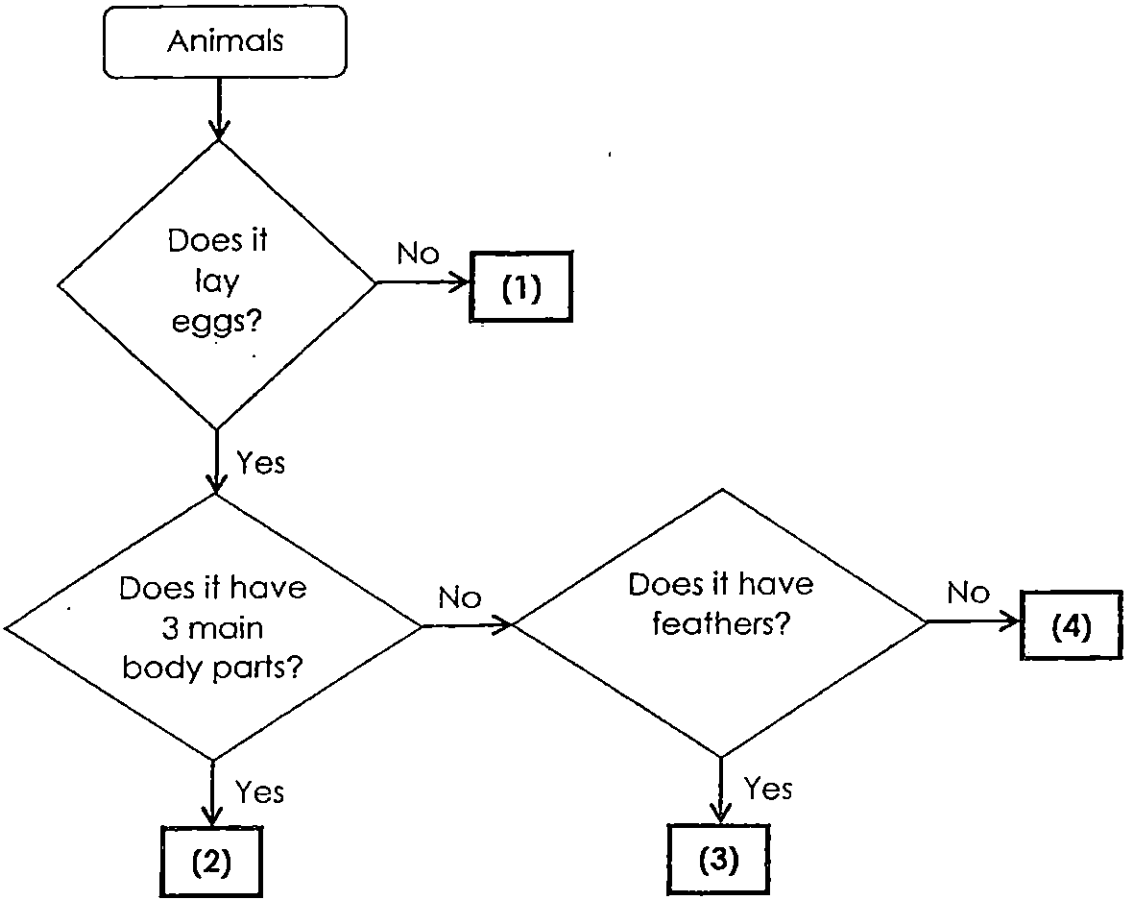
23. Study the flowchart on animals below carefully. Which one of the following represents 'reptiles'?



24. Some objects have been classified into Group A and Group B according to the similarity in their properties.

Group A	Group B
Glass mirror Ceramic plate Metal spoon	Styrofoam cup Ping pong ball Plastic bag

What can be used to describe the properties of the objects in Group A and Group B?

	Group A	Group B
(1)	not strong	strong
(2)	absorbs water	waterproof
(3)	sinks in water	Floats on water
(4)	flexible	stiff

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25. Mei Ling found three objects, A, B and C. She wanted to test if they were magnets. She placed a magnet next to each of the objects and recorded her observations below.

Objects	**A**	**B**	**C**
Observations	No reaction.	One end was attracted. The other end was repelled.	Both ends were attracted.

Which one of the following are most likely the objects, A, B and C?

	Object A	**Object B**	**Object C**
(1)	Wooden ruler	Steel spoon	Magnet
(2)	Magnet	Steel spoon	Wooden ruler
(3)	Steel spoon	Magnet	Wooden ruler
(4)	Wooden ruler	Magnet	Steel spoon

End of Booklet A

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PRIMARY 4 END-OF-YEAR EXAMINATION 2015

Name : _____ Date: 30 October 2015

Class : Primary 4 (Time: 7.50 a.m. - 9.15 a.m.

Duration : 1h 25 min

Parent's Signature : _____ Marks: _____ **30**

SCIENCE
BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, register number and class.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

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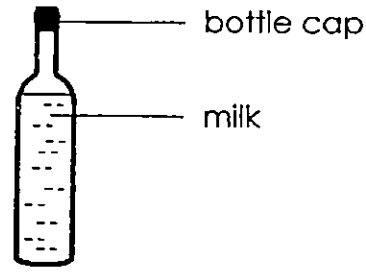
Section B (30 marks)

Write your answers in the spaces provided.

26. The diagram below shows a bottle of milk.

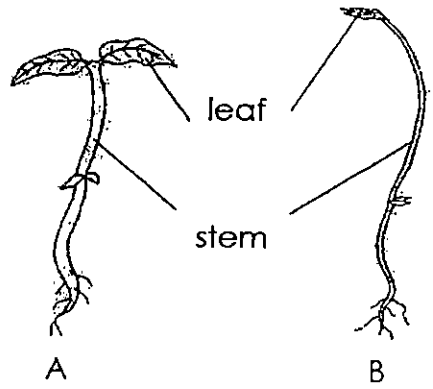


Complete the sentences about the bottle of milk with the helping words, "solid", "liquid" or "gas".

a) The bottle cap is a _____ [1]

b) The milk is a _____ [1]

27. Study the diagram below.



a) What is one difference between the stem of the plant, A and the stem of the plant, B?

The stem of plant A is _____ than the stem of plant B. [1]

b) The leaves help both plants above to make _____. [1]

/4

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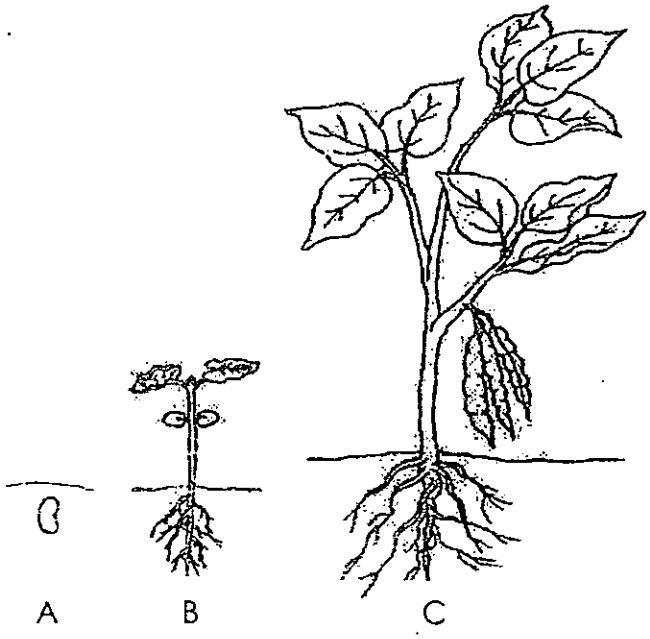
28. The diagram below shows three different stages, A, B and C, in the life cycle of a plant.



Choose the correct words from the box to answer the question below about the life cycle of the plant above.

egg	seed	young plant	adult plant

Identify the stages, A and C, in the life cycle of the plant.

A _____ [1]

C _____ [1]

29. Complete the table with the names of the broad groups of living things based on their characteristics. [2]

Group of living things	Characteristics
	Body covering of dry skin, with scales
	Give birth to its young alive

4

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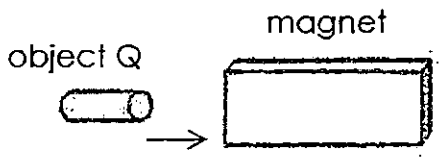
30. Bobby placed a magnet near an Object Q as shown below.



Object Q then moved towards the magnet.

a) Bobby concluded that the magnet exerts a _____ on Object Q. [1]

b) Choose the correct word from the box to answer the question below about Object Q. [1]

flexible	magnetic	strong

Bobby's observation shows that Object Q is made of a _____ material.

2

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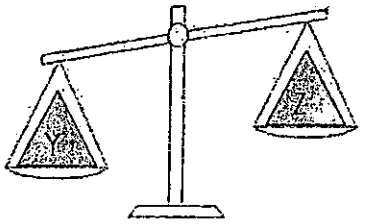
31. Ali placed the objects, Y and Z, on a weighing scale and obtained the result below.



(a) From the diagram above, what could Ali conclude about the difference in mass of the objects, Y and Z? [1]

_____

_____

1

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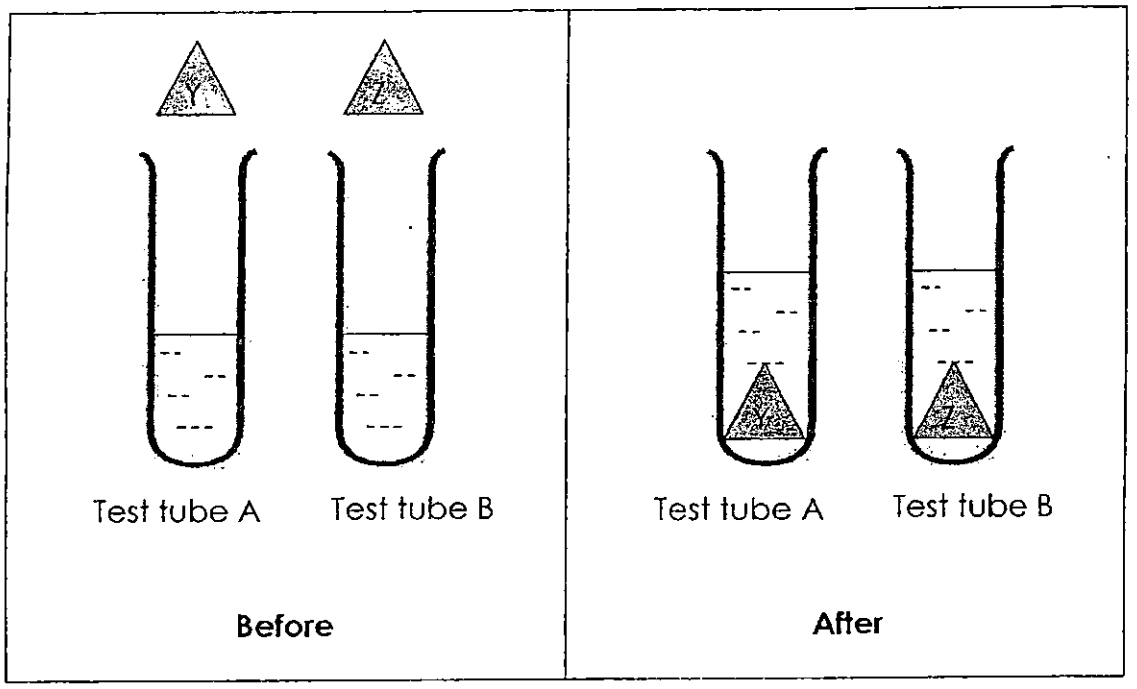
(b) Ali then dropped the objects, Y and Z, into the test tubes, A and B, respectively, each containing the same amount of water, as shown below.



From the diagrams above, what could Ali conclude about the volumes of the objects, Y and Z? [1]

_____

_____

1

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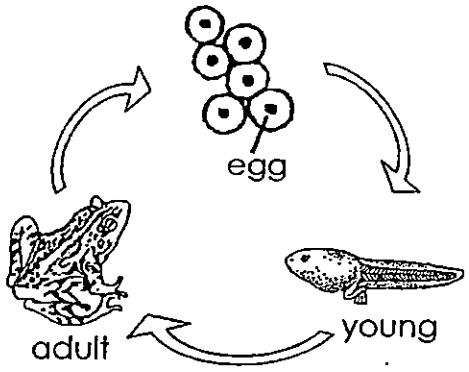
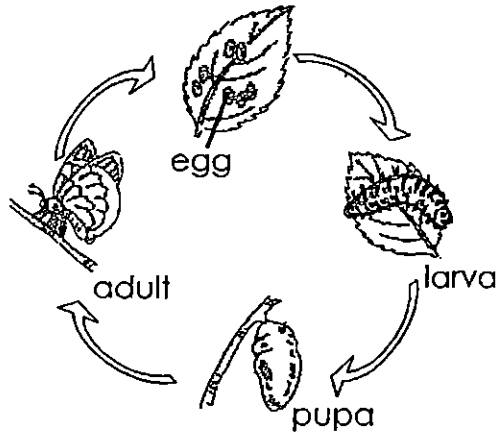
32. The diagrams below show the life cycles of Animal J and Animal K.



Life cycle of Animal J



Life cycle of Animal K

(a) Based on the diagrams above, state two similarities between the life cycles of Animal J and Animal K. [2]

_____

_____

(b) Based on the diagrams above, state one difference between the life cycles of Animals J and Animal K. [1]

_____

_____

/3

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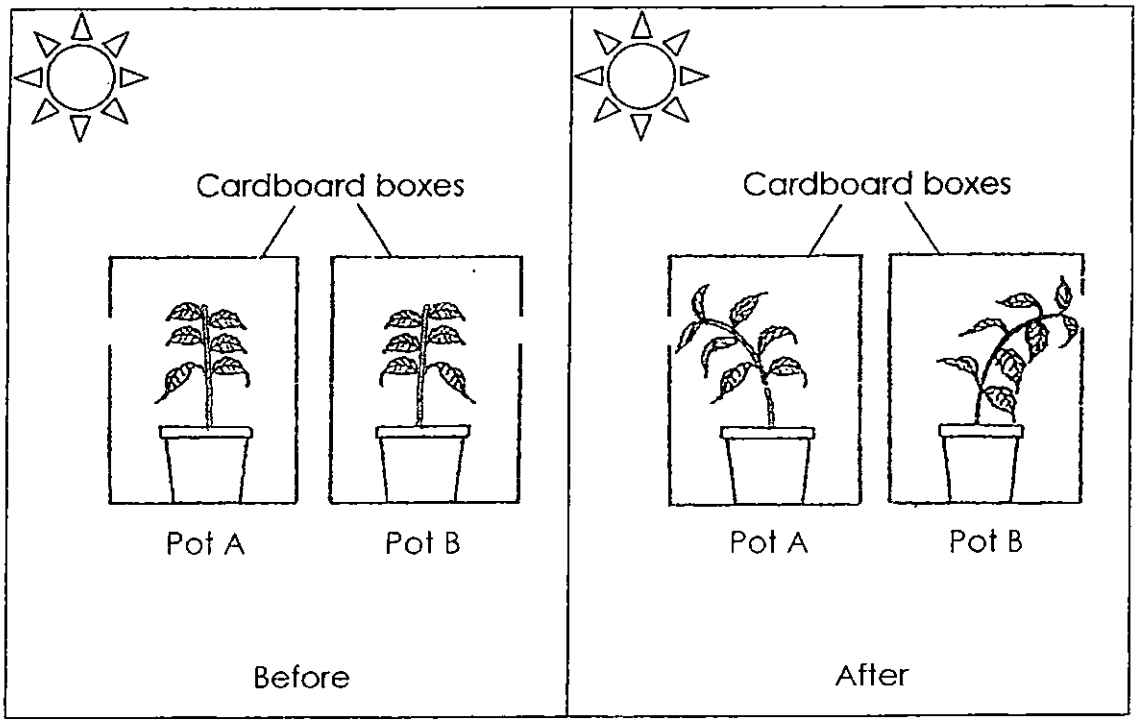
33. Adam conducted an experiment with two potted plants, A and B. He placed one pot of plant each in a cardboard box with an opening on one side of the box. He watered the plants daily. The diagrams show the plants at the start of the experiment and what happened to them after a week.



(a) Explain why the plants grew towards the openings. [2]

_____

_____

(b) Explain why it was important for him to use cardboard boxes and not clear plastic boxes in his experiment. [1]

_____

_____

_____

3

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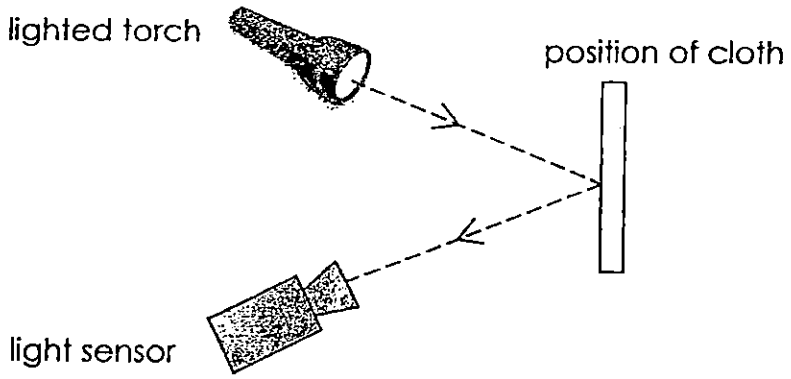
34. Hilary set up an experiment as shown below. The light sensor was used to measure the amount of light that was reflected by 3 different types of cloth, P, Q and R.



The result of the experiment is shown below.

Cloth	**P**	**Q**	**R**
Amount of light (units of light)	40	99	5

(a) Which cloth reflected the least amount of light? [1]

_____

(b) Which cloth is best for making a safety vest to be worn by a cyclist on the road in the night? Explain your answer. [2]

_____

_____

/3

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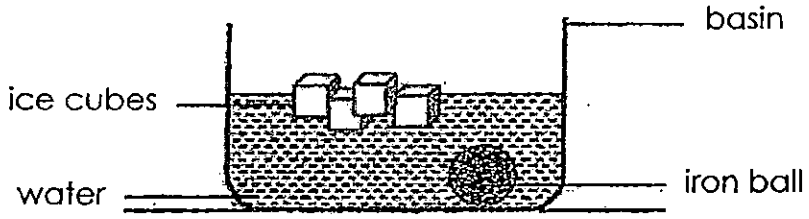
37. Mr Samy poured some water that was heated to 40 °C into a basin at room temperature as shown below. Then, he dropped a few ice cubes into it. After about 10 minutes, he dropped an iron ball that was heated to 85°C into the basin.



a) Describe what happened to the temperature of the water after the iron ball was dropped into it. [1]

_____

_____

b) During the experiment, all the matter in the set-up either gained or lost heat. Study the table below and tick (✓) the appropriate boxes to indicate whether heat was gained or lost by them. [2]

	Matter	**Gained heat**	**Lost heat**
(i)	Basin (after the water was poured in)		
(ii)	Ice cubes (after they were dropped into the basin of water)		
(iii)	Water (after the iron ball was dropped in)		
(iv)	Iron ball (after it was dropped into the basin of water)		

End of Booklet B

/3

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EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : TAO NAN SCHOOL
SUBJECT : SCIENCE
TERM : SA2

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
1	**4**	**4**	**3**	**2**	**4**	**3**	**2**	**4**	**1**
Q 11	Q 12	Q 13	Q 14	Q 15	Q16	Q17	Q18	Q19	Q20
1	**2**	**2**	**4**	**4**	**2**	**3**	**3**	**3**	**1**
Q21	Q22	Q23	Q24	Q25					
2	**3**	**4**	**3**	**4**					

Q26a. solid Q26b. liquid Q27a. thicker Q27b. food

Q28. A: Seed Q28. C : Adult plant

Q29. Reptile Q29. Mammal

Q30a. force Q30b. magnetic

Q31a. He can conclude that object Y have a larger mass than object Z.

Q31b. He can conclude that both object Y and Z have the same volume.

Q32a. Both animals lay eggs and the young does not look like the adult.

Q32b. Animal J has three stages in its life cycle while animal K has four stages in its life cycle.

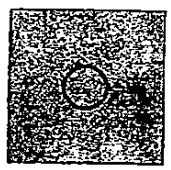
Q33a. As plant need light to make food, it will grow towards the hole as the cardboard boxes does not allow light to pass through.

Q33b. Cardboard is opaque and clear plastic is transparent.

Q34a. Cloth R reflected the least amount of light.

Q34b. Cloth Q. As cloth Q reflects the most light, when at night, it will reflect light and a car driver would be able to see him.

Q35a. **SEE PICTURE**



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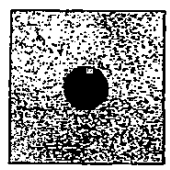

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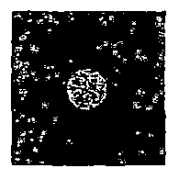

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Q35b The dark round shadow would become smaller.

Q35c. Light travels in a straight line.

Q36a. As the meat in tub B has a larger surface area exposed to the digestive juices, so digestion is faster. Q36b. The teeth.

Q37a. The temperature would increase.

Q37b. (i) gained heat
Q37b. (ii) gained heat
Q37b (iii) gained heat
Q37b (iv) lost heat

THE END

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