

Primary Four Examination Papers

2016

Science

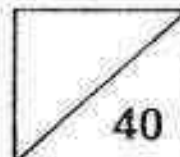
1	Rosyth School	CA1	SA1	SA2
2	Anglo Chinese School	CA1	SA1	SA2
3	Al Tong School	CA1	SA1	
4	Red Swastika School	CA1	SA1	SA2
5	Pei Hwa Presbyterian Primary School	CA1	SA1	SA2
6	Nanyang Primary School		SA1	SA2
7	Tao Nan School		SA1	SA2
8	Chij St Nicholas Girls' School		SA1	SA2
9	Methodist Girls' School		SA1	SA2
10	Temasek Primary School		SA1	SA2
11	Singapore Chinese School		SA1	SA2
12	Maris Stella High School		SA1	SA2



Rosyth School
Topical Test for 2016
SCIENCE
Primary 4

Name: _____

Total
Marks:



Class: Pr 4 _____

Register No. _____ Duration: 60 min

Date: 29 February 2016

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 sections, Part I and Part II.
4. For questions 1 to 12, write the correct answer in the brackets provided.
5. For questions 13 to 18, give your answers in the spaces provided in Part II.

	Maximum Marks	Marks Obtained
Part I	24 marks	
Part II	16 marks	
Total	40 marks	

* This booklet consists of 12 pages. (pg. 1 to 12)

Part 1 (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) and write your answer in the bracket provided.

1. Adam, Beth and Carla made a few statements about living things.

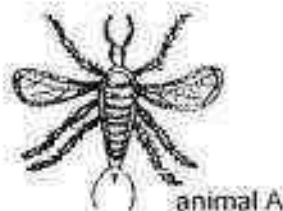


Who has/have made a correct statement(s)?

- (1) Carla only
- (2) Beth and Carla only
- (3) Adam and Beth only
- (4) Adam, Beth and Carla

()

2. Some pupils found animal A in the school field.



After making some observations as shown below, the pupils thought that animal A belonged to the insect group.

- A: Ali said that it is hairy.
- B: Bala said that it has six legs.
- C: Charlie said that it has a pair of wings.

Who gave the correct observation(s) that animal A is an insect?

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

()

3. The following table describes the characteristics of animal groups, X and Y.

Characteristics	X	Y
Has moist skin	✓	
Has hair on its body		✓
Lives in water and on land	✓	
Gives birth to its young alive		✓

Which of the following best represents animal groups, X and Y?

	X	Y
(1)	fish	mammals
(2)	birds	reptiles
(3)	insects	amphibians
(4)	amphibians	mammals

()

4. Jane recorded the characteristics of a plant and mushroom as shown in the table below:

	Characteristics	Plant	Mushroom
W	Does it need sunlight?	Yes	Yes
X	Is it able to bear fruits?	Yes	Yes
Y	Does it make its own food?	Yes	No
Z	Is it able to respond to changes?	Yes	Yes

However, Jane's teacher told her that only some of her characteristics were correct. Which of the above characteristics were correctly recorded?

- (1) W and X only (2) W and Y only
(3) X and Z only (4) Y and Z only

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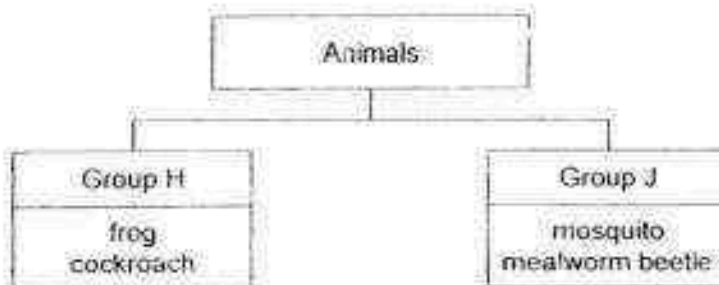
5. Which of these animals have young that do not look like their parents upon hatching?



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

()

6. Study the classification table below.

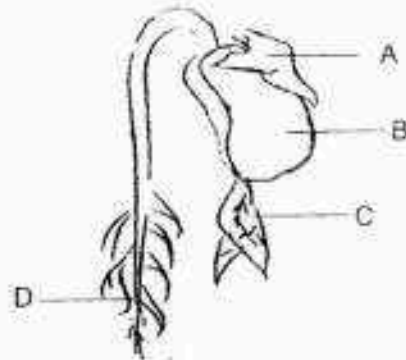


What would be suitable headings for Group H and Group J?

	Group H	Group J
(1)	Lives in water	Lives on land
(2)	Lays one egg only	Lays many eggs at a time
(3)	Has a 3-stage life cycle	Has a 4-stage life cycle
(4)	Its young resembles the adult	Its young does not resemble the adult

()

Study the picture of a germinating seed below and answer questions 7 and 8.



7. Which part of the seed will grow first when it germinates?

- (1) A
- (3) C

- (2) B
- (4) D

()

8. Which part of the plant becomes smaller as the seedling grows?

- (1) A
- (3) C

- (2) B
- (4) D

()

9. The diagram below shows two stages in the life cycle of a bean plant.



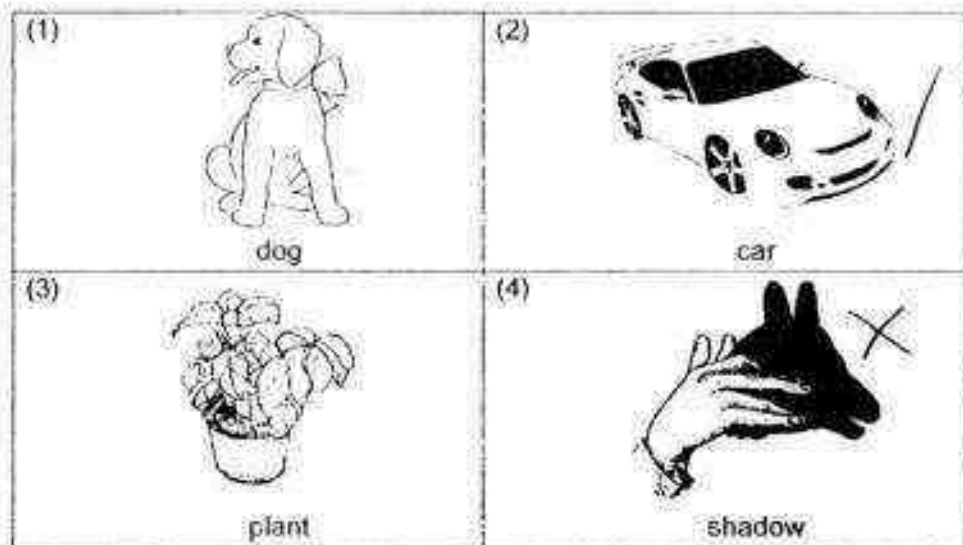
What is/are the common characteristic(s) between stage A and stage B in the life cycle of a bean plant?

- A. They can make their own food.
- B. They are able to produce seeds.
- C. They can absorb water through their roots.

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

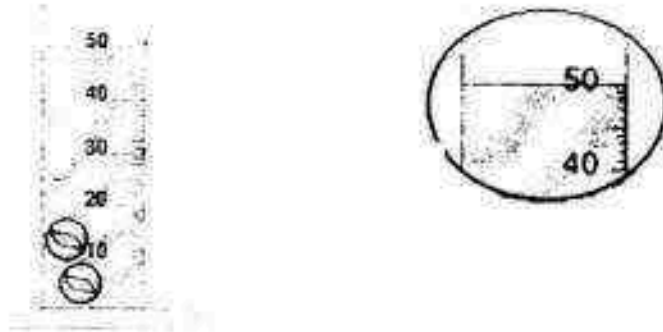
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10. Which of the following is not a matter?



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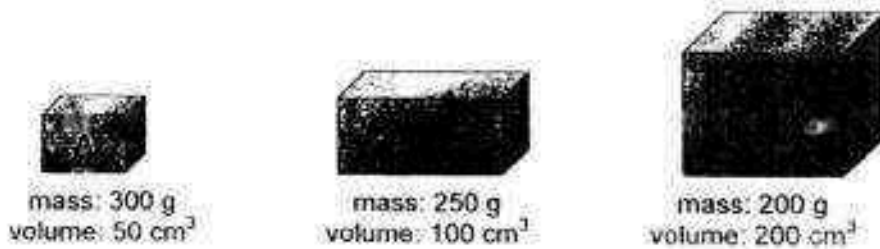
11. Fatimah filled a measuring cylinder with 30ml of water. When she added two identical marbles into the cylinder of water, the water level rose as shown below.



What is the volume of each marble?

- (1) 10 ml (2) 20 ml
(3) 30 ml (4) 50 ml

12. Study the diagrams below



Based on the information given, which one of the following statements is true?

- (1) Box B is lighter than Box C.
- (2) Box A occupies more space than Box B.
- (3) A smaller box is lighter than a bigger box.
- (4) A bigger box occupies more space than a smaller box.

End of Part I

Part II (16 Marks)

For questions 13 to 17, write your answers in the space provided.

- 13 David kept two objects, Y and Z, in two separate cages. He put fresh food and water in the cages daily. He measured the masses of Y and Z and recorded it in the table shown below.

	Mass of object (g)	
	Y	Z
Week 1	300	200
Week 2	320	200
Week 3	350	200
Week 4	?	?
Week 5	390	200

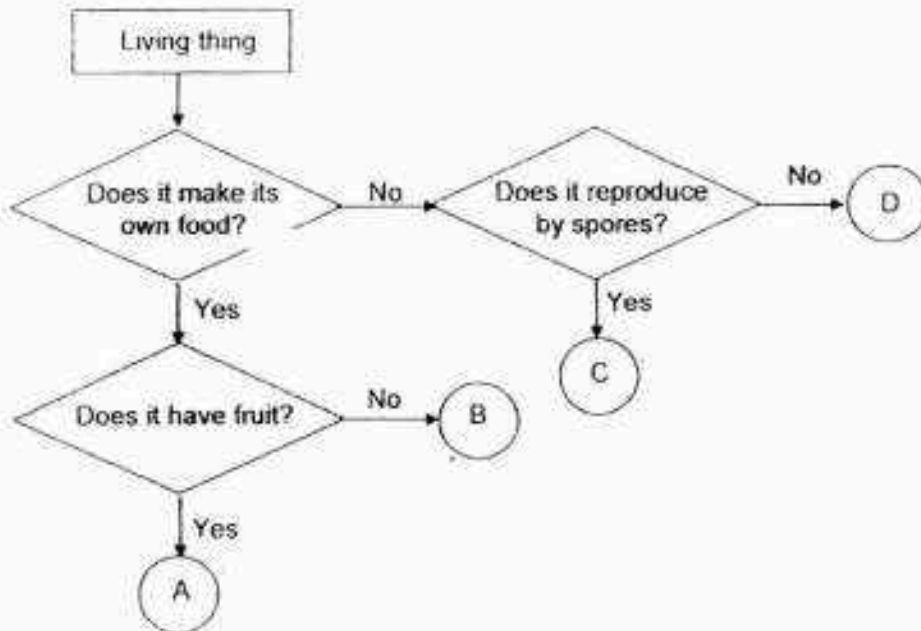
- (a) Which one, Y or Z, is more likely to be a non-living thing? (1m)

- (b) What are the possible masses of Y and Z in Week 4? (1m)

(i) Y: _____ g

(ii) Z: _____ g

14. Study the flowchart below.

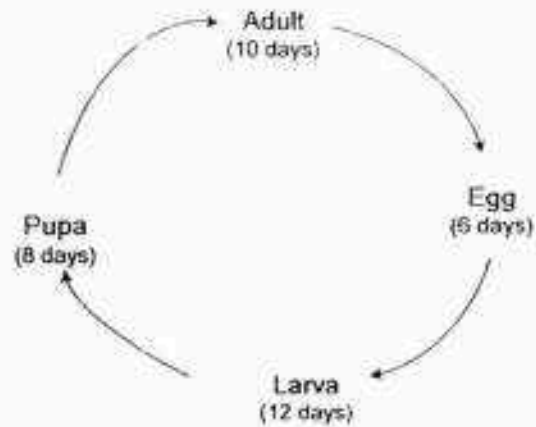


- (a) Based on the information in the flowchart above, which living thing, A, B, C or D, best represents bread mould? (1m)

- (b) From the flowchart, state a similarity between living thing A and living thing B. (1m)

- (c) From the flowchart, state a difference between living thing C and living thing D. (1m)

15. As part of a Science activity, Jenny observed the life cycle of insect K and recorded her data as shown in the diagram below.



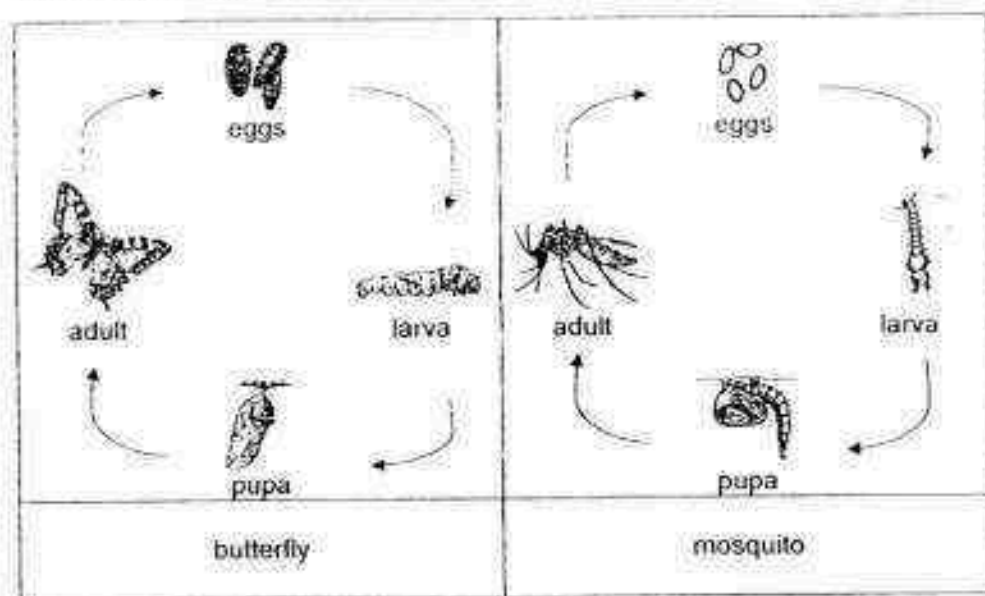
- (a) How long would it take for the organism to become an adult, after the egg is laid? (1m)

_____ days

Jenny observed some dried skin as the organism developed. Her teacher explained that insect K had moulted.

- (b) Explain why insect K had moulted. (1m)

16. The following diagram shows the life cycles of a butterfly and a mosquito.



- (a) The butterfly and mosquito have 4-stage life cycles. Give another similarity between the life cycles of a butterfly and a mosquito. (1m)

- (b) Why do both insects lay many eggs at one time? (1m)

- (c) At a particular stage in its life cycle, the larva of the butterfly is considered a pest to farmers. Why is it considered a pest? (1m)

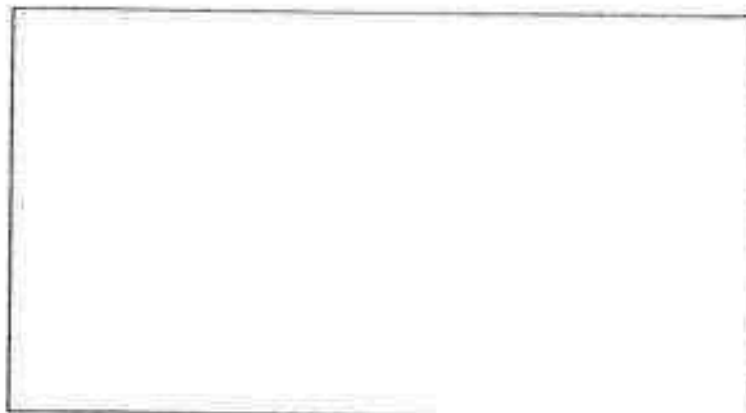
17. Alan carried out an experiment in a dark room to observe the life cycle of green bean plants. He measured the mass of the seed leaves as the seedlings grew and recorded his results in a table.

- (a) Which set of results, X, Y or Z, in the table below would correctly show the mass of the seed leaves as the seedlings grew? Support your choice. (2m)

	Mass (milligrams)		
	X	Y	Z
Day 2	10	15	20
Day 4	15	15	15
Day 8	20	15	10

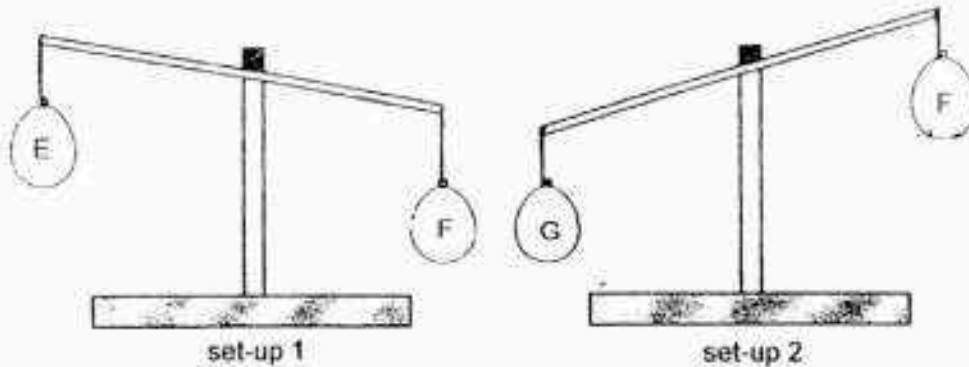
- (b) As Alan continued the experiment in the dark room, he noticed that the plant was beginning to wither. Suggest what Alan could do to ensure the plant does not wither and die. (1m)

- (c) In the space below, draw the life cycle of the bean plant.



(1m)

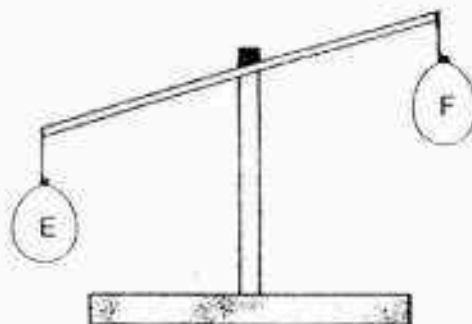
18. Dan was given a lever balance. He used it to compare the masses of the three balloons as shown below.



- (a) Arrange the masses of the balloons, E, F and G, in descending order. (1m)

_____ Heaviest

After some time, Dan noticed a change in set-up 1 as shown below.



- (b) If the mass of balloon G remains the same, will there be a change in set-up 2? Explain why. (1m)

End of Paper

EXAM PAPER 2016
 LEVEL : PRIMARY 4
 SCHOOL : ROYSTH
 SUBJECT : SCIENCE
 TERM : TOPICAL TEST
 DATE: 29 FEBRUARY 2016

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	2	4	4	2	3	4	2	2	4
Q11	Q12								
1	4								

Q13a) Z

b)(i) Y : 370g

(ii) Z : 200g

Q14a) C

b) Both A and B are plants that make its own food.

c) C reproduce by spores but D does not reproduce by spores.

Q15a) 26 days

b) Insect K had moulted as the skin was too small and I grew bigger.

Q16a) Both life cycle start with the egg stage.

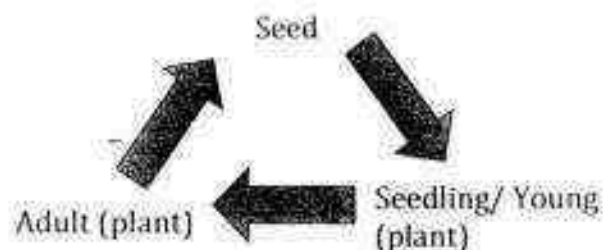
b) To ensure that if their predators eat the eggs, there will still have eggs to continue the life cycle.

c) The larva of a butterfly eats leaves from the farmer's plants.

Q17a) Z. The mass of the seed leaves should decrease as the seed leaves provide food for the seedling.

b) Alan could place the plant near the window to get sunlight.

c)



Q18a) G, F, E

- b) No. In the set-up, G was heavier than F, so if F gets lighter and G remains the same, G will still be heavier than F.

Anglo-Chinese School (Junior)



CONTINUAL ASSESSMENT 1 (2016)

PRIMARY 4

SCIENCE

BOOKLET A

Wednesday

9 MARCH 2016

1 hour

Name: _____ () Class: 4.()

INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 15 questions in this booklet.
- 4 Answer ALL questions.
- 5 Shade your answers in the Optical Answer Sheet (OAS) provided.

Booklet A (30 marks)

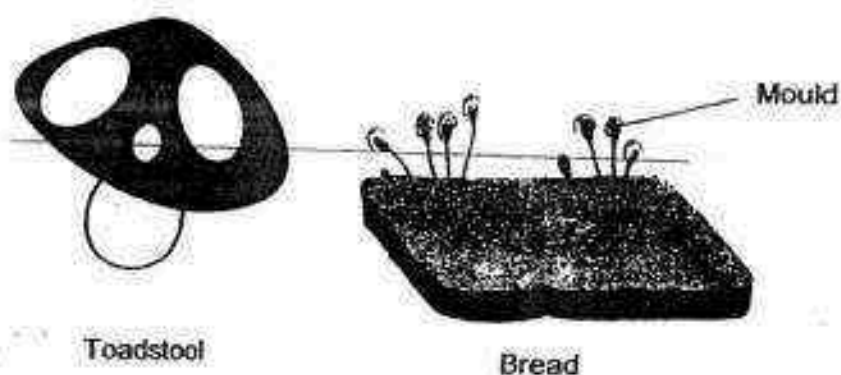
For each question from 1 to 15, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. (15 x 2 marks)

1. Which of the following statements about all living things are correct?

- A They can reproduce.
- B They can respond to changes.
- C They can make their own food.
- D They need air, food and water to live.

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

2. The diagrams below show a toadstool and mould growing on bread.

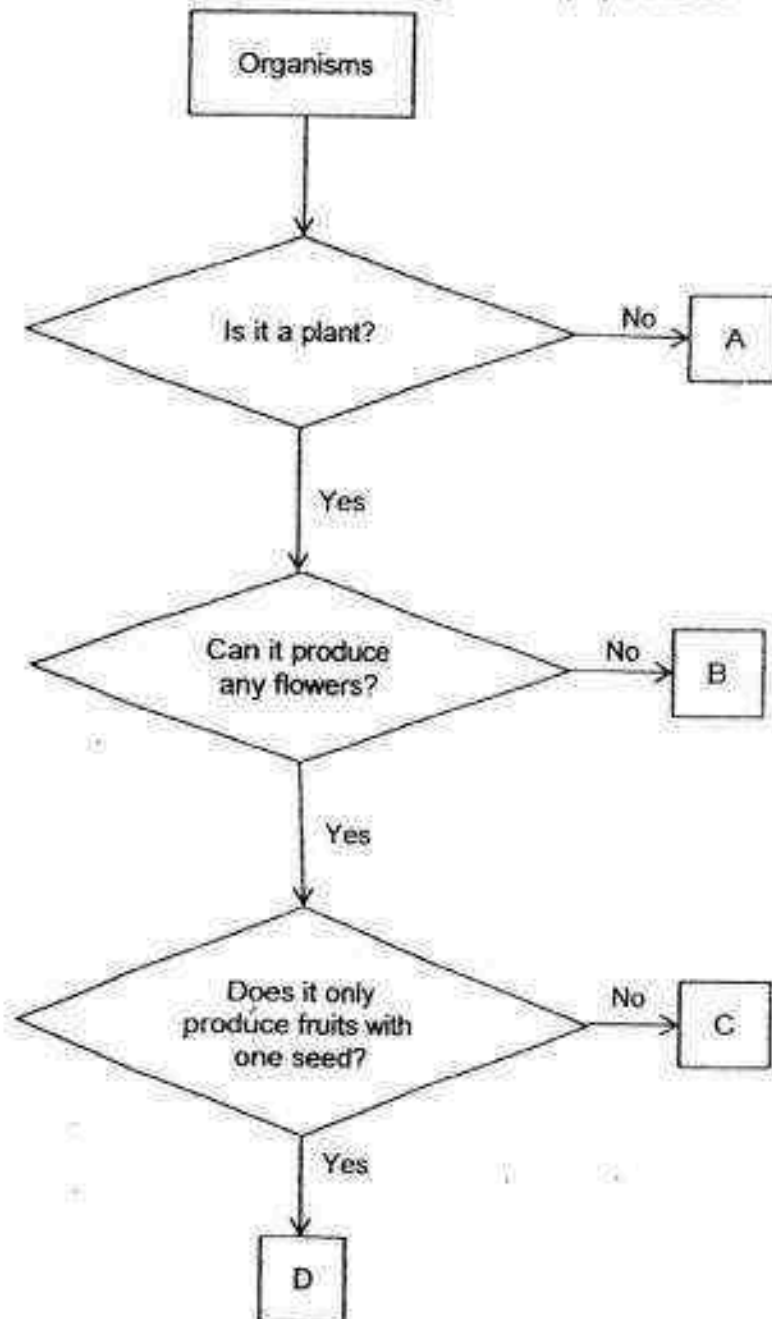


Which of the following characteristics do toadstool and mould have in common?

- A Both are microorganisms.
- B Both reproduce from spores.
- C Both feed on other living things.
- D Both cannot make their own food.

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

3. The flowchart shows some characteristics of organisms A, B, C and D.

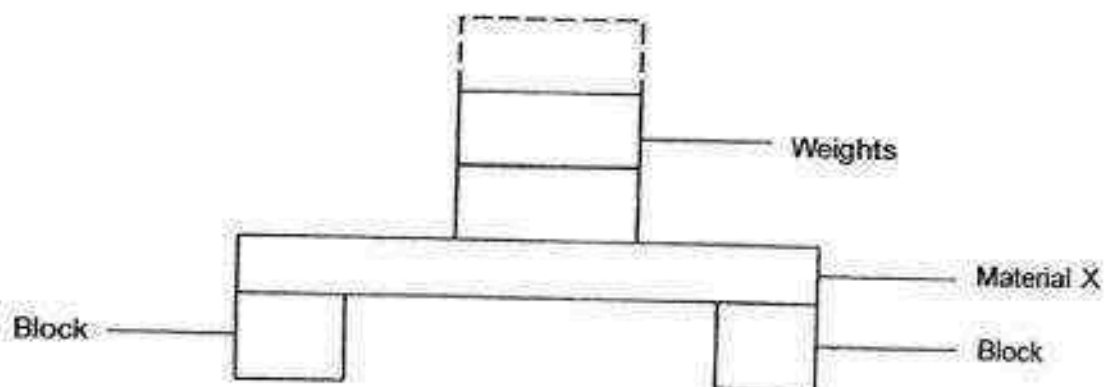


Which of the following statement(s) show(s) a difference between organisms B and D?

- A D can produce fruits but B cannot produce fruits.
- B D produces fruits with many seeds but B does not.
- C D is a flowering plant but B is a non-flowering plant.

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

4. Dan carried out an experiment as shown below. He placed material X on top of two blocks. Weights were then placed one at a time on top of material X until material X broke. Dan repeated the experiment using materials Y and Z. He recorded his results in the table below.



Material	Number of weights placed on each material before it broke
X	3
Y	5
Z	8

What is the aim of Dan's experiment?

- (1) To find out which block is the strongest.
- (2) To find out which material is the strongest.
- (3) To find out if the number of weights affect the strength of the blocks.
- (4) To find out if the strength of weights affect the material of the blocks.

5. A group of Primary 4 pupils made the following statements about digestion.

Siti: The saliva in the mouth helps to digest food.
 Tim: Digestion of food is completed in the small intestine.
 Bob: Digestion of food takes place in the gullet and the stomach only.
 Lucy: The undigested food goes into the large intestine where water is removed from it.

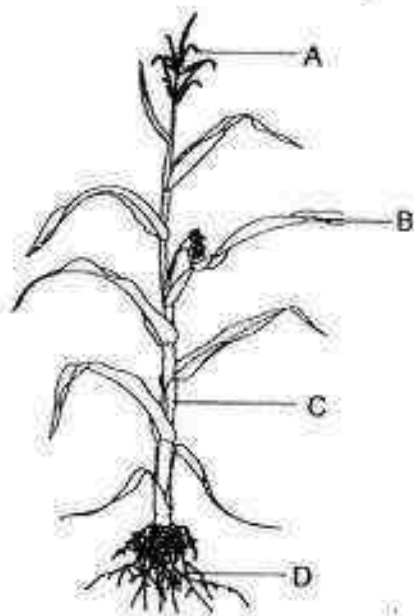
Which of the pupils made correct statements?

- (1) Siti and Tim only
- (2) Bob and Lucy only
- (3) Siti and Bob only
- (4) Siti, Tim and Lucy only

6. Two children, Ali and Peter, commented on a certain plant part of the maize plant shown below in the diagram.

Ali : It provides support.

Peter : It holds the leaves up so that they can get sunlight.



Maize Plant

Which part, A, B, C or D, of the maize plant are they referring to?

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

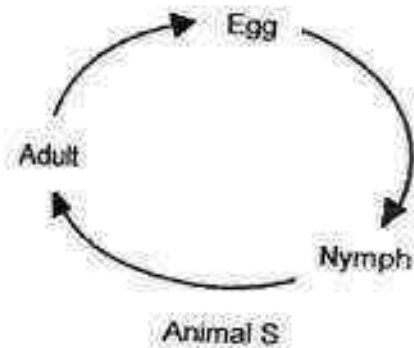
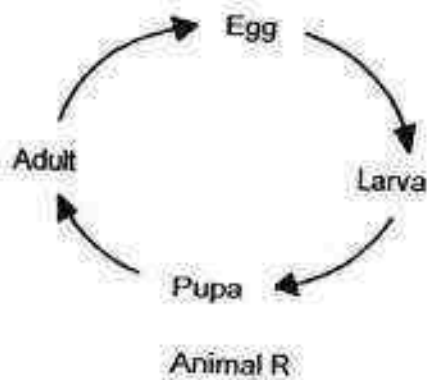
7. Sara classified 6 animals into 2 groups in the table below.

Group 1	Group 2
crow	dog
penguin	dolphin
downfish	elephant

What characteristic did Sara use to classify the animals?

- (1) Where they live.
- (2) How they move.
- (3) Their outer covering.
- (4) Whether they give birth.

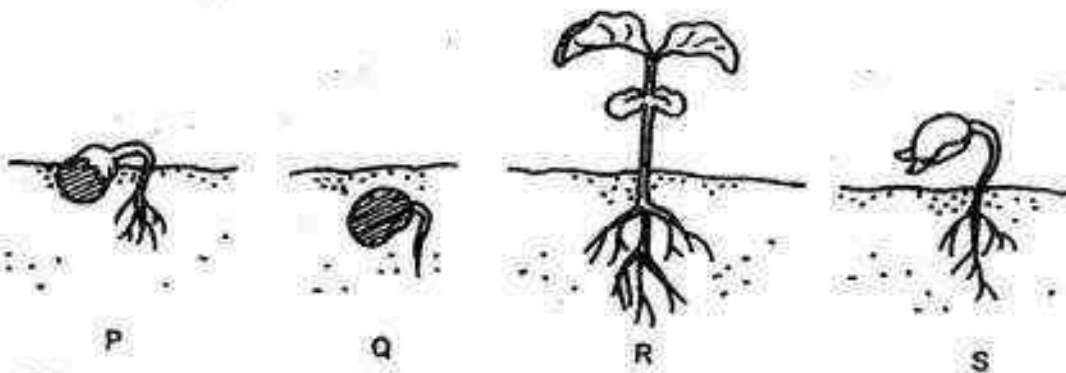
8. The diagrams below show the life cycle of Animals R and S.



Which insects below have similar life cycles to Animals R and S?

	Animal R	Animal S
(1)	mosquito	cockroach
(2)	grasshopper	mosquito
(3)	cockroach	grasshopper
(4)	cockroach	mosquito

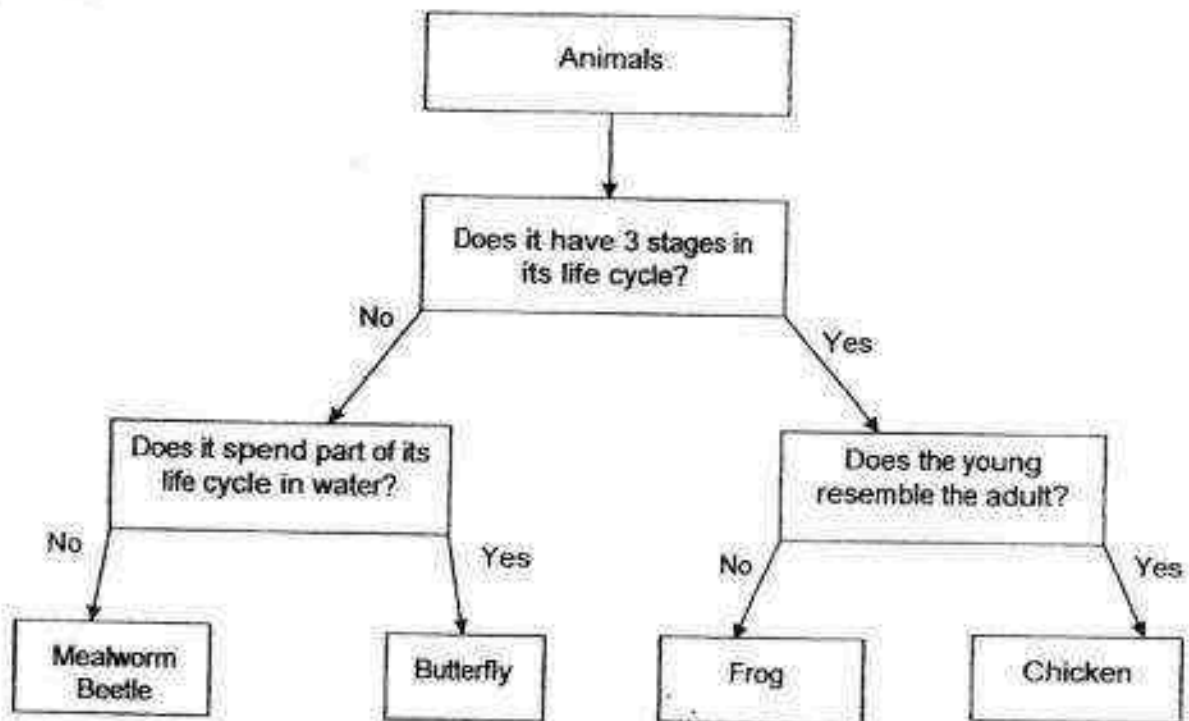
9. Look at the diagrams below.



Which one of the following shows the correct order of a seed growing into a young plant?

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

10. John drew the flowchart below.



Which animal was classified incorrectly?

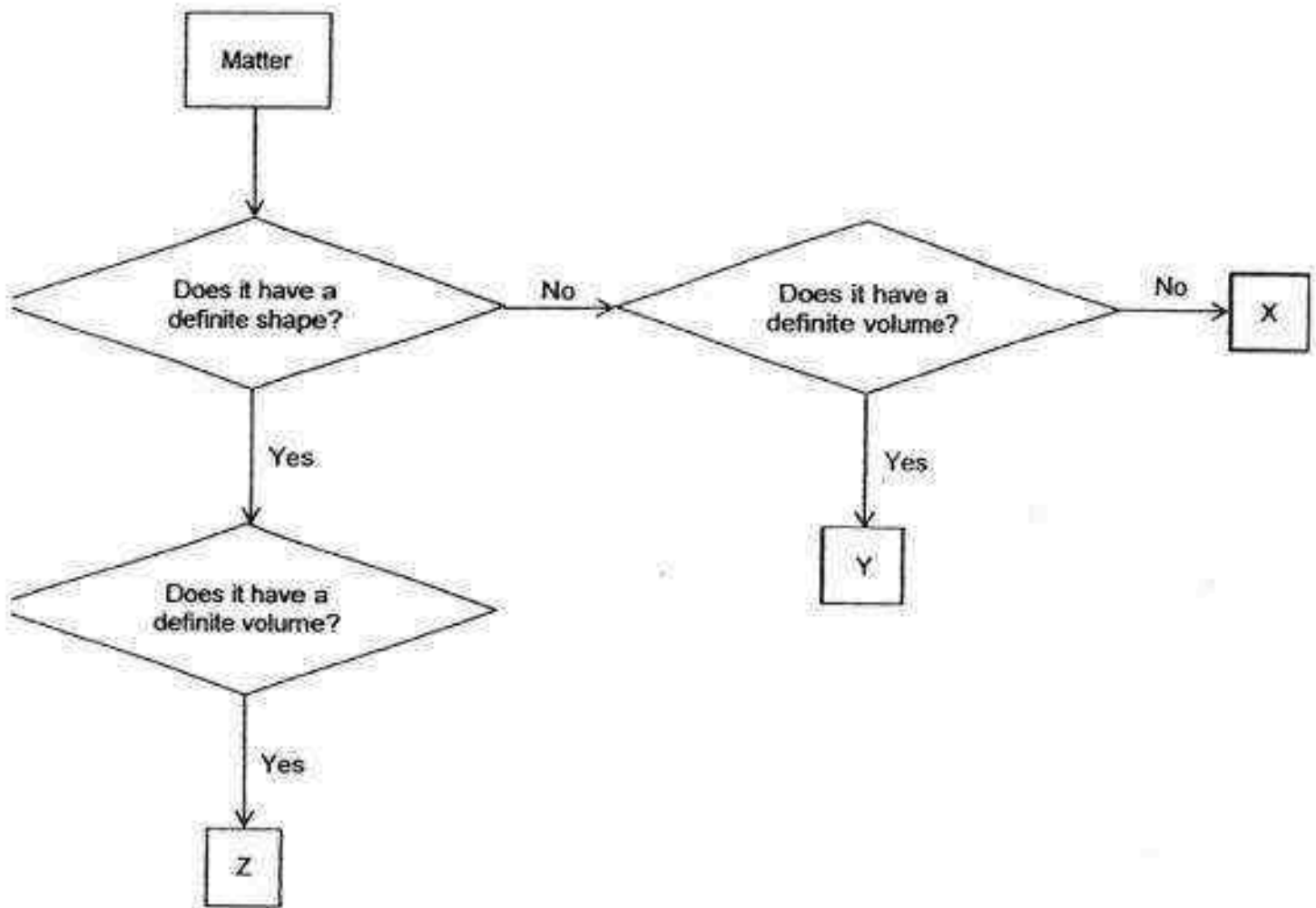
- (1) Frog
 - (2) Chicken
 - (3) Butterfly
 - (4) Mealworm Beetle
11. Mohan observed the growth of a seed to an adult plant. He recorded his observations in the table below.

Day	Length of root (cm)	Length of shoot (cm)	Number of leaves
0	0	0	0
2	1	0	0
4	2	1	0
6	3	3	0
8	4	5	3
10	5	6	5

On which day did the plant most likely start making its own food?

- (1) Day 4
- (2) Day 6
- (3) Day 8
- (4) Day 10

12. Study the flowchart below.



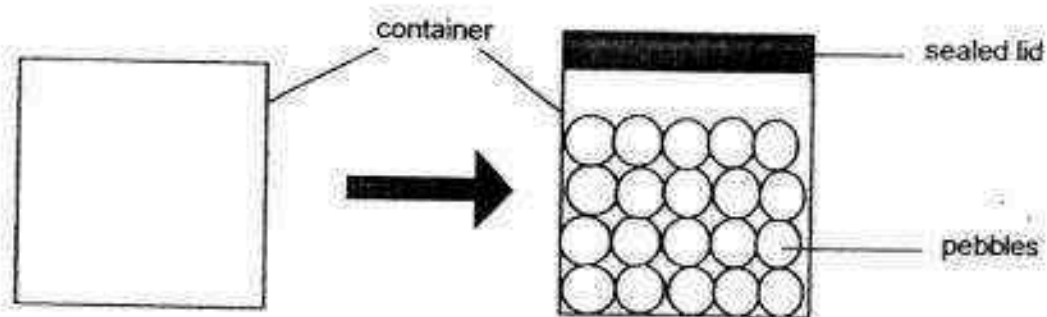
Which one of the following correctly represents X, Y and Z?

	X	Y	Z
(1)	Water	Oxygen	Coin
(2)	Oxygen	Apple juice	Rock
(3)	Air	Sand	Apple juice
(4)	Apple juice	Water	Sand

13. Which of the following are matter?

- (1) Eraser, light and air
- (2) Air, water and eraser
- (3) Light, electricity and heat
- (4) Electricity, eraser and heat

14. The diagram below shows an empty container with a volume of 400cm^3 . Susie placed some pebbles in the container and sealed it later with a lid.

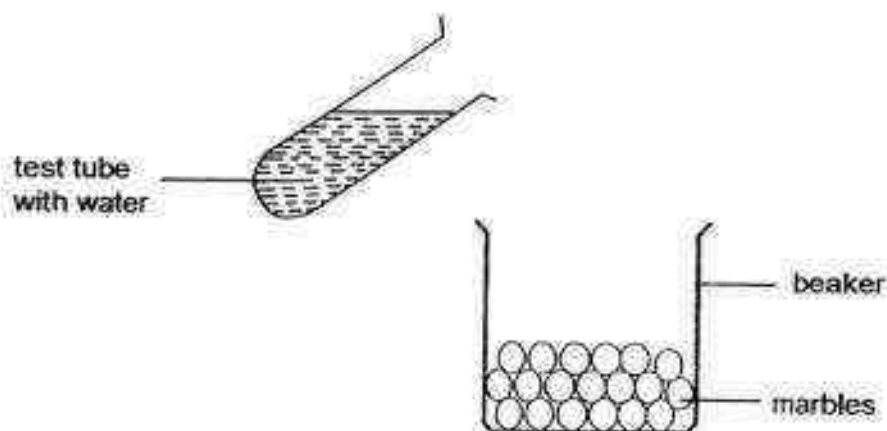


Which of the following statement(s) is/are true?

- A The pebbles can be compressed.
- B The air takes the shape of the container it is in.
- C The pebbles take the shape of the container they are in.

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

15. The water in the test tube is poured into the beaker filled with marbles as shown. A group of pupils were asked to observe the beaker of marbles as water was poured into it and give a reason for their observation.



	Observations	Reasons
Ali	Water will remain on top of the marbles.	Water does not occupy space.
Luke	Water will occupy the space in between the marbles.	Water can be compressed.
Betty	Water will be absorbed by the marbles.	Water can be compressed.
Stacy	Water will occupy the space in between the marbles.	Water occupy the space previously occupied by air.

Which of the above pupils gave the correct reason for his/her observation?

- (1) Ali
- (2) Luke
- (3) Betty
- (4) Stacy

End of Booklet A

Anglo-Chinese School (Junior)



CONTINUAL ASSESSMENT 1 (2016)

PRIMARY 4

SCIENCE

BOOKLET B

Wednesday

9 MARCH 2016

1 hour

Name: _____ () Class: 4. () Parent's Signature: _____

INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 7 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [] at the end of each question or part question.

Booklet	Possible Marks	Marks Obtained
A	30	
B	20	
Total	50	

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

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 table below.

X	Y	Z
Bat	Turtle	Frog
Lion	Lizard	Toad
Monkey	Crocodile	Salamander

(a) State suitable headings for Groups X and Y and Z. [1]

X: _____

Y: _____

Z: _____

(b) In which group does a snake belong to? State a characteristic that it has which is similar only to the animals in that group. [1]

(c) State two similar characteristics that only the animals in group X have. [1]

(Go on to the next page)

SCORE	3
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17. In an experiment, Lily kept four slices of the same type of bread, A, B, C and D under different conditions. A tick (✓) indicates the presence of the condition.

Bread	Conditions	
	Presence of moisture	Presence of light
A		✓
B	✓	✓
C	✓	
D		

The table below shows Lily's findings after 2 weeks.

Bread	Observations
A	No visible patches of mould.
B	Some visible patches of mould.
C	Many visible patches of mould.
D	One visible patch of mould.

- (a) Based on her experiment, what can she conclude about the best condition(s) for mould to grow? [1]

- (b) Where does the mould get its food? [1]

- (c) Lily wants to find out if mould grows faster on white or wholemeal bread. In the table below, indicate with a tick or ticks (✓) the variable(s) that should be kept the same to ensure a fair test. [1]

Variables	Kept the same
Type of bread	
Location of the experiment	
Amount of moisture present	
Amount of mould growing on the bread	

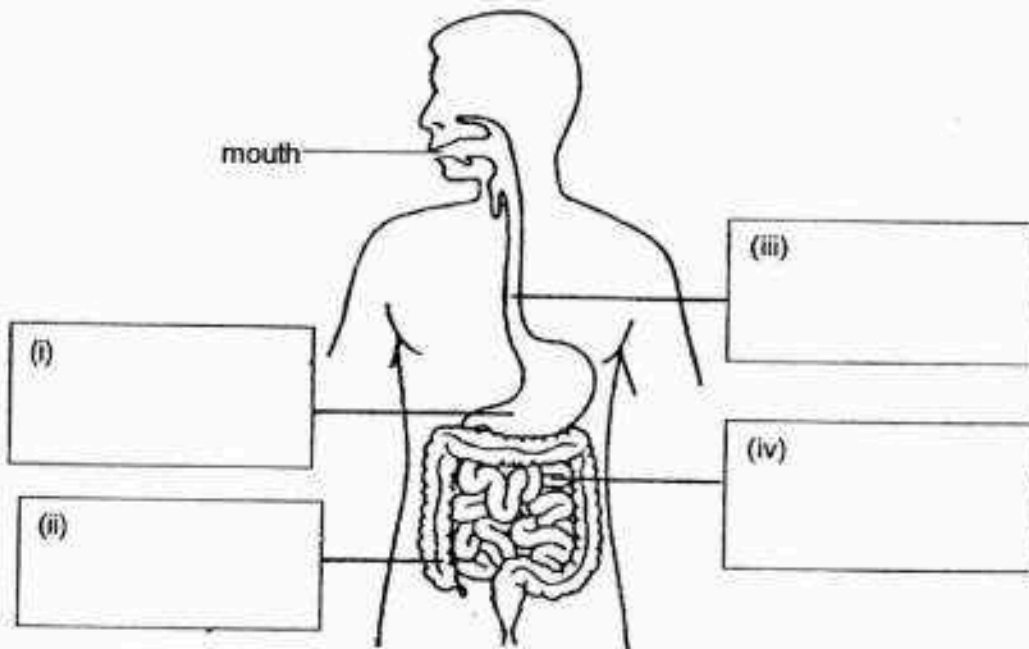
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SCORE	3
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18. The diagram below shows the human digestive system.

(a) Label parts (i), (ii), (iii) and (iv) of the digestive system.

[2]

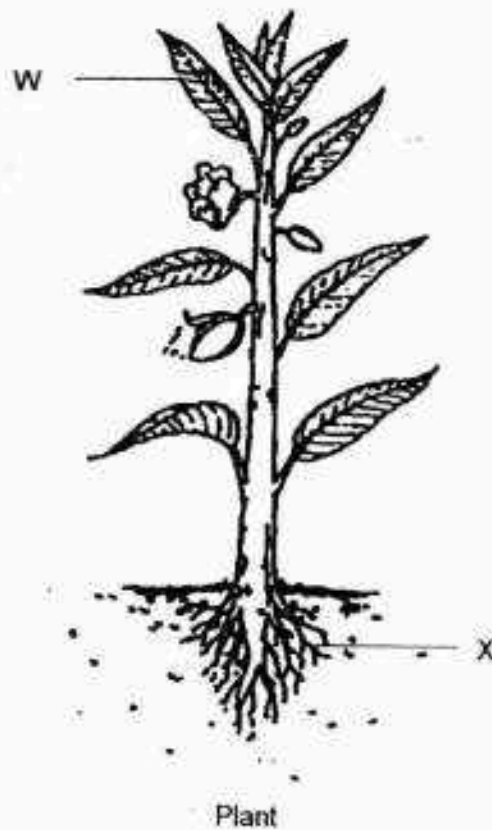


(b) In which parts of the digestive system are digestive juices produced?

[1]

SCORE	3
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19. The diagram below shows a plant.



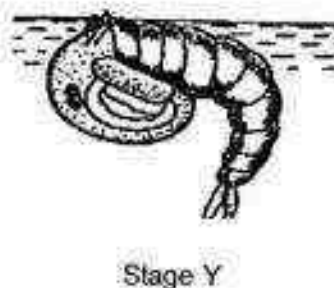
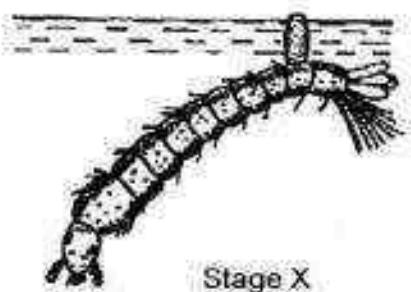
- (a) What is the function of Part W? [1]

- (b) How does Part X help Part W to carry out its function? [1]

(Go on to the next page)

SCORE	
	2

20. The diagrams below show two stages in the life cycle of Animal Q.



- (a) Identify the two stages, X and Y. [1]

X: _____ Y: _____

- (b) At which stage, X or Y, of its life cycle will Animal Q not feed? [1]

Stage: _____

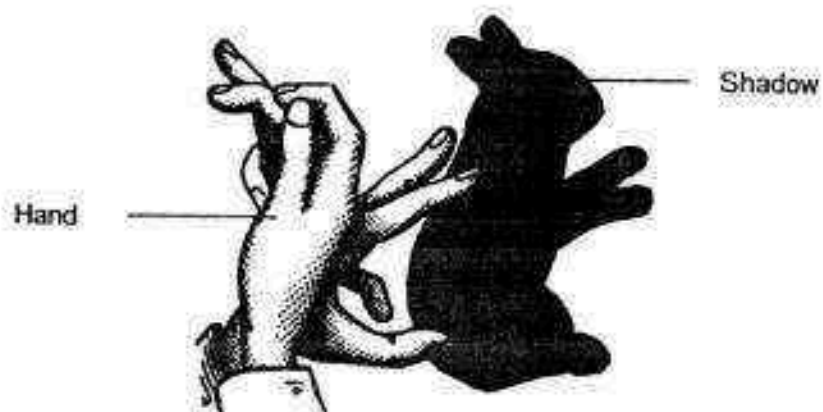
- (c) Dengue fever is an illness caused by infection with a virus transmitted by the Aedes mosquito. It is spread when an adult female Aedes mosquito bites a healthy person after biting an infected person.

What is the best way to prevent the Aedes mosquitoes from breeding? [1]

(Go on to the next page)

SCORE	3
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21. Bala made a shadow using his hand as shown below.



- (a) Is shadow a matter? Based on properties of matter, explain your answer. [1]

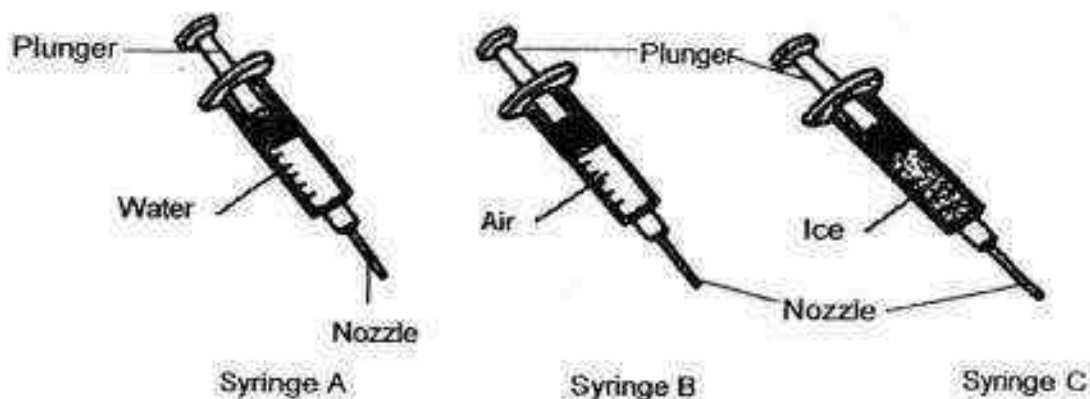
- (b) Which of the following statement(s) is/are true?
Write the letter 'T' in the box(es) next to the statement(s) that is/are true. [2]

Statements		Write the letter 'T'
(i)	Ice and snow are examples of matter.	
(ii)	Sound and water are not matter.	
(iii)	Gases have no definite volume.	
(iv)	Both solids and liquids take the shape of their containers.	

(Go on to the next page)

SCORE	3
-------	---

22. Mark filled three syringes, A, B and C, with different substances as shown below.



- (a) He covered the nozzle of each syringe with his finger and tried to push the plunger in. He recorded his observations in the table below. Match the syringes, A, B and C to the correct observations. Fill in the table with letters A, B and C. [1]

Observations		Syringes
(i)	The plunger could not be pushed in.	
(ii)	The plunger could be pushed in, but not all the way to the end.	

- (b) Explain why the plunger(s) in (a)(ii) could be pushed in. [1]

- (c) Based on the properties of matter, state a difference between ice and air. [1]

End of Paper

SCORE	3
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EXAM PAPER 2016**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	Q 9	Q 10
3	3	3	2	4	3	4	1	4	3
Q 11	Q 12	Q 13	Q 14	Q 15					
3	2	2	1	4					

Q16a) X: Has fur Y: Has scales Z: Has slimy skin

Q16b) Group Y. It has scales.

Q16c) They have fur and gives birth to their young alive.

Q17a) Mould needs moisture and darkness to grow.

Q17b) Mould gets its food from dead or decayed living things.

Q17c) Location of the experiment, amount of moisture present.

Q18ai) Stomach ii) Large intestine iii) Gullet iv) Small intestine

Q18b) Mouth, stomach and small intestine.

Q19a) It makes food for the plant.

Q19b) Part X absorbs water and mineral salts from the ground and transport it to other parts of the plant.

Q20a) X: Larva Y: Pupa

Q20b) Stage: Y

Q20c) We can spray oil on stagnant water so as to stop the larva from breathing.

Q21a) No. It does not occupy space, does not have a definite shape and volume.

Q21b) (i) and (iii)

Q22ai) C, A

ii) B

Q22b) air can be compressed so the plungers could be pushed in.

Q22c) Ice cannot be compressed but air can.



AI TONG SCHOOL

PRIMARY FOUR SCIENCE

DURATION: hour minutes

DATE:

INSTRUCTIONS

Do not open the booklet until you are told to do so.

Follow all instructions.

Answer all questions.

Name : _____ ()

Class : Primary 4 _____

Parent's Signature : _____

Date : _____

Practice Paper Term 4

Name: _____ ()

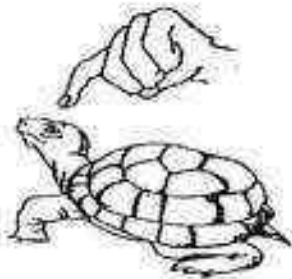
Marks: _____ /56

Class: _____

Section A: 56 marks

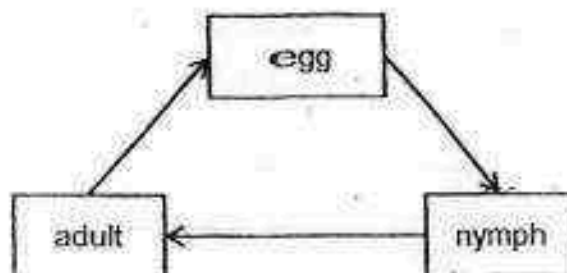
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice and shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. A tortoise hides itself in its shell when touched.



This shows that the tortoise is a living thing because it can _____.

- (1) grow
 - (2) breathe
 - (3) respond
 - (4) reproduce
2. The diagram below shows the life cycle of an animal.

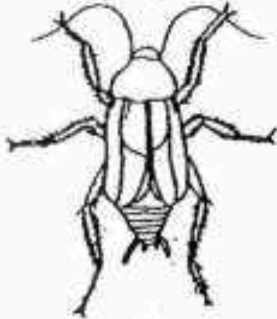


Which animal is likely to have the life cycle as shown above?

- (1) Frog
- (2) Beetle
- (3) Butterfly
- (4) Cockroach

3. Which one of the animals shown below is **NOT** an insect?

(1)



(2)



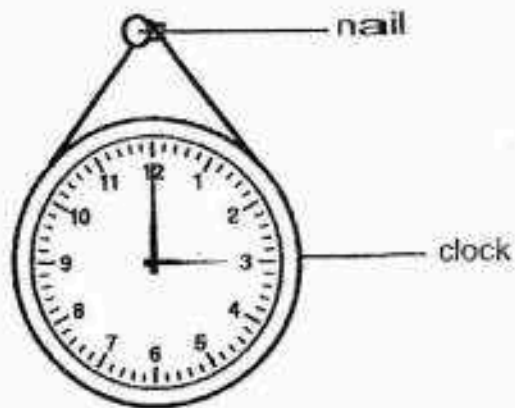
(3)



(4)



4. The diagram shows a clock hanging on a wall.



Iron is used to make nails because iron _____.

- (1) is shiny
- (2) is strong
- (3) sinks in water
- (4) conducts heat well

5. The diagram below shows a young plant.



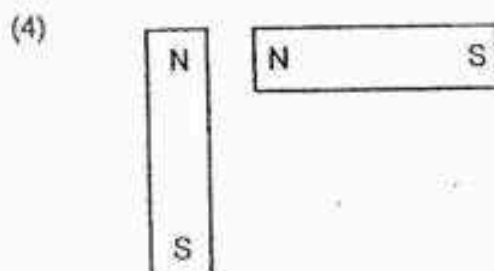
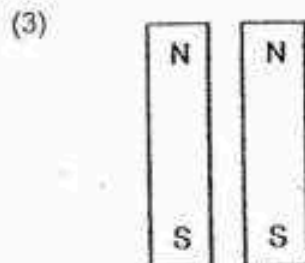
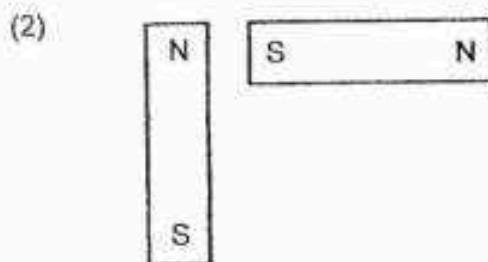
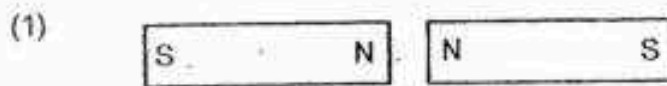
The leaf helps the plant to _____.

- (1) make food
- (2) grow upright
- (3) absorb water
- (4) absorb nutrient

6. In which part of the digestive system is digested food absorbed into the blood?

- (1) gullet
- (2) stomach
- (3) small intestine
- (4) large intestine

7. In which one of the following will the two magnets pull each other together?



8. Harold boiled some water using the pot as shown below.



He is able to hold the pot of boiling water using the plastic handle.
This is because plastic is a _____.

- (1) light material
- (2) flexible material
- (3) poor conductor of heat
- (4) good conductor of heat

9. Which one of the following is a source of light?

- (1) A mirror



- (2) The moon



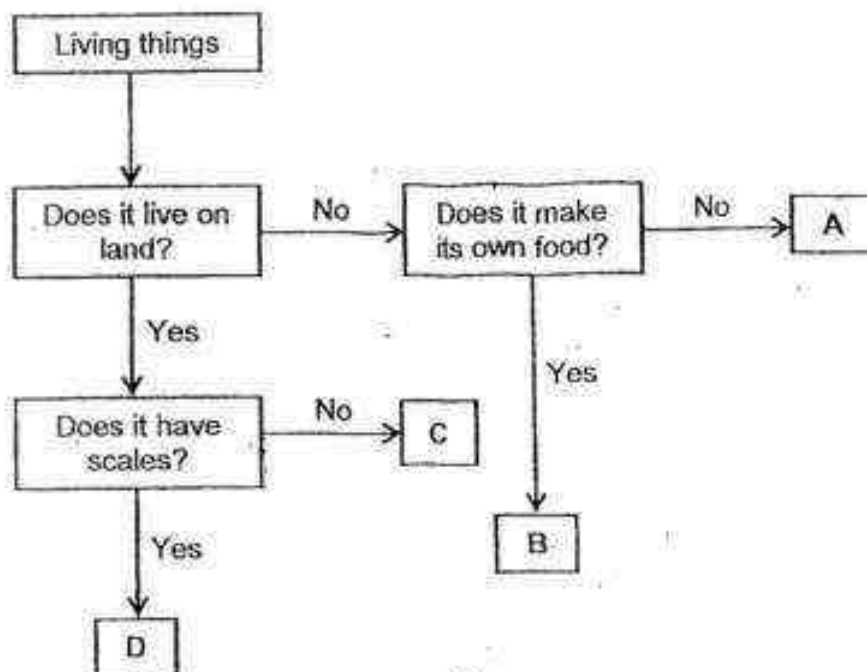
- (3) A candle flame



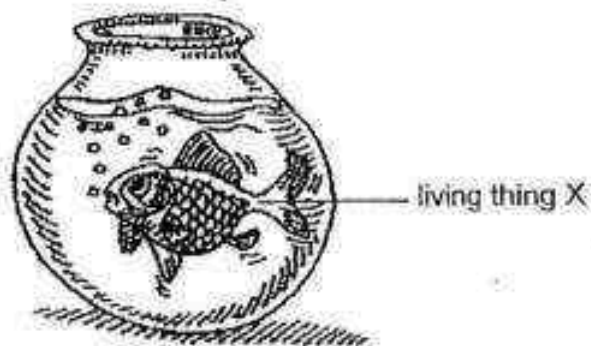
- (4) A leaf



10. The flow chart below shows the characteristics of living things A, B, C and D.



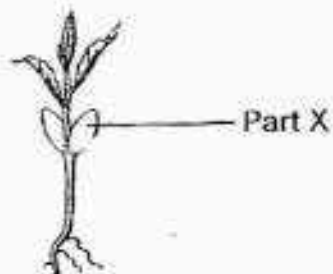
The following diagram shows living thing X in a bowl of water.



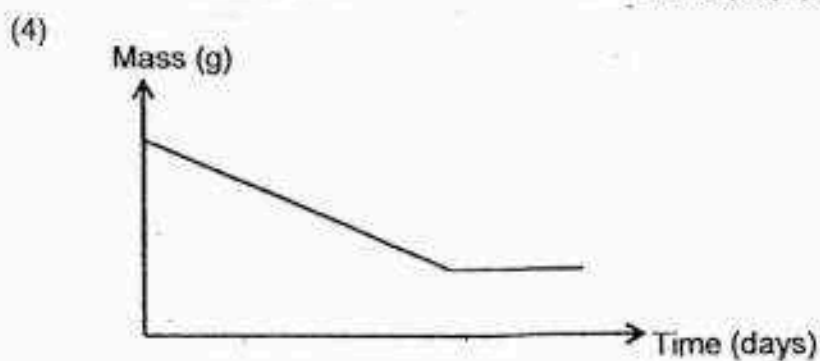
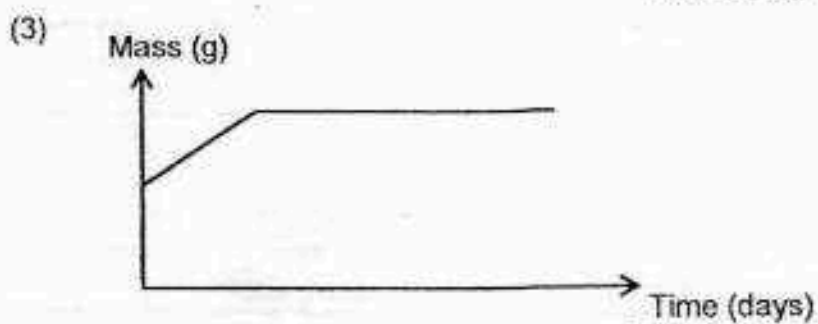
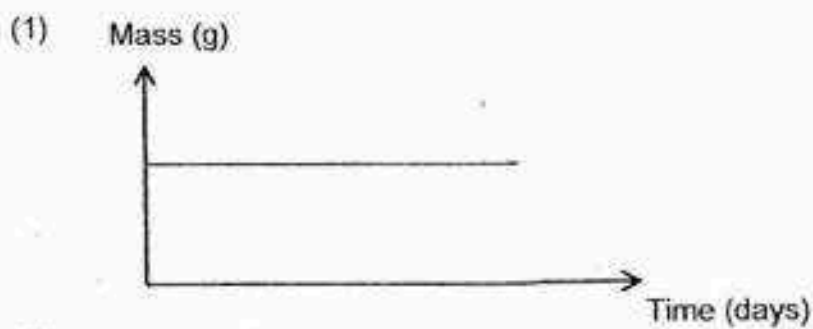
Based on the flow chart above, which of the following can living thing X be?

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

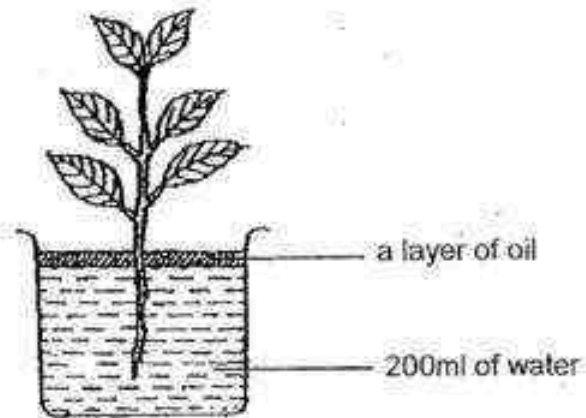
11. The diagram shows a seedling with Part X labelled.



Which of the following graphs is correct about the mass of X over time?

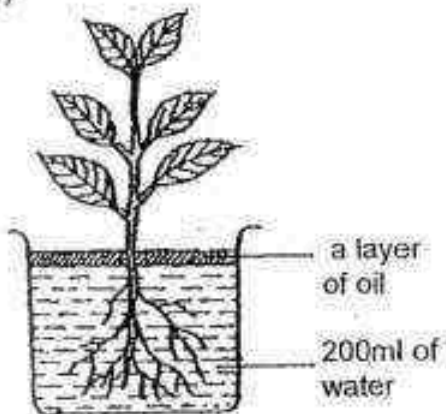


12. Andy set up an experiment as shown below to find out if the absence of roots affects the amount of water absorbed.

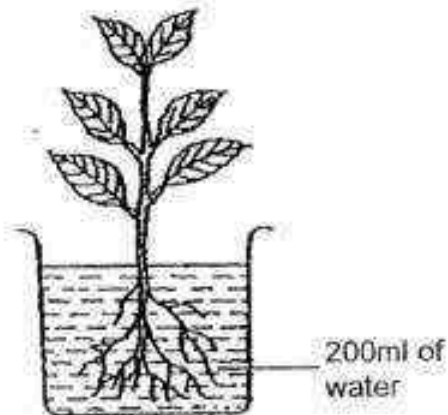


Which of the following should Andy use as his control set-up?

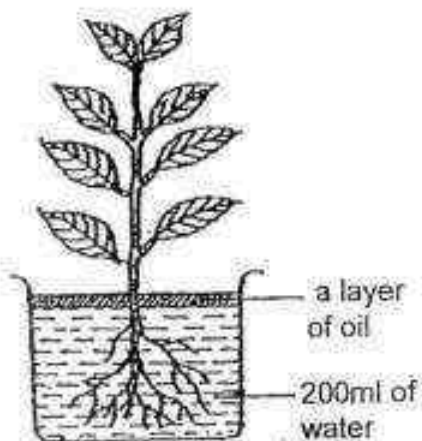
(1)



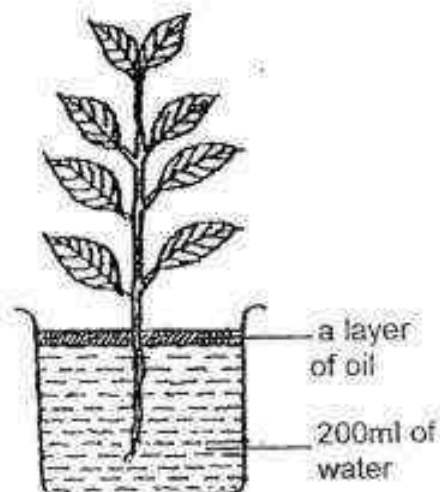
(2)



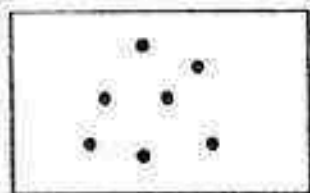
(3)



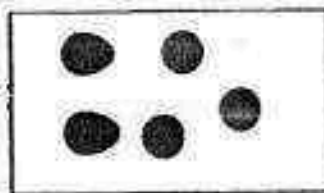
(4)



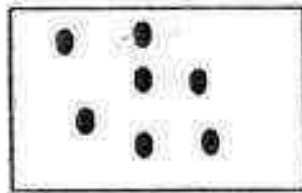
13. The diagram below shows three samples of Food X. Each sample shows Food X at a different stage of its digestion in the human body.



Sample A



Sample B



Sample C

Which part of the human digestive system were the samples most likely taken from?

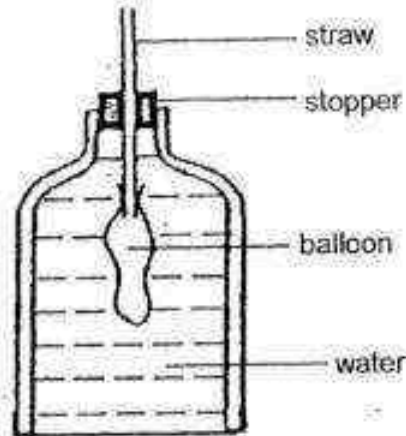
	Sample A	Sample B	Sample C
(1)	Mouth	Stomach	Small intestine
(2)	Stomach	Small intestine	Mouth
(3)	Small intestine	Mouth	Stomach
(4)	Stomach	Mouth	Small intestine

14. Which of the following statements about saliva are true?

- A Saliva is only released in the mouth.
- B Saliva helps food to be absorbed in the stomach.
- C Saliva helps to break down food into simpler substances.
- D Saliva moistens and softens food so that food can be swallowed easily.

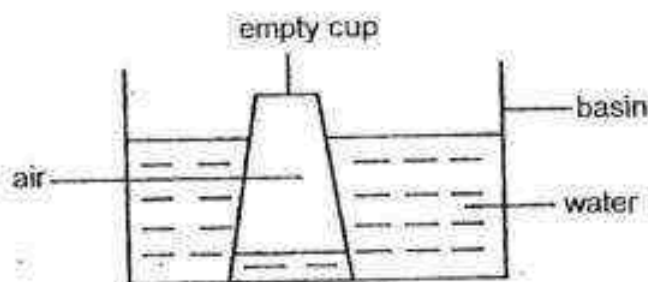
- (1) A and B only
- (2) C and D only
- (3) A, C and D only
- (4) B, C and D only

15. Rasi prepared a set-up as shown below. She tried to blow air through the straw to inflate the balloon but it did not inflate at all.



What can she conclude from the experiment?

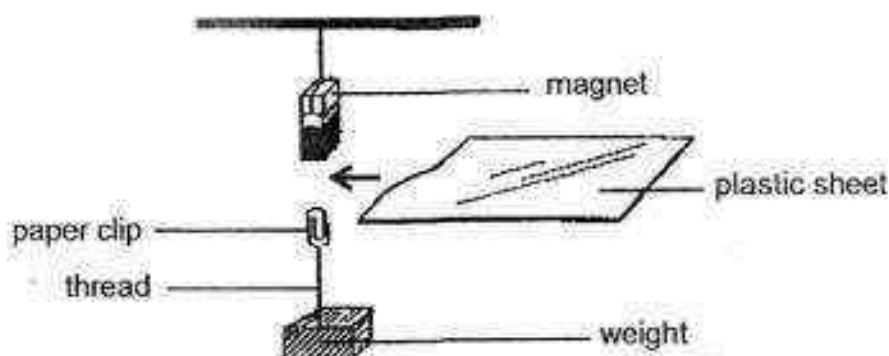
- (1) Air has mass.
 - (2) Air can be compressed.
 - (3) Water has no definite shape.
 - (4) Water has a definite volume.
16. Gopal lowered an empty cup into a basin of water until it touched the bottom of the basin. He observed that some water entered the cup.



Which of the following correctly explains why some water can enter the cup?

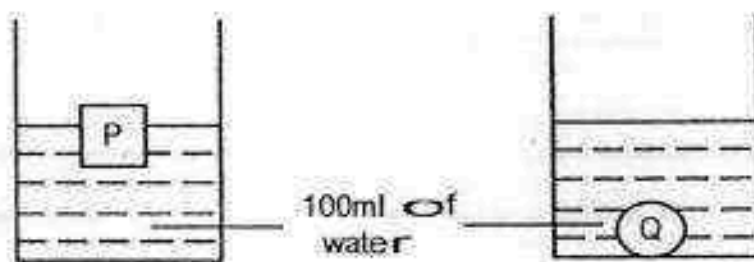
- (1) Air has mass.
- (2) Air has volume.
- (3) Air has no definite shape.
- (4) Air can be compressed.

17. David set up an experiment as shown below. He observed that the magnet attracted the paper clip. He then placed a plastic sheet between the magnet and the paper clip. The paper clip remained where it was.



Which of the following is the reason why the paper clip did not drop?

- (1) The paper clip was magnetised.
 - (2) Magnetic force could pass through the plastic sheet.
 - (3) There was no magnetic force pulling the paper clip down.
 - (4) The plastic sheet was magnetised and attracted the paper clip.
18. The diagrams below show Objects P and Q in two beakers of 100ml of water. The water level in both beakers are now at the same level.



Which of the following statements about Objects P and Q is correct?

- (1) Both objects are of the same mass.
- (2) Both objects are of the same volume.
- (3) Object P is not made of the same material as Object Q.
- (4) Object P is made of a magnetic material but Object Q is not.

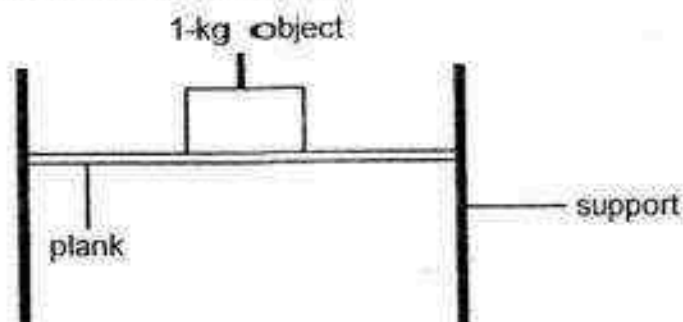
19. The diagram below shows a table tennis ball before and after it was stepped on. The dent in the table tennis ball did not result in any holes in the ball.



Which of the following best describes the changes in mass and volume of air in the table tennis ball?

	Before the table tennis ball was stepped on		After the table tennis ball was stepped on	
	Mass of air in the ball (g)	Volume of air in the ball (cm ³)	Mass of air in the ball (g)	Volume of air in the ball (cm ³)
(1)	3	6	2	6
(2)	3	6	2	4
(3)	3	6	3	6
(4)	3	6	3	4

20. John wanted to compare the strength of four different materials A, B, C and D. He fixed a plank made of material A onto the supports as shown in the diagram below. Then, he placed a 1-kg object on it.

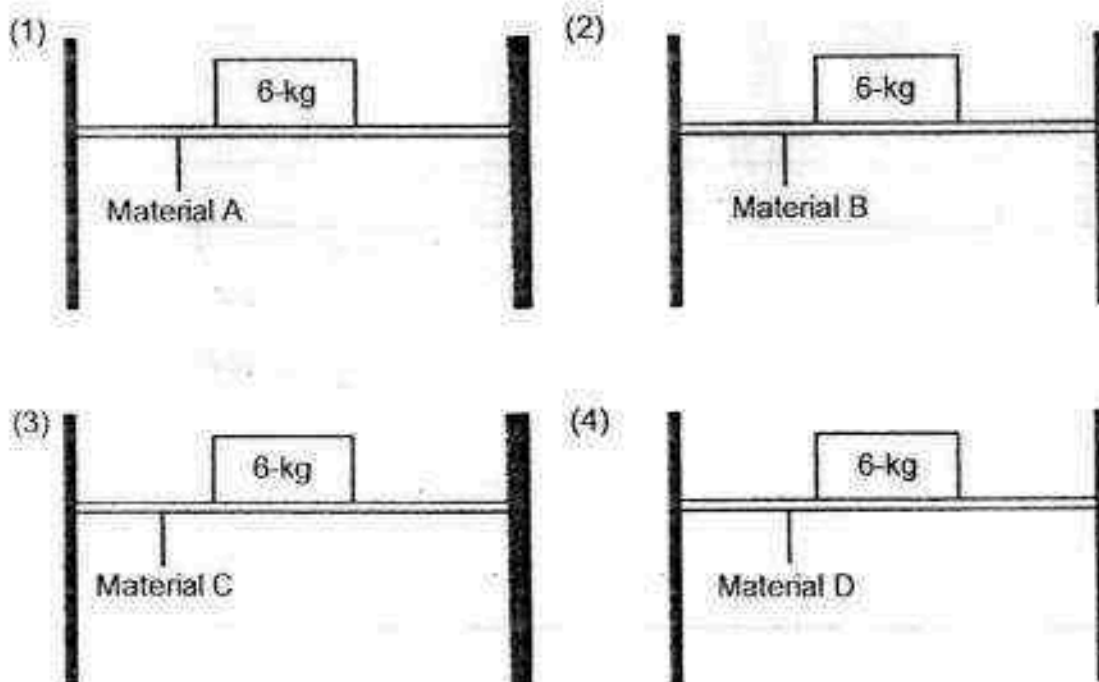


He kept adding similar 1-kg objects on top of one another until the plank broke. He then repeated the experiment with materials B, C and D of similar thickness.

The table below shows the number of 1-kg objects needed to break the planks made of the four materials.

Material	Number of 1-kg objects
A	4
B	5
C	7
D	3

Based on John's experiment, which of the following is possible without the material breaking?



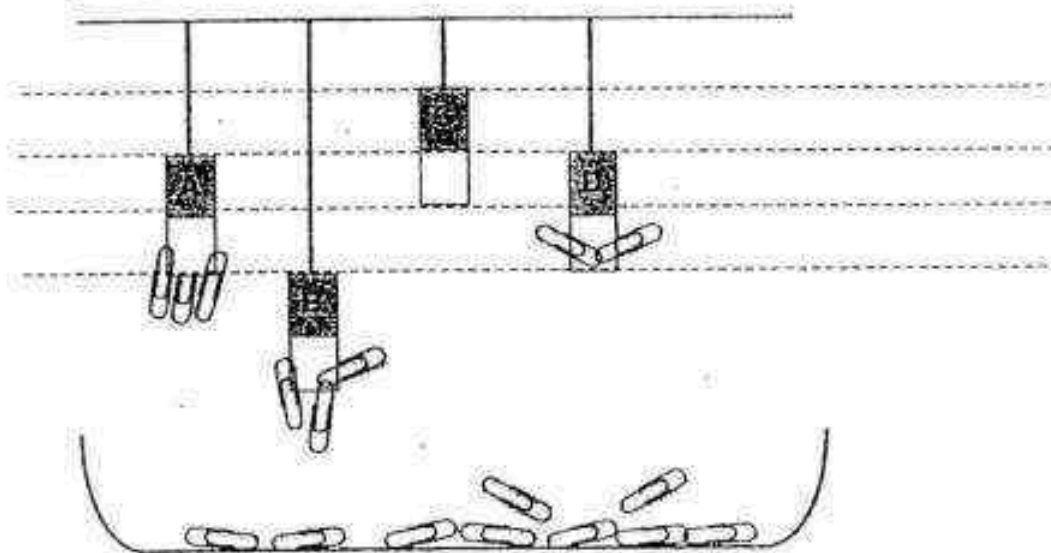
21. The characteristics of three substances, X, Y and Z, are given in the table below. A tick (✓) means the substance has the characteristics.

	Has definite shape	Has definite volume	Has mass
X	✓	✓	✓
Y		✓	✓
Z			

Which of the following statements is incorrect?

- (1) Z is a gas.
- (2) X is a solid.
- (3) Y is a liquid.
- (4) Only X and Y are matter

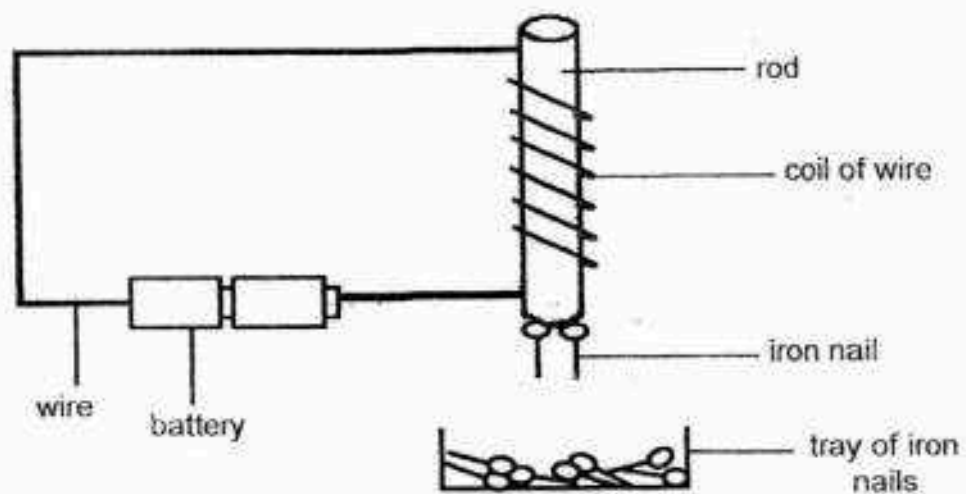
22. Tony hung four magnets, A, B, C and D, from a tray of paper clips.



Which of the following is definitely true from the results shown above?

- (1) C has lost all its magnetic strength.
- (2) A's magnetic strength is stronger than D's.
- (3) B's magnetic strength is stronger than D's.
- (4) A and B have the same magnetic strength.

23. Fahan set up an experiment as shown in the diagram below.



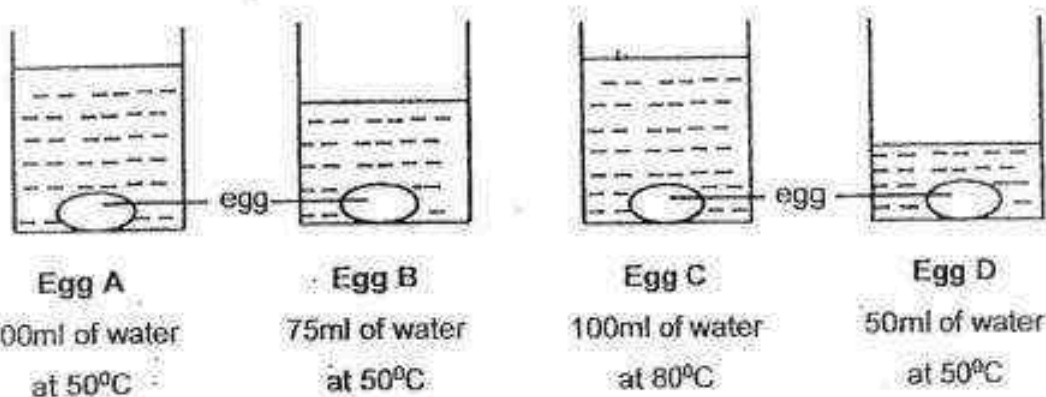
Fahan wanted to find out if the **length** of the rod affects the number of iron nails attracted by the rod.

Which of the following variables **should not** be changed?

- A Length of rod
- B Number of iron nails **attracted**
- C Number of batteries **in** the circuit
- D Distance of rod to **the** tray of nails
- E Number of coils of **wire** around the rod

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

24. Jenny put four similar eggs into four different beakers containing different amounts of water at different temperature. After 5 minutes, she took out the eggs and cracked them to see how cooked each egg was.

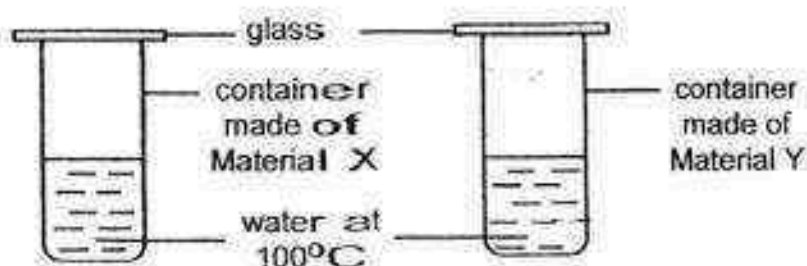


Which of the following shows the correct order of eggs from the one that was least cooked to the one that was most cooked?

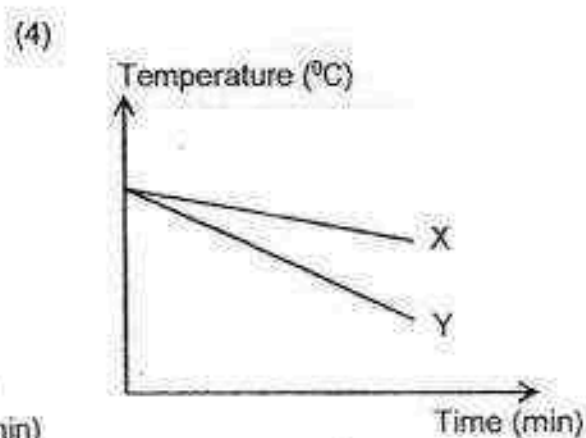
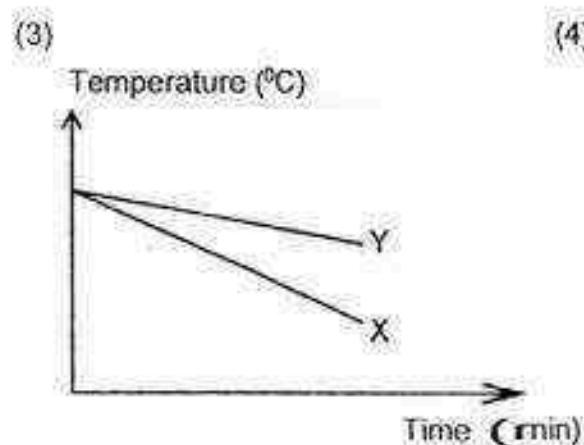
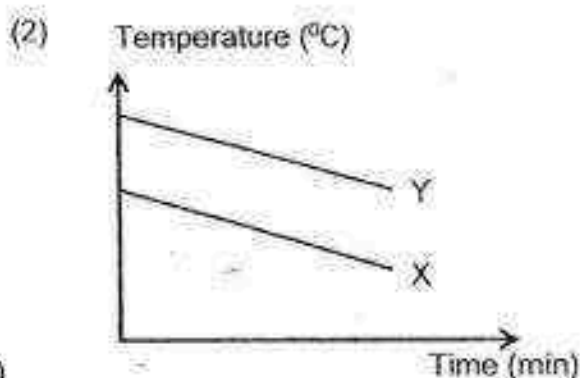
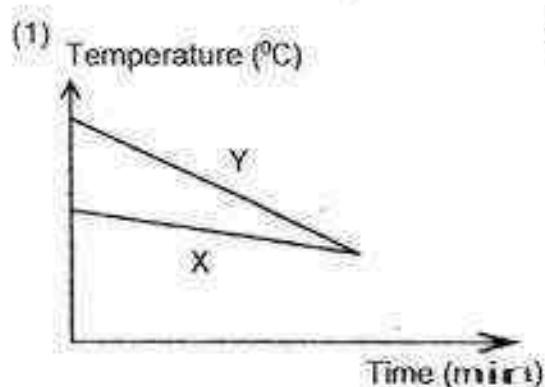
- (1) C, A, B, D
- (2) D, B, A, C
- (3) C, D, B, A
- (4) D, C, A, B

25. The diagram below shows two containers, one made of Material X and the other Material Y. They are of the same size and thickness. Each container is filled with 500ml of water at 100°C .

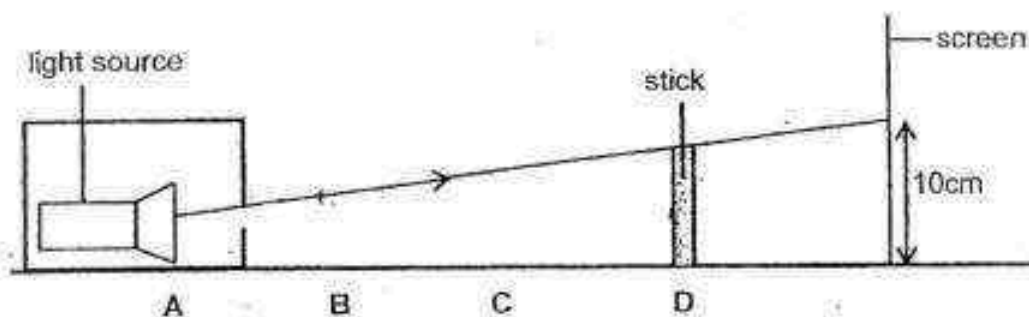
The containers were covered with a sheet of glass and were left on a table in a room for 30 minutes.



If Material X is a better conductor of heat than Material Y, which one of the following graphs shows the correct changes in the temperature of the water in the two containers over time?



26. Dylan wanted to find out how the distance between a light source and a stick would affect the length of the shadow cast by the stick. He placed the stick at position D and observed a 10cm long shadow on a screen as shown in the diagram below.

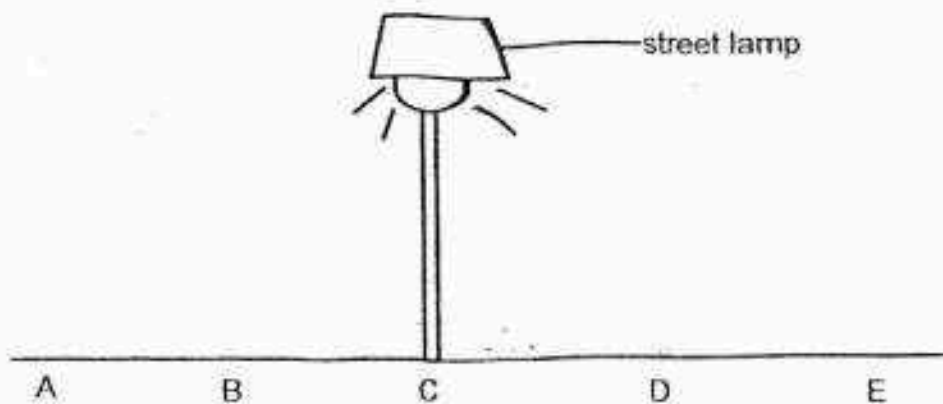


He then placed the light source and the stick at different positions, A, B, C and D, and measured the length of the shadows.

Which of the following is correct?

	Position of light source	Position of stick	Length of shadow (cm)
(1)	A	B	5
(2)	A	C	15
(3)	B	C	8
(4)	B	D	10

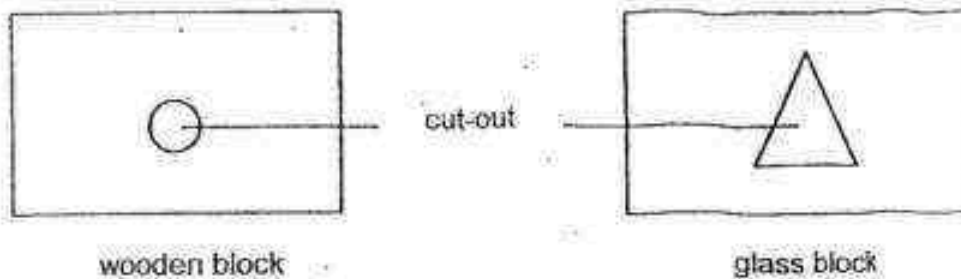
27. Anthony walked past a lighted **street** lamp one night.



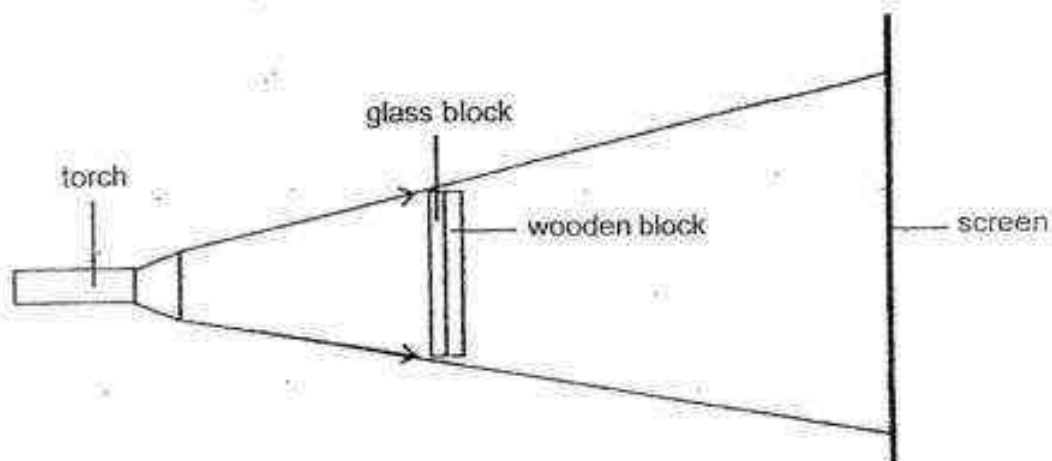
Which of the following is correct about the length of his shadow as he walks from A to E?

- (1) It keeps increasing in **length**.
- (2) It keeps decreasing in **length**.
- (3) Its length keeps **increasing** until he walks to C and then starts to decrease.
- (4) Its length keeps **decreasing** until he walks to C and then starts to increase.

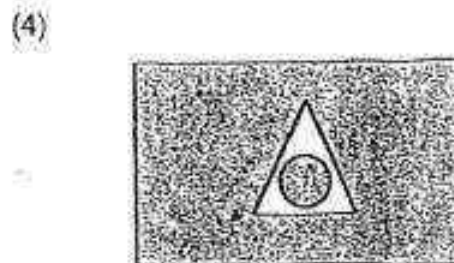
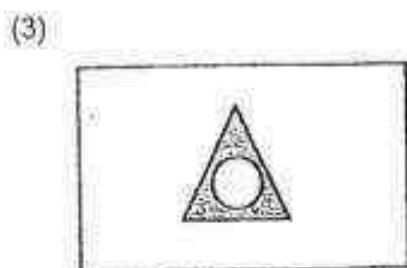
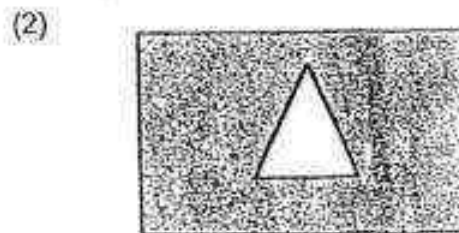
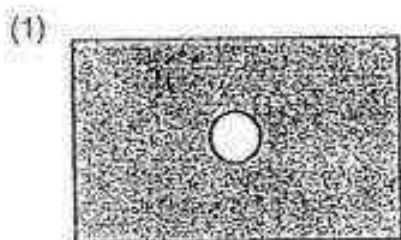
28. A circular shape was cut out from a wooden block and a triangular shape was cut out from a glass block as shown in the diagram below.



The two blocks were placed together and light was shone on the blocks as shown in the diagram below.



Which of the following could be the shadow formed on the screen?



Name: _____ ()

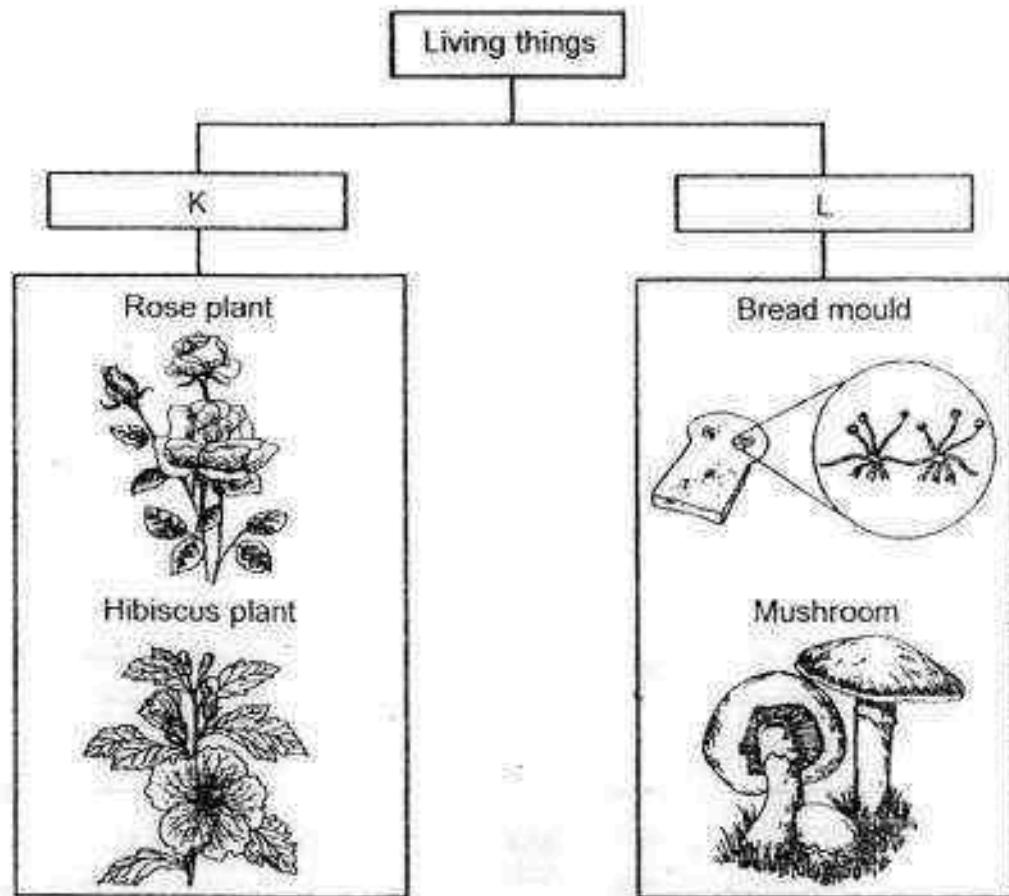
Marks: _____ /44

Class: _____

Section B: 44 marks

Read the questions carefully and write down your answers in the spaces provided.

29. Study the classification chart below.



Choose the correct words from the box to give suitable headings for K and L. [2]

flowering plant

non-flowering plant

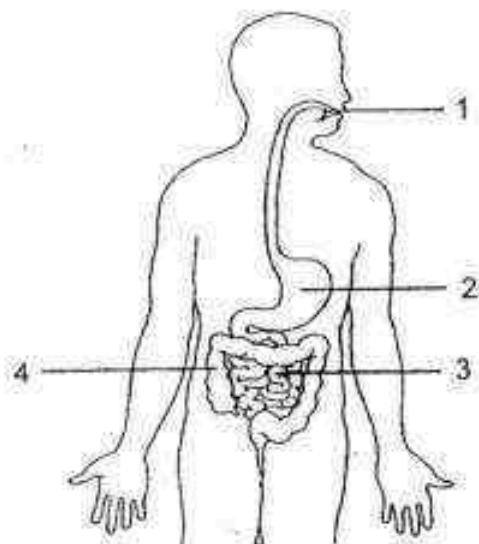
fungi

bacteria

K: _____

L: _____

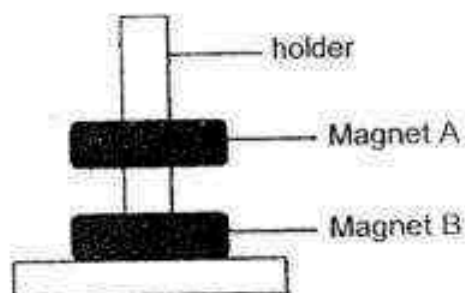
30. The diagram below shows the human digestive system.



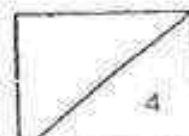
Identify the parts below by putting 1, 2, 3 or 4 in the blanks provided.

- (a) Digestion first takes place here. _____ [1]
 (b) Water is absorbed from undigested food here. _____ [1]

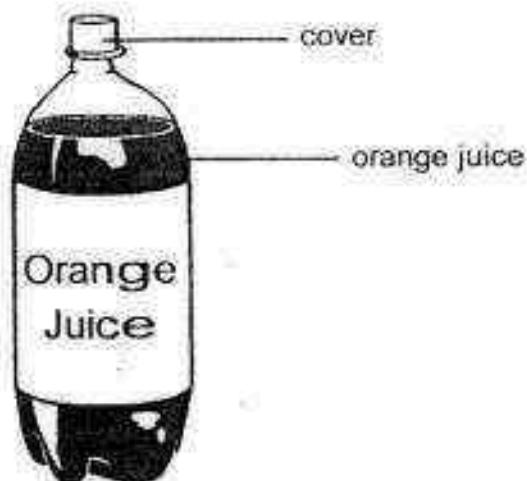
31. Alice placed two ring magnets, A and B, through a holder as shown below.



- (a) The holder was made of wood and did not attract the magnets.
 Wood is a _____ material. [1]
 (b) Why was magnet A floating above magnet B?
 Magnet B was _____ magnet A. [1]



32. The diagram below shows a bottle of orange juice.

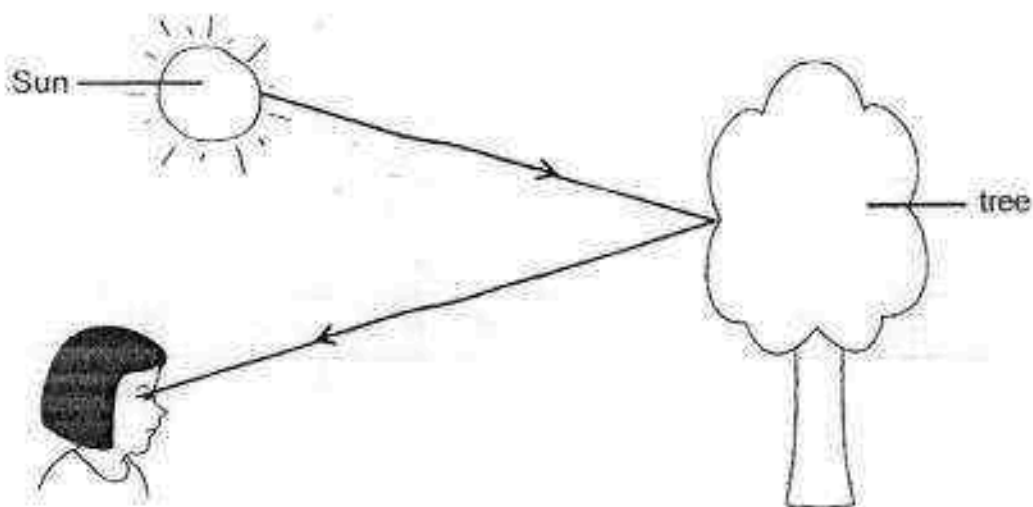


Complete the sentences to state if the parts are solid, liquid or gas.

(a) This cover is a _____ [1]

(b) The orange juice is a _____ [1]

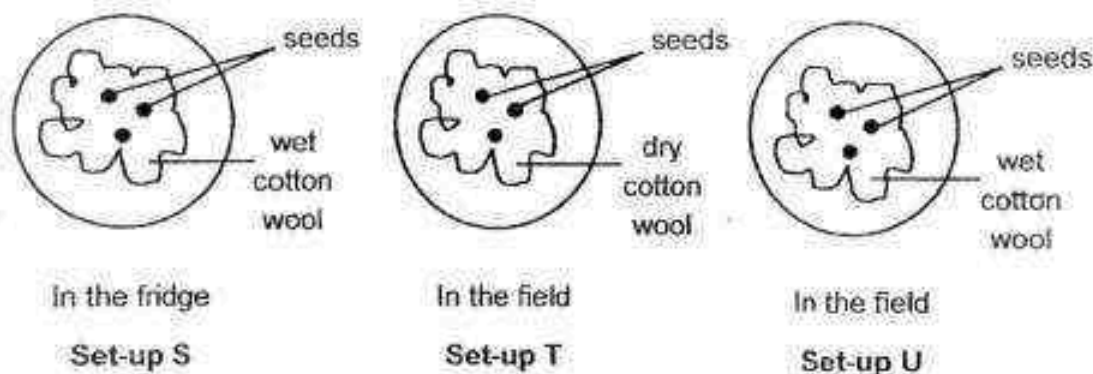
33. The diagram below shows how Mary can see the tree in the daytime.



The _____ from the Sun is _____ by the tree and enters Mary's eye. [2]



34. Daryl carried out an experiment on the germination of similar seeds using three set-ups, S, T and U, as shown below.



- (a) After five days, the seeds in set-ups S and T did not germinate but the ones in set-up U did. Give the most important reason that caused the seeds in set-ups S and T not to germinate?

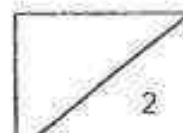
Set-up S: _____ [1/2]

Set-up T: _____ [1/2]

- (b) In another experiment, Daryl observed and measured the height and mass of a green bean plant over five weeks. He recorded his observations in the table below.

Number of week	1	2	3	4	5
Height of plant (cm)	2	6	?	14	18
Mass of plant (g)	3	8	12	18	23

- (i) Predict the height of the green bean plant at the end of week 3. [1]



- (ii) Based on his observations, what is the relationship between the mass of plant and the number of weeks? [1]

- (iii) What do you think would happen to the plant if it was kept in a dark room for week 6 onwards? Explain your answer. [1]



35. David carried out an experiment with four similar set-ups and placed them in a garden. He recorded the growth of the plant in the table below.



Set-up A



Set-up B



Set-up C

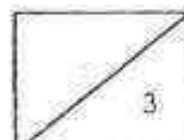


Set-up D

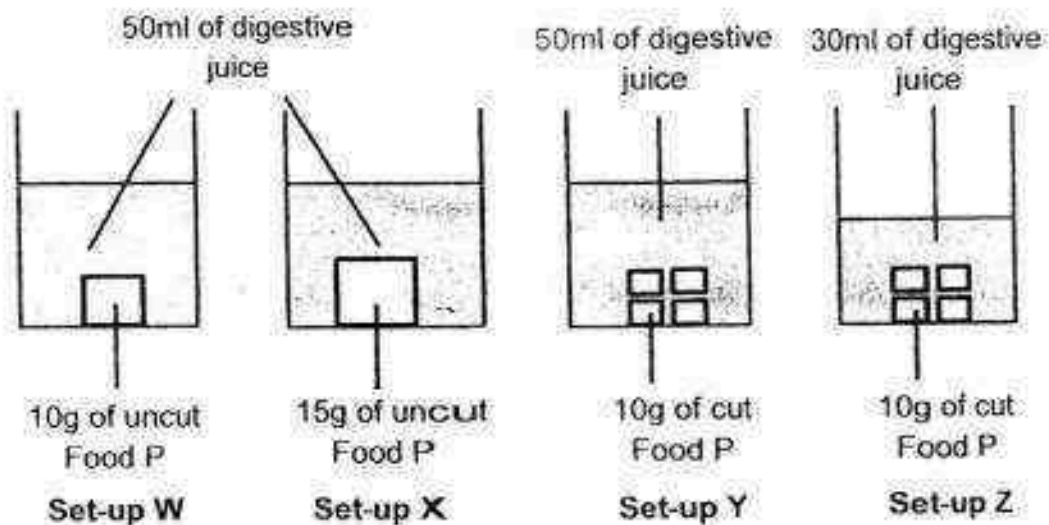
Set-up	Volume of water given daily (ml)	Growth of the plant after one week (cm)
A	5	0
B	20	1
C	50	3
D	100	5

- (a) Based on the data given, what was the aim of his experiment? [1]

- (b) How does placing all four set-ups in the same location help make the experiment a fair one? [2]



36. Wei Ling wanted to find out if cutting Food P into smaller pieces affects the rate of digestion of the food. She prepared 4 different set-ups, W, X, Y and Z, as shown in the diagram below.



- (a) i) Which 2 set-ups should Wei Ling use to help her achieve the aim of her experiment? [1]

- ii) In which set-up from part a(i) would Food P digest the fastest? Explain your answer. [2]

- (b) In which set-up, Y or Z, would Food P digest slower? Explain your answer. [1]



37. The diagram below shows a pair of spectacles.



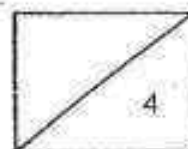
- (a) Give one material that Part X is usually made of. [1]

- (b) Write down one characteristic about the material you gave in (a) that makes it suitable to make Part X. Explain why this characteristic is important for the spectacles. [2]

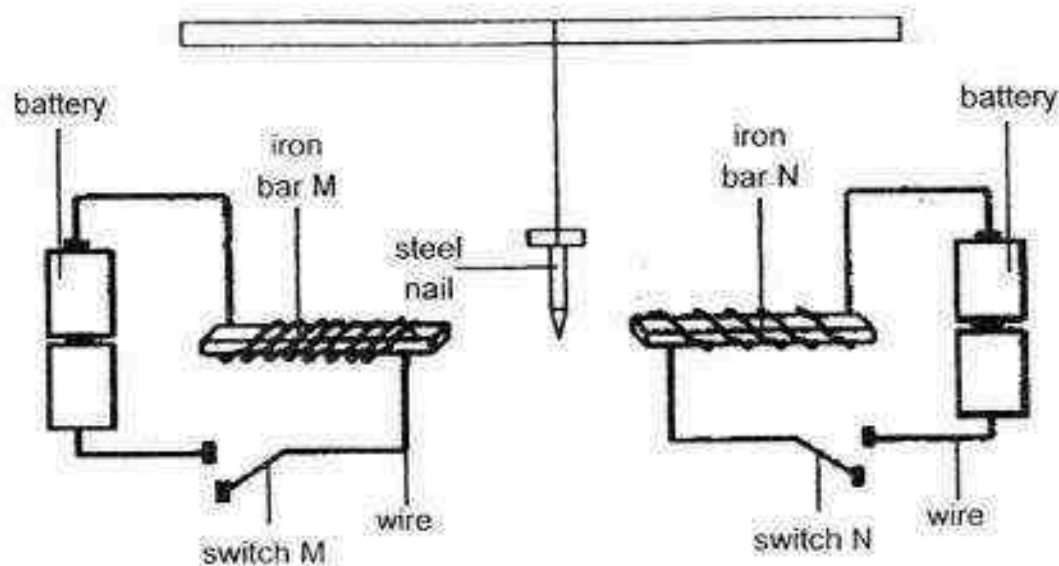
Characteristic:

Explanation:

- (c) John says that Part Y of the spectacles should be strong. Do you agree? Explain. [1]



38. Ahmad set up an experiment as shown in the diagram below. He used identical batteries, wires and iron bars. A steel nail is freely suspended at equal distance between the two iron bars, M and N.

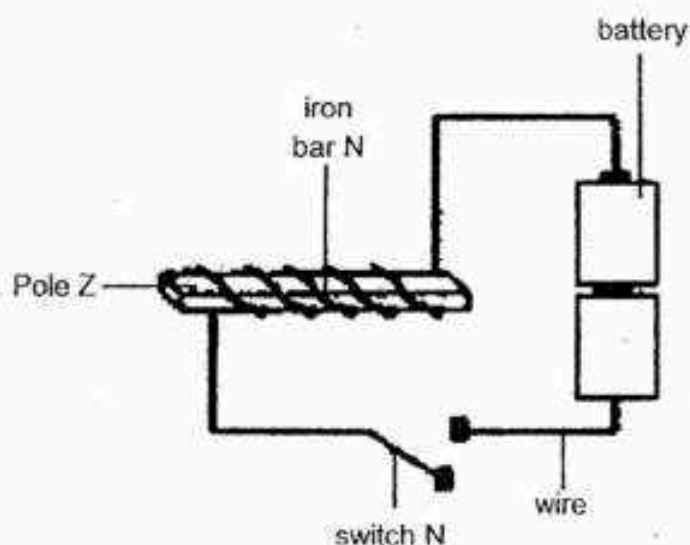


- (a) What do you think would happen to the steel nail if both switches M and N are turned on at the same time? Explain your answer. [2]

- (b) The steel nail is now replaced with a copper nail. What do you think would happen to the copper nail when the switches M and N are turned on again? Explain your answer. [1]



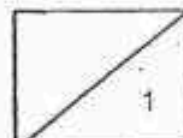
(c) The diagram below shows the set-up with iron bar N only.



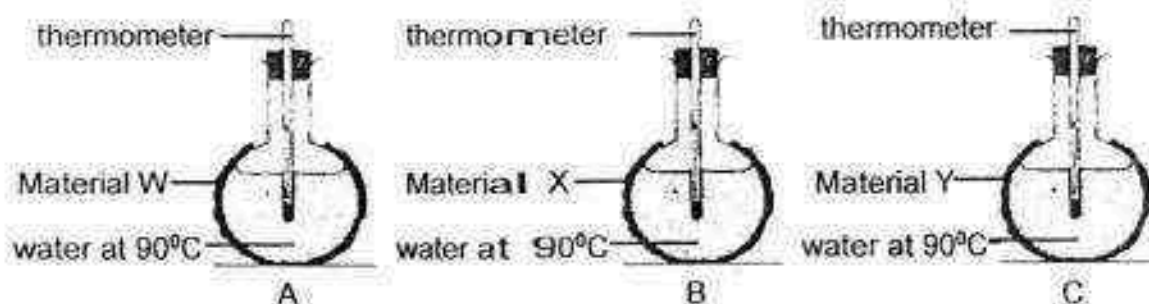
When iron bar N is an electromagnet, it would also have a North pole and a South pole. With the help of a bar magnet, describe what you would do and what you would observe to determine if Pole Z is the South pole. [1]

Do: _____

Observe: _____



39. Three identical flasks A, B and C were filled with equal volumes of water at 90°C . The flasks were wrapped with different materials, W, X and Y.



The temperature of the water in each flask was measured and recorded at the end of 30 minutes. The results are shown in the table below.

Material	Temperature of water at the start ($^{\circ}\text{C}$)	Temperature of water after 30 minutes ($^{\circ}\text{C}$)
W	90	53
X	90	40
Y	90	79

- (a) Based on the results obtained above, which one of the materials, W, X, or Y, would be most suitable to make a jacket that can keep us the warmest in a cold country? Explain your choice. [2]



- (b) A jacket also has a lot of air spaces in it. Explain clearly how this also makes the jacket suitable to keep us warm. [1]



40. Amanda carried out an experiment. She hung a metal wire tightly between two retort stands as shown in Diagram 1 below. She then heated the metal wire for ten minutes and observed the changes to the metal wire as shown in Diagram 2 below.

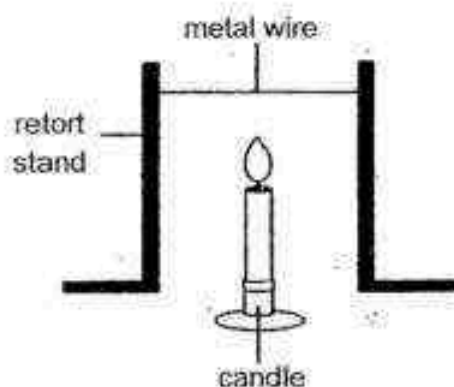


Diagram 1

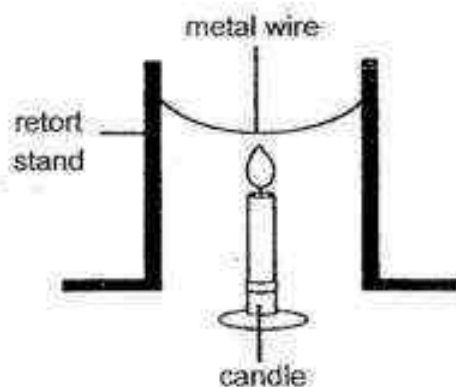
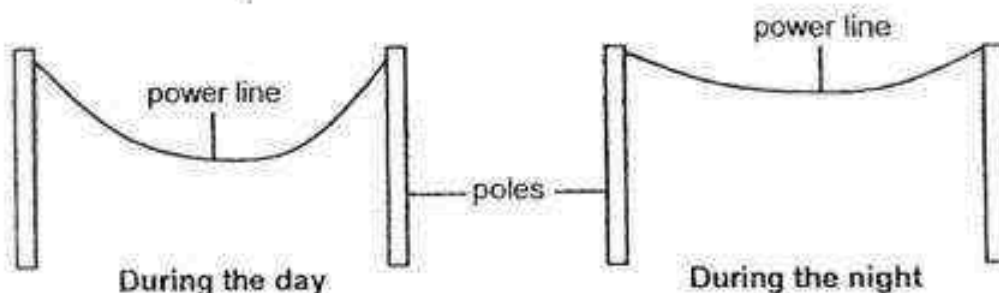


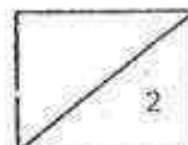
Diagram 2

- (a) Explain what could have caused the changes to the metal wire in Diagram 2. [1]

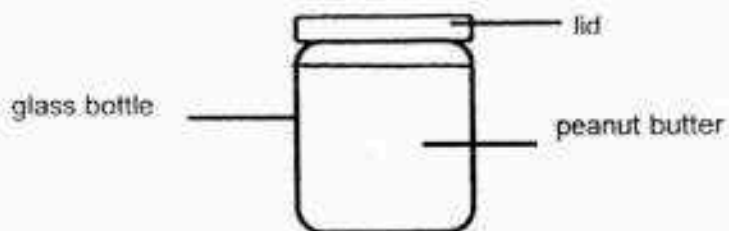
In some countries like the United States, overhead power lines are used to deliver electricity to homes. Amanda observed that the power lines hung loosely between the poles during the day and hung less loosely between the poles during the night as shown in the diagram below.



- (b) Give a reason why the power line hung differently between the poles during the night. [1]



Amanda placed a glass bottle of peanut butter in the refrigerator.



- (c) Explain how will heat travel.

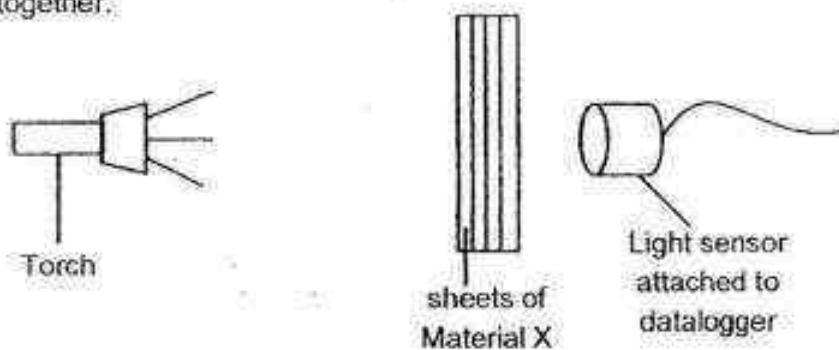
[1]

- (d) After a few days when Amanda tried to open the glass bottle of peanut butter, she found it difficult to open the lid. Explain what she should do to open the lid.

[1]



41. Mr Lim created the set-up below to count the number of sheets of Material X put together.

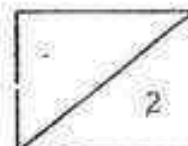


He recorded the amount of light that passed through different number of sheets of Material X in the table below.

Number of sheets of Material X	Amount of light passing through (unit)
0	500
1	360
2	260
3	180
4	110
5	60
6	20
7	0
8	0

- (a) How much light does one sheet of Material X block? [1]

- (b) Give a reason why the set-up cannot be used to count more than 7 sheets of Material X? [1]



- (c) Without changing the apparatus, suggest one change that Mr Lim could do to the set-up if he wants to count more than 7 sheets of Material X. [1]

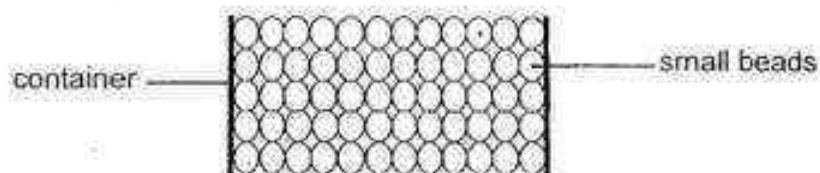
- (d) In another experiment, Mr Lim used the same set-up to count the number of sheets of Material Y put together. Each piece of Material X and Y were of the same thickness.

At the end of the experiment, it was noted that the set-up cannot be used to count more than 5 sheets of Material Y.

What does this tell you about Material Y as compared to Material X? [1]



42. The diagram below shows a container completely filled with small beads.

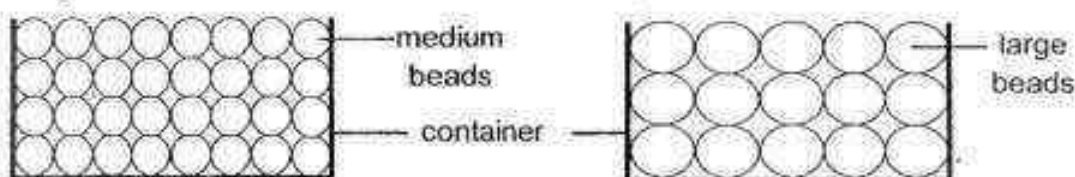


- (a) Name the matter that is found in the spaces between the beads. [1]

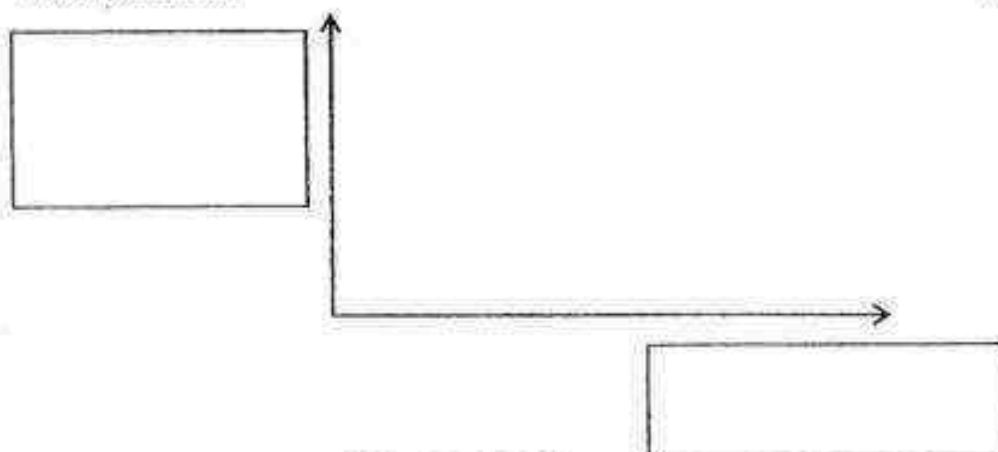
Peter found that he could pour a maximum amount of 30ml of water into the container of beads without water overflowing.

- (b) Explain why this was possible. [1]

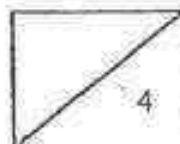
Peter repeated the experiment with medium beads and large beads as shown in the diagram below.



- (c) He noted that when the size of the beads in the container increases, the maximum amount of water he could pour in also increases. In the space below, draw a line graph to show this relationship. Label the axes in the boxes provided. [2]



END OF PAPER



EXAM PAPER 2016**LEVEL : PRIMARY 4****SCHOOL : AI TONG SCHOOL****SUBJECT : SCIENCE****TERM : CA1**

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q7	Q8	Q9	Q10
3	4	2	2	1	3	2	3	3	1
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	1	3	3	4	4	2	3	3	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	2	3	2	3	2	4	1		

Q29. K: Flowering plant L: Fungi**Q30a) 1 b) 4****Q31a) Non-magnetic b) Repelling****Q32a) Solid b) Liquid****Q33. Light reflected****Q34a) Set-up S: The seeds do not have warmth as it is placed in a fridge.****Set-up T: The seeds do not have water as the cotton wool is dry.****Q34bi) Any value between 7cm to 13cm.****Q34bii) As the number of weeks increases, the mass of the plant increases.****Q34biii) The plant would die. There is no sunlight for the leaves to make food.**

Name : _____ ()

Class: P4 _____

P4 Science Practice Paper**Suggested Answer Key and Notes – Section B**

Qn	Suggested Answer	Notes / Remarks
29	K : flowering plant L : fungi	Groups of living things
30	a) 1 b) 4	Digestion first takes place in the mouth and the process is completed in the small intestine where digested food is absorbed into the blood. Water is then removed from the undigested food in the large intestine.
31	a) non-magnetic b) repelling	<ul style="list-style-type: none"> • Magnets can only attract magnetic materials (e.g., metals like iron and steel) and do not attract non-magnetic materials (e.g., non metals and some metals like aluminium and copper) • When magnets repel each other, they push each other away.
32	a) solid b) liquid	Solid and liquid are states of matter.
33	light reflected	The light from the Sun falls on an object and is reflected into the eye in order to see the object.
34	<p>a) Set-up S: The seeds do not have <u>warmth</u> as it is placed in a fridge.</p> <p>Set-up T: The seeds do not have <u>water</u> as the cotton wool is dry</p> <p>b) i) Any value between <u>7cm to 13cm</u></p> <p>ii) As the <i>number of weeks</i> increases, the <i>mass of the plant</i> increases.</p> <p>iii) The plant would die. There is no sunlight for the leaves to make food.</p>	<ul style="list-style-type: none"> • The conditions require for seeds to germinate are presence of air, water and warmth (<u>not</u> sunlight). • There is not enough warmth in the fridge in Set-up S and in Set-up T, there is no water at all since the cotton wool is dry. • Marks will be deducted for wrong or no unit. • Use the results and variables given to follow a relationship pattern: As the (<i>changed variable / cause</i>)... (increases/decreases), the ... (<i>measured variable / effect</i>)... (increases/decreases). • Cause and effect must be correct • Since the plant was in a <u>dark</u> room, there would be <u>no light</u> at all. Since light could not reach the plant, it <u>could not make food</u> and will wither and eventually die.

Qn	Suggested Answer	Notes / Remarks
38	<p>a) The steel nail will be attracted by iron bar M. When the switch is closed / turned on, iron bar M becomes an electromagnet. Since M has more coils than N, it is a stronger electromagnet to attract the nail.</p> <p>b) It will not move / not be attracted by any of the electromagnets. Copper is a non-magnetic material, which cannot be attracted by a magnet.</p> <p>c) Do : Bring the South pole of the bar magnet near Pole Z. Observe : If the magnet repels with Pole Z, then Pole Z is South.</p> <p>OR</p> <p>Do : Bring the North pole of the bar magnet near Pole Z. Observe : If the magnet attracts Pole Z, then Pole Z is South.</p>	<ul style="list-style-type: none"> Know the factors affecting the strength of an electromagnet (made using electricity). Avoid writing "Nothing will happen." Be specific. Like poles of two magnets repel. Unlike poles of two magnets attract. It is the magnet that attracts a magnetic material or that the material is attracted to the magnet (✓). It is incorrect to say that the material attracts the magnet (X).
39	<p>a) <i>Choice</i> : Material Y <i>Data</i> : It has the least decrease in temperature. <i>Concept</i> : Y is the poorest conductor of heat. <i>Apply</i> : Heat transfer from the body to the surroundings will be the slowest.</p> <p>b) Air is a poor conductor of heat. It slows down heat transfer from the body to the surroundings.</p>	<ul style="list-style-type: none"> The choice must be made for explanation to be marked. No/Wrong choice → 0 mark Heat cannot escape or be blocked. Heat transfer can happen at a faster or slower rate, depending on the object it is in contact with. Air spaces contain air. Make inference based on the property of air in the transfer of heat.
40	<p>a) The wire gained heat from the candle flame and expanded.</p> <p>b) At night, the power lines lost heat to the surroundings and contracted.</p> <p>c) Heat travels from the glass bottle of peanut butter to the refrigerator.</p> <p>d) She should place the lid in hot water so that the lid could expand and become bigger than the bottle.</p>	<p>Effects of heat :</p> <ul style="list-style-type: none"> matter gains heat → expands → increases in size/volume → occupies more space matter loses heat → contracts → decreases in size/volume → occupies less space Mention the region that heat was gained from or lost to. The gained heat from The lost heat to Concept : Heat travels from hotter region to a colder region. Do not write just the general concept of how heat travels. In this question, you must specify where the hotter and colder region is.



Name: _____ () Parent's Signature: _____

Class: Pr. 4 _____ Date: _____

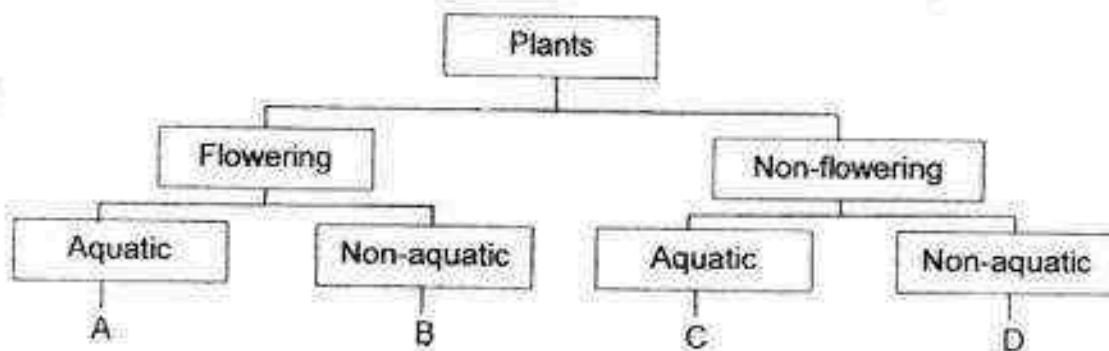
Section A: Multiple-Choice Questions (9 x 2 = 18 marks)

Choose the most suitable answer and write its number in the brackets provided.

1. The following table shows the characteristics of two plants, Y and Z.
A tick (✓) shows that the plant has the characteristic.

Characteristic	Y	Z
Bears fruit	✓	
Grows in water		✓

From the information above, where do plants Y and Z belong in the following classification table?



	Plant Y	Plant Z
(1)	A	D
(2)	B	C
(3)	C	A
(4)	D	B



2. The following is a description of an animal that Suzen saw in the zoo.

It has hair as its outer-covering.
It lays egg.
The mother feeds the young with milk.

Which animal did Suzen see?

(1)



tortoise

(2)



monkey

(3)



bat

(4)



platypus

()

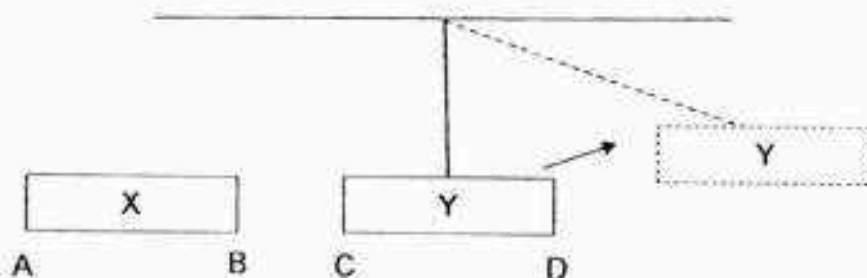
3. Ahmad placed two different items in a container and wanted to separate them using a magnet. Which of the following items cannot be separated using a magnet?

- (1) iron filings and steel safety pins
- (2) steel needles and plastic buttons
- (3) copper coins and iron filings
- (4) rubber bands and iron filings

()



4. Look at the diagram below.



When magnet X is brought near to bar Y, bar Y swings away in the direction as shown with the dotted line in the diagram.

Which of the statements is/are correct about magnet X and bar Y?

- A: Bar Y is not a magnet.
- B: Bar Y is made of a magnetic material.
- C: Bar Y is a magnet, B and C are like poles

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

()

5. Which part of a green bean seedling grows towards water?

- (1) stem
- (2) leaves
- (3) root
- (4) shoot

()

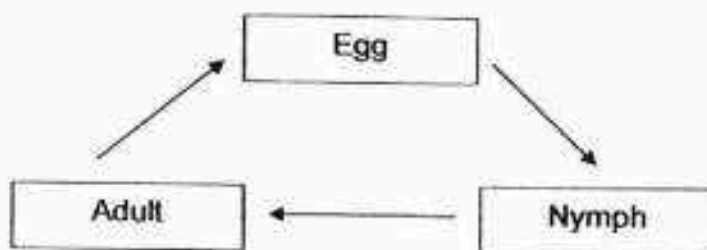


6. Which one of the following statements is true about all solids, liquids and gases?

- (1) They have mass.
- (2) They can be seen.
- (3) They have a definite shape.
- (4) They have a definite volume.

()

7. The diagram shows the life cycle of an animal.



Which of the following animal(s) has/have a similar life cycle as the one shown above?

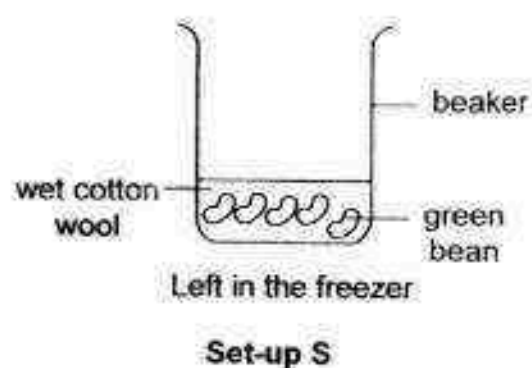
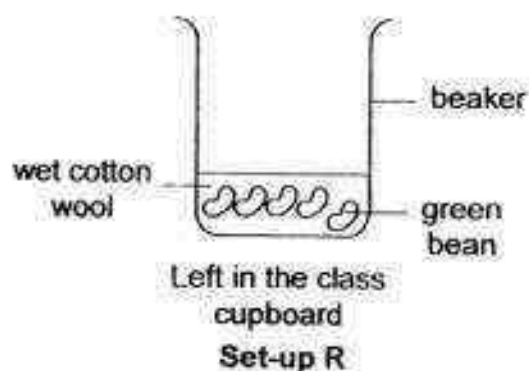
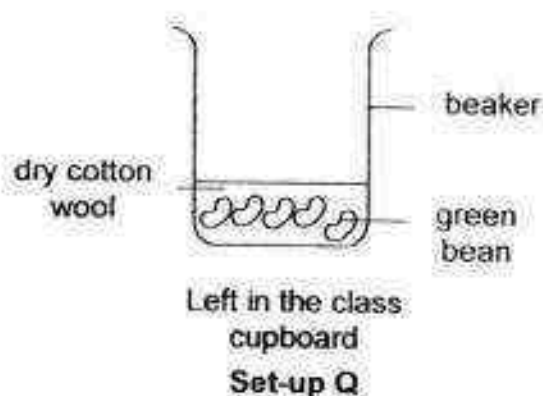
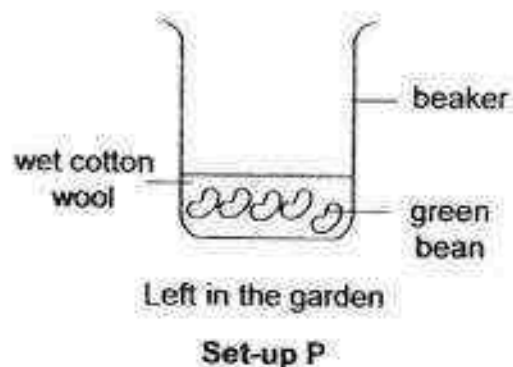
- A: frog
- B: beetle
- C: cockroach

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

()



8. The diagrams below show four set-ups, P, Q, R and S, where green bean seeds are grown.



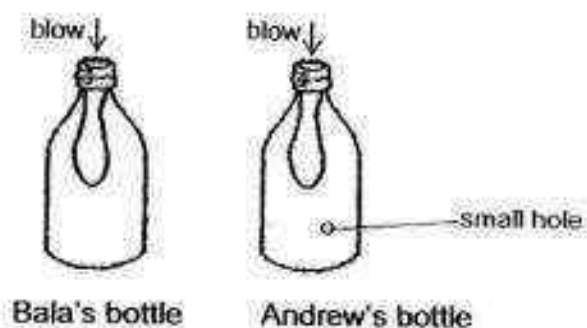
In which of the set-ups will the green bean seeds develop roots after one day?

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

()



9. Bala and Andrew were each given a bottle with a balloon inserted as shown below.



Who can blow up the balloon in the bottle faster and bigger? Why?

	Reason	
(1)	Bala	The air in his bottle will be compressed.
(2)	Bala	The air blown into his balloon cannot escape as there is no hole in his bottle.
(3)	Andrew	Air in the bottle escapes through the small hole, allowing space for the balloon to inflate.
(4)	Andrew	Air enters the balloon through the mouth of the bottle and the small hole.

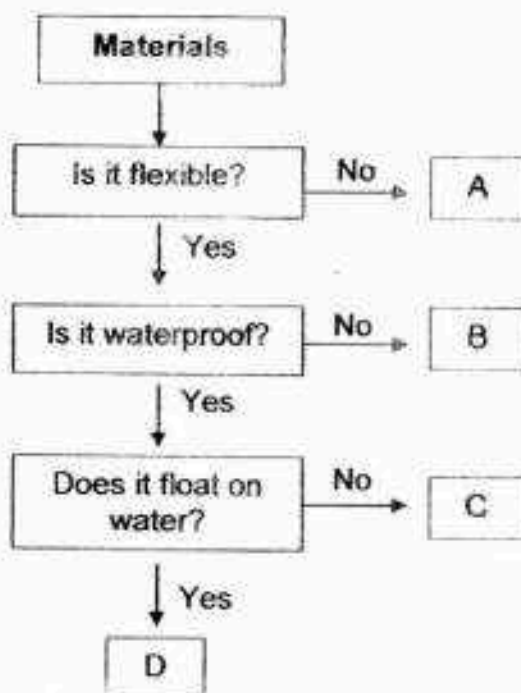
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Section B: Open-ended Questions (4 Questions – 12 marks)

Read the questions carefully and write your answer in the spaces provided.

10. Study the flow chart carefully.

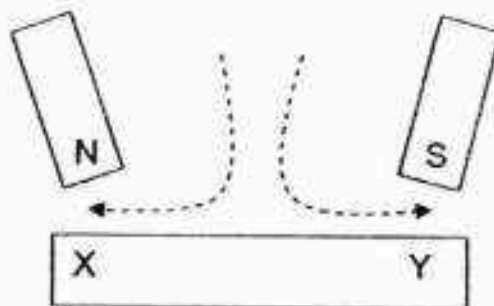


a) Based on the flow chart above, describe material B. (1 m)

b) Which letter in the flow chart represents cotton wool? (1 m)



11. An iron bar XY was magnetised using two magnets as shown in the diagram.



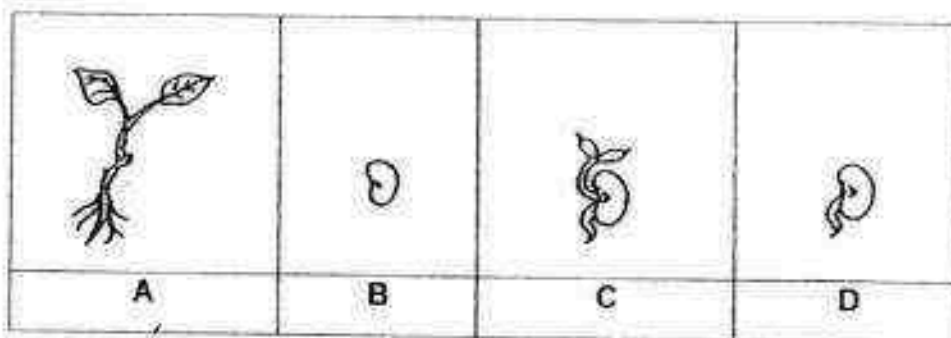
- a) Identify the magnetic poles of iron bar XY after it has been magnetised. (1m)

At X: _____

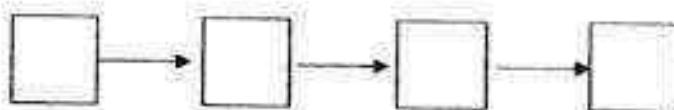
At Y: _____

- b) What would happen when pole X of the bar magnet was placed near an aluminium rod? Explain why. (1m)

12. The diagrams show the different stages of growth of a bean plant.

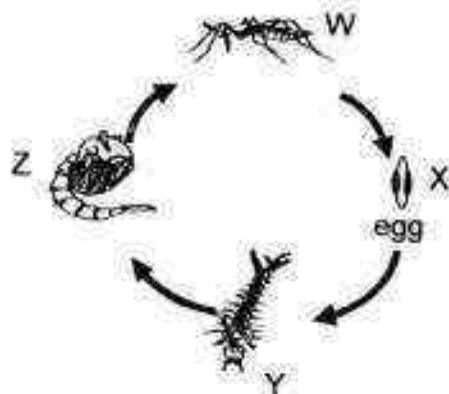


- a) Arrange the stages, A, B, C and D in the correct order to show how a bean seed grows into a seedling. (1m)



- b) For diagram A, how does the seedling obtain its food to grow? (1m)

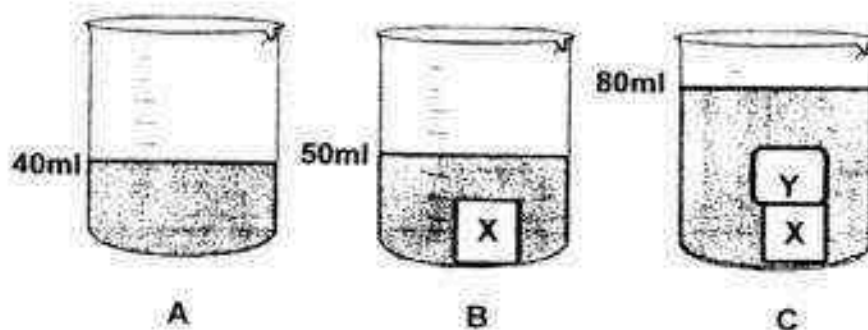
The diagram shows the life cycle of a mosquito.



- c) Identify stage Z. (1m)
-
- d) At which stage, W, X, Y or Z, is the mosquito most harmful to people? Why? (1m)
-
-



13. Xi Min prepared three identical measuring cylinders, A, B and C. She poured an equal amount of water into each cylinder. She then placed blocks X and Y into the cylinders as shown below.



- a) Based on the above, for each of the following statements, put a tick (✓) in the appropriate boxes to indicate if it is True, False or Not possible to tell. (2m)

		True	False	Not possible to tell
(i)	The mass of block X is 10g.			
(ii)	The volume of block Y is the same as the volume of water in cylinder A.			



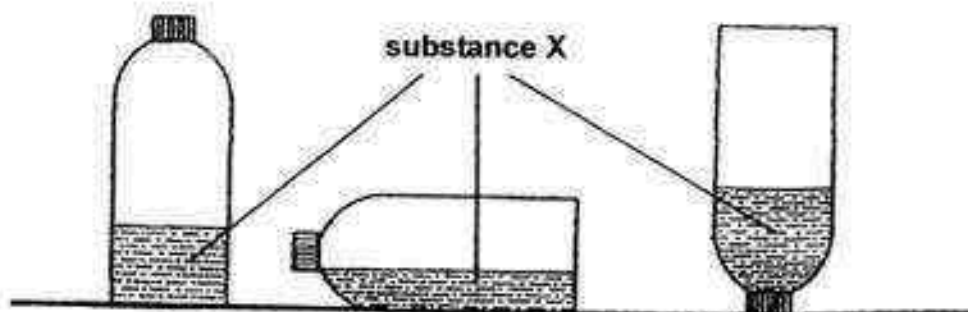
b) Study the table carefully. W, X and Y represent the three states of matter.

W	X	Y
No definite volume	Definite volume	Definite volume
No definite shape	No definite shape	Definite shape

Complete the table by writing W, X or Y in the correct boxes. (1m)

Item	W, X or Y?
ice	
oxygen	

c) The diagram shows the changes to substance X when the bottle is placed in three different positions.



What does this show about the property of substance X? (1m)

END OF PAPER
 ☺☺☺ PLEASE CHECK YOUR WORK. ☺☺☺



EXAM PAPER 2016**LEVEL : PRIMARY 4****SCHOOL : RED SWASTIKA SCHOOL****SUBJECT : SCIENCE****TERM : CLASS TEST 1 (CA1)**

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9
2	4	1	4	3	1	2	4	3

Q10a) Material B is flexible but not waterproof.**Q10b) Material B.****Q11a) At X: South****At Y: North****Q11b) The aluminium rod will not be attracted to pole X as aluminium is a non-magnetic material.****Q12a) $B \rightarrow D \rightarrow C \rightarrow A$** **Q12b) When it has its true leaves, it would trap sunlight to make food.****Q12c) Pupa stage****Q12d) W. At stage W, it would fly around biting people, the other stages would be on the water.****Q13ai) Not possible to tell.****Q13aii) False****Q13b) Ice - Y****Oxygen - W****Q13c) It has no definite shape but has no definite volume.**



PEI HWA PRESBYTERIAN PRIMARY SCHOOL
Mini Test 1

**PRIMARY 4
SCIENCE**
3rd March 2016

Name: _____ ()

Class: Primary 4 Teamwork _____

Total time: 30 mins

INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class and Index No. at the spaces provided above.
2. DO NOT turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions in this question booklet.

FOR TEACHER'S USE

Marks (Section A) :	12
Marks (Section B) :	8
Total Marks (Sections A & B) :	20

There are a total of 9 pages in this booklet, excluding the cover page.

Section A (12 marks)

For each question from 1 to 6, 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 brackets provided.

1. Shaun brings the following objects near a magnet.

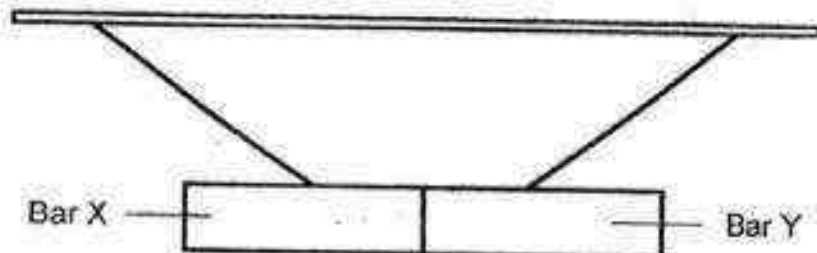
- A Iron fork
- B Glass panel
- C Plastic cup

Which of the objects will not be attracted to the magnet?

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

()

2. The diagram below shows what happened when two bars were brought near each other.



Four statements about the characteristics of Bar X and Bar Y were made:

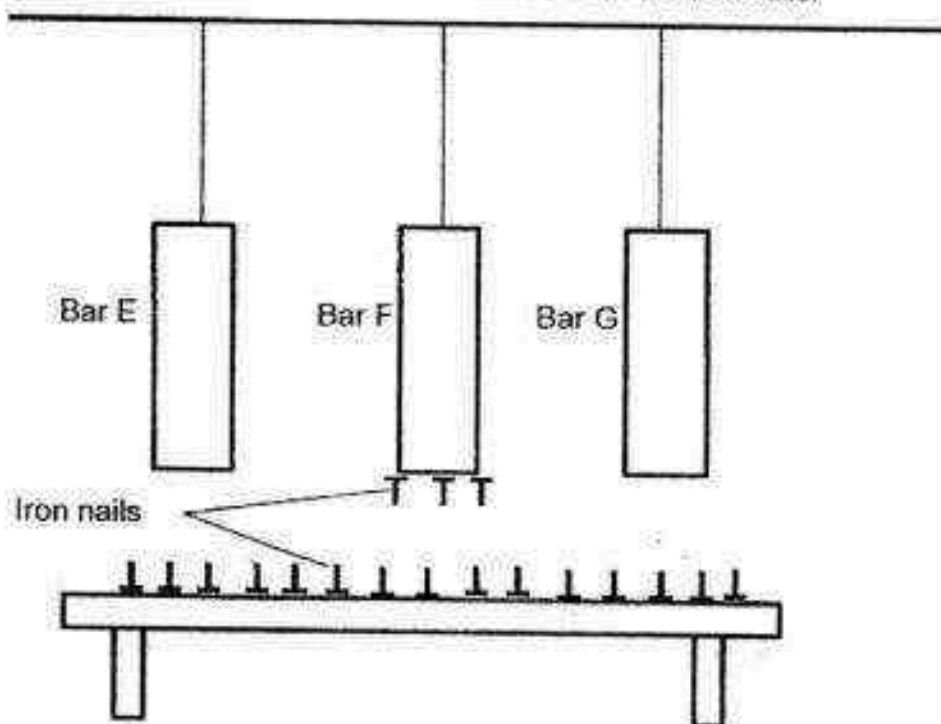
- A Bar X and Bar Y are both magnets.
- B Bar X and Bar Y are made of magnetic materials.
- C Bar X is a magnet whereas Bar Y is made of magnetic material.
- D Bar X is made of magnetic material but Bar Y is made of non-magnetic material.

Which of the following statements could be true?

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

()

3. Jenny hung 3 bars, Bars E, F and G, of the same size from a ceiling as shown below. The bars were at the same distance from the iron nails.



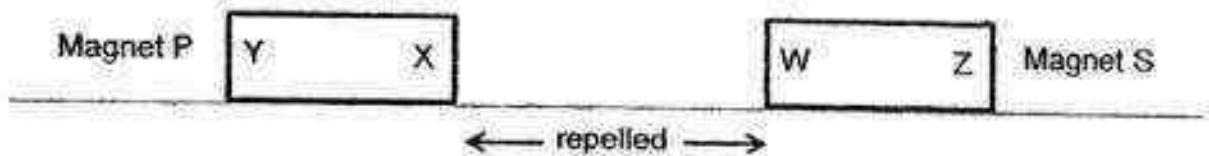
She noticed that only Bar F had iron nails attracted to it.

Why were there iron nails found only on Bar F?

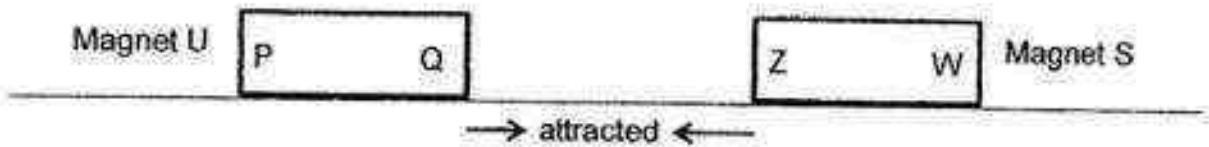
Bar F _____

- (1) was sticky and some of the iron nails were stuck to it
- (2) must be a magnet but the rest of the bars were not
- (3) was a non-magnetic material but the rest of the bars were not
- (4) was nearer to the pile of iron nails than the rest of the bars

4. Ali did an experiment with 2 magnets, Magnet P and Magnet S, as shown in the diagrams below.



He took another magnet, Magnet U, and brought it near Magnet S and the diagram below shows his observation.



If Pole Y was a South pole, which of the following would show the poles of Pole Q and Pole W?

	Pole Q	Pole W
(1)	South	South
(2)	South	North
(3)	North	North
(4)	North	South

5. A magnet that is hung freely will come to rest in the _____ direction.

- (1) North-North
- (2) North-East
- (3) North-West
- (4) North-South

()

6. Which of the following things make use of magnets to work?

- A Compass
- B Telephone
- C Maglev train
- D Electric kettle

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

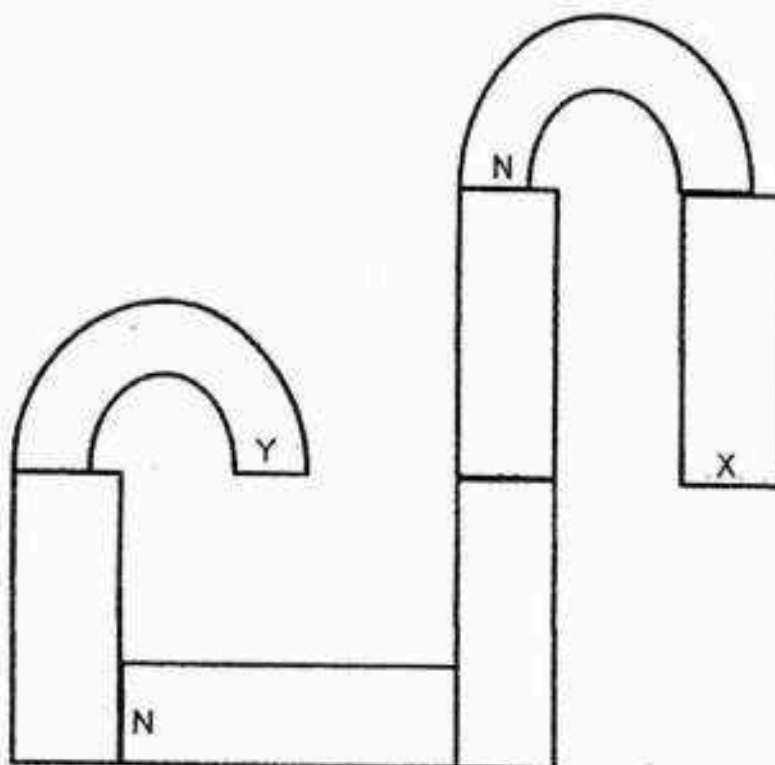
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Section B (8 marks)

Read questions 7 to 11 carefully. 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.

7. Gopal was playing with 5 bar magnets and 2 U-shaped magnets. He formed this set-up as shown in the diagram below.



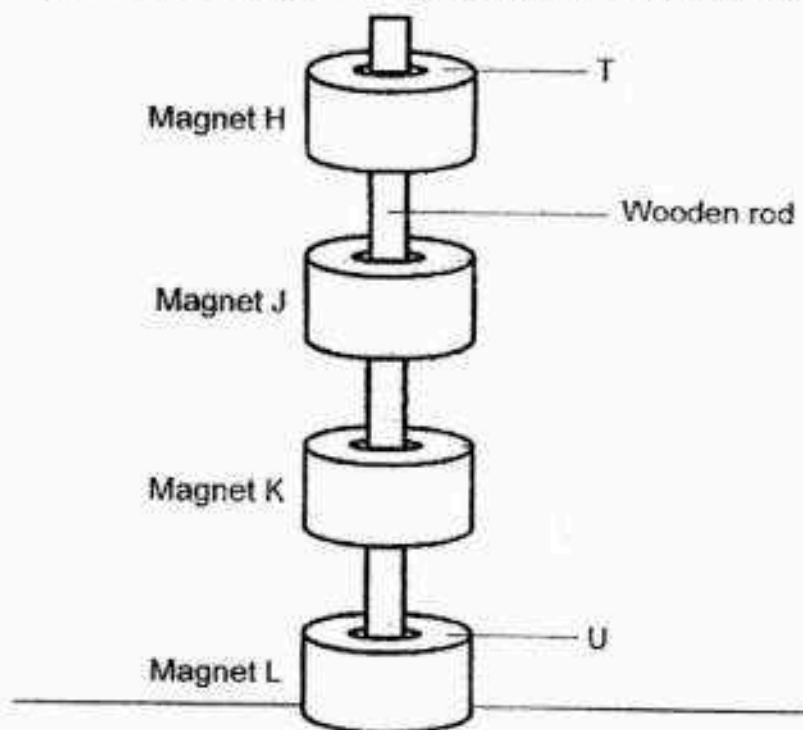
Identify the poles of X and Y.

[1]

(a) Pole X: _____

(b) Pole Y: _____

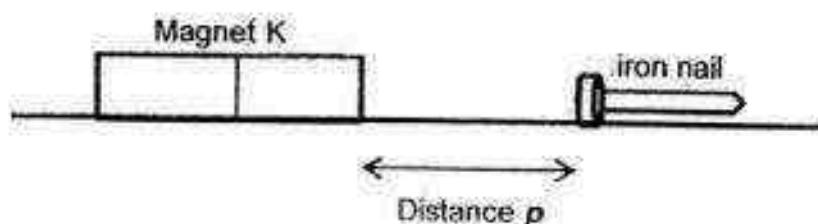
8. Kevin set up the following with 4 ring magnets, Magnets H, J, K and L. The 4 ring magnets were floating above one another as shown below.



- (a) If surface T of Magnet H was a South pole, what could be the pole of surface U on Magnet L? [1]

- (b) Why were the ring magnets floating above one another? [1]

9. Jasmine carried out an experiment using a bar magnet and an iron nail as shown below.



She put a bar magnet K on the table and measured the furthest distance p that the iron nail could be placed before the bar magnet attracted the iron nail. She then repeated the same experiment using magnets L, M and N and recorded the results in the table below.

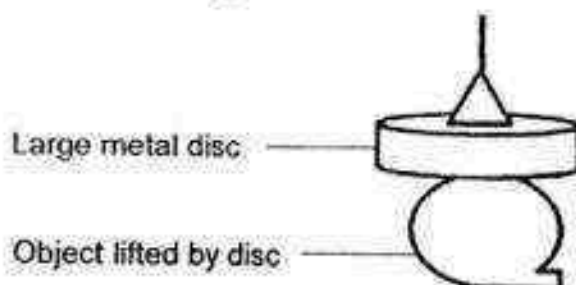
Magnets	Distance p (cm)
K	9
L	6
M	4
N	2

Based on her results, which magnet, Magnets K, L, M or N, was the weakest? [1]

10. Susan brought the South pole and the North pole of a magnet near Object W and recorded her observations in the table below.

Object	Tested with South pole	Tested with North pole
W	Attracts	Attracts

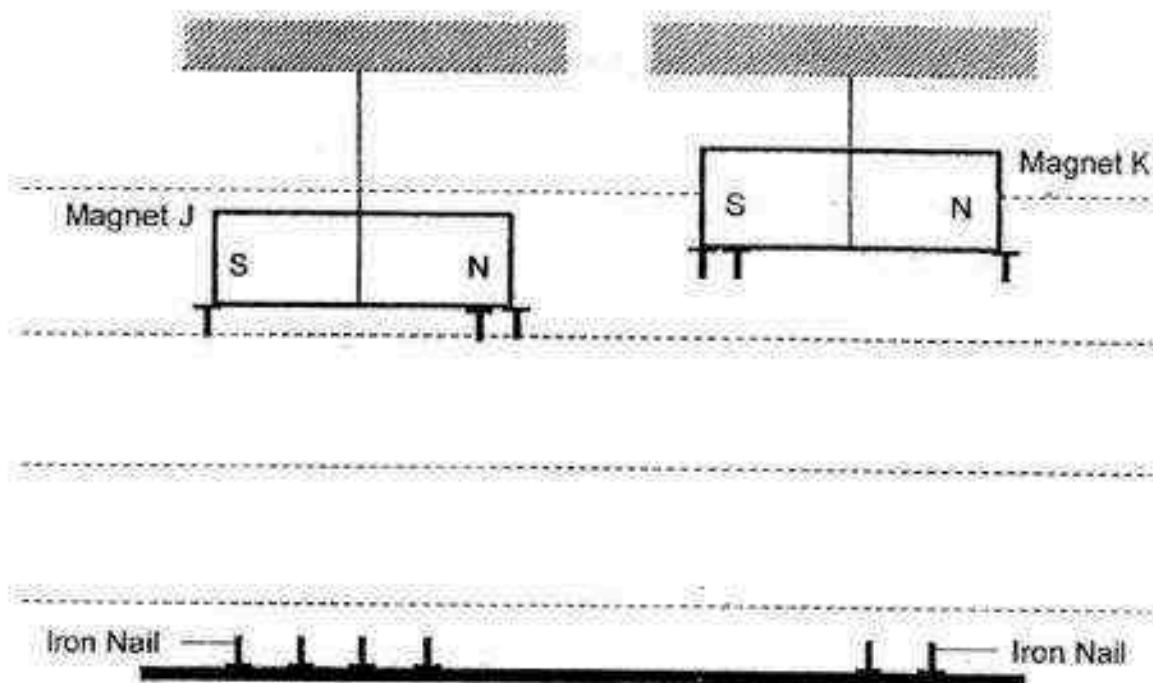
Susan visited a scrapyard and noticed that a large metal disc was connected to a circuit. It was used to separate magnetic objects from non-magnetic objects as shown in the diagram below.



- (a) Based on the results of her experiment, Susan thought that Object W should be used to make the large metal disc in the scrapyard. Do you agree with her? Explain why you say so. [1]

- (b) Susan decided to change the large metal disc to a permanent magnet. Do you agree with Susan's decision? Explain why you say so. [1]

11. In an experiment involving 2 bar magnets (J and K), Jim presented his observations by drawing the diagrams as shown below.



The bar magnets (J and K) were hung at a certain height from some identical iron nails on each side of the table.

- (a) What could Jim conclude from the above observation about Magnet J and Magnet K? [1]

- (b) Explain why more iron nails are attracted to the poles of the magnets. [1]

END OF PAPER

EXAM PAPER 2016

SCHOOL : PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SUBJECT : PRIMARY 4 SCIENCE
TERM : MINI TEST 1

SECTION A: MCQ

Q1	Q2	Q3	Q4	Q5	Q6
3	3	2	3	4	4

SECTION B:

Q7(a) South Seeking Pole

Q7(b) North Seeking Pole

Q8(a) The pole of surface U on Magnet L would be the North seeking pole.

Q8(b) The ring magnets were not touching one another as the repulsion force between each ring magnet kept them separated.

Q9 Magnet N was the weakest. (E

Q10(a) Yes. W is a magnetic material and will become magnet when electricity pass through it.

Q10(b) I would disagree with Susan. Permanent magnet does not lose magnetism easily. **OR** The metal would then be attracted to the permanent magnet and separation would be difficult.

Q11(a) No conclusion can be made. (Unfair) Different distance from the tray.

Q11(b) The poles of the magnets are much stronger than the centre of the magnet. Hence, more nails would be attracted to the poles rather than the centre of the magnet.



NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

**SEMESTRAL ASSESSMENT 1
2016**

BOOKLET A

**Date : 4 May 2016
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.

Section A (28 x 2 marks = 56 marks)

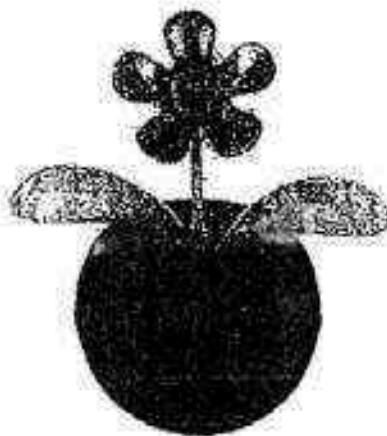
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. R is a living thing and its characteristics are given below.

Reproduces by spores
Cannot make its own food
Can be seen with the naked eye
Absorbs food from the surrounding

Which one of the following could represent living thing R?

- | | |
|-----------|--------------|
| (1) Moss | (2) Grass |
| (3) Yeast | (4) Mushroom |
2. Ali bought a solar toy plant that moves its leaves when light is shone on it. His classmates made the following statements about the solar toy plant.



- | | |
|-------|--|
| Abby | The plant is a living thing because it can move. |
| Betty | The plant is a living thing because it responds to light. |
| Chris | The plant is a non-living thing because it cannot grow. |
| Daud | The plant is a non-living thing because it does not need air, food and water to survive. |

Which pupils had made the correct statement?

- | | |
|--------------------|--------------------|
| (1) Abby and Betty | (2) Abby and Chris |
| (3) Betty and Daud | (4) Chris and Daud |

3. Which one of the following statements is false?

- (1) All plants have roots, stems and leaves.
- (2) The stem of some plants are found underground.
- (3) The roots of all plants are found underground only.
- (4) The flowers of the plant are needed for the production of fruits.

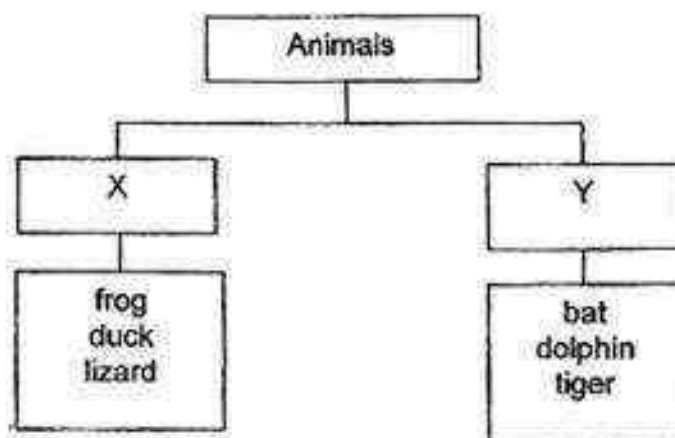
4. The table below shows some characteristics of animals P, Q and R.
A tick (✓) shows that the animal has that characteristic.

Animal	Has 3 body parts	Lays eggs	Feeds its young with milk
P	✓	✓	
Q		✓	
R			✓

Which of the following animals could P, Q and R represent?

	P	Q	R
(1)	snake	ant	cat
(2)	grasshopper	bat	toad
(3)	goldfish	eagle	turtle
(4)	ant	goldfish	elephant

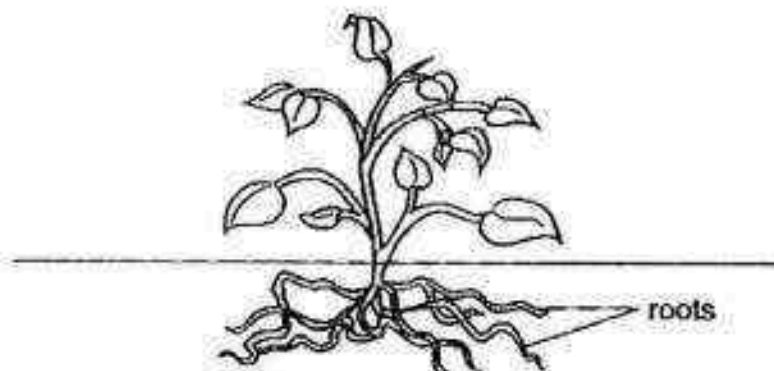
5. Some animals were classified as shown below.



Which one of the following could correctly represent X and Y?

	X	Y
(1)	lay eggs	give birth to live young
(2)	have scales	have hair
(3)	live in water	live on land
(4)	have feelers	do not have feelers

6. Study the diagram shown below.



Based on the way that the roots had grown, which of the following are the correct functions of the roots?

- A make food for the plant
- B take up water for the plant
- C release nutrients to the soil
- D hold the plant firmly to the soil

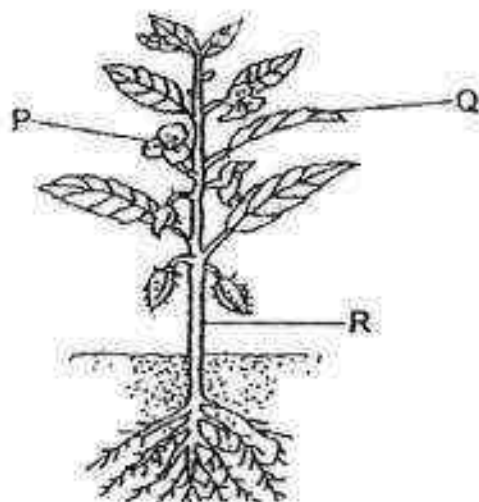
(1) A and C only

(2) A and D only

(3) B and C only

(4) B and D only

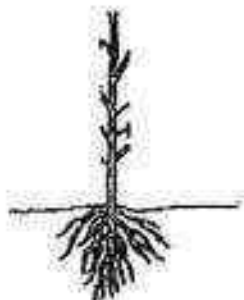
7. The diagram below shows a plant.



Which of the following correctly represents the parts marked P, Q and R?

	P	Q	R
(1)	fruit	stem	leaf
(2)	fruit	leaf	stem
(3)	flower	stem	leaf
(4)	flower	leaf	stem

8. Mary cut off all the leaves of a healthy plant in her garden as shown below.

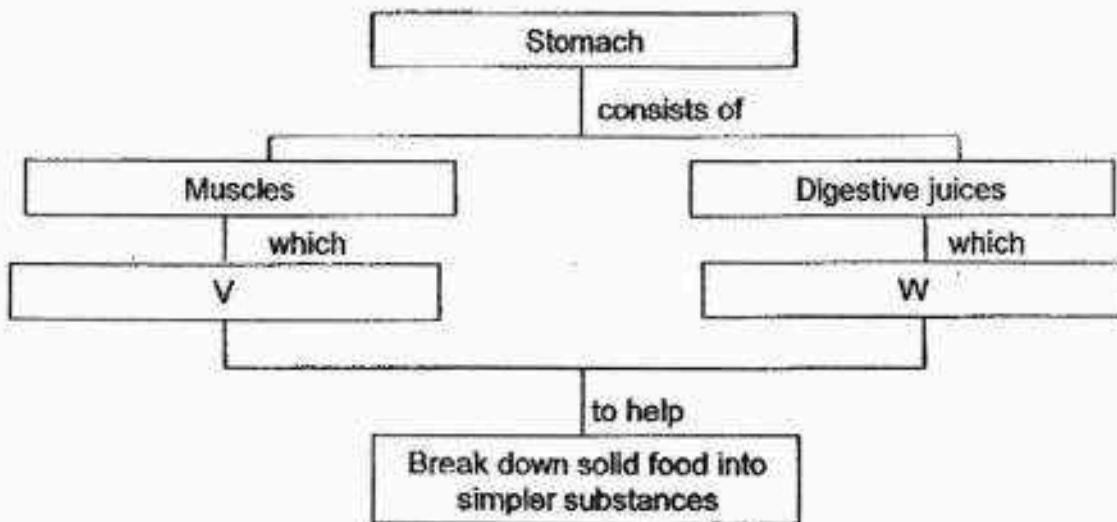


After two weeks of watering, she noticed that the plant died.
Which one of the following could be a possible reason the plant died?

- (1) The plant could not bear fruit.
 - (2) The plant could not make food.
 - (3) The plant could not take in the surrounding soil.
 - (4) The plant could not absorb sunlight to make oxygen.
9. The lungs take in oxygen and remove carbon dioxide from the body. Which of the following systems directly enable the body to carry out the function mentioned?
- (1) Skeletal System
 - (2) Digestive System
 - (3) Muscular System
 - (4) Respiratory System
10. Which of the following correctly describes the difference between the small intestine and large intestine?

	Small intestine	Large intestine
(1)	Digestion begins here	Digestion ends here
(2)	Digestion takes place	No digestion takes place
(3)	Absorbs food and water only	Absorbs water only
(4)	Does not contain digestive juice	Contains digestive juice

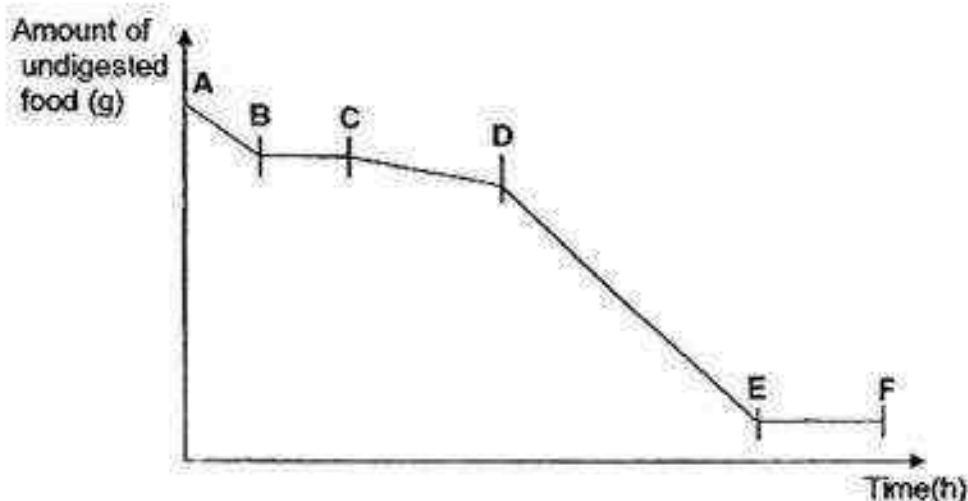
11. Study the concept map below carefully.



Which of the following best describes V and W?

	V	W
(1)	Absorbs water	Absorbs nutrients
(2)	Shapes food into small balls	Pushes food down
(3)	Pushes food down	Helps to churn food
(4)	Churns food with digestive juices	Digests the food

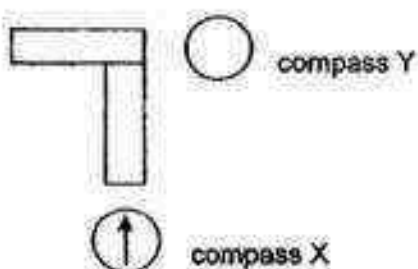
12. The graph below shows the amount of undigested food found in different parts of the digestive system after a student had taken his breakfast.




Which one of the following represents the parts of the digestive system correctly?

	AB	CD	DE	EF
(1)	gullet	mouth	small intestine	large intestine
(2)	mouth	stomach	small intestine	large intestine
(3)	large intestine	small intestine	stomach	mouth
(4)	mouth	gullet	stomach	small intestine

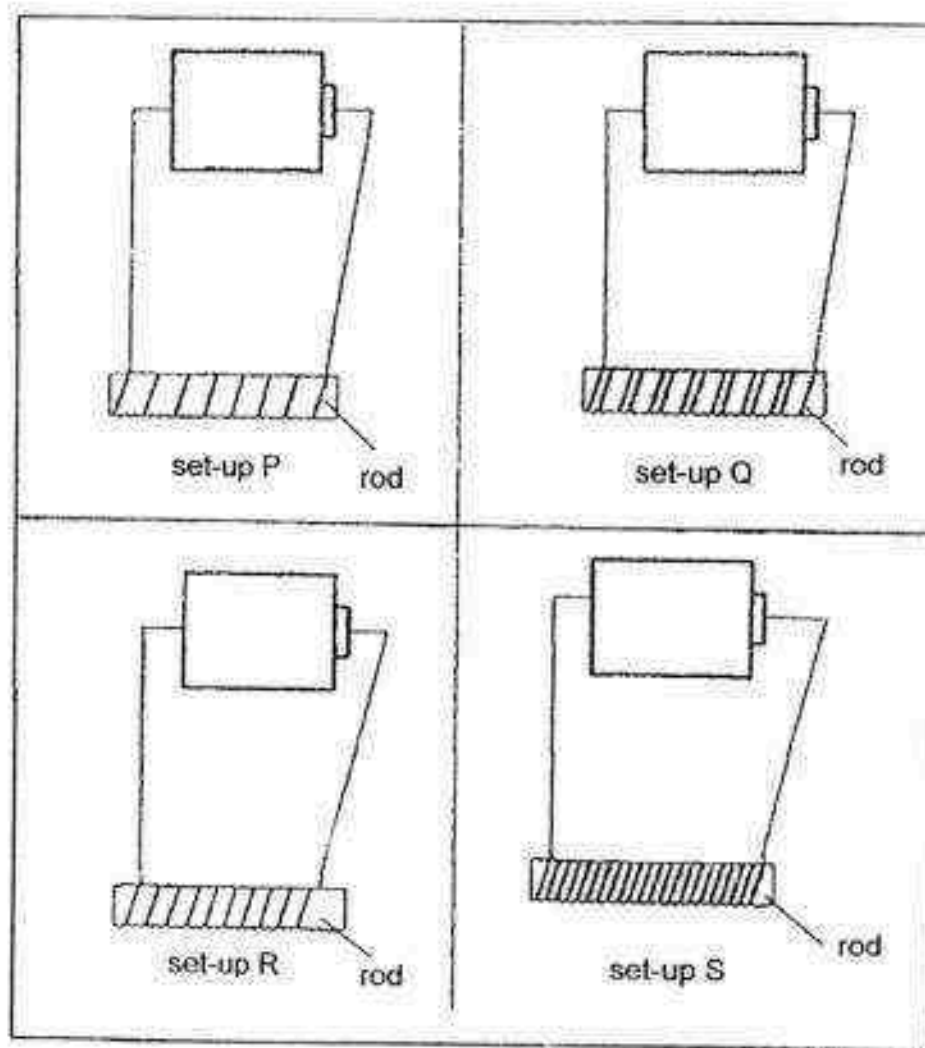
13. Peter set up 2 bar magnets as shown below. He brought compass X towards one end of the bar magnet as shown in the diagram below.



Which one of the following diagrams correctly represents the direction that compass Y will point to?

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

14. Minnet wanted to find out if the number of coils around a rod affects its magnetic strength. She used identical rods, batteries and wires in her set-ups as shown below.



Which one of the following shows the correct arrangement of the magnetised rods according to their magnetic strengths starting from the weakest to the strongest?

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

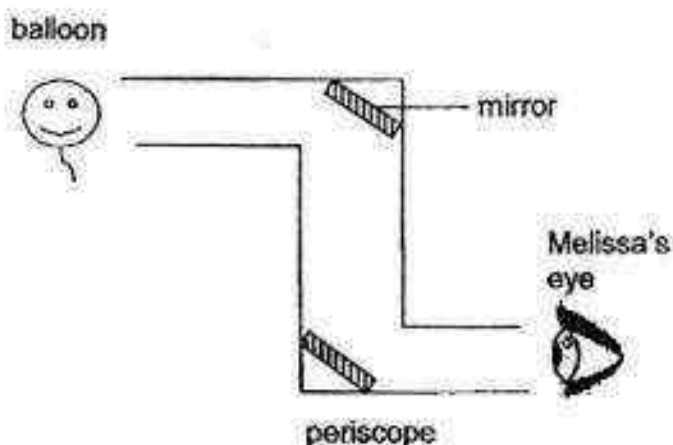
15. Study the classification table below.

Group A	Group B
lit match	table
fire	moon
street lamp	ruler
object P	object Q

Which of the following below incorrectly identifies objects P and Q?

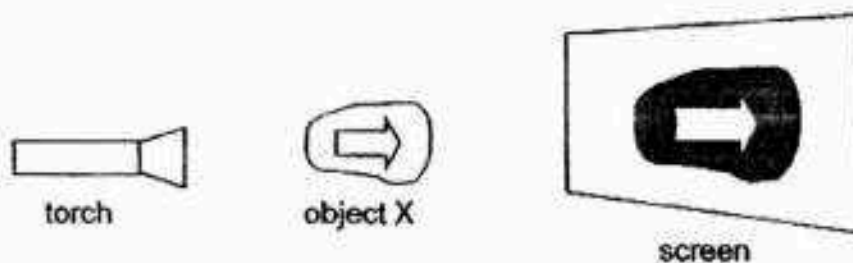
	Object P	Object Q
(1)	firefly	battery
(2)	highlighter	Sun
(3)	lightning	mirror
(4)	candle light	highlighter

16. Which of the following statements explain why Melissa can see the balloon using the periscope?



- A Light travels in a straight line.
 B Light reflects from Melissa's eyes.
 C The mirrors reflect the light from Melissa's eyes into the balloon.
 D The mirrors reflect the light that falls on the balloon into Melissa's eyes.
- (1) A and B only
 (2) A and D only
 (3) B and C only
 (4) B and D only

17. Pauline forms a shadow on a screen by positioning an object X in the path of light from a torch.



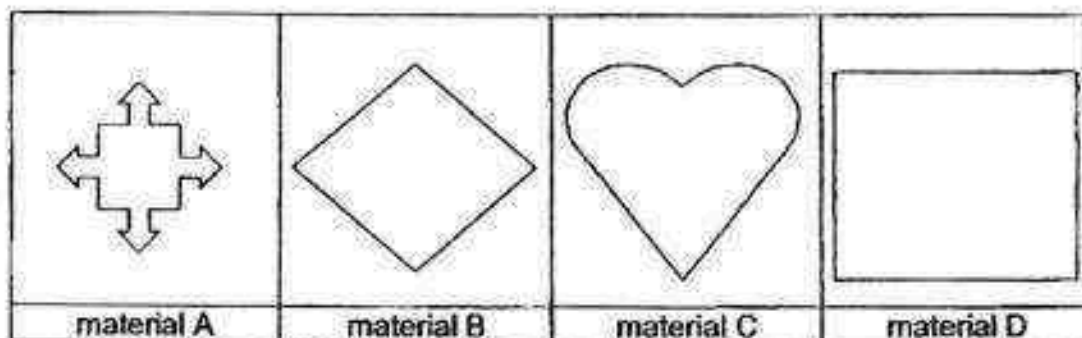
Which of the following actions will decrease the size of the shadow?

- A change the batteries in the torch
- B move the torch nearer to the object
- C move the screen nearer to the torch
- D move the object closer to the screen

- (1) A and B only
- (3) B and D only

- (2) B and C only
- (4) C and D only

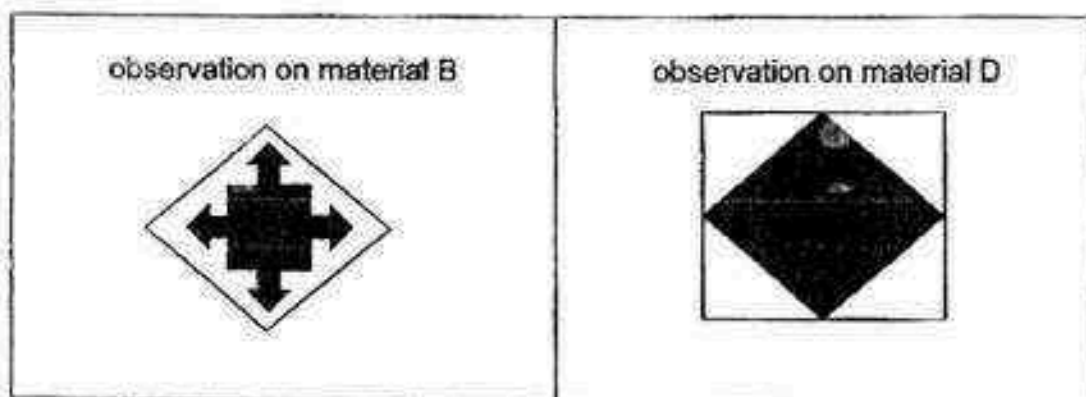
18. Anisah used 4 different materials to cut out the shapes as shown below.



She placed the 4 materials one in front of the other as shown in the diagram below and shone a torch in front of them.



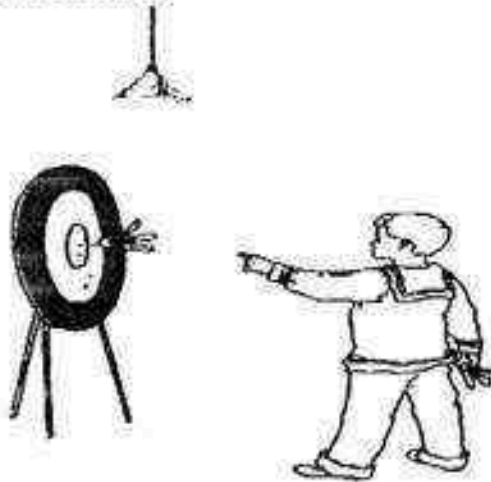
Anisah then recorded her observations on material B and material D as shown below.



Which of the following shows the degree of transparency of materials A, B, C and D?

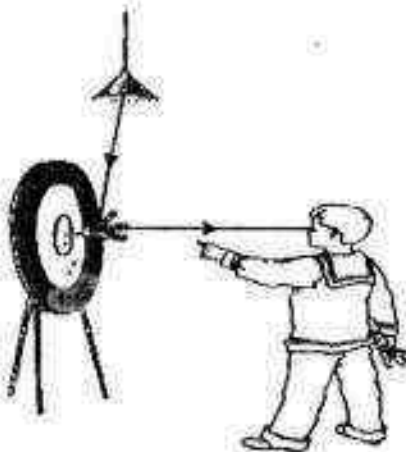
	Allows light to pass through	Does not allow light to pass through
(1)	C	A, B and D
(2)	A and B	C and D
(3)	A, C and D	B only
(4)	A, B, and D	C only

19. Look at the picture below.

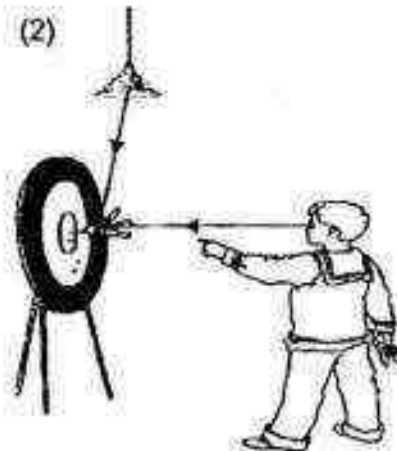


Which of the following shows the correct light rays to explain why Tom can see the dart on the dart board?

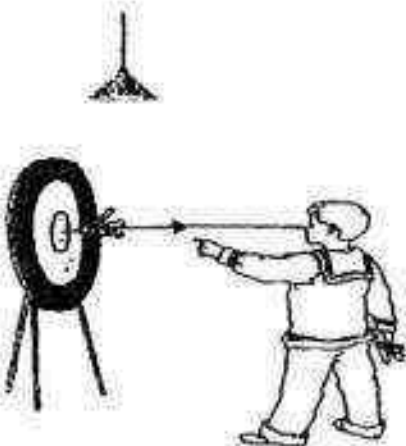
(1)



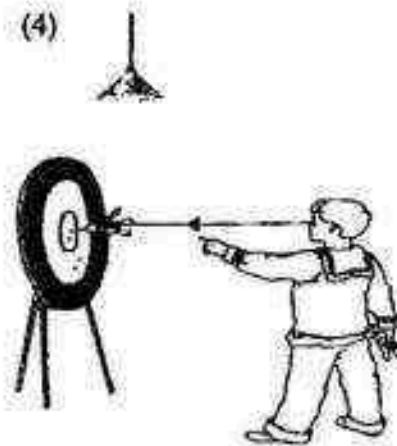
(2)



(3)



(4)



20. Jerome walked in a straight line from points X to Z as shown in Figure 1 below. At point Y, he was directly under the lamp. The distance between X and Y is the same as the distance between Y and Z.

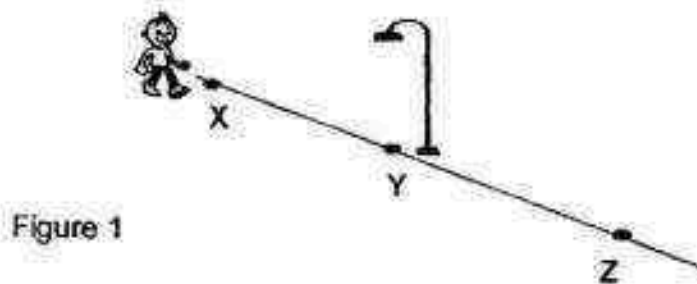
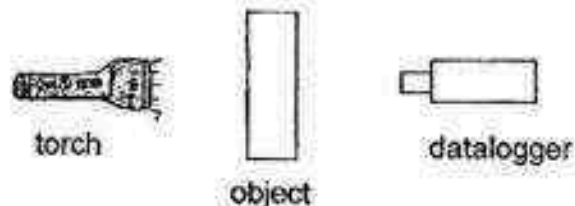


Figure 1

Based on the diagram in Figure 1, which one of the following statements about Jerome's walk is correct?

- (1) The length of his shadow is the longest at position Y.
 - (2) The longest length of the shadow is at both positions X and Z.
 - (3) The faster he walked towards the lamp, the longer his shadow would be.
 - (4) As he walked away from the lamp from Y to Z, his shadow became shorter.
21. Naresh set-up an experiment as shown below.



He shone the torch at the datalogger and it detected a reading of 4000 lux. He then put object A and shone the torch on it. The datalogger was placed behind the object to measure the amount of light passing through Object A. He repeated the experiment with objects B, C and D.

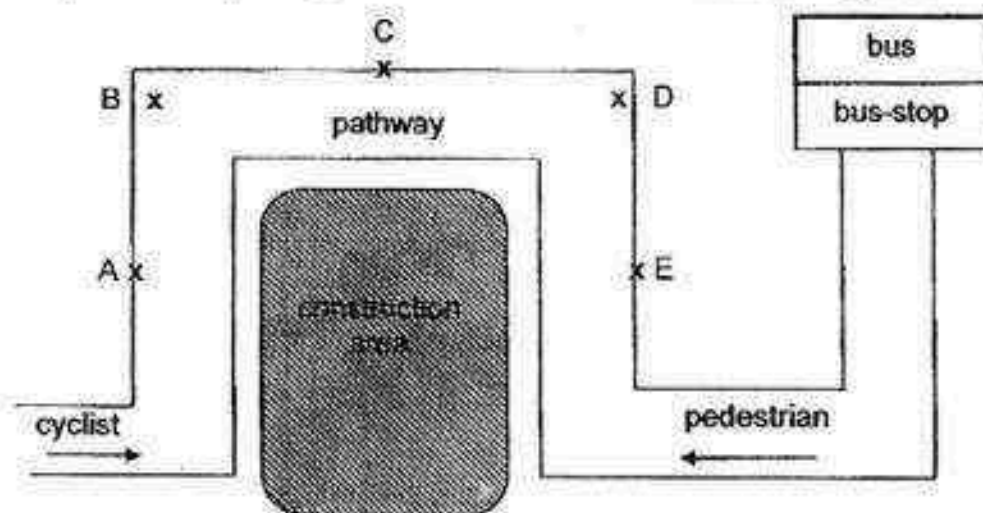
The table below shows the readings which measured the amount of light passing through each object.

Object	Amount of light (lux)
A	0
B	967
C	3345
D	0

Which one of the following materials could object B mostly likely made of?

- (1) wood
- (2) clear plastic
- (3) frosted glass
- (4) stainless steel

22. A bridge was being built near a bus-stop at Rania's house. As a result, the pedestrian pathway had to be blocked as shown in the diagram below.



Top view

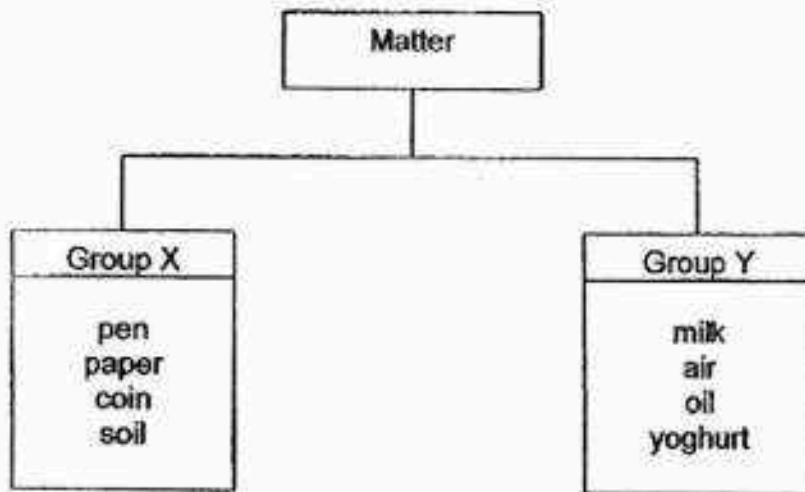
The pathway is used by both cyclists and pedestrians. At which points must a mirror be placed to prevent the cyclists and pedestrians from bumping into one another?

- (1) A and C only
 - (2) B and D only
 - (3) A, B and E only
 - (4) C, D and E only
23. Which of the following statement(s) is/are correct?

- A Not all matter can be seen.
- B Both matter and non-matter have mass.
- C Matter takes up space but non-matter does not take up space.
- D Living things are not solid, liquid or gas so they are not matter.

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

24. Study the following classification chart.

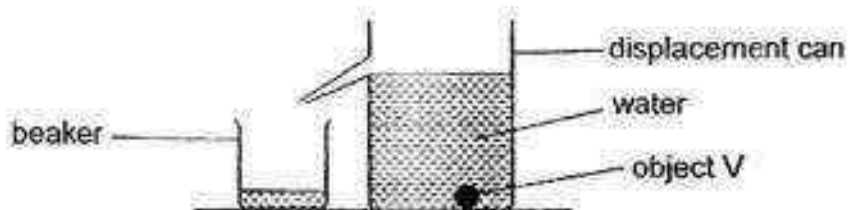


Based on the classification chart, what can we conclude about Group X and Group Y?

- (1) Group X has definite mass but Group Y does not have definite mass.
- (2) Group X has definite shape but Group Y does not have definite shape.
- (3) Group X has definite volume but Group Y does not have definite volume.
- (4) Group X takes the shape of the container but group Y does not take the shape of the container.

25. Ray En carried out three different experiments, A, B and C, on round object V. The diagrams below show the results of her experiments.

A



B



C



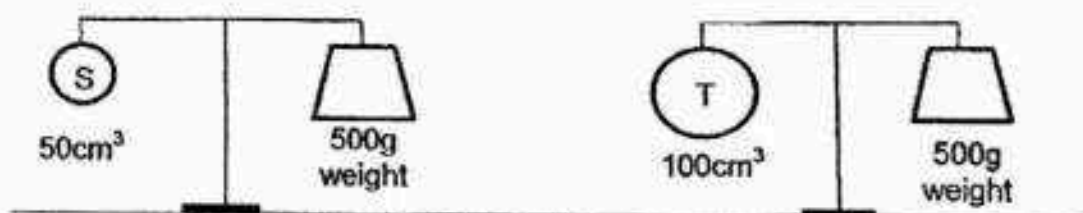
Which of the following conclusion(s) about the experiments is/are **correct**?

Experiment	Conclusion
A	Object V occupies space.
B	Object V does not have definite shape
C	Object V has mass

- (1) B only
(3) A and C only

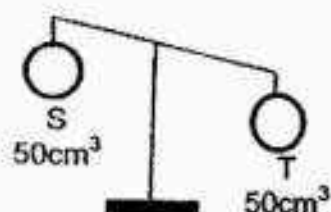
- (2) A and B only
(4) B and C only

26. Rahim hung two objects, S and T, and a 500g weight on a lever balance. The following diagrams show what he observed.

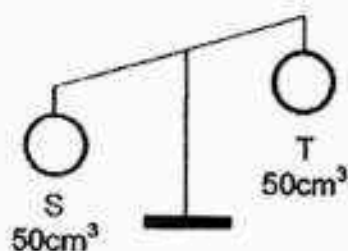


He then compared the 50cm³ of object S with object T of different volumes. Which of the following observations are possible?

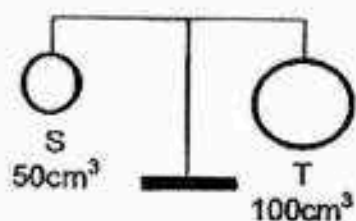
A



B



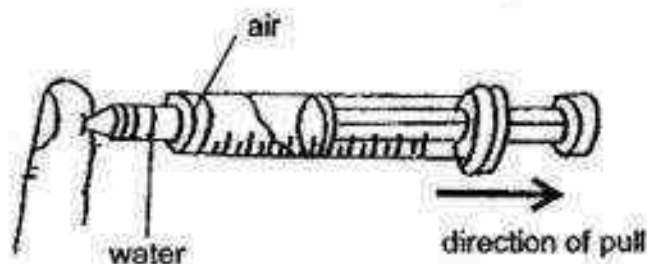
C



- (1) A only
(3) A and C only

- (2) B only
(4) B and C only

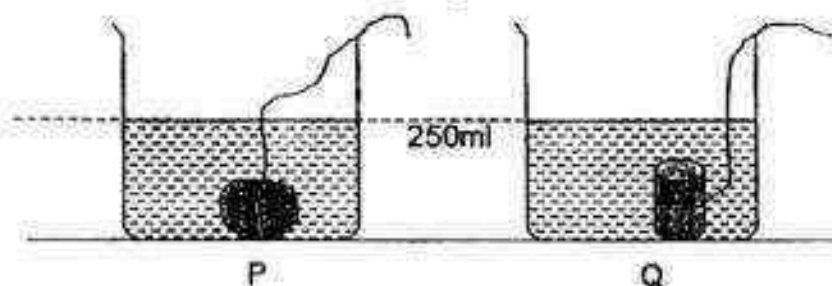
27. Maryanne filled a syringe with some tap water. She blocked the tip and pulled the plunger of the syringe outwards as shown in the diagram below.



Which of the following correctly describe what would happen to the volume of the air and water in the syringe when she pulled the plunger?

	Volume of Air	Volume of Water
(1)	Remains the same	Remains the same
(2)	Decrease	Increase
(3)	Increase	Decrease
(4)	Increase	Remains the same

28. Edison had two 250ml beakers, P and Q. A stone was tied with a string and lowered into beaker P. A metal rod was tied with a string and lowered into beaker Q. Water was then added until the water levels for both beakers reached the 250ml mark as shown in the diagram below.



With the help of the string, the stone and the metal rod was removed from the beaker and the amount of water left was measured.

Which of the following statement(s) about the experiment is/are correct?

- A Both the stone and the metal rod have the same volume
- B Both the stone and the metal rod has a volume of less than 250ml
- C Both the stone and the metal rod has a volume of more than 250ml.
- D The volume of the water left in beaker P and Q is the volume of the stone and the metal rod.

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



NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

**SEMESTRAL ASSESSMENT 1
2016**

BOOKLET B

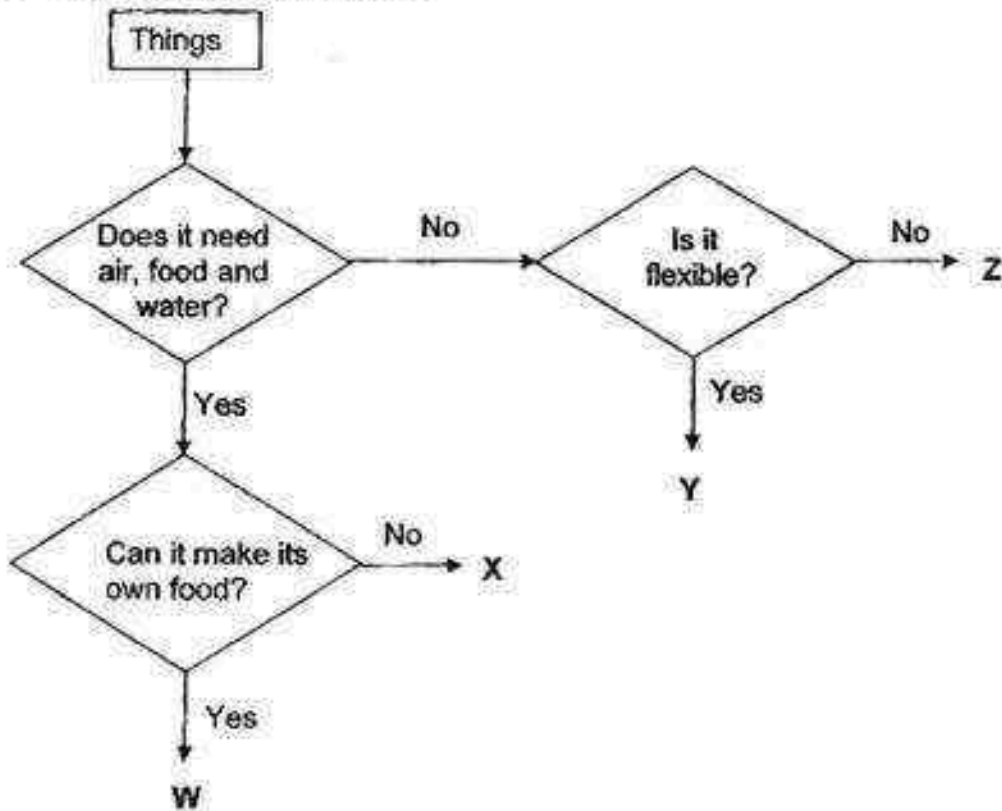
Date : 4 May 2016

Duration : 1 h 45 min

Section B (44 marks)

Write your answers to questions 29 to 41 in the spaces provided.

29. Study the flow chart below.



(a) State all the characteristics of X. [1]

(b) State the difference between W and Z. [1]

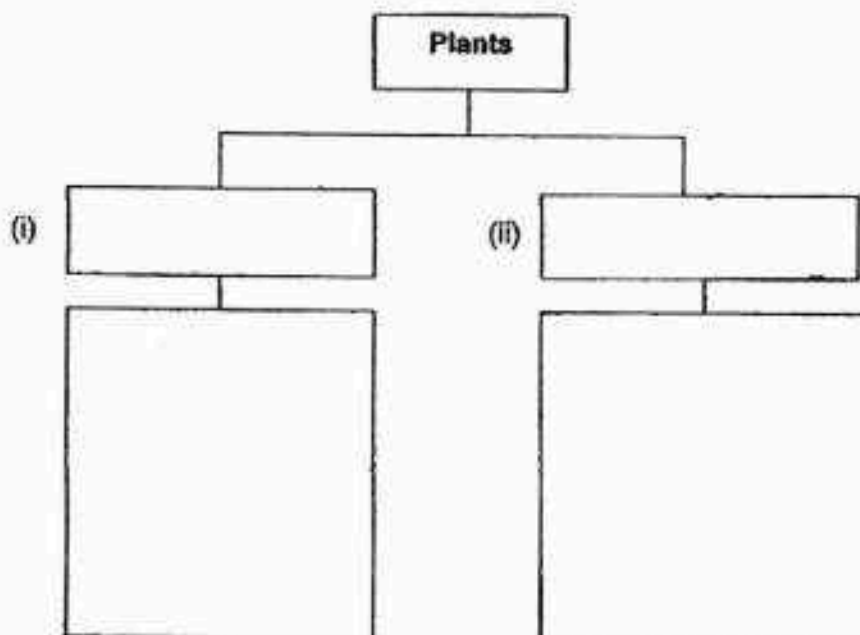
(c) State the similarity between Y and Z. [1]

(d) Give an example of W. [1]

30. Study the living things given below.

- moss
- coconut tree
- bird's nest fern
- rose plant

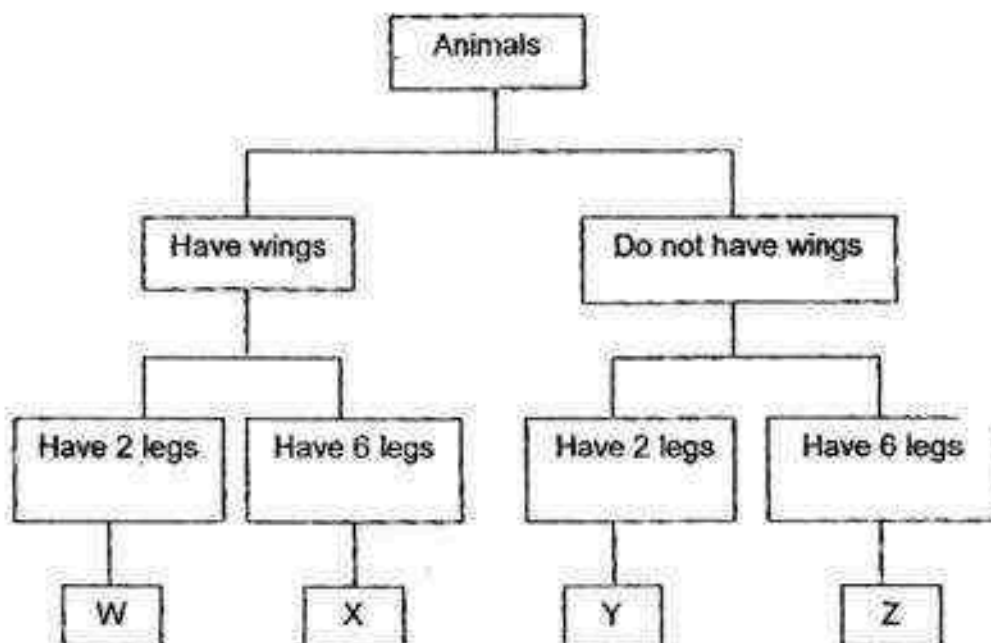
(a) Fill in the classification chart to show how all the living things above can be classified. Give the chart a suitable heading. [2]



(b) Can toadstool be placed in any of the group above? Explain your answer. [1]

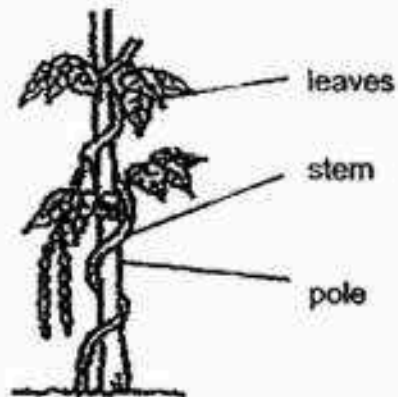
(c) State how non-flowering plants reproduce. [1]

31. Study the classification diagram below.



- (a) Based on the classification diagram above, state **two** characteristics of Animal W. [1]
- (i) _____
- (ii) _____
- (b) Which letter, W, X, Y or Z, could represent 'Man'? Explain your answer. [1]
- _____
- _____
- (c) Identify the **group** of animals that X belongs to. [1]
- _____
- (d) A student stated that groups X and Z belong to the same animal group. State another characteristic of this group of animals. [1]
- _____
- _____

32. Study the picture of Plant X below.



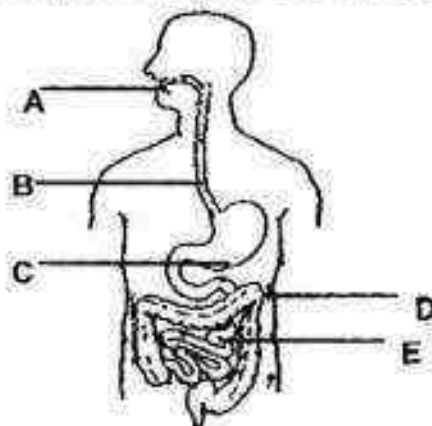
(a) State 2 functions of the stem of plant X. [2]

(i) _____

(ii) _____

(b) Explain how the pole helps plant X. [1]

33. The diagram below shows parts A, B, C, D and E in the human digestive system.



- (a) In the table below, identify points A, B, C, D and E based on the functions stated. Each letter may only be used once. [2]

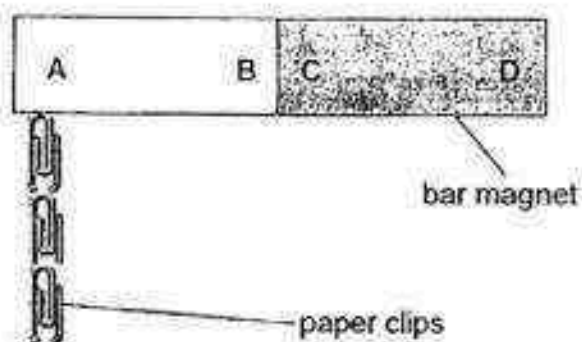
	Function	Part
i)	Larger pieces of food are moistened and broken down to smaller pieces.	
ii)	Water is absorbed here from the remaining undigested food.	
iii)	Partial digestion of food takes place here. It releases acid and enzymes for the chemical breakdown of the food.	
iv)	Small pieces of food are pushed down the tube.	
v)	Most of the digestion occurs here and nutrients are absorbed into the bloodstream.	

- (b) Parts B and C work closely with the muscular system in the digestion of food.
Explain how the muscles in parts B and C help in digestion. [2]

Part B : _____

Part C : _____

34. Mili wanted to find out which part of a bar magnet has the greatest magnetic strength. She conducted an experiment using the set-up as shown below.

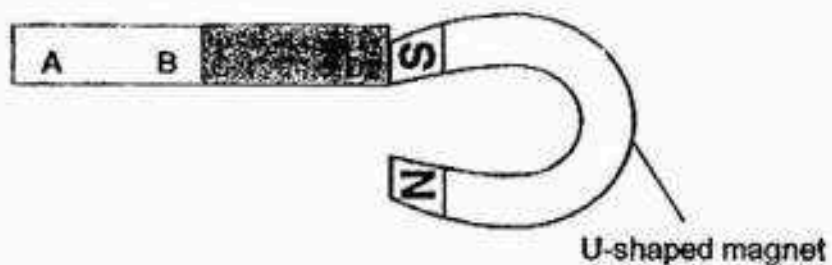


She recorded the number of paper clips attracted by the magnet at part, A, B, C and D in the table below. She repeated her experiment using pins and recorded her results in the same table.

Part of magnet	A	B	C	D
Number of paper clips	10	4	5	11
Number of pins	19	11	11	20

- (a) Based on the results above, what conclusion can Mili make about the strength of the different parts of a bar magnet? [2]

Mili then bought a U-shaped magnet with its S-pole close to the bar magnet. She observed that the bar magnet moved towards the U-shaped magnet as shown below.



- (b) State the pole of part D of the bar magnet and the property of magnets that is demonstrated in Mili's observation above. [2]

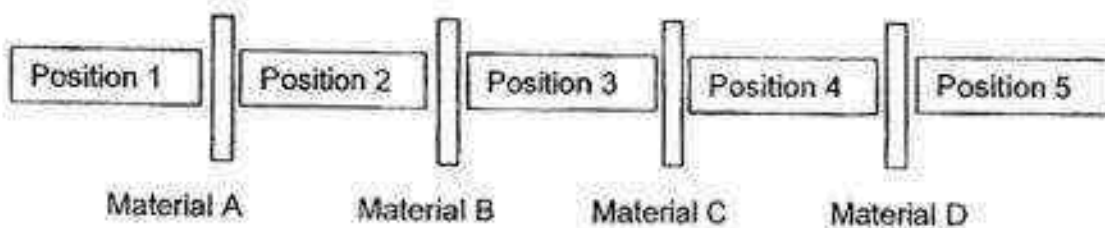
(i) Pole of part D: _____ pole

(ii) Property demonstrated:

35. The table below shows the readings which measured the amount of light passing through each material.

Material	Amount of light (lux)
A	286
B	1497
C	4305
D	0

5 boys, **Peter, Quentin, Ryan, Sam and Terence**, are separated by each material as shown in the diagram below. They are allowed to look in both directions.



The boys recorded their observations that they had made as stated below:

- Quentin can see both Peter and Sam.
- Terence cannot see any of the boys.
- Sam can see Quentin, Ryan and Peter.
- Ryan can only see Sam.

Based on the above observations, write down the Position 1, 2, 3, 4 or 5 of the boys in the space provided below. [2]

Peter Position _____

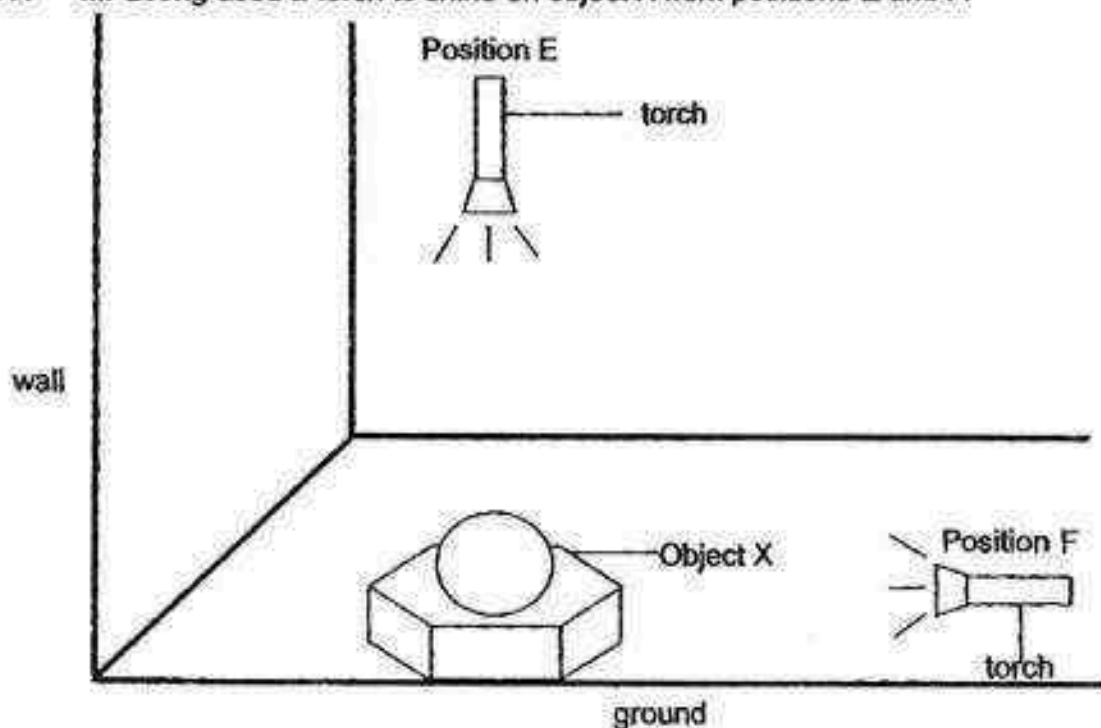
Quentin Position _____

Ryan Position _____

Sam Position _____

Terence Position _____

36. Mr Leong used a torch to shine on object X from positions E and F.



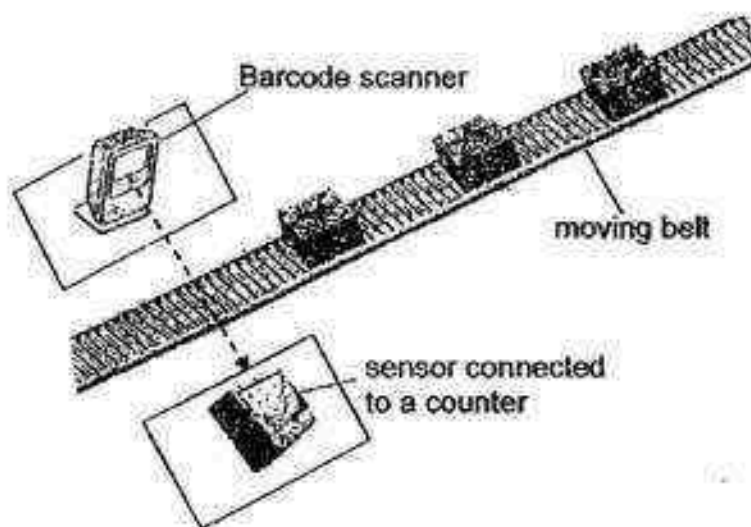
- (a) Draw the shadow of the object

- (i) cast on the wall when he shone the torch from Position E. [1]
 (ii) cast on the ground when he shone the torch from Position F. [1]

(i) Shadow cast on the wall	(ii) Shadow cast on the ground

- (b) Explain how the shadow on the wall is formed. [1]

37. The set-up below uses a light barcode scanner to count and record the number of identical object S on a moving belt.



The moving belt is moving at a same speed. When the object S is blocking the light that is produced by the barcode scanner, the data recorded is shown in the table below.

Time (min)	1	2	3	4	5
Number of Object S	30	60	90	120	150

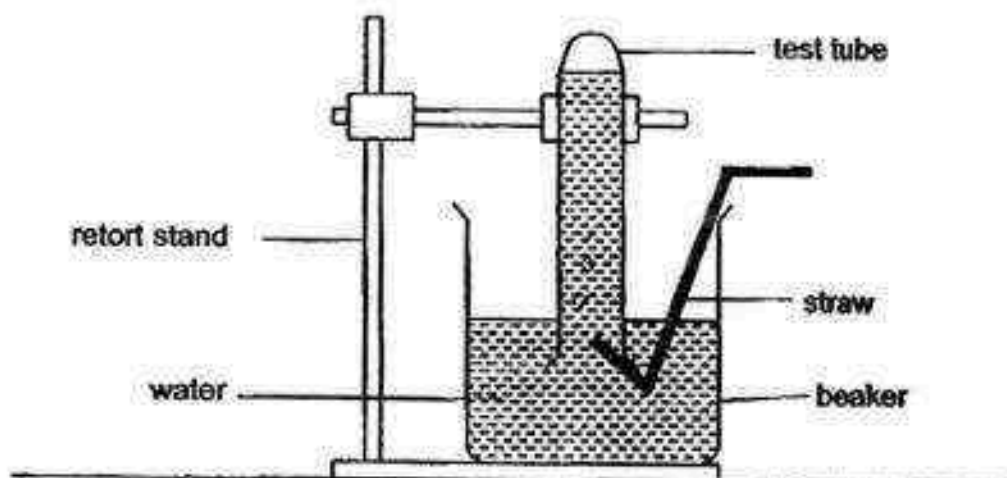
- (a) Without changing the speed, what could be done to enable the scanner to count more object S per minute? [1]

- (b) Based on the set-up, write down one property of light. [1]

The barcode scanner is placed 4 cm above the belt.

- (c) Explain why an object that is less than 4 cm in height cannot be counted. [1]

38. Devi set up an experiment as shown in the diagram below.



Devi blew through the straw into the test tube.

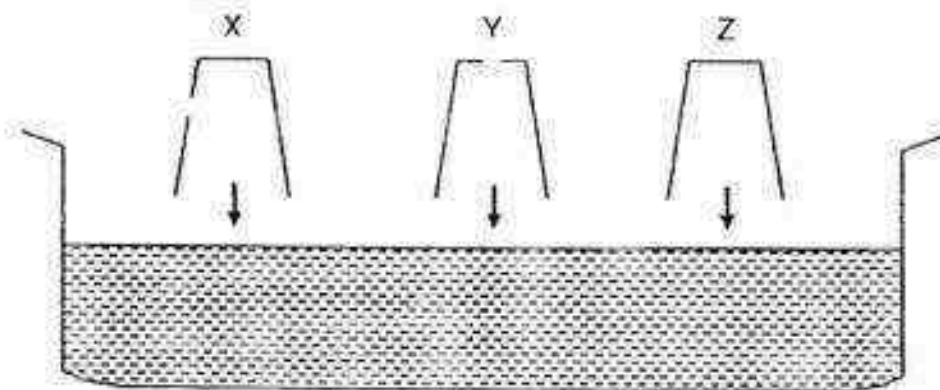
- (a) Using the table below, put a tick in the correct box to show Devi's observations after she blew into the delivery tube two times. [2]

	rises	drops	remains the same
water level in test tube			
water level in beaker			

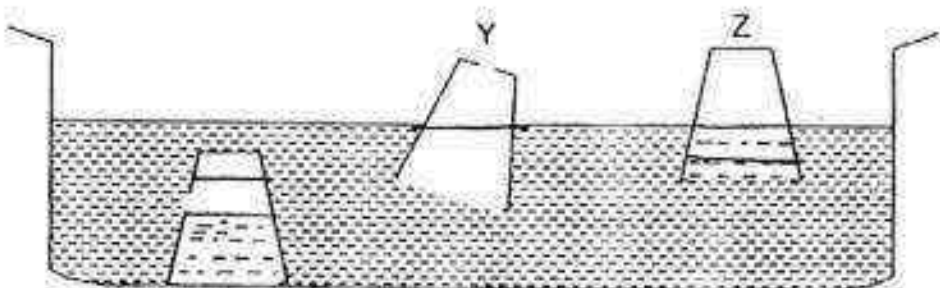
Devi then continued to blow into the straw until she saw the water in the beaker starts "bubbling".

- (b) Explain this observation. [1]

39. Kai Ling conducted an experiment using 3 plastic cups, X, Y and Z, and a basin of water. Kai Ling made a hole at different positions of cups, X and Y. The cups were then pushed into the basin of water as shown in the diagram below.



- (a) In the diagram below, draw the correct water level that would be observed in cups X, Y and Z. [3]



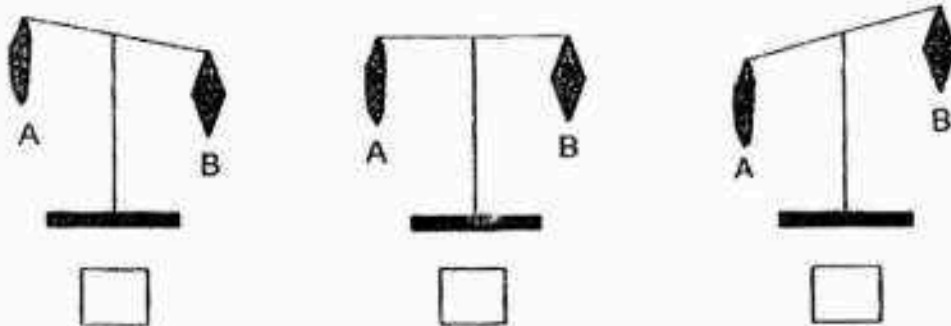
- (b) Write down 1 property of air and 1 property of water that explains your answer in (a). [2]

Air : _____

Water : _____

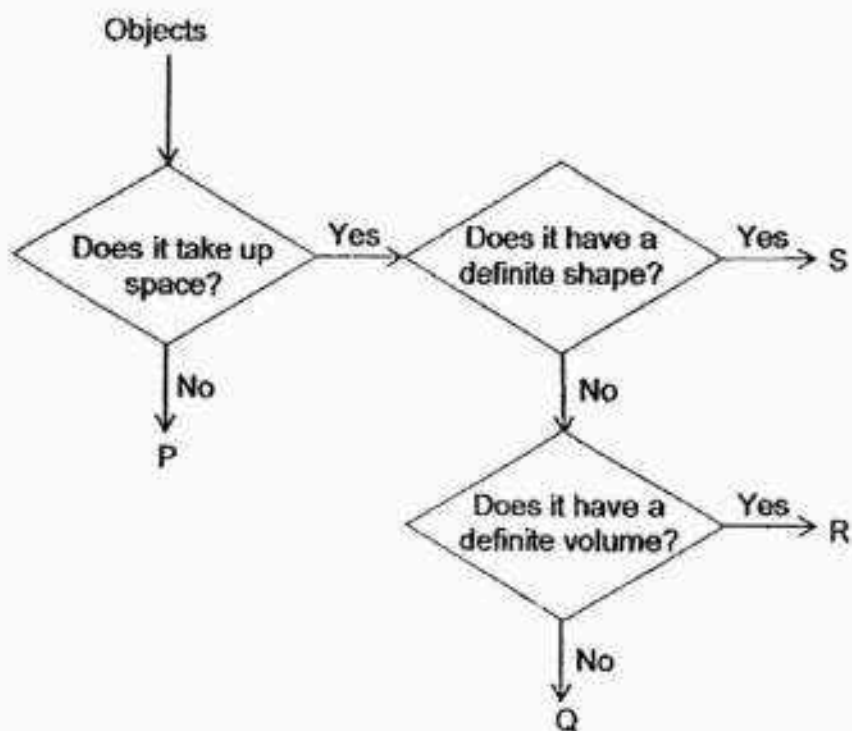
40. Shawn did an experiment on two pieces of cloth, A and B, of the same size and material. He wet cloth A in water and wringed it till there was no water dripping from it. Cloth B remained dry. He hung the two pieces of cloth on a lever balance.

(a) Which of the following diagrams show the result that he would obtain? Tick the correct box. [1]



(b) Explain your choice in (a) [1]

41. Objects P, Q, R and S have been classified in the flowchart below based on their properties.



- (a) Give an example of object P. [1]

- (b) How is object Q different from object S? [1]

- (c) Based on the information in the flow chart, describe object R. [1]

EXAM PAPER 2016

SCHOOL :NANYANG

SUBJECT :P4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	4	3	4	1	4	4	2	4	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	2	2	2	2	2	4	1	1	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	2	2	2	3	4	4	2		

Name : _____

Class : _____

Analysis of selected open-ended questions 2016 P4 Science SA1

29. Since a flowchart is given, answers have to be from the flowchart.

29a. Answer : X is a thing that does not need air, food and water and cannot make its own food.

Note : All characteristics of X in the flowchart has to be listed in order for X to be identified. Use the wordings in the flowchart to craft the answers.

29b. Answer : W does not need air, food and water but Z needs air food and water.

Note : Make use of the information in the flowchart to answer the question. When making comparison, use the characteristics of the animals.

29c. Answer : **Both** Y and Z does not need air, food and water.

Note : For similarity question, start the answer with : **Both** Y and Z

29d. Specific example has to be given.

General examples are not acceptable. Eg : fern, plant, tree

31b. Answer : Y. Man has 2 legs and does not have wings, **like** Y. (Must show comparison)

32a. Answer : It helps the plant to climb up the pole (what the stem is doing) to get more sunlight (purpose) for making food.

It transports water, mineral salts and food to all parts of the plants.

Note : Answer has to be with reference to the weak stem plant, Plant X.

Incorrect answer : It helps to hold/support the plant upright. (This is the function of a ~~stem~~ but not for a weak stem plant)

32b. Answer : Plant X use the pole as a support to climb higher (how pole is useful to plant) to get/ reach for more sunlight (purpose) for making food (reason)

34a. Answer : **Poles/ Ends** of magnets are the strongest and the **centre** of the magnet is the weakest.

Incomplete answer : A and D are strongest but B and C are weakest. (pupils must draw conclusion that A and D are poles of magnets while B and C are the centre of the magnet)

Unaccepted answers : A and D attracted the most numbers of paper clips followed by C than B. (Observations stated instead of a conclusion.)

34bii. Answer : Unlike poles of magnet attract.

Note : diagram only demonstrate attraction between unlike poles of magnet. Additional information given will be penalised.

36a. Shadow drawn should be in pencil, shaded fully and covers 2/3 of space given. Ruler should be used.

36b. Note : Pupils need to apply what they have learnt to the situation given. How shadow of Object X is formed on the wall?

Answer : Light from torch at Position F (be specific as there are 2 torches given in the diagram) is blocked by object X so a shadow is cast on the wall.

37a. Answer : Place object S nearer to each other.

Incorrect answer : Place more object S on the belt (*this does not increase the counting if the speed is not changed or the distance between the objects remains the same*)

Place more scanner and sensor (*this will create more confusion in counting rather than counting more*)

37b. Note : correct property of light has to be given not any property of light.

Answer : Light travels in a straight line.

Light can be blocked by an opaque object.

37c. Note : Light has to be blocked by object S before it can be counted.

Answer : The **light produced by the scanner cannot be blocked by object S** if it is below 4cm, and it will not be scanned and recorded by the counter.

38b. Note : Straw is inside the test tube so air blown in will be released in the test tube. The test tube has to be filled with air first before bubbling will be seen on the water surface.

Answer : The test tube is already filled with water so the excess air that that is blown in escape as bubbles out of the water.

39a. X – water level is above the hole with some air trapped in the cup. (*it is just like a shorter cup with its opening at the hole*)

Y – same level as water level in the container

Z – water level is below water level in container with air trapped in the cup.

Note : Water level **MUST** be drawn in **pencil** using a ruler

39b. Note : Correct property must be stated.

Unacceptable property : Water has definite volume. Water cannot be compressed. (*these are not demonstrated in this experiment*)

40. Answer : Water and cloth are both matter and have mass. The wet cloth will have greater mass than the dry cloth.

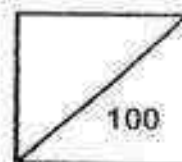
Note : Terms 'heavier' and 'lighter' are for weight comparison. For mass, 'greater mass' or 'less mass' is used.



Rosyth School
First Semestral Assessment for 2016
SCIENCE
Primary 4

Name: _____

Total
Marks:



Class: Pr 4 _____ Register No. _____ Duration: 1 h 45 min

Date: 11th May 2016 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 28 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 29 to 42, give your answers in the spaces given in Booklet B.

* This booklet consists of 17 pages (including the cover page).

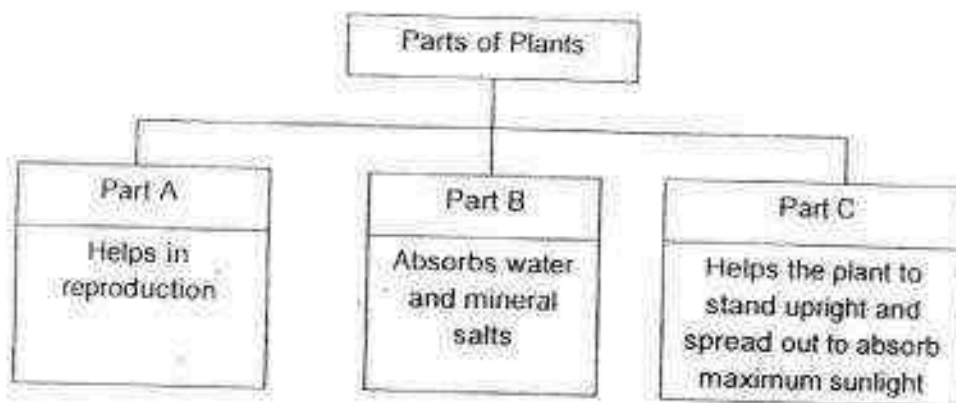
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.
(56 marks)

1. During her walk at Bishan Park, Alice noticed that the snail lays many eggs at one time. Why does the snail lay many eggs during reproduction?



- (1) To camouflage from their predators.
- (2) To only reproduce once in their lifetime.
- (3) To attract more birds to eat their young.
- (4) To increase the survival of its own kind.

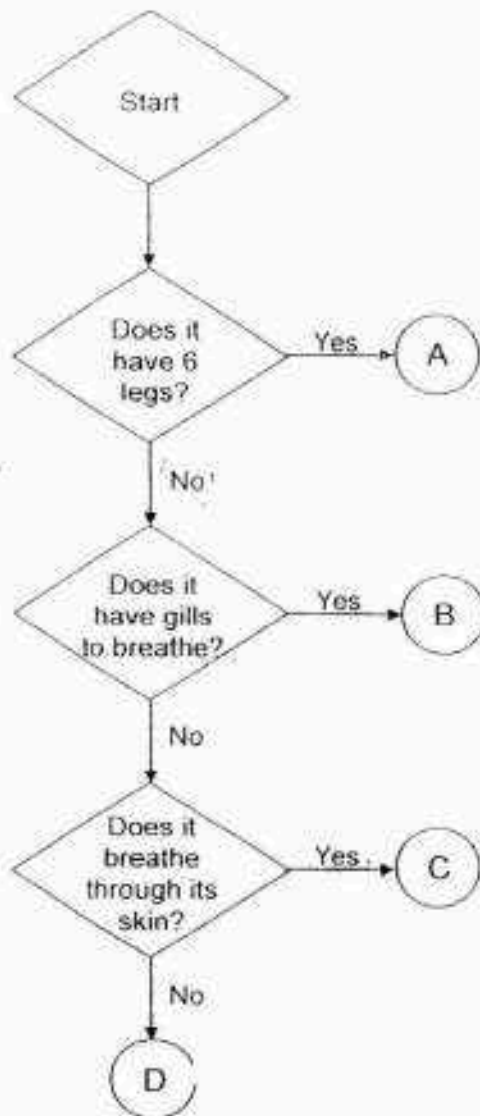
2. Study the classification chart below.



What are plant parts A, B and C likely to be?

	A	B	C
(1)	Fruits	Stem	Leaves
(2)	Roots	Flowers	Stem
(3)	Flowers	Roots	Stem
(4)	Leaves	Roots	Fruits

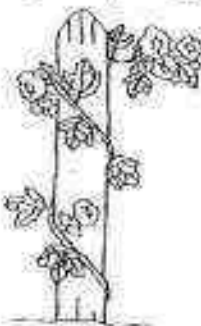
3. Study the flow chart below carefully.



Which group would a frog most likely be in?

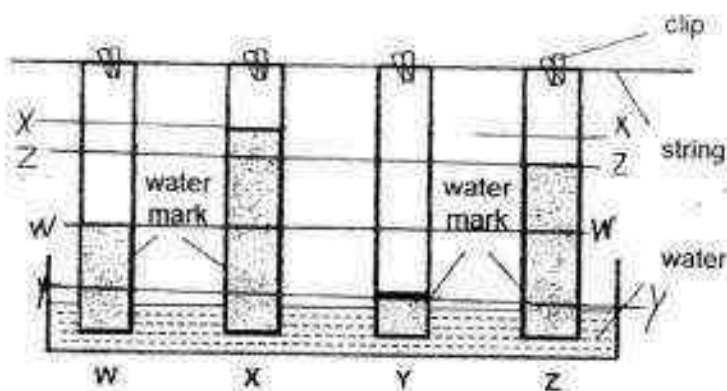
- | | |
|-------|-------|
| (1) A | (2) B |
| (3) C | (4) D |

4. The diagram below shows Plant X growing in a garden.



Based on the diagram above, which one of the following statements about Plant X is correct?

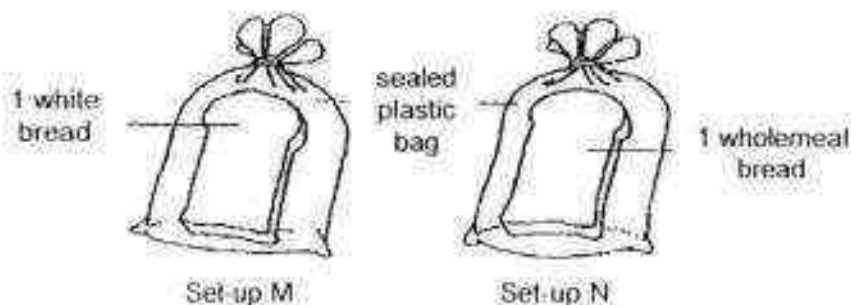
- (1) It has no roots.
 - (2) It reproduces by spores.
 - (3) It needs a support to grow.
 - (4) It does not make its own food.
5. Materials W, X, Y and Z were hung in a container of water as shown below. The strips were of equal length. After 1 minute, the results below show the water mark on each piece of material.



Based on the result, which one of the materials is suitable to make a towel?

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

6. Bala wanted to find out if moisture was needed for mould to grow. He placed one piece of bread each into a plastic bag as shown below.



The table below shows the variables in Bala's experiment.

Variable	Set-up M	Set-up N
Type of bread	White bread	Wholemeal bread
Type of plastic bag	Transparent	Transparent
Amount of water	0 ml	10 ml
Location	Dark cupboard	Dark cupboard

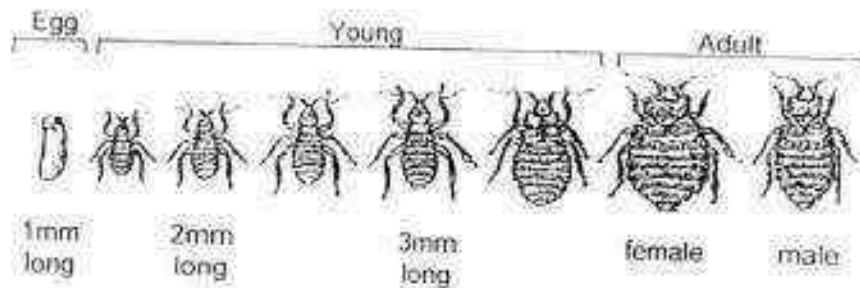
His teacher said that one of the variables was incorrect for a fair test to be done. Which of the following variable was incorrect?

- (1) Type of bread (2) Location
 (3) Amount of water (4) Type of plastic bag
7. Which of the following statements about the life cycles of animals are true?

- A : The life cycle repeats itself.
 B : All the life cycles begin with a seed.
 C : There are 4 stages in their life cycles.
 D : Each life cycle takes different time to complete.

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

8. The diagram below shows the development of a bed bug from an egg to an adult.

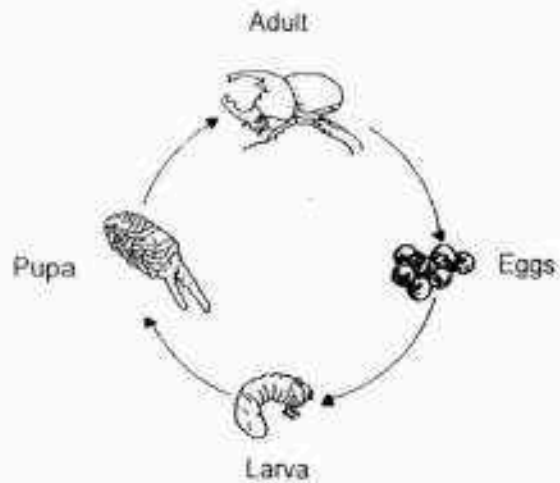


Based on the development shown above, what can you infer about the number of stages in the life cycle of a bed bug?

- (1) 7
(2) 8
(3) 3
(4) 4
9. Which of the following comparisons between the life cycles of a grasshopper and the butterfly is correct?

	Grasshopper	Butterfly
(1) Its young has wings.	No	Yes
(2) Its young is harmful to plants.	No	No
(3) The young looks like the adult.	Yes	No
(4) There are 4 stages in its life cycle.	Yes	Yes

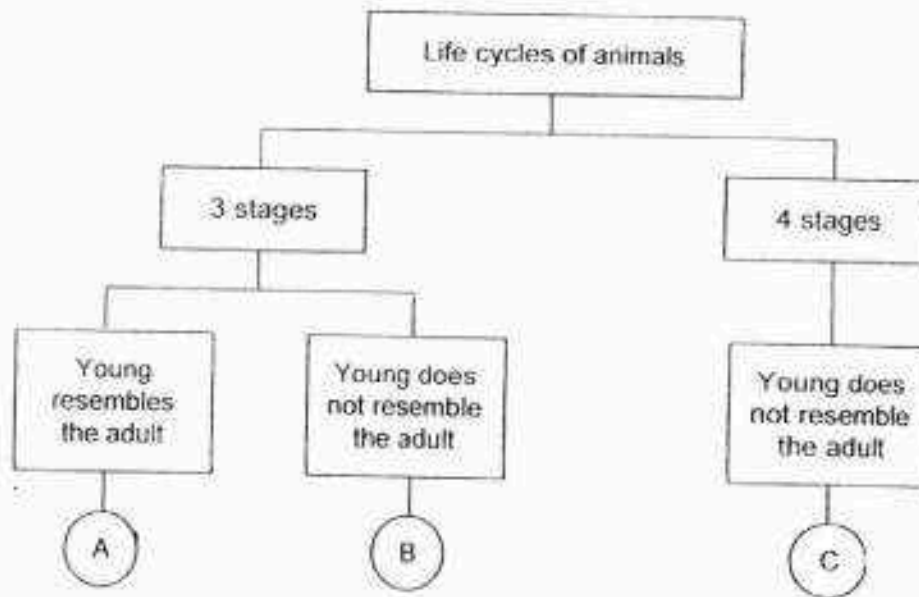
10. The diagram below shows the life cycle of an insect.



At which two stages of the life cycle of the insect does it not need to find and eat any food?

- | | |
|---------------------|-------------------|
| (1) larva and pupa | (2) egg and pupa |
| (3) larva and adult | (4) egg and adult |

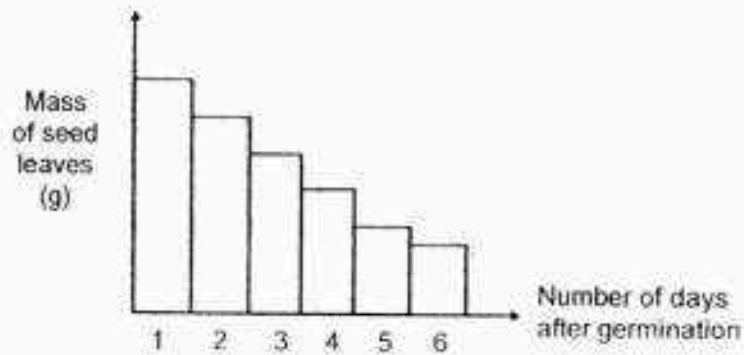
11. Study the classification chart below carefully.



Based on the chart above, which of the following best describes A, B and C?

	A	B	C
(1)	frog	grasshopper	butterfly
(2)	grasshopper	frog	mealworm beetle
(3)	cockroach	grasshopper	frog
(4)	grasshopper	mealworm beetle	butterfly

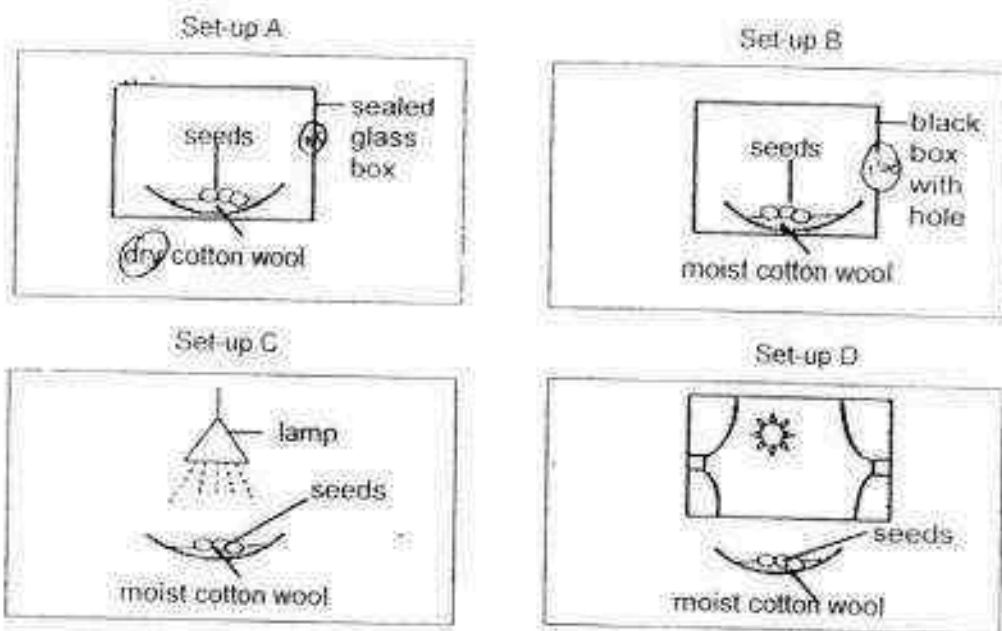
12. Study the graph below.



What is the relationship between the numbers of days after germination and the mass of seed leaves?

- (1) As the number of days after germination increases, the mass of the seed leaves increases.
- (2) As the number of days after germination increases, the mass of the seed leaves decreases.
- (3) As the number of days after germination remains the same, the mass of the seed leaves decreases.
- (4) As the number of days after germination remains the same, the mass of the seed leaves increases.

13. Look at the set-ups below. They are all placed at room temperature.



Which of the following seeds will germinate?

- (1) A and B only
 (2) C and D only
 (3) A, B and D only
 (4) B, C and D only
14. Devi wanted to find out if the location of the pots of plants, X, Y and Z, affects the growth of plants.

	Variables	X	Y	Z
(1)	Width of pot	10cm	15cm	20cm
(2)	Location of pot	Garden	Open field	Dark room
(3)	Duration of experiment	7 days	7 days	7 days
(4)	Number of plants in each pot	4	4	4

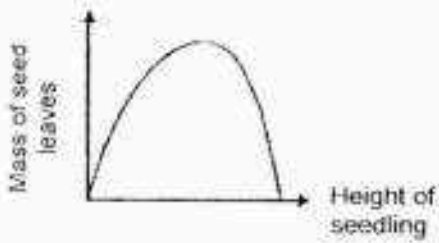
Devi's teacher said that she did not conduct a fair experiment. What change must she make to the set-ups to make it a fair experiment?

- (1) Use pots of the same width.
 (2) Conduct the experiment for 10 days.
 (3) Put all the pots in the same location.
 (4) Use a different number of plants for each pot.

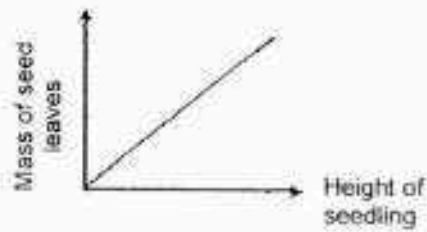
15. Sam had grown some beans. He found out that as the height of the seedling increases, the mass of the seed leaves decreases.

Which graph below shows Sam's result?

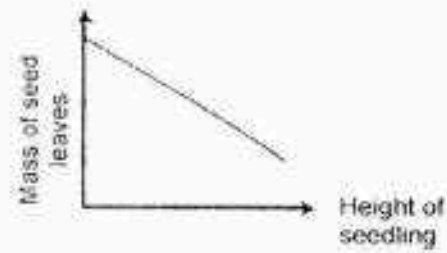
(1)



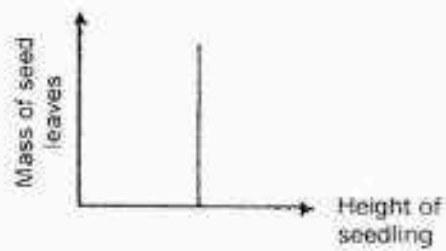
(2)



(3)



(4)



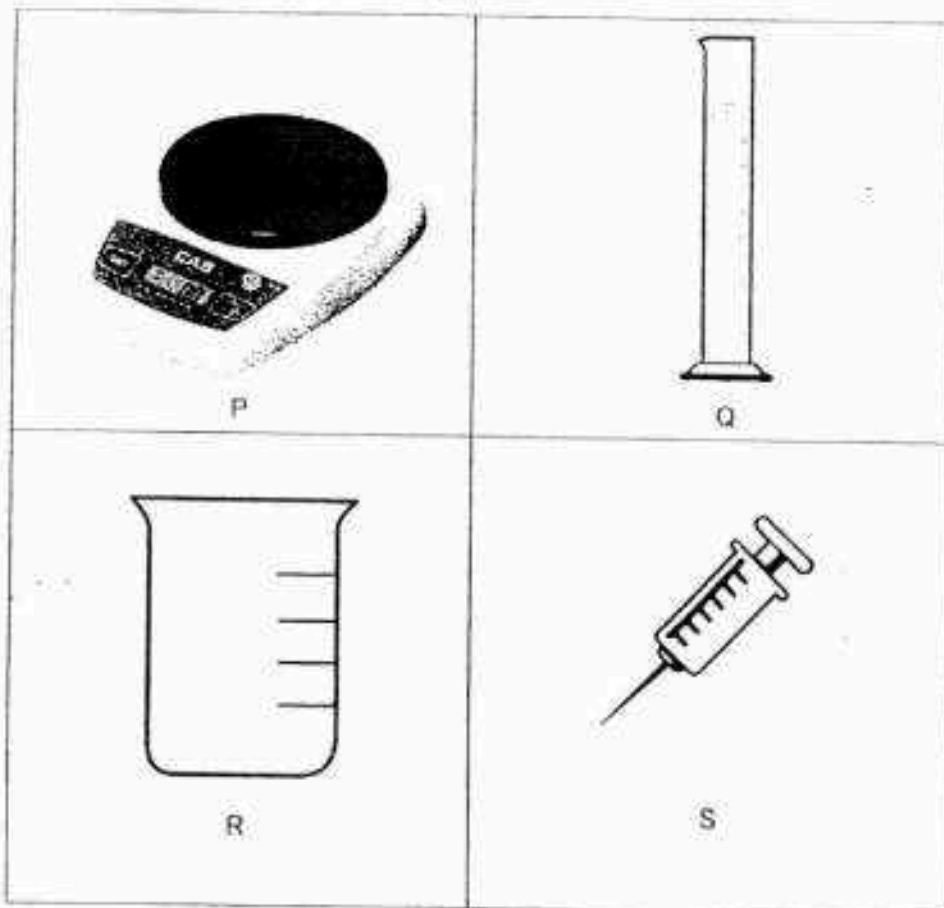
16. Which one of the following are not matter?

- A. Clouds
- B. Ice cubes
- C. Heat from sun
- D. Shadow of a boy X

- (1) A and B
- (3) B and C

- (2) A and D
- (4) C and D

17. The diagrams below show some apparatus.



Which apparatus should be used to measure the mass of an object?

- (1) P
- (3) R

- (2) Q
- (4) S

18. Four boys, Andrew, Brandon, Carl and Desmond made the following statements about the three bags shown below.



Andrew: The items in the three bags have different mass.

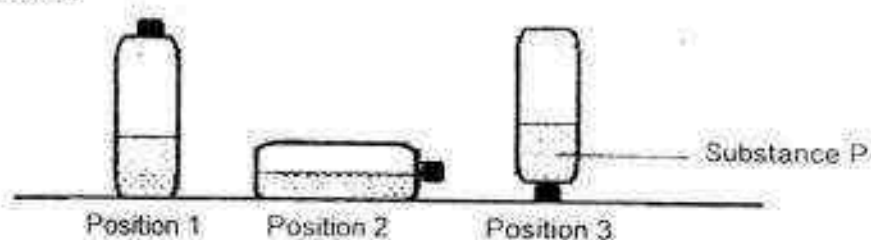
Brandon: The items in the three bags have the same mass.

Carl: The three bags of substance have different volume.

Desmond: The three bags of substances have the same volume.

Whose statements are correct?

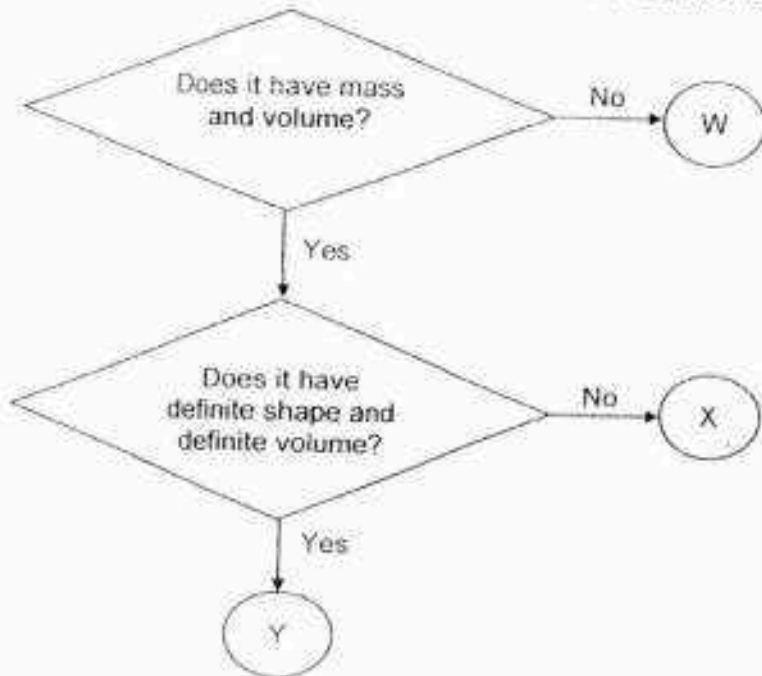
- (1) Andrew and Carl only
 - (2) Brandon and Carl only
 - (3) Andrew and Desmond only
 - (4) Brandon and Desmond only
19. A bottle was filled with substance P. The bottle was placed into 3 different positions.



Based on the observation in the diagram, what can you conclude about substance P?

- (1) It has no mass.
- (2) It can be compressed.
- (3) It has no fixed volume.
- (4) It has no definite shape.

Refer to the flowchart below to answer Questions 20, 21 and 22.



20. Which one of the following is likely to be W?

- | | |
|-----------|------------|
| (1) Rain | (2) Stone |
| (3) Sound | (4) Oxygen |

21. Which one of the following is likely to be Y?

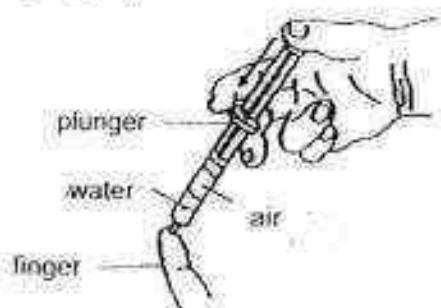
- | | |
|-----------|------------|
| (1) Air | (2) Milk |
| (3) Light | (4) Marble |

22. Which of the following statements are true about X?

- A: X is a gas.
- B: X has mass.
- C: X occupies space
- D: X is a liquid.

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

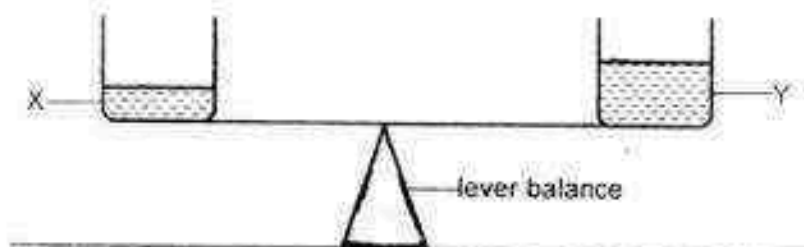
23. Kieran filled the syringe with 5 ml of air and water each. He placed his finger at the end of the syringe tightly as shown below.



Which one of the following is observed when the plunger is pushed in?

	Volume of water / ml	Volume of air / ml
(1)	5	5
(2)	5	0
(3)	5	2
(4)	2	2

24. Study the diagram below carefully. Both containers are of the same size.



Which of the following is true about Liquid X and Liquid Y?

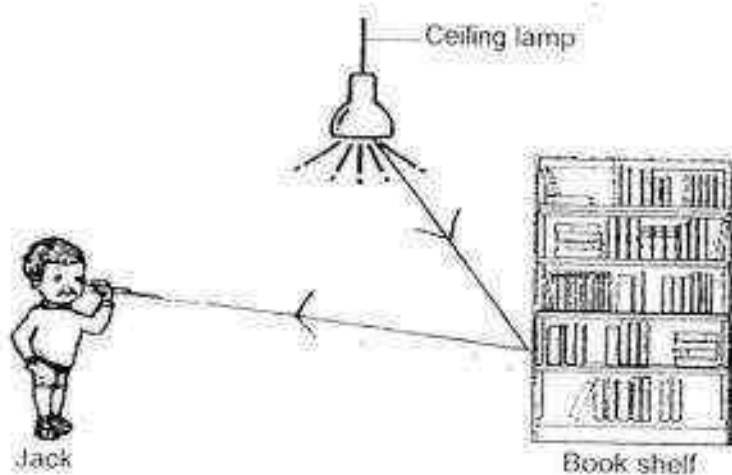
- A Liquid X and Liquid Y have the same mass.
- B Liquid X has a smaller volume than Liquid Y.
- C Liquid X occupies the same amount of space as Liquid Y.
- D Liquid X can be compressed while Liquid Y cannot be compressed.

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

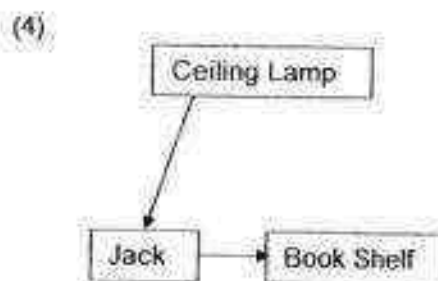
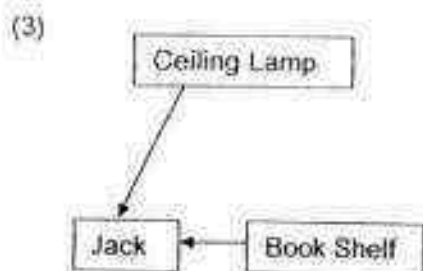
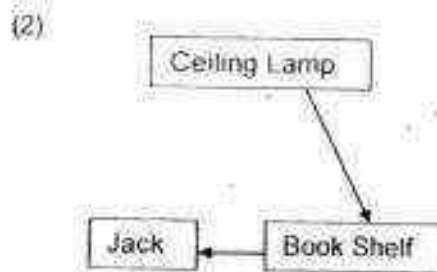
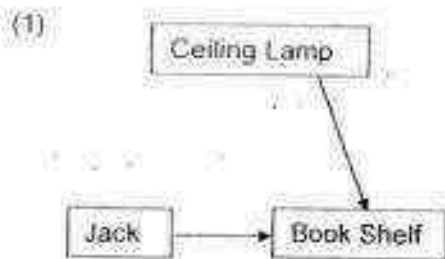
25. Which of the following is a source of light?

- (1) Moon
- (2) Apple
- (3) Firefly
- (4) Flower

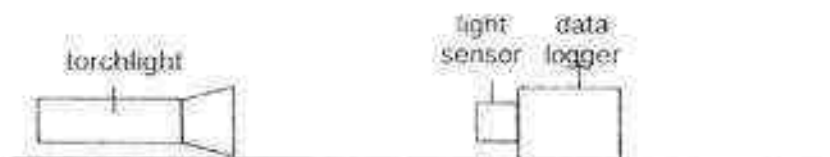
26. Jack entered his room and switched on the ceiling lamp. He could see the ceiling lamp and the book shelf.



Which of the following diagrams shows the path of light which enables Jack to see the book shelf?

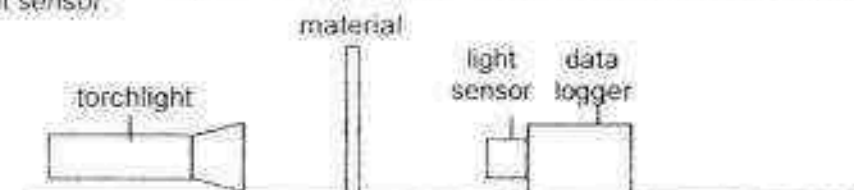


27. Nicholas sets up an experiment as shown below.



The amount of light detected by the sensor was 1200 lux.

He repeated the experiment by placing a material between the torchlight and light sensor.



He placed four different materials in between the light source and the light sensor. The four different materials are clear glass, tracing paper, cardboard and green plastic. He recorded the amount of light passing through the different materials in the table below.

	Amount of light passing through the material (lux)
(1)	0
(2)	50
(3)	900
(4)	1100

Which of the above shows the amount of light passing through a cardboard?

28. Ian and his black dog were in a dimly lit room. Which of the following statements correctly explains why Ian could only see the dog's eyes clearly?

- (1) Ian's eyes were sources of light.
- (2) The dog's eyes were sources of light.
- (3) Light was reflected from Ian's eyes to the dog's eyes.
- (4) Light was reflected from the dog's eyes to Ian's eyes.

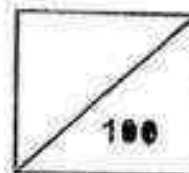
End of Part 1



Rosyth School
First Semestral Assessment for 2016
SCIENCE
Primary 4

Name: _____

Total
Marks:



Class: Pr 4 _____

Register No. _____

Duration: 1 h 45 min

Date: 11th May 2016

Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 29 to 42, give your answers in the spaces given in this Booklet B.

	Maximum	Marks Obtained
Booklet A	56 marks	
Booklet B	44 marks	
Total	100 marks	

* This booklet consists of 14 pages (including the cover page).

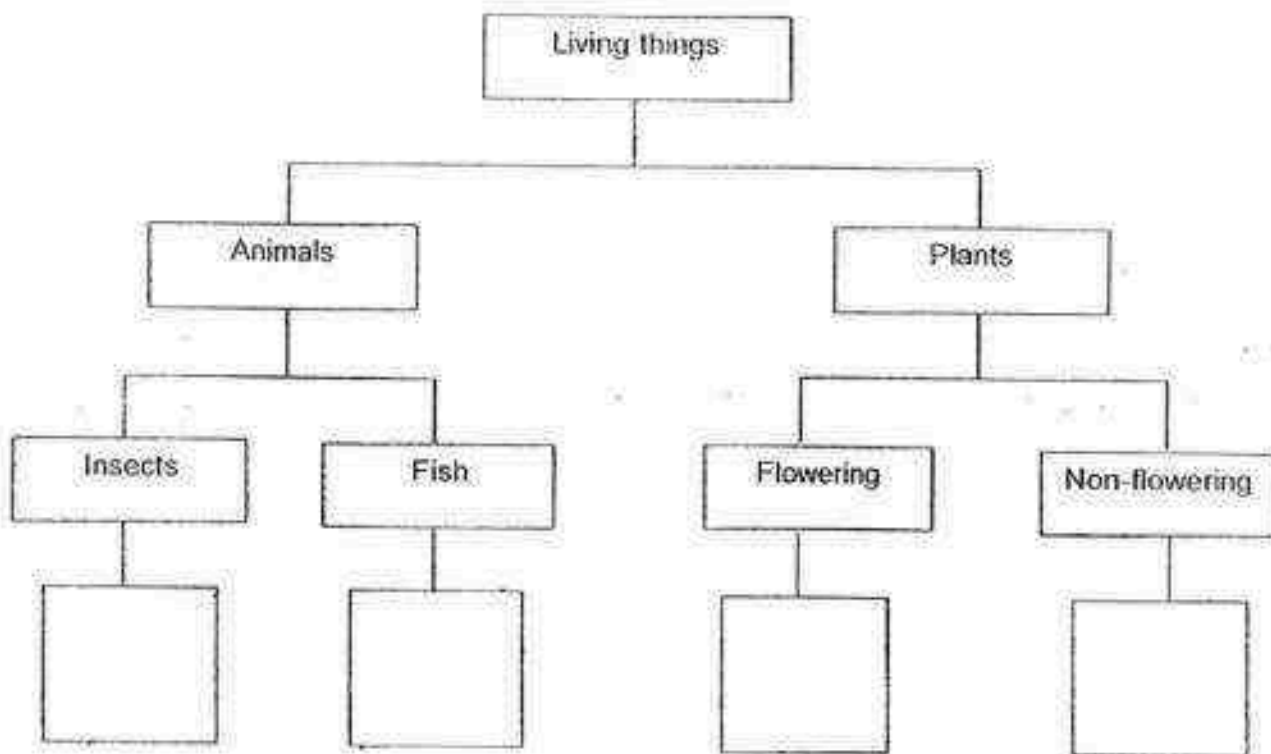
For questions 29 to 42, write your answers in this booklet.

(44 marks)

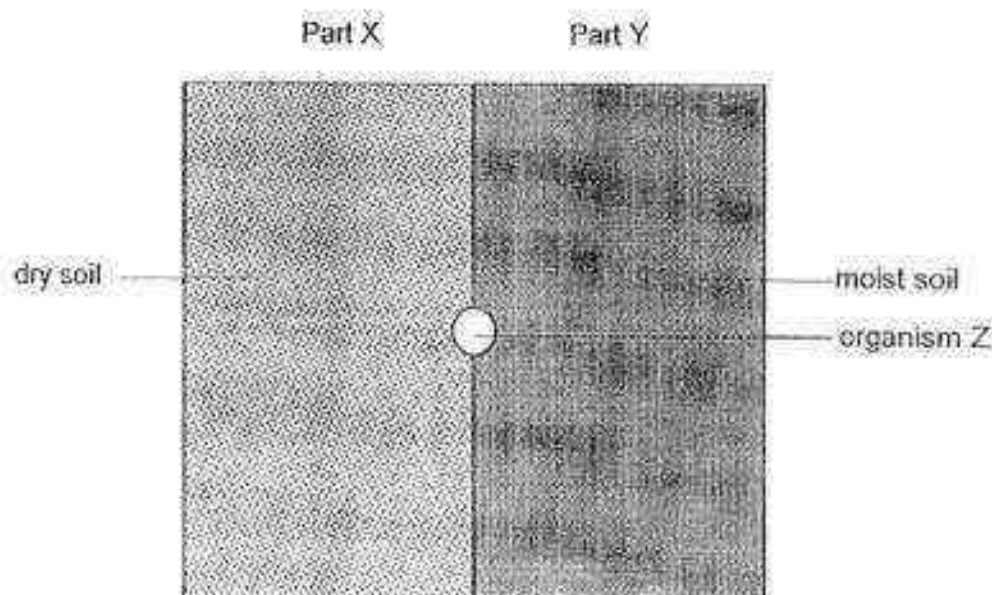
29. The table below lists the characteristics of four different living things, A, B, C and D. A tick (✓) in the box indicates the characteristics which the living thing has.

Characteristics of living things	Living things			
	A	B	C	D
Reproduces by seeds		✓		
Lays eggs	✓		✓	
Can absorb sunlight		✓		✓
Spores can be found on the underside				✓
Has 3 body parts and 6 legs			✓	
Can move from place to place	✓		✓	

Based on the information above, place the living things in the classification chart below by writing the letters A, B, C or D in the boxes provided below. (2m)



30. Amy used a tray consisting of two parts, X and Y. She filled part X with dry soil and part Y with moist soil. She then placed some organism Z in the middle of the tray in the area marked by the circle, to find out which part would organism Z move to.



- (a) After 1 hour, Amy observed that most of organism Z were found in one part of the tray. Which part, X or Y, would most of organism Z be found at? (1m)

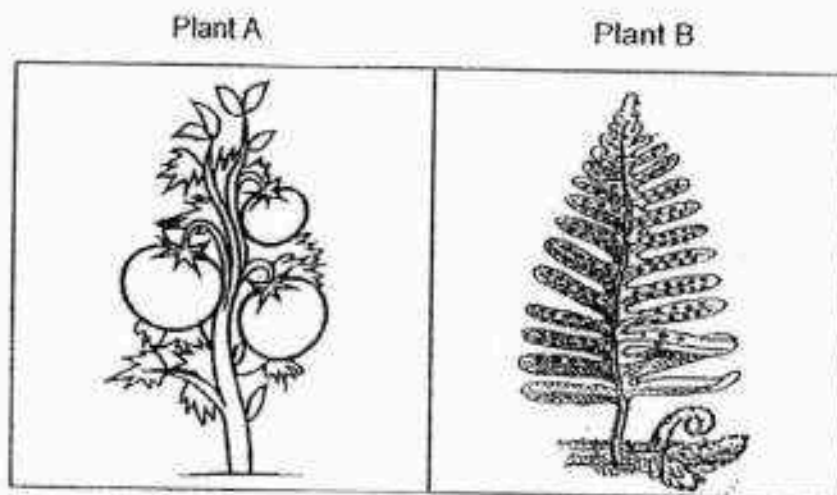
- (b) Give a reason for her observation. (1m)

- (c) For the above experiment, state the following variables (1m)

(i) Changed variable: _____

(ii) Measured variable: _____

31. Study the pictures of two different plants as shown below.



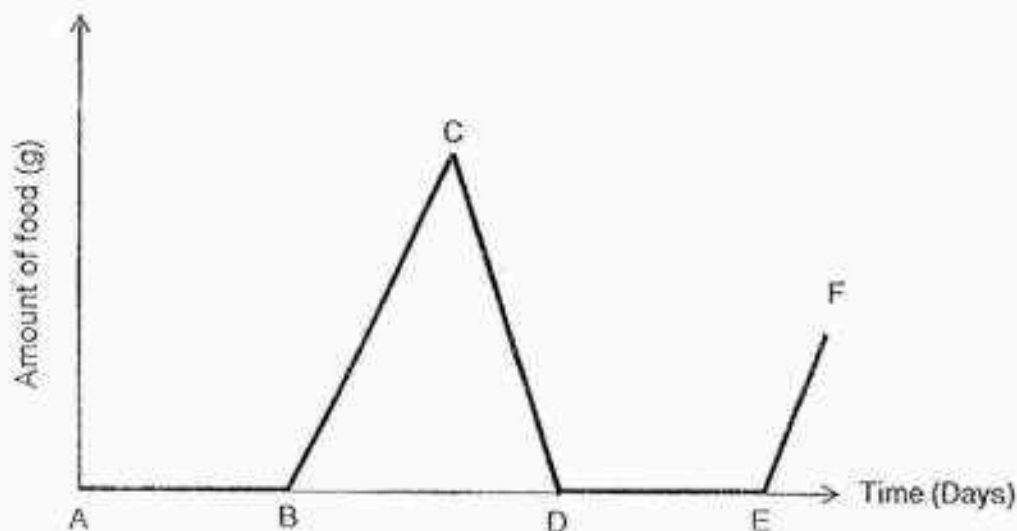
(a) Based on the observations made, state how Plant A and B reproduce. (2m)

(i) Plant A: _____

(ii) Plant B: _____

(b) Can the bread mould be grouped together with Plant B? Explain why. (1m)

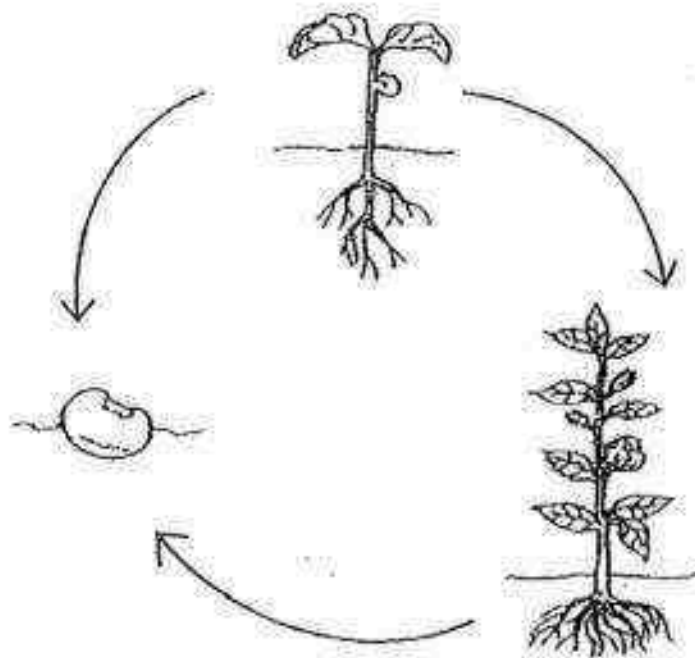
32. The graph below shows the amount of food eaten by a moth throughout its life cycle.



- (a) Which part of the graph AB, BC, CD, DE or EF, represents the pupa stage of the moth? (1m)

- (b) The moth lays its eggs on the leaves. Explain why. (1m)

33. Study the diagram of the life cycle of a plant as shown below.



(a) One of the arrows has been wrongly drawn. Circle the incorrect arrow. (1m)

(b) The passage below explains the development of the plant's life cycle. However, some of the information are missing. Fill in the blanks with the correct words. (2m)

When a seed germinates, the _____ grows downward first.

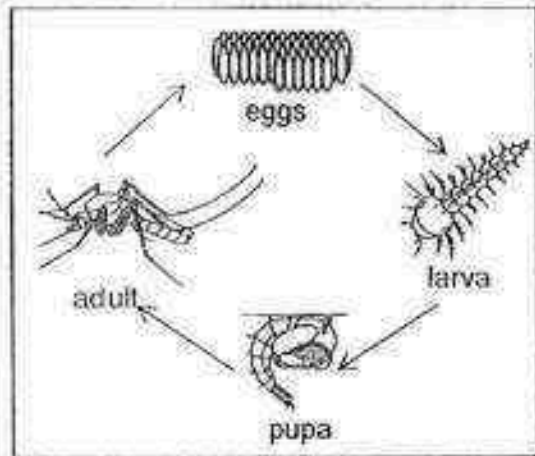
Then the first leaves appear. The seedling starts to make its own

_____. The seedling gradually grows into a/an _____

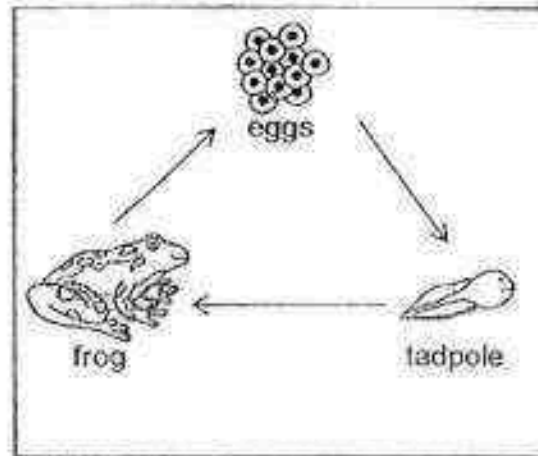
plant. The adult plant will bear flowers and then _____

which contains seeds. These seeds will then continue the lifecycle.

34. The diagrams below show the life cycle of the mosquito and frog.



Life cycle of mosquito



Life cycle of frog

- (a) Which characteristic of living things are these animals showing through their life cycle? (1m)

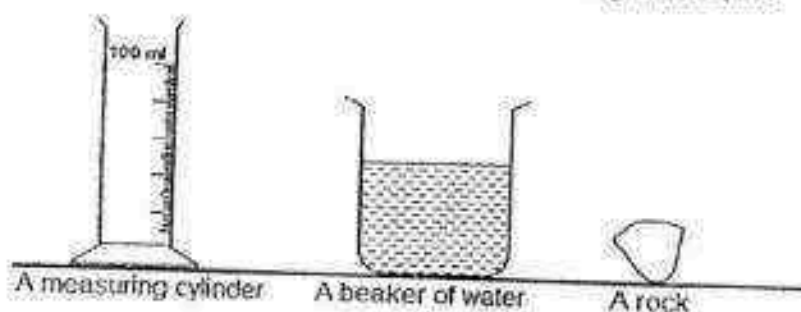
- (b) State a similarity between the two life cycles. (1m)

- (c) State a difference between the two life cycles. (1m)

- (d) Tadpoles go through a few physical changes as they develop into the adult frogs. Name two ways in which the tadpole is different from the adult frog. (Do not compare the size). (2m)

35. Jessica wants to show that a rock is a matter. She decided to find out if the rock has mass and volume.

- (a) To find the volume of the rock, Jessica prepared a measuring cylinder, a beaker of water and the rock. The materials are shown in the diagram below.



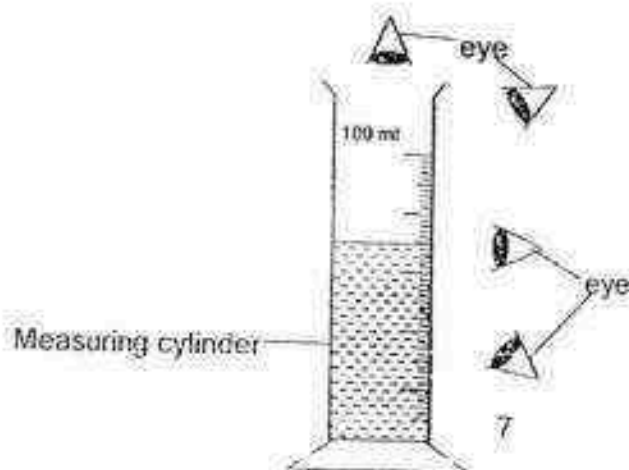
To find the volume of the rock, arrange the following statements in order by indicating 1, 2, 3 and 4 in the table below.

(2m)

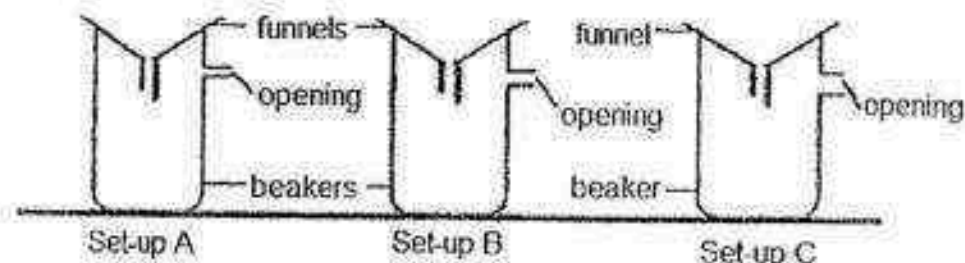
Statements	Steps
Lower the rock gently into the measuring cylinder of water, making sure that the rock is completely underwater.	
Record the volume of water in the measuring cylinder at the beginning.	
Pour some water into the measuring cylinder.	
Record the new volume of water. Then, subtract from it, the volume of water that was in the measuring cylinder at the beginning.	

- (b) Circle the correct position of the eye when reading the volume of water in the measuring cylinder.

(1m)



36. The diagram below shows three set-ups, A, B and C, each with a beaker of similar volume and shape. Each of the beakers had an opening of different size at its side. Susan placed an identical funnel over the mouth of each beaker.



Next, Susan poured 100 ml of water into the funnel and measured the time taken for all the water to flow into the beaker.

She recorded the results in the table below.

Set-up	Size of opening (mm)	Time taken for all the water to flow into the beaker (seconds)
A	3	34
B	5	30
C	8	19

- (a) Complete the table to indicate the different types of variables in the investigation. Use a tick (✓) to indicate your answer. (2m)

Variable	To be changed	To be kept the same	To be measured
Size of beaker			
Size of opening			
Volume of water			
Time taken for water to flow into the beaker			

- (b) In set-up C, all the water took less time to flow into the beaker compared to set-up A. Explain why.

(2m)

37. Put a tick (✓) in the appropriate boxes to indicate if each statement about matter is true or false. (2m)

Statement	True	False
All matter can be seen.		
Air does not have mass.		
All matter cannot be compressed.		
Volume is the amount of space an object occupies.		

38. The diagram below shows a container with a capacity of 400 cm^3 . It contains 100 cm^3 of water. A pump is connected to it and when the plunger is pushed all the way into the pump, it allows 50 cm^3 of air to enter the container.

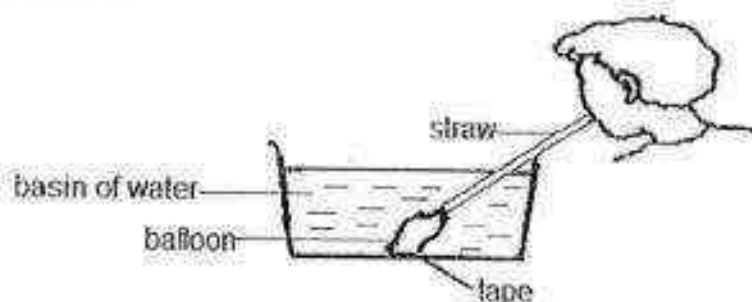


- (a) What is the volume of air in the container before the pump is connected to it? (1m)

- (b) When the pump is connected to the container and the plunger is pushed all the way into the pump, what is the volume of air in the container now? (1m)

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

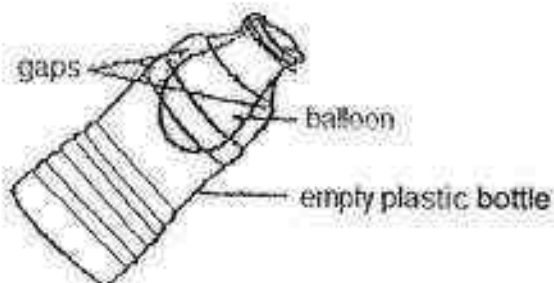
39. Isaac fixed one end of a deflated balloon tightly to a straw using rubber band. He then taped the other end of the balloon to the bottom of a basin which was filled with water. After he had marked the water level in the basin, he blew into the straw, as shown in the diagram below.



- (a) State one observation that Isaac would make about the water level in the basin when air was blown into the straw. (1m)

- (b) Explain your answer. (1m)

Isaac attached another balloon over the mouth of an empty plastic bottle, as shown in the diagram below.



- (c) He tried to blow air into the balloon but realised that it would not inflate at all. Give an explanation for his observation. (1m)

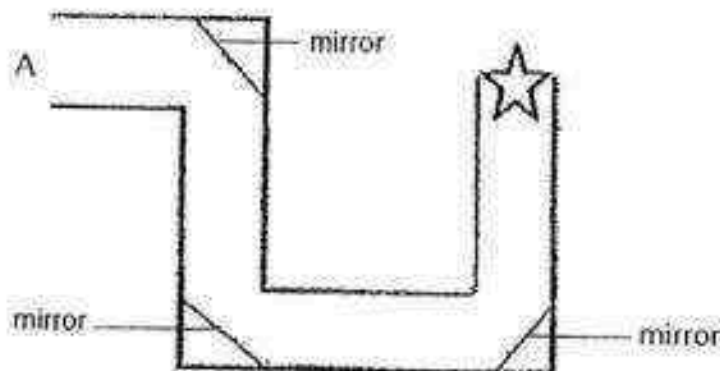
Qn 39(d) continue on page 11

- (d) Without removing the balloon from the mouth of the bottle, state a change that Isaac could make to the bottle so that the balloon would be able to inflate when air was blown into it. (1m)

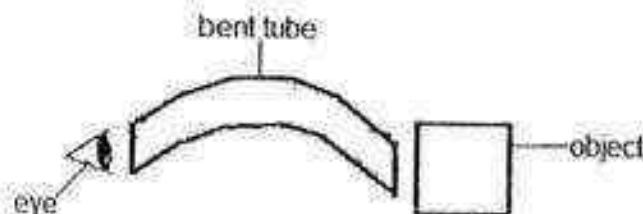
40. The diagram below shows the top view of a corridor. Belle is standing at the position marked A.

With the help of three mirrors, Belle could see the star at the end of the tunnel.

- (a) With a pencil and ruler, draw arrows in the diagram below, to show the path of light that makes it possible for Belle to see the star at the end of the tunnel. (2m)



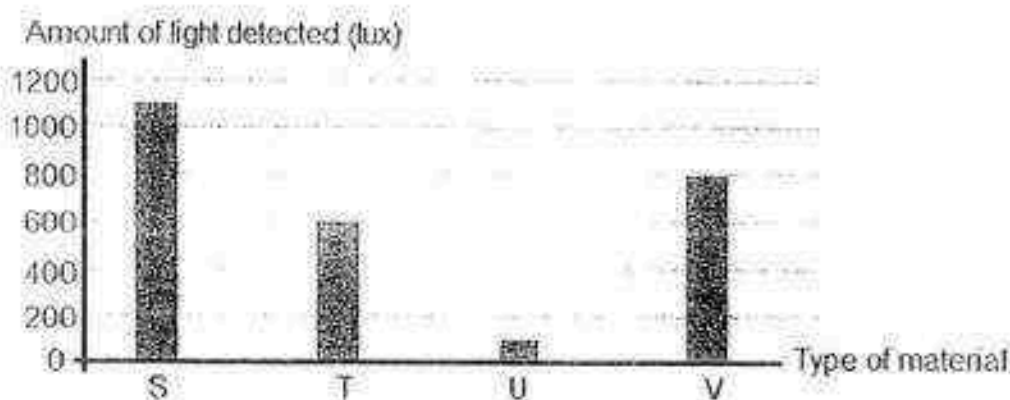
- (b) Belle tried to use a bent tube to look at an object. Would she be able to see the object? Explain your answer. (1m)



41. Clare was given four materials, S, T, U and V to construct a container that traps sunlight for the plants to photosynthesize. A diagram of the container is shown below.



She then conducted an investigation to find out what is the amount of light passing through the material. The results of the investigation was recorded in a graph as shown below.

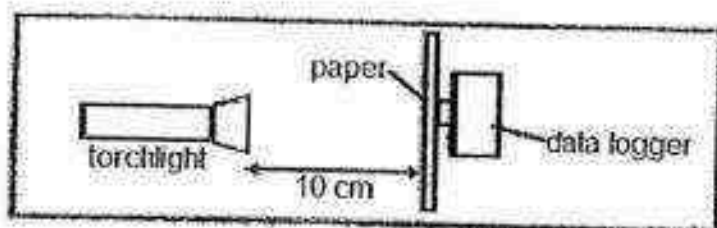


- (a) Which material S, T, U or V should Clare use to build the structure? (1m)

- (b) Give a reason for your answer in (a). (1m)

- (c) Suggest a possible material for your answer in (a). (1m)

42. Julian set up an experiment in the diagram below.



He wanted to find out if thickness of a paper will affect the amount of light passing through it.

Paper	A	B	C	D
Thickness of paper (mm)	1	2	3	4
Amount of light passing through (lux)	200	100	50	?

- (a) Which paper A, B, C or D allows most light to pass through? (1m)

- (b) What happens to the amount of light passing through the paper as the thickness of paper increases? (1m)

- (c) Predict the amount of light passing through Paper D. (1m)

_____ lux

- (d) Explain why the colour of each paper used in the experiment must be the same. (1m)

End of Part II

EXAM PAPER 2010
 LEVEL : PRIMARY 4
 SCHOOL : ROYSTH SCHOOL
 SUBJECT : SCIENCE
 TERM : SA1

BOOKLET A

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10
4	3	3	3	2	1	4	3	3	2
Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20
2	2	4	1	3	4	1	2	4	3
Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28		
4	3	3	1	3	2	1	4		

BOOKLET B

Q29. Insects - C
 Fish - A
 Flowering - B
 Non-flowering - D

Q30a) Part Y

b) Organism Y needs water to survive so it went to part Y which had moist soil.

c)(i) Changed variable: Amount of water in the soil
 (ii) Measured variable: Number of Organism Y

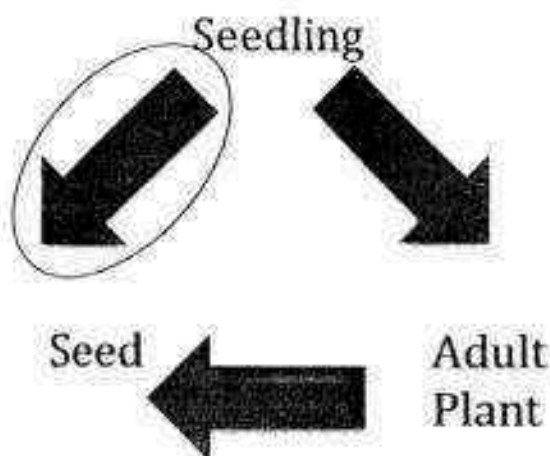
Q31a)(i) Plant A: Reproduce by seeds
 (ii) Plant B: Reproduce by spores

b) No. Bread mould does not make food by itself but plant B makes its own food.

Q32a) DE

b) When the eggs hatch, the larva can feed on leaves for food straight away.

Q33a)



9)

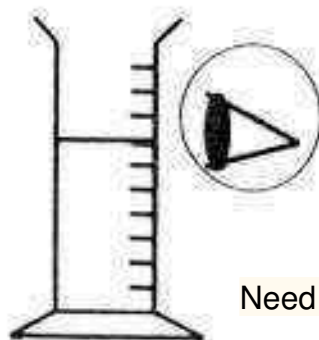
When a seed germinates, the **roots** grow downward first. Then the first leaves appear. The seedling starts to make its own **food**. The seedling gradually grows into a/ an **adult** plant. The adult plant will bear flowers and then **fruits** which contain seeds. These seeds will then continue the **lifecycle**.

Q34a) Living things reproduce.

- b) Both the life cycle of the mosquito and frog start with the egg stage.
- c) The life cycle of mosquitoes has 4 stages but the life cycle of a frog has 3 stages.
- d) Tadpoles have tails but adult frogs do not have tails. Tadpoles have legs but adult frogs have legs.

35a)

Statements	
Lower the rock gently into the measuring cylinder of water, making sure that the rock is completely underwater.	3
Record the volume of water in the measuring cylinder at the beginning.	2
Pour some water into the measuring cylinder.	1
Record the new volume of water. Then, subtract from it, the volume of water that was in the measuring cylinder at the beginning.	4



Q36a) Size of beaker - To be kept the same

Size of opening - To be changed

Volume of water - To be kept the same

Time taken for water to flow into the beaker - To be measured

b) When the opening is bigger, it allows air to escape faster so when this happens, water can occupy space in the beaker in a faster manner.

Q37. All matter can be seen - False

Air does not have mass - False

All matter cannot be compressed - False

Volume is the amount of space an object occupies - True

Q38a) 300cm³

b) 300cm³

c) Even if there is no more space in the container, air can still be compressed so it can occupy any amount of space. And if there is enough space, air will expand.

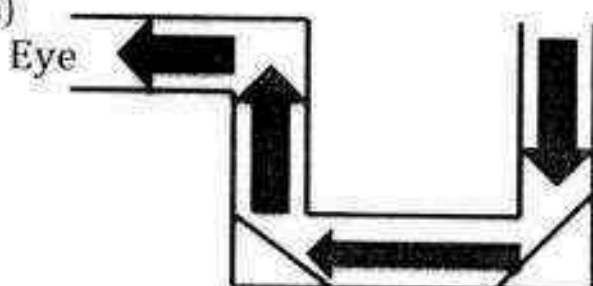
Q39a) The water level would rise.

b) Air occupies space so air would occupy some space and hence, the water level will decrease.

c) Air is taking up space in the bottle.

d) He could add holes in the bottle.

Q40a)



b) No, because light travels in straight lines so if the tube is bent, the eye

would not be able to see the object.

Q41a) S.

b) S allows most light to pass through.

c) Clear plastic.

Q42a) A.

b) As the thickness of the paper increases, the amount of light passing through decreases.

c) 0 lux.

d) So that it would be a fair test and the results will be reliable.

Anglo-Chinese School (Junior)



SEMESTRAL ASSESSMENT 1 (2016)

PRIMARY 4

SCIENCE

BOOKLET A

Tuesday

10 MAY 2016

1 hour 30 minutes

Name: _____ () Class: 4.()

INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 25 questions in this booklet.
- 4 Answer ALL questions.
- 5 Shade your answers in the Optical Answer Sheet (OAS) provided.

This question paper consists of 15 printed pages (inclusive of cover page).

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. The things below are classified into 2 different groups.

Group A	Group B
Fan	Cheetah
Plate	Grasshopper
Bicycle	Orchid Plant

Which of the following belongs to Group B?

- (1) Nail
 - (2) Feather
 - (3) Mushroom
 - (4) Rubber Duck
2. Which of the following statements about plants is true?
- (1) All plants can be eaten.
 - (2) All plants can reproduce.
 - (3) Only plants with fruit can make food for the plant.
 - (4) Flowering plants have flowers throughout the entire year.
3. Which of the following characteristics do most mammals have in common?
- A They can fly.
 - B They have hair.
 - C They give birth to young.
 - D They produce milk for their young to feed on.
- (1) B only
 - (2) A and D only
 - (3) B, C and D only
 - (4) A, B, C and D

4. Roshan conducted an experiment to find out if moisture affects the growth of bread mould. The table below shows the variables in Roshan's experiment.

Variable	Set-up J	Set-up K
Type of bread	Wholemeal bread	White bread
Amount of water sprinkled on bread	0 ml	5 ml
Location where set-up is placed	Dark cupboard	Dark cupboard
Type of plastic bag	Transparent	Transparent

His father told him that his experiment was unfair.

Which of the following best explains why Roshan's experiment is unfair?

- (1) The location was different.
- (2) The type of bread used was different.
- (3) The type of plastic bag used was the same.
- (4) The amount of water sprinkled on bread was different.

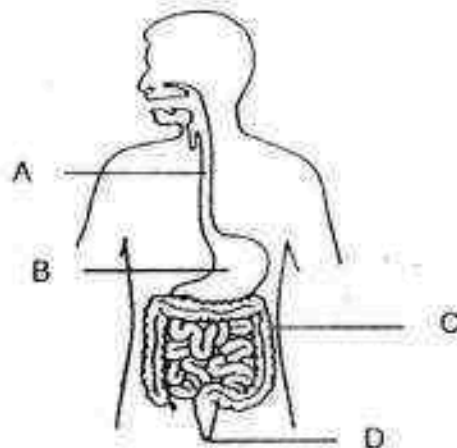
5. Study the table below carefully.

Object	Properties		
	Is it flexible?	Does it absorb water?	Does it break when dropped?
P	No	Yes	Yes
Q	Yes	No	No
R	No	No	Yes
S	Yes	Yes	No

Based on the information above, which object, P, Q, R, or S is most probably a raincoat?

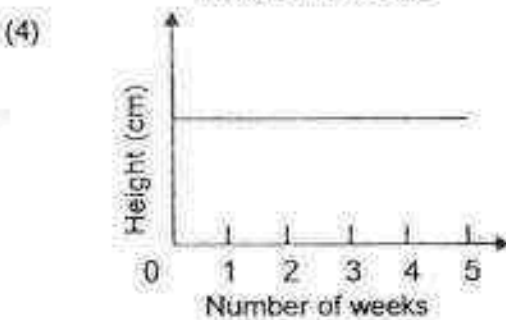
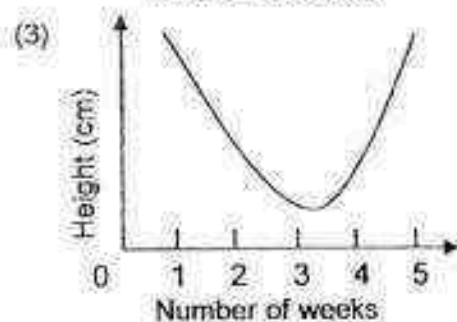
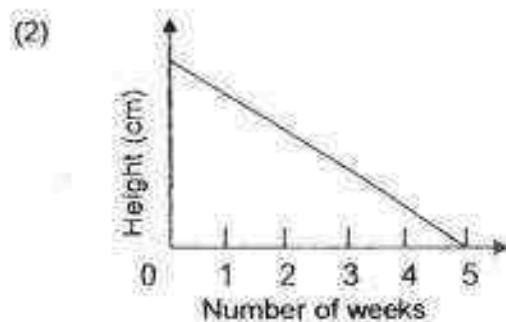
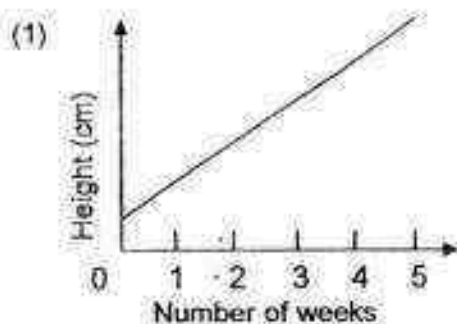
- (1) P
- (2) Q
- (3) R
- (4) S

6. The picture below shows the digestive system of the human body.

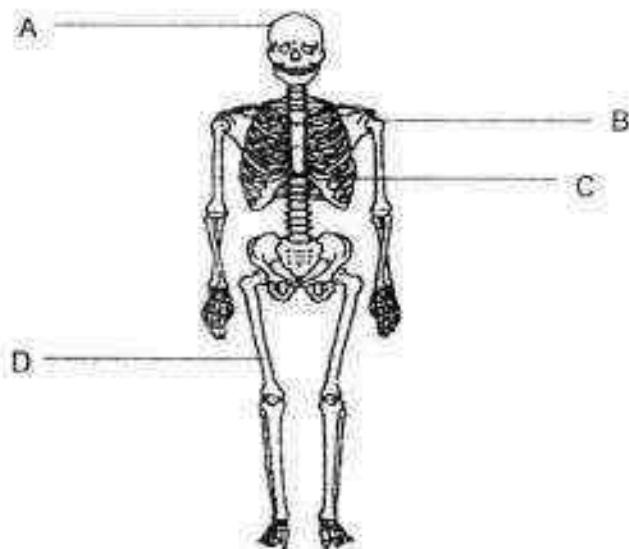


The part marked _____ removes water from the undigested food.

- (1) A
(2) B
(3) C
(4) D
7. Which of the following graphs shows correctly the change in the height of a plant as the seed germinates and becomes a plant over 5 weeks?



8. Observe the diagram of the human skeletal system below.



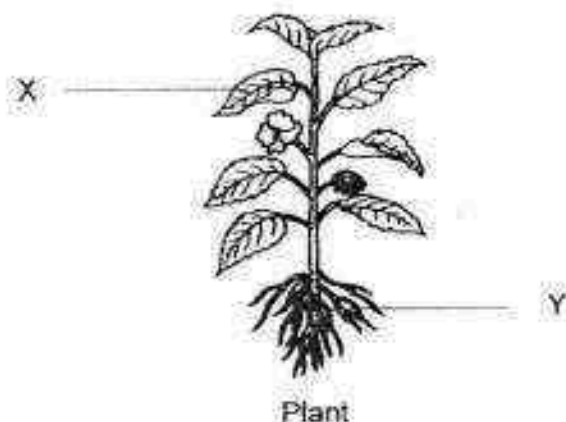
Which parts of the skeletal system help to protect the body's organs?

- (1) A and C only
 - (2) A and D only
 - (3) B, C and D only
 - (4) A, B, C and D
9. Which of the following statements about the stomach are true?

- A The stomach produces digestive juices.
- B The stomach churns and breaks down food.
- C Food is completely digested in the stomach.
- D The stomach lies between the gullet and the small intestine.

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

10. Observe the plant below carefully and identify the functions of the parts labelled X and Y.

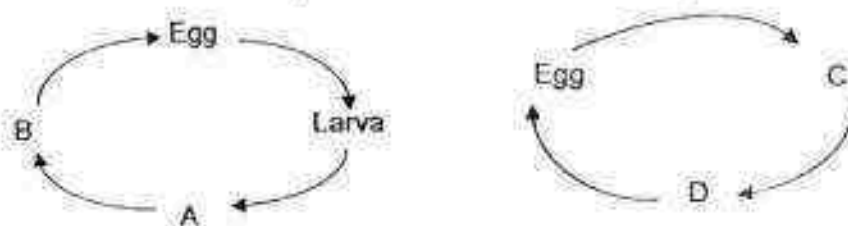


	X	Y
(1)	Makes food for the plant	Supports the branches and leaves
(2)	Makes food for the plant	Absorbs water and nutrients from the soil
(3)	Supports the branches and leaves	Absorbs water and nutrients from the soil
(4)	Absorbs water and nutrients from the soil	Makes food for the plant

11. Which one of the following parts of the digestive system does not match its function as shown in the table below?

	Parts	Function
(1)	Gullet	Moves food down into the stomach.
(2)	Mouth	Breaks down food into smaller pieces.
(3)	Stomach	Mixes food with digestive juices.
(4)	Large Intestine	Absorbs digested food into the blood.

12. The diagrams below show the life cycle of two different kinds of organisms.



Which of the following correctly identifies A, B, C and D?

	A	B	C	D
(1)	Pupa	Adult	Nymph	Adult
(2)	Nymph	Young	Larva	Pupa
(3)	Nymph	Young	Nymph	Adult
(4)	Pupa	Adult	Larva	Pupa

13. Samy did a study on two animals, X and Y. He recorded his observations in the table below. A tick (✓) indicates that the characteristic is observed for the animal.

Observation	Animal X	Animal Y
Eggs are laid in water.	✓	
It has three body parts.		✓
Animal undergoes moulting.		✓

Which one of the following animals could Animals X and Y be?

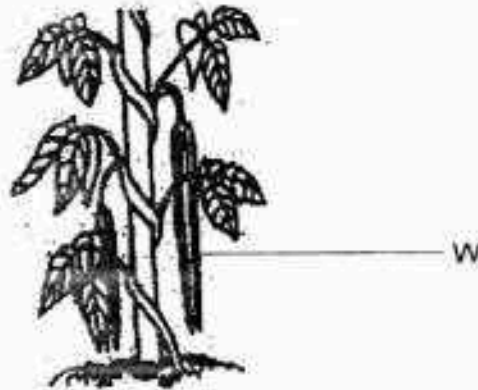
	Animal X	Animal Y
(1)	Cockroach	Chicken
(2)	Frog	Cockroach
(3)	Mosquito	Frog
(4)	Chicken	Beetle

14. Which of the following are characteristics of the mealworm beetle at its larva stage?

- A It eats a lot.
- B It does not move.
- C It looks like the adult.
- D It moults several times.

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

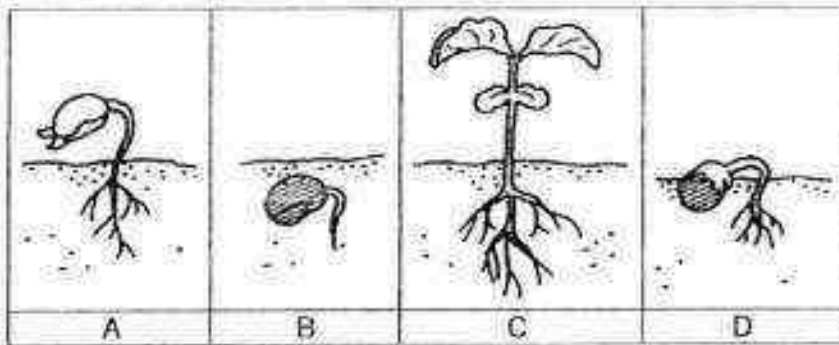
15. The diagram below shows a plant grown in a garden. Part W is a fruit with seeds.



Which one of the following statements describes the function of seeds in part W correctly?

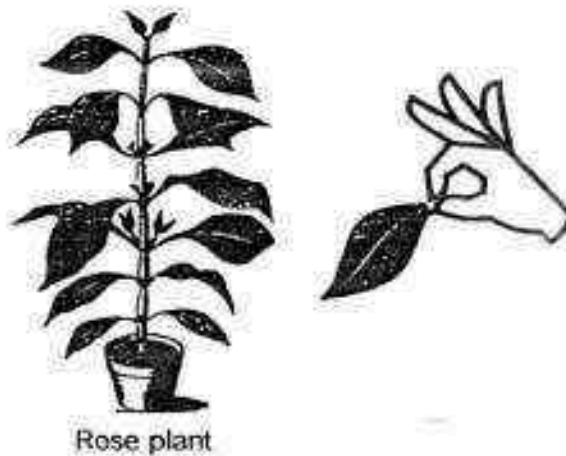
- (1) To grow into new plants.
- (2) To make food for the plant.
- (3) To absorb water and minerals.
- (4) To hold the plant upright and receive sunlight.

16. Study the diagram below carefully.



What is the correct order of the development of a seed to a bean plant?

- (1) D → B → A → C
 - (2) D → C → B → A
 - (3) B → D → A → C
 - (4) B → A → D → C
17. Jenny plucked a leaf from a rose plant that she grew in her garden.



Which of the following best describes what will happen to the plant after two weeks due to Jenny's action?

- (1) It will die.
- (2) It will turn yellow.
- (3) It will grow sideways.
- (4) It will continue to grow.

18. Susan wanted to find out if the type of soil will affect the growth of an orchid plant. She placed 4 identical orchid plants each into a pot and placed them in a field under different conditions as shown in the table below.

Set-up	Water (ml)	Type of soil
M	50	Clayey
N	30	Clayey
O	50	Sandy
P	30	Sandy

Which 2 set-ups should she use to test the aim of her experiment?

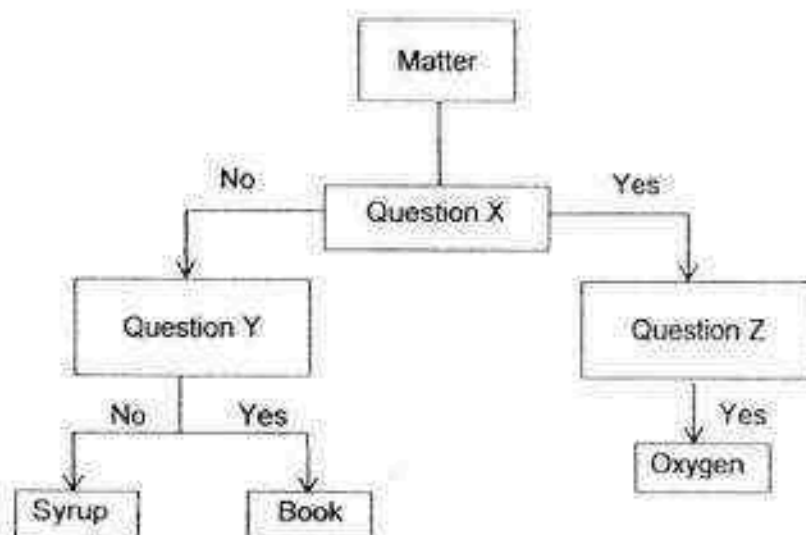
- (1) Set-ups M and P
 - (2) Set-ups M and O
 - (3) Set-ups N and O
 - (4) Set-ups N and M
19. Roy bought a gym ball and pumped air into it until it is fully round. Then, he did many exercises by sitting on different parts of the gym ball as shown below.



Which property of air best explains why Roy can exercise on the gym ball without bursting it?

- (1) Air can be compressed.
- (2) Air has a definite shape.
- (3) Air does not have mass.
- (4) Air has a definite volume.

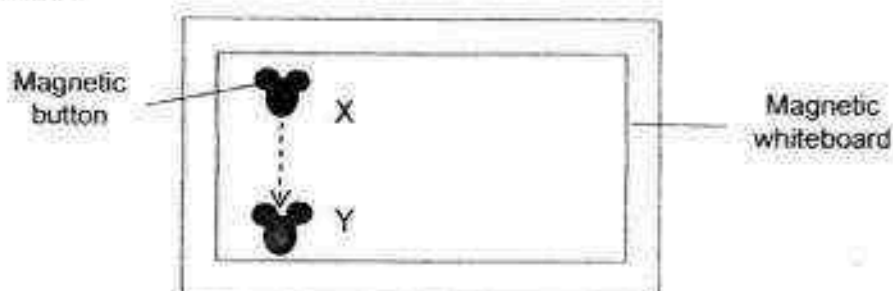
20. The flowchart below shows the properties of matter.



What are the most suitable Questions for X, Y and Z?

	Question X	Question Y	Question Z
(1)	Does it have mass?	Can it be compressed?	Does it have a definite shape?
(2)	Can it be compressed?	Does it have mass?	Does it have a definite shape?
(3)	Can it be compressed?	Does it have a definite shape?	Does it have mass?
(4)	Does it have a definite shape?	Can it be compressed?	Does it have mass?

21. Mrs Lim placed a magnetic button at Point X of the magnetic whiteboard. However, she noticed that the magnetic button slid downwards and came to a stop at Point Y.



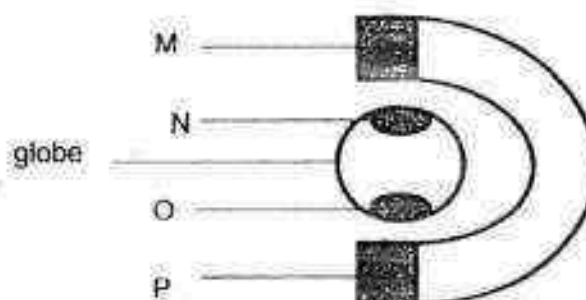
Which of the following explains why the magnetic button slid downwards?

- (1) It can move by itself.
- (2) It has weak magnetic strength.
- (3) It became lighter after some time.
- (4) It was repelled by the whiteboard.

22. Lily wanted to get a floating globe as a birthday gift for her best friend. The globe remains floating at the center at all times as shown in Figure A.



Figure A

Figure B
(Side view)

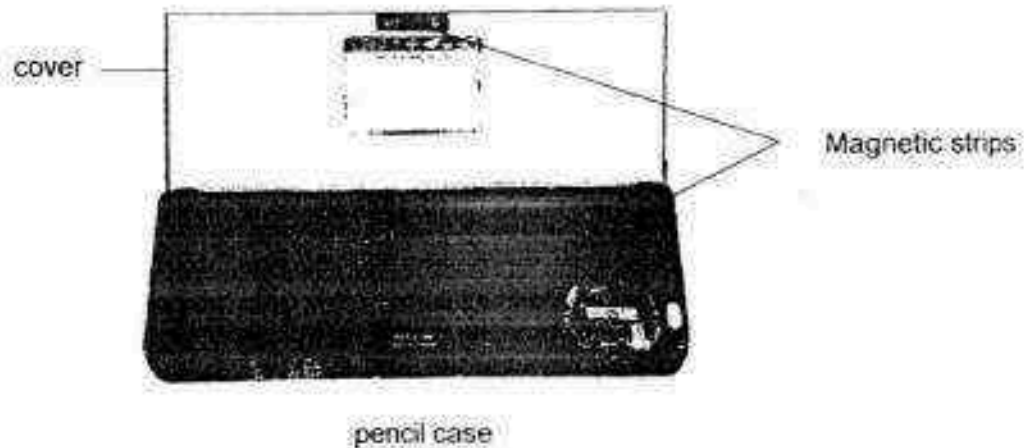
She drew a simple diagram of the floating globe as shown in figure B and labelled the parts accordingly. Lily's friends Abby, Ben, Carl and Dan wrote some comments about the floating globe based on figure B.

Name	Comments
Abby	Parts N and O are made of plastic.
Ben	Parts M, N, O and P are parts of a magnet.
Carl	Parts M and P are unlike poles of a magnet.
Dan	Parts M and P are made of non-magnetic material.

Which of the above comments is/are incorrect?

- (1) Abby only
- (2) Abby and Dan only
- (3) Ben and Carl only
- (4) Ben and Dan only

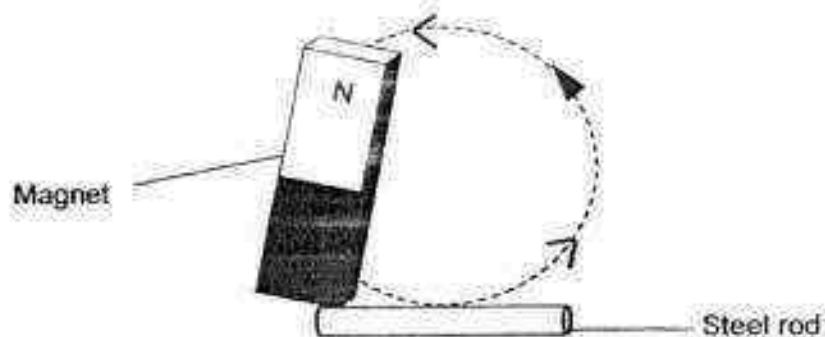
23. Mrs Li bought a pencil case for her son, Daniel. It contains magnetic strips on its cover and sides as shown in the diagram below. These magnetic strips ensure that the stationery do not drop out when the cover is closed.



After four months, Daniel noticed that the cover can no longer be closed. What is the likely reason for this?

- (1) The magnetic strips had shrunk in size.
- (2) The magnetic strips were sprayed with some oil.
- (3) The pencil case had been dropped several times.
- (4) The pencil case had been submerged once into a sink of water.

- 24 Meili conducted an experiment below to find out if the number of strokes with a magnet on a steel rod will affect the number of iron nails attracted to the steel rod. She recorded her findings in the table below.

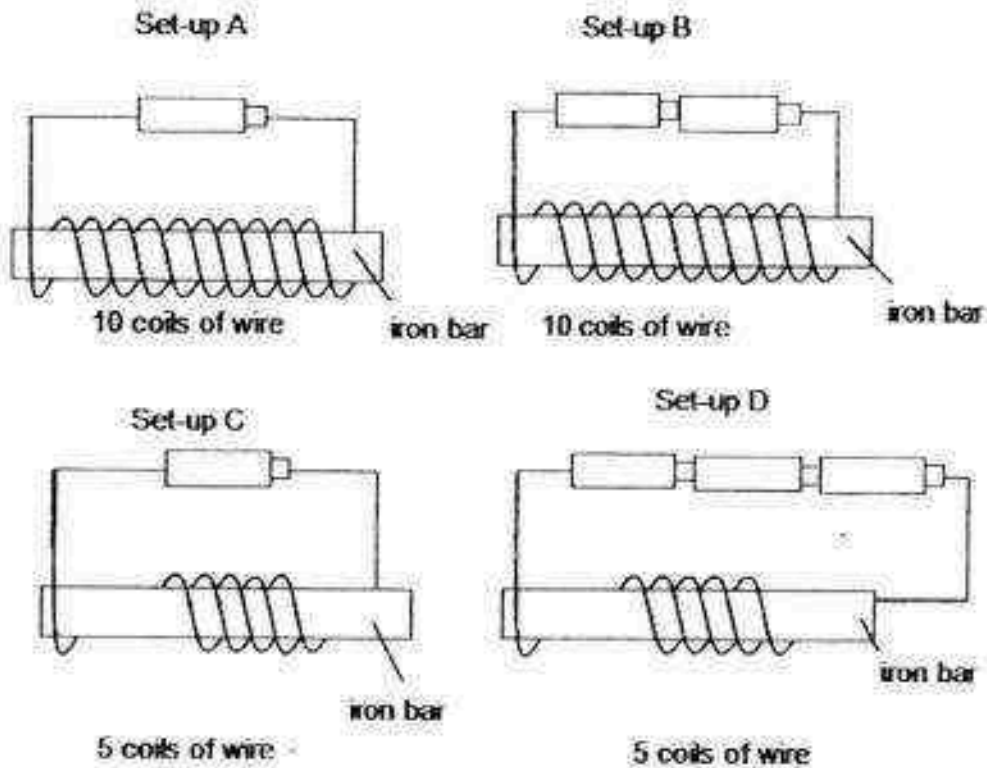


Number of strokes	Number of iron nails attracted to temporary magnet
12	3
17	5
24	9
32	14

Based on her findings above, what is the relationship between the number of strokes with a magnet on the steel rod and the strength of the temporary magnet?

- (1) The number of strokes with a magnet on the steel rod does not affect the strength of the ~~electromagnet~~ *temporary magnet*.
- (2) The weaker the temporary magnet, the greater the number of strokes with a magnet on the steel rod.
- (3) As the number of strokes with a magnet on the steel rod decreases, the strength of the temporary magnet increases.
- (4) As the number of strokes with a magnet on the steel rod increases, the strength of the temporary magnet increases.

- 25 Siti conducted an experiment as shown below using four set-ups, A, B, C and D. She used the same type of batteries, identical wires and identical iron bars.



Siti wants to test whether the strength of an electromagnet is determined by the number of coils of wire around the iron bar. Which 2 set-ups should Siti use to conduct a fair experiment?

- (1) Set-ups A and B
- (2) Set-ups A and C
- (3) Set-ups B and C
- (4) Set-ups C and D

End of Booklet A

Anglo-Chinese School (Junior)



SEMESTRAL ASSESSMENT 1 (2016)

PRIMARY 4

SCIENCE

BOOKLET B

Tuesday

10 MAY 2016

1 hour 30 minutes

Name: _____ () Class: 4.() Parent's Signature: _____

INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 14 questions in this booklet.
- 4 Answer ALL questions.
- 5 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).

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.

26. David did a study on two animals, X and Y. He recorded his observations in the table below.

Observation	Animal X	Animal Y
Number of legs	6	0
Movement	Fly and crawl	Swim only
Method of reproduction	Lay eggs	Give birth to young

- (a) Which group of animals do animals X and Y belong to? [1]

Animal X - _____

Animal Y - _____

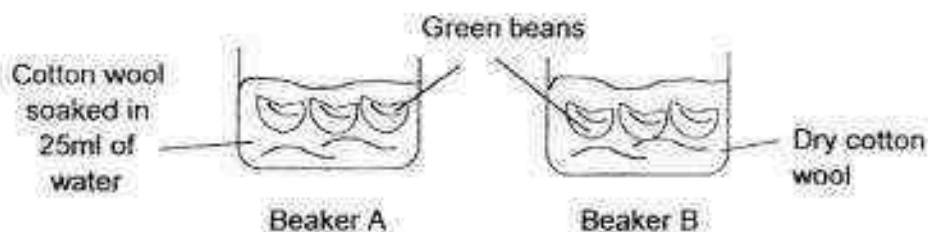
- (b) Give 2 examples of Animal Y. [1]

- (c) Draw the life cycle of Animal X in the box below. [1]

(Go on to the next page)

SCORE	3
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27. Josh wanted to grow some green beans in 2 beakers. He placed 3 identical green beans in each beaker, A and B. He poured 25 ml of water in Beaker A only. He measured the growth of the plants over a month and recorded his observations in the table below.



- (a) Write the letters A and B to match the beakers to the height of the bean plant a month later. [1]

Height of green bean plant (cm)	Beaker
0 cm	
5 cm	

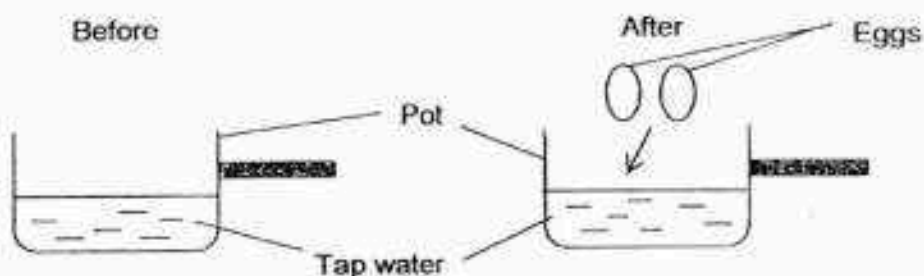
- (b) What is the aim of Josh's experiment? [1]

- (c) State all the conditions needed for germination to take place. [1]

(Go on to the next page)

SCORE	
	3

28. Zoe poured 900 ml of tap water into a pot. After that, she placed 2 eggs into the pot.



- (a) What happened to the water level in the pot right after the two eggs were placed inside the pot? Explain why. [2]

- (b) Draw the water level on figure B if the 900 ml of tap water in the pot shown in figure A is poured into a larger pot as shown in figure B. [1]



Figure A

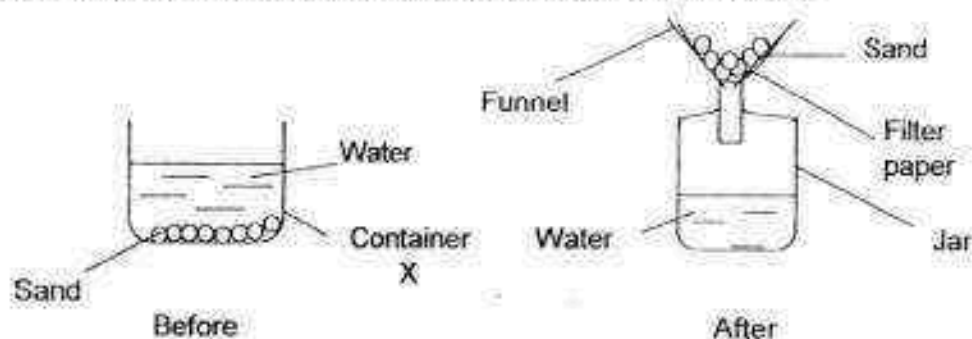


Figure B

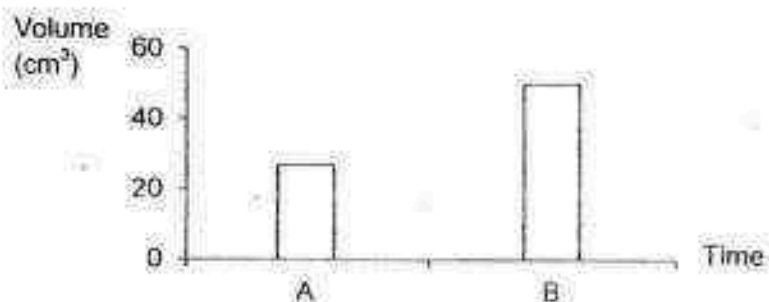
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SCORE	3
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29. Judy scooped some water and sand from the beach and measured its volume before placing them in Container X as shown in the diagram below. She poured both the sand and water into a funnel lined with filter paper. Some sand particles were left on the filter paper as she poured the contents into a jar.



She measured the volume of the contents inside the jar before pouring it back into Container X. She drew a bar graph to represent the volume of contents in Container X before and after filtering.



- (a) Write the letters A and B in the box below to match the bar graphs to show the correct volume of water before and after filtering was done. [1]

Contents in Container X	Bar Graph
Before filtering	
After filtering	

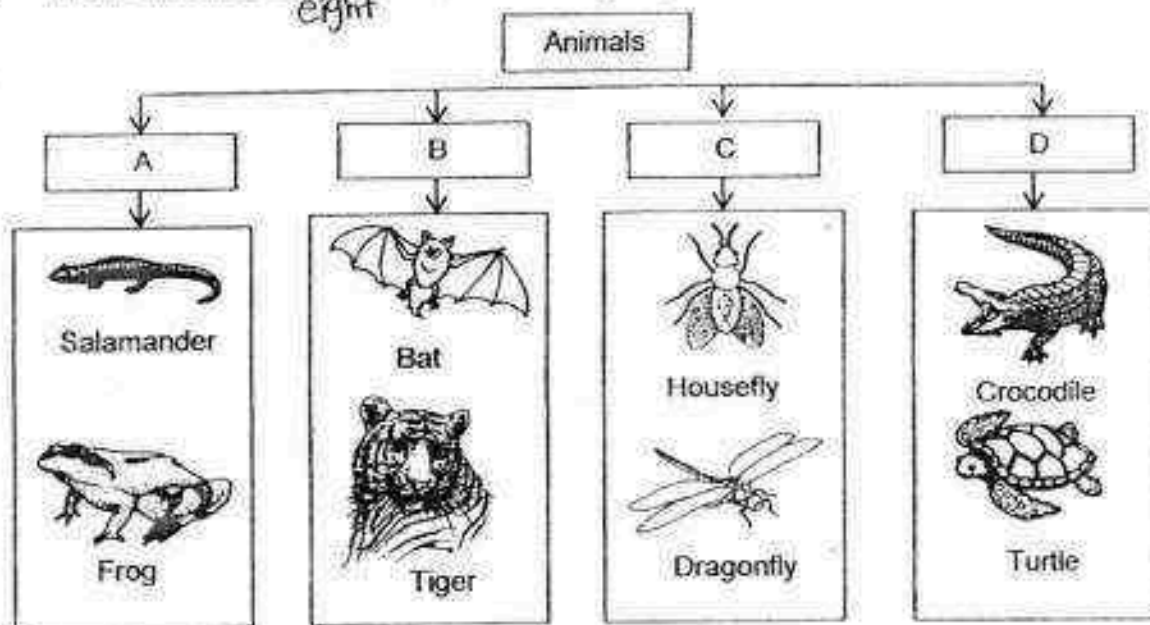
- (b) Judy made some statements on matter. She recorded her statements in the table below. Fill in the box with 'True' or 'False' accordingly. [2]

Statements	True or False
The greater the mass of an object, the bigger the object is.	
The greater the mass of an object, the more matter it contains.	
The mass of an object does not affect the amount of space it occupies.	
The shape of an object affects its mass.	

(Go on to the next page)

SCORE	
	3

30. Lucas classified the ~~six~~ ^{eight} animals below into groups A, B, C and D.



- (a) Give suitable headings for each group.

[2]

A: _____

B: _____

C: _____

D: _____

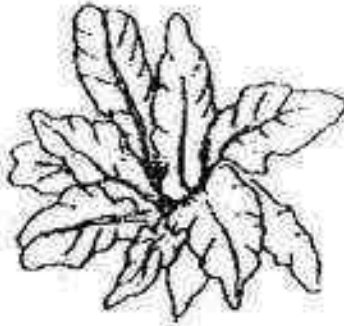
- (b) A chicken does not belong to groups A, B, C or D. Which group of animals does it belong to? State a characteristic of the chicken that is not shared by any of the animals in groups A, B, C and D.

[1]

(Go on to the next page)

SCORE	3
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31. Ali observed a mushroom and a Bird's Nest Fern growing in the Eco-garden.



Bird's Nest Fern

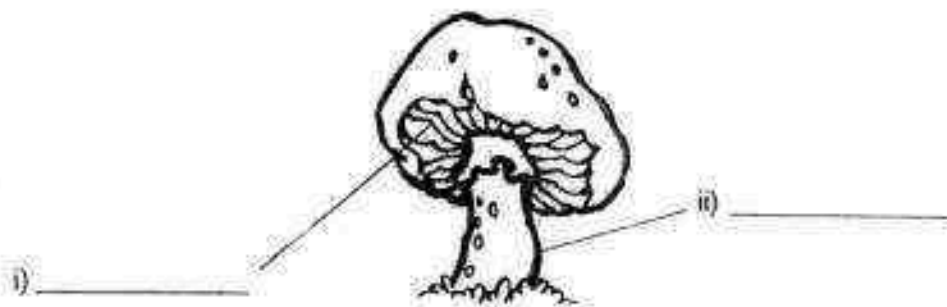


Mushroom

- (a) Ali said that the mushroom and Bird's Nest Fern are plants. Do you agree with Ali? Explain your answer. [1]

- (b) State one similarity between the mushroom and Bird's Nest Fern. [1]

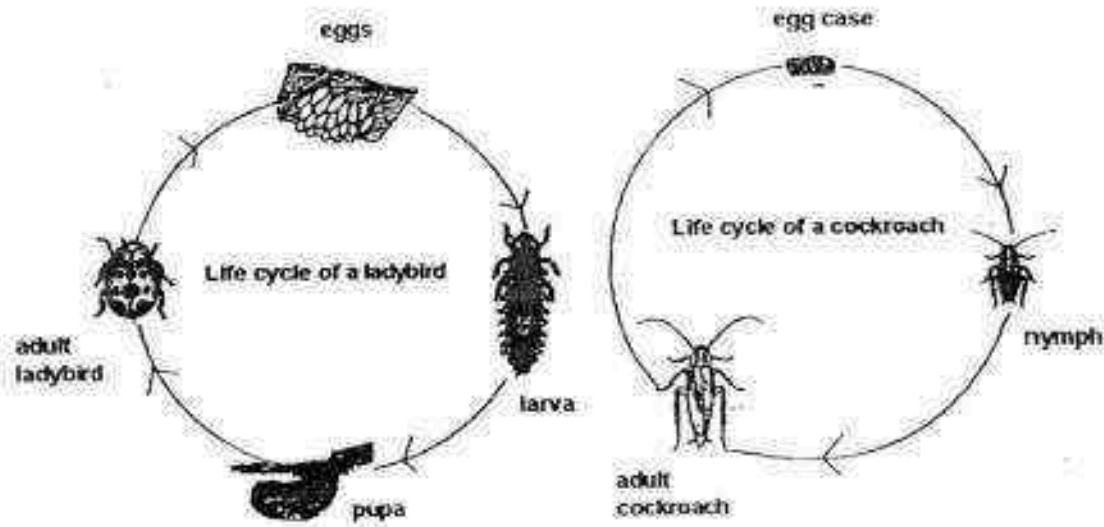
- (c) Label the parts of the mushroom. [1]



(Go on to the next page)

SCORE	
	3

32. The diagram below shows the life cycles of a ladybird and a cockroach.



- (a) How is the life cycle of a ladybird similar to that of a cockroach? [1]

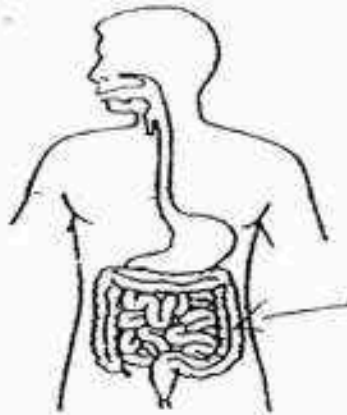
- (b) How is the life cycle of a ladybird different from that of a cockroach? [1]

- (c) Name another insect that has a similar life cycle as the ladybird. [1]

(Go on to the next page)

SCORE	3
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33. The diagram below shows parts of the digestive system.

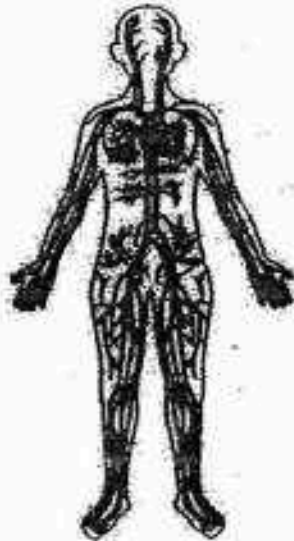


- (a) Draw an arrow and label the part of the digestive system where absorption of water from the undigested food takes place. (1)
- (b) Name three parts of the digestive system where digestive juices are produced. (1)

(Go on to the next page)

SCORE	
	2

34. The diagram below shows an organ system.



- (a) Name the organ system. [1]

- (b) What is the function of this organ system? [1]

- (c) Name a substance in the blood that is carried away from different parts of our body. [1]

(Go on to the next page)

SCORE	
	3

35. The diagrams below show a mangrove plant and a sweet potato plant.



Mangrove Plant



Sweet Potato Plant

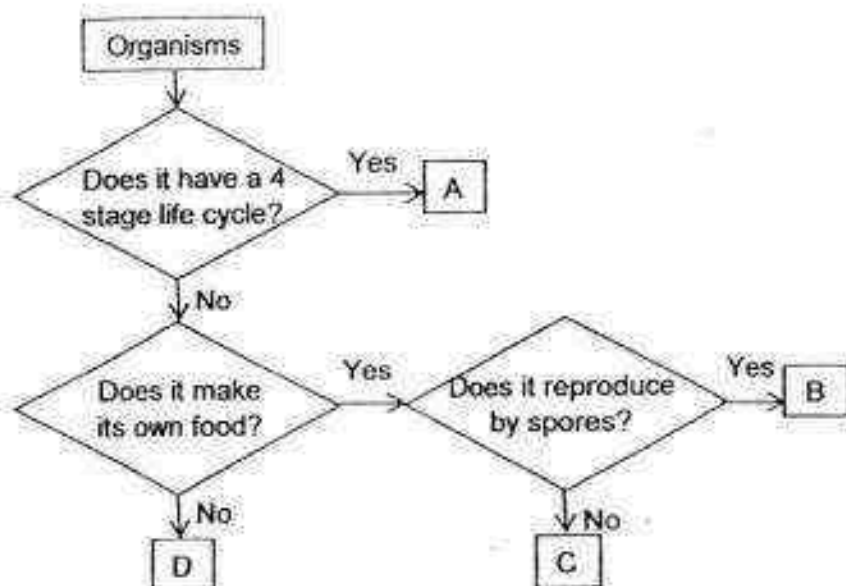
- (a) State a difference between the roots of a mangrove plant and a sweet potato plant based on the observation of the diagrams above. [1]

- (b) State two reasons why roots are important to both plants. [2]

(Go on to the next page)

SCORE	
	3

36. Study the flowchart carefully.



- (a) State all the characteristics of organism D.

[1]

- (b) Based on the characteristics in the flowchart, state one similarity and one difference between organisms B and D.

[2]

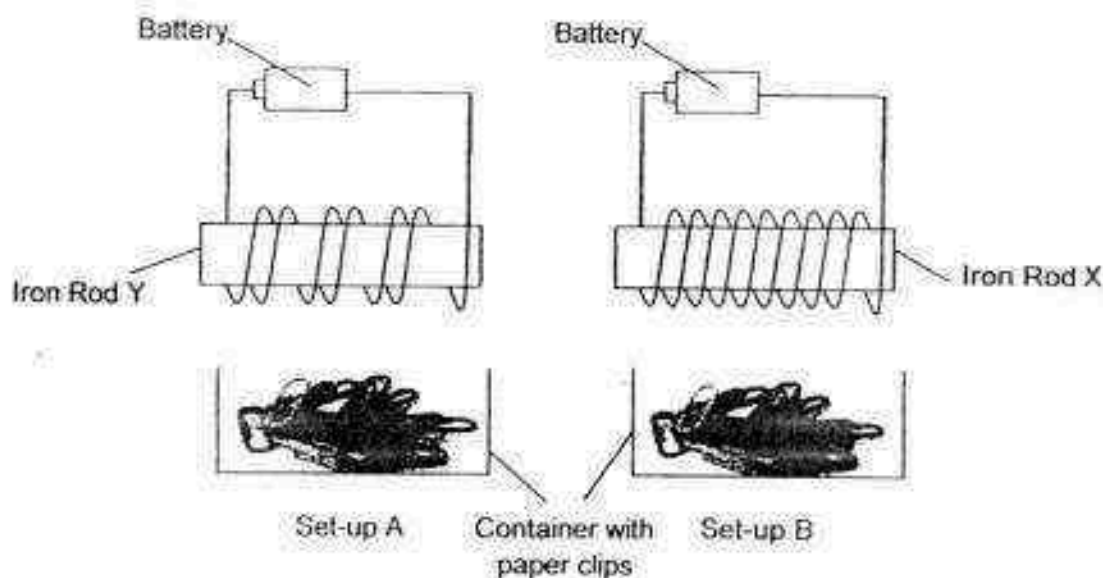
Similarity:

Difference:

(Go on to the next page)

SCORE	
	3

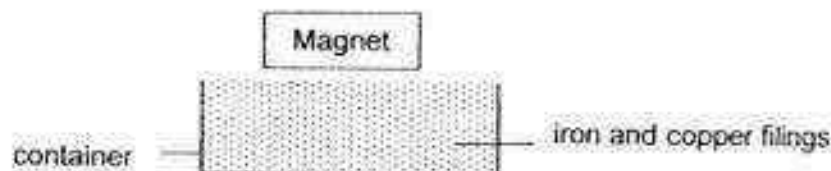
37. John conducted an experiment using two set-ups, A and B. He used identical batteries and identical iron rods. He placed an equal number of metal paper clips in each tray.



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

- (b) State another way to increase the magnetic strength of the electromagnet. [1]

- (c) John mixed 200g of iron filings and 200g of copper filings in a tray. He brought a magnet close to the tray.

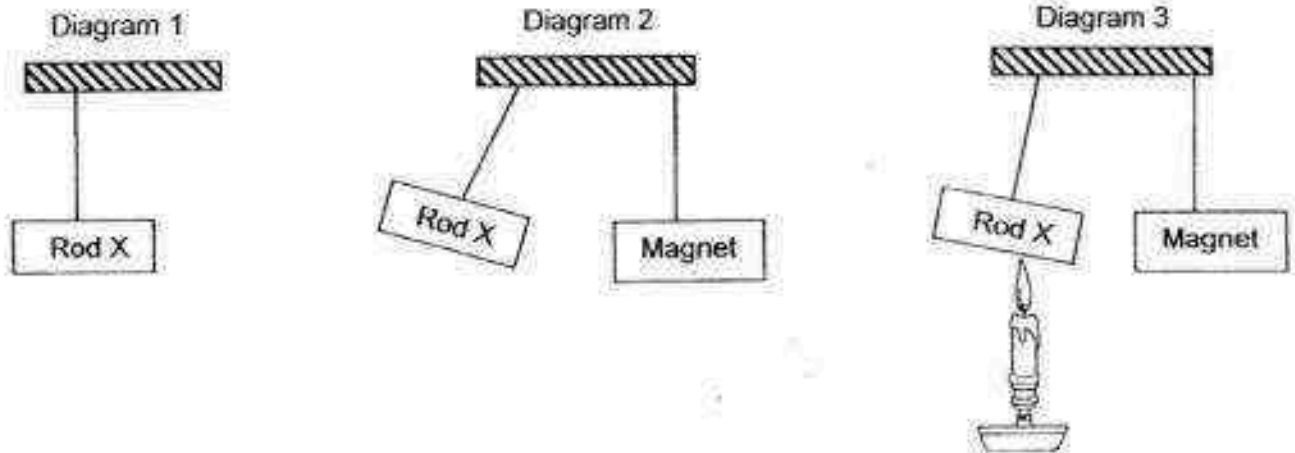


- What will he observe about the iron and copper filings? Explain why. [1]

(Go on to the next page)

SCORE	
	3

38. John ties a string to rod X and hangs it freely as shown in diagram 1. He hangs a magnet near rod X and rod X moves away from the magnet as shown in diagram 2. He then places a candle flame at one end of rod X. After a while, rod X starts to move towards the magnet as shown in diagram 3.



- (a) What is rod X made of? [1]

- (b) Explain why rod X moves away from the magnet in diagram 2 and then moves towards the magnet in diagram 3. [1]

(Go on to the next page)

SCORE	
	2

39. Jack sets up the experiment as shown below. He moves Magnet A slowly towards a paper clip placed on a wooden ruler until the magnet attracts it from a distance, d .



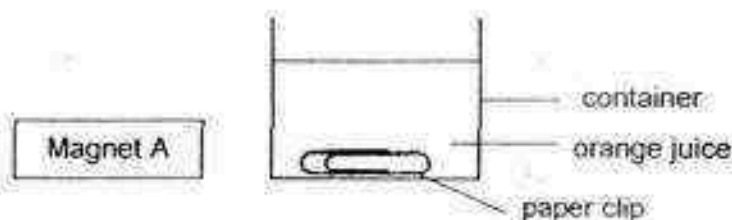
Jack repeats the experiment with three other magnets, B, C and D, and records his observations as shown below.

	Distance d (cm)		
	First try	Second try	Average
Magnet A	2	4	3
Magnet B	1	3	2
Magnet C	1	1	1
Magnet D	2	2	2

- (a) Which magnet is the weakest? Explain your answer. [1]

- (b) Name a variable that must be kept the same to ensure this is a fair test. [1]

- (c) Jack accidentally drops the paper clip into a container of orange juice.



Given Magnet A, describe how he could remove the paper clip without pouring away the orange juice or putting his hands in the container. [1]

End of Booklet B

SCORE	3
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EXAM PAPER 2016
 LEVEL : PRIMARY 4
 SCHOOL : ANGLO CHINESE SCHOOL
 SUBJECT : SCIENCE
 TERM : SA1 (10-MAY-2016)

Q1	Q2	Q3
3	2	3
Q4	Q5	Q6
2	2	3
Q7	Q8	Q9
1	1	3
Q10	Q11	Q12
2	4	1
Q13	Q14	Q15
2	1	1
Q16	Q17	Q18
3	4	2
Q19	Q20	Q21
1	3	2
Q22	Q23	Q24
2	3	4
Q25		
2		

26. a) Animal X- Insect

Animal Y- Fish

b) Guppy, Molly

c)



27. a)

Height of green bean plant (cm)	Beaker
0 cm	B
5 cm	A

b) It was to see if seeds need water to germinate.

c) Air, water, warmth.

28. a) The water level will rise. Eggs is matter and occupies space, when the eggs are placed into the water, it will push the water level higher.



29. a)

Contents in Container X	Bar Graph
Before filtering	B
After filtering	A

b)

Statements	True or False
The greater the mass of an object, the bigger the object is.	False
The greater the mass of an object, the more matter it contains.	True
The mass of an object does not affect the amount of space it occupies.	True
The shape of an object affects its mass.	False

30. a) A: Amphibian

B: mammal

C: Insect

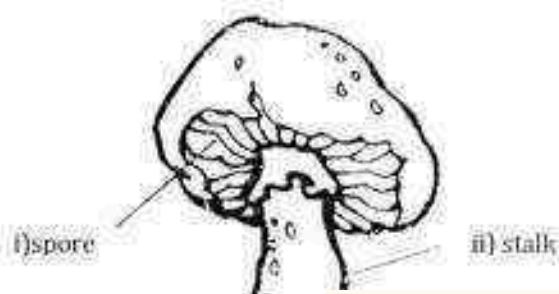
D: reptile

b) Bird. It has feathers.

31. a) No. Mushroom does not make its own food but plants do.

b) They reproduce by spores.

c)

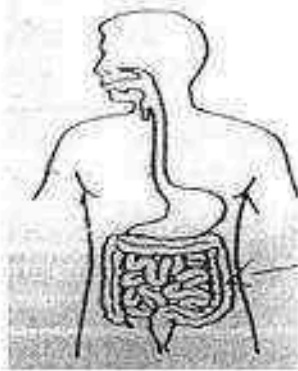


32. a) Both young develop from eggs.

b) The ladybird has four stages but the cockroach has 3 stages in their life cycle.

c) Mosquito

33. a)



large
intestine

b) Mouth, stomach and small intestine.

34. a) circulatory system

b) It is to transport oxygen, digested food, water and blood to all parts of our body.

c) carbon dioxide

35. a) The mangrove's roots are above ground while the roots of a sweet potato plant are underground.

b) The roots anchor the plant firmly to the ground and absorb water and minerals from the ground.

36. a) It does not have a 4 stage life cycle and cannot make its own food.

b) Similarity: They do not have a 4-stage life cycle.

Difference: D does not make its own food but B does.

37. a) It was to see if the number of coils around the iron rod affects the number of metal paper clips attracted.

b) put another battery.

c) The iron fillings will get attracted to the magnet but the copper fillings won't. As iron is a magnetic material, it will get attracted to the magnet but copper is a non-magnetic material and will not be attracted.

38. a) Rod X is made of nickel.

b) The magnet and rod X are repelling each other in diagram 2 - But in diagram 3, rod X lost some of its magnetism and cannot repel so much as it is heated, like poles repel.

39

a) $\angle C$, the distance is constantly the shortest.

b) The type of paper clip.

c) Attract the paper clip via the outside of the container using the magnet and remove it.

THE END



AI TONG SCHOOL

2016 MID-YEAR EXAMINATION PRIMARY FOUR SCIENCE

DURATION: 1 hour 45 minutes

DATE: 10 May 2016

INSTRUCTIONS

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

Name : _____ ()

Class : Primary 4 _____

Parent's Signature : _____

Date : _____

Booklet A	56
Booklet B	44
Total	100

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 and shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which of the following statements are true about bacteria?

- A Bacteria are harmful to us.
- B Bacteria are very tiny living things.
- C Bacteria can make their own food.
- D Bacteria can only be seen using a microscope.

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

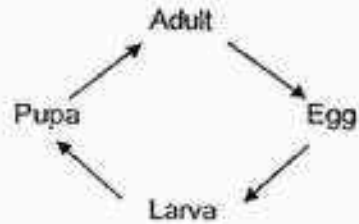
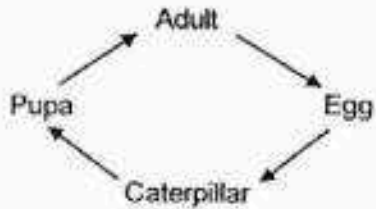
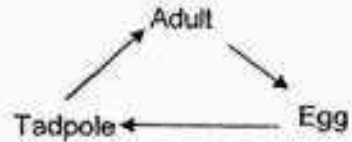
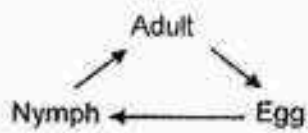
2. Look at the classification table carefully.

Living Things			
Animals		Plants	
Q	R	S	T
Elephant	Grasshopper	Moss	Papaya Plant

Q, R, S and T are headings for each group. What can Q, R, S and T be?

	Q	R	S	T
(1)	Live on land	Live in water	Fungi	Flowering Plant
(2)	Mammal	Insect	Non-flowering plant	Flowering plant
(3)	Has hair	Has six legs	Cannot bear flowers	Can bear flowers
(4)	Has no wings	Has wings	Cannot make food	Can make food

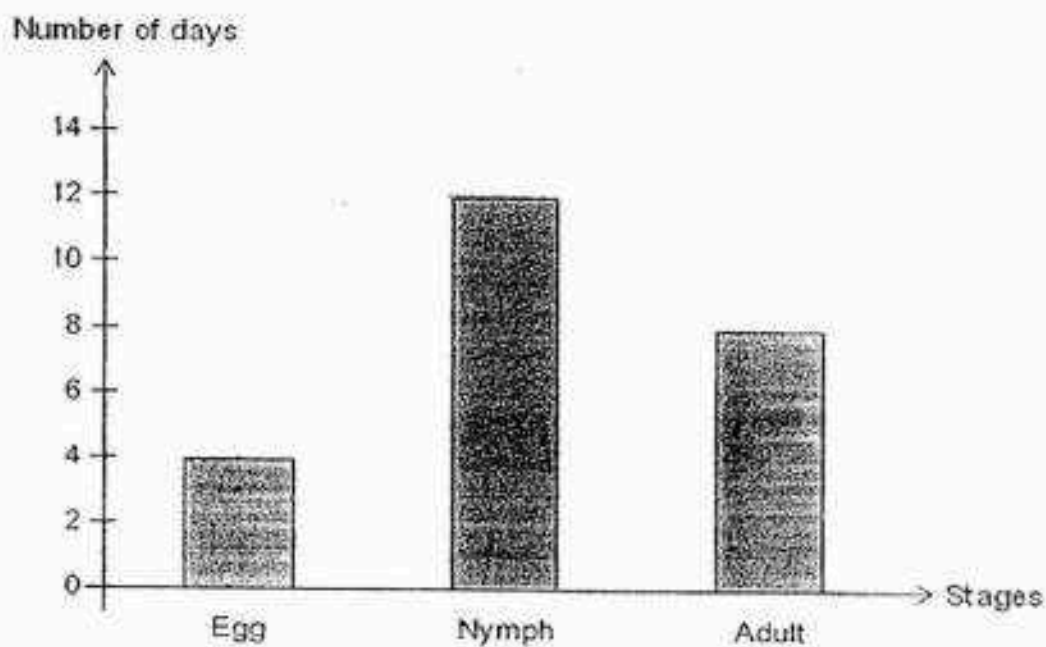
3. Study the life cycles shown below.



Based on the life cycles given above, which one of the following statements are true?

- (1) All the adults are insects.
- (2) All the animals develop from eggs.
- (3) All the animals have 4 stages in their life cycles.
- (4) All the young in the above cycles look like the adult.

4. The graph below shows the number of days each stage of the life cycle of Insect H would last.



Based on the graph, which one of the following information about Insect H is **correct**?

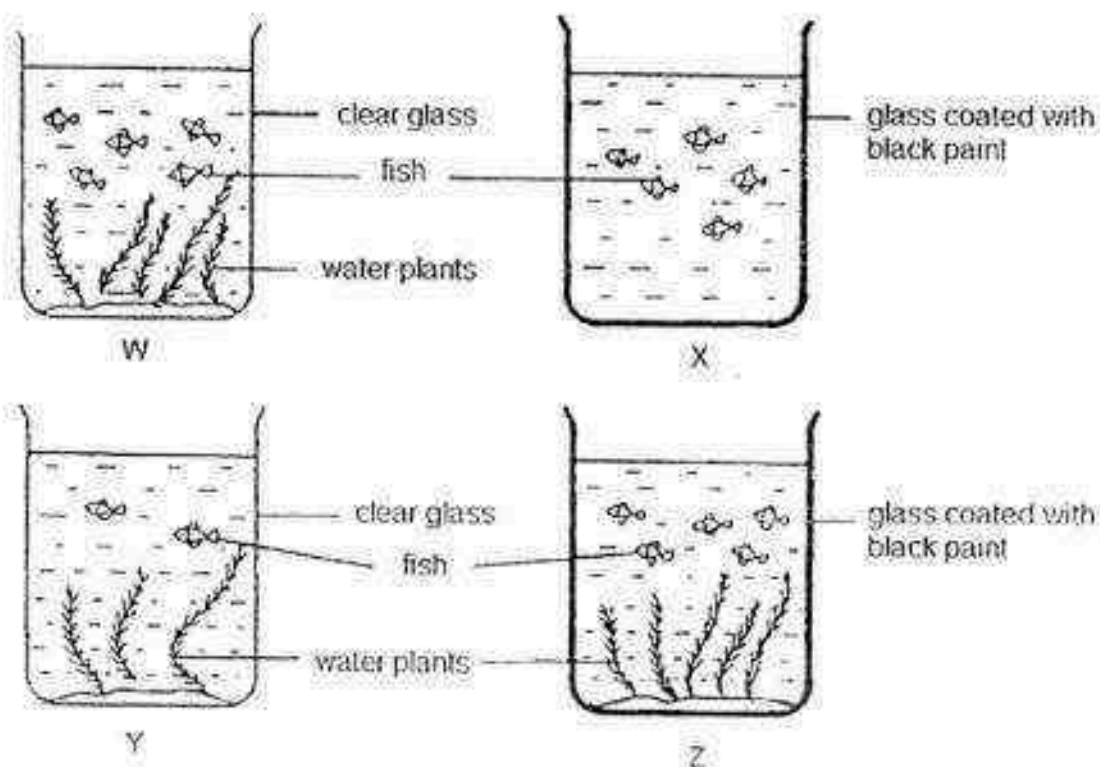
- (1) Insect H lived on land.
- (2) The insect survived for 16 days only.
- (3) The young of Insect H does not moult.
- (4) After the egg hatched, the insect took 12 days to become an adult.

5. The following statements show different stages in the growth of a seed. Which of the following shows the correct order of the stages of seed growth, starting with the earliest stage?

- A The root appears.
- B The seed leaf becomes smaller.
- C The shoot grows out from the seed.
- D The seed increases in size and the seed coat splits.

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

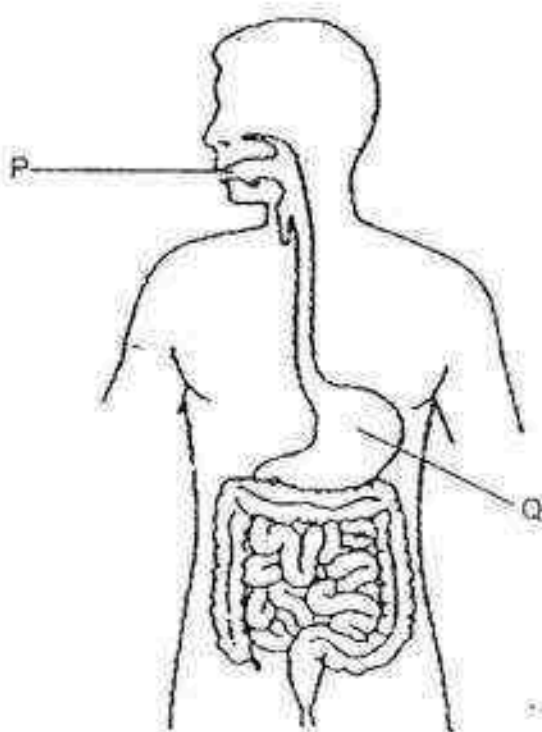
6. Harry wanted to carry out an experiment to find out if amount of light affects the growth of his water plants.



He prepared 4 set-ups, W, X, Y and Z as shown above. Which two set-ups should he use to carry out his experiment?

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

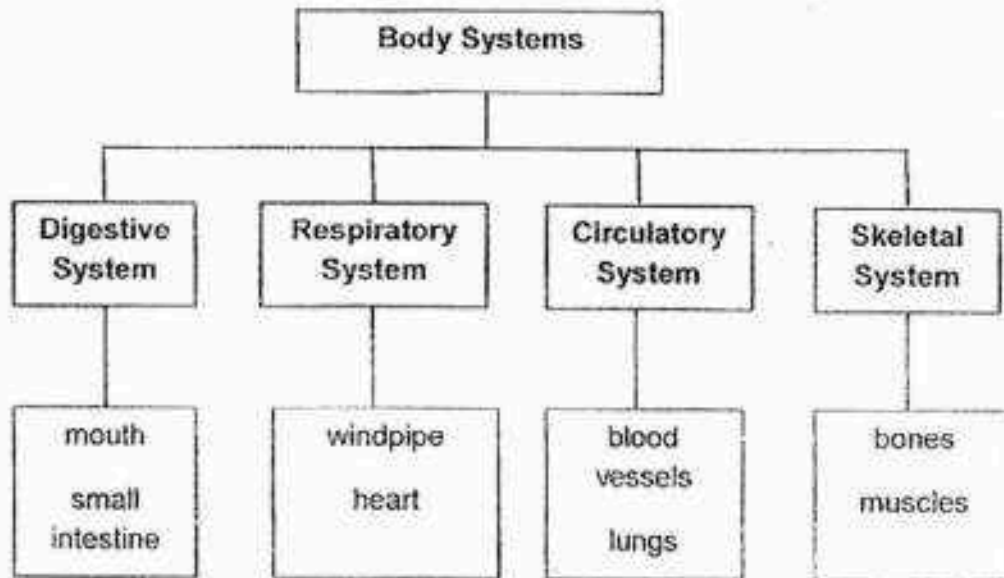
7. Study the diagram of the human digestive system below.



Which of the following correctly describes the functions of parts P and Q of the human

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

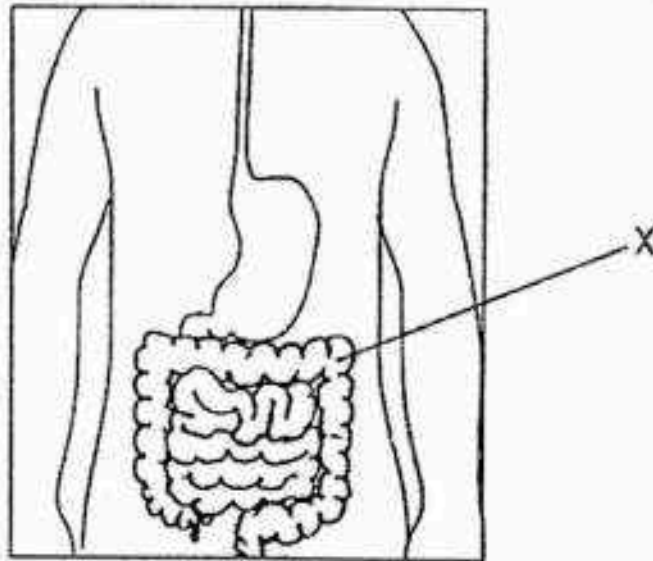
8. The chart below shows how some body organs are classified according to the human body system that they belong to.



Which organs are wrongly matched to the body system?

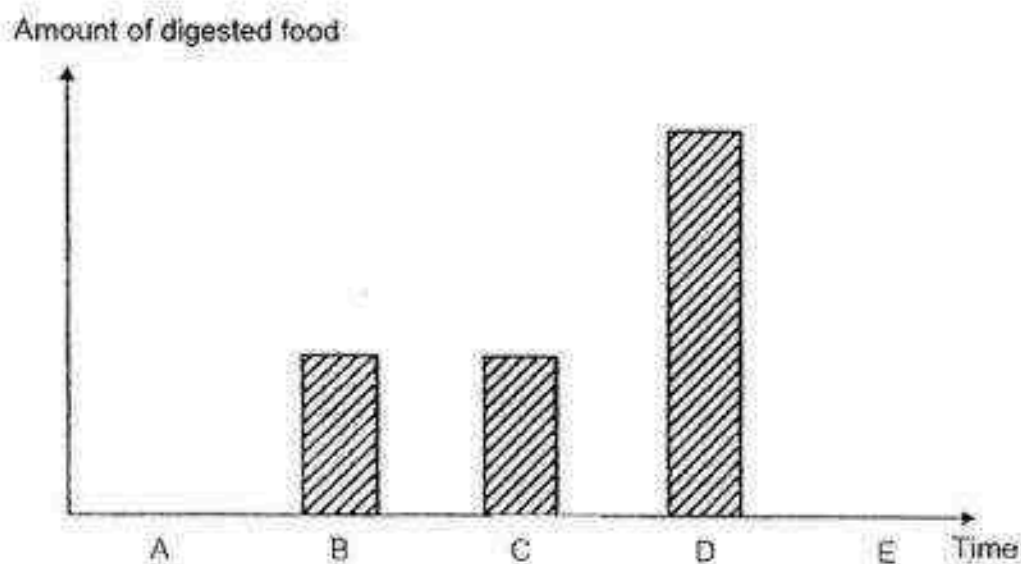
- (1) mouth and muscles only
- (2) windpipe and lungs only
- (3) heart, lungs and muscles only
- (4) mouth, lungs and blood vessels only

9. What will happen if the part labelled 'X' in the diagram of the human digestive system below is not working properly?



- (1) Digestion cannot start.
- (2) Digested food will be passed out.
- (3) Water from undigested food is not absorbed into the body.
- (4) Digestive juices will not be released for the digestion of food.

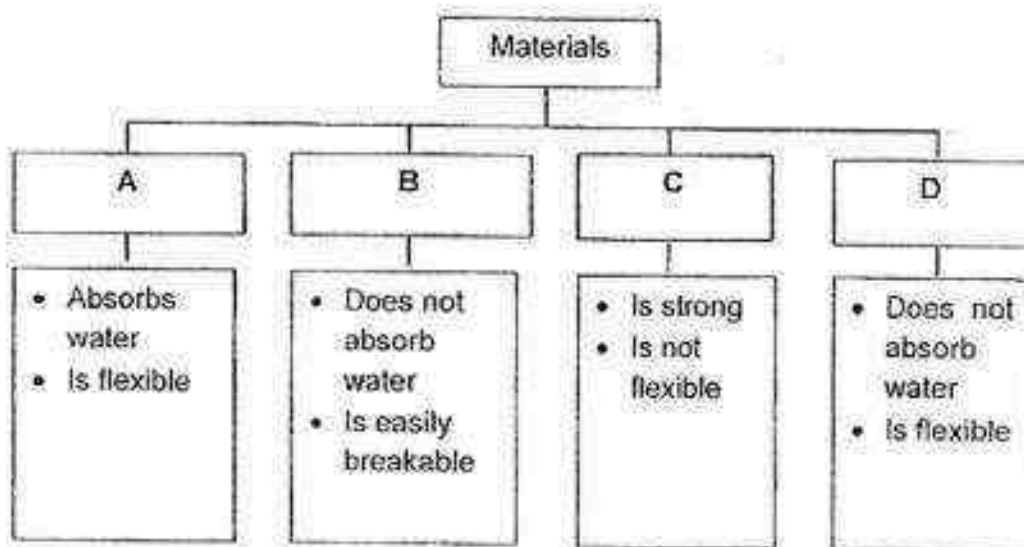
10. Jimmy had fish and chips for lunch. A, B, C, D and E represent parts of the digestive system in sequence. The amount of digested food present at the start of each part is shown in the graph below.



Based on the graph, which of the following best represents B, C and E?

	B	C	E
(1)	Mouth	Stomach	Small Intestine
(2)	Gullet	Stomach	Large Intestine
(3)	Stomach	Small Intestine	Large Intestine
(4)	Small Intestine	Large Intestine	Rectum

11. The diagram below shows some characteristics of four materials, A, B, C and D.



The diagram below shows a car with its tyre labelled.



Which of the above materials could a car tyre be made of?

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

12. Tim carried out an experiment with three materials, P, Q and R of the same size and shape. He dropped each material from a height of 50cm and observed if the material broke when it reached the ground. If the material did not break, he dropped it from an even higher height.

The results of his experiment are shown below.

Material	Height from which material is dropped			
	50cm	1m	1m 50 cm	2m
P	Did not break	Broke	--	--
Q	Did not break	Did not break	Did not break	Did not break
R	Did not break	Did not break	Did not break	Broke

Which of the following is the changed variable of this experiment?

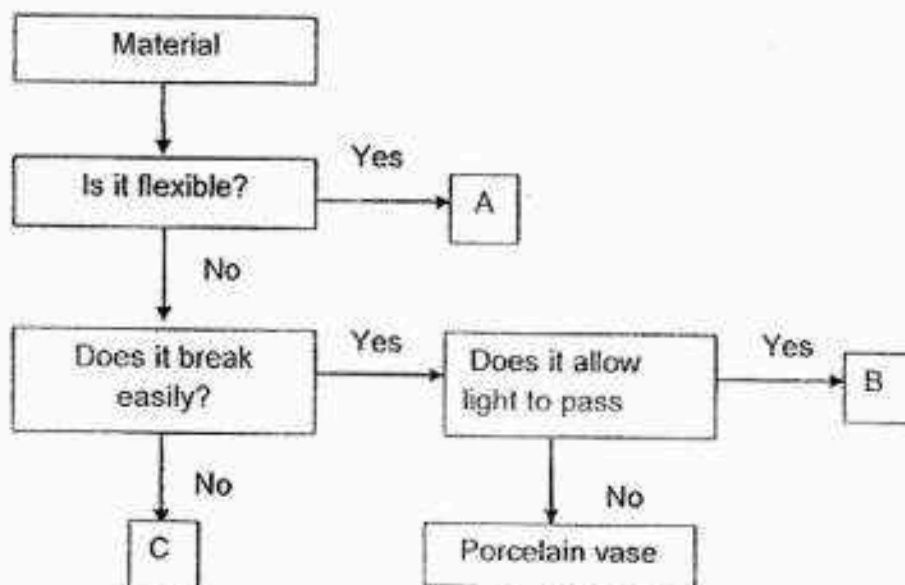
- (1) Size of material
 - (2) Type of material
 - (3) Whether the material broke or not
 - (4) Height from which material is dropped
13. Teddy wanted to find out whether the thickness of a material would affect the amount of water it could absorb. He carried out an experiment and recorded the results in the table below.

Piece	Thickness of Material X	Amount of water absorbed by material
A	1cm	15ml
B	2cm	30ml
C	4cm	65ml
D	5cm	80ml

From the table, what is the relationship between the thickness of the material and the amount of water absorbed?

- (1) There is no change to the amount of water being absorbed.
- (2) The thicker the material X, the more the amount of water absorbed.
- (3) The thinner the material X, the more the amount of water absorbed.
- (4) The thicker the material X, the lesser the amount of water absorbed.

14. Study the flowchart below.



Which of the letters in the flowchart correctly represents a wine glass, a face towel and a plastic water bottle?

	Wine glass	Face towel	Plastic water bottle
(1)	C	A	B
(2)	C	B	A
(3)	B	A	C
(4)	B	C	A

15. The table below shows the properties of four things, A, B, C and D.

Properties	A	B	C	D
Can be seen	✓		✓	✓
Occupies space	✓	✓		✓
Has a definite shape	✓			
Has a definite volume	✓			✓
Can be compressed		✓		

Which one of the following represents milk?

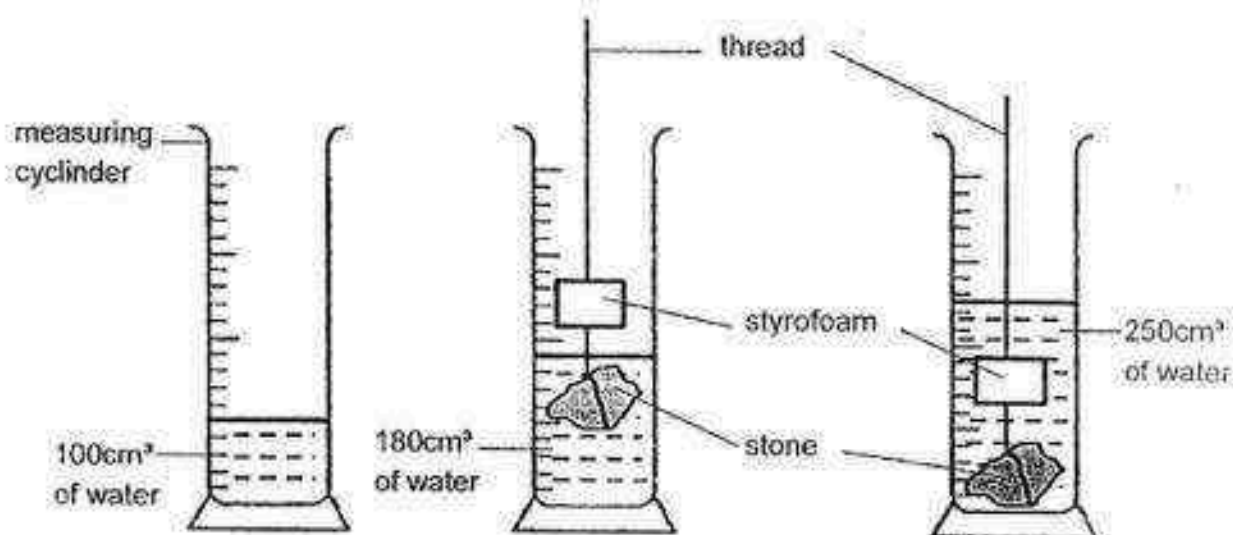
- (1) A
- (2) B
- (3) C
- (4) D

16. Which of the following objects are **not** matter?

- A shadow
- B oxygen
- C toothpaste
- D lightning
- E computer

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

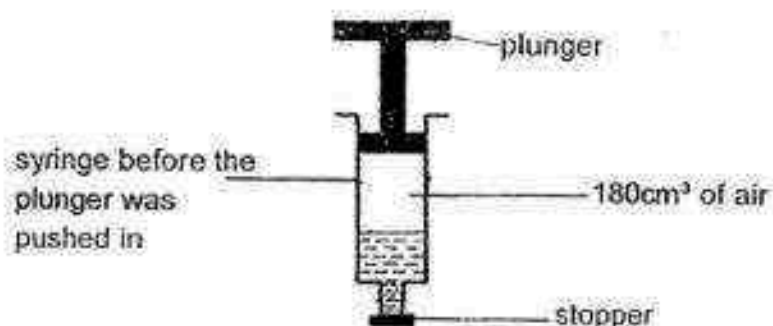
17. Jerry wanted to find out the volume of a stone and a piece of styrofoam. The diagrams below show what he did.



Based on the diagrams, which one of the following is the correct volume of the stone and the styrofoam?

	Volume of stone (cm³)	Volume of styrofoam (cm³)
(1)	70	250
(2)	80	70
(3)	80	100
(4)	180	250

18. The diagram below, not drawn to scale, shows a syringe with a capacity of 300cm^3 .



Assuming that there was no water leakage, which of the following shows the possible volume of air and water after the plunger was pushed in?

	Volume of air (cm^3)	Volume of water (cm^3)
(1)	180	300
(2)	120	180
(3)	180	120
(4)	150	120

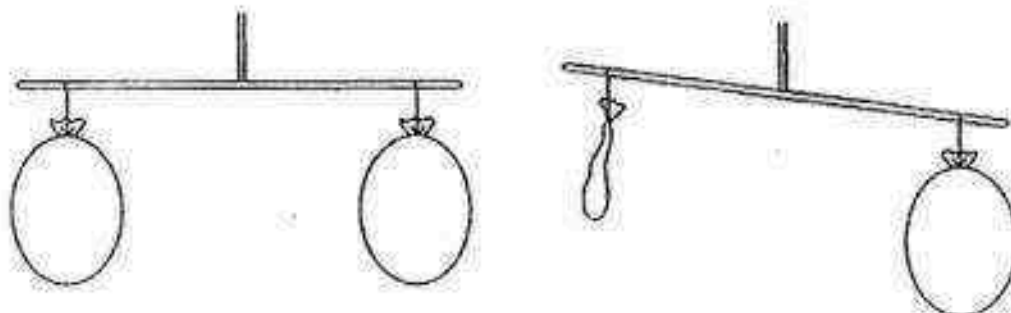
19. The diagram below shows Sally pumping air into a balloon. The balloon becomes bigger.



What does this tell us about air?

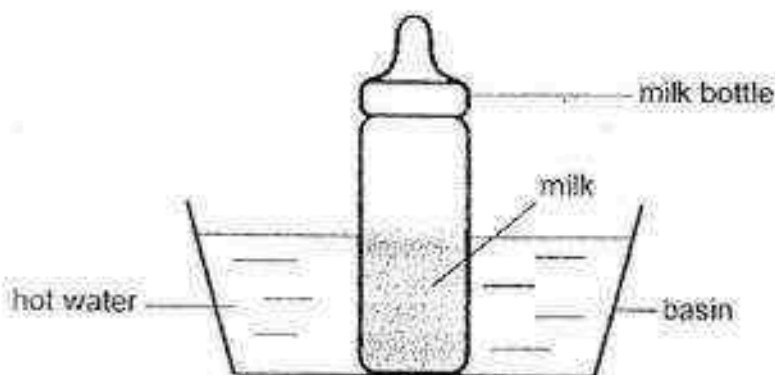
- (1) Air has mass.
- (2) Air can be seen.
- (3) Air occupies space.
- (4) Air can move about.

20. When air is let out of one of the inflated balloons, the balance tilts as shown in the diagram below.



What does this tell us?

- (1) Air has mass.
 - (2) Air occupies space.
 - (3) Air causes things to move.
 - (4) A balloon has no mass until it is inflated.
21. To warm up a bottle of milk for her child, a mother placed the bottle of milk into a basin of hot water as shown in the diagram below.



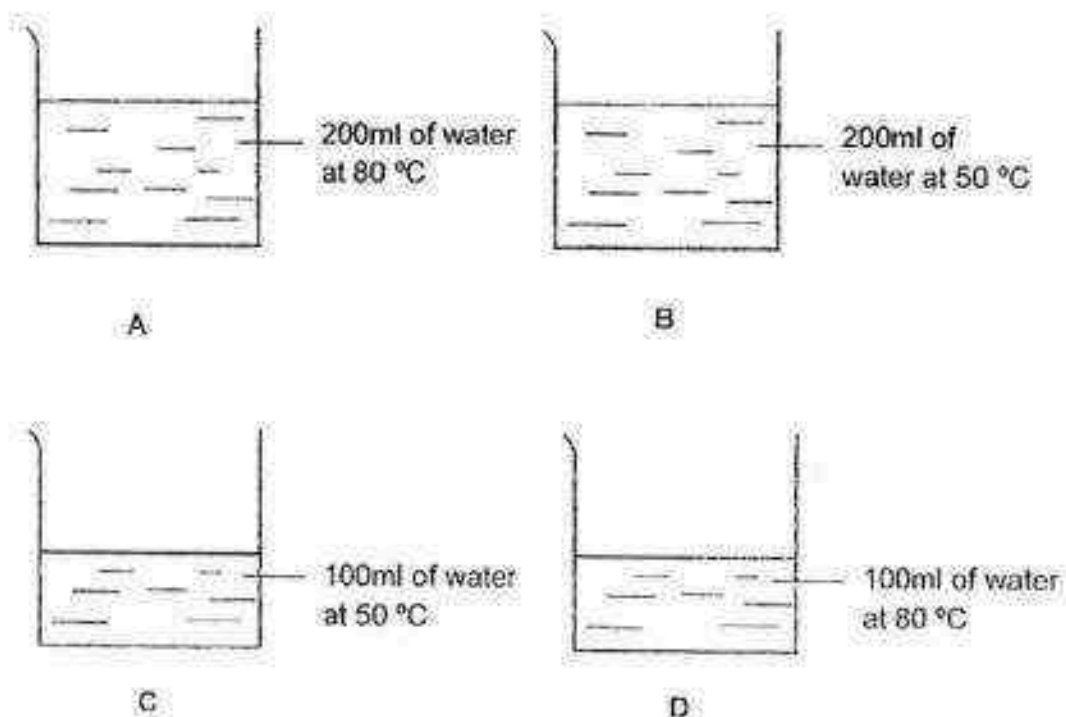
Which of the following is the heat source?

- (1) Milk
- (2) Hot water
- (3) Milk bottle
- (4) Surrounding air

22. Which of the following is a heat source but not a light source?

- (1) Hair dryer
- (2) Basketball
- (3) Torchlight
- (4) Glow-in-the-dark sticker

23. Jim has four beakers of water as shown in the diagrams below.



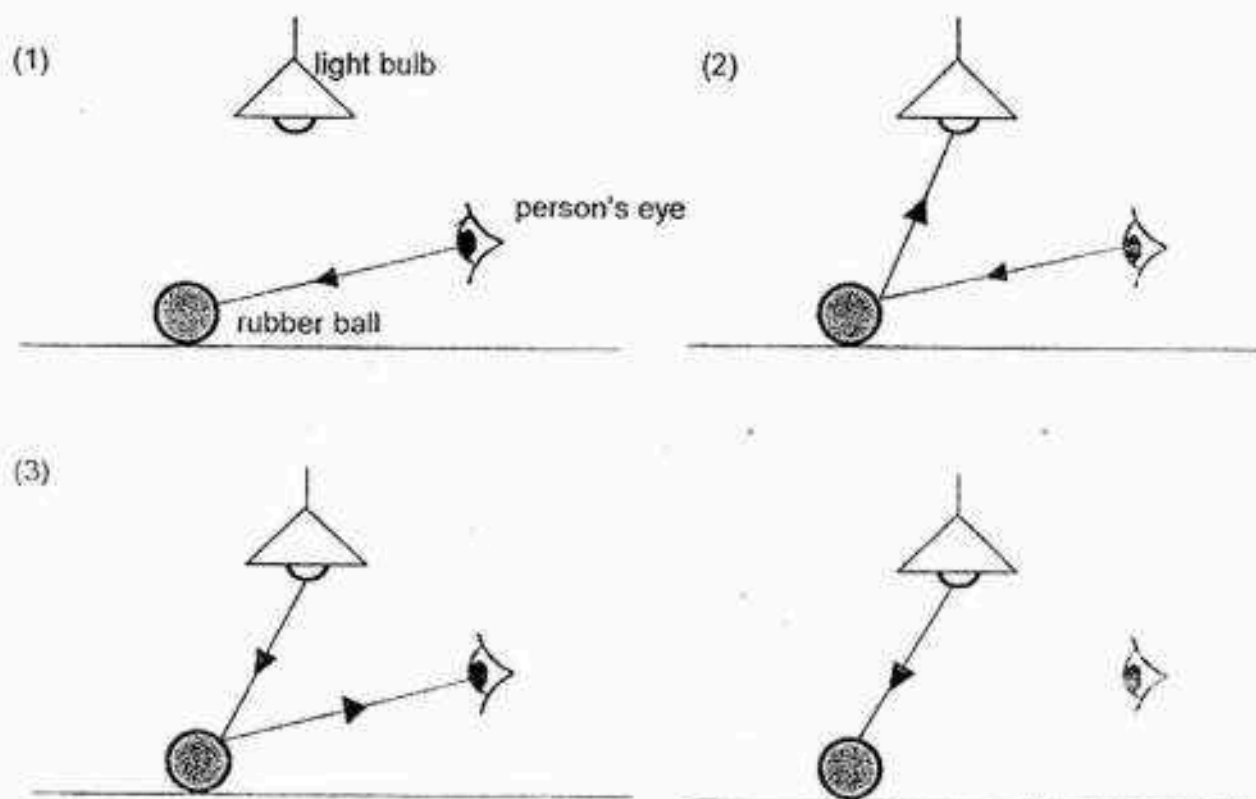
Which of the following statements is correct?

- (1) All the beakers of water have the same amount of heat.
- (2) The water in Beaker C has less heat than the water in Beaker B.
- (3) The water in Beaker A has the same amount of heat as the water in Beaker B.
- (4) The water in Beaker A has the same amount of heat as the water in Beaker D.

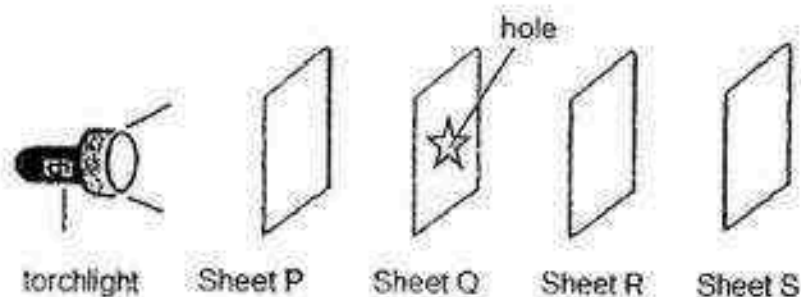
24. Which one of the following statements is false?

- (1) Light energy enables us to see.
- (2) Glass allows light to pass through it.
- (3) Only objects with shiny surfaces will reflect light.
- (4) A shadow is formed when light is blocked by an object.

25. Which of the following diagrams shows the correct direction that light travels to enable a person to see a rubber ball in a room?



26. The experiment shown below was carried out in a dark room.

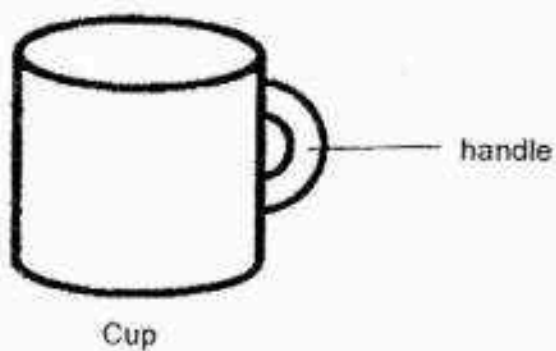


Sheets P, Q, R and S were made of different materials and were arranged in a straight line. Sheet Q had a star-shaped hole cut out from it. The torchlight was **switched on** and a bright star-shaped patch of light was seen on sheet R only.

Which one of the following correctly describes the properties of the materials that sheets P, Q, R and S are most likely made of?

	Allows light to pass through	Does not allow light to pass through	Not possible to tell
(1)	R	Q and S	P
(2)	Q	P	R
(3)	P	Q and R	S
(4)	P and Q	R	S

27. The cup below is able to cast shadows of different shapes.



If Kris shines a torch at the cup from different directions, which one of the following shadows would not be formed by the cup?

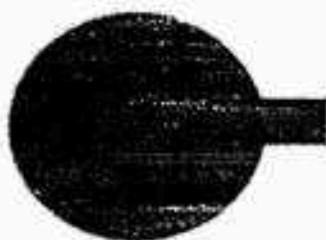
(1)



(2)



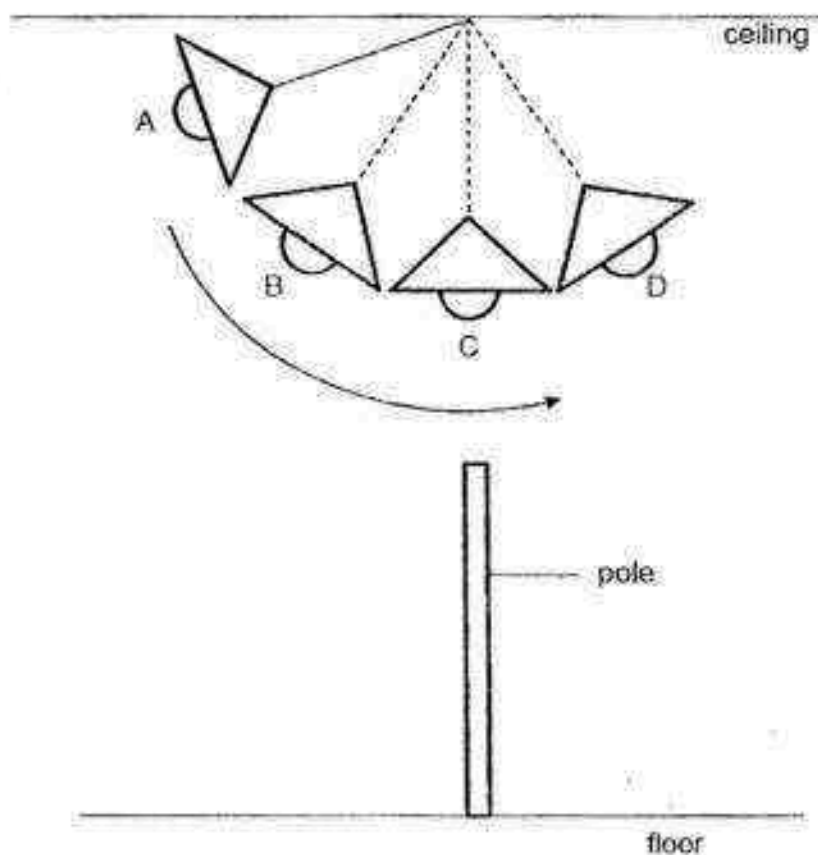
(3)



(4)



28. The diagram below shows a lamp hanging from the ceiling that was made to swing from position A to D. There is a pole standing upright on the floor just below the lamp.



Which of the following statements about the shadows of the pole cast on the floor is correct as the lamp swings from A to D?

- (1) The length of the shadow keeps increasing.
- (2) The length of the shadow keeps decreasing.
- (3) The shadow was longest when the lamp was at position D.
- (4) The shadow was longest when the lamp was at position A.

Name: _____ ()

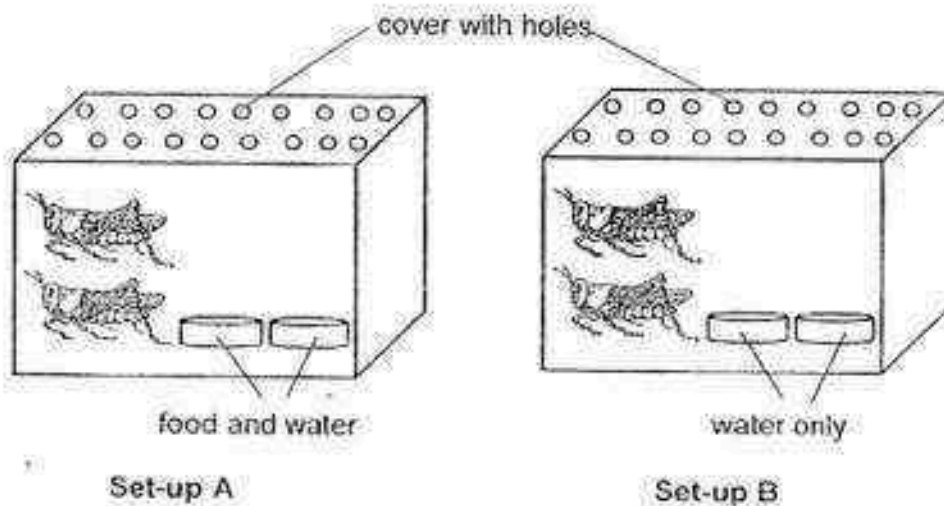
MYE 2016

Class P4 ()

Section B: 44 marks

Read the questions carefully and write down your answers in the spaces provided.

29. Mary placed two similar grasshoppers in each of the two separate glass containers as shown in the diagram below.



- (a) What was the aim of Mary's experiment? Place a tick (✓) in the table given below.

[1]

Aim of the experiment	Tick (✓)
To find out if the presence of air affects the survival of grasshoppers.	
To find out if the presence of food affects the survival of the grasshoppers.	
To find out if the presence of water affects the survival of the grasshoppers.	

- (b) After one week, Mary observed that the grasshoppers in set-up B had died. Explain why this had happened.

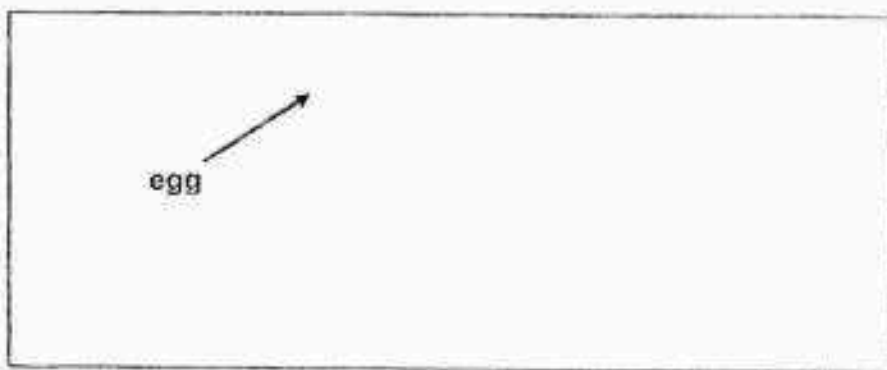
[1]

Question continues on the next page.



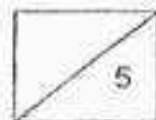
- 29 (c) Mary observed that the number of grasshoppers in Set-up A increased after two weeks. State the characteristic of living things which the grasshoppers were showing. [1]

30. (a) Complete the diagram below to show the life cycle of a chicken. [2]

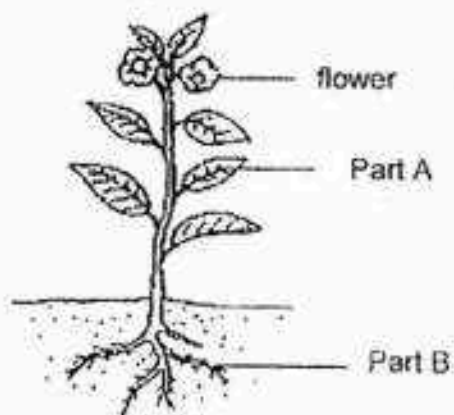


- (b) State one similarity between the life cycle of a cockroach and a chicken. [1]

- (c) Barbara noticed that the snails in her garden lay many eggs at a time. How does laying many eggs at a time help the snails? [1]



31. The diagram below shows a flowering plant.

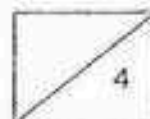


- (a) What do the flowers of the plant develop into? [1]

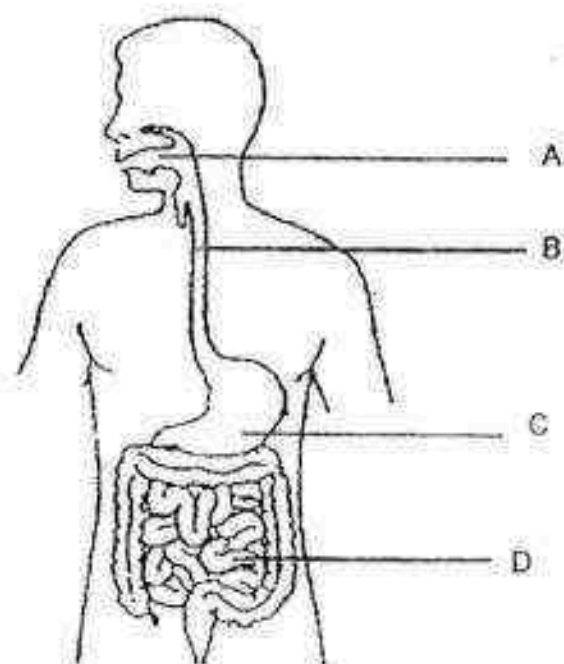
- (b) Give a function of part A. [1]

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

- (d) How does the number of part B of the plant affect the amount of water absorbed by the plant? [1]



32. The diagram below shows the human digestive system.



- (a) In which part(s) of the human digestive system, A, B, C and/or D, does digestion not take place? Explain your answer. [1]

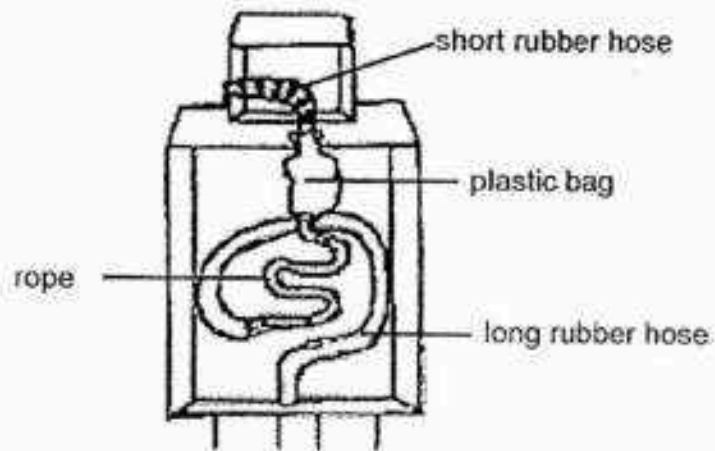
- (b) What is the difference between the function of Part C and the function of Part D? [1]

- (c) There are teeth in part A of the digestive system. What is the function of teeth? [1]

Question continues on the next page.



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



- (d) Give the names of the parts of the digestive system represented by the following two scrap materials. [1]

(i) Long rubber hose: _____

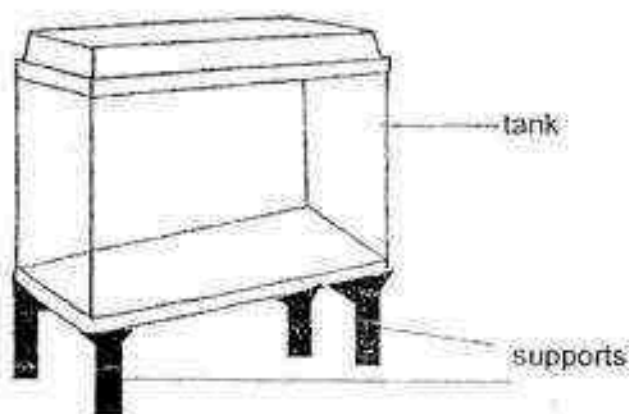
(ii) Plastic bag: _____



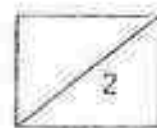
33. Jackson enjoys looking at fish as they swim freely in a tank. He went into a shop to look for a suitable tank for some colourful guppies he had just bought as pets.

(a) Suggest a material that the tank could be made up of to meet his needs? Explain your choice. [1]

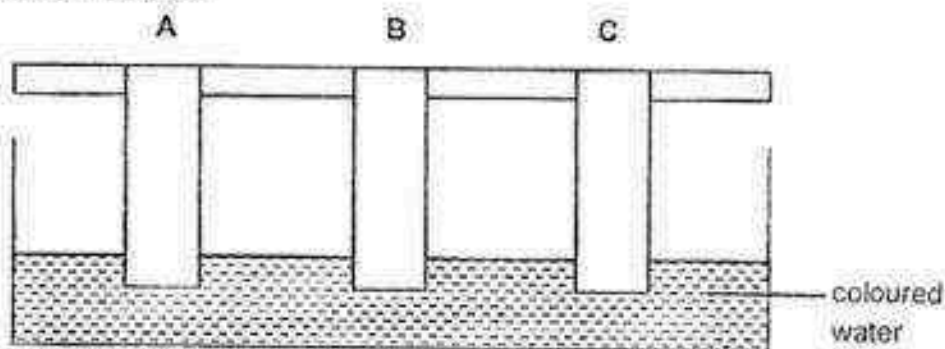
Jackson bought a suitable tank and went home. He placed the tank on four supports as shown in the diagram below.



(b) State one property that these supports must have. Explain your answer [1]



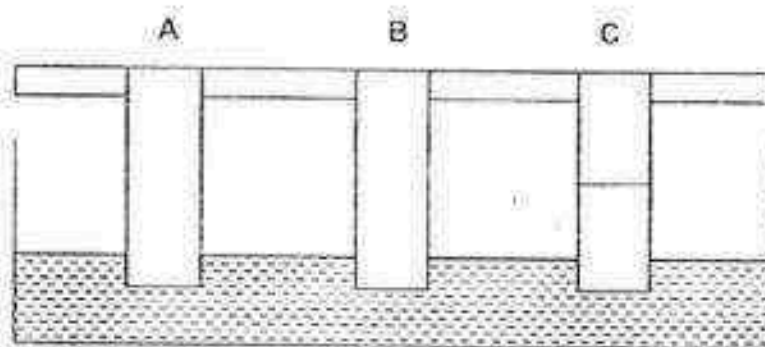
34. Ben set up an experiment as shown below to find out how much water three pieces of fabric, A, B and C can absorb.



The distance that the coloured water travelled up each fabric is recorded in the table below.

	A	B	C
Distance that coloured water travelled up fabric	5cm	15cm	10cm

- (a) In the diagram below, a line has been drawn on fabric C to show where the coloured water travelled up to at the end of the experiment.



In the same diagram above, draw a line on fabric A and B to also show where the coloured water travelled up to for both fabrics at the end of the experiment. [1]

- (b) Which of the above fabric, A, B, or C would you choose to dry your dishes? Explain your answer. [1]

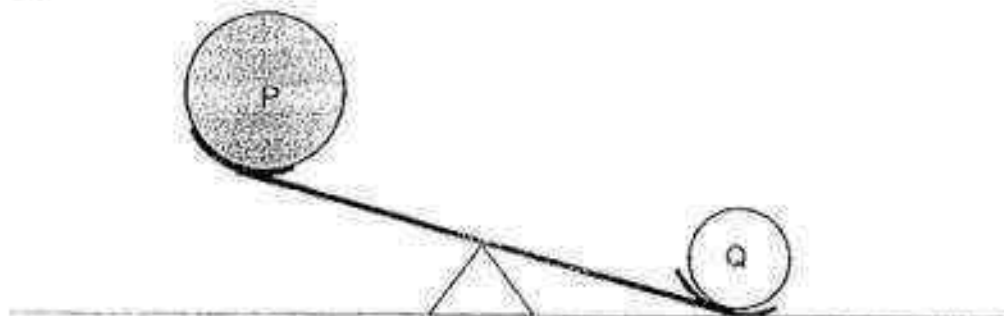


35. James had two round objects P and Q.



- (a) State a difference between the volume of P and the volume of Q. [1]

James then put objects P and Q on a beam balance and the diagram below shows what happened to the beam balance.

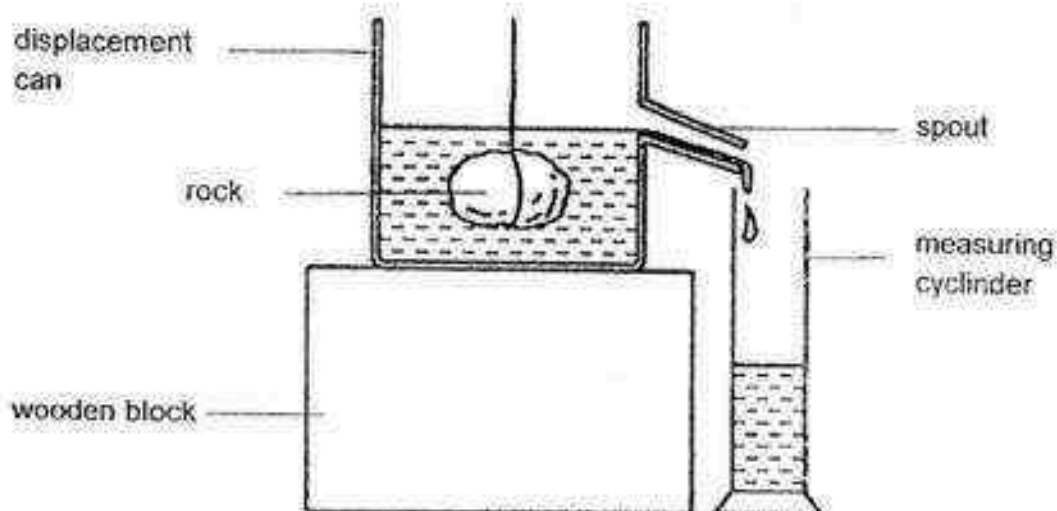


- (b) Based only on the diagram above, what can you conclude about the mass of objects P and Q? [1]

- (c) Which of the following statement(s) is/are true? Put a tick (✓) in the boxes provided if it is true. [1]

Statement	Put a tick (✓) if the statement is true.
A heavier object has more mass than a lighter object.	
A bigger object definitely has more mass than a smaller object.	

36. A displacement can, a measuring cylinder and some water can be used to find the volume of a rock.



- (a) The steps required to use the above equipment to find the volume of the rock are given below but they are not in order. Write '1, 2, 3 or 4' in the boxes provided to arrange the steps correctly.

[2]

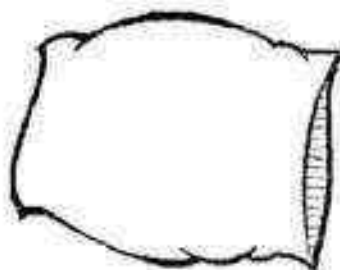
Steps to find out volume of rock	Order
Place the measuring cylinder under the spout to contain the water flowing out from the spout.	
Fill the displacement can with water until it starts to flow out from the spout.	
Place your eye at the water level in the measuring cylinder to find the volume of the rock.	
Tie the rock to a string and lower it into the displacement can.	

- (b) Give the property of matter that this method of finding volume uses.

[1]

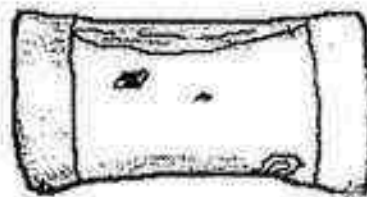


37. A company was trying to invent different types of pillow. Two pillows, X and Y, are shown in the diagram below.



Pillow X

made by putting goose feathers into a cloth bag

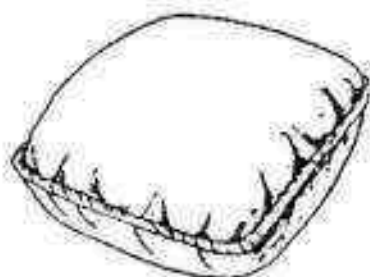


Pillow Y

made completely of wood

- (a) Explain why Pillow X could be flattened when someone sleeps on it but Pillow Y could not? [2]

A new type of pillow, Pillow Z was recently created by the company.



Pillow Z

made by filling a waterproof bag completely with water and sealing it

- (b) The company tells customers that this pillow is very comfortable because it follows the shape of the person's head. What property of water is used in the designing of this pillow? [1]



38. Kylie left a cup of hot milo in an air-conditioned room. He recorded the temperature of the hot milo over a period of time as shown in the table below.

Time (minutes)	Temperature ($^{\circ}\text{C}$)
0	()
5	74
10	68
15	36
20	25
25	22
30	22
35	22

- (a) A reading in the data table above is missing. The diagram below shows a thermometer giving the missing temperature of the cup of hot milo when it was first placed in the air-conditioned room.



- (a) What is the missing temperature? Answer : _____ [1]

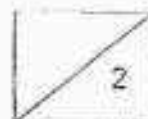
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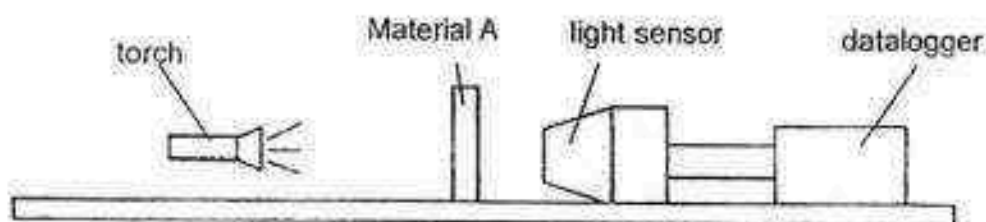
- (a) Between which time interval was there a greatest decrease in temperature? [1]

_____ th minute to _____ th minute

- () Is the amount of heat in the cup of milo at 25 minutes more, less or the same as the amount of heat in the cup of milo at 35 minutes? Explain your answer. [1]



39. Study the experimental set-up shown below. Ray wanted to compare the degree of transparency of materials, A, B, C and D. He set up his experiment in a dark room as shown below.



He recorded the amount of light that passed through material A and repeated the experiment with materials B, C and D. The table below shows the results of his experiment.

Material	Amount of light that passed through (lux)
A	110
B	150
C	0
D	90

- (a) What variable was changed and measured in the above experiment? [1]

Variable changed: _____

Variable measured: _____

- (b) Ray had to keep the thickness of all four materials constant. How does thickness of a material affect the amount of light that passed through? [1]

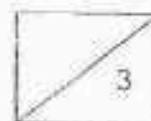
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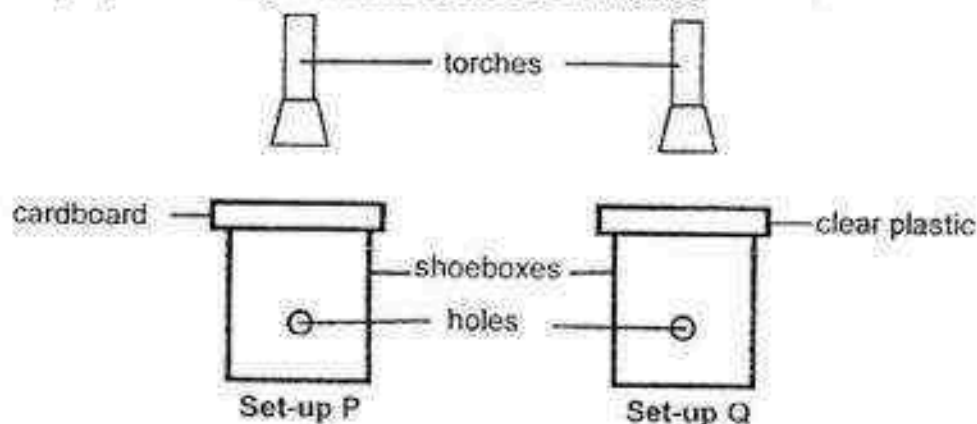
- (c) Based on the results of the experiment, arrange the materials, A, B, C and D, according to their degree of transparency, starting with the most transparent to the least transparent in the table below. [1]

Materials			
Most transparent		Least transparent	

- (d) Based on Ray's observation, which material is the most suitable to make toilet doors? Explain your answer. [2]

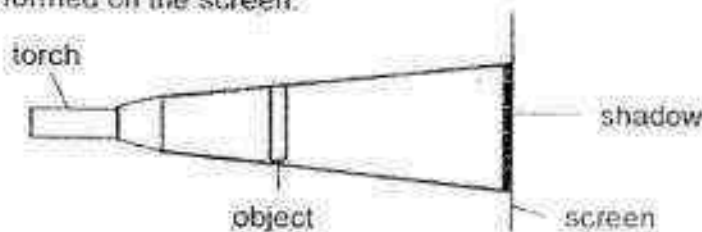


40. Miss Lim had two similar shoeboxes. She put an object into each shoebox. Then, she made a hole on one side of each box and covered the opening of the boxes with a cardboard and clear plastic as shown below. She then shone a torch over each box and peeped in through the hole at the side of the box.



- (a) In which set-up was she able to see the object? Explain your answer. [2]

Miss Lim then took out the object and shone light on it as shown in the diagram below. A shadow was formed on the screen.



- (b) How is a shadow formed? [1]

Question continues on the next page.



- (c) Based on the diagram above, how should Miss Lim move the object if she wanted to create a smaller shadow? [1]

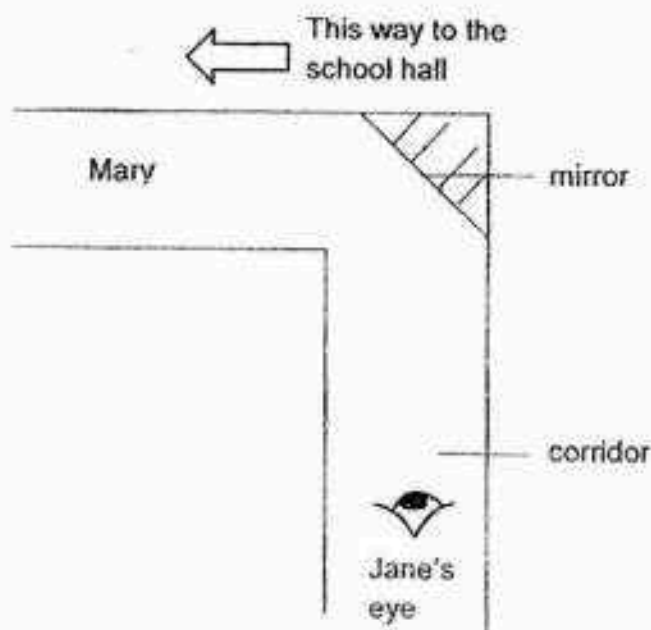
41. The diagram below shows Jane walking along a narrow corridor and going to make a left turn towards the school hall.



- (a) From where she is standing, she cannot see if there are other students coming towards her from the school hall. What property of light causes this to happen? [1]



- (b) The diagram below shows the top view of the corridor that Jane is walking along. A mirror has been drawn into the diagram. Draw in light rays to show the direction that light will travel such that Jane can see that Mary is walking towards her from the school hall and be more careful. [2]



- (c) The school wanted to make the corridor brighter so they installed more light bulbs along the corridor. The students soon complained that they felt very hot walking along that corridor. Give an explanation for this. [1]

END OF PAPER



EXAM PAPER 2016 (P4)

SCHOOL : AI TONG

SUBJECT : SCIENCE

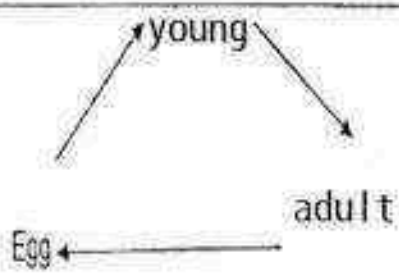
TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	2	4	4	3	2	3	3	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	2	2	3	4	1	2	4	3	1
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
2	1	2	3	3	3	4	4		

Name: _____ ()

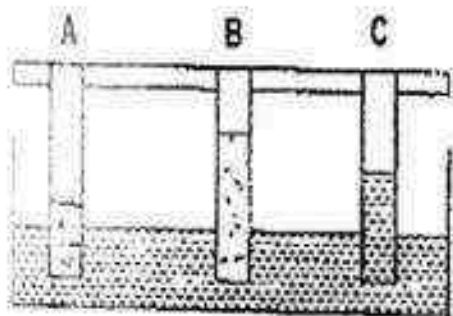
Class: 4 Perseverance

Qu. No.	Suggested Answers (full marks or partial marks)								
29a	<table border="1"> <thead> <tr> <th>Aim of the experiment</th><th>Tick (✓)</th></tr> </thead> <tbody> <tr> <td>To find out if the presence of air affects the survival of grasshoppers.</td><td></td></tr> <tr> <td>To find out if the presence of food affects the survival of the grasshoppers.</td><td>✓</td></tr> <tr> <td>To find out if the presence of water affects the survival of the grasshoppers.</td><td></td></tr> </tbody> </table>	Aim of the experiment	Tick (✓)	To find out if the presence of air affects the survival of grasshoppers.		To find out if the presence of food affects the survival of the grasshoppers.	✓	To find out if the presence of water affects the survival of the grasshoppers.	
Aim of the experiment	Tick (✓)								
To find out if the presence of air affects the survival of grasshoppers.									
To find out if the presence of food affects the survival of the grasshoppers.	✓								
To find out if the presence of water affects the survival of the grasshoppers.									
29b	The grasshoppers in set-up B had no <u>food</u> .								
29c	Living things <u>reproduce</u> .								

30a	
30b	Both have a <u>3 - staged</u> life cycle.
30c	When <u>some eggs</u> are eaten by predators, some eggs can still <u>hatch</u> survive.
31a	The flowers will develop into <u>fruits</u> .
31b	Part A is used to <u>make</u> <u>food</u> for the plant.
31c	Part B helps to <u>hold</u> the plant <u>firmly</u> to the ground.
31d	The <u>greater</u> the number of Part B, the <u>greater</u> the amount of water absorbed by the plant.

32a	Part B. There are <u>no</u> <u>digestive</u> <u>juices</u> in Part B.
32b	<p>Part C only <u>continues</u> the digestion of food but Part D <u>completes</u> the digestion of food.</p> <p style="text-align: center;"><u>OR</u></p> <p>Part C does not <u>absorb</u> <u>digested</u> <u>food</u> into the bloodstream but Part D absorbs digested food into the <u>blood stream</u>.</p>
32c	The teeth <u>chew</u> food into <u>small</u> <u>pieces</u>
32d	<p>(i) <u>large intestine</u></p> <p>(ii) <u>stomach</u></p>
33a	He should use glass. It allows <u>most</u> light to pass through.
33b	The supports must be <u>strong</u> to support the weight of the tank.

34a



34b

Material B.Material B absorbs the most amount of water.

35a

P has more volume than Q.

35b

P has less mass than Q.

35c

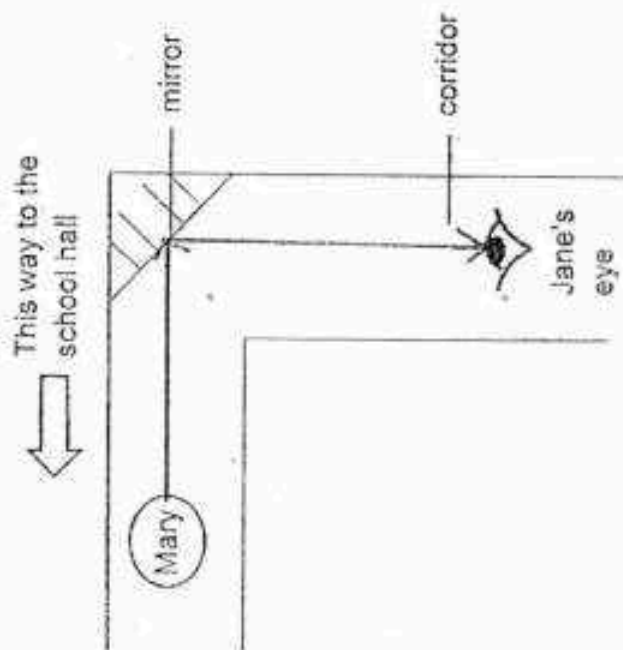
Statement	Put a tick (✓) if the statement is true.
A heavier object has more mass than a lighter object.	✓
A bigger object definitely has more mass than a smaller object.	

36a	Steps to find out volume of rock	Order
	Place the measuring cylinder under the spout to contain the water flowing out from the spout.	2
	Fill the displacement can with water until it starts to flow out from the spout.	1
	Place your eye at the water level in the measuring cylinder to find the volume of the rock.	4
	Tie the rock to a string and lower it into the displacement can.	3
36b	Matter has <u>volume</u> .	
37a	Pillow X has <u>air</u> in it which can <u>compress</u> when someone sleeps on it but Pillow Y is wood which is <u>stiff</u> .	
37b	Water has no <u>definite shape</u> .	
38a	80c	
38b	10 th to 15 th minute	

38c	<u>Some</u> amount of heat because the <u>temperature</u> of the milo is the <u>same</u> .
39a	Variable changed: <u>type of material</u> Variable measured: <u>amount of light that passed through</u>
39b	The thicker the material, the <u>less</u> <u>light</u> can pass through the material.
39c	B → A → D → C
39d	Choice: C Data: The amount light that passed through was <u>zero</u> Concept: C is does not allow <u>any</u> <u>light</u> to pass through Application: Toilet door should not allow <u>anyone</u> to see through
40a	Set up Q. The clear plastic is ^{transparent} <u>transparent</u> but the cardboard is <u>opaque</u> .
40b	When light is <u>blocked</u> by an object 40c) Move object nearer to the screen. Move object further from the torch.

Q 41 (b)

The diagram below shows the top view of the corridor that Jane is walking along. A mirror has been drawn into the diagram. Draw in light rays to show the direction that light will travel such that Jane can see that Mary is walking towards her from the school hall and be more careful. [2]



41)a)light travels in a straight line.

c)The light bulbs give out heat.



RED SWASTIKA SCHOOL

SCIENCE 2016 SEMESTRAL EXAMINATION 1 PRIMARY 4

Name : _____ ()

Class : Primary 4/ _____

Date : 10 May 2016

BOOKLET A

Total time for Booklets A & B: 1h 30 min

Booklet A: 28 questions (56 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 12
 - b. Questions 1 to 28

Section A

For Questions 1 to 30, choose the most suitable answer and shade its number in the OAS provided.

1. Four students made the following statements about insects.

Abby: All insects have a pair of wings.
Bryan: All insects have three body parts.
Collin: All insects have three pairs of legs.
Deborah: All insects have a hard outer covering.

Which student has made a wrong statement about insects?

- (1) Abby
- (2) Bryan
- (3) Collin
- (4) Deborah

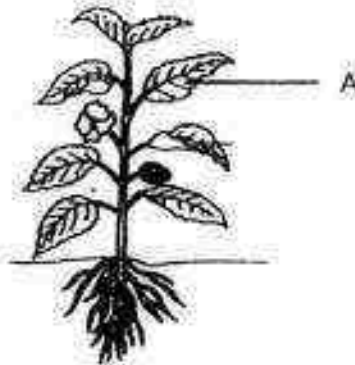
2. The following items are classified into two groups as shown.

Group A	Group B
Mushroom	Table
Fern	Chair
Rose Plant	Water

Which of the following are suitable headings for the groups?

	Group A	Group B
(1)	Plants	Animals
(2)	Plants	Non-living things
(3)	Living things	Non-living things
(4)	Non-living things	Living things

3. The picture shows a plant found in a garden.



Which of the following is the function of part A?

- (1) Takes in water for the plant.
- (2) Produces seeds for reproduction.
- (3) Anchors the plant firmly to the ground.
- (4) Allows the plant to take in and give out gases.

4. Study the table below.

	can move from place to place freely	can reproduce	needs air, food and water
X	✓	✓	✓
Y	X	✓	✓

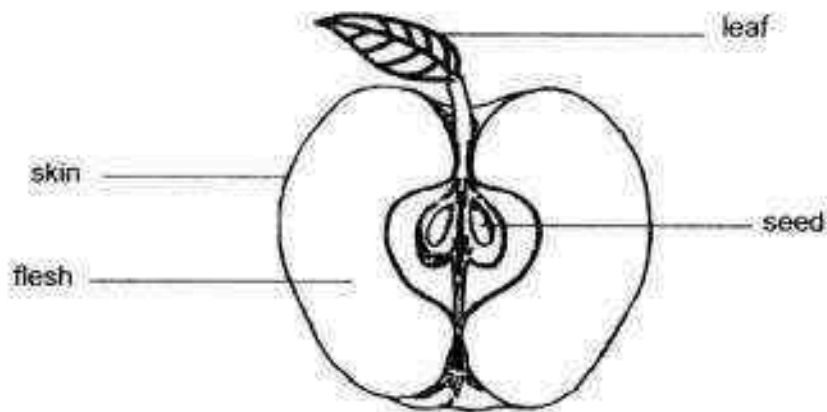
The following statements are made about X and Y.

- A: Y can only be a plant.
- B: X is a living thing.
- C: Y is a non-living thing.

Which of the statement(s) is/are definitely true?

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

5. An apple is cut in half as shown.



Which part of the apple will develop into a new apple plant?

- (1) skin
 - (2) seed
 - (3) flesh
 - (4) leaf
6. Which of the following statements is true about the Bird's Nest fern?
- (1) It is a non-flowering plant which reproduces by spores.
 - (2) It is a non-flowering plant which reproduces by seeds.
 - (3) It is a flowering plant which reproduces by spores.
 - (4) It is a flowering plant which reproduces by seeds.
7. Which of the following is correct?

	3-stage life cycle	4-stage life cycle
(1)	grasshopper	cockroach
(2)	mosquito	beetle
(3)	cockroach	mosquito
(4)	beetle	grasshopper

8. It is known that mosquito larva feeds on algae as food.
The diagram below shows the pupal stage of a mosquito.



Which of the following is true about the feeding habit during this stage?

- (1) Stops feeding
 - (2) Starts to feed on blood instead
 - (3) Starts to feed on only one piece of algae per day
 - (4) Starts to feed on more algae than when it was in its larval stage
9. The diagrams show the young and adult of a butterfly.



young



adult

Which of the following statements is/are correct?

- A: The young can fly but the adult cannot fly.
 - B: The young cannot fly but the adult can fly.
 - C: The young can lay eggs but the adult cannot lay eggs.
 - D: The young cannot lay eggs but the adult can lay eggs.
- (1) A and C only
 - (2) A and D only
 - (3) B and C only
 - (4) B and D only

10. Which part(s) of the digestive system produce(s) digestive juices?

- A: Mouth
- B: Stomach
- C: Large Intestine

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

11. The diagram below shows a structure in the skeletal system.



Which of the following are the functions of the above structure?

- A: Takes in and gives out air
- B: Gives the body its shape
- C: Protects important organs
- D: Pumps blood to all parts of the body

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

12. The table below shows four organ systems W, X, Y and Z with one part found in each of the system.

System	W	X	Y	Z
Part	Windpipe	Blood vessels	Gullet	Skull

Which organ system helps to break down food into simpler substances?

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

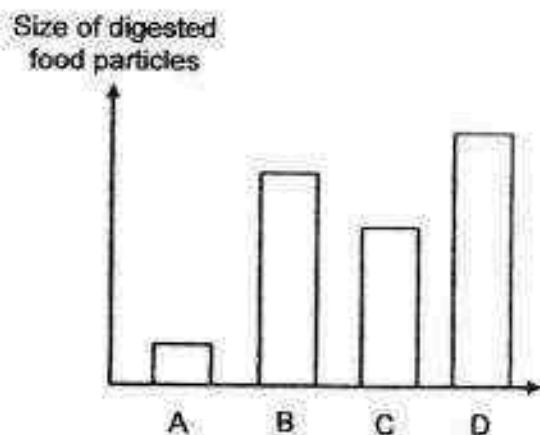
13. Baylen planted three similar plants, A, B and C, in the same location. The table below shows the set-up of his experiment.

	Plant A	Plant B	Plant C
Type of soil	Garden Soil	Garden Soil	Garden Soil
Amount of fertiliser	10 ml	20 ml	30 ml
Amount of water	100 ml	100 ml	100 ml

What is the most likely aim of Baylen's experiment?

He is trying to find out if _____

- (1) the type of soil affects the growth of the plant
 - (2) the type of plant affects the growth of the plant
 - (3) the amount of water affects the growth of the plant
 - (4) the amount of fertiliser affects the growth of the plant
14. Study the bar graph on the size of digested food substance as it passes through the different parts, A, B, C and D, of our digestive system.



Which of the following is most likely our small intestine?

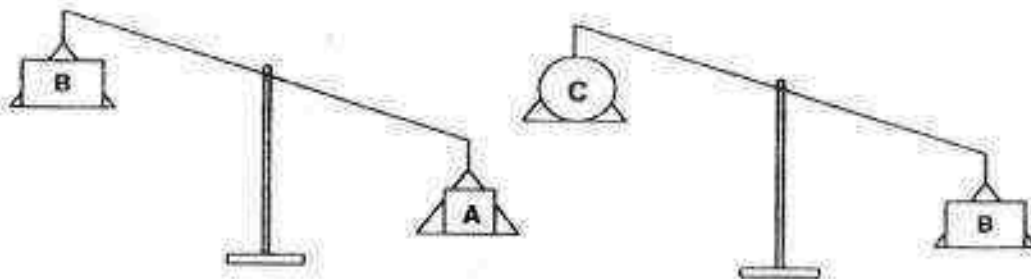
- (1) Part A
- (2) Part B
- (3) Part C
- (4) Part D

15. Material X has the following properties.

- Material X is light.
- Material X is not waterproof.
- Material X is flexible.

Material X will be suitable to be used to make a _____.

- (1) raincoat
 - (2) cooking pot
 - (3) tissue paper
 - (4) washing glove
16. Betty is comparing the mass of three objects A, B and C using the balance beam as seen below.



Which of the following statements is true about their masses?

- (1) Object A is the heaviest.
 - (2) Object C is the heaviest.
 - (3) Object B is heavier than object A.
 - (4) Object C is heavier than object A.
17. Three students made the following statements.

Alice : All solids have mass.
Bethany : All liquids do not have a definite volume.
Calvin : All gases do not have a definite shape.

Which of the students are correct?

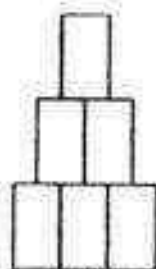
- (1) Alice and Calvin only
- (2) Alice and Bethany only
- (3) Bethany and Calvin only
- (4) Alice, Bethany and Calvin

18. The table below shows the properties of three objects X, Y and Z.

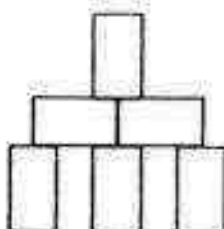
	X	Y	Z
Has mass	✓	✓	
Has a definite shape	✓	✓	
Can be seen		✓	✓

Which of the following statements is true?

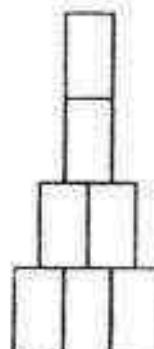
- (1) Object X is a gas.
 - (2) Object Y is a gas.
 - (3) Object Y is a liquid.
 - (4) Object Z is a non-matter.
19. Christopher created three models by making use of six identical wooden blocks.



model 1



model 2



model 3

Each of the model set-up above has the same _____.

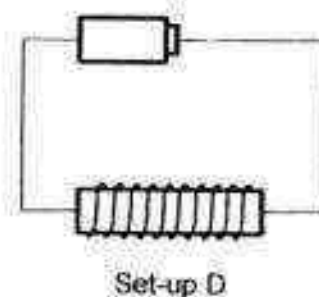
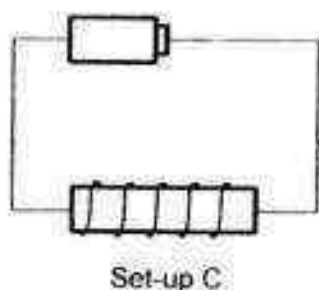
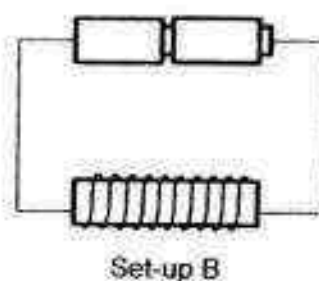
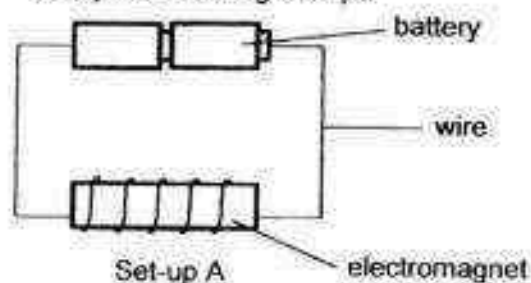
- A: mass
- B: shape
- C: volume

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

20. Which one of the following objects cannot be separated using a magnet when mixed together with a pile of sand?

- (1) iron filings
- (2) nickel coins
- (3) copper wires
- (4) cobalt chains

21. Study the following set-ups:



Which pairs of set-ups should Marcus use if he wants to find out whether the number of coils around the electromagnet affects the magnetic strength of the electromagnet?

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

22. Study the interaction of the three magnets in the arrangement below.

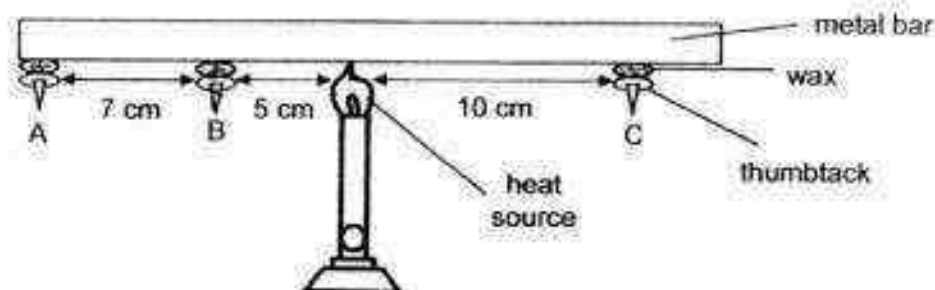


Which of the following could unknown poles A and B be?

	Pole A	Pole B
(1)	North-seeking	North-seeking
(2)	North-seeking	South-seeking
(3)	South-seeking	North-seeking
(4)	South-seeking	South-seeking

23. Which of the following is an example of matter gaining heat?
- (1) Solid butter melting on the dining table.
 - (2) Liquid water freezing to become solid ice.
 - (3) Metal bar becoming slightly shorter after placing in the freezer for a day.
 - (4) Spoon becoming cold after being left in cold water.
24. Which of the following is a heat source?
- (1) Thermometer
 - (2) Unlit candle
 - (3) Data-logger
 - (4) Sun

25. Three thumbtacks were attached to a metal bar using the same amount of wax and the metal bar was heated as seen in the diagram.



Arrange the thumbtacks in the correct order starting with the one that will fall off first.

- (1) A, B, C
 - (2) A, C, B
 - (3) B, C, A
 - (4) C, B, A
26. Meng Kuan has two identical glasses filled with different amount of water.

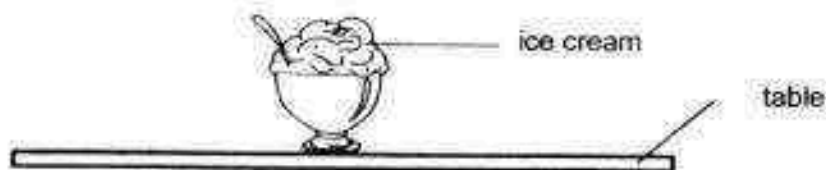


Which of the following statements are correct?

- A: The water in glass B has a higher temperature than glass A.
- B: The water in both glass A and B have the same temperature.
- C: The water in glass B has more heat than the water in glass A.
- D: The water in both glass A and B have the same amount of heat.

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

27. Shanice accidentally left her bowl of ice cream on the table.



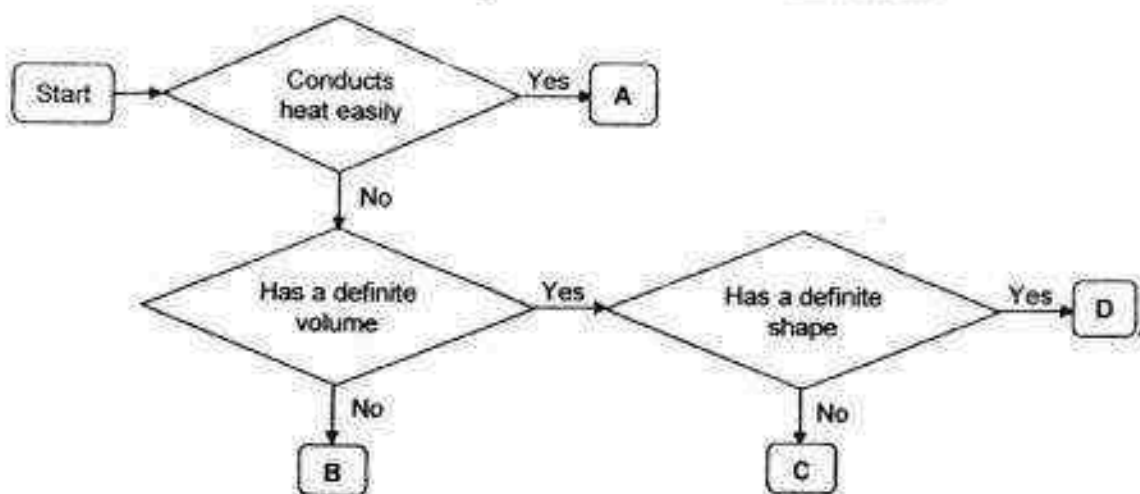
When she came back two hours later, the ice cream had melted because the

- A: ice cream has lost heat to the surrounding air
- B: ice cream has gained heat from the surrounding air.
- C: surrounding air has gained heat from the ice cream
- D: surrounding air has lost heat to the ice cream

Which of the following statements are correct?

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

28. Study the characteristics of objects shown in the flow chart below.



Which of the following objects is most suitable to be air?

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

End of Section A



RED SWASTIKA SCHOOL

SCIENCE 2016 SEMESTRAL EXAMINATION 1 PRIMARY 4

Name : _____ ()

Class : Primary 4/ _____

Date : 10 May 2016

BOOKLET B

13 Questions
44 Marks

In this booklet, you should have the following:

- a. Page 13 to Page 26
- b. Questions 29 to 41

MARKS

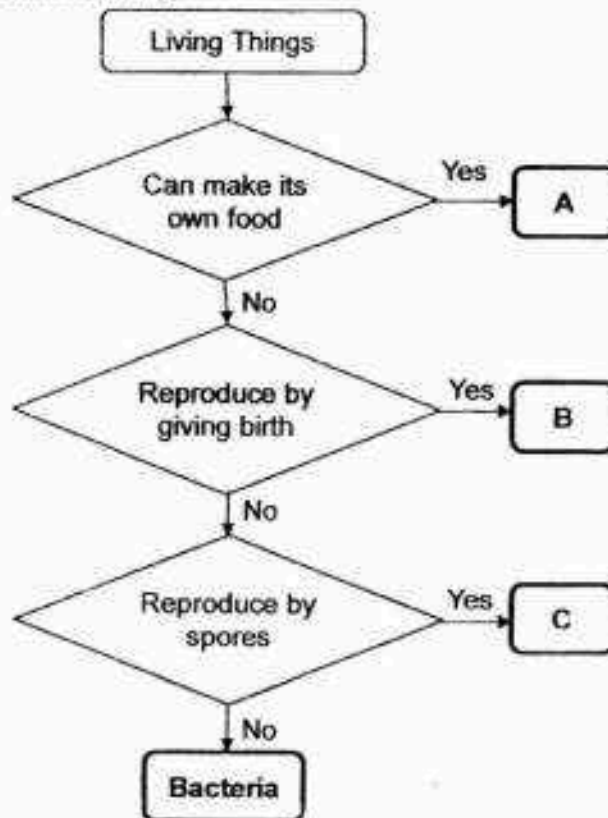
	OBTAINED	POSSIBLE
BOOKLET A		56
BOOKLET B		44
TOTAL		100

Parent's Signature : _____

Section B

Answer all the questions in the space provided.

29. Study the flow chart carefully.



a) Based on the flow chart, what are the characteristics of organism B? (1m)

b) Which group of living things could organism A be? Explain why. (1m)

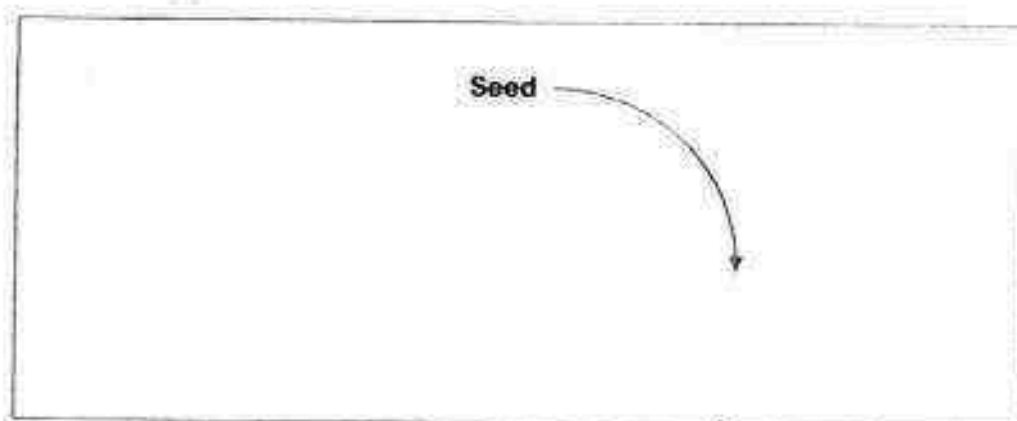
c) Give an example of organism C. (1m)



30. Professor Sim was exploring country X when she found plant Z with the following characteristics:

- Plant Z is able to bear fruits
- The seed of plant Z germinates best between 20 °C and 25 °C

- a) Complete the life cycle of Plant Z in the box below. (2m)
One of the stages had already been drawn for you.



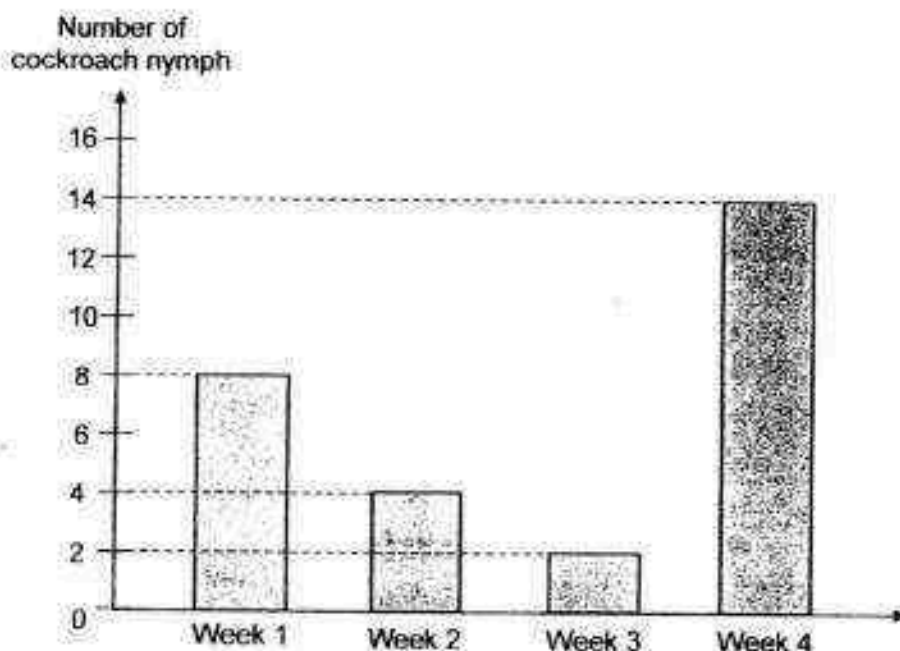
In recent months, the daily temperature of Country X has risen to be around 33 °C. Professor Sim planted ten seeds of plant Z in an open garden in Country X and she ensured that there was enough water given daily.

- b) After a week, she observed that only one of the seeds managed to germinate. The remaining nine seeds did not germinate. What is the possible reason for the observation? (1m)

- c) What is the first evidence Professor Sim observed which shows that the seed had started to germinate? (1m)



31. Mr Low started an experiment studying the life cycle of a cockroach and recorded his observation in the graph below. He ensured that none of the cockroaches had escaped or died during the experiment. There was enough food and water provided.



- a) What is a possible reason for the decrease in the number of cockroach nymphs from week 1 to week 2? (1m)

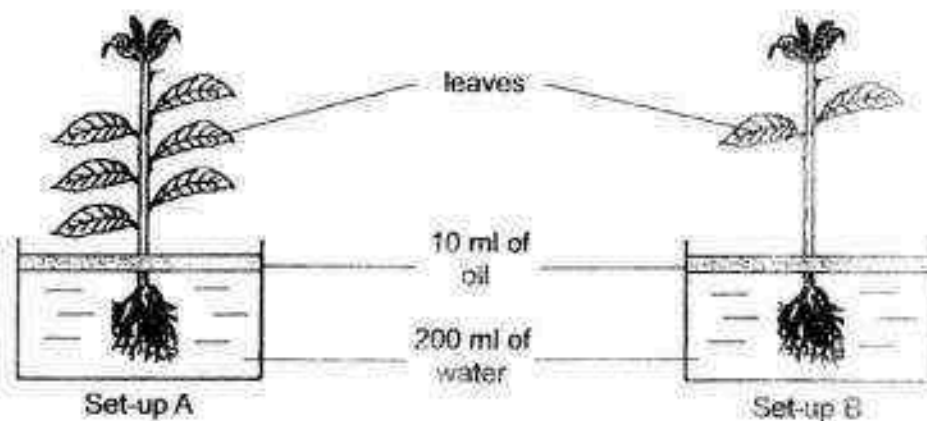
- b) What is a possible reason for the increase in the number of cockroach nymphs from week 3 to week 4? (1m)

- c) How was Mr Low able to tell apart an adult cockroach and a cockroach nymph? [Do not compare its size and shape] (1m)



32. Nichole wanted to find out whether the number of leaves of a plant affects the amount of water absorbed by the plant.

Her set-ups are as shown below.



- a) What is one other variable that must be kept the same to ensure the experiment is a fair one? (1m)

Every day, she measured the volume of water left in each container and recorded the results in the table below.

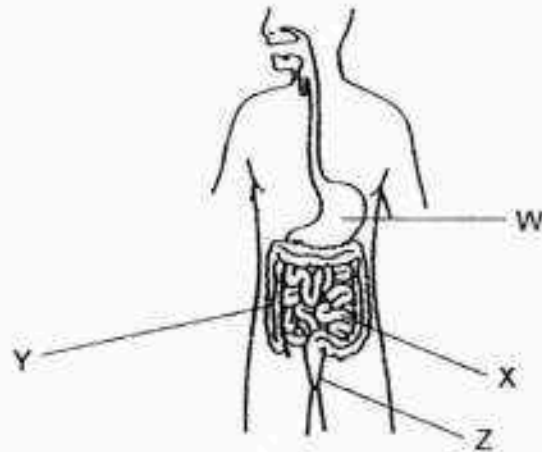
	Day 0	Day 1	Day 2	Day 3	Day 4
Set-up A	200 ml	170 ml	140 ml	115 ml	90 ml
Set-up B	200 ml	190 ml	180 ml	165 ml	150 ml

- b) What is the relationship between the number of leaves of a plant and the volume of water left in the container? (1m)

- c) What can Nichole conclude about the experiment? (1m)



33. Study the diagram of the digestive system carefully.



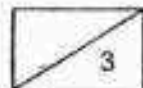
- a) Identify part W and part X. (1m)

part W: _____

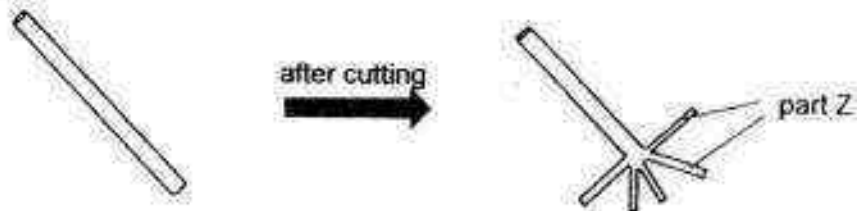
part X: _____

- b) State one similarity in the way part W and part X digest food. (1m)

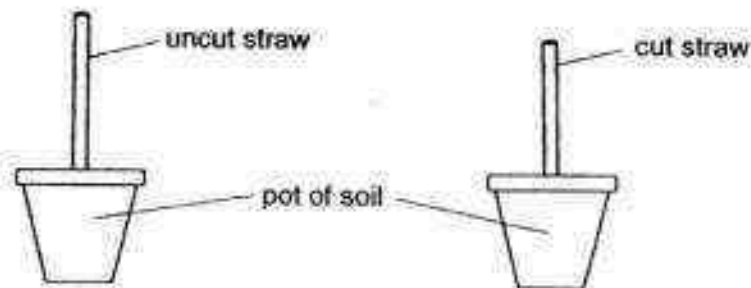
- c) What happened to the undigested food which entered part Y to part Z? (1m)



34. Joyce conducted an experiment with two identical straws. She cut one end of one straw into smaller strips labelled part Z as shown in the diagram below.



Next, she buried the uncut straw into one pot of soil and the cut straw into another similar pot of soil.



She tried to pull both the uncut and cut straws out and realised that she had a more difficult time pulling out the cut straw.

- a) If the cut straw is a model of a plant, which part of the plant will part Z be? (1m)

- b) Based on the answer for part (a), what function of plant part was shown by part Z in the experiment? (1m)

- c) What can Joyce do to the cut straw to make it even more difficult to pull out of the pot of soil? (1m)

35. Study the table below.

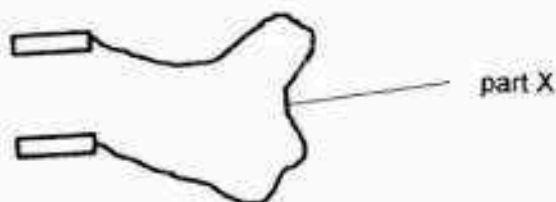
A tick (✓) shows that the characteristic is present in the material.

A cross (X) shows that the characteristic is not present in the material.

	Strong	Flexible
Material A	✓	✓
Material B	✓	X
Material C	X	X

a) State one difference between material A and B. (1m)

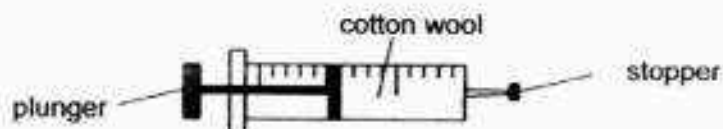
b) Which material (A, B or C) will be suitable to make part X of the skipping rope? Explain why. (2m)



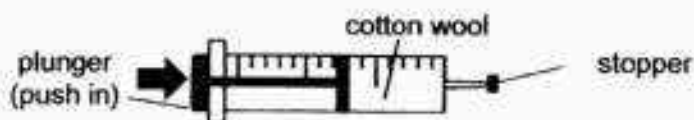
Material _____



36. Olivia filled a syringe with some cotton wool as shown below.

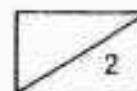


When she pushed in the plunger, she observed that the cotton wool occupied a smaller space.

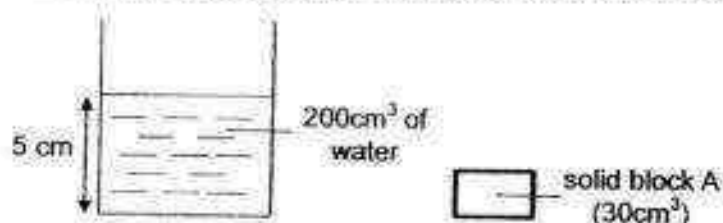


- a) What matter can be found in the cotton wool which allows the plunger to be pushed in? (1m)

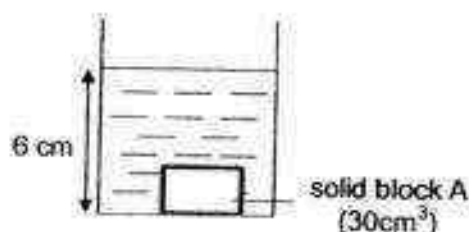
- b) Explain your answer in part (a). (1m)



37. Muhammed has a beaker with 200cm^3 of water and a solid block A of 30cm^3 .

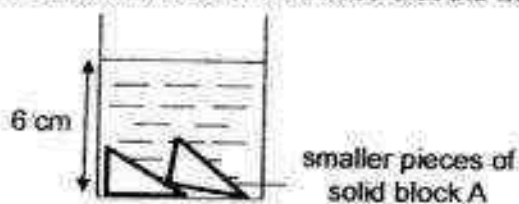


When Muhammed placed solid block A into the beaker of water, the water level increased to 6 cm.



- a) Which property of matter was shown by solid block A when it was placed in the water? (1m)
-
- b) When the water level increased to 6cm, will the volume of water in the beaker decrease, increase or remain the same? (1m)
-

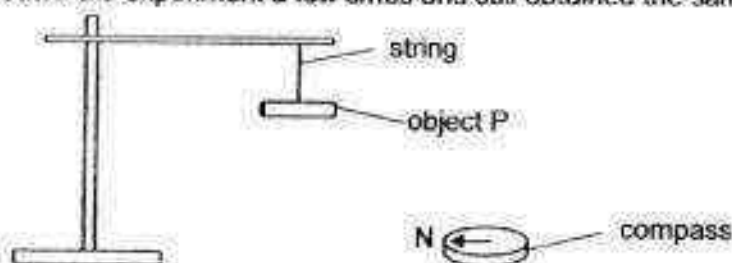
- c) Muhammed cut solid block A into two smaller pieces and placed them back into the beaker of water, he realised that the water level remained at 6 cm.



Explain his observation. (1m)



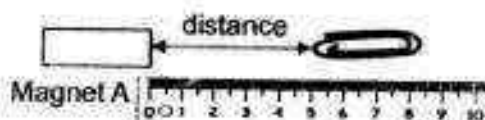
38. Gordon found object P in the Science room. When he tied it to a string and left it hanging freely, he observed that object P stopped in the same direction as the compass beside it. He repeated the experiment a few times and still obtained the same results.



- a) Explain why did object P react this way. (1m)

- b) What was a possible material object P was made of? (1m)

Next, Gordon set up an experiment as shown below. He moved the paper clip towards the magnet along the ruler until the paper clip was attracted to the magnet and measured the distance.



He repeated the experiment with two other magnets, B and C, and recorded the result in the table below.

	Magnet A	Magnet B	Magnet C
Distance	5 cm	3 cm	? cm

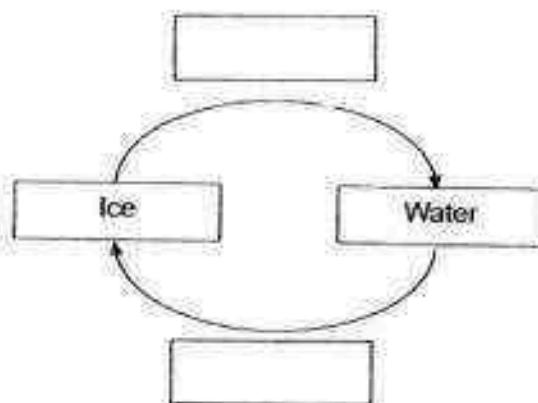
- c) Compare the magnetic strength of magnet A and B. (1m)

- d) If magnet C had the weakest magnetic strength, what could the distance be? (1m)



39. Study the diagram carefully.

a) Fill in the blanks below with either 'heat gain' or 'heat loss'. (1m)



b) Maya prepared three bowls of water of different temperatures. The temperature was kept the same throughout the experiment.

	Temperature ($^{\circ}\text{C}$)
Bowl A	10
Bowl B	50
Bowl C	?

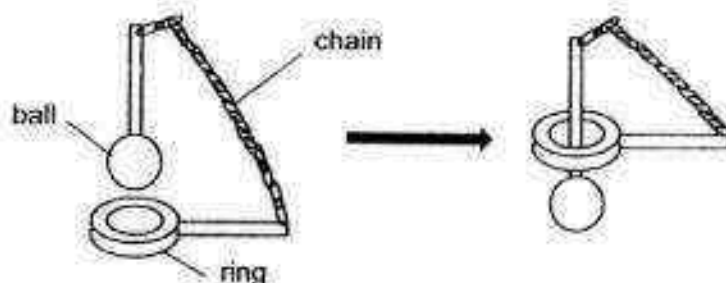
After placing both her hands in bowl A for 5 minutes, she removed and immediately placed them into bowl C. Her hands felt hot when they were in bowl C.

Read each of the statements and put a tick (\checkmark) in the correct box. (2m)

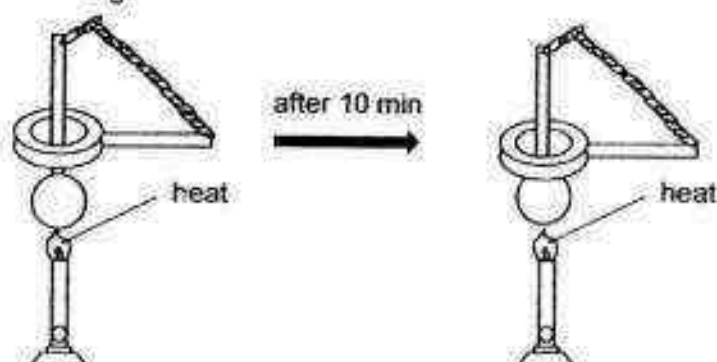
Statement	True	False	Not possible to tell
(i) The water in bowl C is warmer than the water in bowl A.			
(ii) The temperature of the water in bowl C is lower than the temperature in bowl B.			



40. Liling conducted an experiment using a metal ball and ring as seen below. The metal ball was able to enter the ring as seen in the diagram below.



She heated the metal ball for 10 minutes as seen below. After that, she realised that the metal ball was stuck and was not able to be removed from the metal ring.

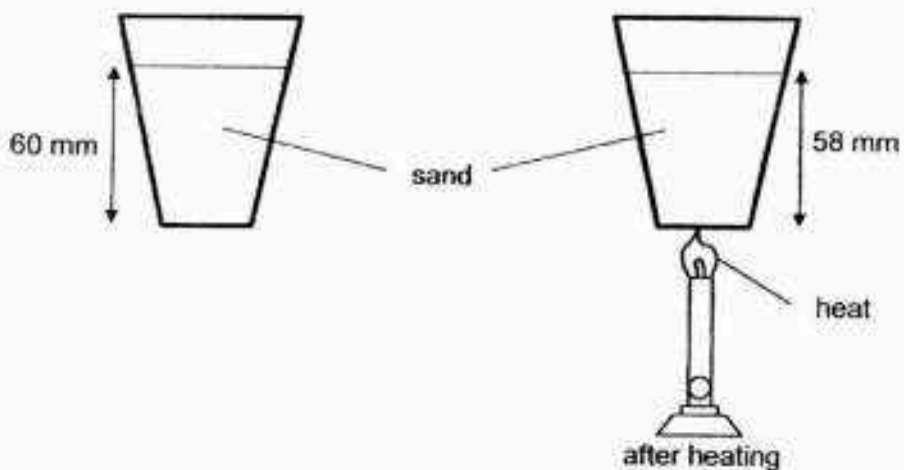


- a) What happened to the metal ball when it was heated for 10 minutes? (1m)

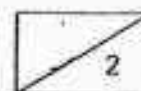
- b) What property of the metal ball increased after it was heated for 10 minutes which resulted in it being unable to be removed from the metal ring? (1m)

- c) To remove the metal ball from the metal ring, explain what can Liling do to the metal ball to quicken the process. (1m)

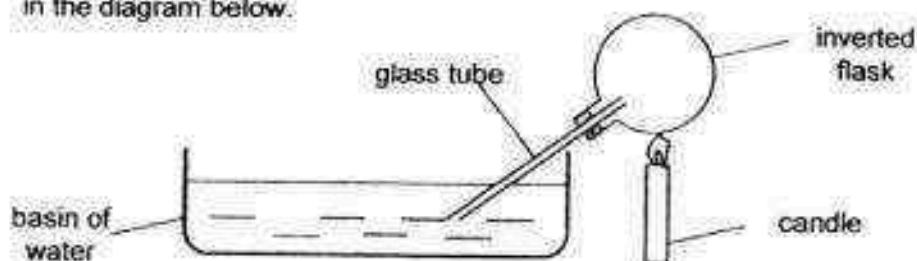
Liling filled a metal cup with sand such that it was at a height of 60 mm. Liling heated the metal cup for 20 minutes and realised that the height of the sand dropped to 58 mm.



d) Explain what had happened. (2m)

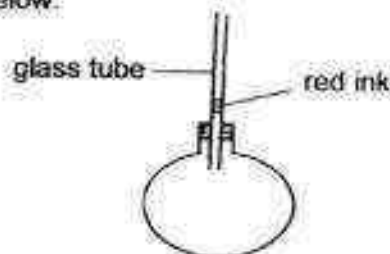


41. Benny placed an inverted flask with a glass tube into a basin of water as seen in the diagram below.



- a) He noticed that bubbles were seen coming out of the glass tube into the water after the inverted flask was heated for four minutes. Explain why. (2m)

Using another flask, he added a drop of red ink into the glass tube as seen in the diagram below.



- b) He noticed that the red ink did not drop into the flask. Explain why. (1m)

- c) Next, he heated the flask and he noticed the red ink fell downwards a little before it moved up the glass tube. Explain his observation. (2m)

End of Section B
Please check your work



EXAM PAPER 2016

LEVEL : PRIMARY 4

SCHOOL : RED SWASTIKA SCHOOL

SUBJECT : SCIENCE

TERM : SA1

Booklet A: MCQ [Total: 56 marks]

1. (1)	6. (1)	11. (2)	16. (1)	21. (4)	26. (3)
2. (3)	7. (3)	12. (3)	17. (1)	22. (2)	27. (4)
3. (4)	8. (1)	13. (4)	18. (4)	23. (1)	28. (2)
4. (2)	9. (4)	14. (1)	19. (2)	24. (4)	
5. (2)	10. (2)	15. (3)	20. (3)	25. (3)	

Q29a. Organism B cannot make its own food and reproduce and by giving birth to young alive.

Q29b. Organism A is a plant as only plants can make its own food.

Q29c. Yeast/mushroom/bracket fungi

Q30b. There is too much heat for the seeds to germinate.

Q30a. seed → young plant → adult plant



Q30b. There is too much heat for the seeds to germinate.

Q30c. Professor Sim observed that the roots started grow from the seed.

Q31a. The cockroach nymphs have developed into adult cockroach.

Q31b. The adult cockroaches had reproduced and its eggs have hatched into new cockroaches.

Q31c. The adult cockroach has a pair of wings but the cockroach nymph does not have a pair of wings.

Q32a. The location of the experiment.

Q32b. The greater the number of laves on the plant, the lesser the volume of water left in the container.

Q32c. She can conclude that a plant with more leaves will absorb more water.

Q33a. Part W: Stomach Part X: Small intestine

Q33b. Both part W and X produce digestive juices to digest food.

Q33c. Water in the undigested food is absorbed and the digested food is then passed out through the anus.

Q34a. Part Z is the roots.

Q34b. Part Z holds the straw firmly to the ground.

Q34c. She could increase the length of strips cut from the straw

Q35a. Material A is flexible but material B is not flexible.

Q35b. Material A. A skipping rope needs to be strong so that it will not break upon impact with the ground. It also needs to be flexible so that it can bend easily when being used during skipping.

Q36a. The matter is air/gas.

Q36b. As air has no definite volume, it can be compressed.

Q37a. The property is that solid Block A occupies space.

Q37b. The volume of water remained the same.

Q37c. As the solid block A has a definite volume, the volume will remain the same when the shape is changed into smaller pieces.

Q38a. Object P is a magnet which comes to rest in the North-South direction.

Q38b. Object P can be made of steel.

Q38c. Magnet A has a greater magnetic strength than Magnet B.

Q38d. The distance is 0 cm - 3 cm (1 cm/2 cm)

Q39a. Heat gain → water → heat lost → ice



Q39bi. True

ii. Not possible to tell

Q40a. The metal ball gained heat and expanded.

Q40b. The volume of the metal ball increased.

Q40c. Place the metal ball in ice water so that it can lose heat and contract quickly.

Q40d. As the metal cup gained heat and expanded, there would be more space for the sand to flow downwards.

Q41a. As the air in the flask gained heat and expanded, the air will escape through the glass tube because there was not enough space in the flask.

Q41b. Air in the flask/glass tube occupies space.

Q41c. The flask/glass tube gained heat and expanded, allowing more space for the red ink to fall a little. The air in the flask gained heat and expanded, pushing the red ink upwards.



PRIMARY 4 MID-YEAR EXAMINATION 2016

Name : _____ ()

Date: 12 May 2016

Class : Primary 4 ()

Time: 1 hour 45 minutes

Parent's Signature : _____

Marks: _____ / 56

SCIENCE BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Booklet A (28 x 2 marks)

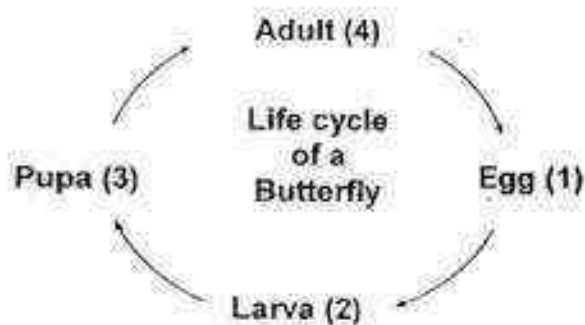
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS) provided.

1. Which one of the following is/are true about life cycles?

- A: All living things have a life cycle.
- B: The life cycle of a human is a four-staged cycle.
- C: The duration of the life cycle is similar for all insects.
- D: The young looks like its adult in the life cycle of all living things.

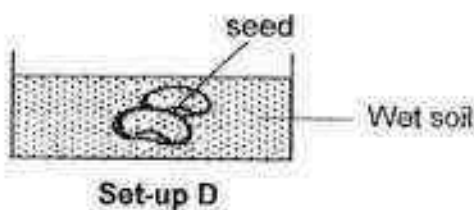
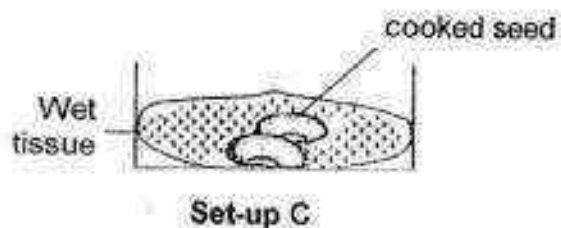
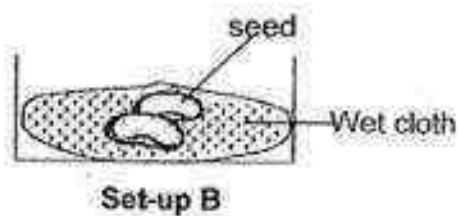
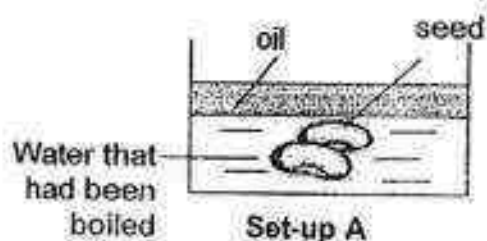
- (1) A only
- (2) A and D only
- (3) B and C only
- (4) B, C and D only

2. The diagram below shows the life cycle of a butterfly.

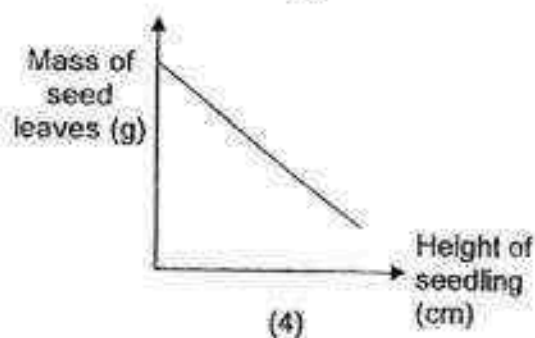
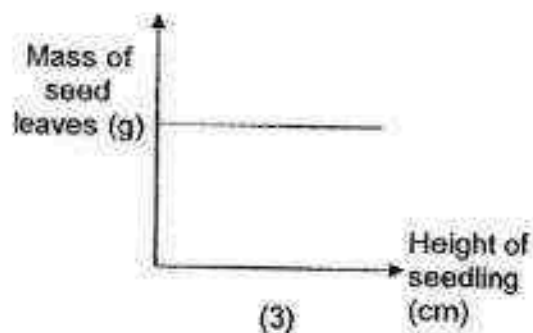
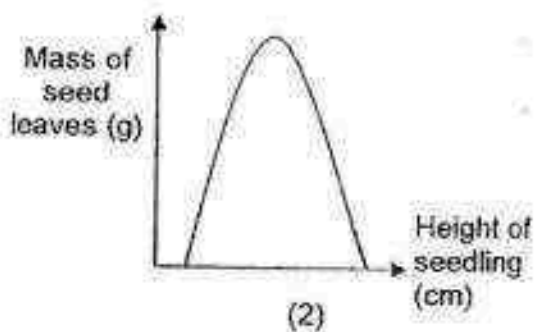
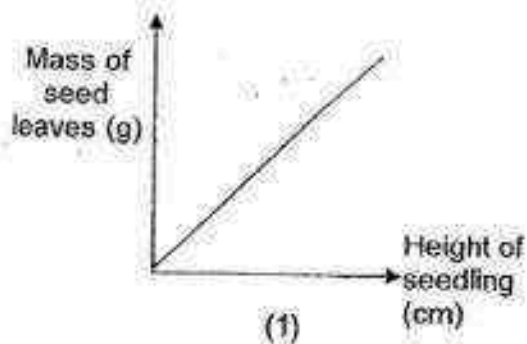


Which stage of the butterfly, (1), (2) (3) or (4) shown above is harmful to a plant?

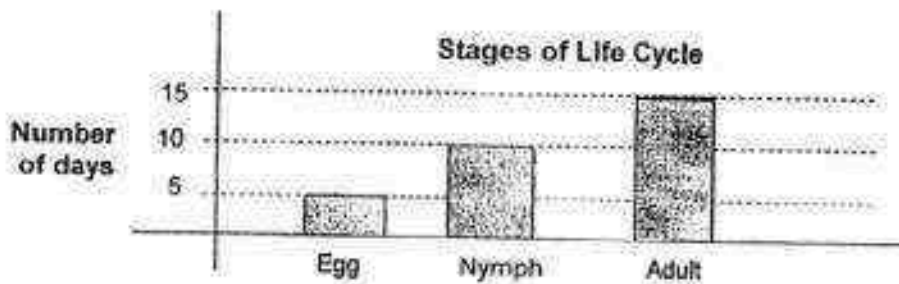
3. Study the following set-ups which were placed in a classroom. Which of the following set-ups allowed the seeds to germinate?



- (1) Set-ups B and D only
 - (2) Set-ups B and C only
 - (3) Set-ups A, B and C only
 - (4) Set-ups A, C and D only
4. Which one of the following graphs below correctly shows the relationship between the mass of the seed leaves and the height of the seedling?

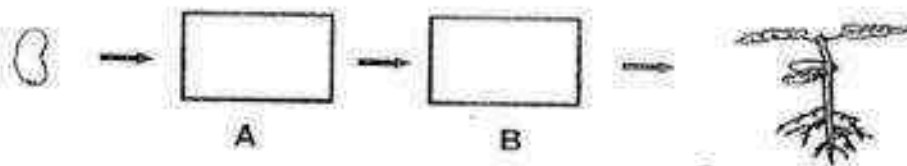


5. The graph below shows the number of days in each stage of the life cycle of an insect.



Based on the graph above, which one of the following statements is true?

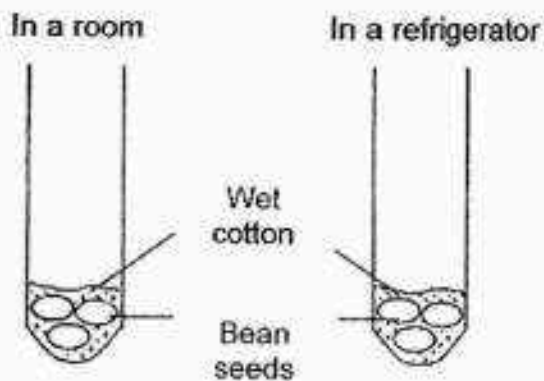
- (1) The insect spends most of its life as a nymph.
 - (2) The insect's life cycle takes 25 days to complete.
 - (3) It takes 5 days for the insect to hatch from an egg.
 - (4) The hatched nymph takes 15 days to become an adult.
6. The diagram below shows the growth of a young plant with two missing pictures, A and B.



Which one of the following shows the correct pictures for A and B?

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

7. James set up an experiment as shown below. After a few days, he noticed that the bean seeds placed in the room had germinated but not those in the refrigerator.



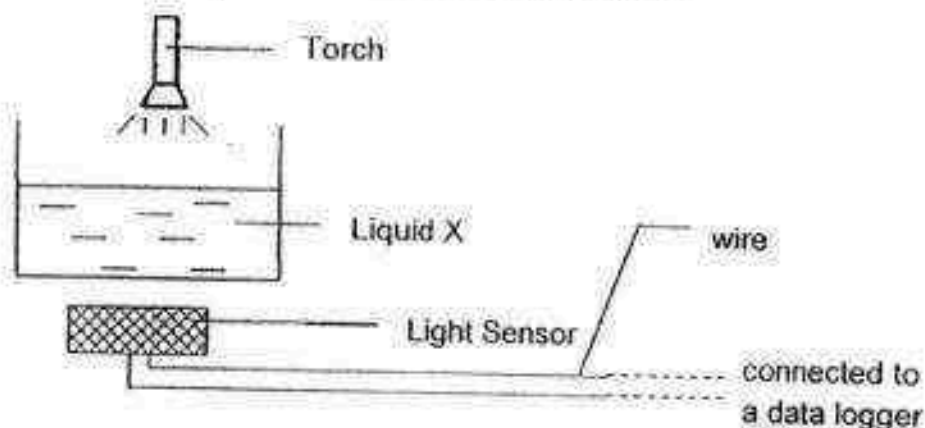
From this experiment, we can conclude that seeds need _____ to germinate.

- (1) air
 - (2) light
 - (3) water
 - (4) warmth
8. Which of the following are light sources?

- A: sun
- B: mirror
- C: moon
- D: lightning

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

9. Amy wanted to find out the amount of light that passed through Liquid X. She conducted the experiment with the following set-up.



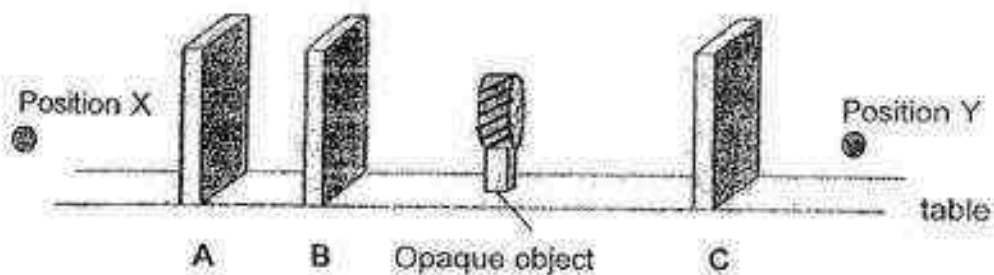
Then, she repeated the experiment with Liquids Y and Z and recorded the readings in the table below.

	Liquid X	Liquid Y	Liquid Z
Amount of light sensed (lux)	220 lux	400 lux	0 lux

What liquids could X, Y and Z be?

	X	Y	Z
(1)	Tap water	Chocolate milk	Apple juice
(2)	Chocolate milk	Apple juice	Tap water
(3)	Tap water	Apple juice	Chocolate milk
(4)	Apple juice	Tap water	Chocolate milk

10. Siow Ming carried out an investigation in a lighted room. He placed different materials A, B and C and an opaque object on a table as shown in the diagram below.

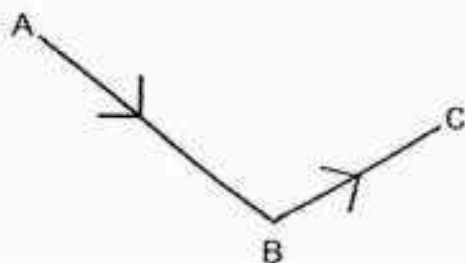


When viewed from position X, the opaque object was seen clearly. When viewed from position Y, the opaque object was seen as a blurred image.

What are the possible materials A, B and C?

	A	B	C
(1)	frosted paper	clear glass	clear plastic sheet
(2)	clear glass	clear plastic sheet	cardboard
(3)	clear plastic sheet	frosted paper	cardboard
(4)	clear plastic sheet	clear glass	frosted paper

11. In the diagram below, the arrows indicate the path of light that allows a person to see an object.



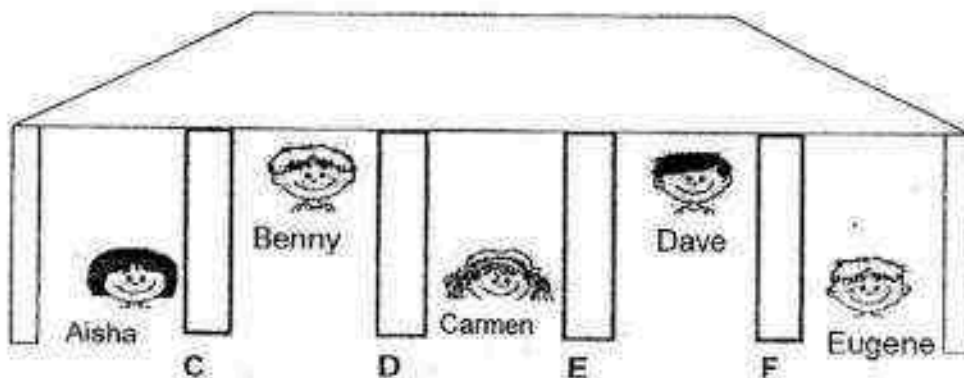
What could A, B and C represent?

	A	B	C
(1)	Object	Eyes	Light source
(2)	Light source	Object	Eyes
(3)	Eyes	Object	Light source
(4)	Light source	Eyes	Object

12. A company produces 4 types of materials C, D E and F with the properties shown in the table below.

Allows light to pass through	Does not allow light to pass through
C D	E F

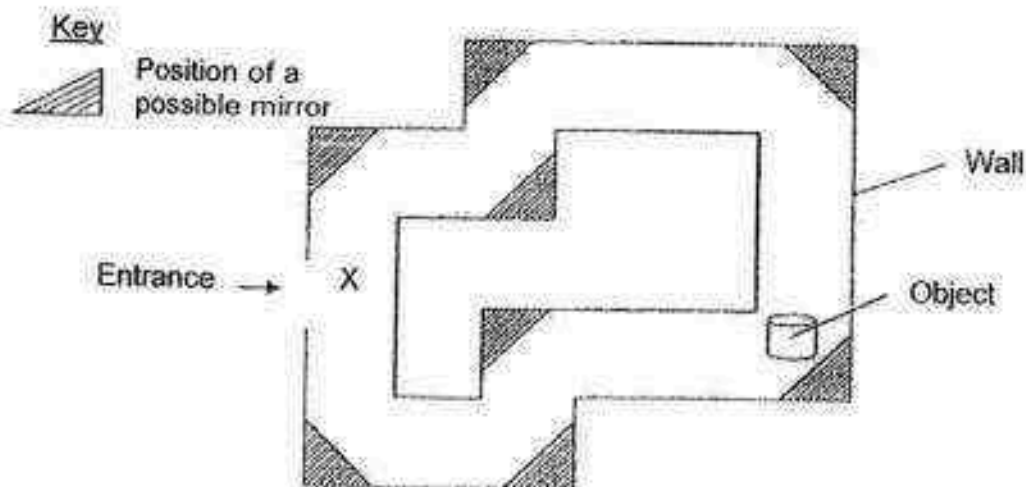
An architect uses the above materials to build 4 different walls for a playhouse. He asks five children to stand behind the walls, as shown in the diagram below.



Which one of the following is true?

- (1) Benny can see Dave.
- (2) Eugene can see Aisha.
- (3) Aisha cannot see Benny.
- (4) Eugene cannot see Dave.

13. The diagram below shows an open air maze seen from the top view. The walls are made of cement. Paul is standing at position X shown below.



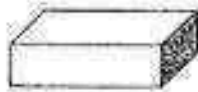
What is the least number of mirrors needed for him to see the object?

- (1) Two mirrors
 - (2) Three mirrors
 - (3) Four mirrors
 - (4) Five mirrors
14. Which one of the following is/are examples of matter?

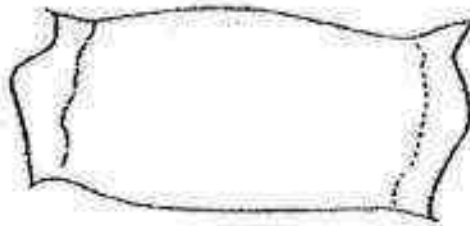
- A: Air
- B: Rain
- C: Heat
- D: Shadow

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

15.



1 kg brick

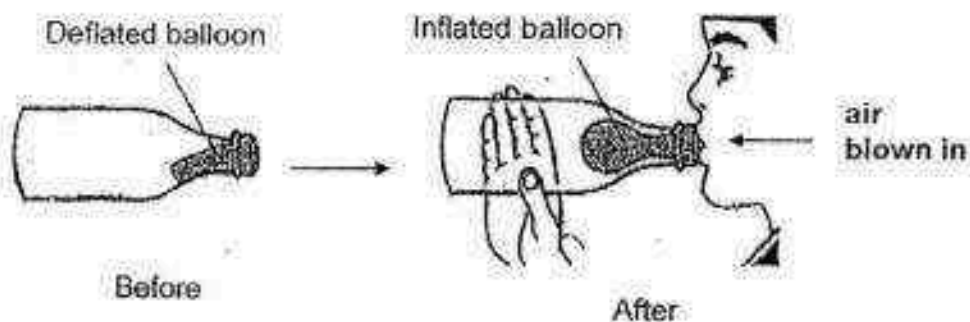


1 kg cushion

Which one of the following statements about the two objects shown above is true?

- (1) Both objects have the same mass.
- (2) The cushion is lighter than the brick.
- (3) Both objects occupy the same amount of space.
- (4) The brick can be compressed while the cushion cannot.

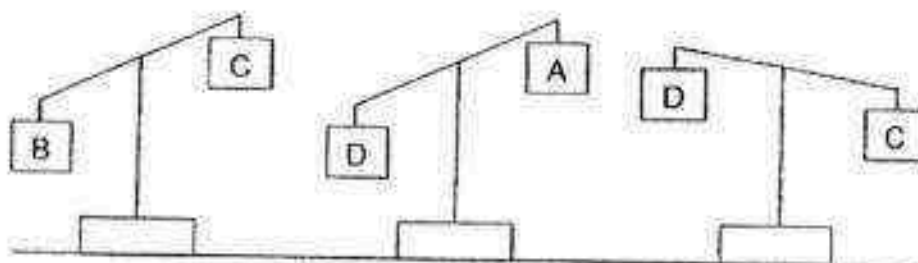
16. Tom blew into a deflated balloon in a bottle. After a while, he found it hard to inflate the balloon further even though there was enough space in the bottle.



Which one of the following explains why Tom was not able to inflate the balloon fully?

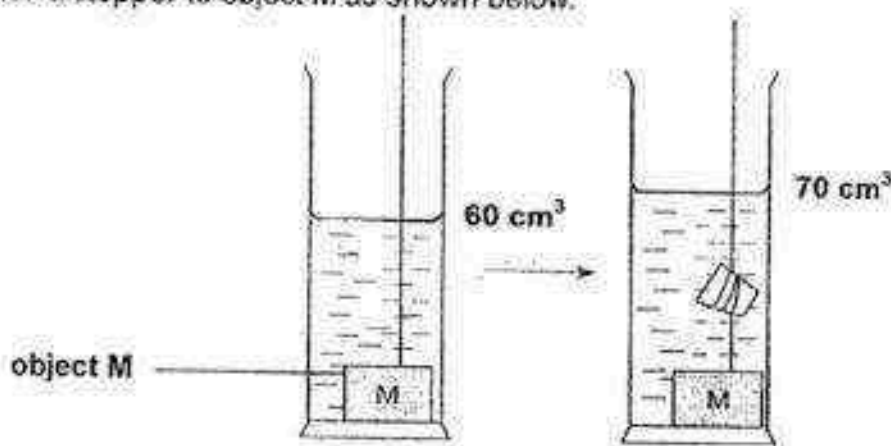
- (1) The air in the bottle has a definite volume.
- (2) The air in the balloon has no definite shape.
- (3) The air in the bottle cannot be compressed further.
- (4) The air in the balloon does not have a definite volume.

17. Kelly compared 4 different objects A, B, C and D on balances as shown below.



Which one of the following statements is true?

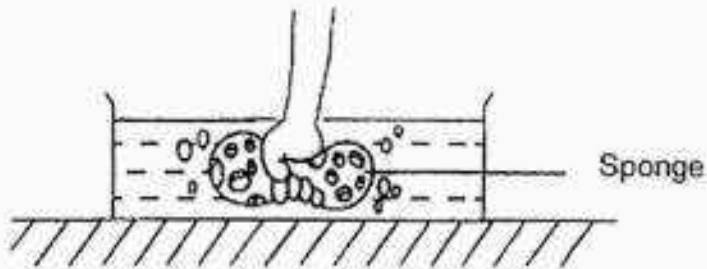
- (1) B has a smaller mass than D.
 - (2) C has a smaller mass than A.
 - (3) B has a greater mass than A.
 - (4) A has a greater mass than D.
18. Mariam wanted to find the volumes of object M and a stopper. She first dropped object M into a measuring cylinder with 30 cm^3 of water. Then, she tied a stopper to object M as shown below.



What are the likely volumes of **object M** and the **stopper**?

	object M (cm^3)	stopper (cm^3)
(1)	30	10
(2)	30	70
(3)	60	70
(4)	60	10

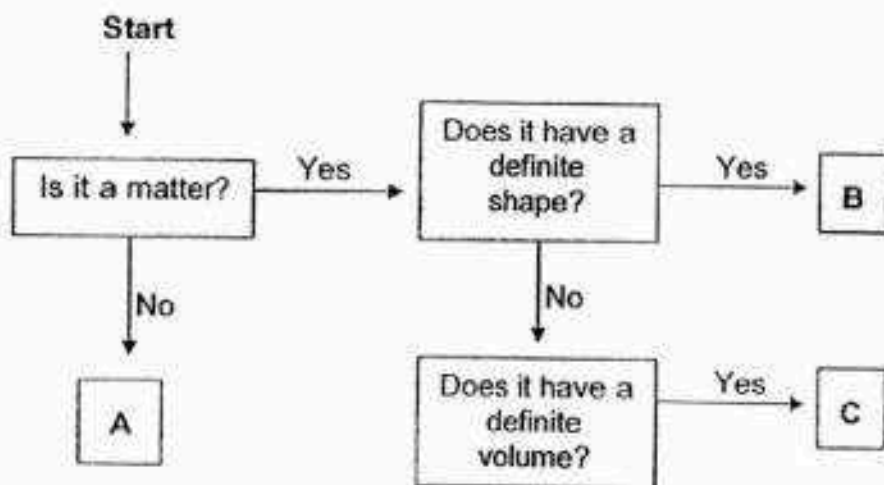
19. Shirley pressed a sponge in the tub of water as shown below. Bubbles were observed escaping from the sponge.



Which one of the following statements explains the escaping bubbles?

- (1) Air trapped in the sponge was released.
- (2) Water trapped in the sponge was released.
- (3) Air trapped in the sponge was compressed.
- (4) Water absorbed in the sponge was compressed.

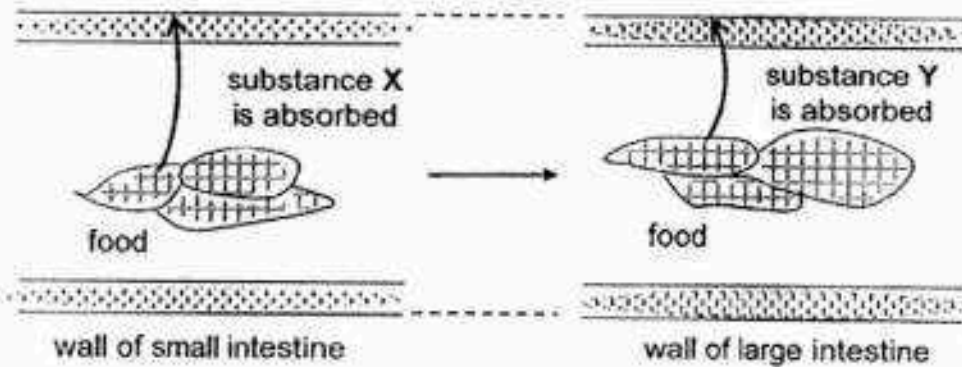
20. Study the flowchart below carefully.



Identify A, B and C.

	A	B	C
(1)	noise	needle	wind
(2)	wind	fork	air
(3)	noise	spoon	saliva
(4)	saliva	milk	spoon

21. Below is a diagram of food found in the small and large intestines.



What are substances X and Y?

	X	Y
(1)	water	digested food
(2)	digested food	water
(3)	air	undigested food
(4)	undigested food	air

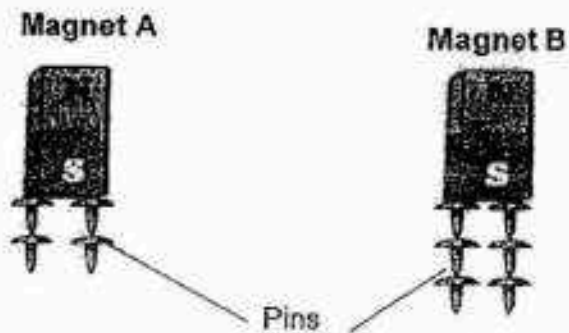
22. The table below shows the different functions of the various parts of a land plant.

A: makes food for the plant
B: holds the plant firmly to the ground
C: supports and spreads out the branches with leaves
D: transports food, water and mineral salts to all parts of the plant

Which one of the following parts of the plant is matched correctly?

	Part of Plant	Functions
(1)	Leaf	A and B
(2)	Stem	C and D
(3)	Roots	A and C
(4)	Fruit	B and D

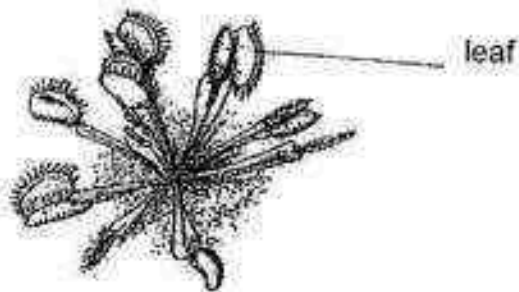
23. Wei Ling conducted a test using two magnets, A and B.



Based on the observation shown above, what can she conclude from the experiment?

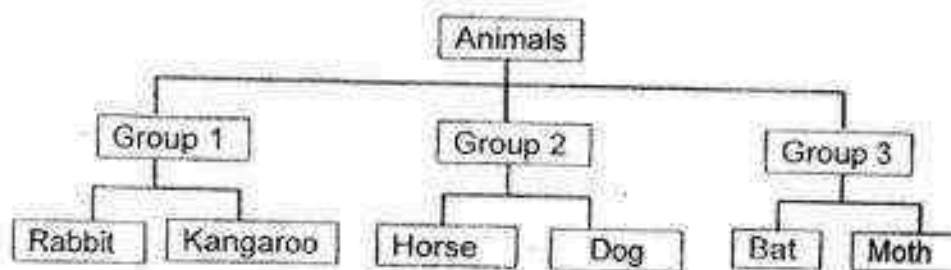
- (1) A magnet is strongest at its poles.
 - (2) The pins are definitely made of iron.
 - (3) Magnet A is stronger than Magnet B.
 - (4) Magnet B is stronger than Magnet A.
24. Which one of the following will not cause a magnet to lose some or all of its magnetism?
- (1) Washing the magnet.
 - (2) Hammering the magnet.
 - (3) Heating the magnet over a flame.
 - (4) Dropping the magnet down a flight of stairs.

25. The leaf of the plant below closes when an insect lands on it.



Which characteristic of the plant is observed?

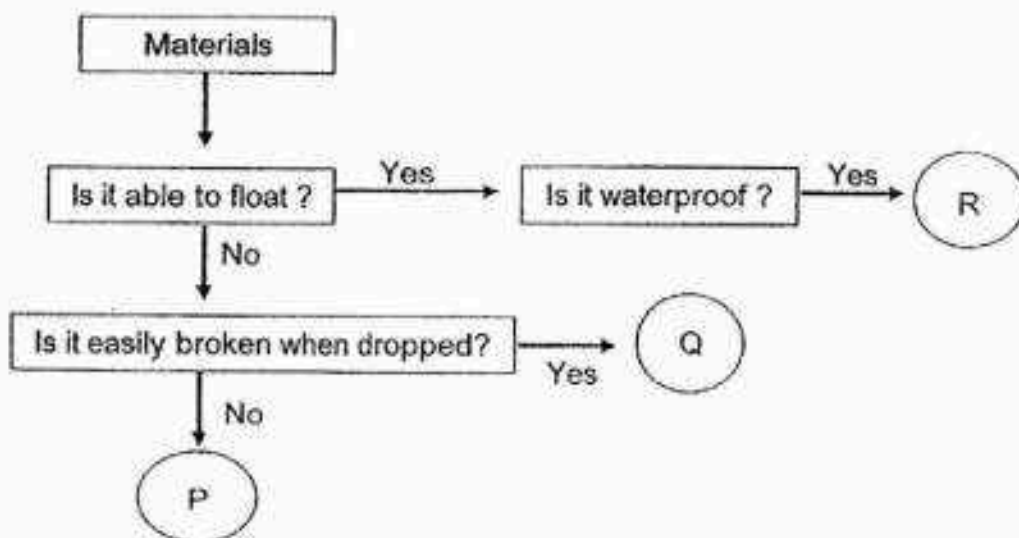
- (1) The plant can grow.
 - (2) The plant can reproduce.
 - (3) The plant can respond to changes around it.
 - (4) The plant needs air, food and water to survive.
26. Study the classification table below.



The animals have been grouped according to _____.

- (1) their shape
- (2) the food they eat
- (3) the way they move
- (4) their body covering

27. Study the flowchart below.



What materials can P, Q, R be?

	P	Q	R
(1)	Metal	Glass	Paper
(2)	Glass	Metal	Plastic
(3)	Paper	Plastic	Glass
(4)	Metal	Glass	Plastic

28. Figure X shows some fish in a fish bowl. Figure Y shows some fish in a can bought from a supermarket.



Figure X

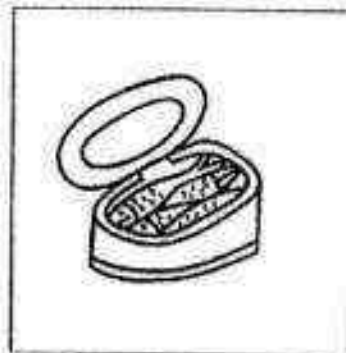


Figure Y

	Fish in Figure X	Fish in Figure Y
A:	Alive	Once alive
B:	Can grow	Cannot grow
C:	Need food	Do not need food
D:	Do not respond to changes around them	Respond to changes around them

How are the fish in Figure X different from the fish in Figure Y?

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

End of Booklet A

Section B

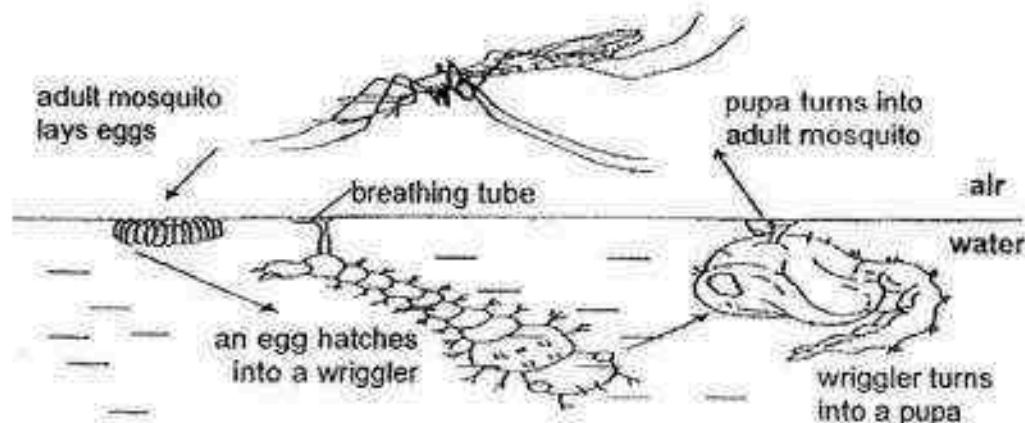
For questions 29 to 41, write your answers clearly in the spaces provided.

29. At a vegetable farm, Mr Tan carried out an experiment using fertiliser on 5 similar potted plants, A,B,C,D and E for a period of 2 weeks.

Pot	Amount of fertiliser given weekly (ml)	Amount of water given daily (ml)	Height of plant (cm) at start of experiment	Height of plant (cm) at end of experiment
A	0	250	5	10
B	10	250	5	20
C	20	250	5	35
D	30	250	5	38
E	40	250	5	38

- a) What is the aim of Mr Tan's experiment? [1]
- _____
- b) Using the results shown above, state the least amount of fertiliser that would ensure the maximum growth of plant. [1]
- _____
- c) State a reason why the height of the plant in pot A increases even when no fertiliser is provided. [1]
- _____
- _____
- d) If Mr Tan has another similar potted plant F, in which he provides 25ml of fertiliser, what could be the height of the plant at the end of 2 weeks? [1]
- _____
- _____

30. During the hotter months, a high number of Singaporeans may contract dengue fever, a disease caused by the Aedes mosquito.

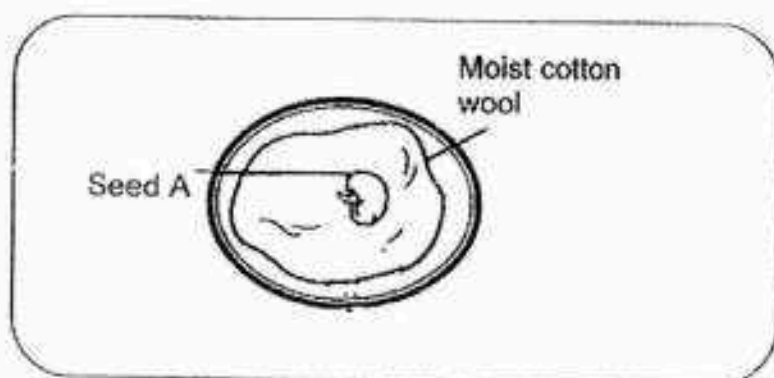


A teacher asks 2 pupils, Amelia and Britney, to suggest ways to stop mosquitoes from breeding in a pond. Their suggestions are as follows:

Amelia	Spray oil on the water surface.
Britney	Use a water pump to produce bubbles to ensure that the water is not stagnant.

- a) From the diagram above, how many stages are there in the life cycle of the Aedes mosquito? [1]
- b) Name another insect that has a similar life cycle as the mosquito. [1]
- c) Study the diagram of the wiggler shown above. How does Amelia's suggestion kill the wigglers? [1]
- d) The teacher says that Britney has a safer suggestion as it does not harm the living things in the pond. Suggest another safe way to stop the breeding of mosquitoes. [1]

31. Larry has a seed, A. He placed it in a dark cupboard as shown below.

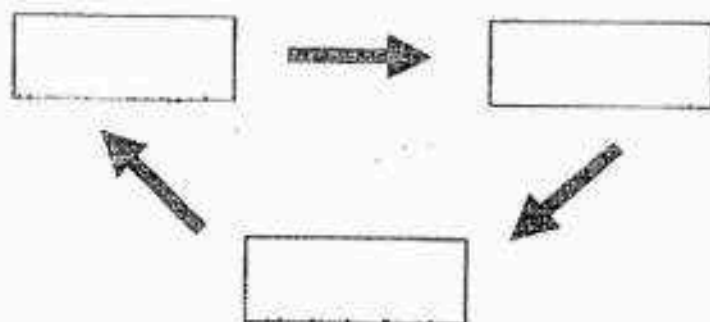


- a) Seed A germinated. Explain why.

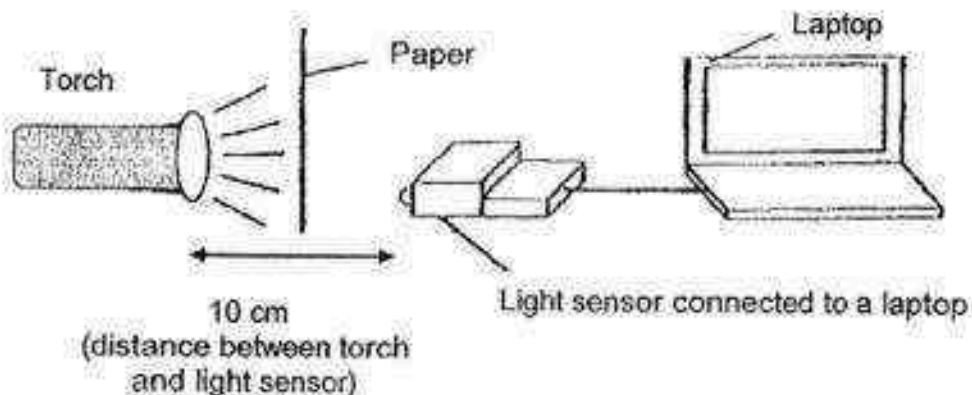
[1]

- b) Write the stages of the life cycle of a plant in the diagram below.

[1]



32. Zachary wanted to find out if the number of sheets of paper affects the amount of light passing through it. He measured the amount of light that was able to pass through a piece of paper with a light sensor as shown below.



He then increased the number of sheets of paper used. The table below shows the results of his experiment.

- a) Fill in the missing value, X, in the table shown below.

[1]

Number of sheets of paper used	1	2	3	4	5
Amount of light received by the light sensor (lux)	100	80	X: _____	40	20

- b) State the changed variable in Zachary's experiment.

[1]

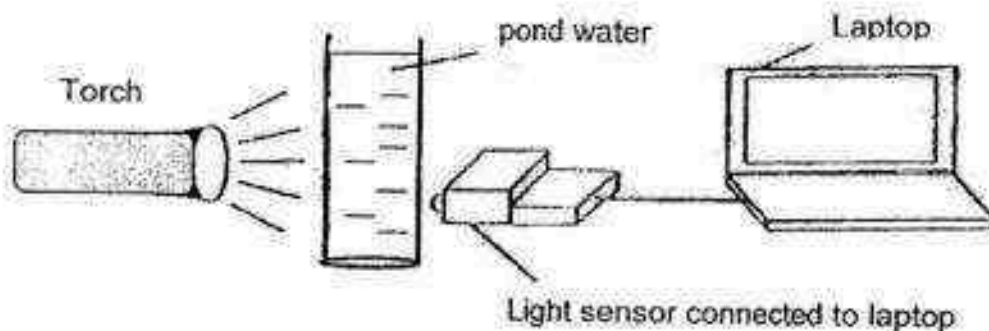
- c) From the above experiment, what is the relationship between the amount of light received and the number of sheets of paper?

[1]

- d) If the torch is shifted left to 20cm away from the light sensor, how will this change affect the amount of light received by the light sensor?

[1]

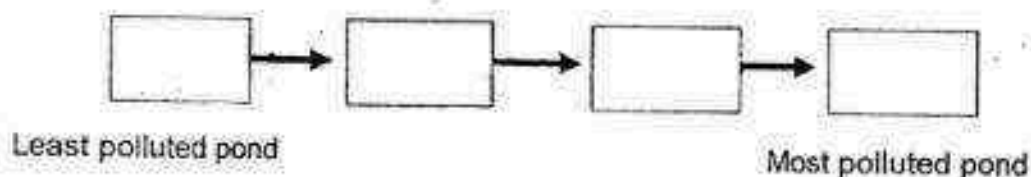
33. David collected four cylinders of water from four different ponds A,B,C and D. He measured the amount of light that passed through the four cylinders of water using a light sensor. The table below shows the data collected.



Pond	Amount of light detected
A	300 lux
B	150 lux
C	420 lux
D	690 lux

- a) Arrange the above data, starting from the least polluted pond to the most polluted pond.

[1]



- b) Plants need sunlight to make food. In which pond, A,B,C or D, would fully submerged plants grow best? Explain your choice.

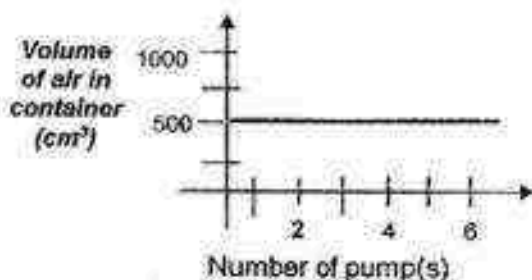
[2]

34. Mrs Goh had a glass container with a capacity of 500 cm^3 . She fitted a pump on the container. Each time she pushed the pump in completely, 100 cm^3 of air would enter the container. Mrs Goh pushed the pump 6 times.

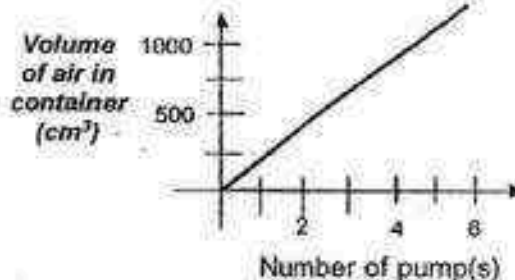
Her students, Jack and Jill, each drew a line graph of the amount of air in the container as shown below.



Jack's Graph



Jill's Graph



- a) Whose line graph is correctly drawn? Explain why.

[2]

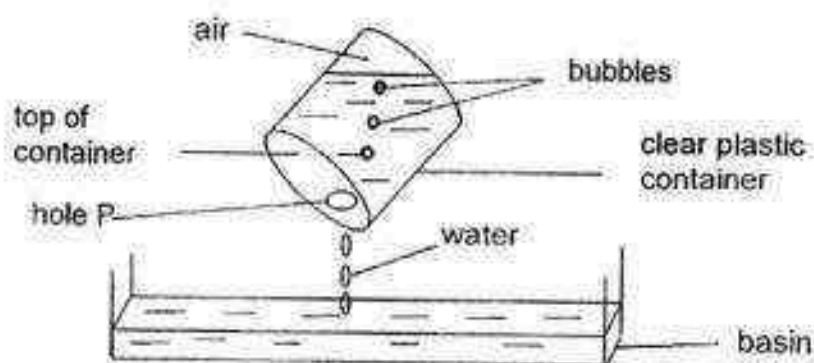
- b) Using the same set of apparatus, Mrs Goh pumped in 50 cm^3 of water into the container. What would be the volume of air in the container now?

[1]

- c) Mrs Goh continued to pump water into the container. However, she could not fill the container completely with water. Explain why.

[1]

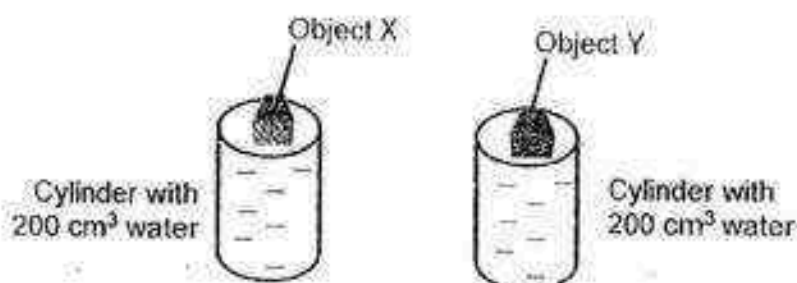
35. Athira has a clear plastic container filled with water. It has a hole on top of the container. She pours the water out as shown below.



- a) When water is flowing out of the container, bubbles can be observed rising up to the surface of the water. Explain why.

[1]

- b) In another experiment, Athira released 2 objects, X and Y, each from the same position into a cylinder with 200 cm^3 of water as shown below.



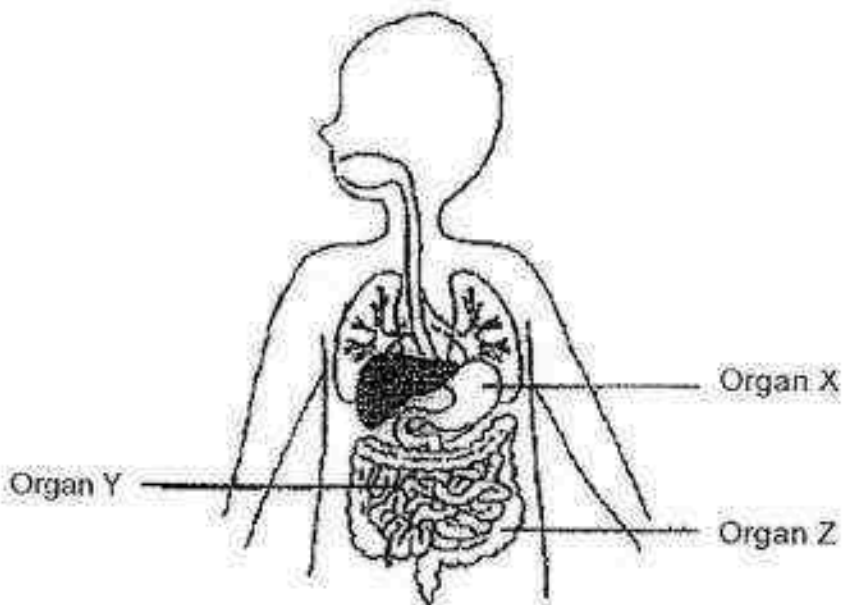
She recorded the time needed for each object to reach the bottom of the cylinder. Object X took 10 seconds while Object Y took 4 seconds. What does this tell us of the mass of Object X compared to Object Y?

[1]

- c) State the property of matter that is needed for the experiment to be carried out.

[1]

36. The diagram below shows the human digestive system.



a) Name organs X and Y.

[1]

i) Organ X: _____ ii) Organ Y: _____

b) What is the function of organ Z?

[1]

c) Grandma Li has lost many teeth. Explain how fewer teeth affect the speed of the digestion of food, if she chews the same number of times as before?

[2]

37. Alif has 2 plants, A and B, in his garden as shown below.



Plant A

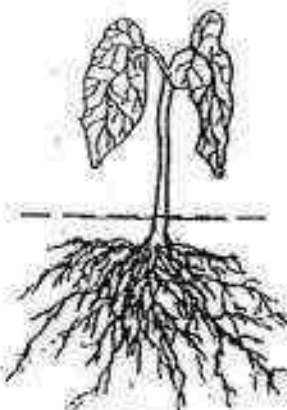


Plant B

- a) That night, there was a strong wind that caused Plant B to fall but not Plant A. Explain why only Plant B fell.

[2]

- b) Alif replanted the upper part of Plant A into a pot by cutting off at Part X as shown below.



Plant A

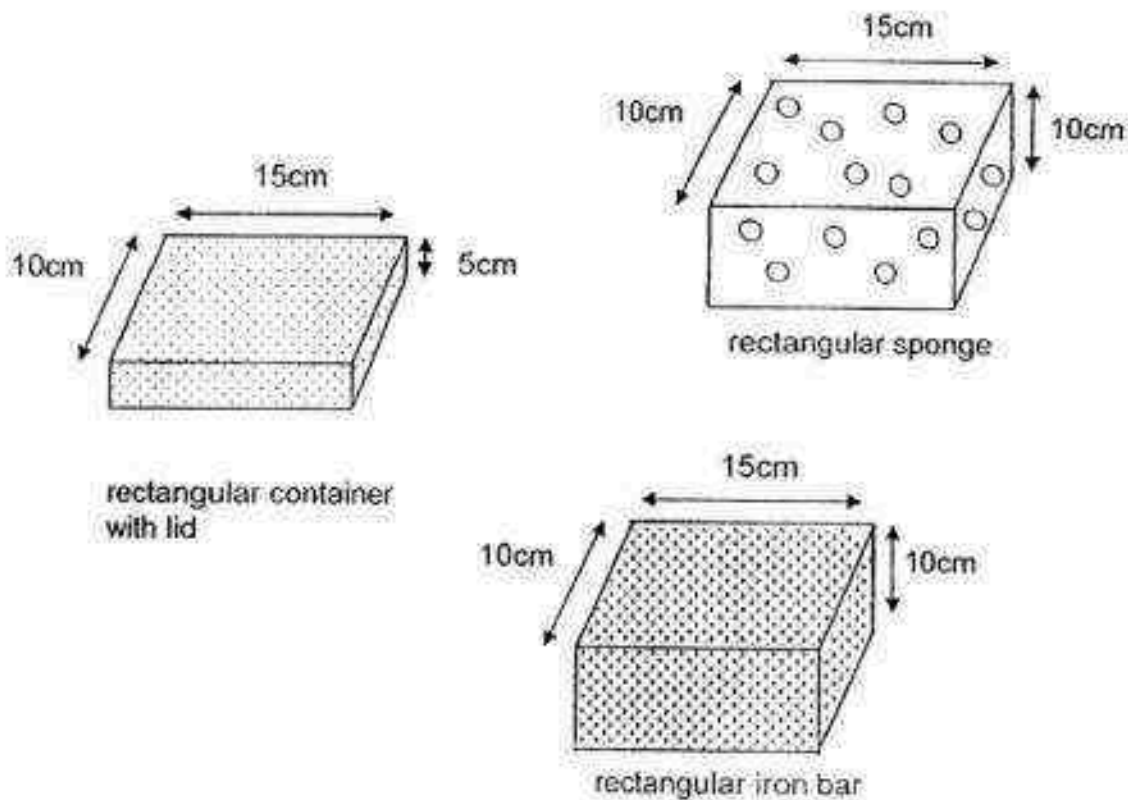


Plant A in pot

- A few days later, Plant A withered and died. Explain why.

[1]

38. Sandra was given a rectangular sponge, a rectangular iron bar and a rectangular container with a lid as shown below.



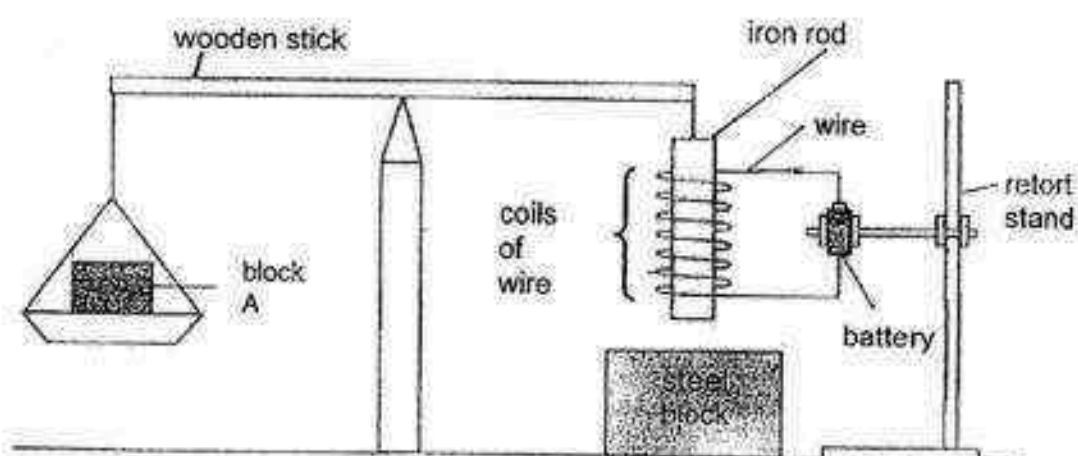
- a) Sandra placed the sponge into the container. She discovered that she could close the lid. Explain why.

[2]

- b) Sandra then removed the sponge and placed the iron bar into the container. She could not close the lid. Explain why.

[1]

39. Study the set-up below.



When the wire is not connected to the battery, the wooden stick becomes balanced as shown above.

- a) However, when the wire is connected to the battery, the iron rod is pulled downwards towards the steel block. Explain why. [2]

- b) If the steel block is replaced by Magnet K and the wire is connected to the battery, the iron rod is pushed upwards, away from the steel block. Give a reason why this happens. [2]

40. John has the following two pairs of shoes.



rubber shoes



wooden shoes

- a) Which pair of shoes is more comfortable for running? State two properties of the material you have chosen.

[2]

- b) John wore the rubber shoes and stepped on a puddle of water. He noticed that his feet were not wet. Explain why.

[1]

41. The diagram below shows Animal P. Susan wanted to find out if the animal is an insect. She carried out the following steps:

- Step A** Measured its length.
Step B Checked if it had wings.
Step C Counted the number of legs.
Step D Counted the number of body parts.



Animal P

- a) Which 2 steps A,B,C or/and D are used to determine if Animal P is an insect? [1]

- b) From the above steps, Susan concluded that Animal P is not an insect. [2]
Give a reason how Animal P is different from an insect.

End of Booklet B

EXAM PAPER 2016 (P4)

SCHOOL : TAO NAN

SUBJECT : SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	2	1	4	3	2	4	2	4	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	4	2	2	1	3	3	1	1	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
2	2	4	1	3	3	4	2		

29)a)He wanted to find out how the amount of fertiliser affects the height of the plant.

b)30ml of fertiliser.

c)The plant could still make food without fertiliser.

d)The height of the plant is 37cm high.

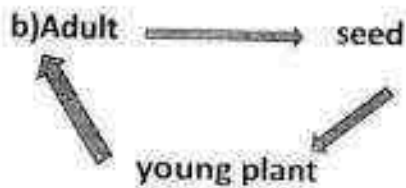
30)a)There are four stages.

b)A mealworm beetle.

c)When you spray oil on the surface of the water, it prevents air from going into the pond, so the larva and pupa could breathe.

d)Breed fishes inside the pond to eat the wigglers and pupae.

31)a)It was provide with moisture, warmth and oxygen.



32)a)60

b)The sheets of paper.

c)The more the sheets of paper, the lesser light received.

d)The distance is longer so the amount of light received by the light sensor is lesser.

33)a)D → C → A → B

b)The most amount of light is able to pass through the water and the plants will be able to make the most amount of food.

34)a)Jack's graph. Air does not have a definite volume and can be compressed.

b)450cm³.

c)Air is occupying space in the glass container.

35)a)Air is entering the container.

b)Object X has smaller mass than Object Y.

c)Matter has mass.

36)a)i)Stomach ii)Small intestine

b)It is to absorb water from the undigested food.

c)The digestion of food is slower as the teeth chew the food into bigger pieces than last time.

37)a)Plant B had lesser roots than Plant A , so the roots of Plant A anchored the plant more firmly to the ground than the roots in Plant B.

b)Plant A had no roots to absorb water for the entire plant.

38)a)A sponge can be compressed because it has many air spaces in it.

b)A iron bar is an solid. It cannot be compressed and does not have any air spaces in it.

39)a)The iron rod is magnetised and it became a magnet and it attracted the steel block.

b)The like poles of the electromagnet and Magnet K are facing each other and the magnets repelled each other.

40)a)Rubber shoes. It is flexible and waterproof.

b)Rubber is waterproof.

41)a)Step C and Step D.

b)Animal P has two body parts and eight legs while insects has three body parts and six legs.

12

Name: _____ ()

Class: Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4
Semestral Assessment 1 – 2016
SCIENCE
BOOKLET A
12 May 2016

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

28 questions
56 marks

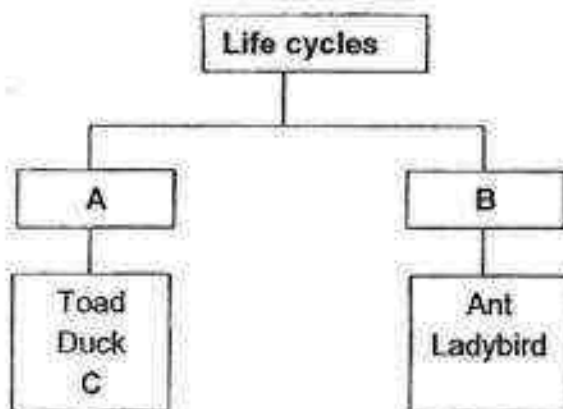
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of 17 printed pages.

Section A (28 x 2 marks = 56 marks)

For each question from 1 to 28, 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. Some animals are classified according to their life cycles as shown in the chart below.



Which of the following correctly represents B and C?

	B	C
(1)	3-stage life cycle	Moth
(2)	4-stage life cycle	Grasshopper
(3)	3-stage life cycle	Cockroach
(4)	4-stage life cycle	Mosquito

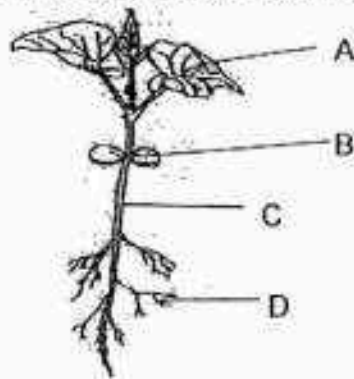
2. The characteristics of 3 types of living things, A, B and C, are shown in the table below.

Characteristics	Living Things		
	A	B	C
Does it make its own food?	Yes	No	Yes
Does it have flowers?	No	No	Yes

Which one of the following conclusions is correct?

- (1) A reproduces by seeds
- (2) B and C are mushrooms
- (3) A and C are green plants
- (4) A and B are flowering plants

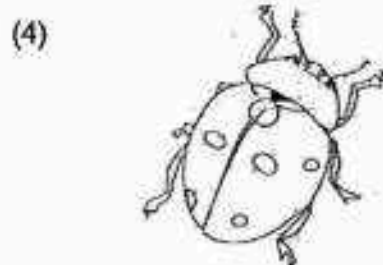
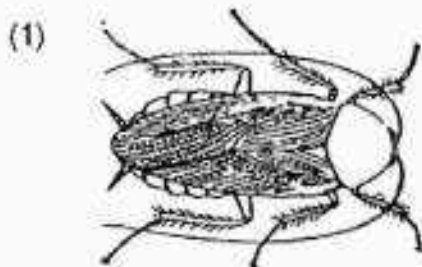
3. The diagram below shows different parts of the plant.



Which part(s) A,B,C or D, make (s) food for the plant?

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

4. Which of the following animals does not have young that resembles the adult?

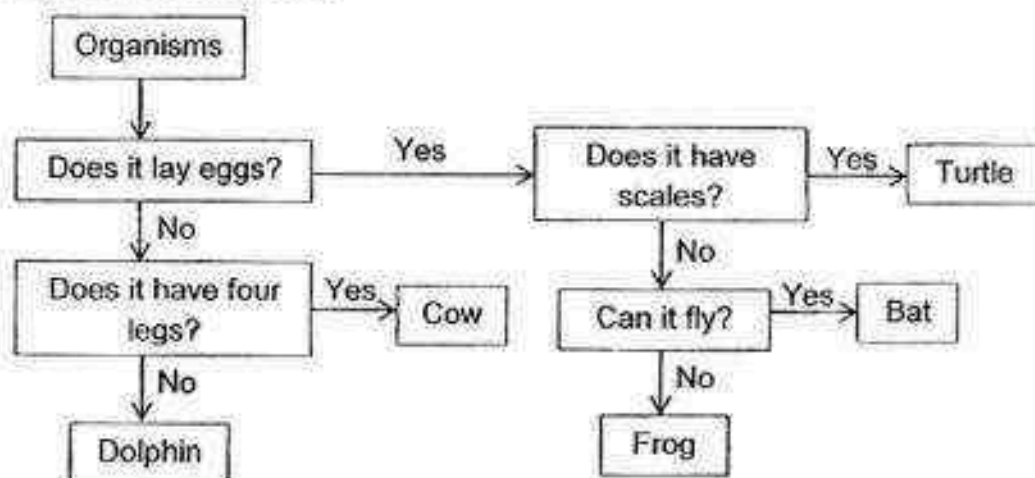


5. Sally conducted an experiment to determine if warmth was necessary for seed germination. She used the same type of seeds.

Set-up	Number of seeds	Place	Amount of water given (ml)
A	5	Open field	200
B	5	Refrigerator	200
C	5	Near an open window	400
D	6	In a dark cupboard	400

Which two setups should Sally use for her experiment?

- (1) A and B
 - (2) A and D
 - (3) B and C
 - (4) C and D
6. Study the flowchart below.



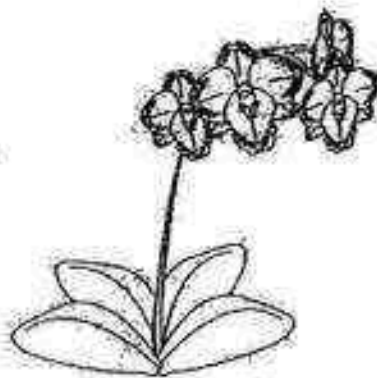
Which animal has been placed wrongly?

- (1) Bat
- (2) Frog
- (3) Turtle
- (4) Dolphin

7. Study the pictures below.



Fern

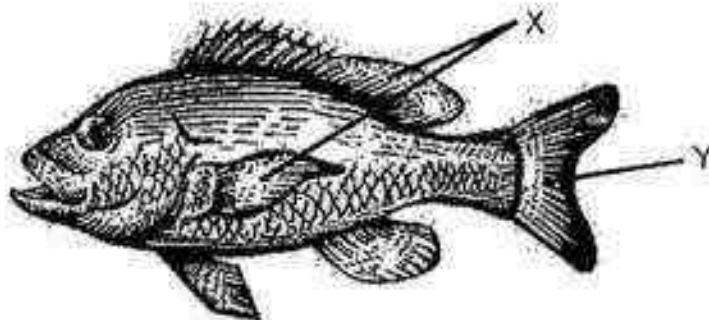


Orchid plant

What observations can be made about the fern and the orchid plant?

- (1) Both the fern and orchid plant reproduce by spores.
- (2) The fern has a weak stem but the orchid plant has a strong stem.
- (3) The fern is a non-flowering plant but the orchid plant is a flowering plant.
- (4) The fern does not need light to grow but the orchid plant needs light to grow.

8. The diagram below shows a fish.



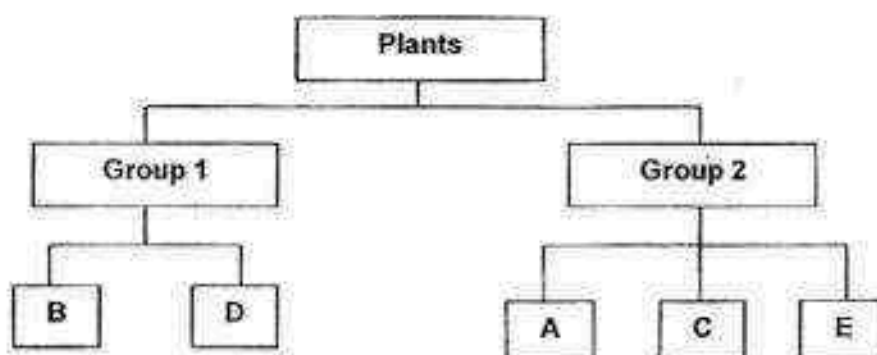
Which one of the following is not a function of parts, X and Y, of the fish?

- (1) To help the fish move forward.
- (2) To help to protect the fish's body.
- (3) To help the fish to balance itself in water.
- (4) To help the fish to change its direction of movement.

9. The table below shows the characteristics of 5 plants, A, B, C, D and E.

Plants \ Characteristics	A	B	C	D	E
Texture of leaves	Smooth	Hairy	Waxy	Smooth	Smooth
Type of stem	Strong	Strong	Weak	Weak	Weak
Shape of leaves	Heart	Oval	Heart	Oval	Heart
Number of seeds	Many	Single	Many	Many	Single

The plants can be classified as shown below.



Which one of the following characteristics was used to classify the plants?

- (1) Type of stem
- (2) Shape of leaves
- (3) Texture of leaves
- (4) Number of seeds

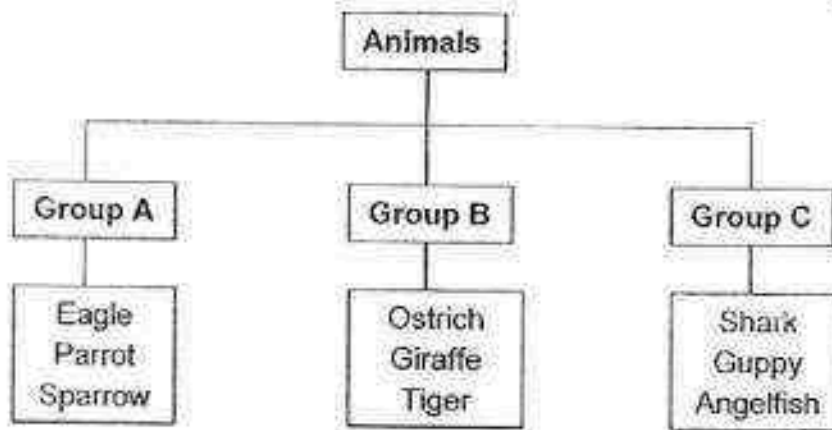
10. Timothy made some observations of a teddy bear, a robot dog, a hamster and a cactus. He described their characteristics in the table below.

Characteristics	A	B	C	D
Does it grow?	Yes	No	Yes	No
Can it move from one place to another?	No	No	Yes	Yes
Does it respond to changes?	Yes	No	Yes	Yes

Based on the table above, which one of the following best represents, A, B, C and D?

	Teddy bear	Hamster	Robot dog	Cactus
(1)	C	A	B	D
(2)	A	D	C	B
(3)	D	B	A	C
(4)	B	C	D	A

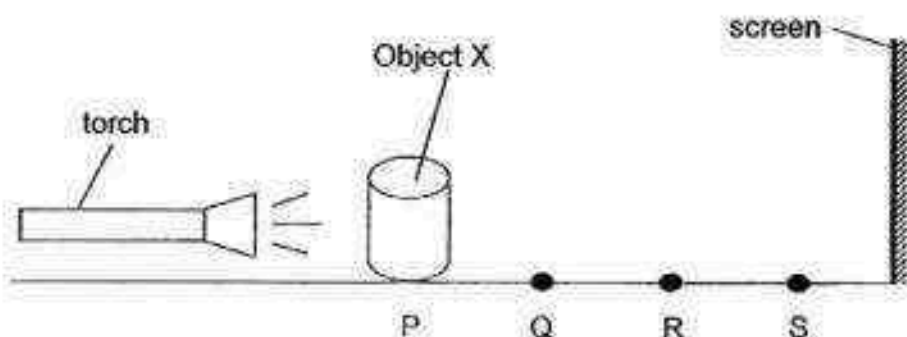
11. The classification chart below shows how some animals can be grouped.



How are the above animals classified?

- (1) By their movement
- (2) By their outer covering
- (3) By their method of breathing
- (4) By their method of reproduction

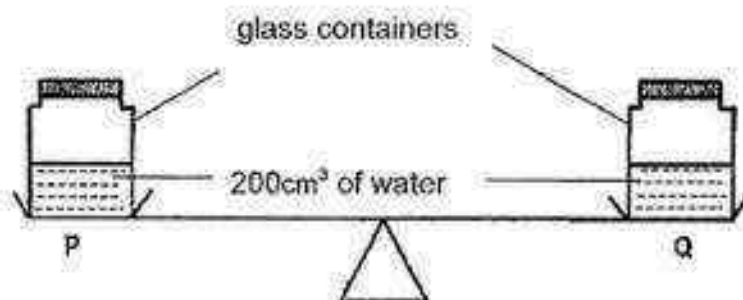
12. Object X is placed in front of a torch to cast a shadow on the screen as shown in the figure below.



When Object X is at P, the height of shadow cast on the screen is 20cm. Which one of the following correctly shows the height of the shadow cast on the screen when Object X is placed at Q, R and S?

Height of shadow (cm)			
	Q	R	S
(1)	16	18	20
(2)	22	20	18
(3)	18	16	14
(4)	22	24	26

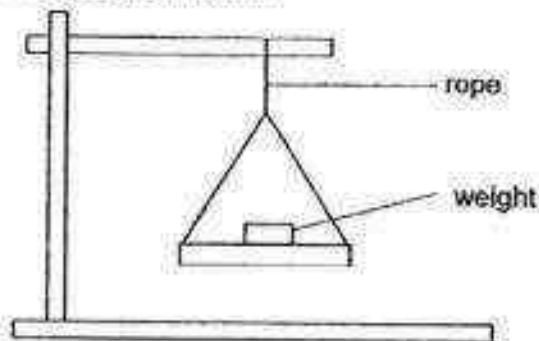
13. Reuben placed two glass containers with a capacity of 500cm^3 each on a balance as shown in the diagram below. Each container contained 200cm^3 of water.



Reuben pumped in an additional 50cm^3 of air into Container P. Which of the following statement(s) is/ are correct?

- A The side with container P moved downwards.
 B The air in container P occupied a volume of 300cm^3 .
 C The volume of water in container P decreased to 150cm^3 .
- (1) B only
 (2) A and B only
 (3) A and C only
 (4) B and C only

14. Roberta set up an experiment to find out if the thickness of a rope would affect the number of weights it can hold.



She used 4 ropes, P, Q, R and S. She added weight of the same mass, until the rope broke. The table below shows the number of weight that each rope could hold before it broke.

Rope	Thickness of rope (units)	Number of weights
P	1	5
Q	2	10
R	3	15
S	4	20

Based on the table above, what conclusion can Roberta draw about the strength of the rope?

- (1) The greater the number of weights, the heavier the rope.
- (2) The longer the rope, the greater the strength of the rope.
- (3) The thicker the rope, the greater the strength of the rope.
- (4) The greater the number of weights, the lesser the strength of the rope.

15. Which of the following is not a source of light?

- A Moon
- B Cloud
- C Firefly
- D Lightning
- E Torchlight

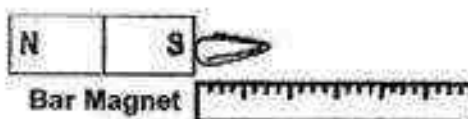
- (1) A and B only
- (2) C and D only
- (3) A, B and C only
- (4) C, D and E only

16. Jered was given a bar magnet and a rod magnet. He placed the bar magnet at one end of the ruler and slowly pushed a paper clip towards it until the paper clip was attracted to the magnet. He repeated the experiment with the rod magnet.

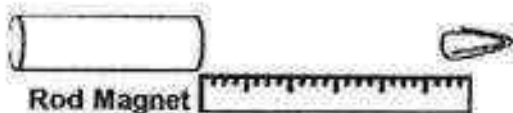
Before



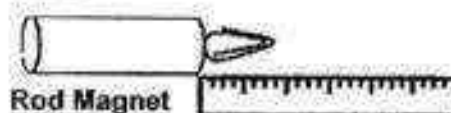
After



Before

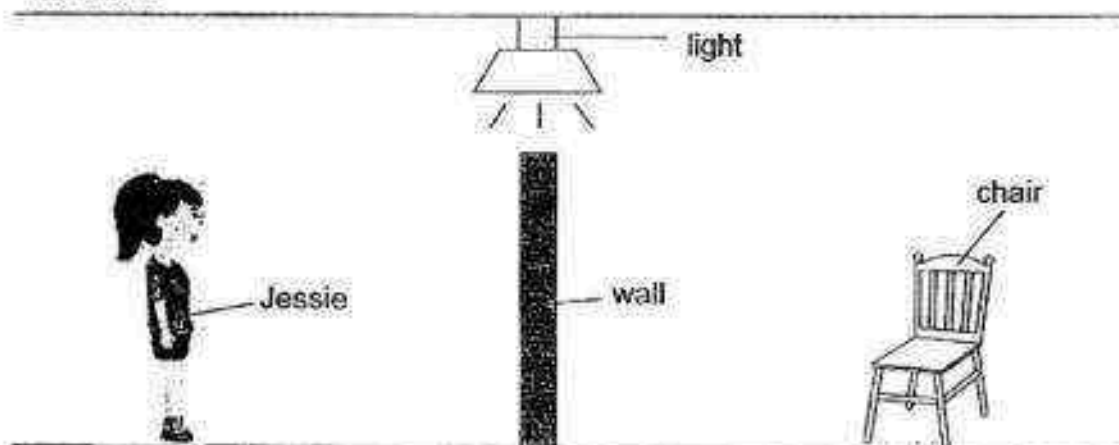


After



What must Jered measure to find out which magnet has a greater magnetic strength?

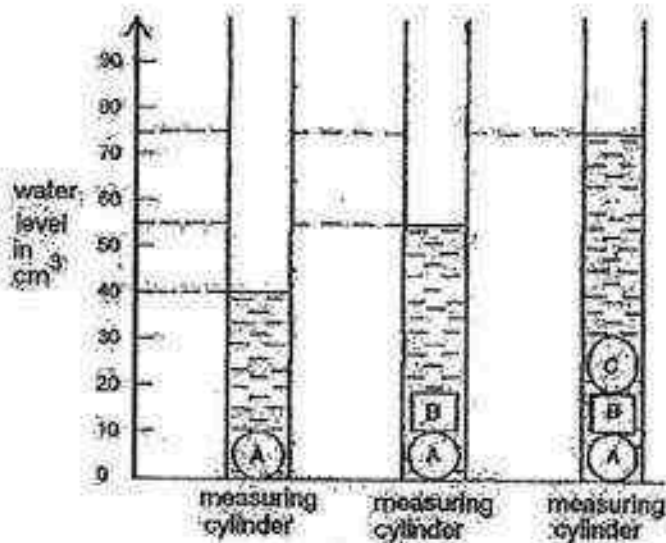
- (1) He should measure the distance between the ruler and the paper clip.
 - (2) He should measure how fast the paper clip is attracted to the magnet.
 - (3) He should measure the distance between the magnet and the paper clip.
 - (4) He should measure the distance from where the paper clip is attracted to the magnet.
17. When Jessie was standing behind the wall as shown below, she could not see the chair.



Which one of the following was the reason why Jessie could not see the chair?

- (1) The wall did not reflect light.
- (2) The chair did not reflect light.
- (3) The chair did not give off light.
- (4) The wall did not allow light to pass through.

18. The following diagram shows the water level in a measuring cylinder when three different objects, A, B and C, are placed into the cylinder one after the other.



Which one of the following statement is true?

- (1) The total volume of objects A and C is 40cm^3 .
 - (2) The total volume of objects B and C is 35cm^3 .
 - (3) Objects B and C occupy the same amount of space.
 - (4) Object C occupies the most space and object B occupies the least space.
19. A bar magnet was broken into two parts, X and Y, as shown below.



Which of the following arrangement cannot be formed from X and Y?

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

20. The table below records the properties of X, Y and Z. A tick (✓) indicates the presence of the property while a cross (×) indicates the absence of the property.

Properties	X	Y	Z
It has mass.	✓	✓	×
It occupies space.	✓	✓	×
It has definite shape.	×	×	×
It has definite volume.	✓	×	×
It is visible.	✓	×	✓

Which one of the following best represents X, Y and Z?

	X	Y	Z
(1)	rain	wind	light
(2)	air	oxygen	electricity
(3)	baby powder	carbon dioxide	dust
(4)	orange juice	shadow	lightning

21. The diagram below shows an object.



Which one of the following shadows can be formed by the object above?



A



B



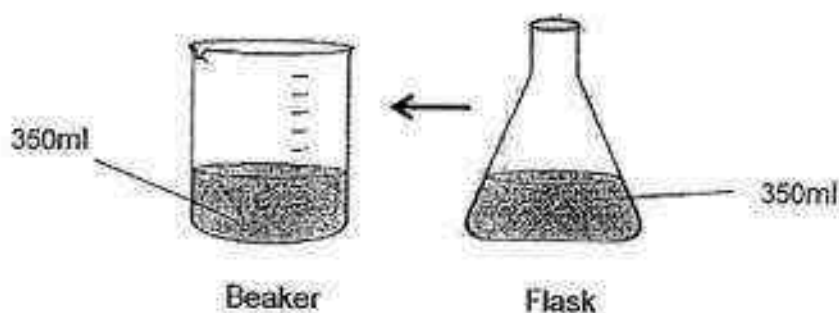
C



D

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

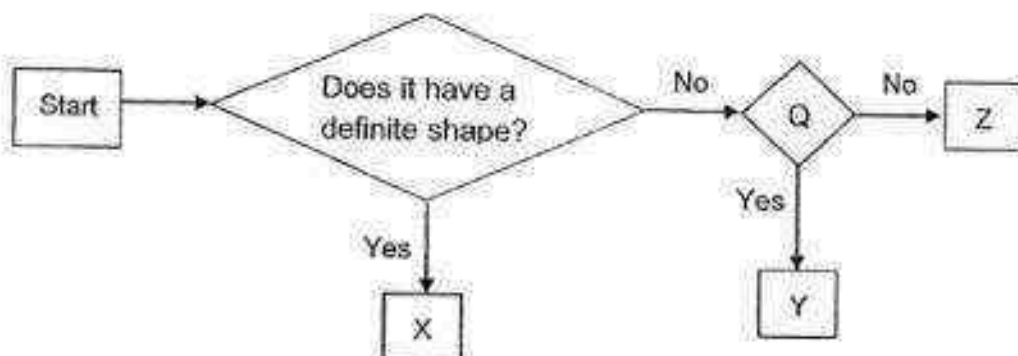
22. There were two containers on a table, an empty beaker and a flask with water. Water from the flask was poured into the beaker.



What can be concluded about water from the above activity?

- (1) The water has the same mass and a definite shape.
- (2) The water has the same mass and a definite volume.
- (3) The water has the same mass but indefinite volume.
- (4) The water has a definite volume but different mass.

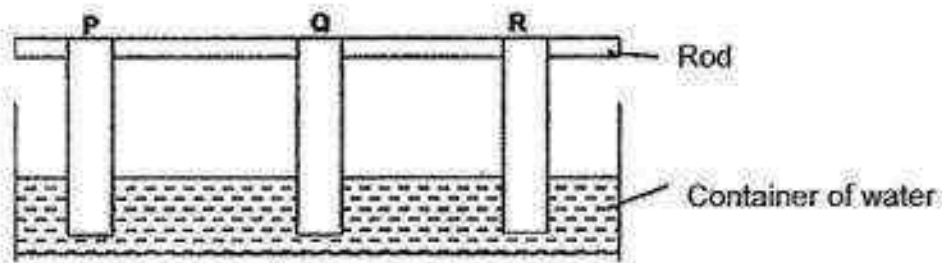
23. Study the flow chart below.



If Y is carbon dioxide and Z is apple juice, which of the following questions should be placed at Q?

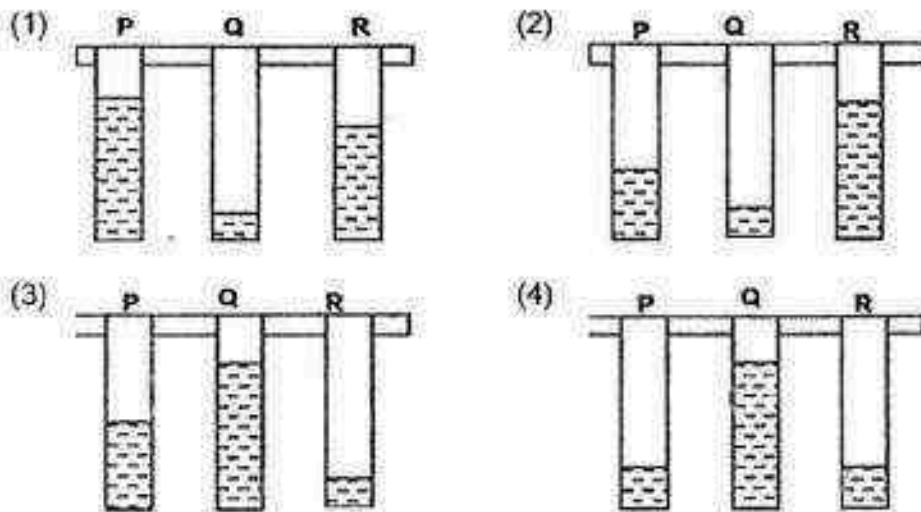
- (1) Does it have mass?
- (2) Can it be compressed?
- (3) Does it take up space?
- (4) Does it have a fixed volume?

24. Sara set up the experiment as shown below to measure the amount of water different materials, P, Q and R, can absorb over 5 minutes.

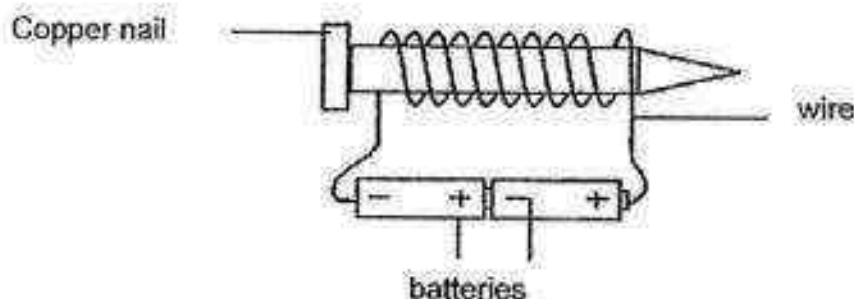


At the end of her experiment, she concluded that Q absorbed the most amount of water while R absorbed the least amount of water.

Which of the following best shows her experimental result for her to make the above conclusion?

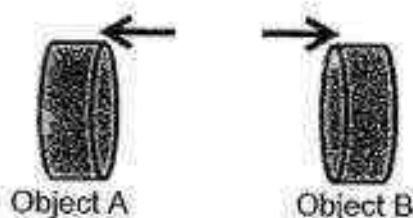


25. Li Na made an electromagnet as shown below. The batteries were connected to the wires correctly and both the batteries were working well.



Li Na found that the electromagnet did not attract any paper clips that were brought close to it. Why were the paper clips not attracted to the electromagnet?

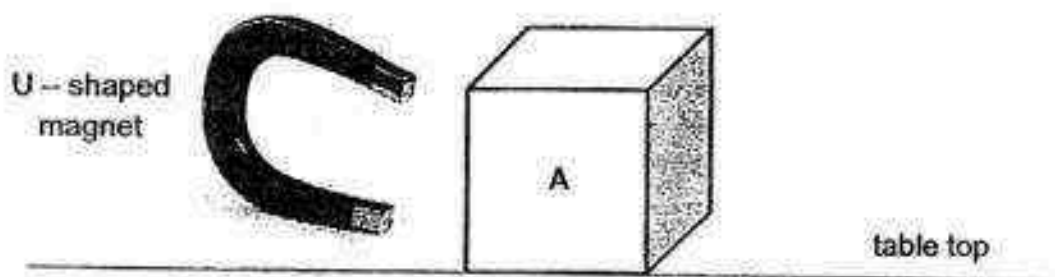
- (1) The wire was too short.
 - (2) There were not enough batteries.
 - (3) There were too few coils around the copper nail.
 - (4) The copper nail is a non-magnetic material so it cannot be magnetised.
26. When two objects, A and B, are brought near to each other, they moved in the direction as shown by the arrows.



What can we conclude about the 2 objects from the above observation?

- (1) The two objects are magnets.
- (2) The two objects are made of steel.
- (3) Only one of the objects is a magnet.
- (4) The unlike poles of the 2 objects are facing each other.

27. Elroy has 4 identical boxes, A, B, C and D. Each box contains some items of the same mass. Using a U-shaped magnet, he tries to drag box A across the table as shown below.



He repeated the experiment with boxes, B, C and D.

Out of the 4 boxes, A, B, C and D, he was only able to drag Boxes, C and D, across the table with his U-shaped magnet.

Which of the following objects are likely to be found in each of these boxes?

	A	B	C	D
(1)	Iron nails	Cotton wool	Silver coins	Cotton wool
(2)	Silver coins	Iron nails	Cotton wool	Steel clips
(3)	Cotton wool	Silver coins	Iron nails	Steel clips
(4)	Cotton wool	Iron nails	Steel clips	Silver coins

28. Clarence carried out an experiment with a lever balance.

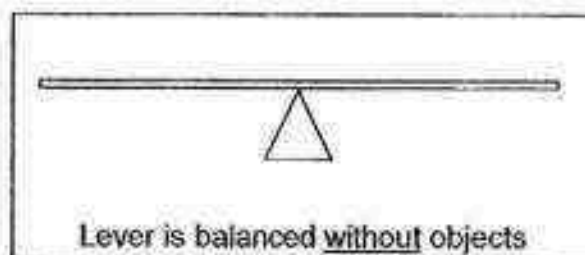


Diagram 1

He placed objects, X, Y and Z, onto the balance as shown in diagram 2.

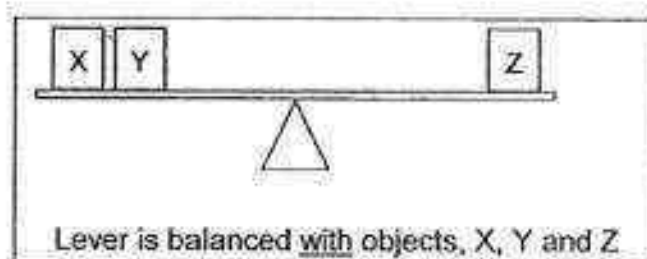


Diagram 2

Which of the following can be concluded from the setup above?

- A Object Z has the greatest volume.
- B Object X and Y have the same mass.
- C Object Y has a smaller mass than Object Z.
- D Object Z has a greater mass than Object X.

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

Name : _____ ()

Class : Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4
Semestral Assessment 1 – 2016
SCIENCE
BOOKLET B
12 May 2016

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

13 questions
44 marks

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

This paper consists of 15 printed pages.

Booklet A	56
Booklet B	44
Total	100

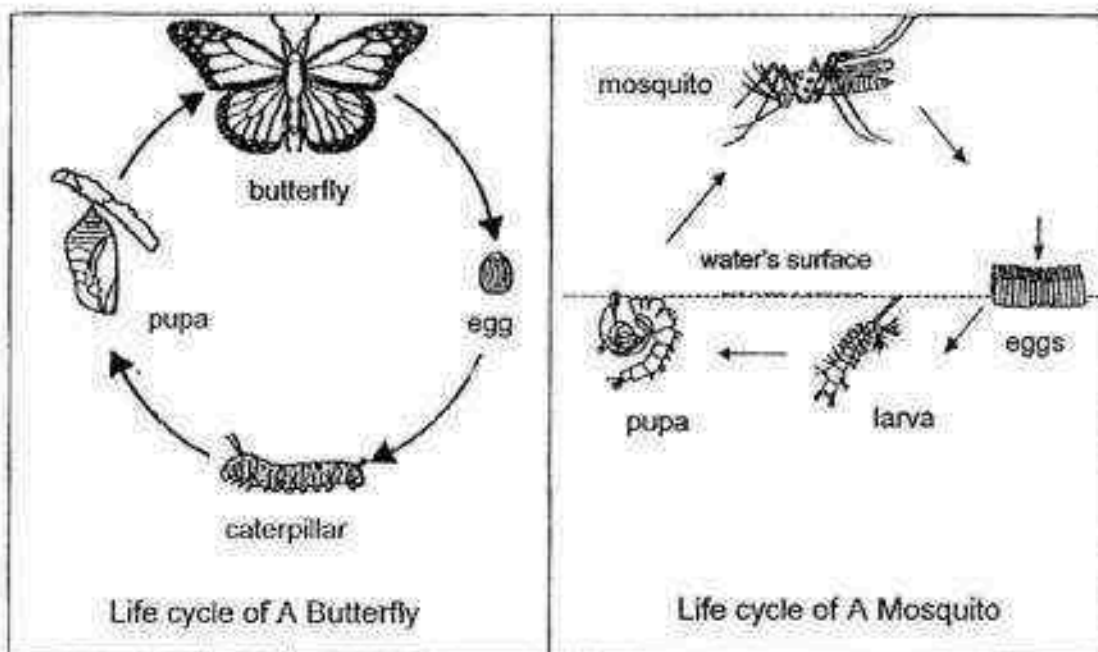
Parent's Signature/Date

Section B (44 marks)

For questions 29 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.

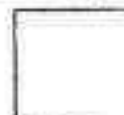
29. Refer to the diagram below.



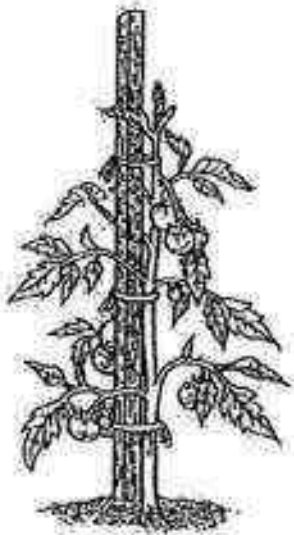
(a) State a difference in the life cycles of the two insects shown above. [1]

(b) Both the caterpillar and mosquito larva moult and shed their outer coverings as they grow into adults. Explain why this happens. [1]

(c) At a certain stage in their life cycles, the butterfly and mosquito are considered to be pests. Explain why this is so. [2]



30. Alif made some statements about the plants shown below.



Plant A

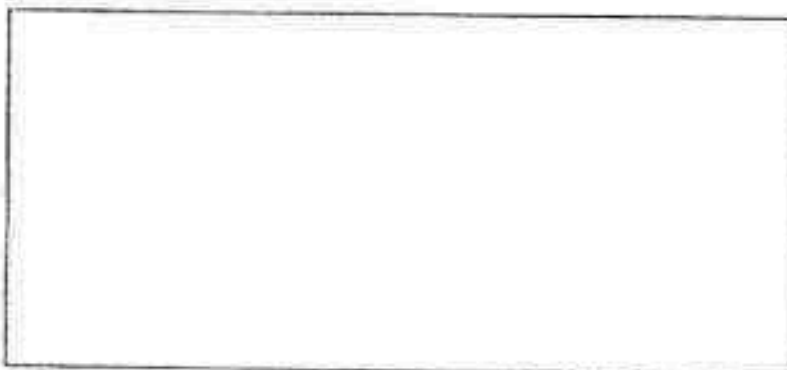


Plant B

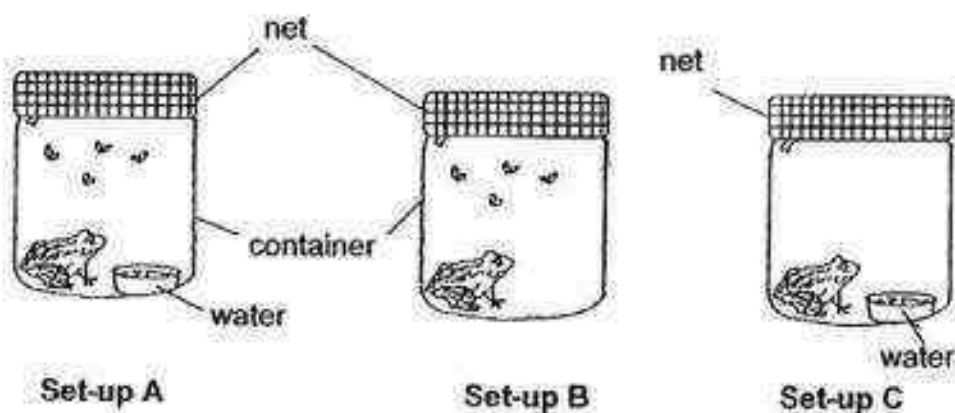
- (a) State whether the statements are true or false and give a reason for your answer. [2]

	Statements	True/False	Reason
(i)	Plant A is a flowering plant although it does not have flowers.		
(ii)	Plant B is a non-flowering plant as it does not have flowers.		

- (b) Draw the life cycle of part A in the box below. [1]



31. Desmond placed similar toads into three set-ups, A, B, and C, as shown in the diagram below.



- (a) If Desmond wanted to find out if a toad needs water to survive, which 2 set-ups should he use? [1]

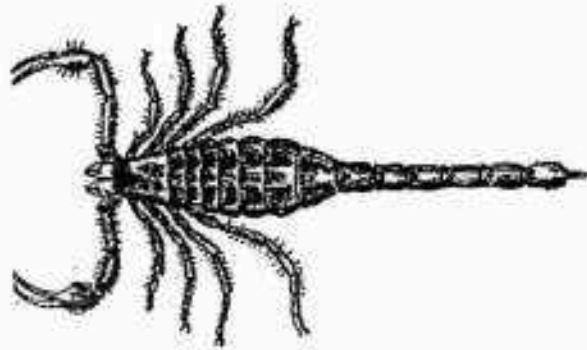
- (b) Why did Desmond use a net to cover the containers instead of a metal or plastic lid? [1]

- (c) If Desmond wanted the toad in set-up B and C to live longer, what changes could he make to the set-ups? [1]

Set-ups	Changes to be made in the set-up
B	
C	



32. Observe the animal shown below.



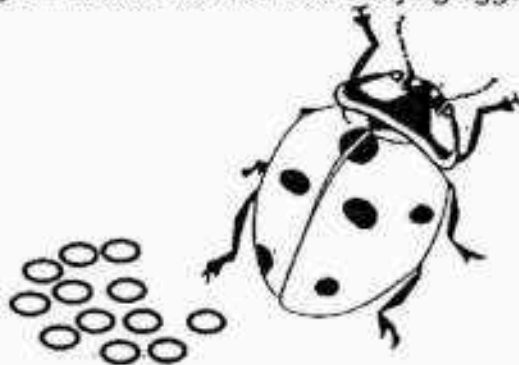
Scorpion

(a) State two reasons why the scorpion is not an insect. [2]

(i)

(ii)

(b) The diagram below shows a beetle laying eggs.

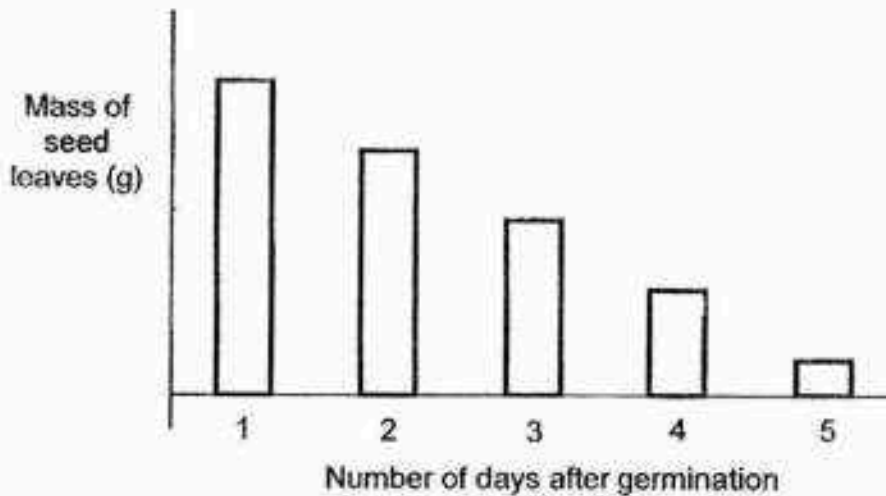


Explain how laying many eggs helps the beetle during reproduction. [1]



33. Prakash studied what happens to the mass of the seed leaves as a seed germinates and develops into a seedling.

He presented his results in a graph as shown below.

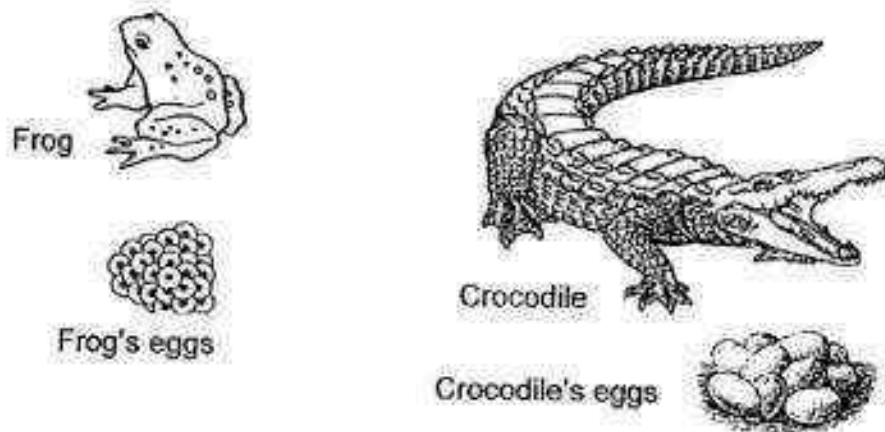


- (a) State the relationship between the number of days after germination and the mass of the seed leaves. [1]

- (b) How did the seedling get its food after Day 5? [1]



34. The diagram below shows two animals, a frog and a crocodile.



- (a) State a similarity and a difference between the characteristics of a frog and the crocodile. [Do not compare the outer covering of the eggs and reproction methods.] [2]

Similarity:

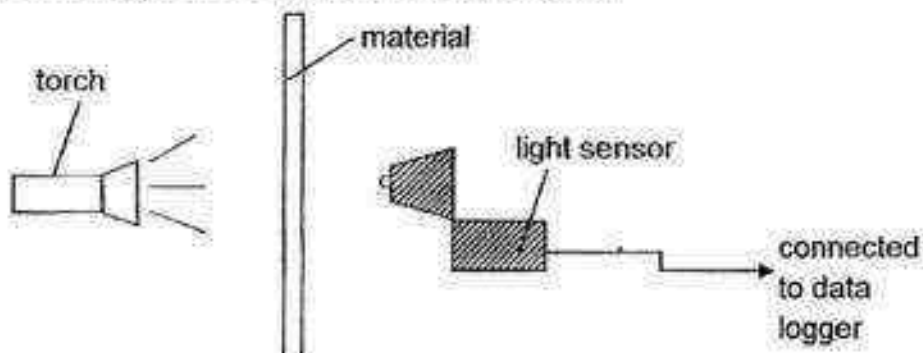
Difference:

- (b) The frog's egg is covered by a jelly-like substance whereas the crocodile's egg is covered by a hard shell. Give one reason how this helps the two organisms. [1]

- (c) The tadpole has a different breathing method as compared to the adult frog. Explain why is this so [1]



35. Darius carried out an experiment as shown below. He placed different materials between the lighted torch and a light sensor which is connected to the data logger as shown in the diagram below.



The amount of light that passed through the different materials was recorded in the table below.

	Materials			
	A	B	C	D
Amount of light detected (lux)	20	100	0	60

- (a) What is the aim of Darius' experiment?

[1]

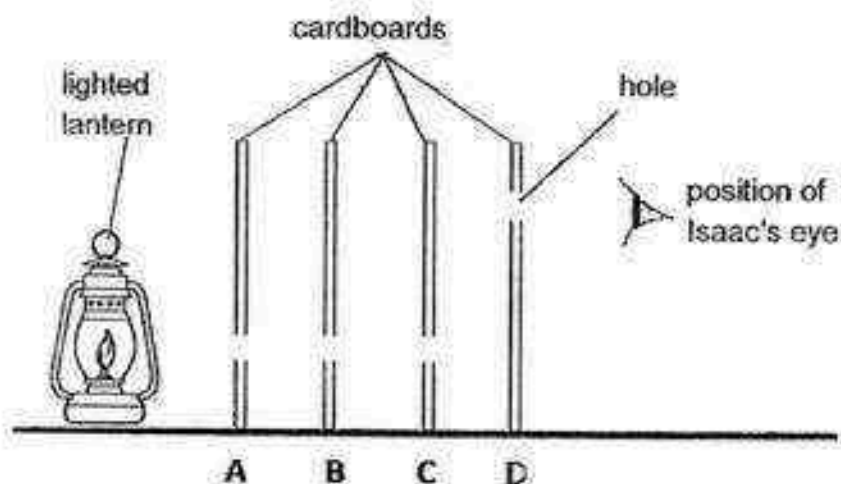
- (b) Darius wanted to select materials to make a sunglass lens and a spectacle lens. Which material, A, B, C or D, should he choose? Give a reason for your answer.

[2]

	Material chosen	Reason for your choice
Sunglass lens		
Spectacles lens		

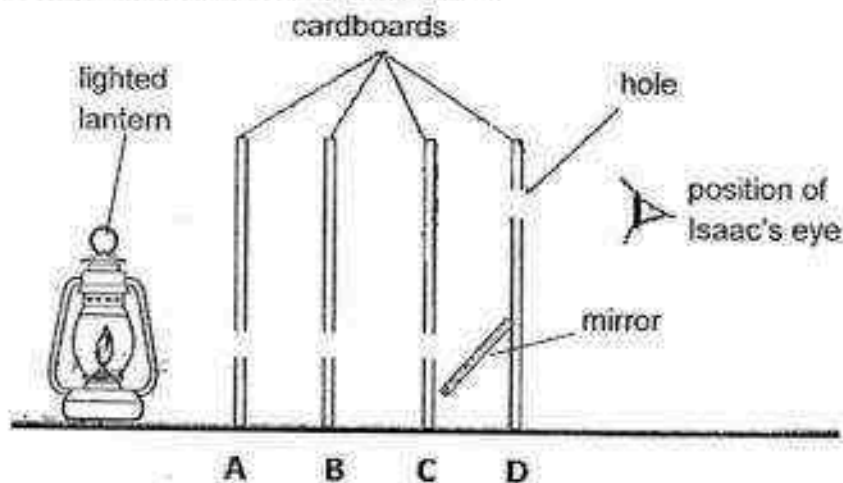


Isaac placed four cardboards, A, B, C and D, in a straight line as shown below. He punched a similar hole in each of the cardboards. He then placed a lighted lantern at the end of the cardboards and tried to view the lantern through the holes from the other end.

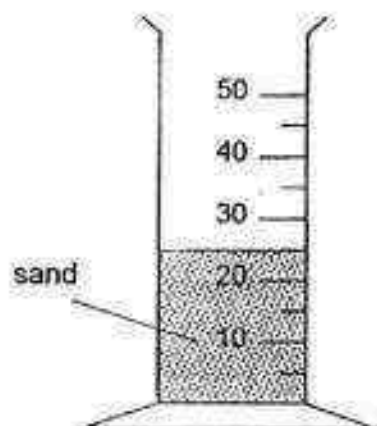


- (c) Would Isaac be able to see the light from the lantern from his position as shown in the diagram above? Explain your answer. [1]

- (d) Isaac placed 2 mirrors in the same set-up to help him see the lantern. In the diagram below, one mirror has been drawn for you. Complete the setup by drawing the second mirror. [1]



36. In the diagram below, Shane filled a measuring cylinder with 25cm^3 of sand.



- (a) He then poured 25cm^3 of water into the same measuring cylinder.

What would be the total volume of sand and water shown in the measuring cylinder? Tick your answer in the table below.

Volume of water	Tick (✓)
Above 50cm^3	
At 50cm^3	
Below 50cm^3	

[1]

- (b) Explain your choice in (a).

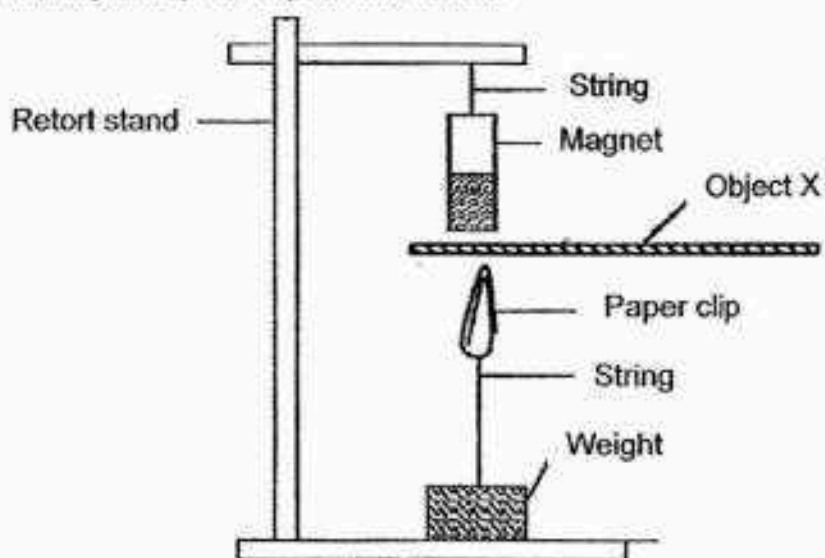
[2]

- (c) Shane said that sand is a liquid as it takes the shape of the cylinder. Give a reason why Shane was wrong to make this statement.

[1]



37. Anthony set up the experiment below.



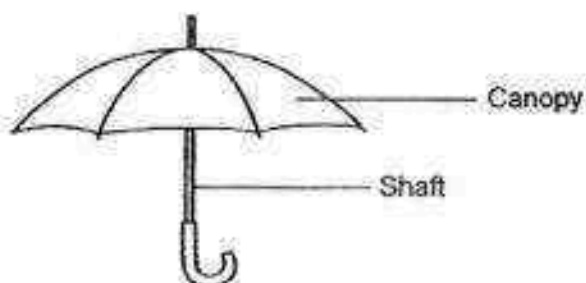
When object X is placed between the magnet and the paper clip, the paper clip remains at the same position.

- (a) What type of material could object X be made of ? [1]

- (b) When the thickness of object X was increased, the paper clip dropped. Explain this observation. [1]



38. Vincent wanted to find out which type of material, A, B and C, was the most suitable for making the canopy of an umbrella.



He weighed each piece of material before and after soaking it in a basin of water. The results were recorded in the table below.

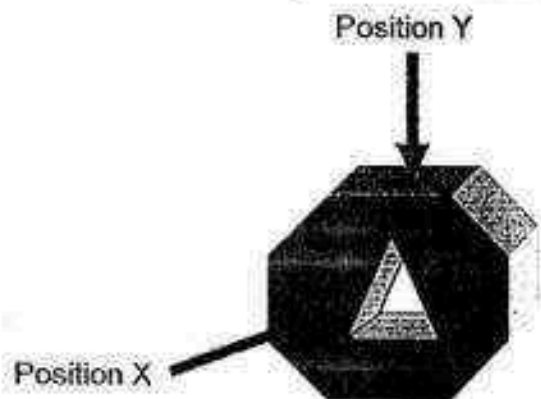
Material	Mass of material before soaking in water (g)	Mass of material after soaking in water (g)
A	25	45
B	25	25
C	25	55

- (a) Which material, A, B or C, is the most suitable for making the canopy of an umbrella? Explain why. [1]

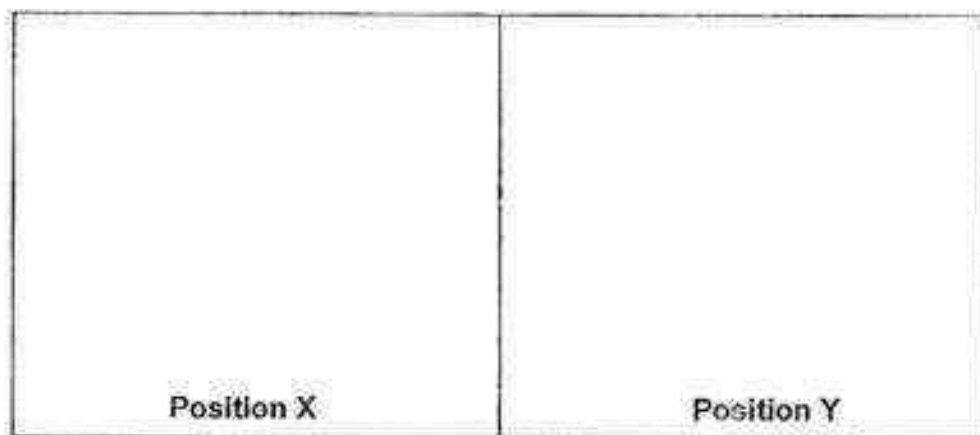
- (b) Suggest a material for the shaft of the umbrella and give 2 reasons for your choice. [2]



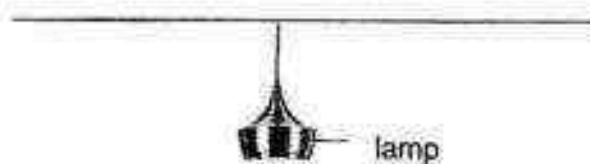
39. Keith used a wooden block and cut out a triangular shape in the centre as shown below. He then shone a torch from 2 different positions, X and Y.



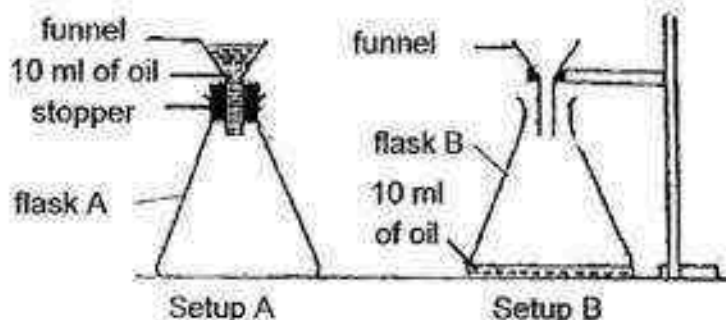
- (a) In the space provided, sketch and shade the shadow cast when a torch is shone from position X and Y. [2]



- (b) In the diagram below, Andrew could see the pot of flower. Draw light rays to show how the lamp acted as a source of light allowed him to see pot of flower. [1]



40. In a Science experiment, Nora poured 10ml of oil into the funnels of set-ups, A and B, respectively.

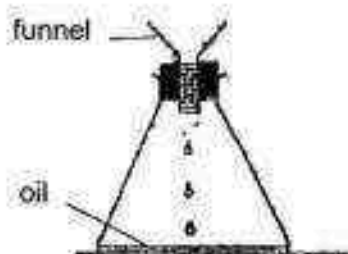


Nora noticed that the oil did not flow into flask A easily, but it flowed into flask B at a faster rate.

(a)

[2]

Miranda did the same experiment using the same apparatus. However, her result for flask A was different from Nora's result as shown below.



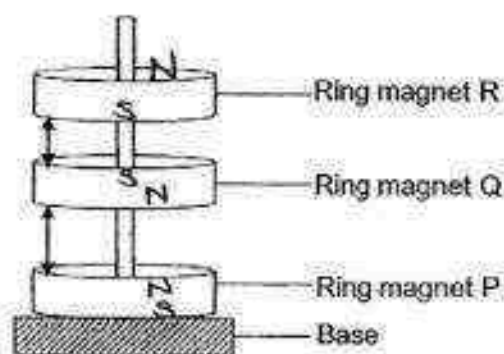
- (b) Which of the following reason(s) likely caused Miranda's result to be different from Nora's result? Tick (✓) the appropriate box or boxes.

[2]

	Reason	Tick (✓)
(i)	Miranda used less oil.	
(ii)	Miranda's stopper was loose.	
(iii)	Miranda poured the oil in slowly.	
(iv)	Miranda poured the oil in quickly.	



41. John conducted an experiment below. He noted that the 3 ring magnets were at a distance from one another.

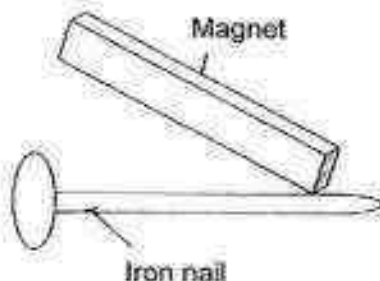


He then

- (a) What would

[1]

Amelie wanted to make a magnet from an iron nail by using the stroking method.



She stroked the iron nail with the magnet more than 30 times, but still could not get the iron nail to attract any paper clips.

- (b) State a possible reason why .

[1]

- (c) What is another method that Amelie can use to magnetise the iron nail?

[2]

End of Booklet B

EXAM PAPER 2016 (P4)

SCHOOL : CHIJ

SUBJECT : SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	3	1	4	1	1	3	2	2	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	3	2	3	1	4	4	2	3	1
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	2	2	3	4	1	3	3		

29)a)The mosquito lay eggs in water but the butterfly lay eggs on land,

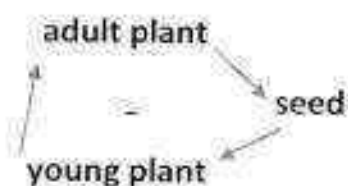
b)As the larva of the organisms eats, they grow until they become too big for their outer covering. They grow a new outer covering and shed the old ones.

c)When the butterfly is a caterpillar, it feeds on crops and the mosquito sucks people's blood.

30)a)i)True / Plant A has fruits and the fruits are developed from flowers.

ii>false / Some flowers only bloom under suitable conditions or seasons.

b)



31)a)Set-ups A and B.

b)So that air can go in the container and are holes for the frogs to breathe.

c)B : Put water in it.

C : Put files in it.

32)a)i)It has eight legs and insects have six legs.

ii)It does not have three body parts and insects have three body parts.

b)The beetle species will not be extinct and the eggs will have higher chances of survival as they reach adulthood.

33)a)As the number of days after germination increases, the mass of the seed leaf decreases.

b)The leaves of the seedling make food for the seedling after Day 5.

34)a)Similarity: They both have four legs.

Difference: The frog breathe through moist skin while the crocodile breathe through lungs.

b)The jelly-like substance and the hard shell can protect the frog's and the crocodile's eggs.

c)The tadpole lives in water while the frog is an amphibian, which lives on both land and in water.

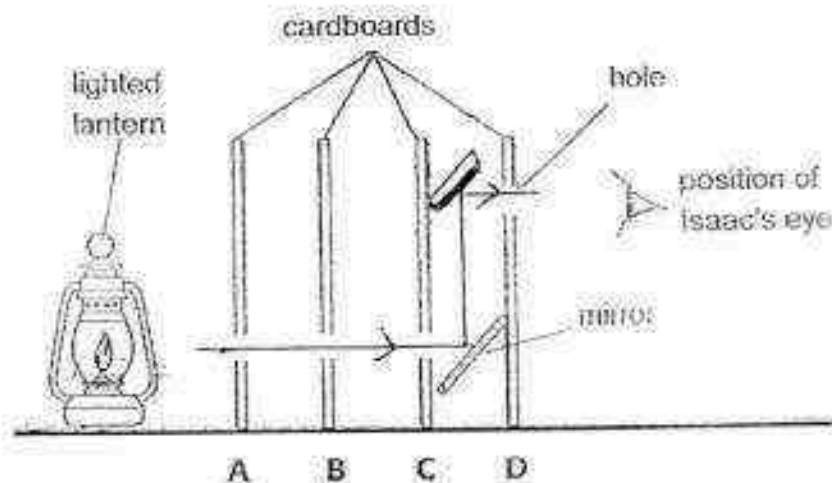
35)a)To see the amount of light that passed through the different materials.

b)A / Sunglass lens need dark materials, but not C, because C does not allow any light to pass through.

B / The spectacles lens must allow most, most light to past through them as people can see things properly.

c)No, the holes are not in a straight line and light travels in a straight line.

35)d)



36)a) Below 50cm^3

b) Sand occupies less space than 25cm^3 water occupies space between the grains of sand so the total volume will be less than 50cm^3 .

c) Sand is a solid as solid has a definite volume, a definite shape and it cannot be compressed.

37)a) Wood.

b) The magnet cannot attract the paper clip through the thicker sheet of material X.

38)a) Material B. The more water the material absorb, the heavier they will and Material was still the same mass as before it was soaked in water so the person holding it will not be wet.

b) Metal. It is waterproof and it is strong and stiff.

39)a)



39)b)



40)a)As the stopper on Flask A prevent the air in Flask A from escaping, oil cannot enter the flask to occupy its space. But for Flask B there is no stopper to prevent air from escaping air in Flask B can escape allowing oil to enter Flask B and occupying its space.

b)ii , iii

41)a)Ring magnets R and P were attracted to each other as their unlike poles are facing each other.

b)She did not stroke the same direction.

c)She can connect batteries to a wire and coil the wire around the iron nail. Then she should on the switch.

13

METHODIST GIRLS' SCHOOL

Founded in 1887



MID-YEAR EXAMINATION 2016
PRIMARY 4
SCIENCE

BOOKLET A

Total Time for Booklets A and B: 1 hour 20 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 : 12 May 2016

This booklet consists of 18 printed pages including this page.

For each question from 1 to 28, 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).

[56 marks]

1. Which one of the following characteristics shows that a dragonfly is a living thing?

- (1) A dragonfly lays eggs.
- (2) A dragonfly has wings.
- (3) A dragonfly is smaller than a book.
- (4) A dragonfly has a pair of antennae on its head.

2. Study the characteristics of P, Q, R and S in the table shown below.

	Has legs	Needs water	Ability to move from place to place
P	No	Yes	No
Q	Yes	Yes	Yes
R	No	Yes	Yes
S	Yes	No	Yes

Which one of the following is most likely to be a non-living thing?

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

(Go on to the next page)

3. Jusri saw a Bird's nest fern on his way home from school as shown below.



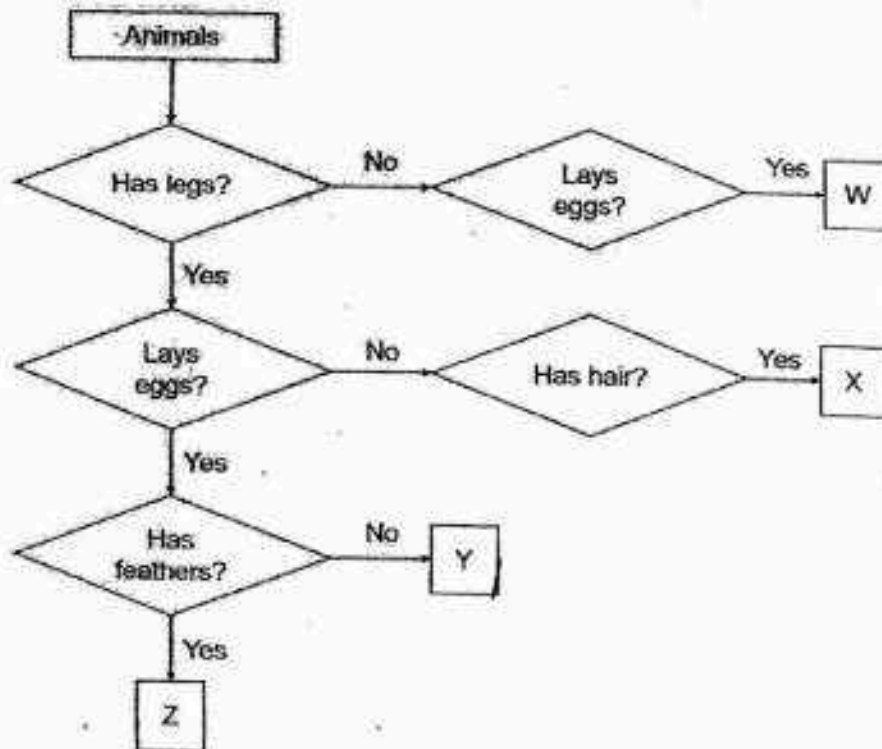
Which of the following group(s) can this plant be placed into?

Group A	Group B	Group C
Bears flowers	Reproduces by spores	Makes its own food

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

(Go on to the next page)

4. Study the flow chart as shown below.

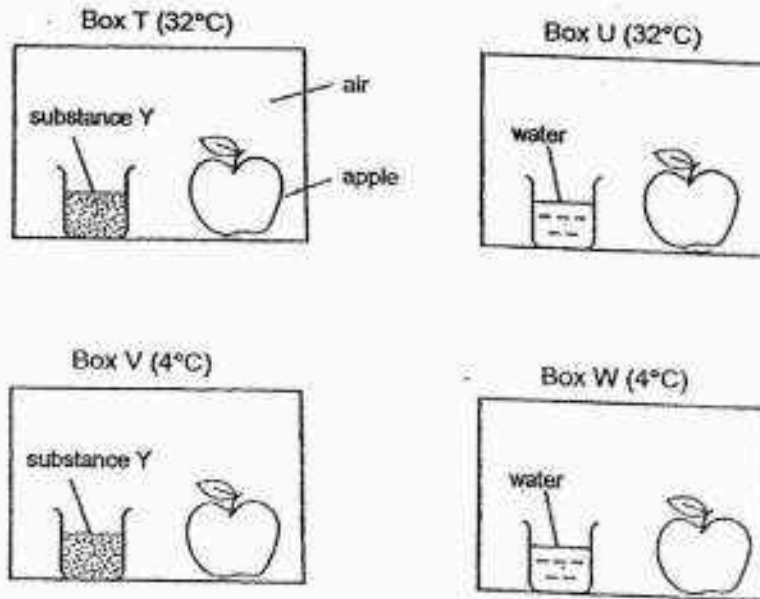


Which animals could W, X, Y and Z be?

	W	X	Y	Z
(1)	snake	penguin	snake	chicken
(2)	goldfish	lion	turtle	sparrow
(3)	whale	snake	chicken	shark
(4)	lion	dolphin	mynah	snake

(Go on to the next page)

5. Shumin placed four similar apples in four identical sealed boxes as shown below.

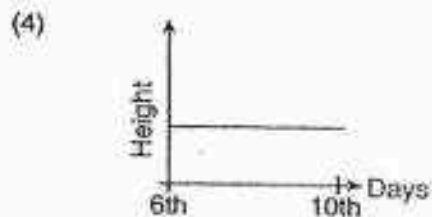
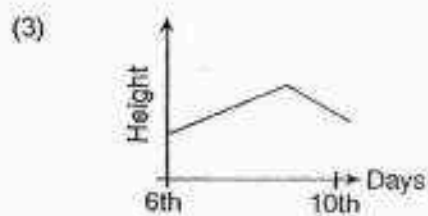
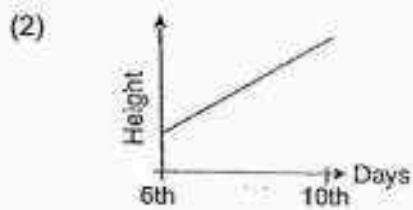
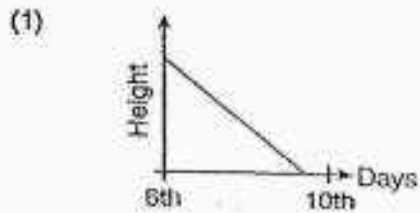


She placed the boxes T and U at 32°C and boxes V and W at 4°C. Substance Y absorbs water from the surrounding. Which box, T, U, V and W, would fungus first appear on the apple?

- (1) Box T
- (2) Box U
- (3) Box V
- (4) Box W

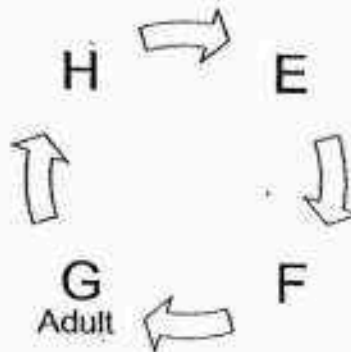
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6. A seed germinated after 5 days and it became a young plant. The young plant was given light, water and air from the 6th - 10th day. Which one of the following graphs shows the changes in the height of the young plant between the 6th - 10th day?



(Go on to the next page)

7. Study the life cycle of an insect below.



If G represents the adult stage, at which stage does the process of moulting take place?

- (1) E
 - (2) F
 - (3) G
 - (4) H
8. Mary did a study on two animals, Q and R. At the end of her study, she completed a checklist as shown below.

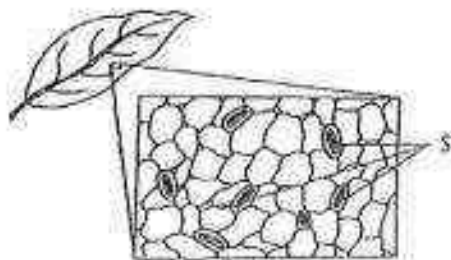
Observation	Animal Q	Animal R
It has six legs.	✓	✓
Eggs are laid in water.	X	✓
There are 4 stages in the life cycle.	X	✓

Which one of the following shows Animal Q and R correctly?

	Animal Q	Animal R
(1)	Butterfly	Beetle
(2)	Grasshopper	Butterfly
(3)	Mosquito	Frog
(4)	Cockroach	Mosquito

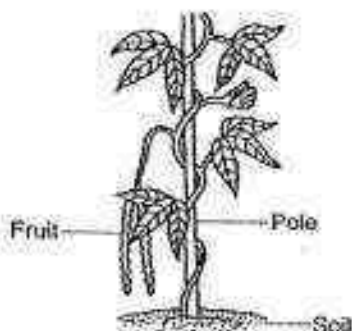
(Go on to the next page)

9. The diagram below shows a part of a leaf under a microscope.



What is the function of the leaf that are labelled S?

- (1) They make food for the plant.
 - (2) They absorb water for the plant.
 - (3) They take in light only for the plant.
 - (4) They allow gaseous exchange for the plant.
10. The diagram below shows a healthy plant in a garden.



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

A	This plant has a weak stem.
B	This plant is a flowering plant.
C	This plant does not have roots.

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

(Go on to the next page)

11. Study the statements made by the three students carefully.

Student	Function
Fatimah	The leaves make food for the plant.
Jie Ming	The stem supports the branches and leaves of the plant.
Donna	The roots transport water and mineral salts throughout the plant.

Which student(s) has/have made the wrong statement about the function of a plant part?

- (1) Donna
- (2) Jie Ming
- (3) Fatimah and Jie Ming
- (4) Donna and Jie Ming

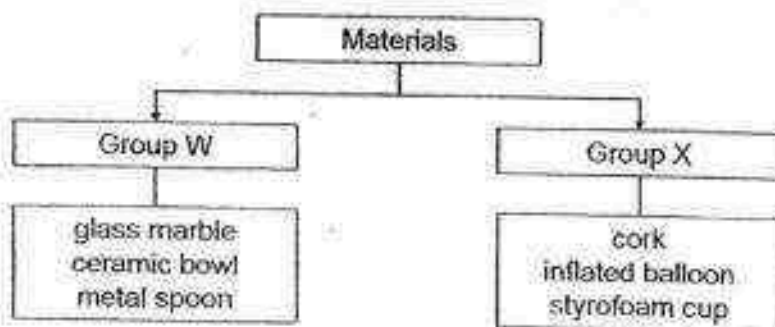
12. Kumar wanted to find out if the seeds of different plants germinate at the same time. He made sure that the conditions for growth were provided for the seeds to germinate well. What other variables should also be considered to make his experiment a fair one?

T : The type of seeds.
 U : The size of the pots.
 V : The amount of soil used in each pot.

- (1) U only
- (2) T and U only
- (3) T and V only
- (4) U and V only

(Go on to the next page)

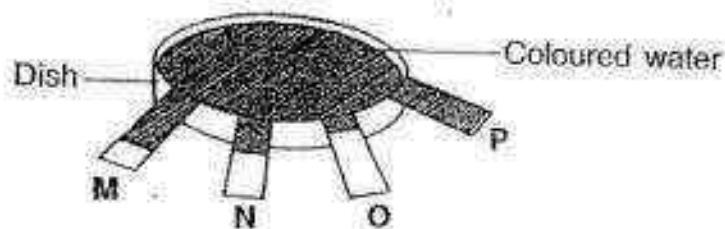
13. Study the classification chart below.



Which one of the following headings is correct for Group W and X?

	Group W	Group X
(1)	Stiff	Flexible
(2)	Natural	Man-made
(3)	Sinks in water	Floats on water
(4)	Light can pass through	Light cannot pass through

14. Bala placed four equal lengths of different fabrics, M, N, O and P into a dish containing some coloured water. Fifteen minutes later, he observed that fabric M, N, O and P absorbed the water from the dish. The shaded portion of the fabrics shows the amount of water absorbed by the materials.



Which one of the following conclusions about fabrics M, N, O and P is correct?

	Least absorbent		Most absorbent	
(1)	P	M	N	O
(2)	M	N	O	P
(3)	O	N	M	P
(4)	N	M	P	O

(Go on to the next page)

15. Some properties of four materials, A, B, C and D were tested in a laboratory. The results are shown below.

Material	Brittle	Stiff	Waterproof
A	X	✓	✓
B	X	X	X
C	X	X	✓
D	✓	✓	✓

Which one of the material above represents a rubber band?

- (1) A
(2) B
(3) C
(4) D
16. Four parts of a bar magnet are labelled H, I, J and K as shown in the diagram below.

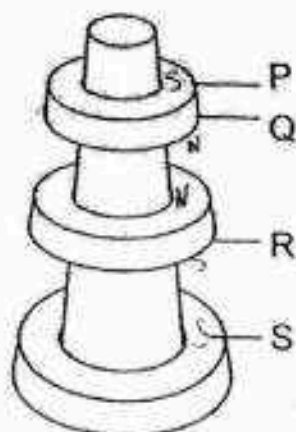


Which of the following represents the number of nails that are attracted to parts H, I, J and K of a bar magnet?

	Part H	Part I	Part J	Part K
(1)	2	3	5	7
(2)	9	1	2	11
(3)	7	5	4	2
(4)	2	11	11	4

(Go on to the next page)

17. Prema strung three ring magnets through a pencil and she pushed it together by hand. When the grip was released, the following was observed.

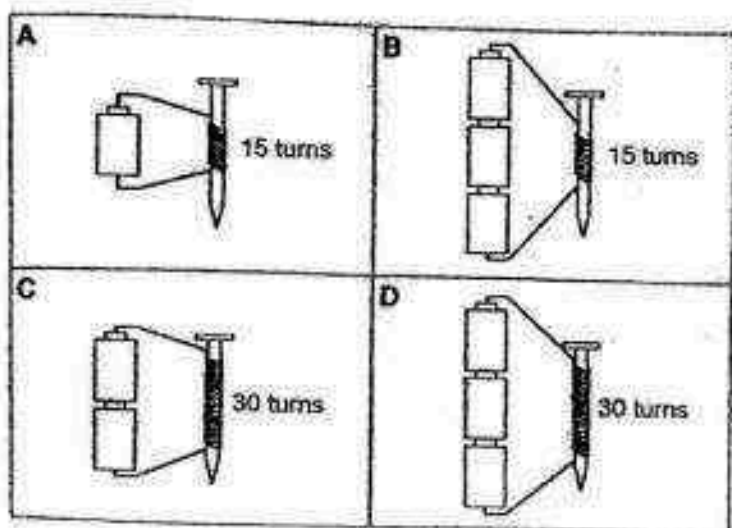


Which one of the following correctly shows the poles of P, Q and R?

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

(Go on to the next page)

18. Tian Le wanted to find out if the number of turns of the wire around the iron nail would affect the magnetic strength of an electromagnet. Which two arrangements below should he choose in order to conduct a fair test?



- (1) A and B only
 (2) B and C only
 (3) B and D only
 (4) C and D only
19. The following describes a substance in different states of matter.

State Q
 No definite shape
 Can be compressed

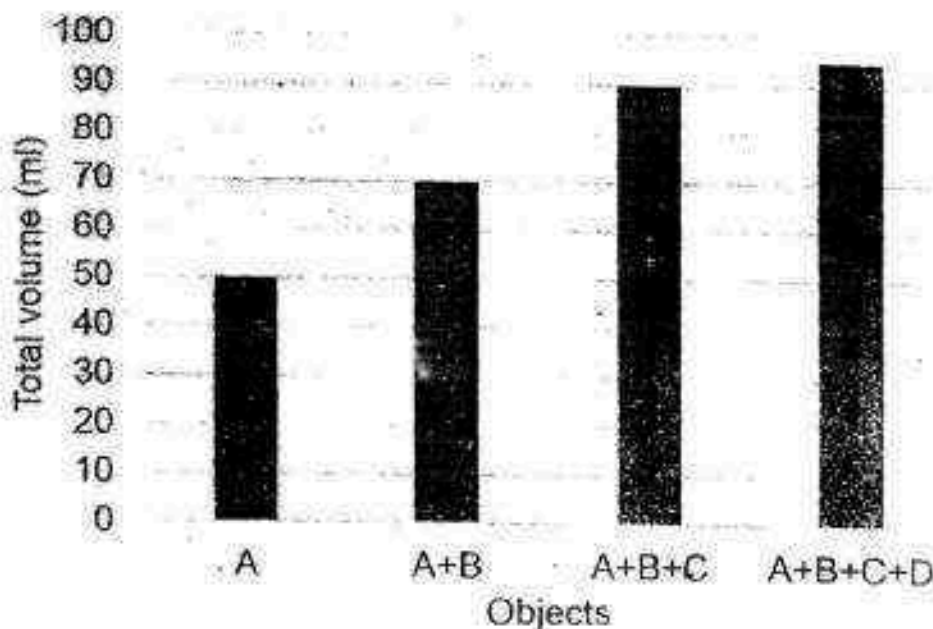
State R
 Definite shape
 Cannot be compressed

Which one of the following correctly identifies the substance in State Q and State R?

	State Q	State R
(1)	Solid	Liquid
(2)	Liquid	Gas
(3)	Gas	Liquid
(4)	Gas	Solid

(Go on to the next page)

20. Farah had 40 ml of water in a measuring cylinder. She then placed four objects, A, B, C, D, one at a time, into the measuring cylinder. Each time she placed an object into the measuring cylinder, she recorded the total volume. The graph below shows the total volume after each object has been placed into the measuring cylinder.



Study the statements below carefully.

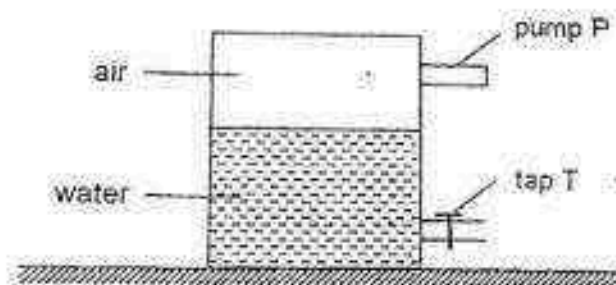
- R: Object D has a smaller volume than B.
 S: Object B and C have the same amount of matter.
 T: The volume of Object A is twice the amount of Object D.
 U: The amount of water in the measuring cylinder increases after each object is placed into it.

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

- (1) R and T only
- (2) S and U only
- (3) S, T and U only
- (4) All of the above

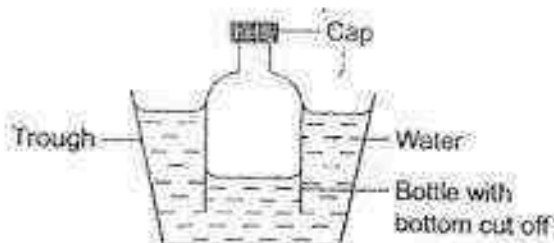
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21. A sealed container which holds 120 cm^3 of water and 80 cm^3 of air was set up as shown below.



20 cm^3 of water was removed from the container through tap T and 60 cm^3 of air was then pumped into the container using pump P.
What would be the final volume of air in the container?

- (1) 80 cm^3
 (2) 100 cm^3
 (3) 140 cm^3
 (4) 160 cm^3
22. Austen lowered a bottle with the bottom cut off into a trough of water.

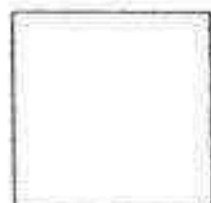


What will happen when Austen removes the cap from the bottle?

- E : The water level in the bottle will increase.
 F : The water level in the bottle will decrease.
 G : Air in the bottle will escape from the bottle.
- (1) E only
 (2) F only
 (3) E and G only
 (4) F and G only

(Go on to the next page)

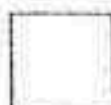
23. Four sheets of metal were heated to the temperatures indicated in the diagrams below.



Sheet A: 80°C



Sheet B: 65°C



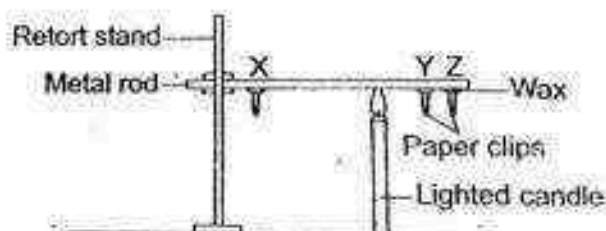
Sheet C: 80°C



Sheet D: 65°C

Which of the following metal sheets contains the most heat energy?

- (1) Sheet A
 (2) Sheet B
 (3) Sheet C
 (4) Sheet D
24. An experiment was set up as shown below.



After a few minutes, the paper clips started to drop off the metal rod, one after another. Which one of the following correctly shows the order in which the paper clips will drop off the metal rod?

	First	Second	Third
(1)	X	Y	Z
(2)	X	Z	Y
(3)	Y	Z	X
(4)	Z	Y	X

(Go on to the next page)

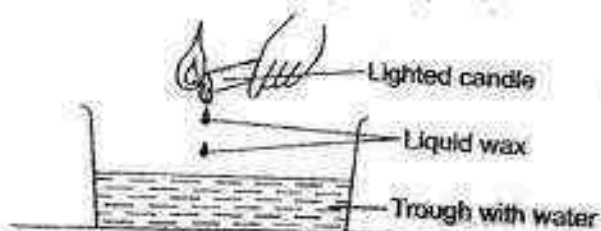
25. Georgia wanted to prepare some instant noodles for lunch. When the water started to boil, she added the packet of noodles into the pot of water. The pot of water stops boiling immediately.

Which of the following statements are true?

- J : The packet of noodles is cooler than the water.
 K : The heat transfers from the water to the noodles.
 L : The noodles increase the temperature of the water

- (1) J and K only
 (2) K and L only
 (3) J and L only
 (4) All of the above

26. Collin held a lighted candle over a trough of water as shown below.



As the liquid wax dripped into the trough of water, solid wax was formed on the surface of the water.

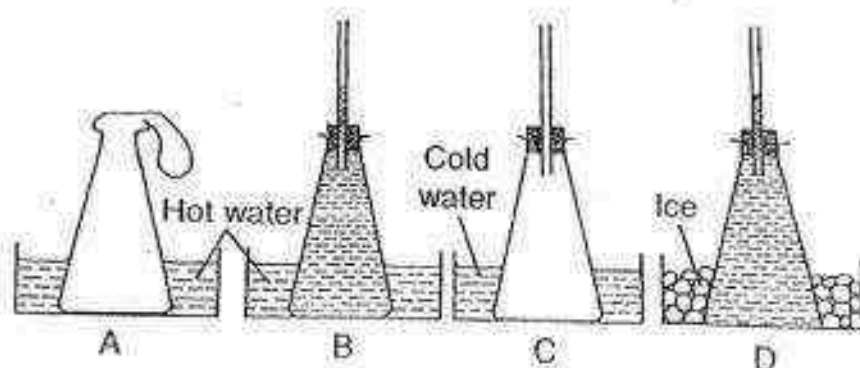
Which of the following statements is/are true?

- Q : The solid wax lost heat to the flame to become liquid wax.
 R : The liquid wax lost heat to the water as it touched the water.
 S : The liquid wax gained heat from the water as it touched the water.

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

(Go on to the next page)

27. Study the set-ups below.



Which of the two set-ups can be used to show the expansion and contraction of a liquid?

- (1) A and B
 (2) B and C
 (3) B and D
 (4) A and C
28. Boiling water was poured into four bottles, P, Q, R and S which are made of different materials. The time taken for the water in each bottle to reach room temperature was recorded as shown below.

Bottle	Time taken for water to reach room temperature
P	13 min
Q	10 min
R	28 min
S	18 min

Which bottle is made of a material that is the poorest conductor of heat?

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

End of Booklet A

METHODIST GIRLS' SCHOOL
Founded in 1887



MID-YEAR EXAMINATION 2016
PRIMARY 4
SCIENCE

BOOKLET B1

Total Time for Booklets A and B: 1 hour 20 minutes

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Name: _____ ()

Class: Primary 4. _____

Date : 12 May 2016

Booklet A	56
Booklet B1	16
Booklet B2	18
Total	90
Parent's Signature	

This booklet consists of 7 printed pages including this page.

For questions 29 to 34, 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.

[16 marks]

29. Meifang observed an animal in her garden as shown below.

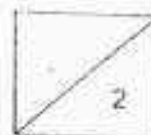


woodlouse

She said that it belongs to the animal group, insects. Give two reasons why she is wrong. [2]

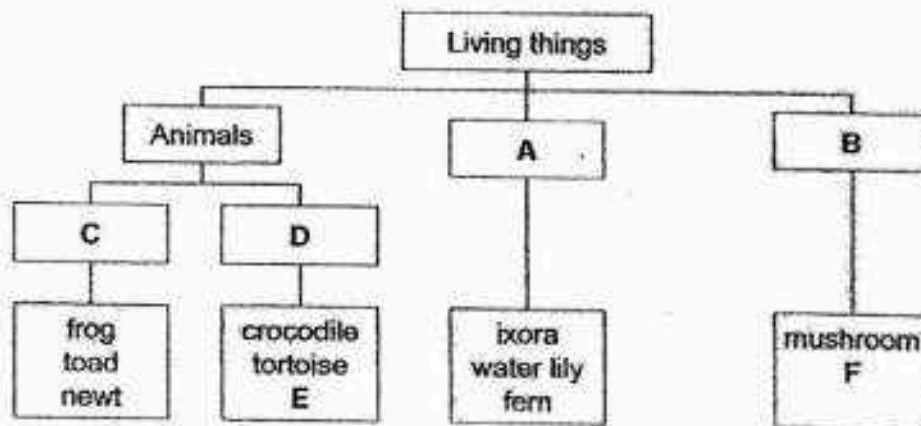
Reason 1:

Reason 2:



(Go on to the next page)

30. Study the classification chart below.



(a) Identify the groups of living things for A and B. [1]

A: _____

B: _____

(b) Identify the animal groups for C and D. [1]

C: _____

D: _____

(c) Give an example of an organism for E and F. [1]

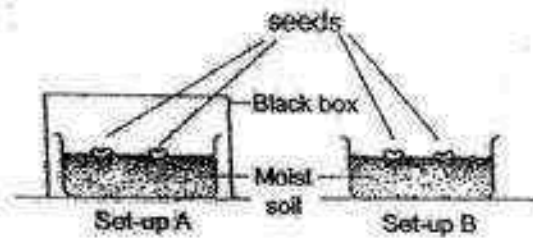
E: _____

F: _____



(Go on to the next page)

31. Fairoz set up an experiment in the classroom as shown below.



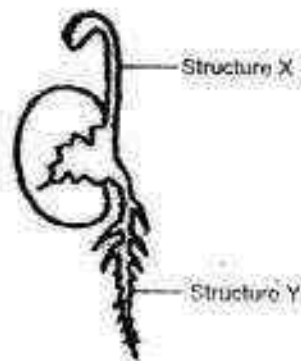
(a) What was Fairoz trying to find out in this experiment?

[1]

(b) After 3 days, he noticed that both seeds in set-up A and B germinated. What are the conditions required by the seeds to germinate?

[1]

After 3 days, he observed and drew a picture of the germinated seed as shown below.



(c) Which structure, X or Y, developed first?

[1/2]

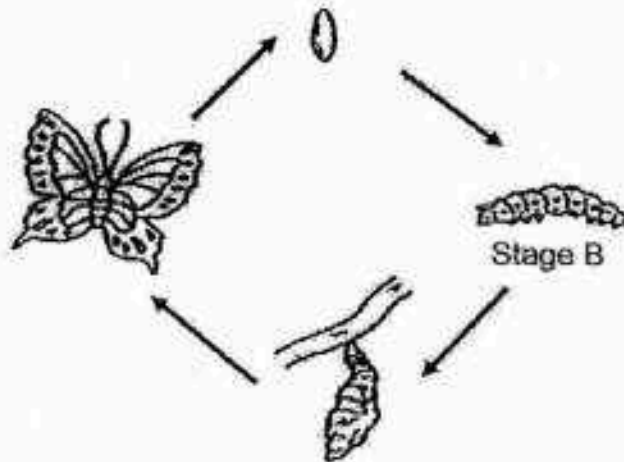
(d) Identify structure X.

[1/2]



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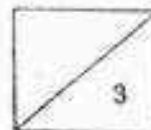
32. Study the life cycle of the butterfly as shown below.



- (a) Identify Stage B in the life cycle of the butterfly. [1]

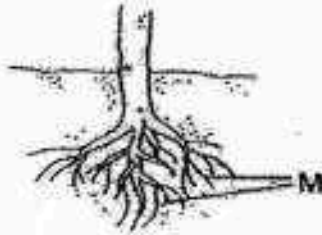
- (b) The butterfly does not feed at some stages of its life cycle. Identify the two stages. [1]

- (c) Which animal has the same number of stages as the life cycle of the butterfly? [1]



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33. The diagram below shows part of a plant.



- (a) Name the part labelled M.

[1]

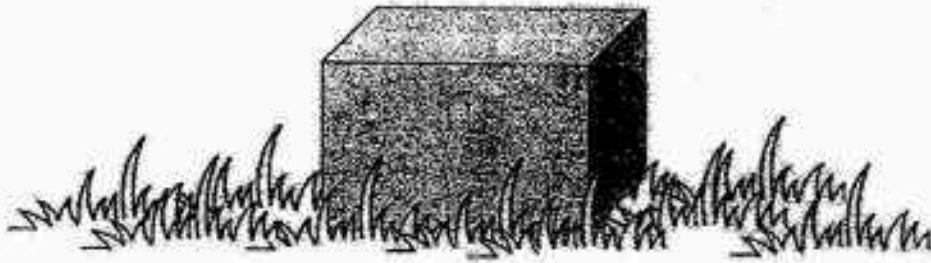
- (b) What are the two functions of part M?

[2]



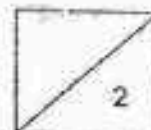
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34. De Ming left a wooden box outside his garden as shown below.



- (a) What would De Ming observe about the grass patch after he lifted up the box a few days later? [1]

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



(Go on to the next page)

End of Booklet B1

METHODIST GIRLS' SCHOOL

Founded in 1887



MID-YEAR EXAMINATION 2016
PRIMARY 4
SCIENCE

BOOKLET B2

Total Time for Booklets A and B: 1 hour 20 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 : 12 May 2016

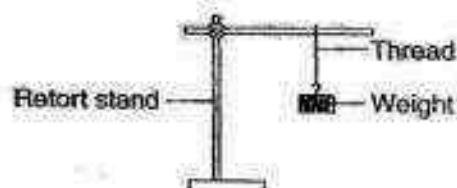
Booklet B2	18
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This booklet consists of 7 printed pages including this page.

For questions 35 to 40, 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.

[18 marks]

35. Devi set up an experiment as shown below.



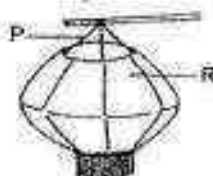
She added weights to the thread until it broke. She repeated the experiment using threads of four different materials and recorded the results in the table shown below.

Thread	W	X	Y	Z
Number of weights before the thread broke	12	5	2	8

- (a) What property of the materials was Devi trying to find out from this experiment?

[1]

Devi wanted to make a lantern as shown below.

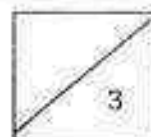


- (b) Which thread should Devi choose for part P so that the lantern would be durable? Give a reason for your answer.

[1]

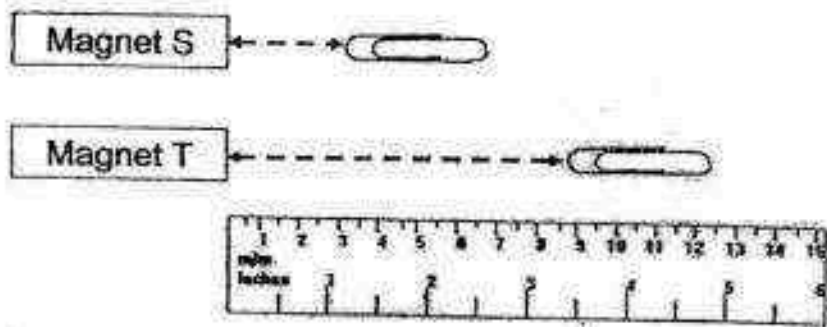
- (c) Devi placed a lighted candle in the lantern. What property should part R have in order for the lantern to be useful at night?

[1]



(Go on to the next page)

36. Lu Kai set up an experiment as shown below.

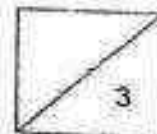


He slowly pushed the paper clips towards the magnets along the ruler. He then measured the distance at which the paper clips are attracted to the magnets. The results are shown below.

Magnet	Distance at which the paper clip is attracted to the magnet
S	3 cm
T	9 cm

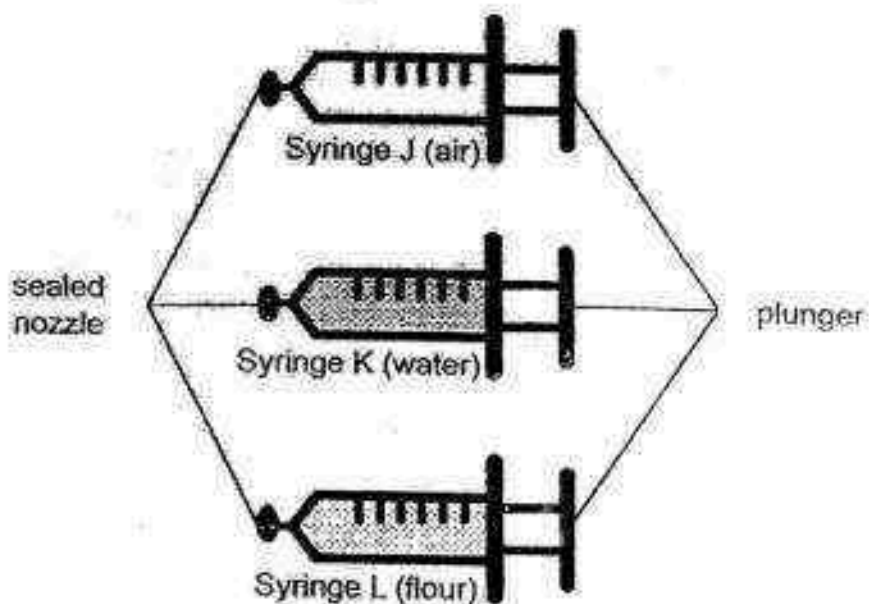
- (a) Which magnet has a stronger magnetic strength? Explain your answer. [2]

- (b) What material could the paper clip be? [1]



(Go on to the next page)

37. Juliana set up an experiment as shown below.



She used three identical syringes and put in equal volumes of air, water and flour in each of the syringe. She then pushed the plunger of each syringe using the same strength.

- (a) What would Juliana's observation be for Syringe J, K and L after she pushed the plunger of each syringe?

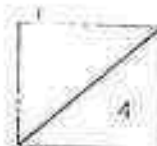
[1]

- (b) Was the experiment a fair test? Explain why.

[2]

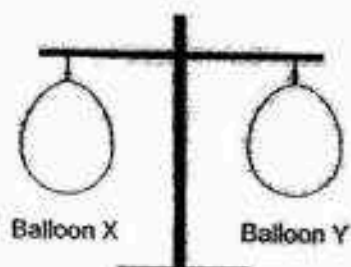
- (c) What could Juliana conclude from this experiment about the three states of matter?

[1]



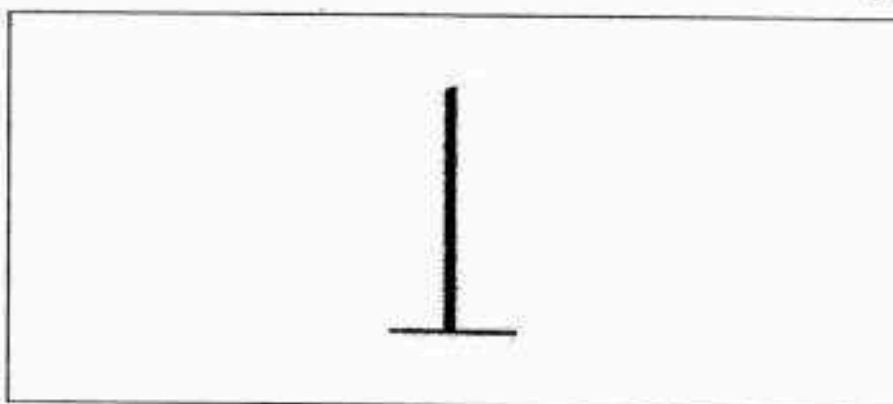
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38. Clement blew equal amount of air into balloons X and Y as shown below.



He then pricks Balloon Y with a needle.

- (a) Draw his observation and label the balloons after he has pricked Balloon Y in the box below. [1]

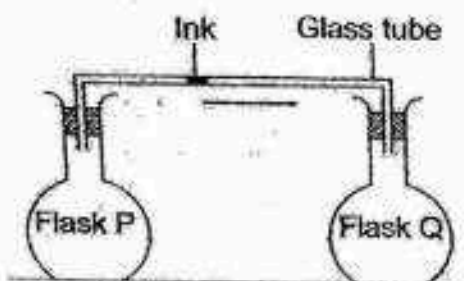


- (b) What does Clement's experiment show? [1]



(Go on to the next page)

39. Mirah set up the experiment as shown below.



Flask P and Q contain air and there is a drop of ink in the glass tube. She wanted to move the ink in the glass tube. Her teacher suggested that she could do that by placing either one of the flasks in a basin of hot water.

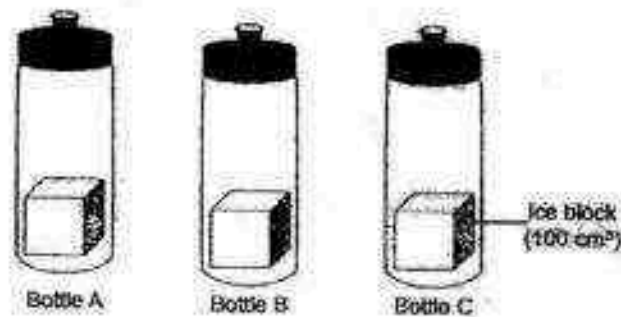
- (a) Which flask should Mirah choose to put into the basin of hot water if she wants the drop of ink to move towards Flask Q? [1]

- (b) Explain how the hot water in the basin caused the ink in the glass tube to move? [2]

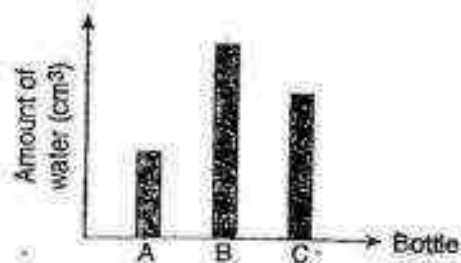


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40. Xinhui set up an experiment as shown below.



She placed an ice block of equal volume in each bottle made of different materials. 30 minutes later, she removed the ice block and measured the amount of water collected in each bottle and recorded her findings in the graph below.



- (a) If you are going to the beach on a hot day, which bottle would you choose to keep your drink cold? [1]

- (b) Explain why you chose the bottle in (a). [2]



End of Booklet B2

YEAR : 2016
 LEVEL : PRIMARY 4
 SCHOOL : METHODIST GIRLS'
 SUBJECT : SCIENCE
 TERM : SA1

Booklet A

Q1	1	Q5	2	Q9	4	Q13	3	Q17	2	Q21	2	Q25	1
Q2	4	Q6	2	Q10	2	Q14	3	Q18	3	Q22	3	Q26	2
Q3	4	Q7	1	Q11	1	Q15	3	Q19	4	Q23	1	Q27	3
Q4	2	Q8	4	Q12	4	Q16	2	Q20	1	Q24	3	Q28	3

Booklet B1

Q29 Reason 1: Insects have six legs but the woodlouse does not.
 Reason 2: Insects have 3 body parts but the woodlouse does not.

Q30a A: Plants
 B: Fungi

Q30b C: Amphibians
 D: Reptiles

Q30c E: Snake / Lizard
 F: Bread mould

Q31a Whether seeds need light to germinate.

Q31b Air, water and warmth.

Q31c Structure Y.

Q31d The shoot.

Q32a The larva stage.

Q32b The egg and pupa stages.

Q32c The mosquito.

Q33a The root.

Q33b The first function is to anchor the plant firmly into the soil. The
 second function is to absorb minerals and water from the soil.

Q34a The grass patch would have turned brown.

Q34b There is no light under the box so the grass is unable to make food.

Booklet B2

Q35a Devi was trying to find out how strong each material was.

Q35b She should use material W because it is the strongest.

Q35c The material should be transparent.

Q36a Magnet T as it could attract the paper clips from a further distance than Magnet S.

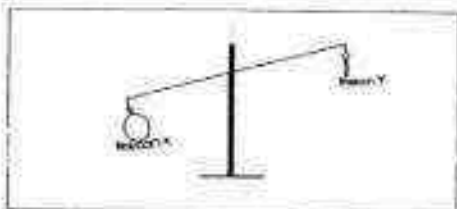
Q36b The paper clip could be iron or steel.

Q37a Only syringe J would be able to be pushed in.

Q37b Yes, all the variables were kept the same except for one variable which is the substance in the syringe.

Q37c Only gas can be compressed.

Q38a



Q38b Air has mass.

Q39a She should put flask P in the basin of hot water.

Q39b The hot water will cause the air in flask P to gain heat expand, pushing the ink drop towards flask Q.

Q40a Bottle A.

Q40b The ice in bottle A melted the slowest so the material of the bottle must be a poor conductor of heat.

End



**PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1**

**PRIMARY 4
SCIENCE
(BOOKLET A)**

13 MAY 2016

Name: _____ ()

Class: Teamwork _____

Total time for Booklets A and B: 1 h 30 min

INSTRUCTIONS TO CANDIDATES

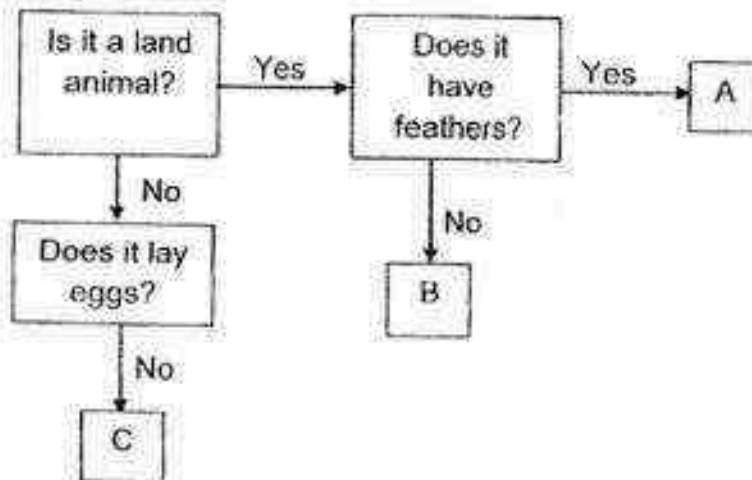
1. Write your Name, Class and Register No. in the spaces provided above.
2. DO NOT turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

This booklet consists of 14 printed pages, excluding the cover page.

For each question, from 1 to 22, four options are given. One of them is correct. Make your choice and shade the oval (1, 2, 3, or 4) on the Optical Answer Sheet.

[44 Marks]

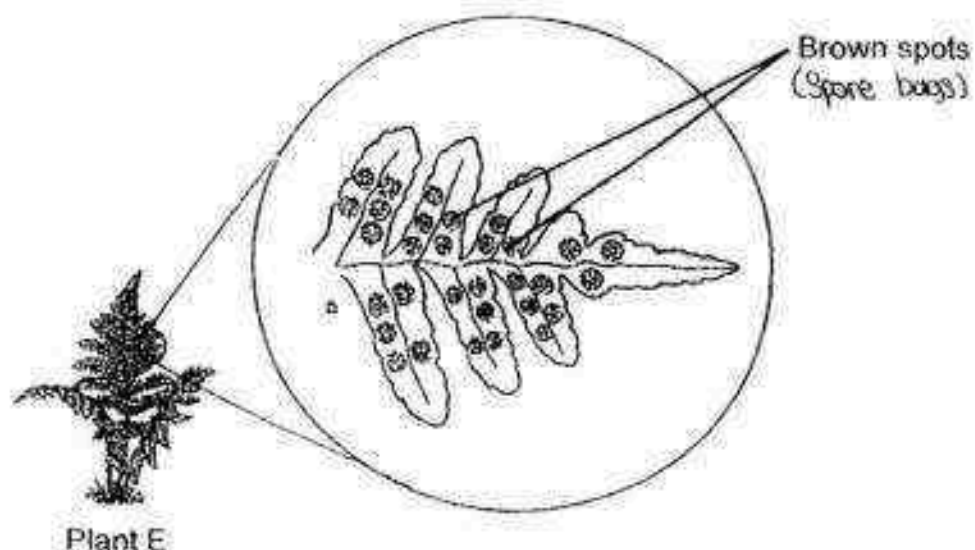
1 Study the flowchart on animals carefully.



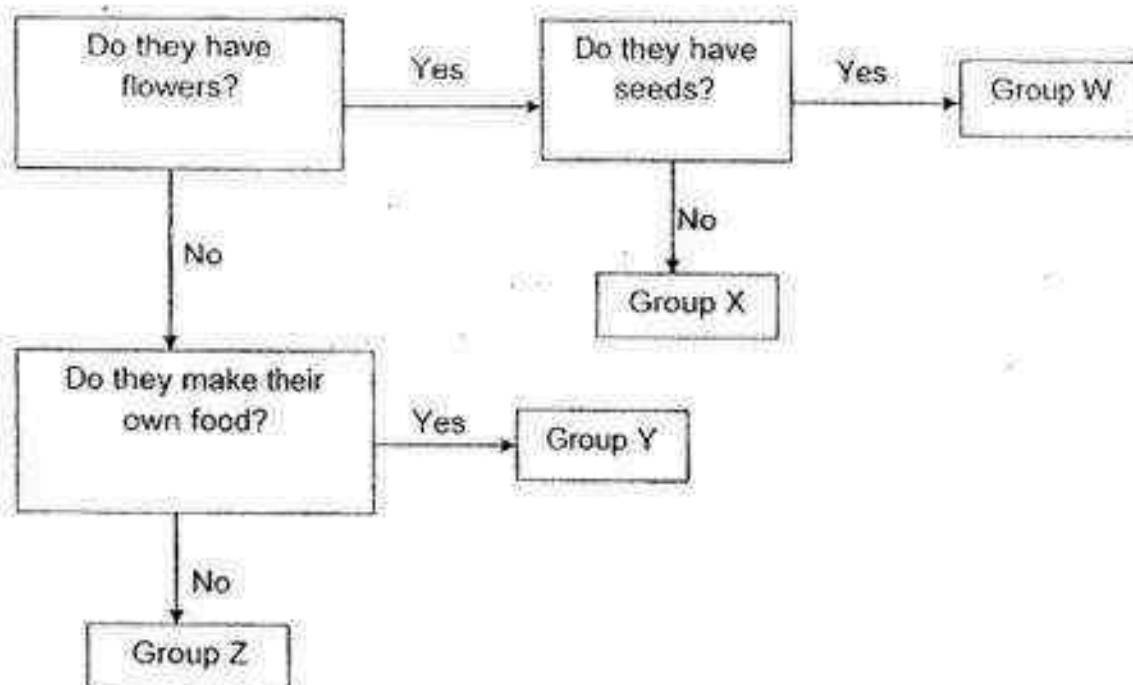
Which of the following animals could A, B and C be?

	A	B	C
(1)	Chicken	Monkey	Guppy
(2)	Chicken	Guppy	Monkey
(3)	Guppy	Monkey	Chicken
(4)	Guppy	Chicken	Monkey

- 2 Mary visited the garden and observed that Plant E has some brown spots on the underside of the leaves.



Mary used the following flowchart to classify Plant E.



Which of the following groups (W, X, Y or Z) can Plant E be placed in?

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

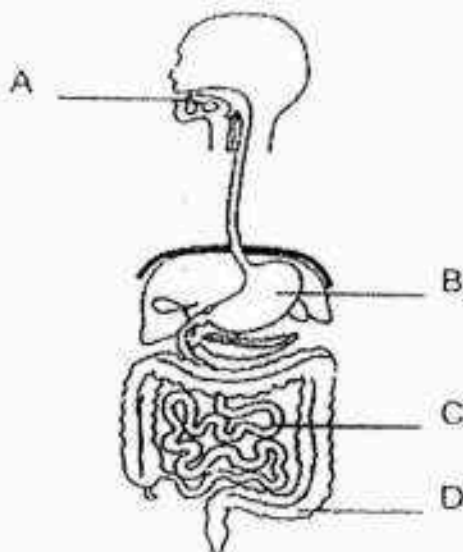
- 3 The diagram below shows a nail clipper.



Jane uses this nail clipper to cut her nails.

This part marked X should be made of _____.

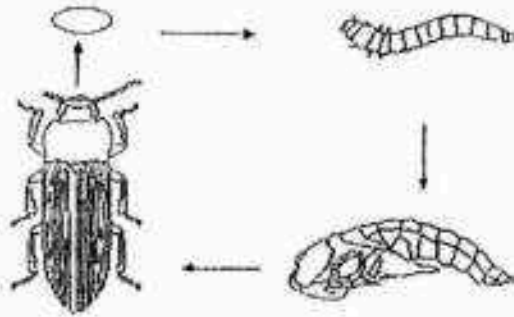
- (1) steel
 - (2) glass
 - (3) wood
 - (4) paper
- 4 The diagram below shows a human digestive system with some organs labelled A, B, C and D.



Which organs in the digestive system produce digestive juices?

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

5 Look at the life cycle of the beetle shown below.



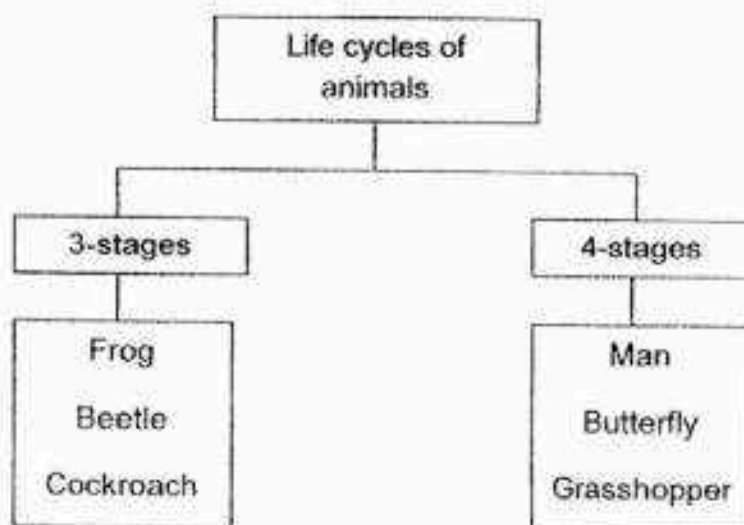
Which of the following animal has the same number of stages as the beetle?

- (1) Frog
- (2) Butterfly
- (3) Chicken
- (4) Cockroach

6 The number of stages in the life cycle of birds such as chicken is _____.

- (1) 5
- (2) 2
- (3) 3
- (4) 4

- 7 In the classification chart below, the animals are grouped according to the number of stages in their life cycles.

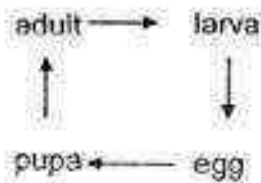


Which animals are not classified correctly?

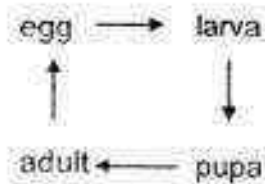
- (1) Man and Beetle only
- (2) Cockroach and Butterfly only
- (3) Beetle, Man and Cockroach only
- (4) ~~Man~~ , Beetle and Grasshopper only

8. Which of the following shows the correct order of the stages in the life cycle of butterfly?

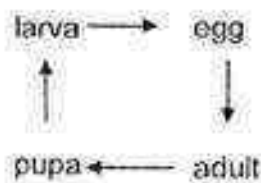
(1)



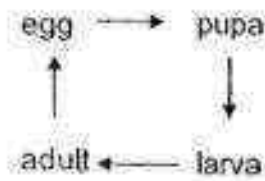
(2)



(3)



(4)



9. Which of the following is true when a seed germinates?

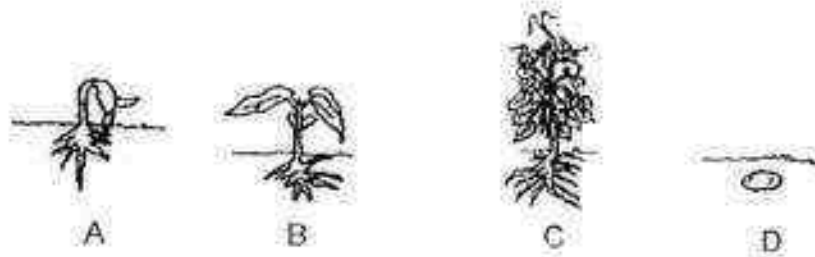
- (1) The root appears first.
- (2) The shoot appears first.
- (3) The first leaves appear first.
- (4) The shoot and the first leaves appear first.

10. Both young and adult flowering plants _____

- A produce seeds X
- B produce flowers X
- C make their own food ✓
- D take in water through their roots ✓

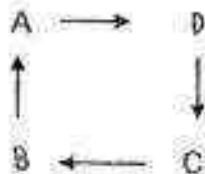
- (1) A and B
- (2) A and C
- (3) B and D
- (4) C and D

- 11 The diagrams below show different stages in the life cycle of a plant.

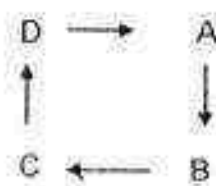


Which of the following shows the correct order of the life cycle of a plant?

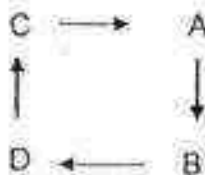
(1)



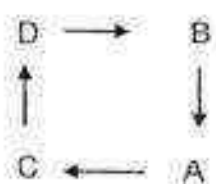
(2)



(3)

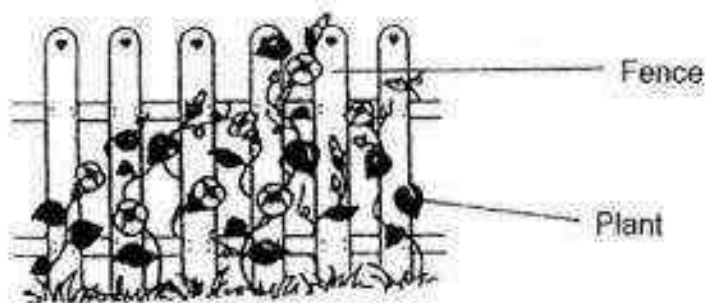


(4)



- 12 Ali observed some plants growing on the fence in the garden.

These plants grow on the fence to _____.

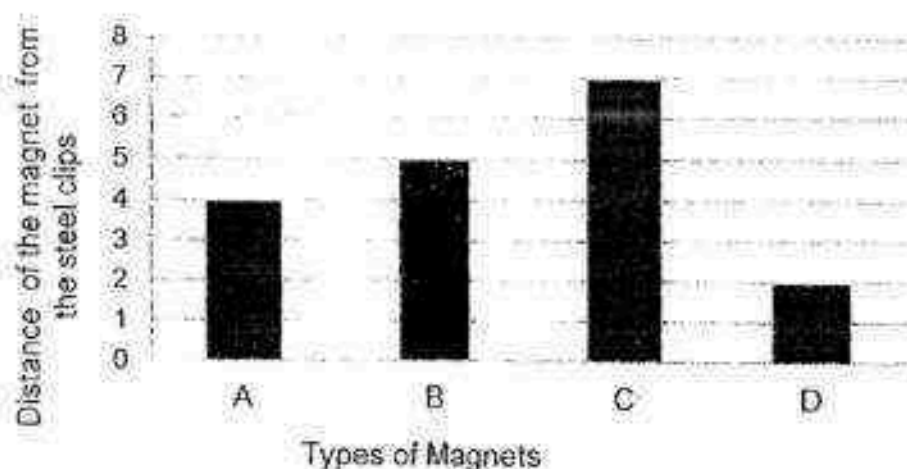


- (1) produce spores for reproduction
- (2) take in water from the roots to survive
- (3) bear fruits and seeds for reproduction
- (4) gain support to allow the plants to get enough sunlight

13. John wanted to find the maximum distance at which magnet A is from steel clip before the clip gets attracted to magnet A. He placed magnet A and steel clip along the ruler as shown below.



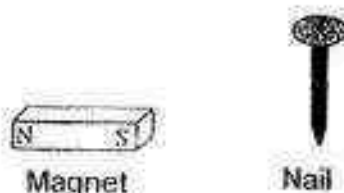
He moved magnet A along the ruler towards the steel clip. He recorded the reading on the distance at which the steel clip was attracted to magnet A. He repeated the experiment using 3 other magnets B, C and D and presented his result in a graph shown below.



Based on the graph, which magnet has the strongest magnetic pull?

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

- 14 Stella wants to make a temporary magnet using a bar magnet and nail.

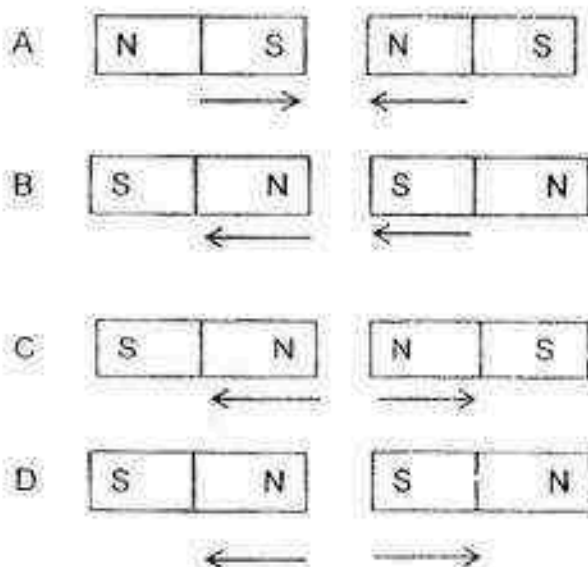


Which of the following steps is correct?

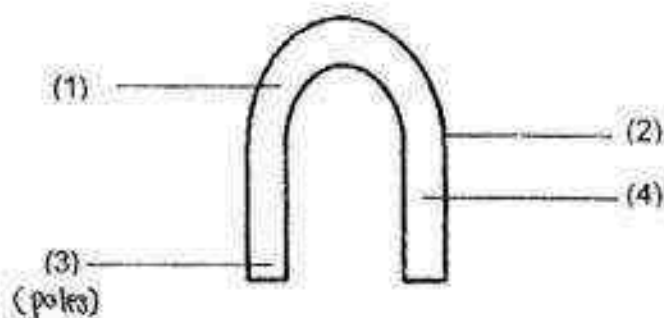
Stroke the nail with the _____.

- (1) North pole of the magnet many times in one direction.
 - (2) South pole of the magnet many times in both directions.
 - (3) North pole and South pole of the magnet many times in one direction.
 - (4) North pole and South pole of the magnet many times in both directions.
- 15 Which two of the following statements about magnets are true?
- | | |
|---|---|
| A | Unlike poles repel each other. |
| B | The pull of a magnet is weakest at its poles. |
| C | Magnetic materials will be attracted to magnets. |
| D | The two poles of a magnet are known as North-seeking and South-seeking poles. |
- (1) A and B
 - (2) A and D
 - (3) B and C
 - (4) C and D

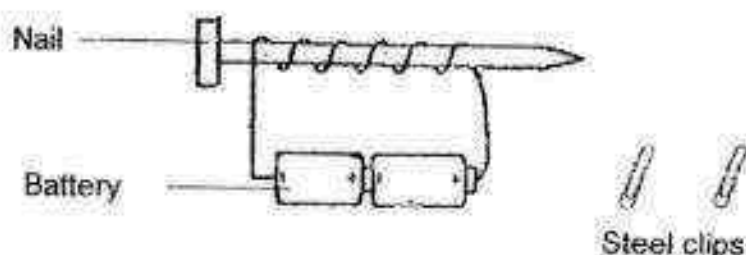
- 16 Which two diagrams below show the possible interaction between two bar magnets when they are brought close to each other? (The arrows show the direction of movement between the two bar magnets.)



- (1) A and C
 (2) A and D
 (3) B and C
 (4) B and D
- 17 Kent put a U shaped magnet into a tray of metal pins. When he removed the magnet from the tray of metal pins, which part of the magnet (1, 2, 3 or 4) will attract the most metal pins?



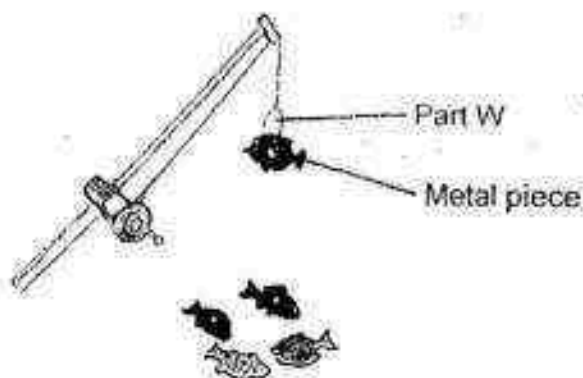
- 18 James set up an electromagnet using a nail, a coil of wire and two batteries as shown below.



He observed that the electromagnet did not attract any steel clips that were brought near to it.

Which of the following explanation is correct?

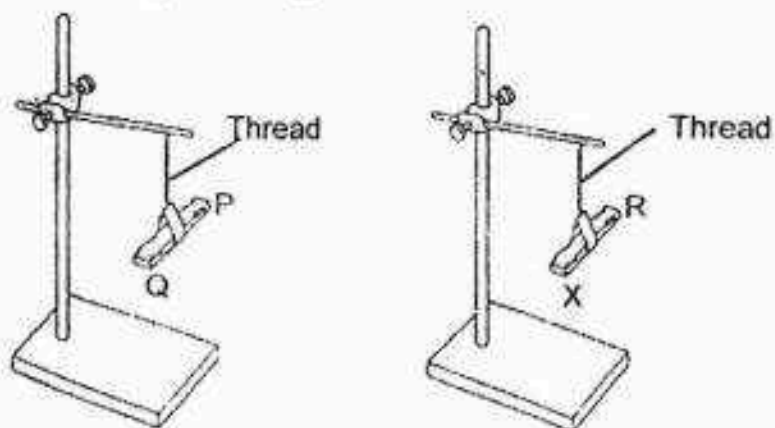
- (1) Too many batteries were used.
 - (2) Iron clips were used instead of steel clips.
 - (3) The nail used was a non-magnetic material.
 - (4) The number of coils around the nail was too many.
- 19 Kenneth made a magnetic fishing rod using an electromagnet at Part W. When he switched on the electromagnet, he was able to attract the metal pieces on the fish. However, when he switched off the electromagnet, he could not release the fish.



What could be the possible reason?

- (1) The electromagnet at Part W was not strong enough.
- (2) He had used a permanent magnet to make the electromagnet.
- (3) The metal pieces on the fish were all made of magnetic material.
- (4) The electromagnet was no longer a magnet when it was switched off.

20 Study the two set ups carefully.

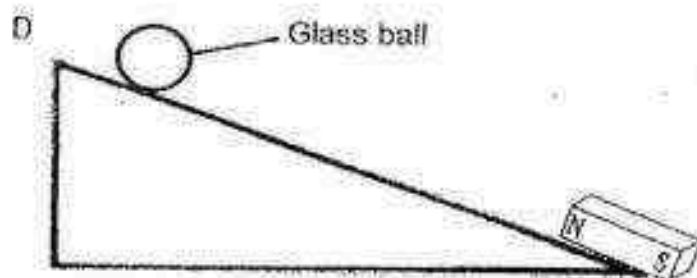
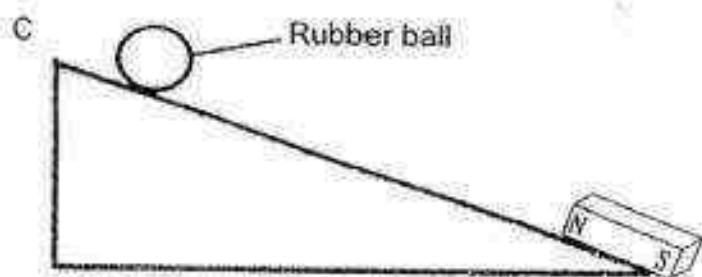
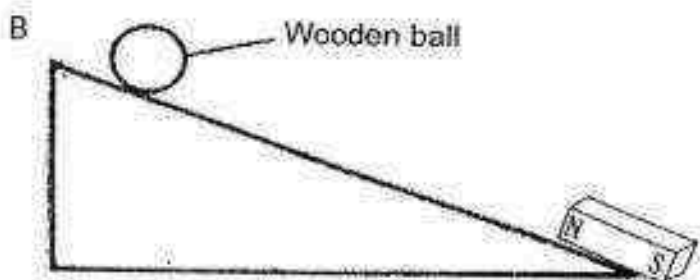
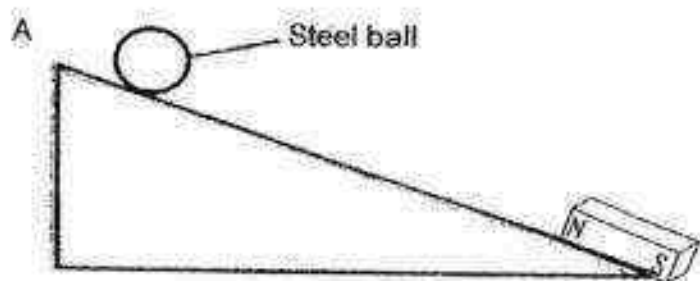


P, Q, R and X are the poles of the two suspended magnets. Both magnets rested in North-South direction as shown above.

Which of the following statement is correct if the magnets were brought together?

- (1) Pole Q and Pole R will repel.
- (2) Pole Q and Pole X will attract.
- (3) Pole P and Pole R will attract.
- (4) Pole P and Pole X will attract.

- 21 John set up an experiment using 4 similar 10-gram balls made of different materials, a ramp of the same surface and a bar magnet as shown below. The balls are released the same time.

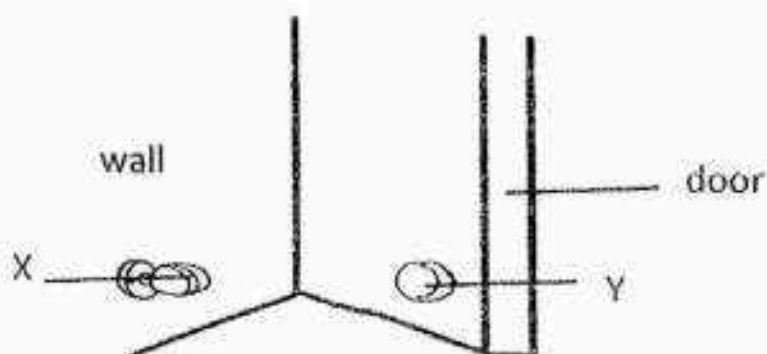


Which ball will most likely roll down the ramp the fastest?

- (1) Steel ball
- (2) Glass ball
- (3) Rubber ball
- (4) Wooden ball

- 22 Ali saw the magnetic door stopper at the back of his door.

The stopper is made of 2 parts, X and Y. He found out that one of the parts have to be a magnet for the stopper to hold the door open.



Based on the information given, which of the following could X and Y be?

	X	Y
(1)	Magnet	Steel
(2)	Magnet	Aluminium
(3)	Glass	Magnet
(4)	Plastic	Magnet



PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1

PRIMARY 4
SCIENCE
(BOOKLET B)

13 MAY 2016

Name: _____ (姓)

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) :	44
Marks (Booklet B) :	36
Total Marks (Booklets A & B) :	80

This booklet consists of 12 printed pages, excluding the cover page.

For questions 23 to 33, write your answers in this booklet.

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

[36 Marks]

23 John saw two items shown below.



A ticking clock on the wall



A chick in a garden

He told Mary that both items seem to be able to move on their own and so both are living things. Mary disagreed with John.

Based on the characteristics of living and non-living things, give 2 reasons why Mary said so.

[2]

24. On a rainy day, Su Mei wore her raincoat to go to school.



- (a) Suggest 2 properties of the material used to make Part G of the raincoat and explain how these properties make the raincoat suitable for wearing on a rainy day.

[2]

	Property	Explain how the property makes the raincoat suitable
(i)		
(ii)		

- (b) Su Mei was wearing a pair of spectacles. Other than the properties stated in (a), state another property of the material used to make Part K of her spectacles.

[1]

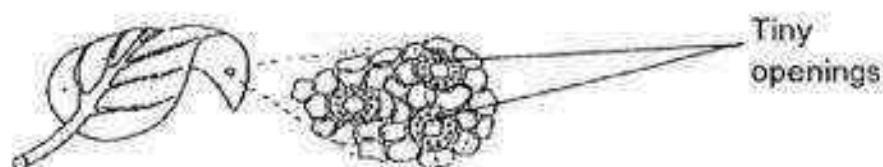
- 25 (a) Why do plants reproduce?

The diagram below shows Plant B.



Plant B

John plucked a leaf from a Plant B and put it under a microscope and saw tiny openings on the leaf as shown below.



- (b) What is the function of the tiny openings in the leaf?

[1]

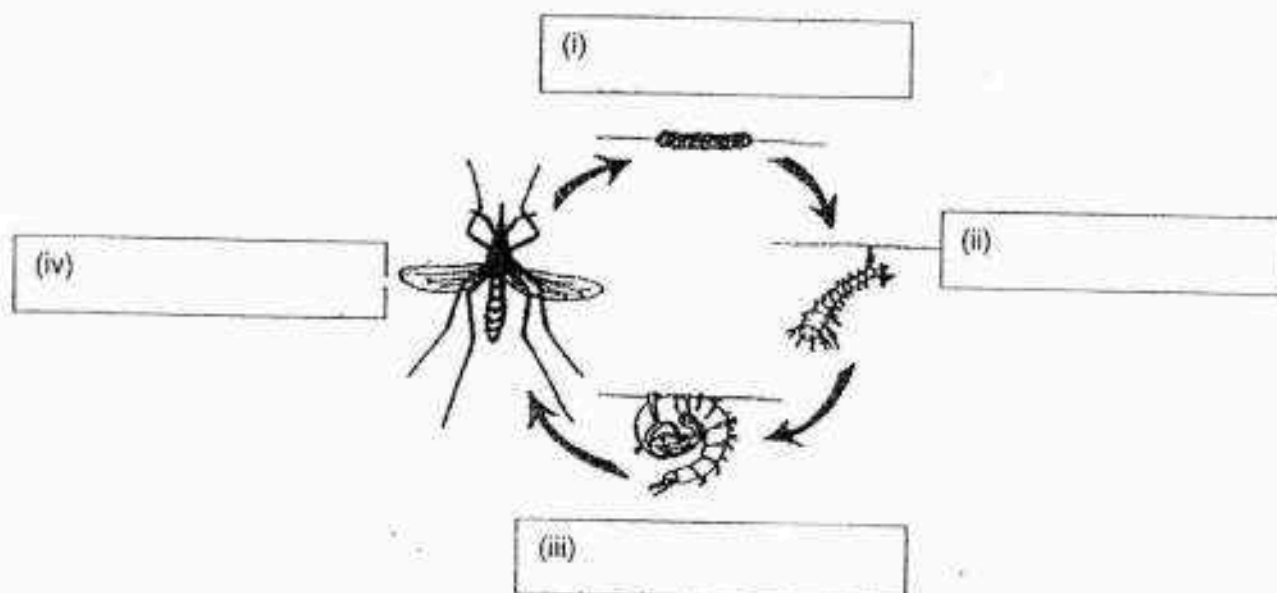
- (c) The flowers on Plant B only appeared when the plant is in the adult stage. Describe how the flowers would develop on Plant B that enable the plant to grow into new plants.

[2]

26 (a) Study the life cycle of the mosquito.

Name the stages clearly in the boxes provided.

[1]



(b) Aedes mosquitoes spread dengue fever. At which stage of its life cycle is it most harmful to Man? Why?

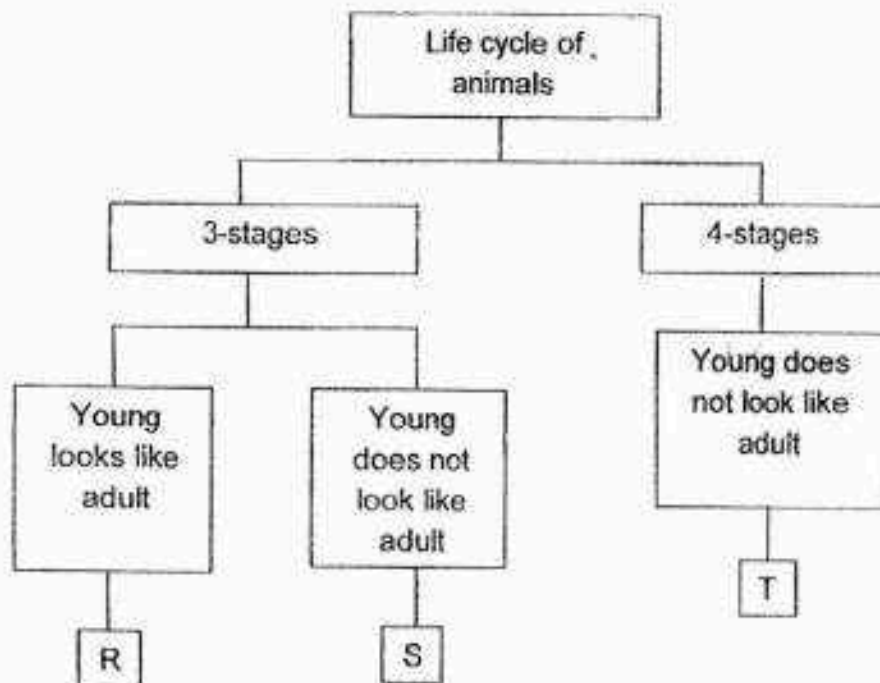
[1]

(c) State two ways to prevent the mosquito from breeding.

(i)

(ii)

27 Study the diagram below.



Based on the flowchart above, give an example for each of the following:

[3]

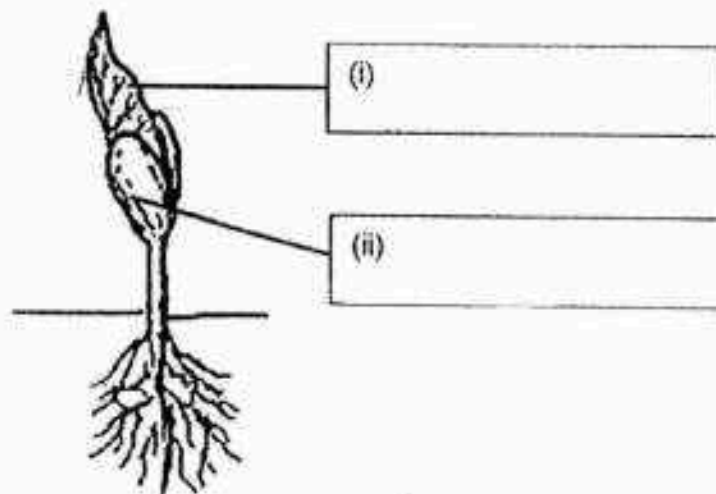
R: _____

S: _____

T: _____

- 28 (a) The diagram below shows a seed developing into a young plant.
Label the parts in the boxes provided.

[1]

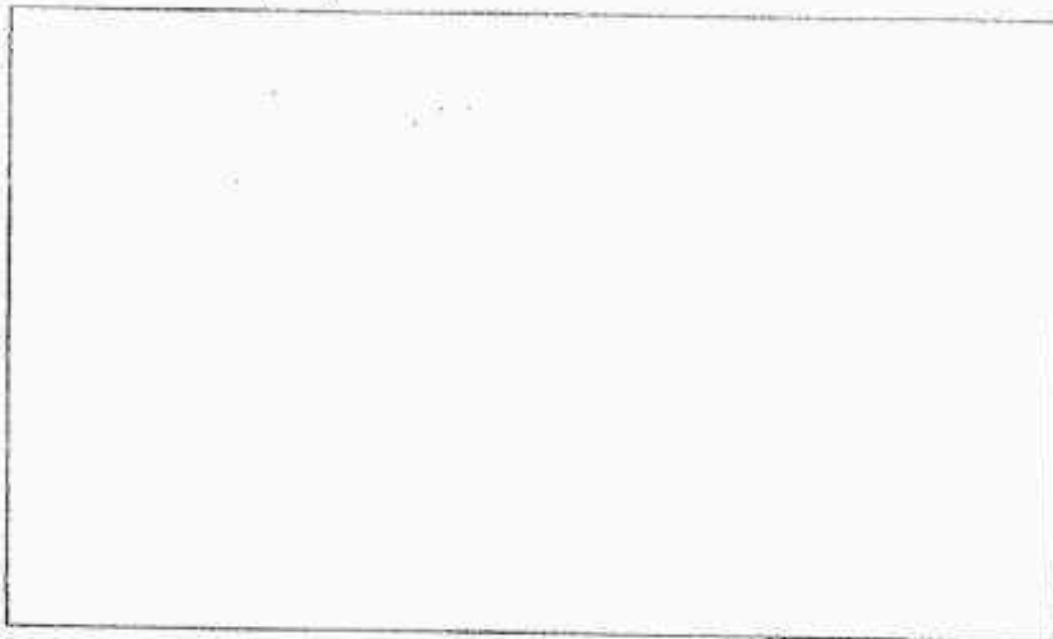


- (b) How does the young plant at this stage in (a) get its food?

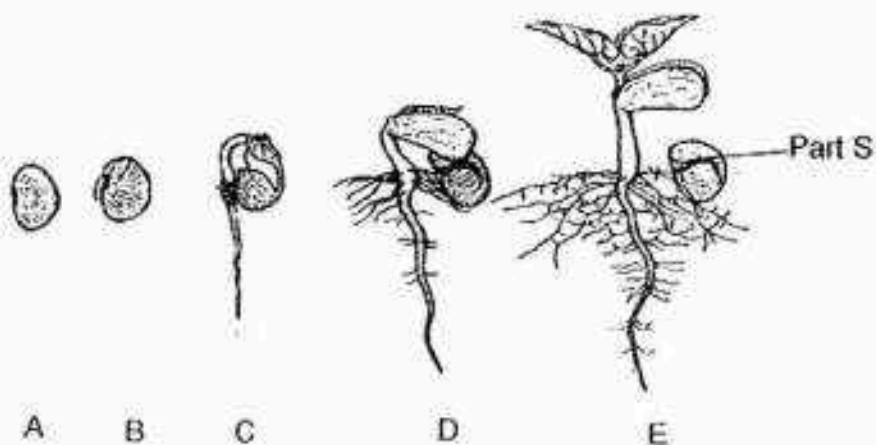
[1]

- (c) Draw the life cycle of a flowering plant in the box provided. (You do not need to draw the plant)

[2]



- 29 The diagram below shows a germination process of a green bean.



- (a) At which stage(s) can the seedling start to make its own food? [1]

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

- (c) (i) Part S drops off during the germination process.
What is Part S? [1]

- (ii) State the function of Part S. [1]

30. Max kept some eggs of Insect G in a container.

Once they hatched, he gave them the same amount of food every day. He observed the growth of Insect G for a few days and recorded the amount of food left in the table below.

Day	Amount of food at the beginning of the day (g)	Amount of food at the of end the day (g)
1	100	90
2	100	80
3	100	60
4	100	100
5	100	100
6	100	100
7	100	90

- (a) He noticed that the amount of food did not change from Day 4 for three days. If the young of Insect G survived, what had happened to the young on Day 4? [1]

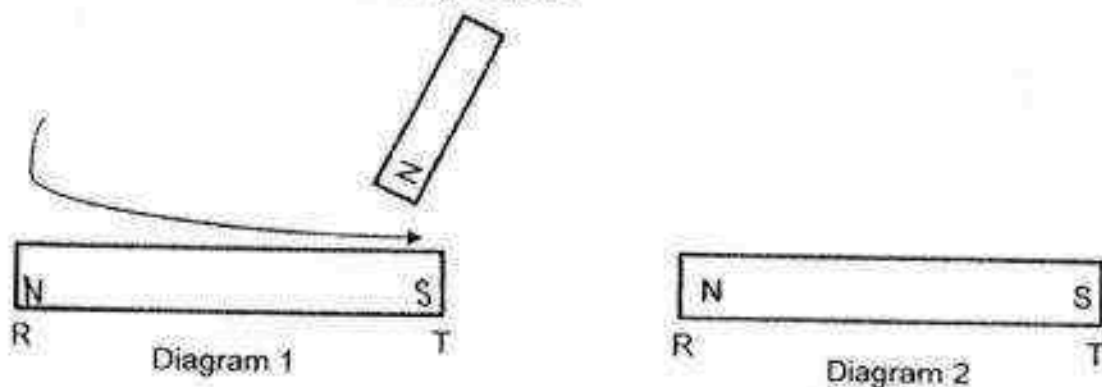
- (b) Based on the information given, how many days did it take for Insect G to become an adult after it was hatched? [1]

- (c) Max kept some young of another insect, Insect M, in a container and observed the changes that the young went through until they became adults. He realised that the life cycle of Insect M was different from Insect G.

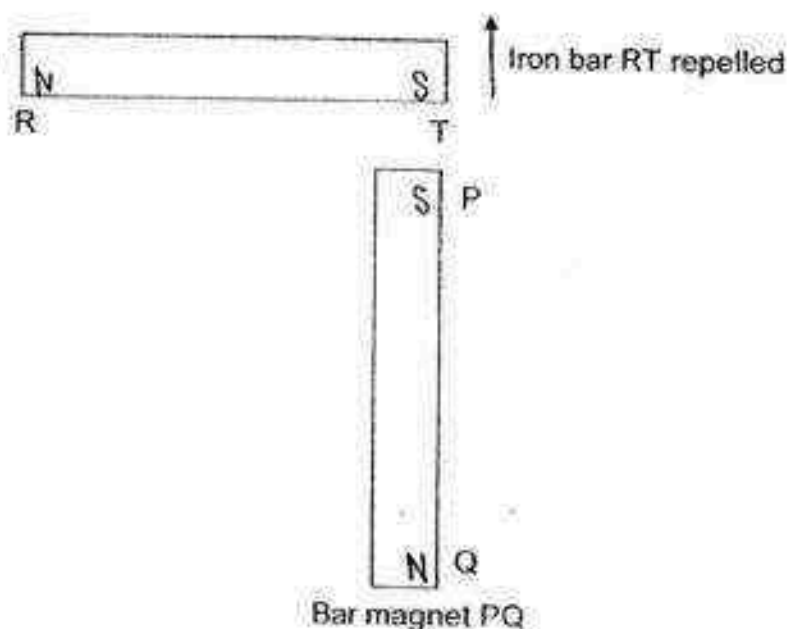
Draw the life cycle of Insect M in the space below.

[1]

- 31 (a) An iron bar RT was made into a temporary magnet using the stroke method shown in Diagram 1. Diagram 2 shows the magnetic poles of the iron bar RT after it was magnetised.



When iron bar RT was brought near another bar magnet PQ, iron bar RT repelled.



Based on the information above, identify the magnetic poles of bar magnet PQ.

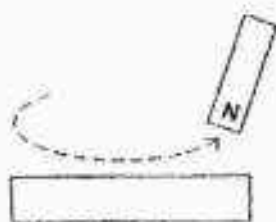
[1]

P: _____

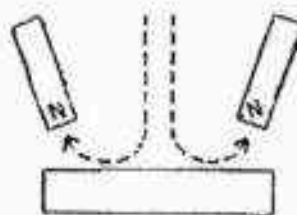
Q: _____

Question 31 (b) continues on page 24

- (b) Henry used 2 identical iron bars, A and B and stroke it 20 times with similar bar magnets as shown below.



Iron bar A



Iron bar B

He brought some steel paper clips to both iron bars and found that the steel paper clips only attract to iron bar A. He realised that iron bar B was not magnetised.

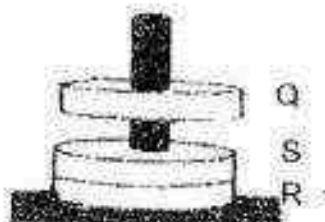
Give a reason iron bar B is not magnetised.

[1]

- 32 (a) Kent placed 3 discs Q, R and S through a wooden rod, 2 of the discs are magnets and one is an iron disc as shown in Diagram 1.



He adjusted the positions of the 2 discs and observed the following in Diagram 2.



- (a) (i) Based on the information above, state which discs are magnets and which disc is the iron disc by writing the correct letters (Q, R and/or S) in the table below.

[1]

	Disc
Magnets	
Iron disc	

- (ii) Explain why Disc Q float above Disc S.

[1]

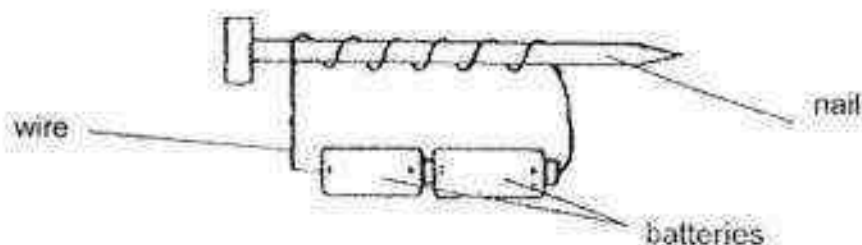
- (iii) Explain why Disc S did not float above Disc R.

[1]

Question 32 (b) continues on page 2

- (b) Kent replaced the iron disc to a plastic disc. Will the result be the same or different from his observation in Diagram 2? Explain your answer [1]

- 33 (a) Max set up the following electromagnet using a nail, a wire and two batteries. He found that he was able to pick up some metal clips. He wanted to make it into a stronger electromagnet that can pick up more metal clips.



State 2 ways he can improve his set up so that he can pick up more metal clips. [2]

- (i) _____
- (ii) _____

- (b) Max changed the nail to a wooden rod and realised the rod could not pick up any metal clips. Give a reason why this is so. [1]

END OF PAPER

EXAM PAPER 2016

SCHOOL : PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SUBJECT : PRIMARY 4 SCIENCE
TERM : SA1

BOOKLET A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	3	1	3	2	3	4	2	1	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	4	3	1	4	1	3	3	2	4
Q21	Q22								
1	1								

SECTION B:

Q23 The ticking clock on the wall does not reproduce but the chick in the garden reproduces. The ticking clock on the wall does not grow but the chick in the garden grows. That is why Mary disagreed with John, as the ticking clock on the wall was a non living thing while the chick in the garden was a living thing.

Q24(a) (i) & (ii)

Property	Explain how the property makes the raincoat suitable
Light/Lightweight/Flexible	Wearer to be comfortable/ Wearer can move about/could fit the wearer's body
Waterproof	Wearer to keep dry

Q24(b) Transparent

Q25(a) It reproduces to ensure that their own kind will continue to live.

Q25(b) There are tiny openings on the leaf to give out and take in gases.

Q25(c) Flower would develop into fruits with seeds. The seeds then grow into new plants/ will help plants to reproduce.

Q26(a)

- (i) Egg
- (ii) Larva
- (iii) Pupa
- (iv) Adult

Q26(b) Adult stage/ stag 4. The adult mosquito bites/ drink blood/ feeds on blood.

Q26(c) (i) Change water in vases and bowls on alternate days.

(ii) Turn over all water storage containers.

OR Clear blockages and put insecticides in roof gutters monthly.
Cover bamboo pole holders when not in use.

Q27 R: Grasshopper

S: Frog/ Dragonfly

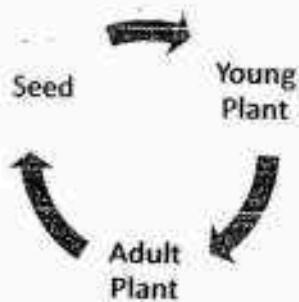
T: Butterfly

Q28(a)

- (i) leaf/leaves or true leaves/leaf
- (ii) From the seed leaf/leaves or cotyledon

Q28(b) It depends on the seed leaf for food

Q28(c)



Q29(a) Stage E

Q29(b) The plant at stage E has its own true leaves to make food by itself.

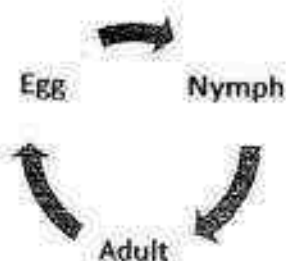
Q29(c)

- (i) Seed coat
- (ii) Protects the seed/baby plant/seed leaf

Q30 (a) It has become a pupa which neither feed nor moves

Q30 (b) 7 days

Q30(c)



Q31(a) P: South-seeking pole
Q: North-seeking pole

Q31(b) Iron bar B was strokes with different directions and same pole.

Q32(a)

(i)

	Disc
Magnets	Q and S
Iron disc	R

(ii) Like poles facing each other and they repel.

(iii) Disc R is a magnetic material and cannot repel a magnet.

Q32(b) The result will be the same because the plastic is (non-magnetic)/ not a magnet) it (cannot repel) or attract Disc S/ it will not have any reaction to Disc S.

Q33(a)

- (i) Increase the number of coils of wire around the nail
- (ii) Increase the number of batteries in the circuit.

Q33(b) Wood is a non-magnetic material which cannot be magnetised. Hence, the rod could not pick up any metal clips.



Temasek Primary School

Semestral Assessment 1

Primary Four

2016

SCIENCE
(Booklet A)

Name: _____ ()

Class: Primary 4 _____

Date: 10 May 2016

Parent's Signature: _____

56 Marks

Total Time for Booklet A and B: 1h 45 min

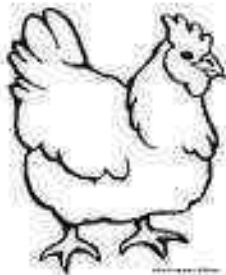
INSTRUCTIONS TO CANDIDATES

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

For questions 1 to 28, 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).

(56m)

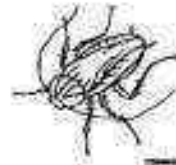
1. Study the three animals shown below carefully.



chicken



frog



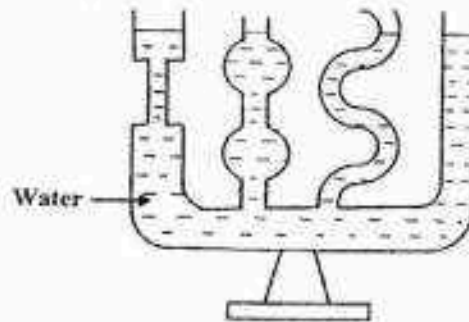
cockroach

Which of the following statements about the life cycles of the animals above is/are true?

- A: They lay eggs.
- B: Their young have wings.
- C: They have a 4-stage life cycle.
- D: Their young do not resemble the adult.

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

2. Ella poured some water into a container as shown below.



From her observation, what can she conclude about the property of liquid?

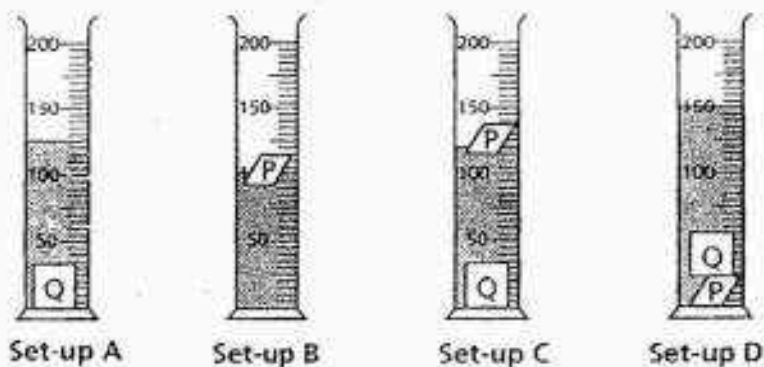
- (1) Liquid has mass.
- (2) Liquid has no fixed shape.
- (3) Liquid cannot be compressed.
- (4) Liquid does not have a fixed volume.

3. Which one of the following is/are true about water and a stone?

- A: They have mass.
- B: They take up space.
- C: They have a fixed shape.
- D: They have a fixed volume.

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

4. The following set-ups show the observations when Object P and Object Q are placed into a measuring cylinder containing 100ml of water.



Which of the following statements is/are true of the experiment?

- A: Object Q sinks in water.
- B: Object P floats in water.
- C: The set-ups cannot be used to find the volume of Object P.
- D: The set-ups can be used to find the volume of Object P and Q.

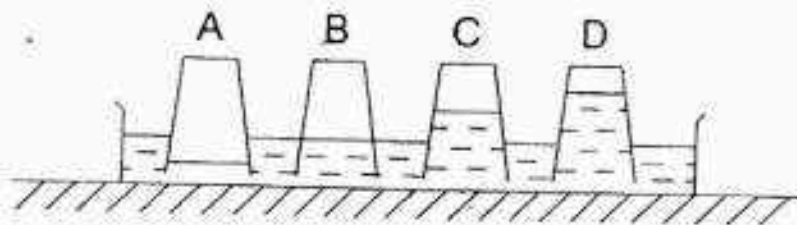
- (1) A and B only.
- (2) C and D only.
- (3) A, B and D only.
- (4) B, C and D only.

5. Which part of the digestive system can digestive juices be produced?

- A: gullet
- B: stomach
- C: small intestine
- D: large intestine

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

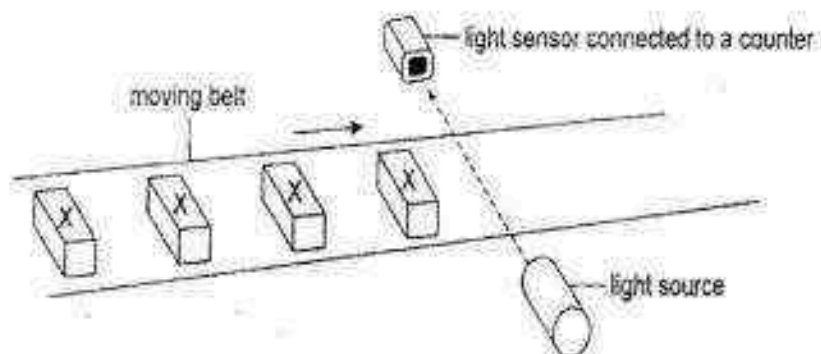
6. 4 similar glasses were inverted and pushed into a basin of water.



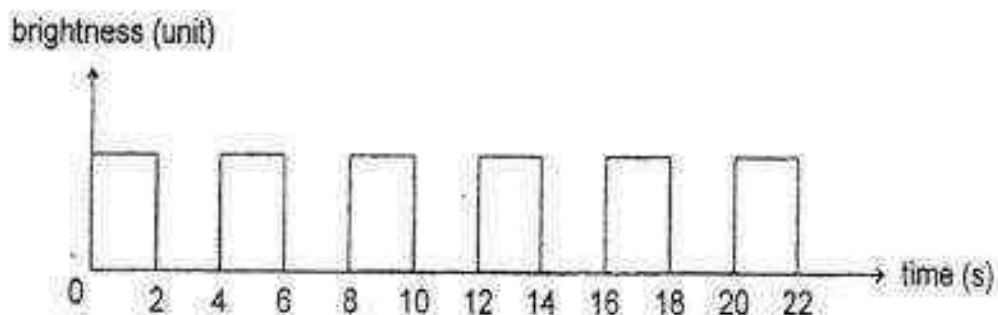
Which glass shows the correct water level in it?

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

7. At a factory, a light sensor is used to count the number of object X on a moving belt.



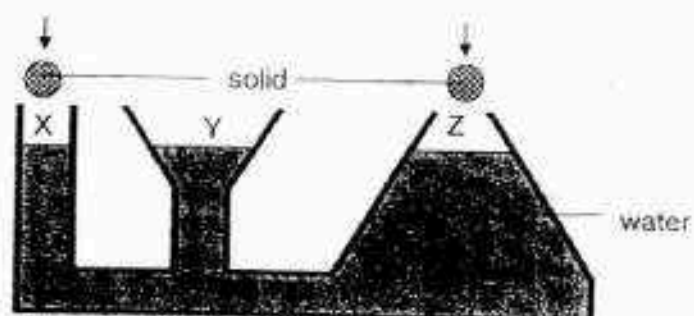
When object X moves between the light source and the sensor, it blocks the light from reaching the sensor. The data recorded over a short period is shown in the graph below.



Based on the above graph, how many object X passed the sensor within a period of 22 seconds?

- (1) 5
- (2) 6
- (3) 11
- (4) 22

8. A container with 3 openings labelled X, Y and Z is shown in the diagram below.



Two solids are dropped slowly into the container as shown. What will happen to the water level at X, Y and Z?

	X	Y	Z
(1)	Increase	Decrease	Increase
(2)	Increase	Remain the same	Increase
(3)	Increase	Increase	Increase
(4)	Remain the same	Increase	Remain the same

9. Li Xuan recorded the mass of individual materials, W, X, Y and Z of similar sizes. Then, she put each of them into 4 beakers containing equal amounts of water as shown below.



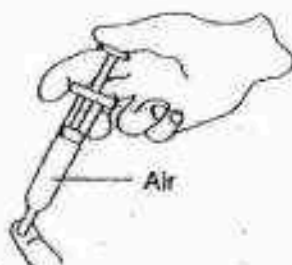
She measured the mass of each material again after 15 minutes and recorded the masses in the table below.

Material	Mass at the beginning (g)	Mass after 15 minute (g)
W	7	14
X	5	14
Y	13	15
Z	10	12

Based on the table above, which material is the most absorbent?

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

10. Study the diagram below carefully.



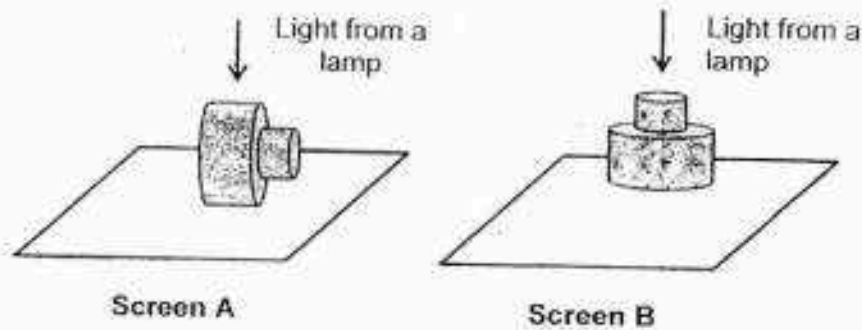
What will happen to the volume and mass of the air inside the syringe when the plunger is pushed in?

	Mass	Volume
(1)	remains unchanged	remains unchanged
(2)	remains unchanged	decrease
(3)	decrease	decrease
(4)	increase	decrease

11. Which of the following organs is not part of the digestive system?

- (1) Gullet
- (2) Heart
- (3) Stomach
- (4) Large intestine

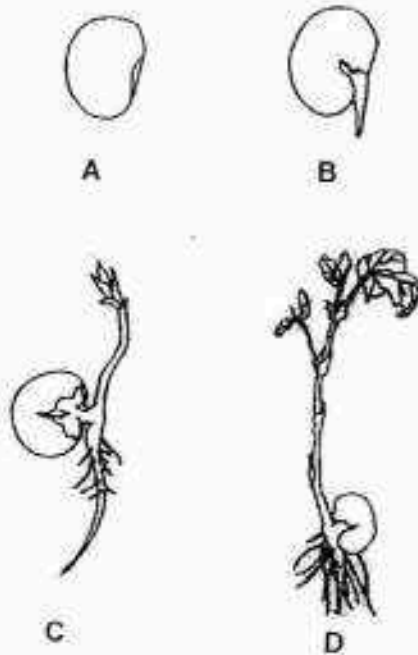
12. Hamid investigated the shapes of shadows formed by two identical wooden objects. He placed them in two different positions under two identical light sources.



Which one of the following shadows would be observed on each screen?

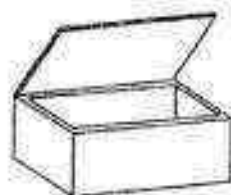
	Screen A	Screen B
(1)		
(2)		
(3)		
(4)		

13. Which of the following shows the correct sequence of the stages in a plant's life cycle?

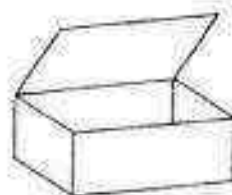


- (1) $C \rightarrow D \rightarrow A \rightarrow B$
- (2) $D \rightarrow C \rightarrow B \rightarrow A$
- (3) $A \rightarrow C \rightarrow B \rightarrow D$
- (4) $B \rightarrow A \rightarrow C \rightarrow D$

14. Box A and box B are made of cardboard of different thickness. Ethel used box A to send a heavy parcel.



Box A



Box B

Which of the following is the best reason for Ethel to use box A?

- (1) Box A is bigger.
- (2) Box A is stronger.
- (3) Box A is heavier.
- (4) Box A is more flexible.

15. Bryan was standing behind a wall in a brightly lit room and he could not see the cat.



Bryan

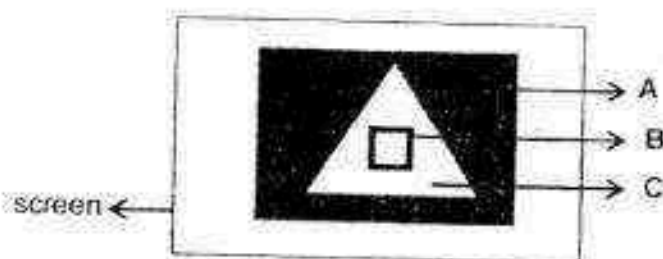


cat

Which one of the following explains why Bryan could not see the cat?

- (1) The cat is a living thing.
- (2) The cat is not a light source.
- (3) The wall did not allow light to pass through.
- (4) The cat did not allow light to pass through.

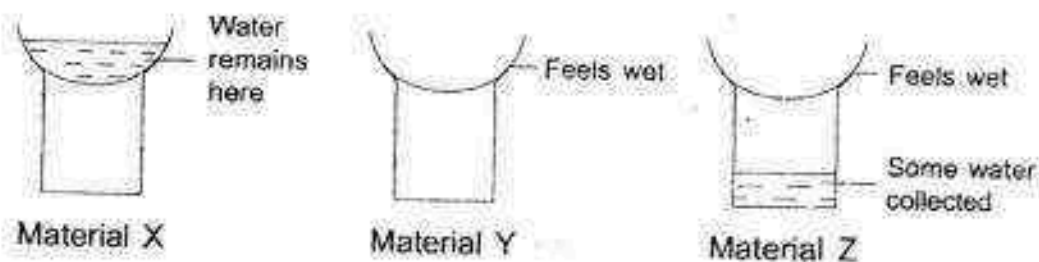
16. Gwyneth carried out an experiment to observe the shadow of an object. The diagram below shows the shadow cast on a screen.



Based on the shadow observed above, what conclusion could be drawn?

- (1) Part A allowed most light to pass through.
- (2) The whole object is made of opaque materials.
- (3) Part C and part B are made of the same material.
- (4) The object is made of at least two different materials.

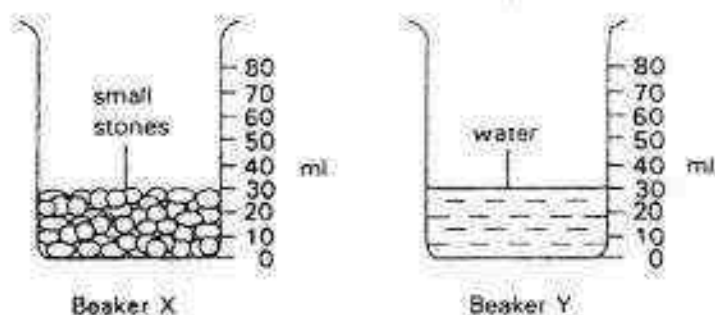
17. Aloysius sets up an experiment to find out which of the three materials absorbs the most amount of water. He pours equal amount of water on each material and the diagrams below show what happened after an hour.



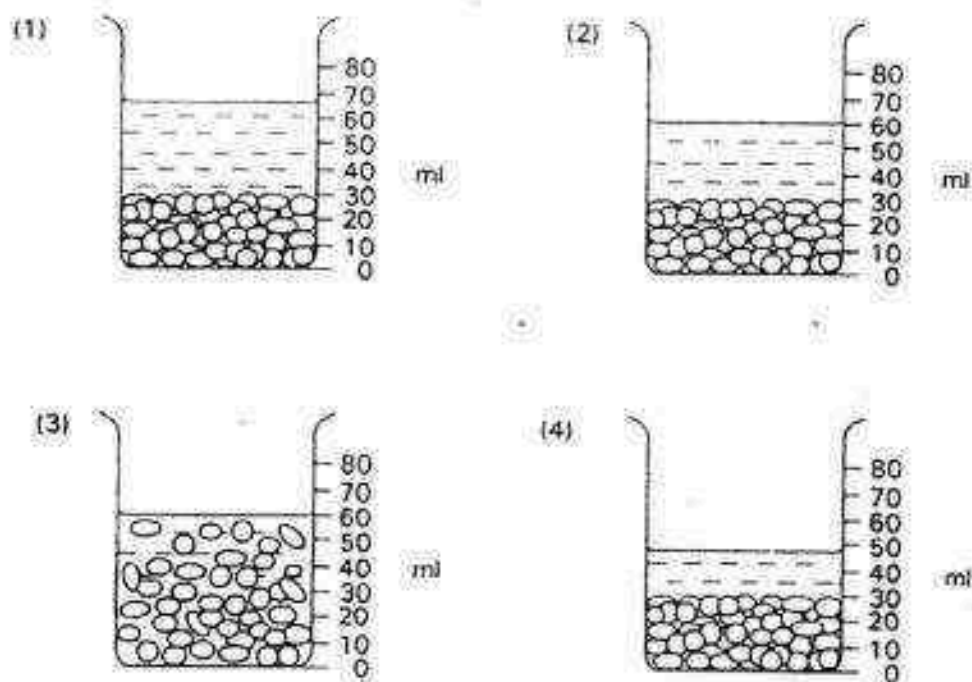
Which material(s) would he choose for making a raincoat?

- (1) X only.
- (2) Y only.
- (3) Z only.
- (4) Y and Z only.

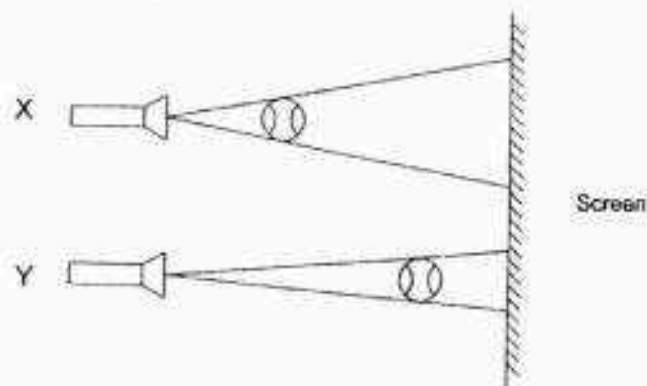
18. The diagram shows two beakers X and Y. Beaker X contains small stones and Beaker Y contains 30ml of water.



The water in Beaker Y is then poured into Beaker X. Which drawing shows Beaker X after the water from beaker Y has been poured into it?



19. Study the diagrams below carefully.



Which of the following best describes the shadows cast on the screen?

- (1) X will cast a bigger shadow.
- (2) Y will cast a bigger shadow.
- (3) No shadow will be cast on the screen.
- (4) The size of the shadows cast will be the same.

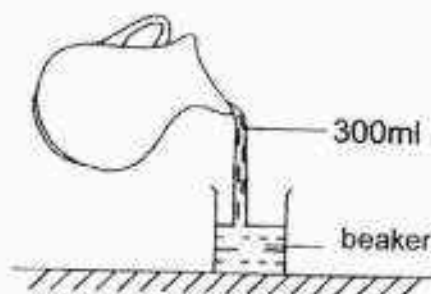
20. The table below shows some materials classified under three different groups.

Group A	Group B	Group C
rubber	leather	steel
cotton	silk	iron
	X	

Which of the following could X be?

- (1) Wood
- (2) Paper
- (3) Wool
- (4) Plastic

21. Shayna poured 300ml of water from a jug into a beaker with some water. The capacity of the beaker is 200ml.

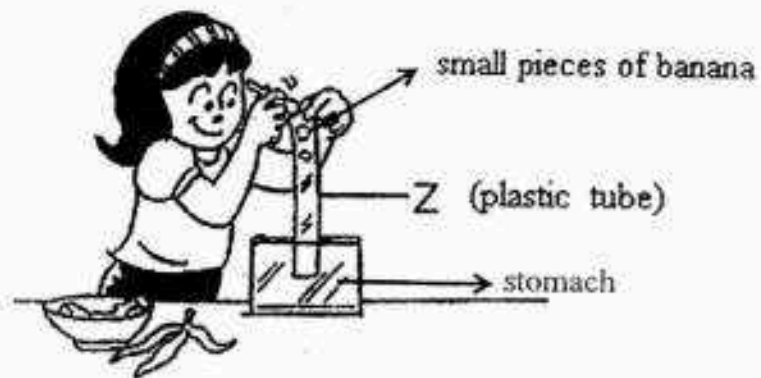


Shayna made the following statements based on her observations. Which statement(s) is/are correct?

- A: Water can be compressed.
- B: Water in the beaker will overflow.
- C: Water does not have a fixed shape.

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

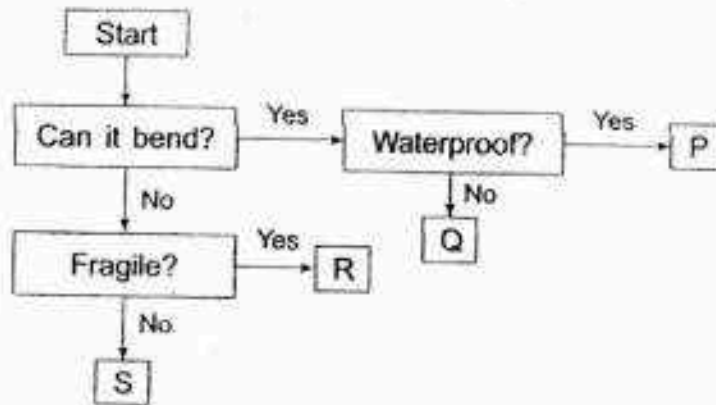
22. Emilie set up the following to simulate part of the digestive system.



She used a plastic tube to represent part Z of the digestive system.
What does Z represent?

- (1) gullet
- (2) windpipe
- (3) large intestine
- (4) small intestine

23. Study the flow chart below carefully.



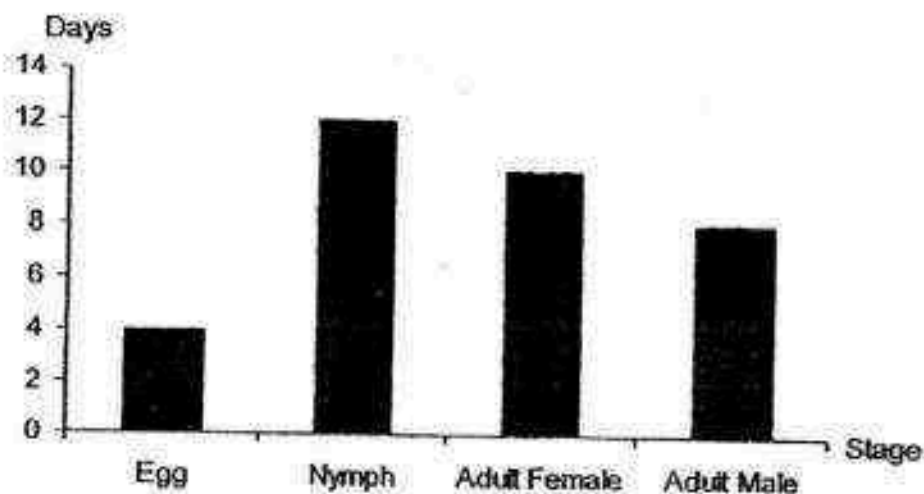
Jessie packed one of the objects in the flow chart into a box labelled "handle with care". Which object, P, Q, R and S, is it likely to be?

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

24. Which of the following statements about fungi is not true?

- (1) Mushroom is a fungi.
- (2) Fungi reproduce by spores.
- (3) Fungi can make its own food.
- (4) Some fungi feed on dead organisms.

25. The graph below shows the number of days of each stage in the life cycle of insect X.



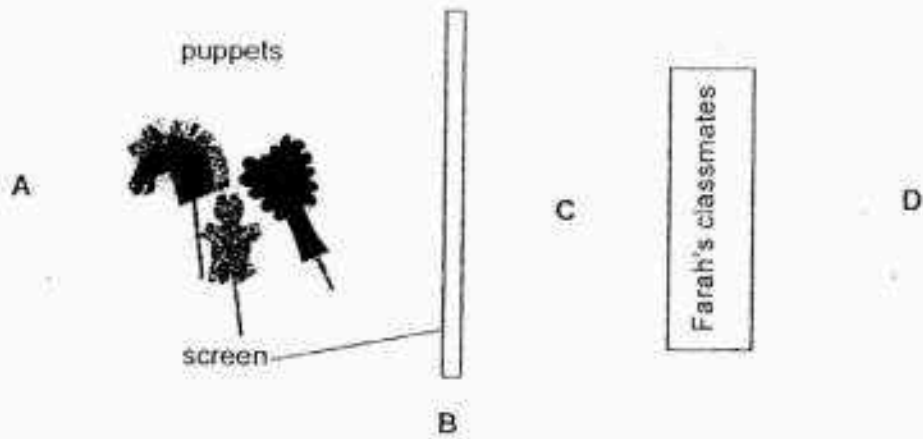
Based on the graph above, which of the following statements about insect X is correct?

- (1) Insect X has 4 stages in its life cycle.
- (2) Insect X is likely to be a mealworm beetle.
- (3) After the egg is laid, it takes 16 days to become an adult.
- (4) The adult male has a longer life span than the adult female.

26. Which of the following sentence is true about light?

- (1) Light is a matter.
- (2) Light has fixed shape.
- (3) Most light passes through opaque materials.
- (4) Some light passes through translucent materials.

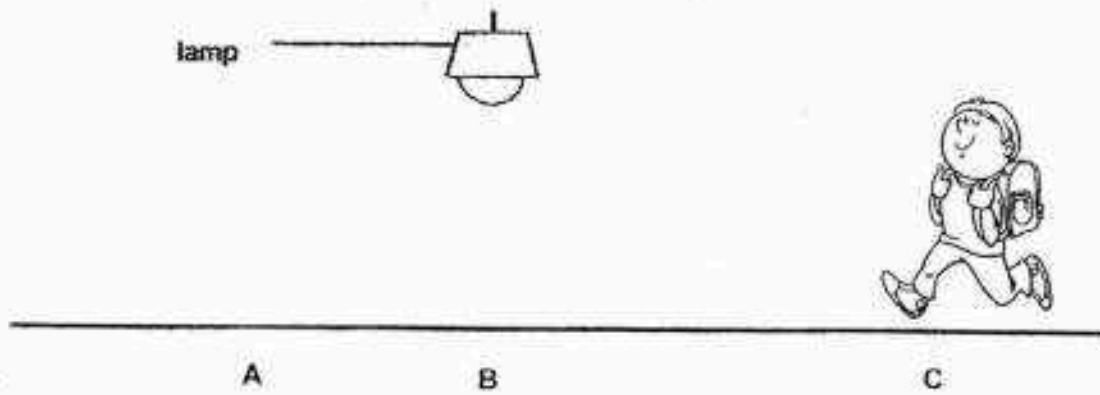
27. Farah and her friends wanted to put up a shadow puppet performance for their classmates. Their classmates should only see the shadows of the puppets on the screen and not the actual puppets.



At which position, A, B, C or D, should Farah and her friends place a light source so that their classmates are able to see the shadows on the screen?

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

28. Keith is walking from point C to point A.



Which of the following shows the correct order of the lengths of Keith's shadow?

	Longest	←→	Shortest
(1)	A	B	C
(2)	C	A	B
(3)	B	A	C
(4)	C	B	A

End of booklet A



Temasek Primary School

Semestral Assessment I

Primary Four

2016

**SCIENCE
(Booklet B)**

Name: _____ ()

Class: Primary 4 _____

Date: 10 May 2016

Parent's Signature: _____

44 Marks

Total Time for Booklet A and B: 1h 45 min

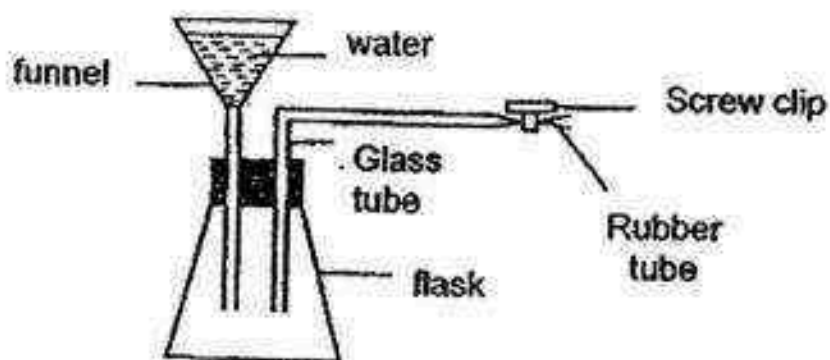
INSTRUCTIONS TO CANDIDATES

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write your answers in this booklet.

Paper	Marks	Scores
Booklet A	56	
Booklet B	44	
Total	100	

Write the answers to questions 29 to 41 in this booklet. The number of marks allocated is shown in the brackets [] at the end of each question. (44 marks)

29. Farid set up an experiment as shown below.



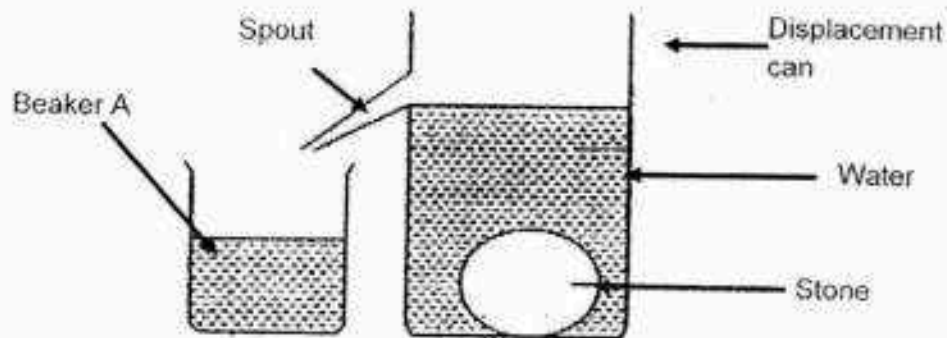
- a. Explain why the water in the funnel did not flow into the flask. [1]
- _____
- b. What do you think Farid will observe when he removed the screw clip? [1]
- _____
- c. What can Farid conclude about his experiment?

Read the statements in the table below and put a tick (✓) in the correct column. [2]

	Statement	True	False
a.	Air occupies space.		
b.	Air has mass.		

Score	4
-------	---

- 30a. Jenny filled a displacement can with water just below the spout. Then, she dropped a stone into it and collected the amount of water that flowed out through the spout into Beaker A as shown in the diagram below.

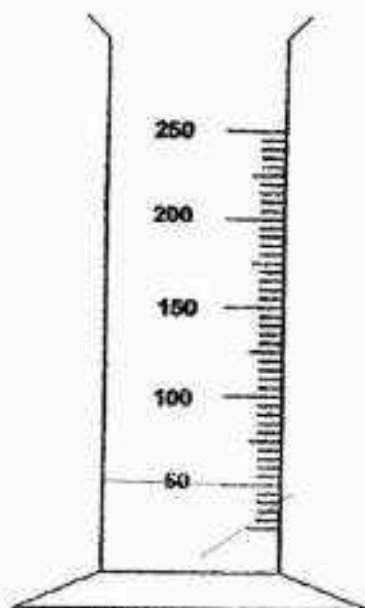


- i. Explain why the water flowed out of the displacement can. [1]
- _____
- _____
- ii. Based on the above experiment, state a difference in property between the solid and liquid. [1]
- _____
- _____

Score	2
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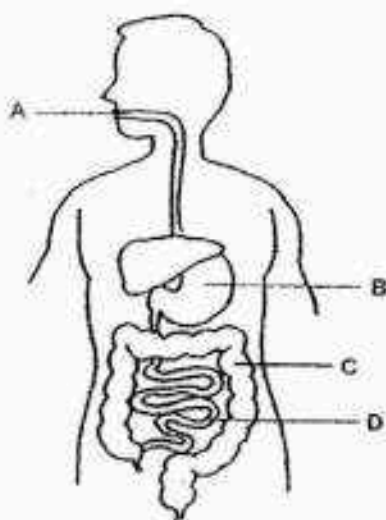
- b. Jenny noted that the volume of water in beaker A is 50cm^3 . She then poured the water from beaker A into a measuring cylinder.

Draw the water level in the measuring cylinder. [1]



Score	1
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31a. The diagram below shows a digestive system.

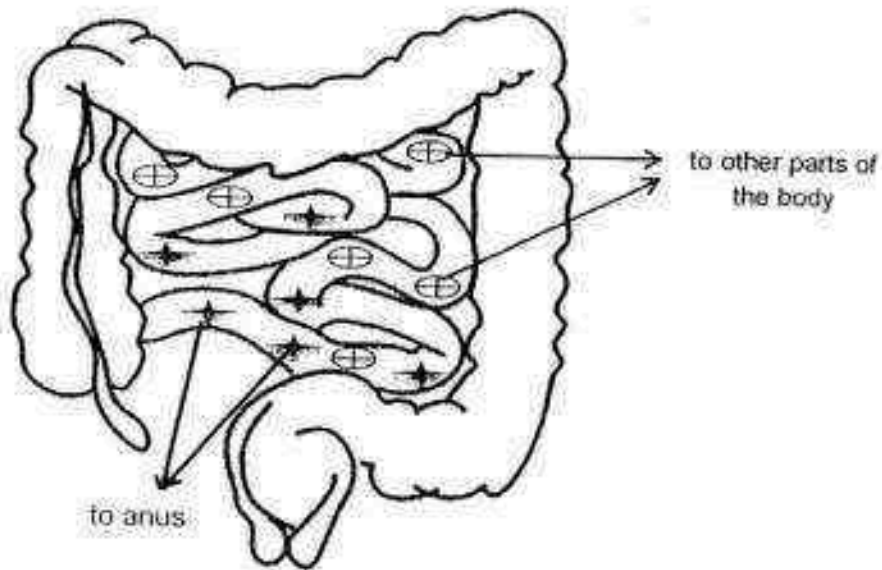


- i. Josiah had just eaten his lunch. At which part (A, B, C or D) does digestion first takes place? [1]

- ii. State the function of part B in the digestive system. [1]

Score	2
-------	---

- 31b. The diagram below shows what happens in Josiah's small intestine and large intestine several hours after lunch. The symbols represent substances involved in the digestion process.



- i. Study carefully the movement of the substances represented by ✱ and ⊕. [2]

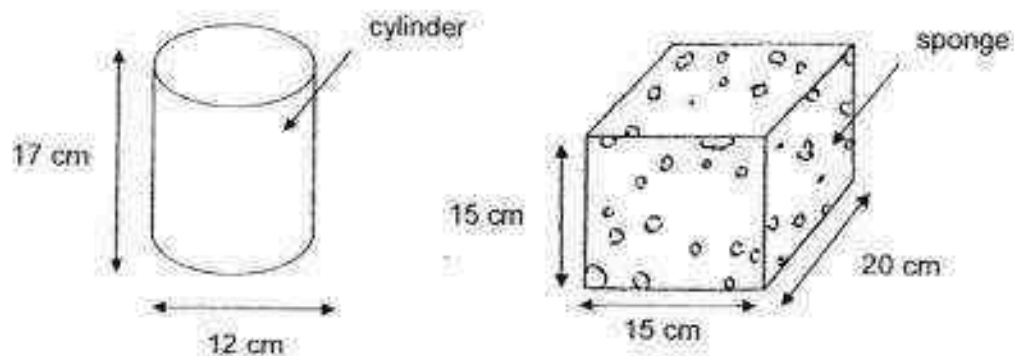
Identify the substances:

✱ represents _____

⊕ represents _____

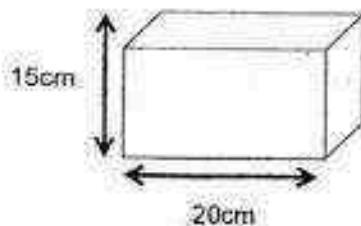
Score	2
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32. Ahmad was given a sponge and a cylindrical container as shown in the diagram below. He was able to squeeze the whole sponge into the cylindrical container.



- a. Explain how Ahmad was able to squeeze the sponge into the cylindrical container. [2]

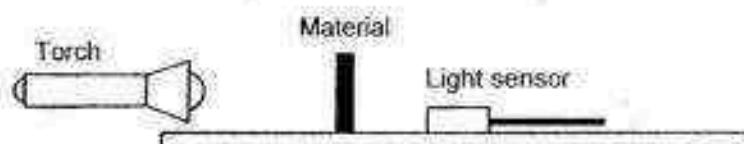
Ahmad found another cube of different material which is of the same size as the sponge.



- b. Why Ahmad could not squeeze the cube into the cylindrical container? [1]

Score	3
-------	---

33. Crystal conducted an experiment to find out the amount of light that would pass through 4 different materials, P, Q, R and S. She used a light sensor to detect the amount of light that passed through each material as shown below.



When no material was placed between the torch and light sensor, the amount of light detected was 500 units. The following table below shows her results when different materials were placed between the torch and light sensor.

Material	Amount of light detected (units)
P	497
Q	390
R	180
S	0

- a. Based on her experiment, which one of the materials, P, Q, R or S will be most suitable to make part Y of the spectacles below which is used for reading? Give a reason for your answer. [2]



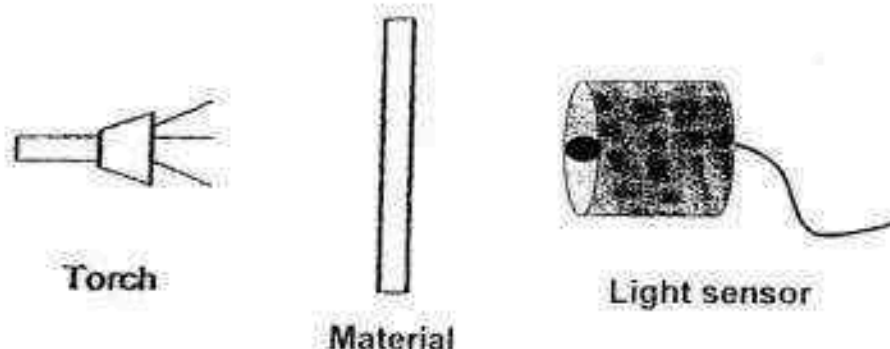
- b. Other than the positions of the torch and light sensor, state 2 other variables that have to be kept constant for a fair test. [2]

i. _____

ii. _____

Score	
-------	--

34. Hui Lin set-up an experiment as shown below.



She observed that the light sensor reads 100 units when no material was placed in between the torch and the light sensor.

She then placed different types of materials in between the torch and light sensor and recorded the results in the table below.

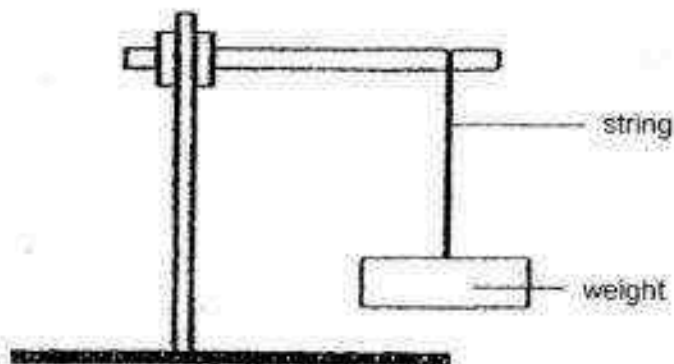
Material	Amount of light detected (units)
A	15
B	30
C	90
D	65

Hui Lin made some conclusions in the table below. Put a tick (✓) in the appropriate boxes. [4]

	Paul's conclusions Hui Lin	True	False	Not possible to tell
a.	Material D could be a piece of frosted glass.			
b.	Material A will <u>not</u> cast the darkest shadow.			
c.	No shadow will be formed by material B.			
d.	Material C will form the longest shadow.			

Score	4
-------	---

35. Mr Lee conducted an experiment as shown below to study a certain property of material.



In his study, he used 3 different strings, X, Y and Z. He tied weights to the string, one at a time until it broke. The results are shown below.

String	Number of weights before the string broke
X	1
Y	8
Z	4

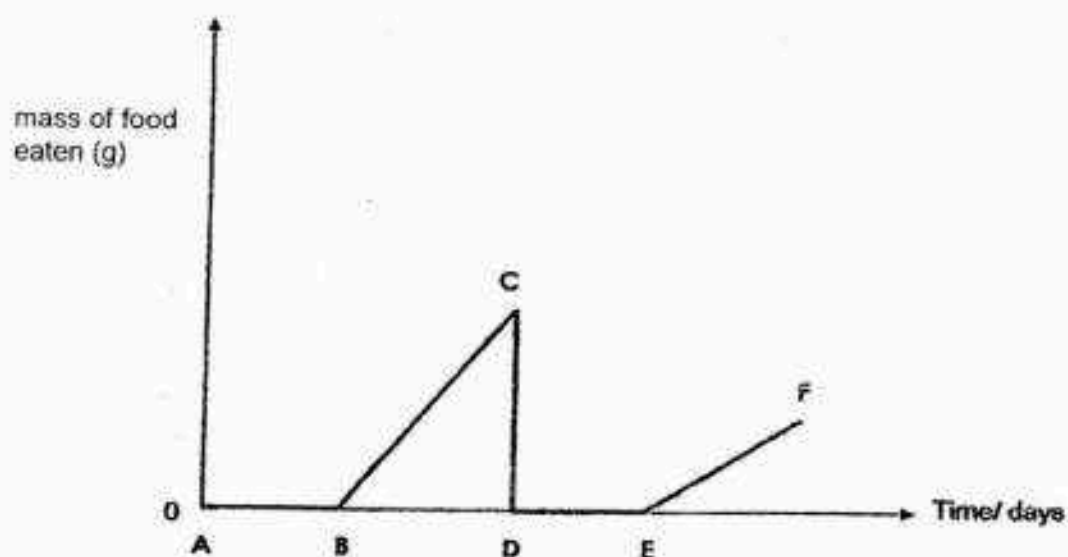
- a. State the property of material that Mr Lee tested. [1]

- b. Based on his results, which string, X, Y or Z, would be more suitable for making the string of a kite? [1]

- c. Besides using strings of the same length, what else should Mr ^{Lee} Tan do to the strings to ensure that his experiment is a fair one? [1]

Score	<div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; width: 50%; height: 50%; border-left: 1px solid black; border-top: 1px solid black; transform: rotate(45deg);"></div><div style="position: absolute; bottom: 0; right: 0; width: 20px; height: 20px; text-align: center; line-height: 20;">3</div></div>
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- 36a. Linus drew a graph below to show the mass of food eaten by a butterfly throughout the stages of its life cycle.



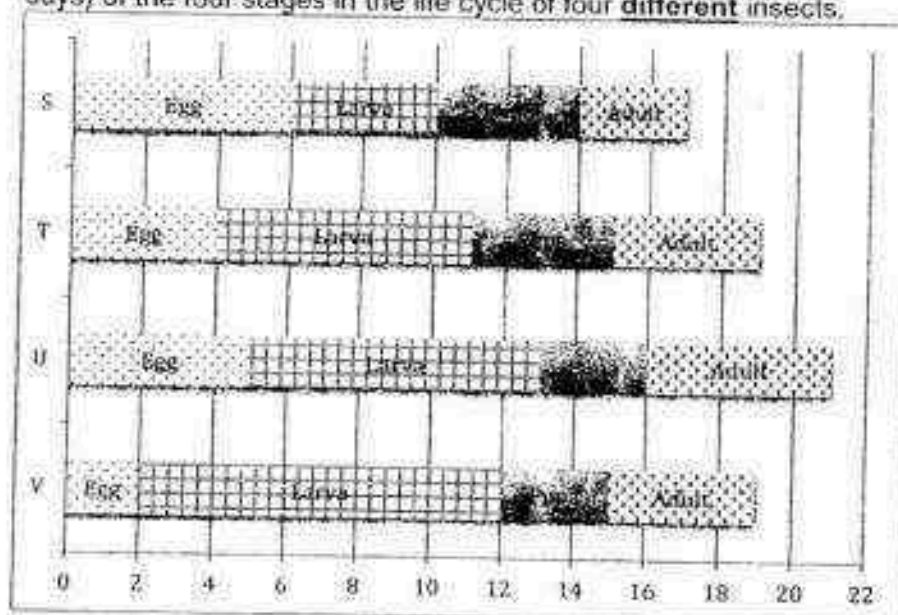
- i. Which part of the graph represents the butterfly in its larva stage?
Put a tick (✓) in the correct column. [1]

Part BC	
Part CD	
Part DE	
Part EF	

- ii. Explain why the mass of food eaten by the butterfly at part DE is as shown in the graph. [1]

Score	2
-------	---

- 36b. A week later, Linus drew up another graph to show the length (number of days) of the four stages in the life cycle of four **different** insects.



- i. Which insect has the shortest life cycle? [1]

- ii. Linus studied the effect of surrounding temperature on the life cycle of insect S. His findings are shown below

Temperature (°C)	Number of days for one complete life cycle
40	19
25	25
15	40

From Linus' findings, how would temperature affect the length of one complete life cycle of insect S? [1]

Score	2
-------	---

37a: Dash conducted an experiment using the set-up in Diagram 1.

Diagram 1

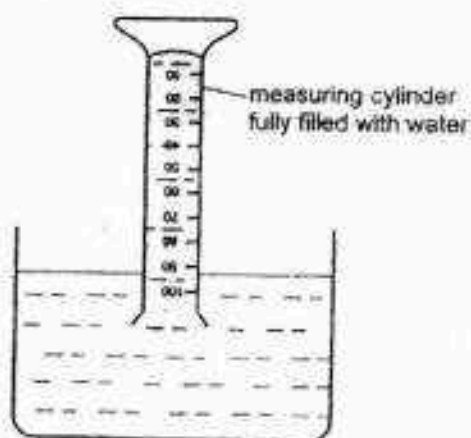
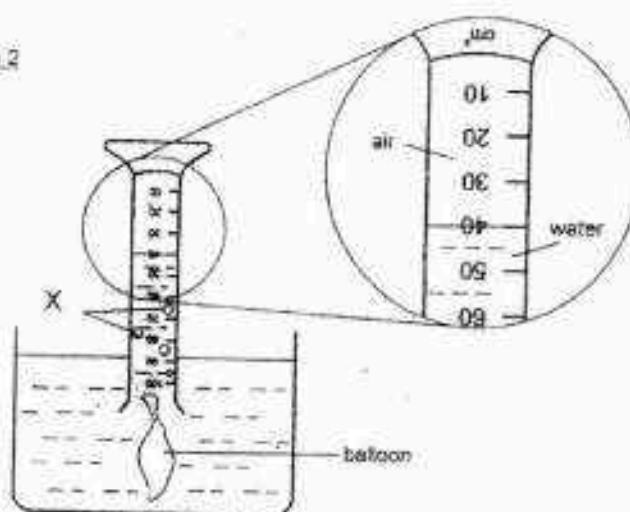


Diagram 2 showed what happened when he released air from the balloon into the measuring cylinder.

Diagram 2



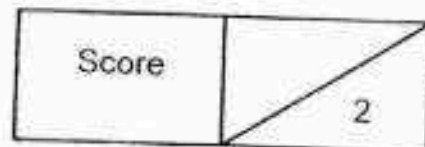
- i. What could substance X be? [1]

Score	1
-------	---

b. He noticed that substance X rose up the measuring cylinder while the water moved out of the measuring cylinder.

i. Why do you think this had occurred? [1]

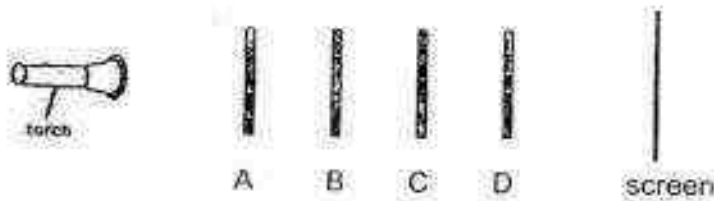
ii. Based on Diagram 2, what is the volume of air in the measuring cylinder? [1]



38. The diagram below shows four different shapes cut from sheets made of different materials.



The shapes were then arranged in a straight line as shown and a torch was then shone on them and a shadow was observed on the screen.



The diagram below shows the shadow of the objects on the screen.

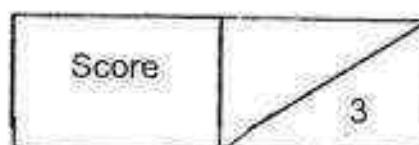


- a. Based on the shadow formed, state whether the materials of the shapes are opaque or transparent. [2]

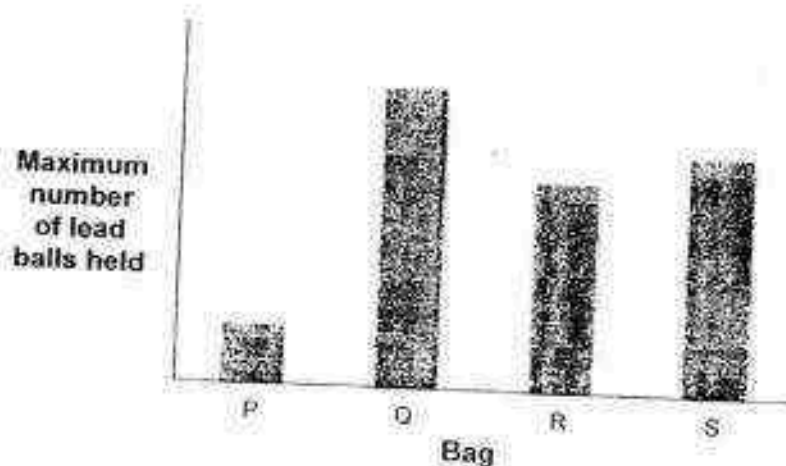
A: _____ B: _____

C: _____ D: _____

- b. If the position of the B (square) and C (triangle) was swapped, would a triangular shadow be observed? Explain your answer. [1]



39. Janice had four shopping bags made of different materials. She put metal balls into the bags until they were torn. She then recorded the maximum number of metal balls each bag could hold in the graph below.



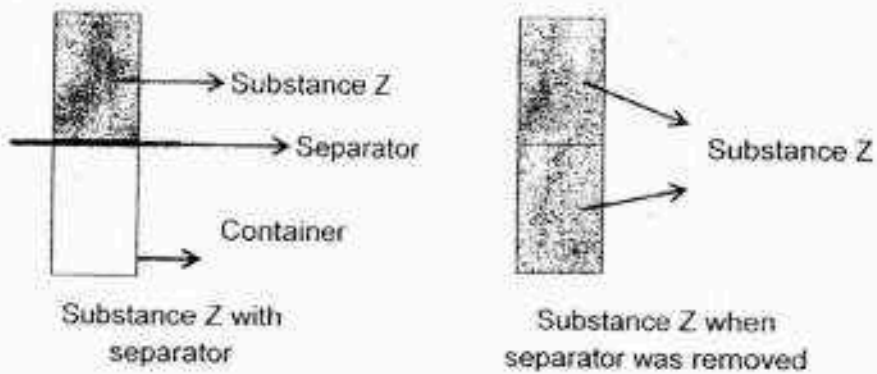
- a. Arrange the bags according to their strength, beginning with the strongest bag. [2]

Strongest _____ Weakest

- b. What is the relationship between the strength of the shopping bags and the maximum number of metal balls they could hold? [1]

Score	3
-------	---

40. Roy filled a container with substance Z as shown below.



- a. Based on the experiment, state two properties that can be concluded about Substance Z. [2]

i: _____

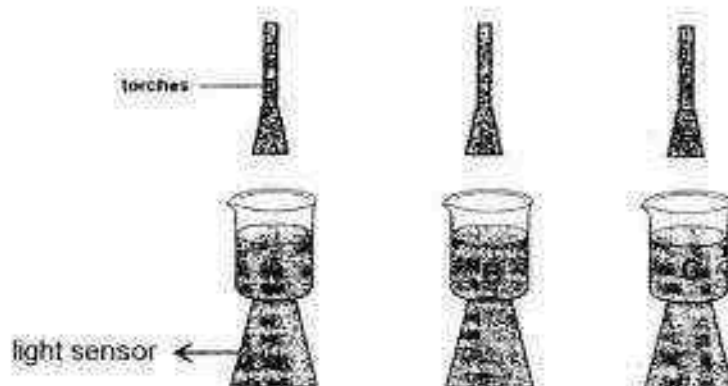
ii: _____

- b. Which of the following could Substance Z be?
Put a tick (✓) next to your choice(s). [1]

No.	Substance	Tick
i.	Oil	
ii.	Ice cubes	
iii.	Brownish Gas	
iv.	Plasticine	

Score	<div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"><div style="position: absolute; top: 0; right: 0; width: 100%; height: 100%; border-left: 1px solid black; border-top: 1px solid black; transform: rotate(45deg); transform-origin: top right;"></div></div> <div style="position: absolute; bottom: 10px; right: 10px; font-weight: bold;">3</div>
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41. Elliot set up the following experiment with 100cm^3 of three different kinds of liquid.



Beakers	Type of liquid	Amount of light detected (units)
A	Tap water	250
B	Coffee	120
C	Cooking oil	200

- a. What will happen to the reading on the light sensor if he added a spoonful of milk powder to beaker A? [1]
- _____
- b. Why did the light sensor detect more light for beaker C than beaker B? [1]
- _____
- c. What could be the aim of Elliot's experiment? [1]
- _____

Score	3
-------	---

End of Booklet B

YEAR : 2016
 LEVEL : PRIMARY 4
 SCHOOL : TEMASEK PRIMARY
 SUBJECT : SCIENCE
 TERM : SA1

Booklet A

Q1	1	Q5	2	Q9	2	Q13	1	Q17	1	Q21	3	Q25	3
Q2	2	Q6	1	Q10	2	Q14	2	Q18	4	Q22	1	Q26	4
Q3	4	Q7	1	Q11	2	Q15	3	Q19	1	Q23	3	Q27	1
Q4	3	Q8	3	Q12	2	Q16	4	Q20	3	Q24	3	Q28	2

Booklet B

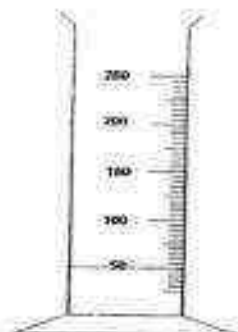
- Q29
- (a) There is air inside the flask.
- (b) Water in the funnel will flow down to the flask.

(c)

Statement		True	False
a.	Air occupies space.	✓	
b.	Air has mass.		✓



- Q30
- (a) i. The stone occupy the space.
- ii. Solid has a definite shape but liquid does not have a definite shape.

(b)



Q31

- (a) i. A
- ii. Break down into simpler substance.

- (b)  represents undigested food.
-  represents digested food.

Q32

- (a) The air in the sponge is compressed thus volume of sponge became smaller.
- (b) The cube has a definite shape.

Q33

- (a) Material P. P allows most of the light to pass through.
- (b) i. The same thickness of the material.
- ii. The position of the material.

Q34

	Hui Lin's	True	False	Not possible to tell
(a)	Material D could be a piece of frosted glass.	✓		
(b)	Material A will not cast the darkest shadow.		✓	
(c)	No shadow will be formed by material B.		✓	
(d)	Material C will form the longest shadow.			✓

Q35

- (a) Strong
- (b) String Y
- (c) Same thickness.

Q36

- (a) i. Part BC ✓
- ii. The butterfly is now at a pupa stage.
- (b) i. Insect S.
- ii. The colder the temperature, the more number of days for one complete life cycle.

- Q37 (a) i. Air bubbles.
- (b) i. Air occupies space in the measuring cylinder.
- ii. 40 cm^3

- Q38 (a) A : Transparent B : Transparent
- C : Opaque D : Transparent
- (b) Yes. B is transparent but C is opaque.

- Q39 (a) Q, S, R, P
- (b) The stronger the shopping bags, the more metal balls it can hold.

- Q40 (a) i. Can be compressed.
- ii. No definite shape.

(b)

No.	Substance	Tick
i.	Oil	
ii.	Ice cubes	
iii.	Brownish Gas	✓
iv.	Plasticine	

- Q41 (a) It will decrease.
- (b) Cooking oil allows more light to pass through as compared to coffee.
- (c) To find out which liquid allow most of the light passing through.

End

SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

FIRST SEMESTRAL ASSESSMENT 2016

NAME: _____ ()

DATE: _____

CLASS: PRIMARY 4 SY / C / G / SE / P

Parent's Signature:

SCIENCE

BOOKLET A

25 questions

50 marks

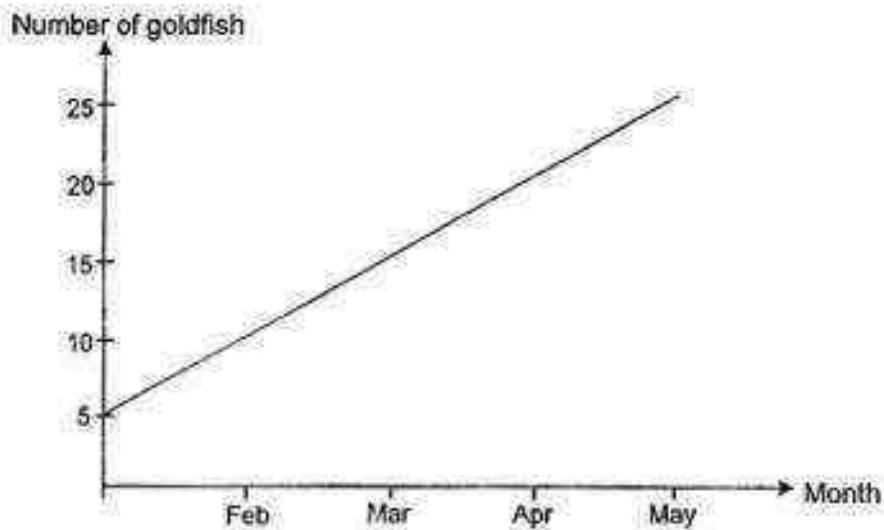
Total time for Booklets A & B: 1 h 25 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.**FOLLOW ALL INSTRUCTIONS CAREFULLY.**

Part I (50 marks)

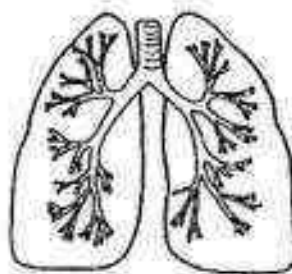
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Patrick put 5 goldfish in a fish tank and fed them every day. The graph below shows the number of goldfish in the tank over the next few months.



The graph shows that living things _____.

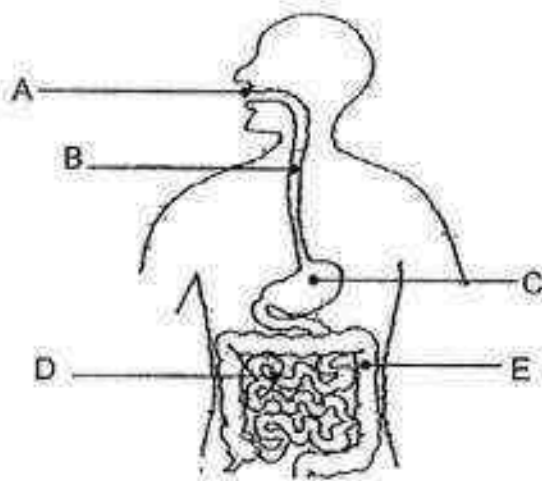
- 1) grow
 - 2) reproduce
 - 3) respond to changes
 - 4) need air, food and water
2. The diagram below shows an organ in the human body.



It is a part of the _____ system.

- | | |
|----------------|--------------|
| 1) circulatory | 3) skeletal |
| 2) respiratory | 4) digestive |

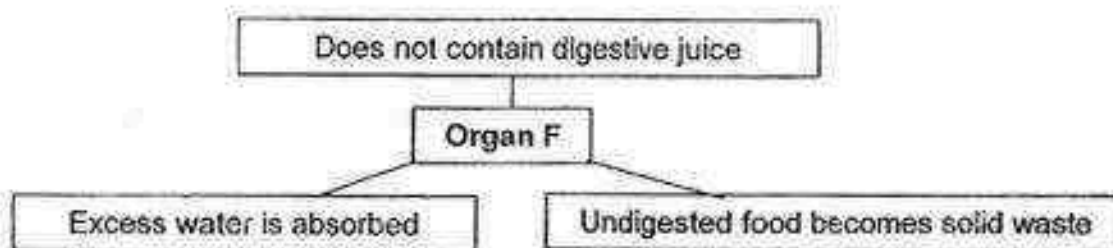
3. The diagram below shows the human digestive system.



Which parts produce digestive juice?

- | | |
|--------------------|-----------------------|
| 1) A, B and C only | 3) A, B, C and D only |
| 2) A, C and D only | 4) A, C, D and E only |

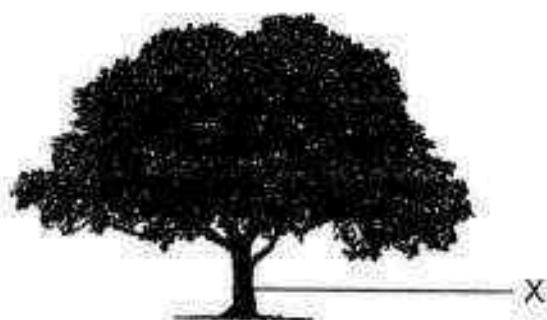
4. Study the concept map below.



What is mostly likely to happen if Organ F does not function properly?

- 1) Food will flow to the gullet.
- 2) Watery waste will be passed out.
- 3) Food cannot be digested completely.
- 4) Digested food cannot be absorbed by our body.

5. Four children were shown a picture of a tree as shown below. Each of them made a statement about part X.



- Ali: It connects the roots to the other parts of the tree.
 Betty: It helps hold the tree firmly to the ground.
 Chris: It transports water to the leaves.
 Devi: It transports food to the leaves.

Which of the children is/are correct?

- 1) Chris only
 2) Ali and Chris only
 3) Betty and Devi only
 4) Ali, Betty and Chris only
6. The table below shows information about 3 animals, X, Y and Z.

Animal	Number of legs		Methods of reproduction	
	2	4	Lays eggs	Gives birth
X		✓	✓	
Y	✓		✓	
Z		✓		✓

What outer body coverings do animals X, Y and Z most likely have?

	Animal X	Animal Y	Animal Z
1)	Feathers	Shell	Scales
2)	Scales	Hair	Shell
3)	Exoskeleton	Scales	Hair
4)	Scales	Feathers	Hair

7. Steve wants to go camping. He wants to build his own tent as shown below.

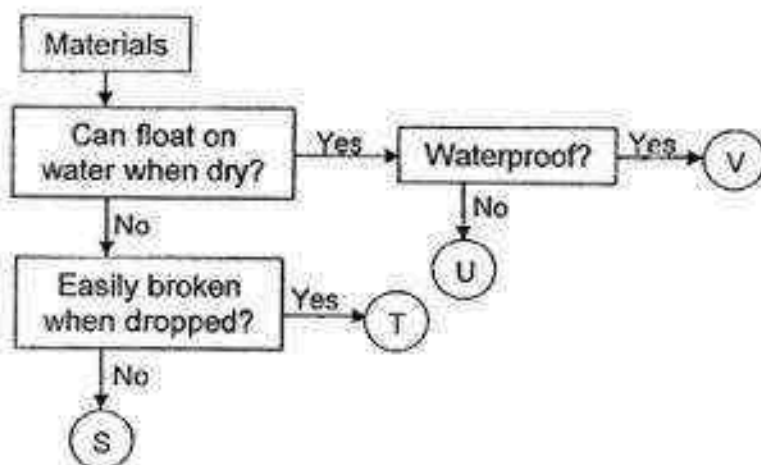


Which properties must Material A have so that it can be used by Steve to build his tent?

- A: It must be heavy.
- B: It must be flexible
- C: It must be waterproof.
- D: It can float on water.

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

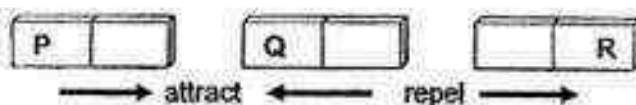
8. 4 balls are made of materials S, T, U and V. Use the chart below to determine the material each ball is made of.



Which of the following can S, T, U and V be?

	S	T	U	V
1)	glass	silver	paper	plastic
2)	iron	glass	plastic	paper
3)	paper	plastic	silver	glass
4)	silver	glass	paper	plastic

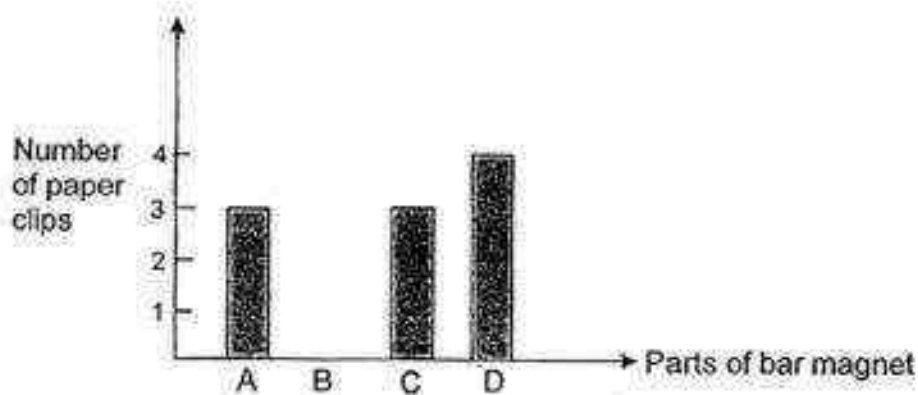
9. The diagram below shows 3 magnets.



What are the poles marked P, Q and R?

	P	Q	R
1)	North pole	North pole	North pole
2)	North pole	South pole	South pole
3)	South pole	South pole	North pole
4)	South pole	North pole	South pole

10. Muthu recorded the number of paper clips attracted to different parts of a bar magnet and plotted the graph as shown below.



Identify the bar magnet that Muthu used in his experiment.

- 1) 3)
- 2) 4)

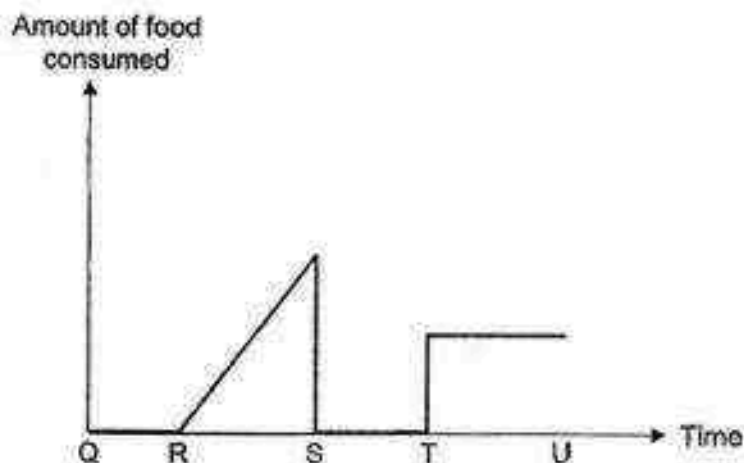
11. Jeremy compared the life cycles of the butterfly and the grasshopper.

	Characteristics	Butterfly	Grasshopper
A:	Has 4 stages in its life cycle?	Yes	No
B:	Does the young moult?	Yes	No
C:	Does the young resemble its adult?	No	Yes
D:	Does it lay its eggs in water?	Yes	Yes

Which of the above comparisons are correct?

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

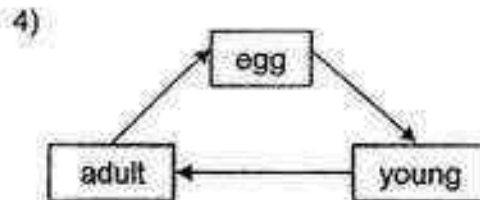
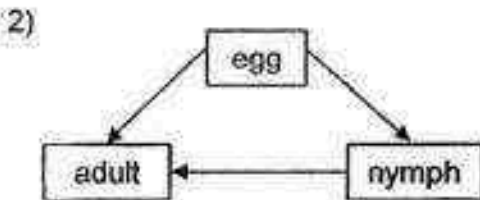
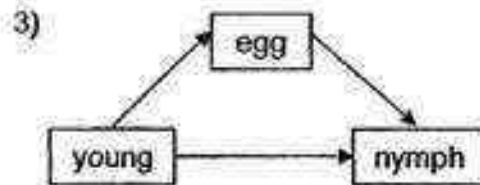
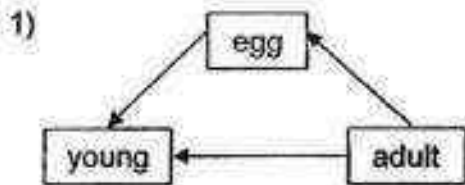
12. Faizal studied Animal X which started eating upon hatching. He observed the amount of food consumed during the 4 stages of its life cycle. He plotted his observations in the graph below.



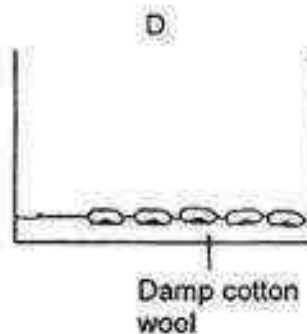
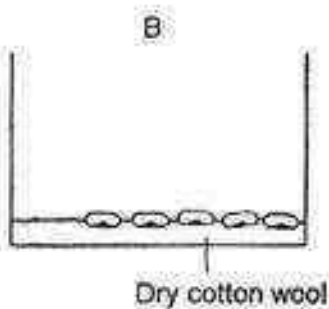
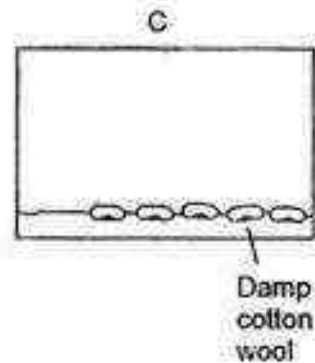
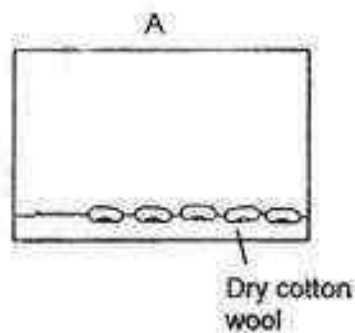
Which stage is Animal X in from S to T?

- | | |
|----------|----------|
| 1) nymph | 3) pupa |
| 2) larva | 4) adult |

13. Study the life cycles shown below. Which life cycle is drawn correctly?



14. Seeds were placed in 4 identical containers as shown in set-ups A, B, C and D below. Containers A and C were sealed. All the set-ups were at room temperature.

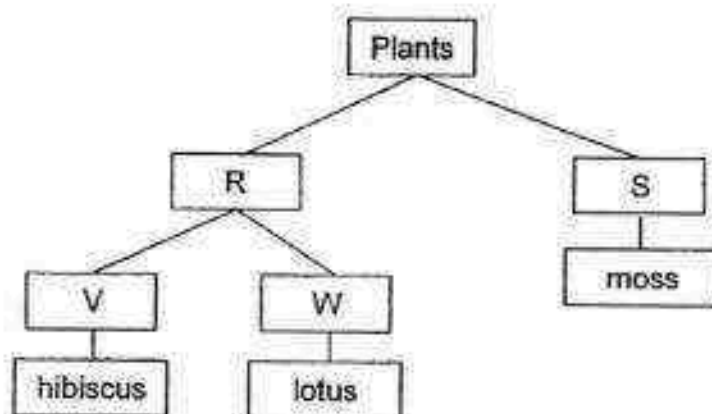


Which 2 set-ups would the seeds most likely germinate?

- 1) A and B
2) A and C

- 3) B and D
4) C and D

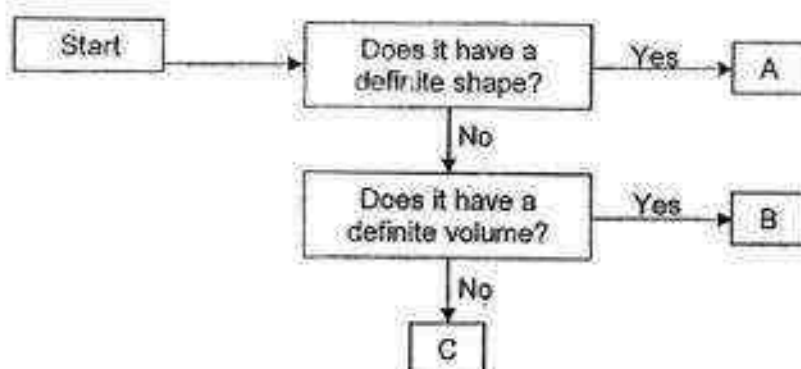
15. Susan grouped some plants using the classification chart below.



What could the headings R, W and S be?

	R	W	S
1)	Reproduce from seeds	Land	Reproduce from spores
2)	Non-flowering	Water	Flowering
3)	Flowering	Water	Non-flowering
4)	Reproduce from spores	Land	Reproduce from seeds

16 Study the flow chart below carefully.



How many of the items in the table below can be placed at B?

milk	water
sand	air
sponge	petrol

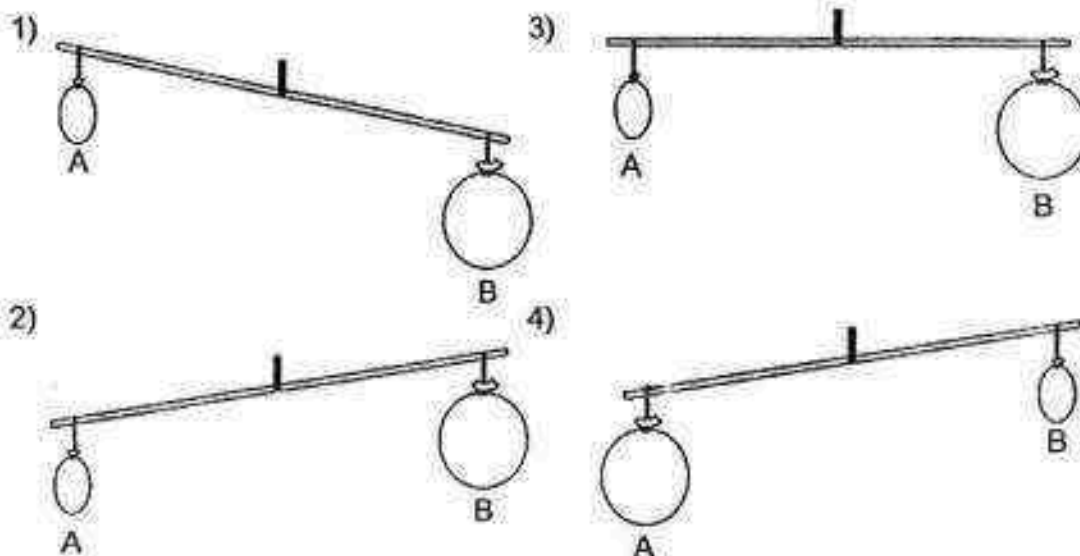
- 1) 1
2) 2

- 3) 3
4) 4

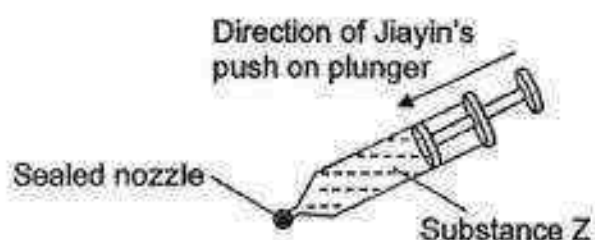
17. Timmy blew 2 balloons and hung them on a balance rod as shown below. He then let the air out of Balloon A.



Which of the following would Timmy observe?



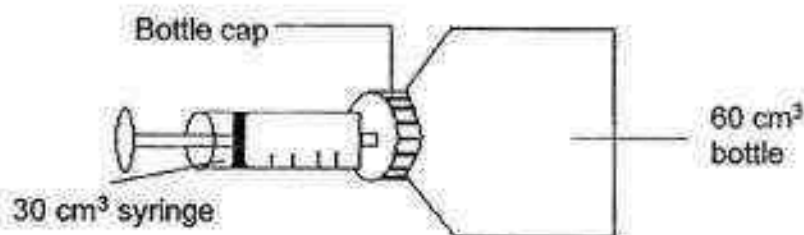
18. The syringe below contains 100cm^3 of Substance Z and its nozzle is sealed. Jiayin is not able to push the plunger inwards no matter how hard he tries.



This experiment shows that Substance Z _____.

- 1) has mass
- 2) is a matter
- 3) can be compressed
- 4) has a definite volume

19. Huixin took a 30 cm^3 syringe and filled it with air. She poked a hole through a bottle cap and pushed all the air out of the syringe into an empty bottle with a capacity of 60 cm^3 . She repeated pumping air into the bottle until she had pumped a total of 120 cm^3 . After that, she sealed the bottle cap with sticky tape to prevent any air from escaping.



What is the volume of air in the bottle now?

- 1) 30 cm^3
- 2) 60 cm^3
- 3) 120 cm^3
- 4) 180 cm^3

20. Doris was given a table as shown below.

Substances	Has a definite shape	Has a definite volume
H	✓	✓
K		✓

What conclusions can Doris make based on the information given?

- 1) Substance H is a solid but Substance K is a liquid.
- 2) Substance H is a liquid but Substance K is a gas.
- 3) Both substances take the shape of a container.
- 4) Both substances can be compressed.

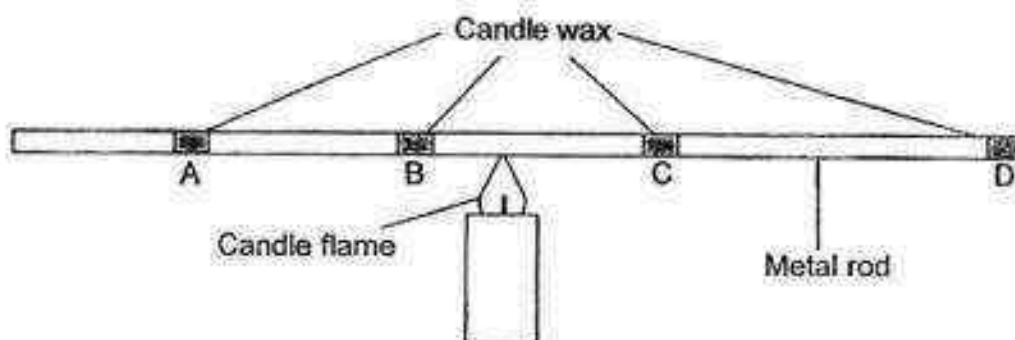
21. Which one of the following is **not** a source of heat?

- 1) A sweater
- 2) A candle flame
- 3) The Sun
- 4) A lighted gas stove

22. The following items were left standing in a cup of hot coffee. Which item would feel the hottest when touched?

- | | |
|-----------------|--------------------------|
| 1) Plastic fork | 3) Wooden chopsticks |
| 2) Glass rod | 4) Stainless steel spoon |

23. Phyllis was given a metal rod. The metal rod was coated with candle wax at parts A, B, C and D. The metal rod was heated over a candle flame as shown below.



In what order would the wax melt?

	First	→		Last
1)	A	B	C	D
2)	D	B	C	A
3)	C	B	D	A
4)	B	C	A	D

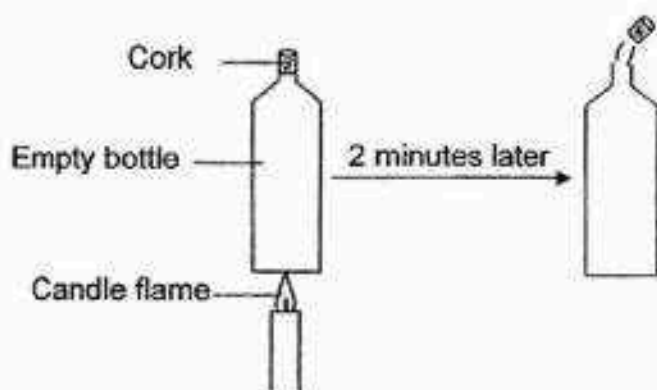
24. Aminah made a cup of hot tea for herself. She then left her cup of tea on her dining table as shown below for 15 minutes.



Which of the following describes what was happening to the cup, spoon and tea during the 15-minute duration?

	Glass cup	Hot tea
1)	Losing heat	Losing heat
2)	Gaining heat	Losing heat
3)	Gaining heat	Gaining heat
4)	Losing heat	Gaining heat

25. An empty bottle which was sealed with a cork was heated. 2 minutes later, the cork popped out.



Which of the following best explains the above observation?

- 1) The air outside the bottle gained heat and expanded.
- 2) The air inside the bottle gained heat and expanded.
- 3) The air inside the bottle lost heat and contracted.
- 4) The bottle lost heat and contracted.

End of Booklet A

SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

FIRST SEMESTRAL ASSESSMENT 2016

NAME: _____ ()

DATE: _____

CLASS: PRIMARY 4 SY

Parent's Signature:

SCIENCE

BOOKLET B

	Total Actual Marks	Total Possible Marks
Booklet A		50
Booklet B		30
Total		80

10 questions

30 marks

Total time for Booklets A & B: 1 h 25 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

Name: _____ ()

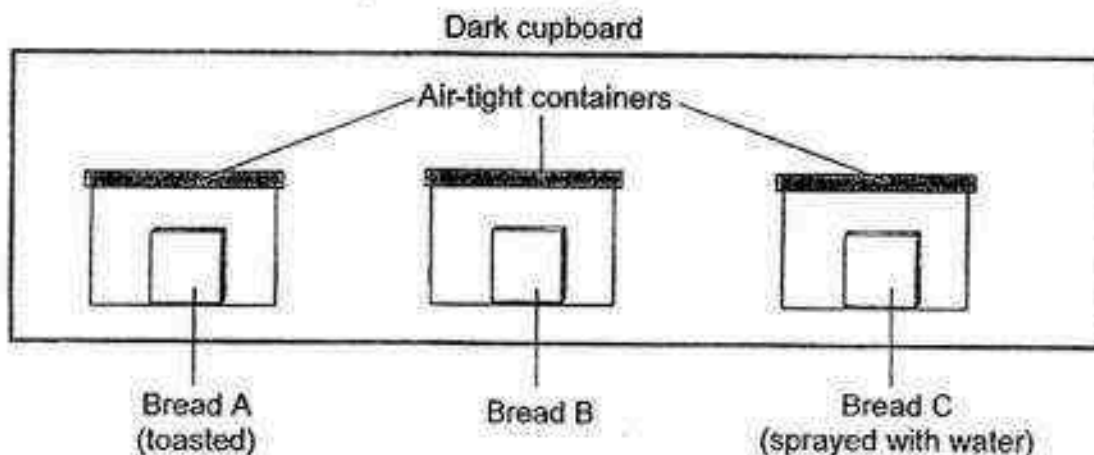
Date: _____

Class: Primary 4 SY

Part II (30 marks)

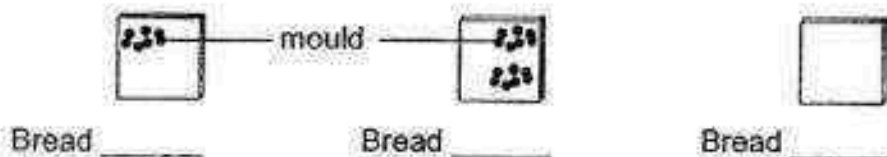
Answer all the following questions.

26. Three similar slices of fresh bread were kept in 3 similar air-tight containers. All the containers were then placed in a warm place for a week.



At the end of one week, the containers were removed from the cupboard and patches of mould were seen appearing on only two slices of bread.

- a) Below are the results of the experiment. Match the results to the correct slices of breads by writing A, B and C in the blanks. [1]



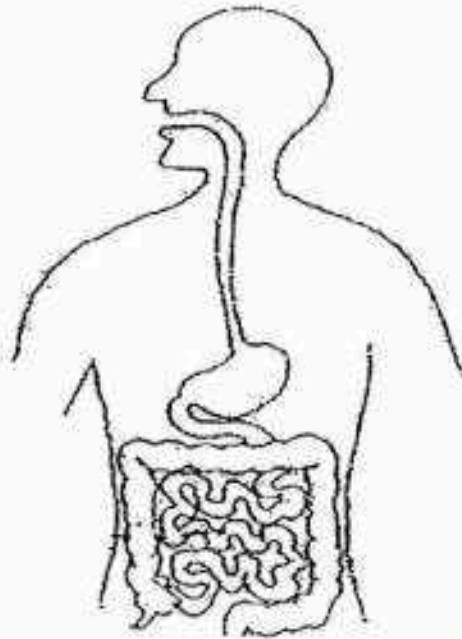
- b) What is the purpose of toasting Bread A in the oven? [1]

- c) Based on the experiment, mould will grow faster on the bread when the bread has _____. [1]



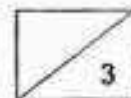
27. Organ L is part of the human digestive system. It has digestive juices and the process of digestion ends here.

a) Based on the above descriptions, label Organ L in the diagram below. [1]



b) When digestion is completed at Organ L, what happens to the digested food? [1]

c) The _____ connects the mouth to the stomach. [1]



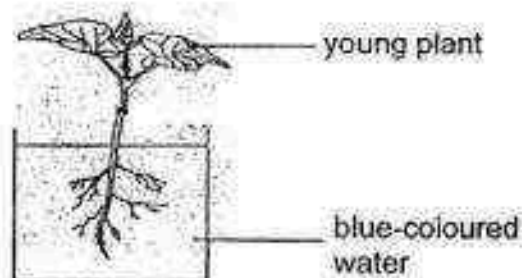
28. The following objects are classified according to the materials they are made of.

Group P	Group R
Spectacle lens	Raincoat
Window pane	Drinking straw
Car windscreen	Water bottle

Identify the material used to make the objects in each group and a property of the material that makes it suitable to make the group of objects. [2]

	Material	Suitable property
Group P		
Group R		

29. Isabel placed a young plant into a beaker of blue-coloured water as shown below. After 2 days, she observed that the leaves turned blue.



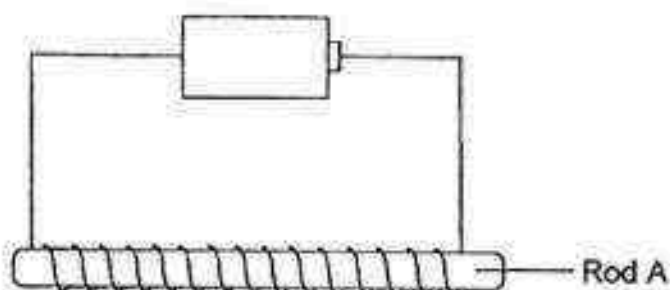
Explain clearly why the leaves of the young plant turned blue. [2]

The roots _____ and

the stem _____.



30. Isaac prepared the set up below using a new battery.



- a) When he sprinkled some iron filings around Rod A, he observed that none was attracted to Rod A. Explain to Isaac why this happened. [1]

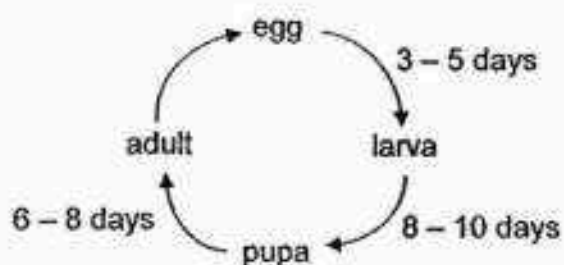
- b) Using the same set-up, Isaac then changed Rod A to Rod B. When iron filings are sprinkled on Rod B, most were attracted to Rod B. Name a possible material that Rod B was made of. [1]

- c) List 2 methods we can use to increase the strength of an electromagnet. [2]

Method 1:	
Method 2:	



31. Study the life cycle of Animal X below.

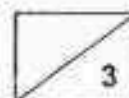


- a) What is the greatest number of days Animal X will take to become an adult from the egg stage? [1]

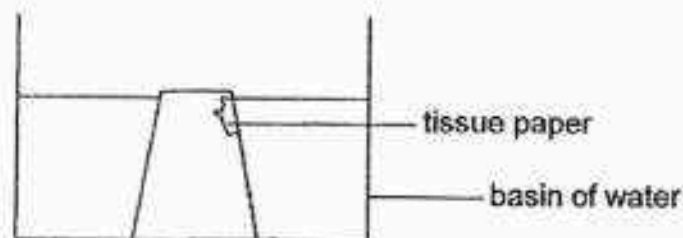
- b) Tick the animal/s that has/have a similar life cycle as Animal X. [1]

Dragonfly	
Butterfly	
Frog	
Bee	

- c) Besides laying eggs, name another similarity between the life cycle of Animal X and a cockroach. [1]

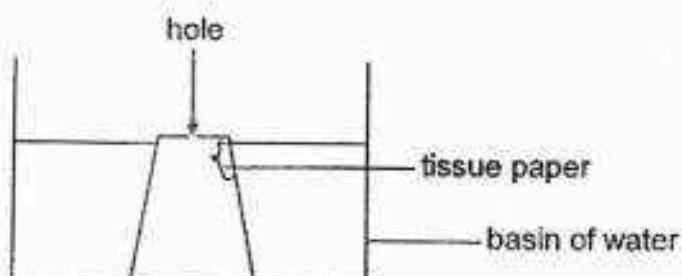


32. Julia pushed an inverted plastic cup with a piece of tissue paper stuck to its bottom into a basin of water as shown below.



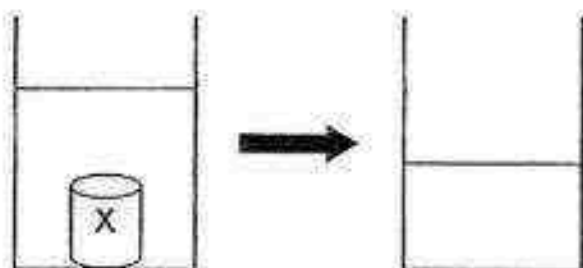
- a) Draw a line to show the water level inside the cup in the diagram above. [1]
- b) Explain why the tissue paper did not get wet. [1]

- c) What will happen to the water level in the cup if Julia makes a hole in the bottom of the cup? [1]





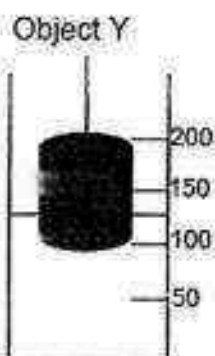
33. Peiyi was given a beaker filled with water and Object X in it as shown below. The volume of Object X and water was 220 cm^3 . Peiyi then removed Object X and found that the volume of water was 165 cm^3 .



- a) What is the volume of the object?

[1]

Peiyi then used a measuring cylinder filled with 100 cm^3 of water and held Object Y as shown below to measure the volume of Object Y.

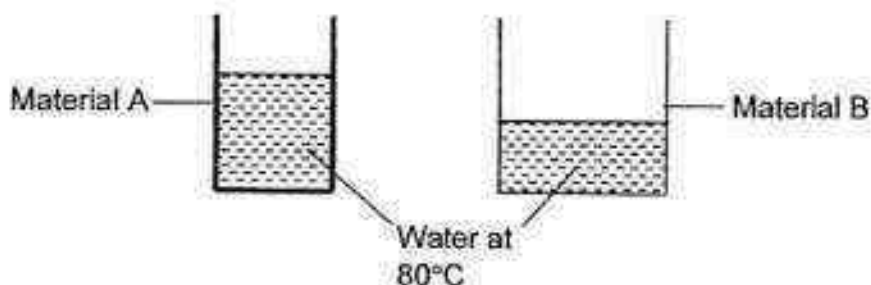


- b) Explain clearly to Peiyi why her method will not result in the actual volume of Object Y.

[2]



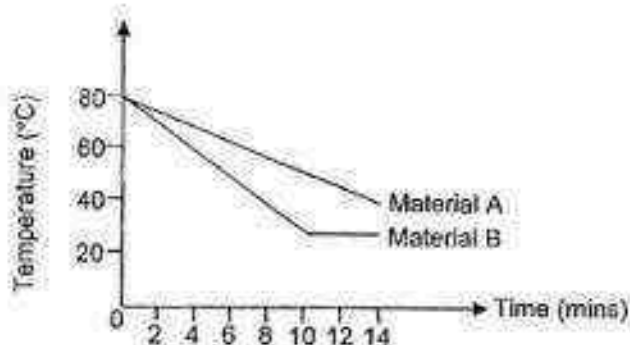
34. James wanted to find out which material, A or B, can be used to store cold drinks. He then prepared the set-up as shown below. He poured the same amount of water at 80°C into two cups made of Materials A and B.



- a) His teacher told him that his experiment is not a fair test. State 2 variables he needs to keep the same for a fair test. [1]

- i) _____
- ii) _____

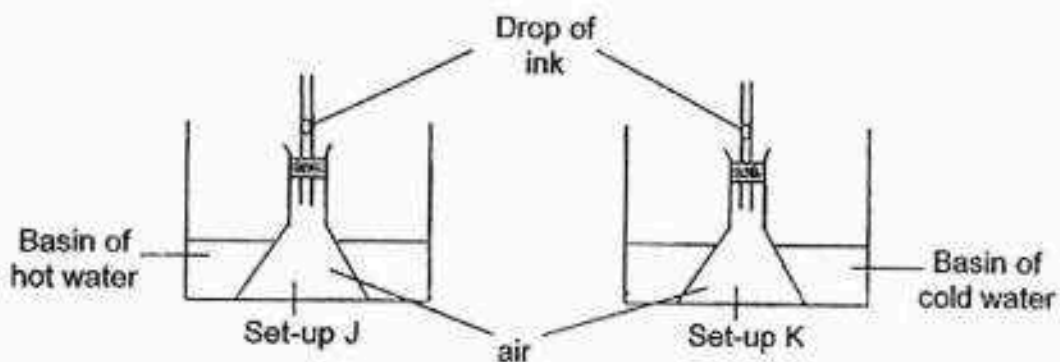
After making the necessary change to ensure a fair test, he carried out the experiment. He used a datalogger and 2 temperature sensors to measure the changes in temperature of the hot water in the 2 cups. The results of his experiment are shown below.



- b) James chose to use Material A to make a container for storing cold drinks. Explain his choice. [2]



35. Study the 2 set-ups below.



a) Tick what would happen to the drop of ink in Set-ups J and K? [2]

	Move upwards	Remain the same	Move downwards
Set-up J			
Set-up K			

b) Explain your answer for Set-up K. [2]

End of Booklet B

B - 10



EXAM PAPER 2016 (P4)

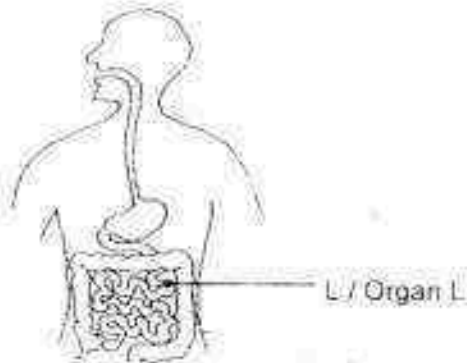
SCHOOL : SCGS


SUBJECT : SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	2	2	2	2	4	3	4	1	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	3	4	4	3	3	1	4	2	1
Q21	Q22	Q23	Q24	Q25					
1	4	4	2	2					

SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTAL EXAMINATION 1 2016
PRIMARY 4 SCIENCE

Question No.	Suggested Answer
26a	B, C, A
26b	To remove water/ moisture (from Bread A/ the bread).
26c	more water/ moisture
27a	
27b	It enters the blood / blood stream / body.
27c	gullet
28	Group P: Glass / clear plastic, transparent / allow light to pass through Group R: Plastic, waterproof / does not absorb water
29	The roots of the plant absorbed / took in the blue-coloured water and the stem transported the water to the leaves .
30a	Rod A was made of a non-magnetic material / non-metal / copper / plastic
30b	Iron / steel / nickel / cobalt
30c	i) Increase the number / voltage / power / strength of batteries ii) Increase the number of coils / turns of wire around the rod
31a	23 (days)
31b	Butterfly, Bee
31c	Both the young of Animal A and cockroach moult.

Question No.	Suggested Answer												
32a	Any level below the tissue paper 												
32b	The air in the (inverted) cup occupied the space in the cup.												
32c	It will rise / increase <u>until the water levels in the cup and basin are the same</u> .												
33a	55 cm ³												
33b	Object Y was <u>not fully submerged in the water</u> and <u>only part</u> of the volume of Object Y was measured.												
34a	i) Size of cups ii) Thickness of materials used to make the cups												
34b	Material A is a poorer conductor of heat than Material B thus it will conduct heat from the surrounding air to the cold drinks slower .												
35a	<table border="1"> <tr> <th></th><th>Move upwards</th><th>Remain the same</th><th>Move downwards</th></tr> <tr> <td>Set-up J</td><td>✓</td><td></td><td></td></tr> <tr> <td>Set-up K</td><td></td><td></td><td>✓</td></tr> </table>		Move upwards	Remain the same	Move downwards	Set-up J	✓			Set-up K			✓
	Move upwards	Remain the same	Move downwards										
Set-up J	✓												
Set-up K			✓										
35b	The air in the flask lost heat to the cold water and contracted .												



MARIS STELLA HIGH SCHOOL (PRIMARY)

SEMESTRAL ASSESSMENT 1

SCIENCE

12 MAY 2016

BOOKLET A

NAME: _____ ()

CLASS: Primary 4 ()

24 questions

48 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.

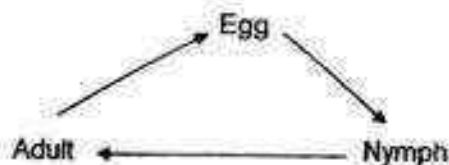
For each question from 1 to 24, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS). (24 x 2 marks)

- 1 Andy, Ben and Colin made the following statements about the human skeletal system and muscular system.

Andy: Only the skeletal system is needed for movement to take place.
Ben: Only the muscular system is needed for movement to take place.
Colin: Both skeletal and muscular system are needed for movement to take place.

Whose statement is/are correct?

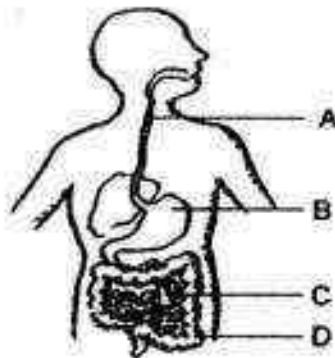
- (1) Andy only
(2) Ben only
(3) Colin only
(4) Andy and Ben only
- 2 The diagram below shows the life cycle of an animal.



Which animal most likely have the same life cycle as the one shown above?

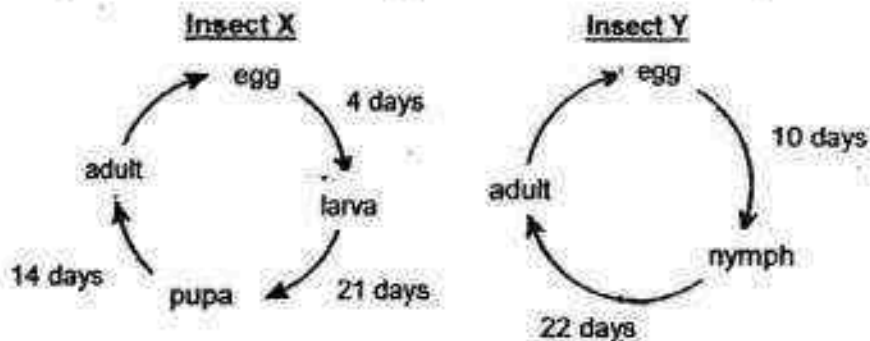
- (1) Frog
(2) Beetle
(3) Chicken
(4) Grasshopper

3. The diagram below shows the digestive system of a human body.



In which part of the digestive system does digested food get absorbed into the bloodstream?

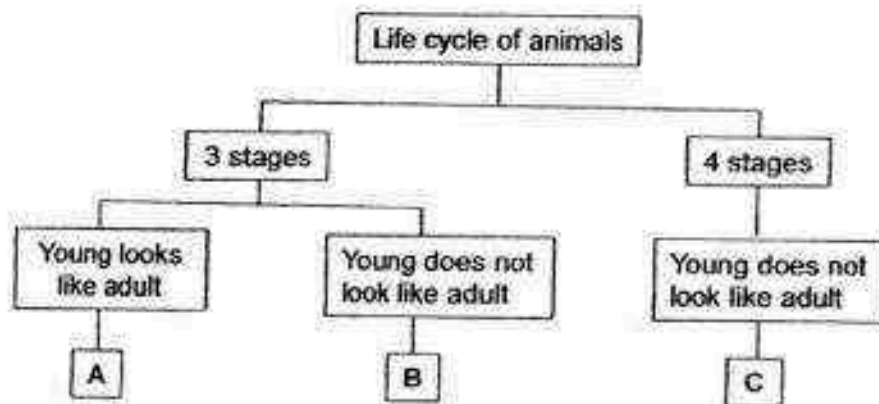
- (1) A
 - (2) B
 - (3) C
 - (4) D
4. The diagrams below show the life cycles of two different insects, X and Y.



Based only on the information given, which of the following statements is true?

- (1) Insect X has a longer life span than Insect Y.
- (2) The young of both insects do not resemble their parents.
- (3) Insect X has a 4 life cycles while Insect Y has 3 life cycles.
- (4) Insect X takes a shorter time to hatch from an egg than Insect Y.

- 5 Study the classification chart below.



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

	A	B	C
(1)	Grasshopper	Frog	Mosquito
(2)	Human	Beetle	Butterfly
(3)	Frog	Butterfly	Mosquito
(4)	Human	Grasshopper	Beetle

- 6 The diagram below shows a plant. The leaves of the plant close when they are touched.



This shows that the plant is a living thing because it can _____.

- (1) die
- (2) grow
- (3) reproduce
- (4) respond to changes around them

- 7 The table below shows the characteristics of two animals E and F.

Animal	Number of Legs				Method of Reproduction	
	0	2	4	6	Lays eggs	Gives birth to young alive
E			✓			✓
F	✓				✓	

What outer body coverings will animals E and F most likely have?

	Animal E	Animal F
(1)	hair	scales
(2)	feathers	hair
(3)	moist skin	hair
(4)	hair	feathers

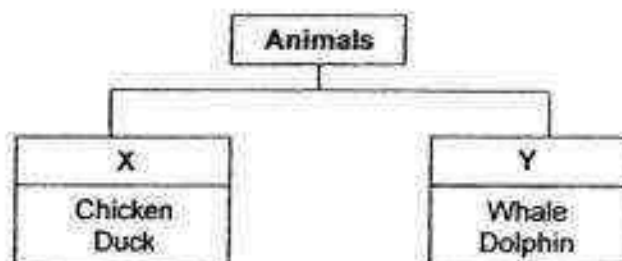
- 8 The following table shows the characteristics of organisms A, B, C, D and E.

Characteristics	A	B	C	D	E
It responds to changes in its surroundings.	×	✓	✓	✓	✓
It can only be seen through a microscope.	✓	×	✓	×	✓
It can move freely on its own.	×	×	✓	✓	×

Which of the organisms, are micro-organisms?

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

- 9 Study the classification chart below.



Which of the following is most likely headings of animals in groups X and Y?

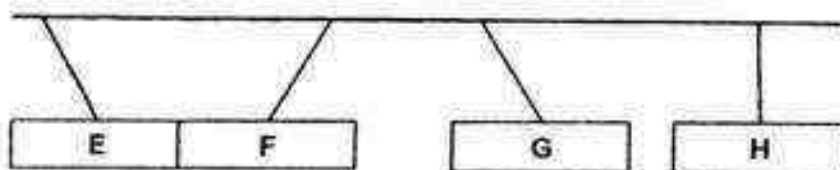
	X	Y
(1)	Have feathers	Have scales
(2)	Lay eggs	Give birth to young alive
(3)	Hard outer covering	Have hair
(4)	Breathe through lungs	Breathe through gills

- 10 Which of the following items make use of magnets to work?

- A Compass
- B Refrigerator
- C Plastic Ruler

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

- 11 The diagram shows what happened to 4 different bars, E, F, G and H, when they were suspended on a string next to each other.

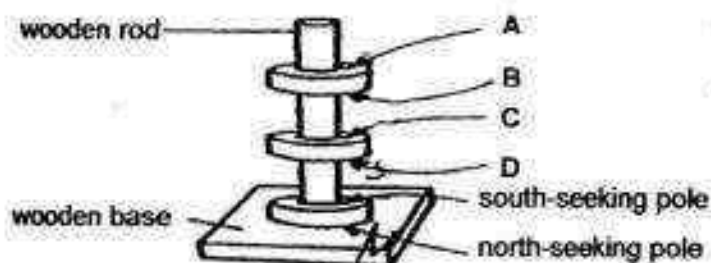


Which of the following statements about the 4 bars is correct?

- A E is a magnetic object.
- B F is a non-magnetic object.
- C G is a magnet.
- D H is a non-magnetic object.

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

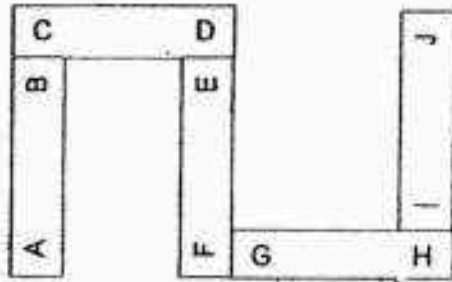
- 12 The diagram below shows two ring magnets suspended on top of another on a wooden base. A, B, C and D are the poles of the suspended magnets.



Which one of the following pairs are like poles?

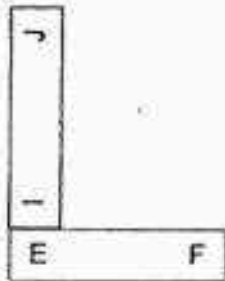
- (1) A and B
- (2) A and C
- (3) B and C
- (4) C and D

- 13 Five bar magnets with their poles marked A to J can be arranged as shown below.

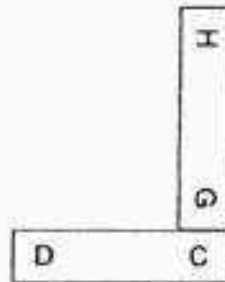


Which of the following shows a possible arrangement of two of the magnets?

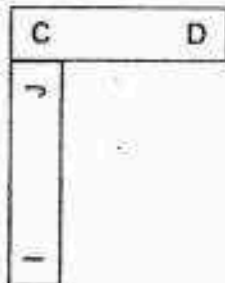
(1)



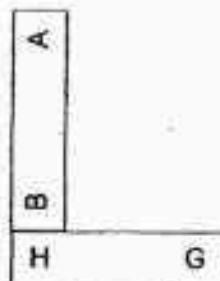
(2)



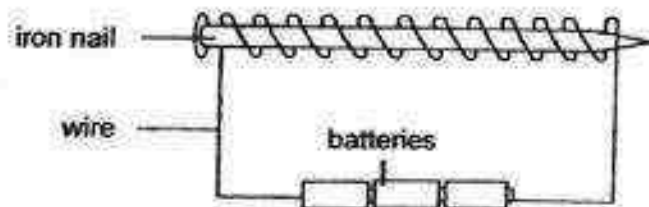
(3)



(4)



14 Study the electromagnet shown below.

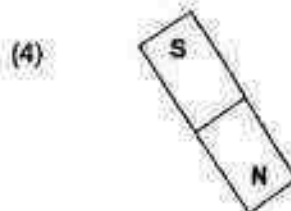
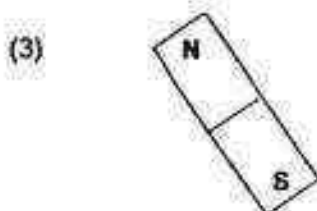
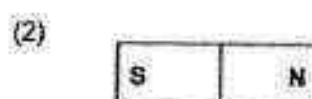
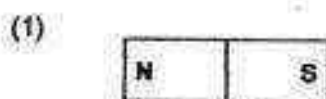


Which one of the following changes will decrease the number of pins attracted to the electromagnet?

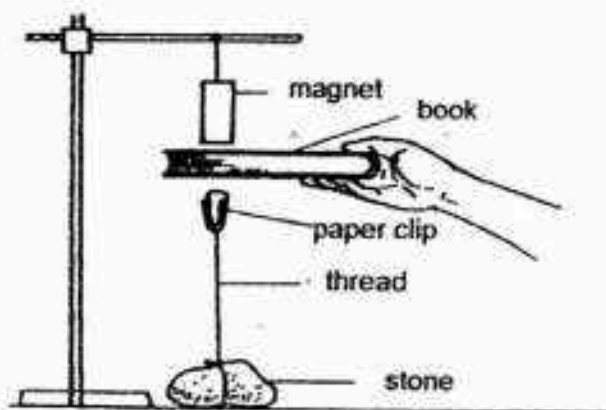
- A Increase the number of batteries
- B Decrease the number of batteries
- C Replace the iron nail with an aluminium nail
- D Increase the number of coils of wire around the iron nail

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

15 Which one of the following correctly shows the direction of a freely suspended bar magnet when it has come to a stop?



16 Study the diagram below.



What does the above demonstration show about magnetism?

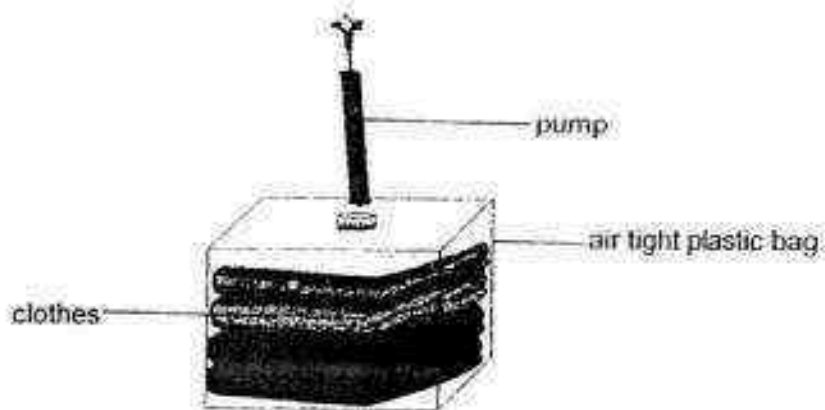
- (1) Magnetism from paper clip attracted the book.
- (2) Magnetism from the book attracted the paper clip.
- (3) Magnetism can pass through a non-magnetic object.
- (4) Magnetism cannot pass through a non-magnetic object.

17 Which of the following is/are not matter?

- A Air
- B Heat
- C Light
- D Shadow

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

- 18 Mrs Lim used a pump to remove the air from an air-tight plastic bag packed with clothes. She recorded the results in the table shown below.

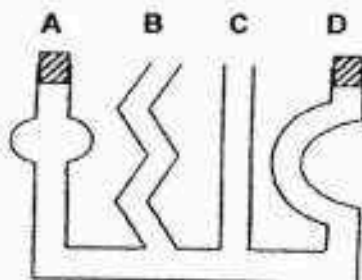


Number of pumps	Mass of the bag of clothes (g)
0	900
10	890
20	880

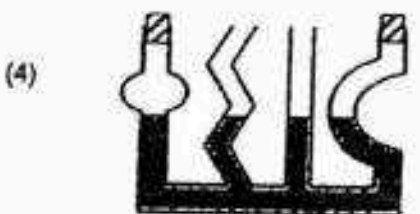
Based only on the information from Mrs Lim's experiment, which of the following conclusion(s) is/are possible?

- A Air has mass.
 - B Air has volume.
 - C Air does not have a definite shape.
- (1) A only
- (2) B only
- (3) A and C only
- (4) A, B and C

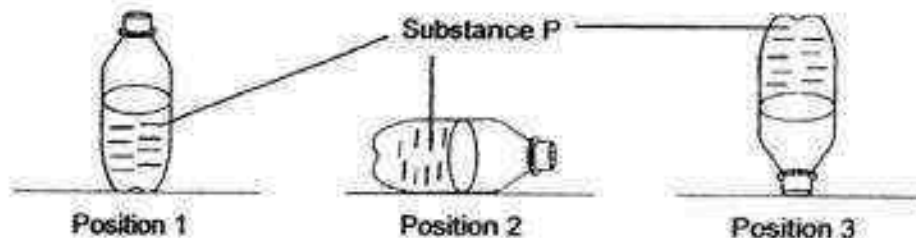
- 19 The diagram below shows a communicating vessel. The openings of A and D are covered with stoppers. 500ml of water is poured into the vessel through opening B.



Which diagram shows the final water level in the vessel after all the water is poured in?



- 20 The diagram below shows a bottle filled with Substance P and put into 3 different positions.



Based only on the demonstration above, which of the following statement(s) is/are incorrect about Substance P?

- A Substance P has mass.
- B Substance P has indefinite shape.
- C Substance P has indefinite volume.

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

- 21 The diagram below shows four objects placed on different lever balances.



Arrange the objects according to their masses from the smallest to the biggest.

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

- 22 Adam was asked by his teacher to conduct an experiment to find the volume of a small marble of 5cm^3 .



A



B

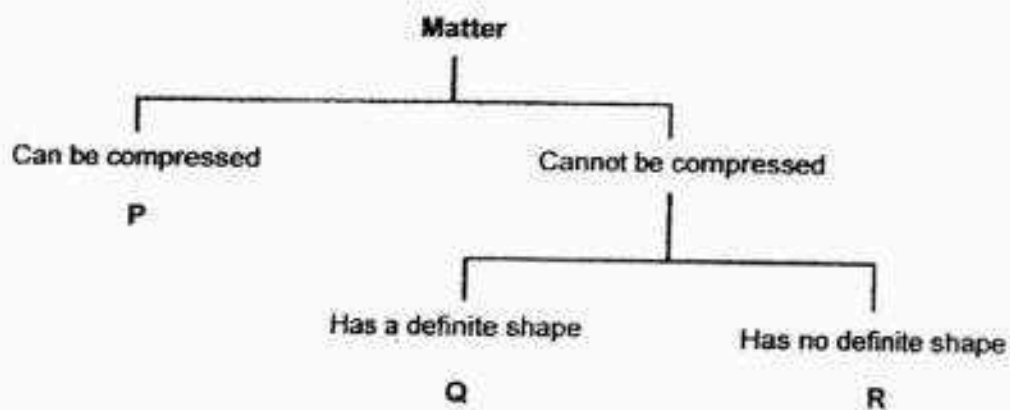


C

Which of the apparatus below is/are most suitable to conduct the experiment?

- (1) A only
 - (2) B only
 - (3) B and C only
 - (4) A, B and C
- 23 Which one of the following properties is correct of water and stone?
- (1) Both take up space.
 - (2) Both cannot be seen.
 - (3) Both have indefinite shape.
 - (4) Both have indefinite volume.

24 Study the classification table below.



Which of the following correctly represents P, Q and R?

	P	Q	R
(1)	liquid	gas	solid
(2)	gas	solid	liquid
(3)	solid	liquid	gas
(4)	gas	liquid	solid

End of Booklet A



MARIS STELLA HIGH SCHOOL (PRIMARY)
SEMESTRAL ASSESSMENT 1
SCIENCE
12 MAY 2016
BOOKLET B

NAME: _____ ()

CLASS: Primary 4 ()

10 questions

32 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: _____ / 48

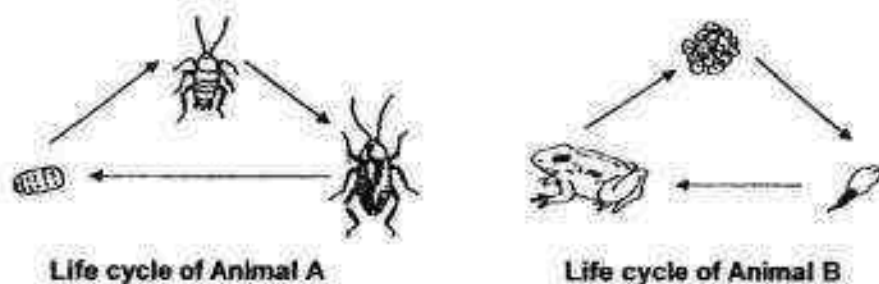
BOOKLET B: _____ / 32

TOTAL: _____ / 80

PARENT'S SIGNATURE: _____

For questions 25 to 34, write your answers in this booklet. The number of marks available is shown in brackets [] at the end of each question or part question. (32 marks)

25 The diagram below shows the life cycles of Animal A and Animal B.



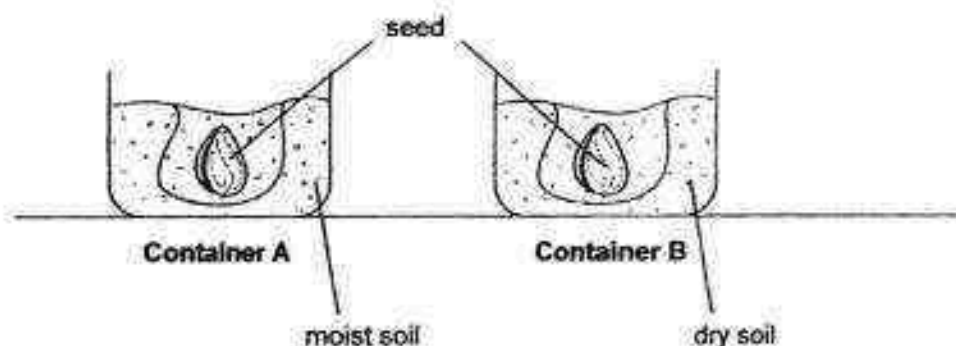
- (a) Based only on the diagram, state one similarity and difference between the two life cycles shown. [2]

Similarity: _____

Difference: _____

- (b) In what way is the tadpole of a frog different from the adult frog? [1]

26. James placed a seed in two containers, A and B, and left them in a warm area. After a few days, the seed in container A germinated but the seed in container B did not.



- (a) Give a reason why the ^{seed} ~~bean~~ in container A germinated.

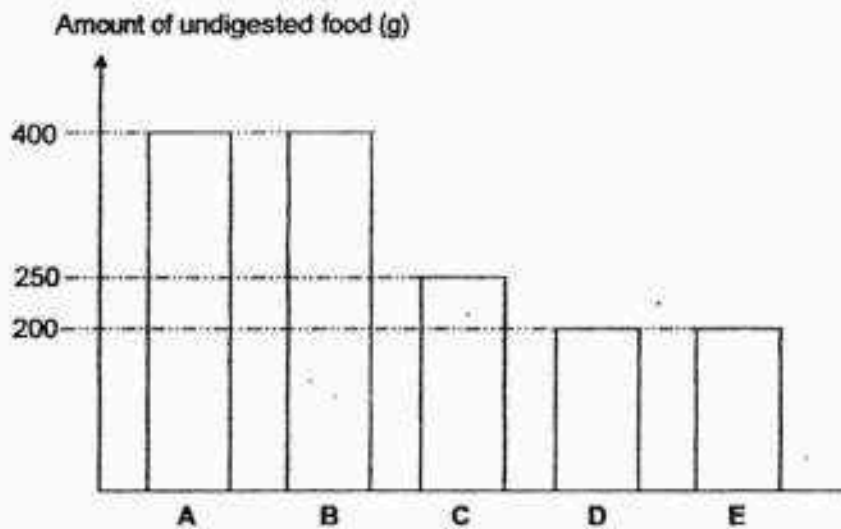
[1]

- (b) Put a tick (✓) in the appropriate boxes.

[2]

	Statement	True	False
(i)	Seed coat protects the seed.	<input type="checkbox"/>	<input type="checkbox"/>
(ii)	Most flowering plants have a three-stage life cycle – seed, young plant and adult plant.	<input type="checkbox"/>	<input type="checkbox"/>
(iii)	As the seed germinates, the shoot appears first before the roots grow out.	<input type="checkbox"/>	<input type="checkbox"/>
(iv)	Seed leaves provide the embryo in the seed with food.	<input type="checkbox"/>	<input type="checkbox"/>

- 27 The graph below shows the amount of undigested food in our digestive system as it leaves different parts of the human digestive system, A to E. The amount of undigested food eaten by the person is 500g.



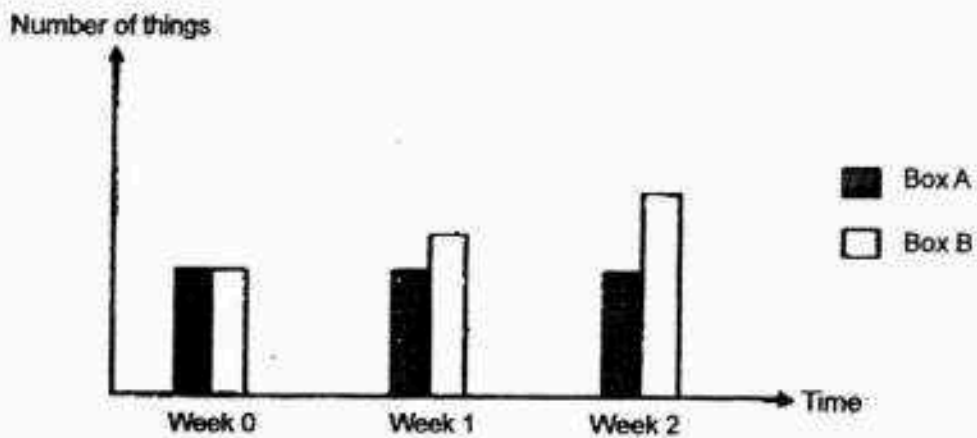
- (a) Based on the graph, which parts (A, B, C, D and E) of the digestive system do digestion occurs? [1]

- (b) John is having constipation. He noticed that his faeces are very dry. Name the organ in the digestive system that is causing this problem. [1]

	2
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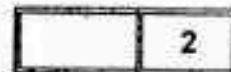
- 28 Jethro set up two boxes, A and B. He placed some living things in one box and an equal number of non-living things in another box. Both boxes were provided with equal amount of air, food and water.

Jethro recorded the number of things in both boxes over 2 weeks and drew the graph below.



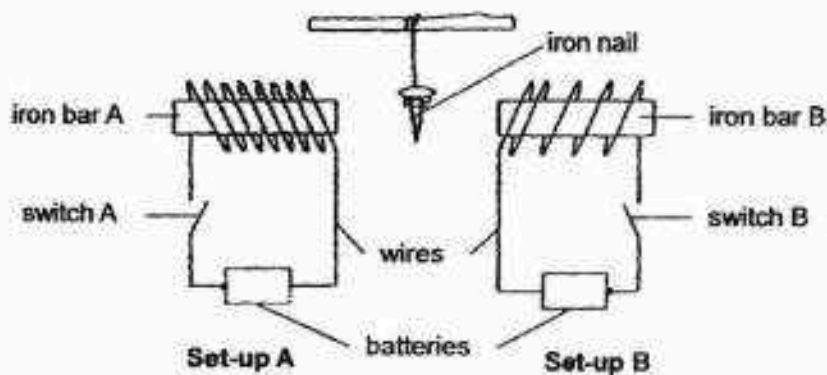
- (a) Based on the graph above, which box (A or B) contained living things? [1]

- (b) State the characteristic of living things that helped you to arrive at your answer in (a). [1]



(Go on to the next page)

- 29 Jamie suspended an iron nail freely midway between 2 identical iron bars, A and B.



- (a) What will Jamie observe when she turned on both switches A and B? [1]

- (b) Explain her observation in (a). [2]

- (c) What will Jamie observe about the nail if she changed the iron nail into an aluminium nail? Give a reason for your answer. [1]



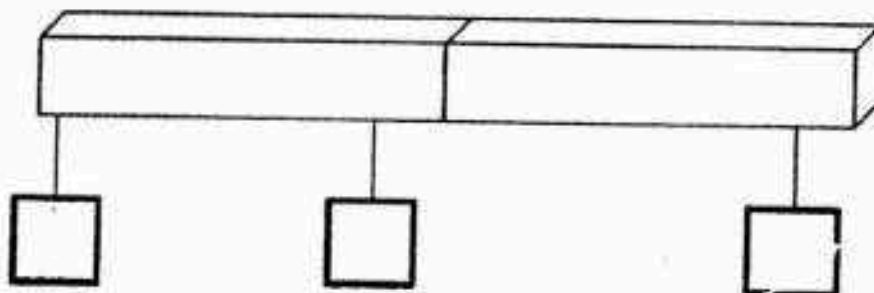
- 30 Tom conducted Experiment A with a bar magnet and some metal pins. He brought the metal pins close to the different positions of the bar magnet. The number of metal pins attracted to the different positions of the bar magnet were recorded in the table below.

Position	Number of metal pins attracted
A	30
B	28
C	5

Experiment A

- (a) Label the positions, A, B and C, in the boxes provided.

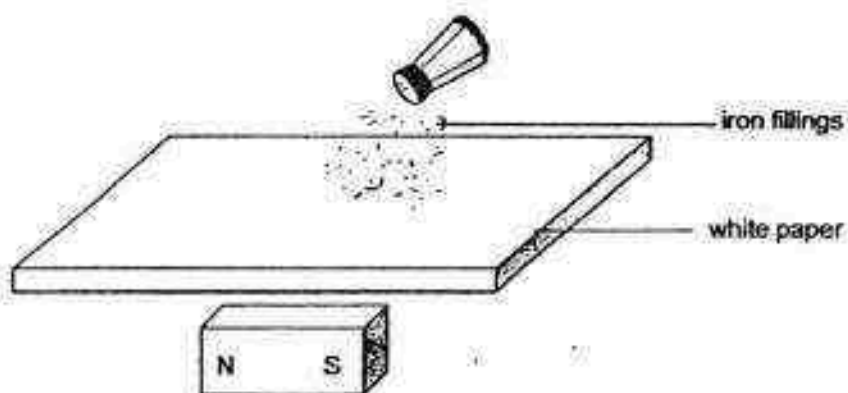
[1]



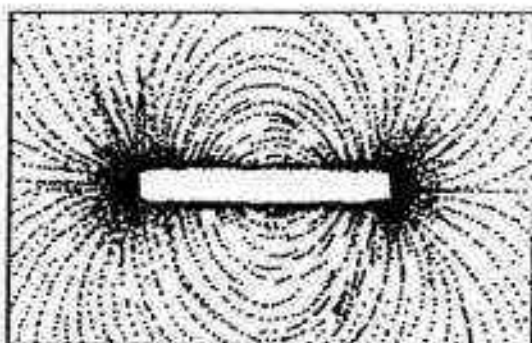
	1
--	---

Tom then conducted Experiment B. He placed a stiff white sheet of paper on top of the bar magnet and sprinkled some iron filings on it as shown in Diagram A.

Experiment B



A pattern is formed by the iron filings as shown in Diagram B.



(b) State two properties of magnets demonstrated in experiments A and B.

[2]

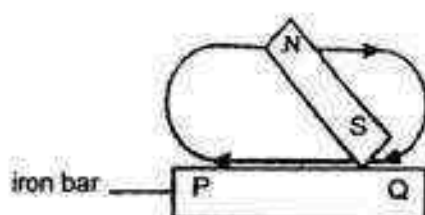
(i) _____

(ii) _____



(Go on to the next page)

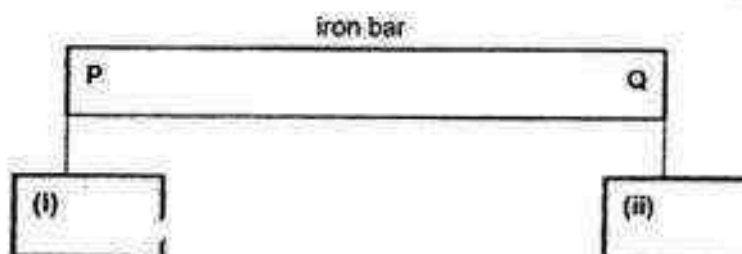
- 31 Tobey set up an experiment as shown below. He wanted to find out if the number of times he stroked the iron bar with the magnet would affect the distance from which the safety pin would be attracted to the iron bar. The results are shown below.



Number of strokes	Distance from iron bar (cm)
20	5
25	8
30	11
40	14

- (a) In the diagram below, the iron bar was magnetised and remained in the same position.

Identify and label the North and South poles of the iron bar after it has been magnetised. Use 'N' for North pole and 'S' for South pole. [1]



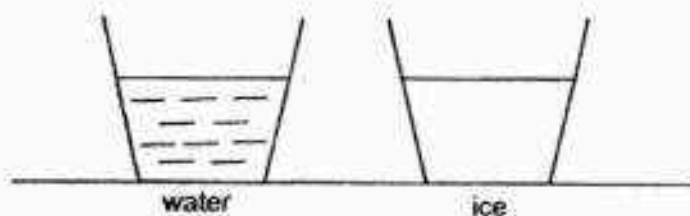
- (b) Based on the results table, what is the number of strokes that resulted with an iron bar having the strongest magnetism? [1]

- (c) What is the relationship between the number of strokes and the magnetism of the temporary magnet? [1]

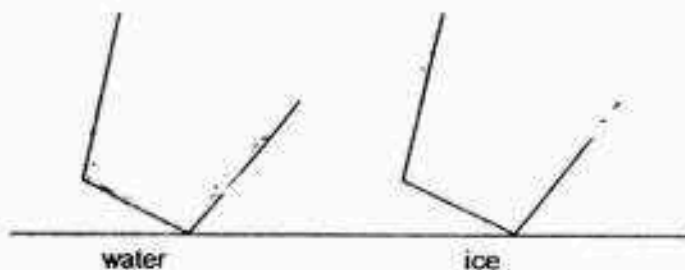


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- 32 John set up the experiment as shown below to find out more about the properties of matter. The diagrams below show a glass of water and a glass of ice.



- (a) Draw the level of observations of the ~~level of~~ water and ice after both glasses are tilted. [1]



- (b) What properties of matter are shown in (a)? [1]

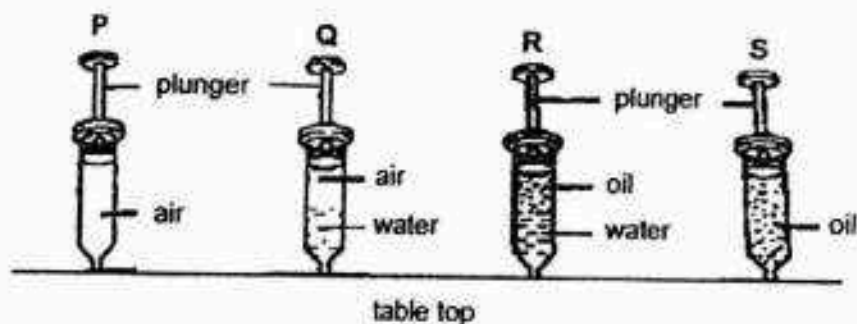
(i) _____

(ii) _____



(Go on to the next page)

John then set up another experiment below to find out more about the properties of matter. He observed and compared the following syringes.



- (c) Which of the plunger(s) (P, Q, R and S) cannot be pushed downwards? [1]

- (d) Give a reason for your answer in (c). [1]

- 33 Allan placed an inflated ball on a weighing scale as shown below. He observed that the mass of the inflated ball was 250g.



Mass: 250g

- (a) Allan then deflated the ball and measured its mass. What would happen to the mass of the ball? [1]

- (b) What is the property of air shown in (a)? [1]

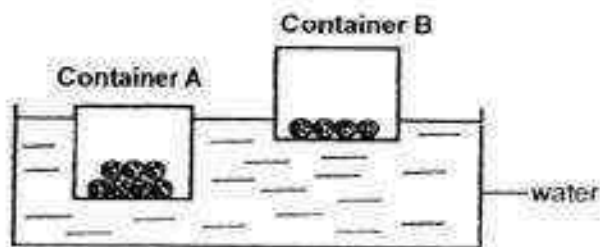
- (c) The volume of air inside the ball is 600 cm^3 . Allan pumped in another 50 cm^3 of air. [1]
What is the final volume of air in the ball?

- (d) What is the property of air shown in (c)? [1]



(Go on to the next page)

- 34 Leroy used identical marbles and containers for the experiment he conducted as shown below. He compared the distance that each container sunk in water.

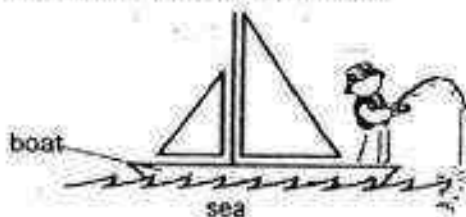


- (a) State the manipulated variable of the experiment. [1]

- (b) What is the aim of his experiment? [1]

- (c) Name one important variable to be kept the same for the experiment to be a fair test. [1]

- (d) Leroy went out on a fishing trip and had a full load of fish. After fishing, he discovered that the boat has sunk deeper into the water.



Assuming that there is no damage to the boat, suggest what can be done to cause the boat to float above the water level. [1]

End of Booklet B



EXAM PAPER 2016

SCHOOL : MARIS STELLA HIGH SCHOOL
SUBJECT : PRIMARY 4 SCIENCE
TERM : SA1 (MID YEAR EXAM)

BOOKLET A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	4	3	4	1	4	1	3	2	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	3	3	2	3	3	4	1	2	1
Q21	Q22	Q23	Q24						
4	2	1	2						

BOOKLET B

Q25(a) They both have a 3 stage life cycles.

Q25(b) The young of animal A resembles its adult but animal B's young does not resemble its adult.

Q26(a) It had water, oxygen and warmth

Q26(b)

- (i) True
- (ii) True
- (iii) False
- (iv) True

Q27(a) A, B & C

Q27(b) The large intestine

Q28(a) Box B

Q28(b) Living things reproduce

Q29(a) The iron nail would be attracted by set-up A **Q29(b)** Iron bar A had more coils than the iron bar B, therefore iron bar A would have stronger magnetism than iron bar B and the iron nail would tilt towards set up A.

Q29(b) The iron nail would not tilt to anyone of the set ups as aluminum is not a magnetic object therefore it cannot be magnetized and would not attract the iron nail.

Q30(a) _____

A **C** **B**

Q30(b)

- (i) Magnetism is strongest at its poles.
- (ii) Magnetism can pass through non-magnetic objects

Q31(a)

- (i) N
- (ii) S

Q31(b) 40 strokes

Q31(c) The greater the number of strokes the stronger the magnetism of the magnet

Q32(a)



Q32(b)

- (i) Liquid does not have a definite shape
- (ii) Solids have definite shape

Q32(c) R and S

Q32(d) R and S have liquids in them, they have a definite volume. So it cannot be pushed down.

Q33(a) Its mass would decrease

Q33(b) Air had mass

Q33(c) 600cm^3

Q33(d) Air can be compressed

Q34(a) The number of marbles

Q34(b) To find out whether the number of marbles would affect the distance of the container that sink

Q34(c) The weight of the marbles

Q34(d) Release some fish.



NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 2
2016

BOOKLET A

Date : 24 October 2016

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 23 printed pages including this cover page.

Section A (28 x 2 marks = 56 marks)

For each question from 1 to 28, 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)

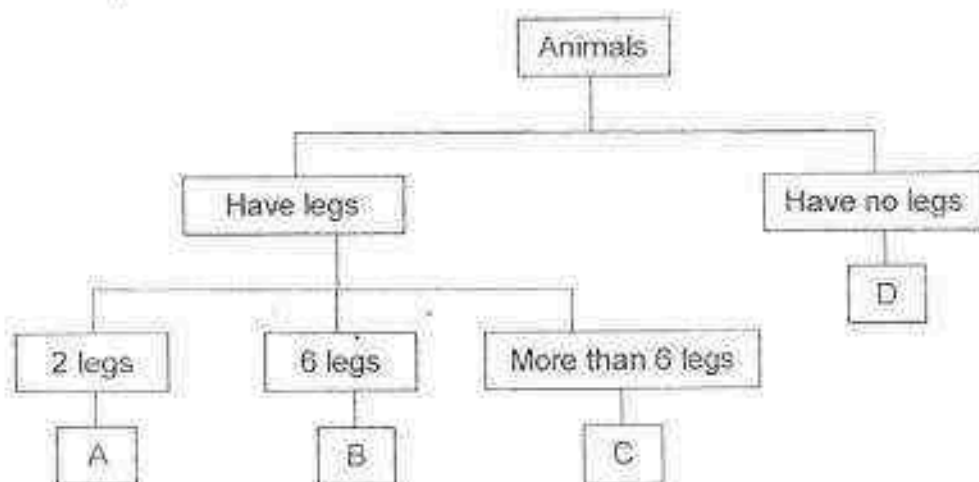


(3)

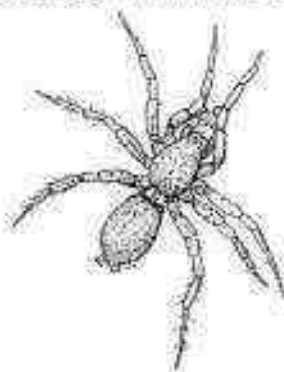


(4)

2. Study the chart below.



Where would you put this animal in the chart above?



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

- A
B
C
D

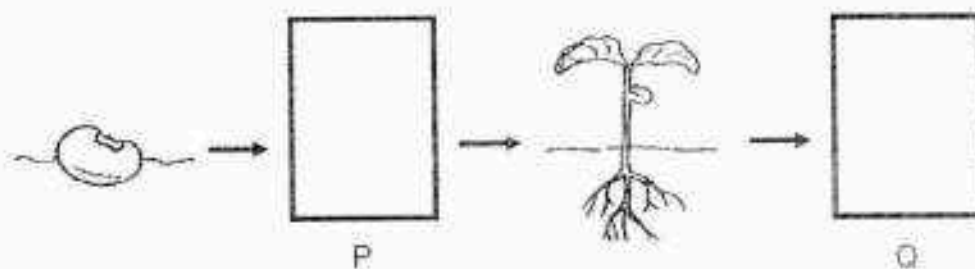
3. The diagram below shows a plant.



The stem helps the plant to _____.

- (1) make food
 - (2) grow upright
 - (3) absorb water
 - (4) absorb nutrient
4. In which part of the digestive system is water absorbed from undigested food?
- (1) gullet
 - (2) stomach
 - (3) small intestine
 - (4) large intestine

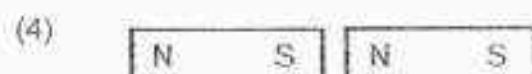
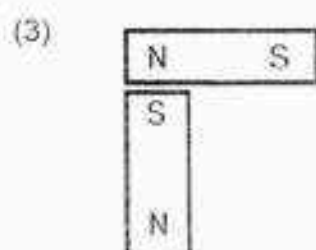
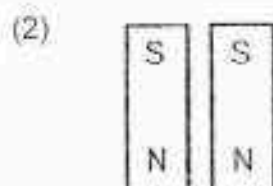
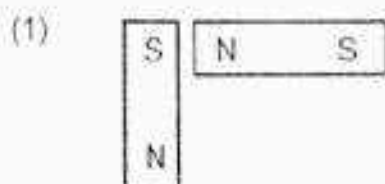
5. The diagram below shows the growth of a young plant with two missing stages, P and Q.



Which one of the following shows the correct stages for P and Q?

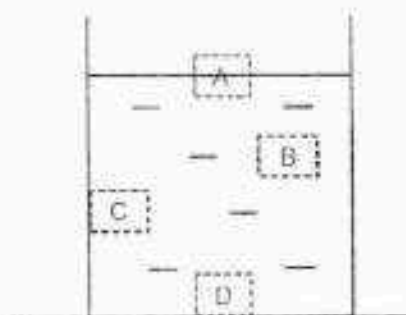
	P	Q
(1)		
(2)		
(3)		
(4)		

6. In which one of the following will the two magnets push each other away?



7. Elizabeth put a solid glass block into a container of water.

At which position, A, B, C or D, would the solid glass block most likely be found?

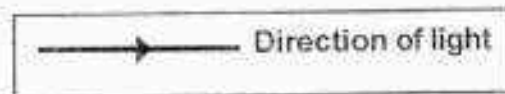


- (1) A
(2) B
(3) C
(4) D

8. Look at the picture below.



Which one of the following explains how the boy can see the ball on the ground?



(1)



(2)



(3)

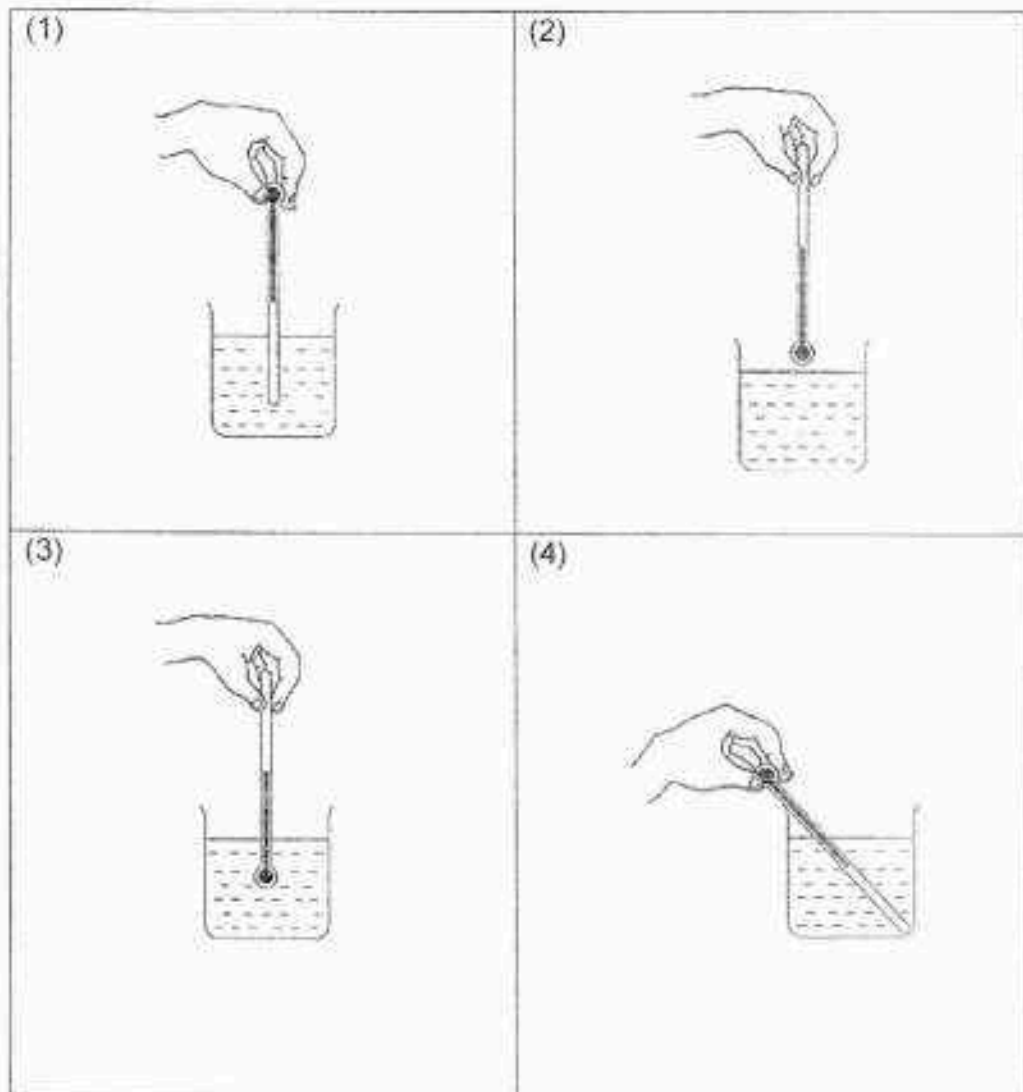


(4)



9. Becky 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?

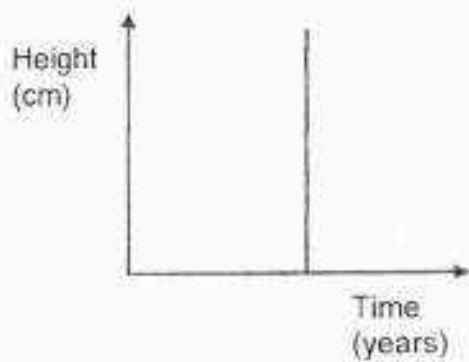


10. Which one of the following properties is **true** for both air and water?

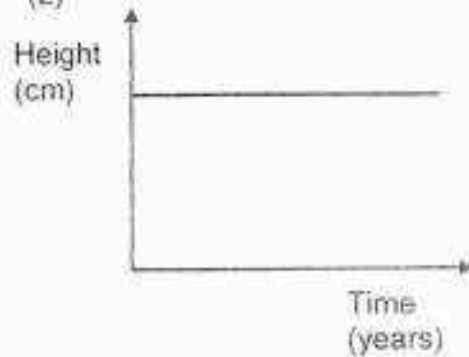
- (1) They can be seen.
- (2) They take up space.
- (3) They have fixed shapes.
- (4) They have fixed volumes.

11. Which graph shows the correct height of a toy lion over a few years?

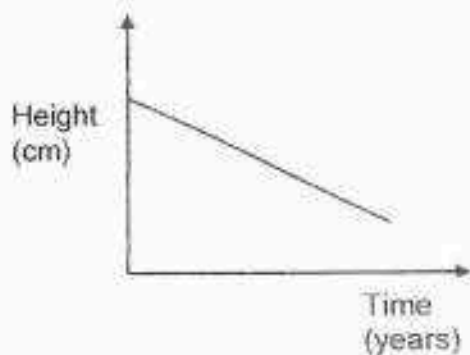
(1)



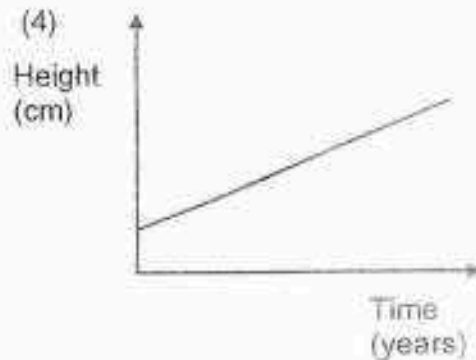
(2)



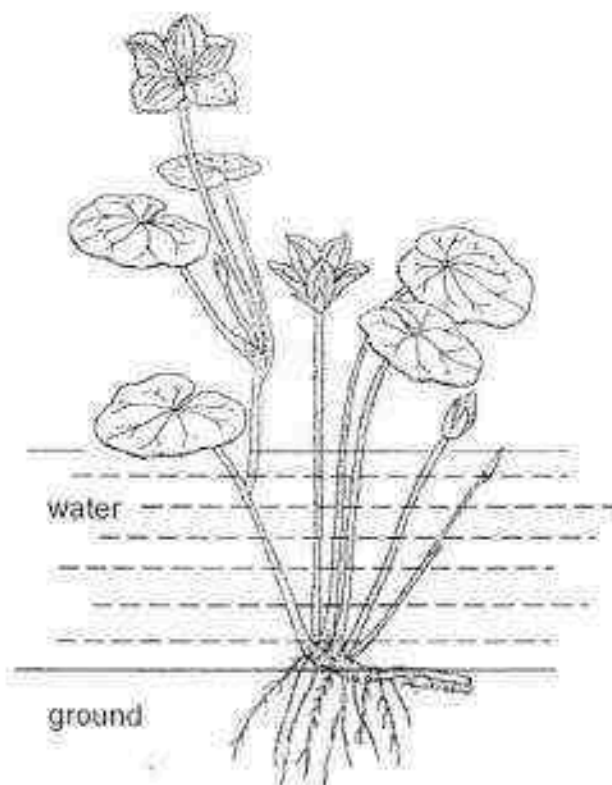
(3)



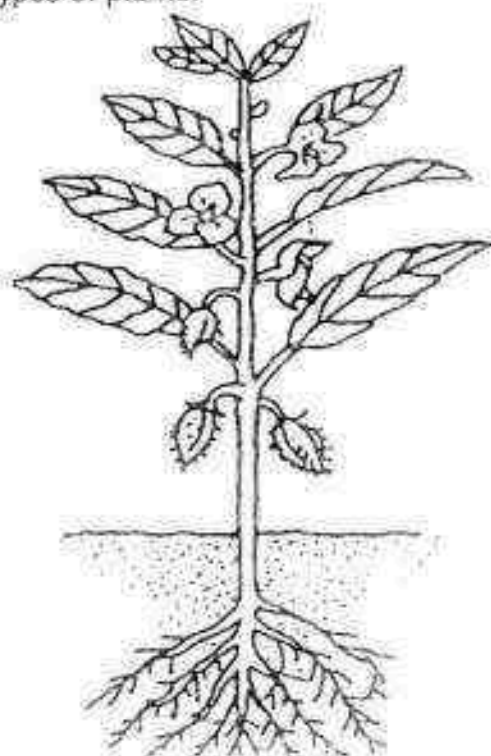
(4)



12. The following diagrams show two different types of plants.



Plant X



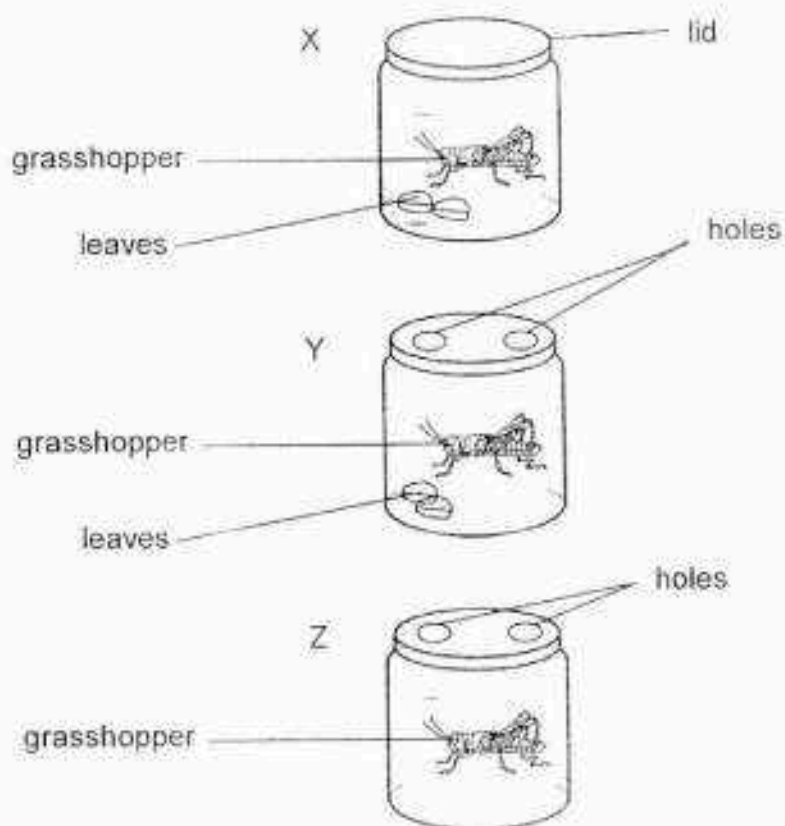
Plant Y

Based on the diagrams, which of the following statements about the two plants are not true?

- A Only plant Y bears fruits.
- B Both plant X and plant Y needs water.
- C Only roots of plant Y anchors it to the ground.

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

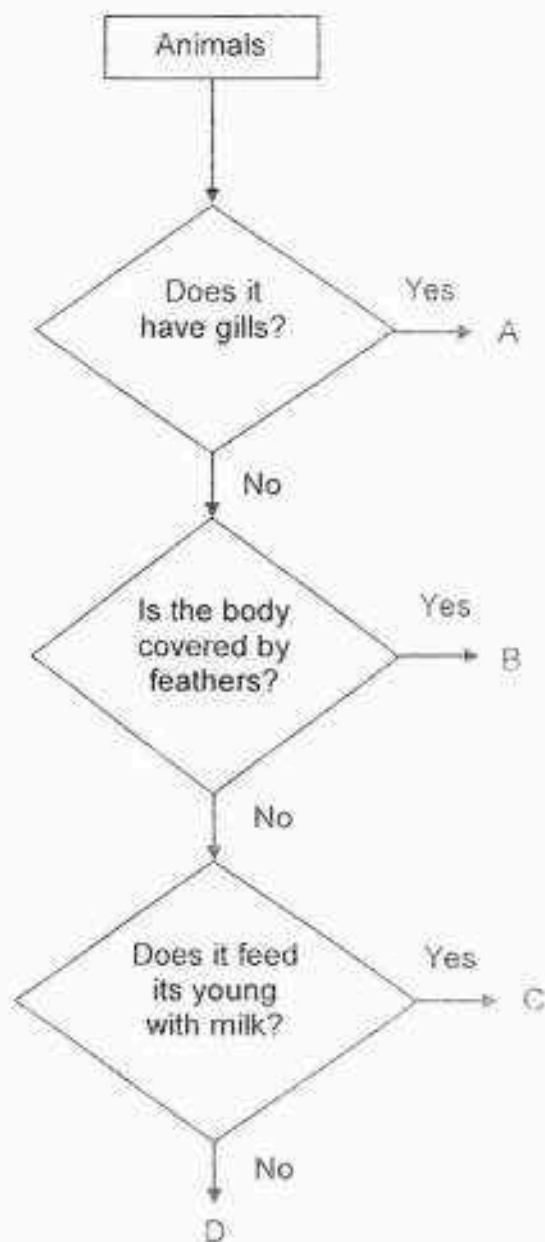
13. Ivy kept three grasshoppers in three different set-ups, X, Y and Z



Based on the conditions in the 3 set-ups, which one of the following would be the most likely observation?

	grasshopper alive for the longest period of time	grasshopper alive for the shortest period of time
(1)	Y	X
(2)	X	Y
(3)	Y	Z
(4)	Z	Y

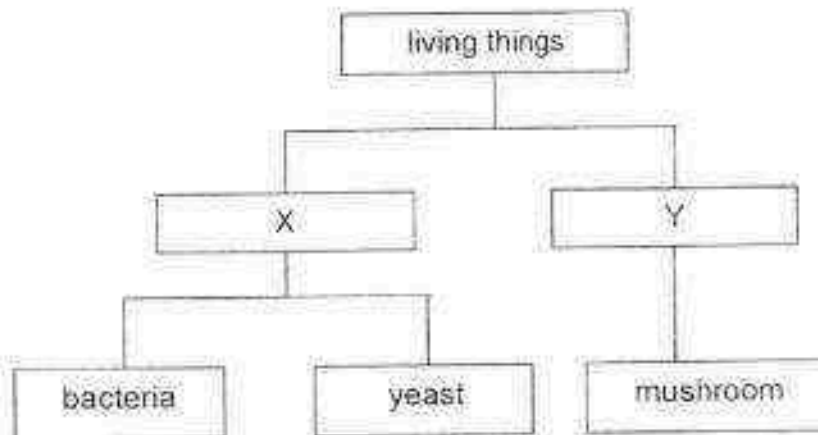
14. Study the flowchart below carefully.



Which one of the following could represent A, B, C and D?

	A	B	C	D
(1)	fish	insect	bird	mammal
(2)	fish	bird	mammal	insect
(3)	reptile	bird	insect	mammal
(4)	reptile	fish	mammal	bird

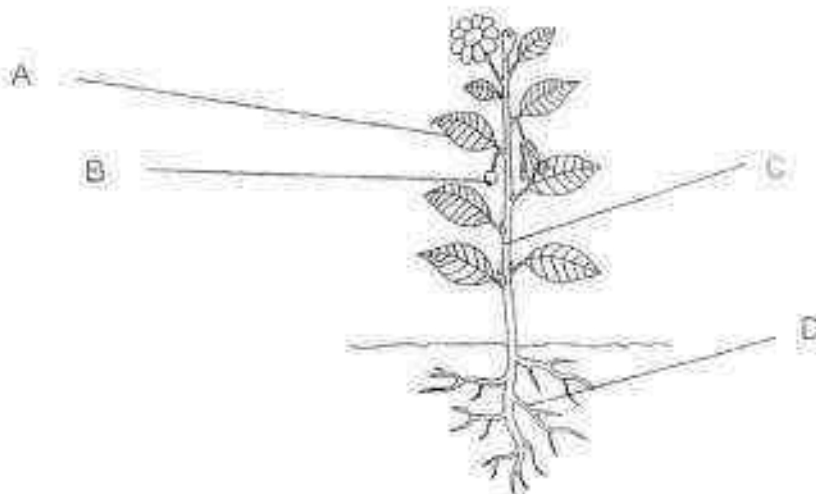
15. Study the classification chart below.



Which one of the following letters best represent headings X and Y?

	X	Y
(1)	reproduce by seeds	reproduce by spores
(2)	can make its own food	cannot make its own food
(3)	cannot be seen clearly with naked eye	can be seen clearly with naked eye
(4)	cannot reproduce	can reproduce

16. Which one of the following statements about plant parts A, B, C and D is incorrect?

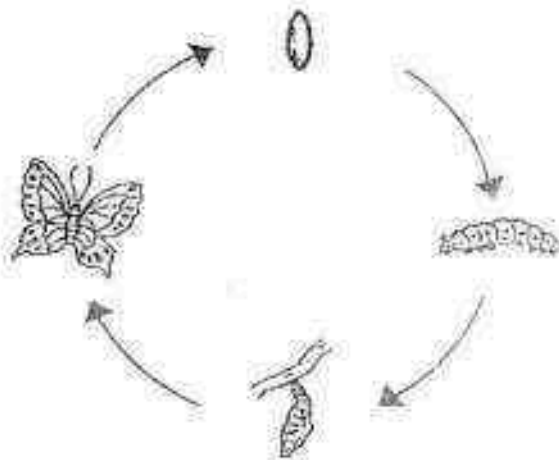


- (1) A makes food for the plant.
- (2) B takes in food for the plant.
- (3) C transports water and food for the plant.
- (4) D absorbs water and mineral salts for the plant.

17. Which one of the following parts of a human body are correctly matched to the body system?

	Digestive System	Skeletal System	Respiratory System
(1)	mouth	rib cage	blood
(2)	gullet	skull	heart
(3)	nose	rib cage	lungs
(4)	stomach	backbone	windpipe

18. Study the life cycle of the animal shown below.

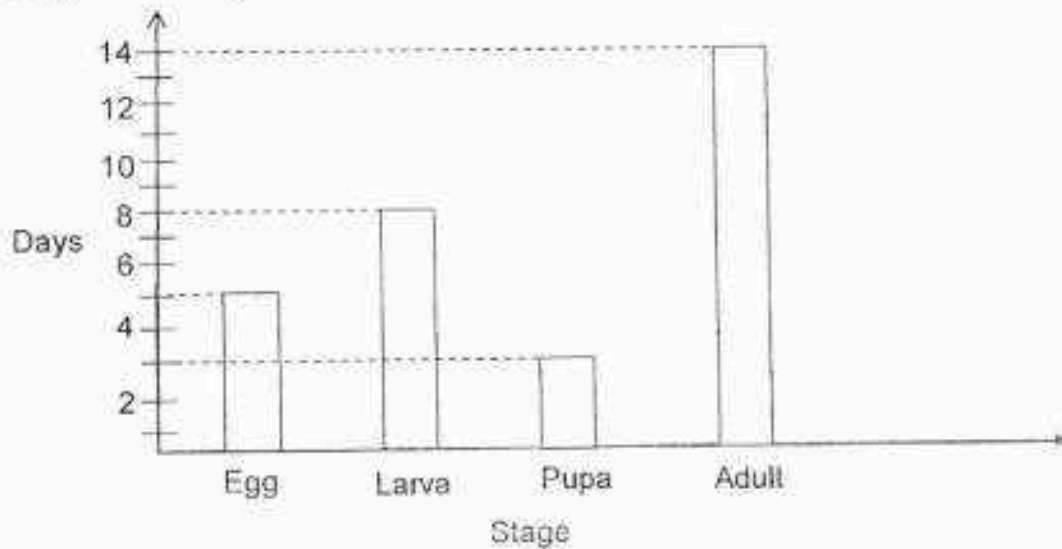


Which of the following statement(s) about the life cycle of the animal is/are correct?

- A The young of the animal resembles the adult.
- B The animal undergoes moulting at the larval stage.
- C There are four stages in the life cycle of the animal.

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

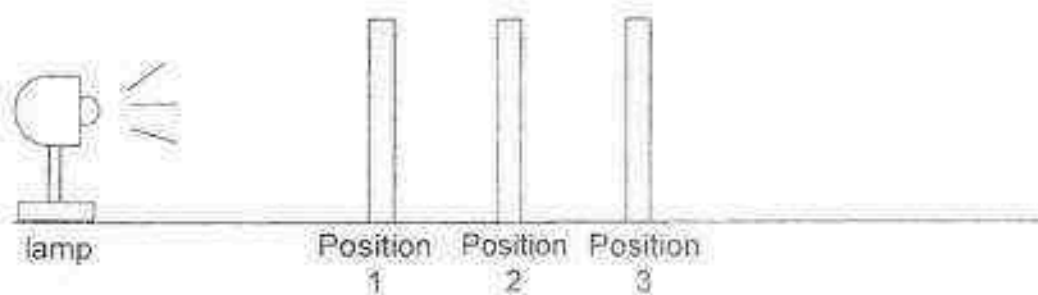
19. The graph below shows the number of days an insect spends at each stage of its life cycle.



How many days does the young take to become an adult **after** the egg is hatched?

- (1) 3
- (2) 11
- (3) 14
- (4) 30

20. The following experiment was set in a darkened room.

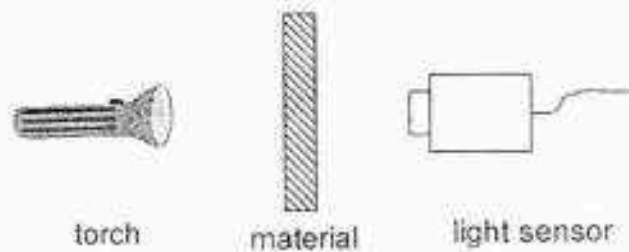


Beck Song placed 3 different materials, tracing paper, ~~drawing paper~~ ^{cardboard} and clear plastic sheet, at different positions. The three materials are of similar size and thickness. He changed the positions of the materials and recorded his observations.

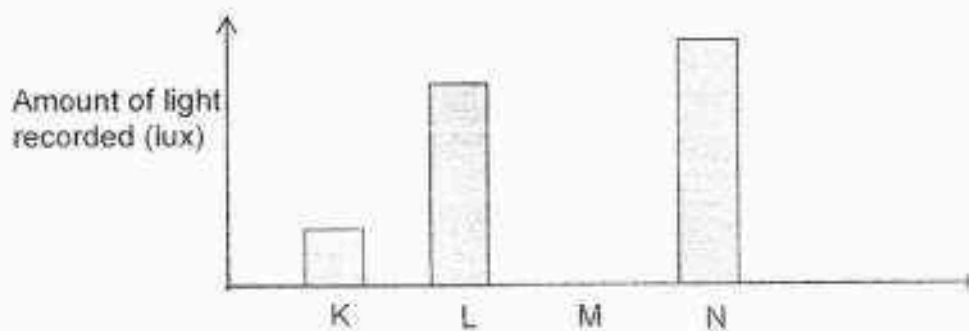
Which one of the following shows the most likely observation on the material at Position 3?

	Position 1	Position 2	Position 3	Observation at Position 3
(1)	clear plastic sheet	tracing paper	cardboard	A faint light can be seen on the cardboard.
(2)	cardboard	tracing paper	clear plastic sheet	A faint light can be seen on the clear plastic sheet.
(3)	tracing paper	cardboard	clear plastic paper sheet	A bright light can be seen on the clear plastic paper.
(4)	cardboard	clear plastic sheet	tracing paper	A faint light can be seen on the tracing paper.

21. Jayden used a light sensor to measure the amount of light that passed through 4 different materials, K, L, M and N.



The graph below shows the results of the experiment.

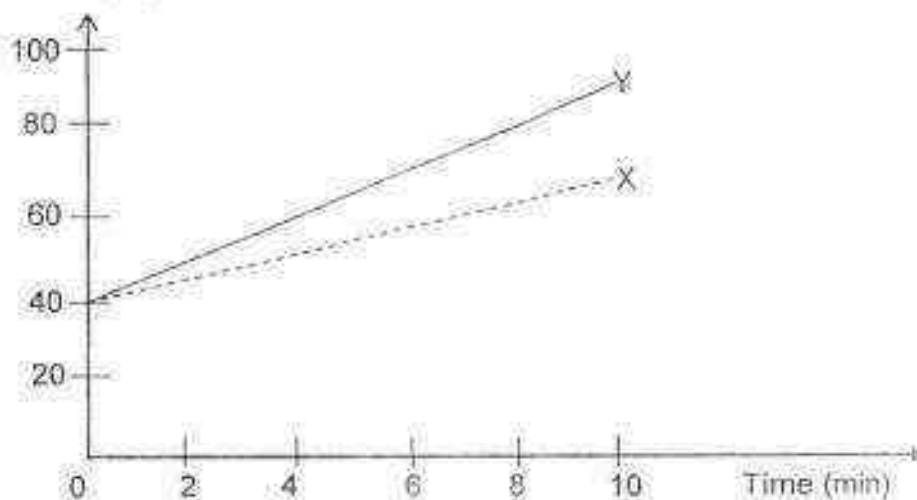


Which one of the following could most likely represent material L?

- (1) mirror
- (2) tissue paper
- (3) aluminium foil
- (4) clear plastic sheet

22. Ruth filled two identical beakers made of different materials, X and Y, with an equal amount of water and heated the beakers of water for 10 minutes. A thermometer was used to measure the temperature of water in each beaker and the graph below shows the results.

Temperature
of water ($^{\circ}\text{C}$)

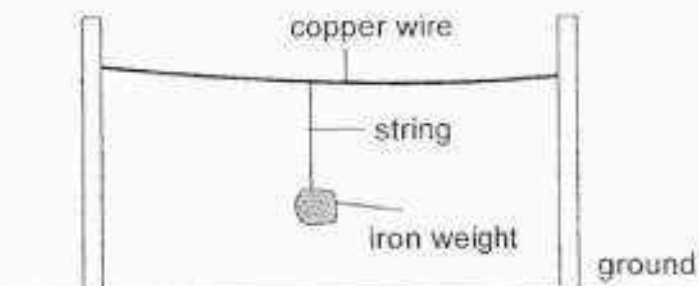


Based on the graph, which of the following statement(s) is/are true?

- A Beaker X conducted heat to the water slower than Beaker Y.
- B Water in each beaker was at 40°C at the start of the experiment.
- C Both beakers of water reached the same temperature after 10 minutes.

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

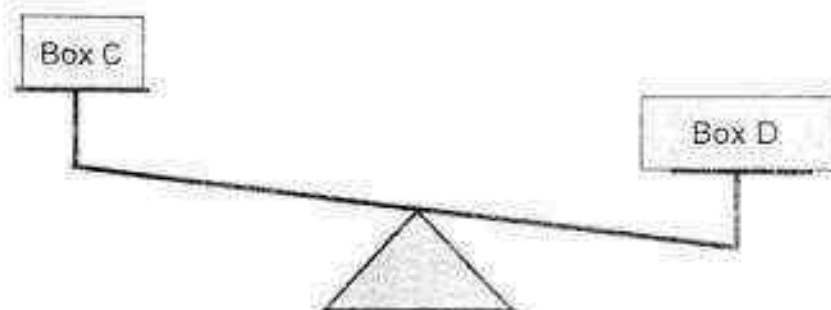
23. Andrew tied an iron weight to a string and hung it from a piece of copper wire as shown below.



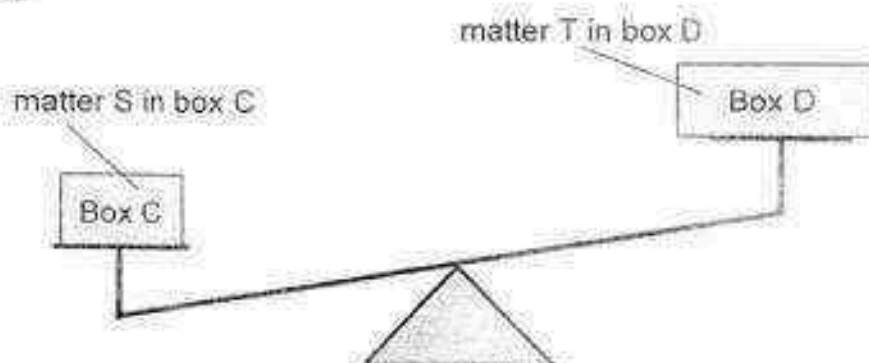
When the copper wire is heated, what will mostly likely happen to the iron weight?

- (1) It will be lower as the string expands.
- (2) It will be lower as the copper wire expands.
- (3) It will be higher as the copper wire contracts.
- (4) It will be at the same height as the copper wire is a poor conductor of heat.

24. Two boxes, C and D, are made of the same material with the same thickness. Box C is smaller than box D. The diagram below shows the balance scale when the two empty boxes are placed on it.



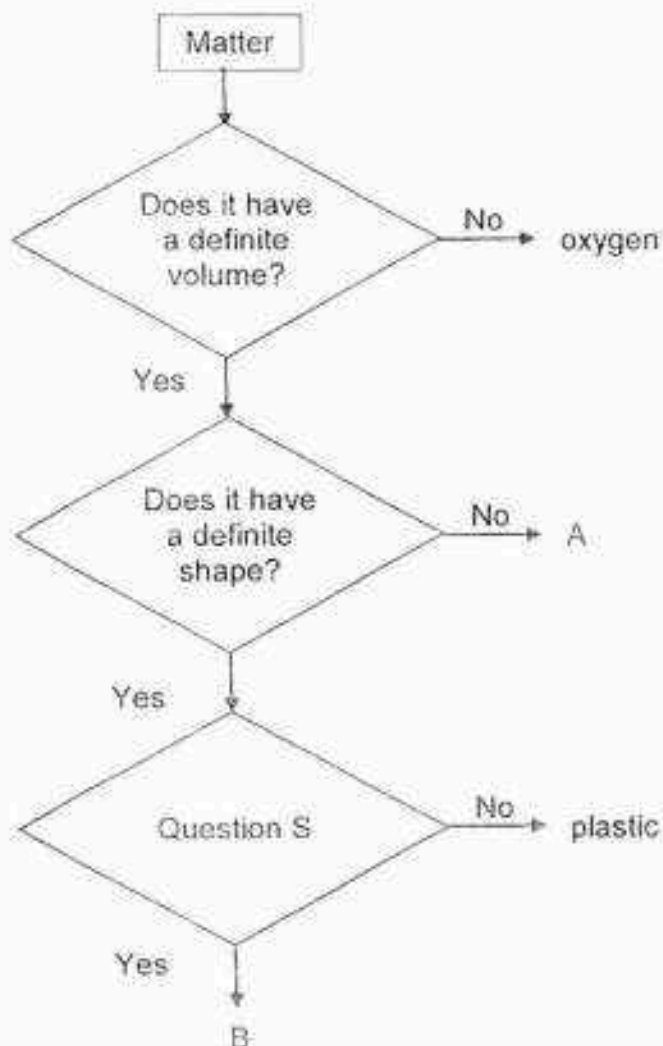
Matter S was placed in box C and matter T was placed in box D. The diagram below shows the balance scale when the two boxes were placed on it.



Which of the following statements is/are true?

- (1) Matter S and T have the same mass.
- (2) Box C has a greater mass than Box D.
- (3) Matter S has a greater mass than matter T.
- (4) Matter S is a liquid and matter T is a solid.

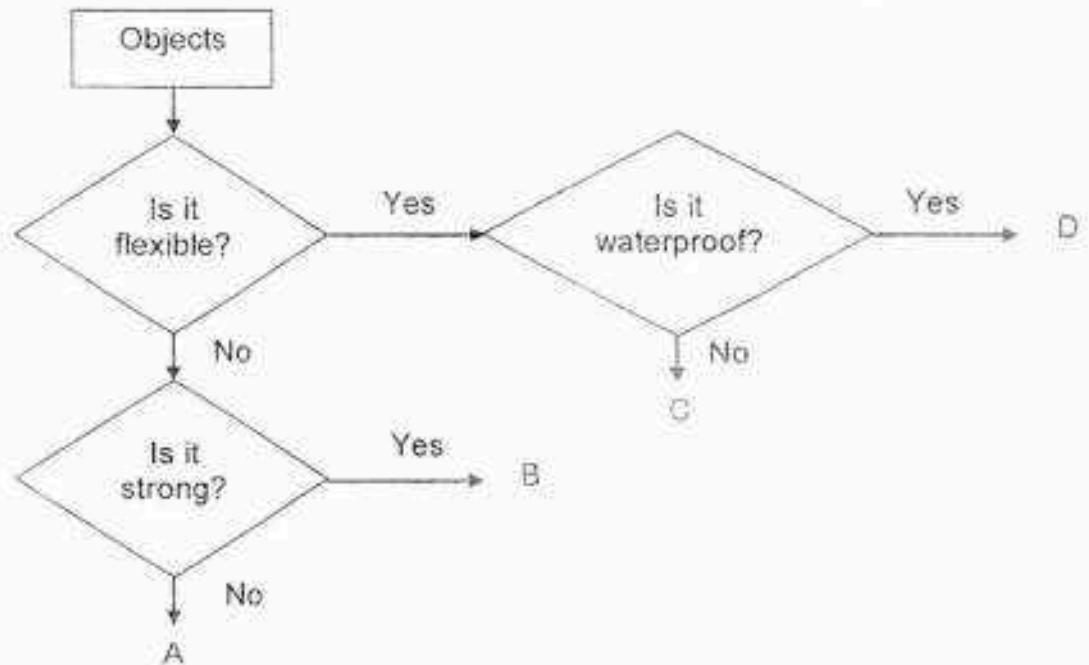
25. Study the flowchart below.



Which one of the following correctly states what matter A, B and question S are?

	A	Question S	B
(1)	carbon dioxide	Is it a good conductor of heat?	copper
(2)	water	Is it a magnetic material?	iron
(3)	air	Is it a good conductor of heat?	iron
(4)	honey	Is it a magnetic material?	copper

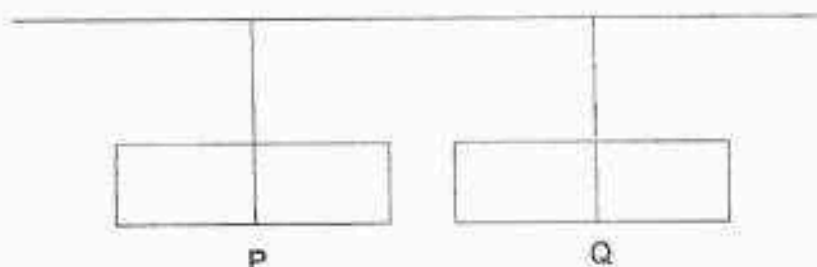
26. Study the flow chart below.



Which one of the following best represents objects A, B, C and D?

	A	B	C	D
(1)	crayon	plastic bag	cotton shirt	leather belt
(2)	leather belt	cotton shirt	plastic bag	crayon
(3)	crayon	metal pipe	cotton shirt	plastic bag
(4)	plastic bag	crayon	leather belt	cotton shirt

27. The diagram below shows what happens when two bars, P and Q, are hung near each other.

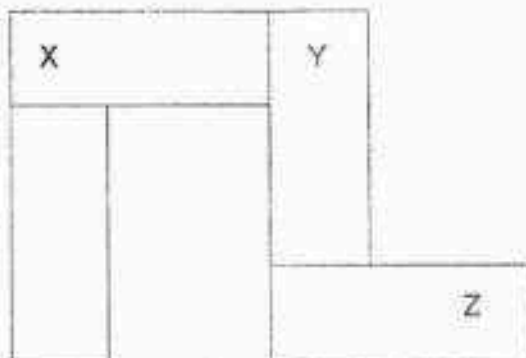


Based on the results, which of the following statements could be **true**?

- A Both bars P and Q are magnets.
- B Both bars P and Q are magnetic materials but not magnets.
- C Bar P is a non-magnetic material and bar Q is a magnet.
- D Both bars P and Q are non-magnetic materials.

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

28. Wendy found 4 magnets arranged in the following pattern.



Which of the following could be the poles of the magnets at X, Y and Z?

	X	Y	Z
A	N	N	S
B	N	S	N
C	S	N	S
D	S	S	N

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



NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

**SEMESTRAL ASSESSMENT 2
2016**

BOOKLET B

Date : 24 October 2016

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 4 ()

Marks Scored:

Booklet A:		56
Booklet B :		44
Total :		100

Any query on marks awarded should be raised by 4th November 2016. 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 13 printed pages including this cover page.

Section B (44 marks)

Write your answers to questions 29 to 41 in the spaces provided.

29. Draw lines to match the parts of a plant to its function. [2]

Parts

roots

leaf

Function

It makes food for the plant.

It obtains water for the plant

30. David places a magnet near an iron rod. The iron rod moves towards the magnet.

Choose the correct word(s) in the box below to help you answer (a) and (b).

magnet	magnetic
flexible	strong

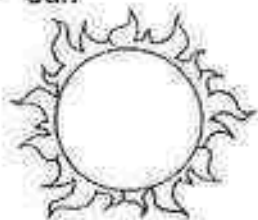
(a) The _____ exerts a force of attraction on the iron rod. [1]

(b) David's observation shows that iron is a _____ material. [1]

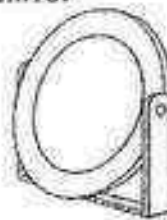
31. Look at the pictures. Tick (✓) the sources of light. [2]



sun



mirror



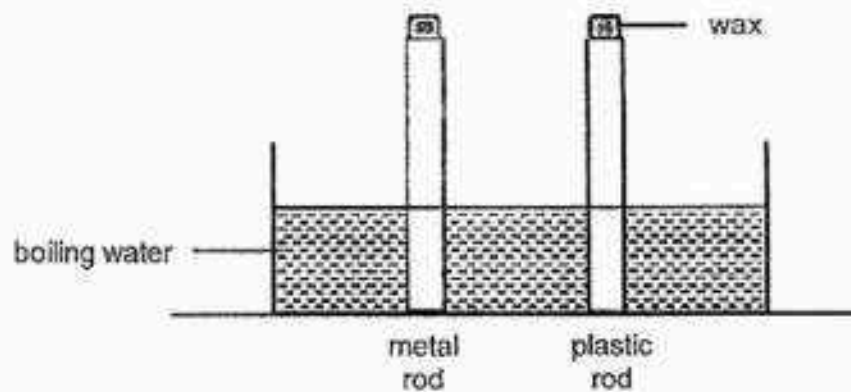
eyes



lamp



32. Shanti 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.



Fill in the blanks below.

- (a) The wax on the plastic rod melted _____ than the wax on the metal rod. [1]
- (b) Metal is a _____ conductor of heat than plastic. [1]

33. Reza compares the mass of three toys.

Study the diagrams below and circle the correct comparison.



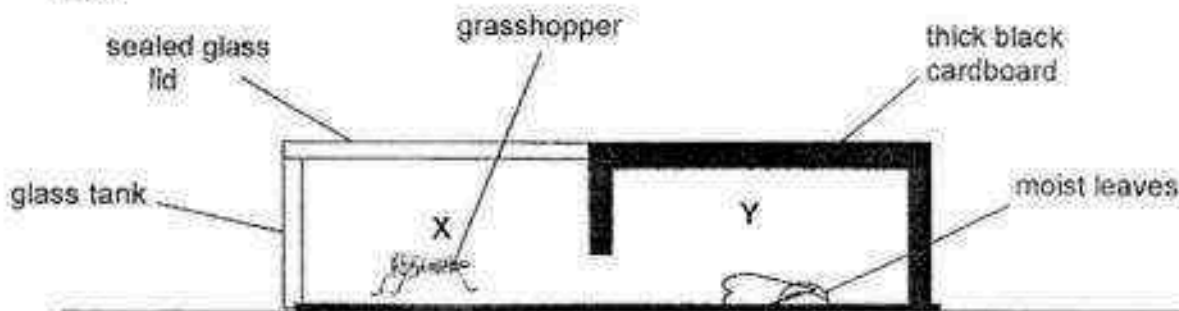
- (a) The toy car 'is heavier than' / 'has the same mass as' / 'is lighter than' the ball. [1]



- (b) The ball 'is heavier than' / 'has the same mass as' / 'is lighter than' the teddy bear. [1]

34. Mindy prepared a set-up for an experiment. She divided a sealed glass tank into two parts, X and Y, as shown in the diagram below. Part Y of the glass tank was covered with a piece of thick black cardboard. She placed a grasshopper in part X of the glass tank and left enough moist leaves for the grasshopper to eat for a week.

Then she placed the glass tank near an open window on a bright and sunny day.



5 minutes later, Mindy observed that the grasshopper moved towards Part Y of the glass tank.

- (a) Which characteristic of living things was shown in the observation made by Mindy? [1]

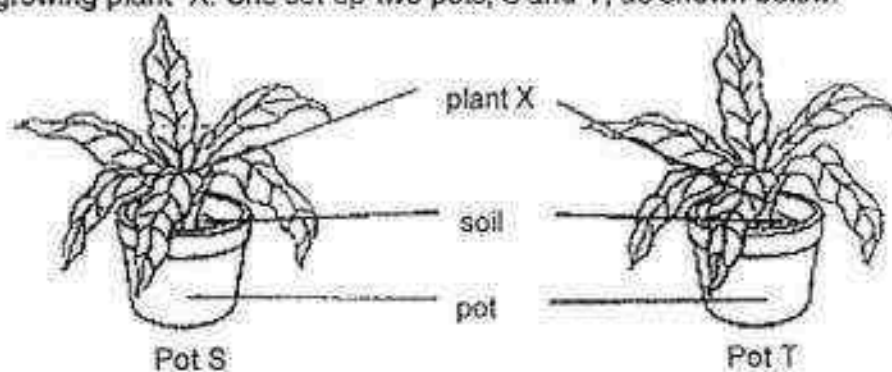
- (b) A week later, Mindy found that the grasshopper had died. Give 2 possible reasons why the grasshopper died. [2]

(i) _____

(ii) _____

- (c) State another characteristic of living things that is not shown in the experiment above. [1]

35. Su Ling wanted to find out which type of soil was more suitable for growing plant X. She set up two pots, S and T, as shown below.



For Su Ling's experiment, which variable(s) should she keep the same and which variable(s) should she change?

- (a) Put a tick (✓) in the correct boxes below.

[2]

Variable	Keep the same	Change
i) Size of the plants		
ii) Type of soil in each pot		
iii) Amount of water given to each plant		
iv) Amount of light given to each plant		

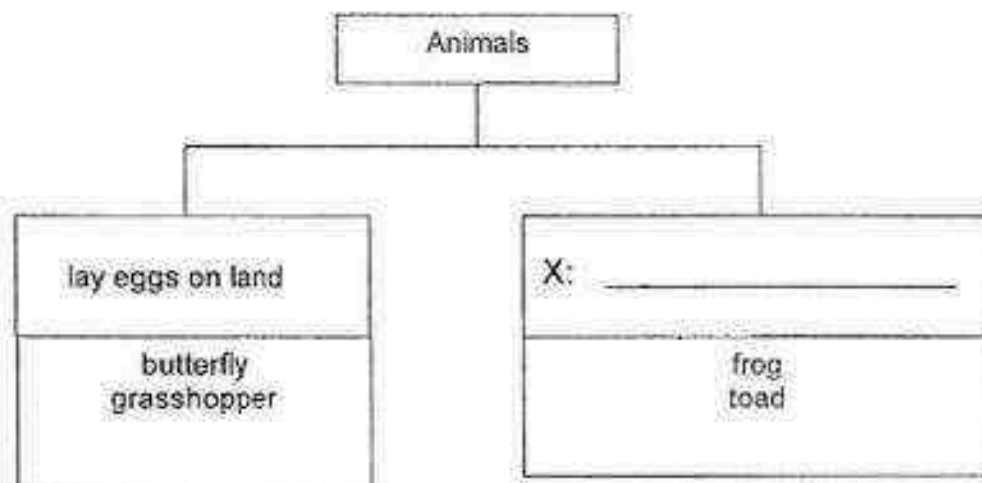
- (b) State one characteristic of plants that is different from animals.

[1]

- (c) What observation would she have to make to conclude that the soil in Pot S is more suitable for the growth of plant X?

[1]

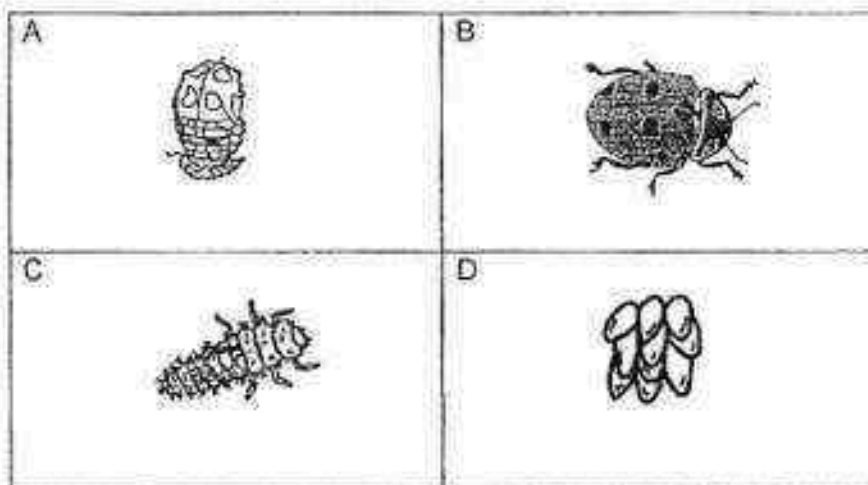
36. Study the classification chart below. The following animals are classified according to the way they reproduce.



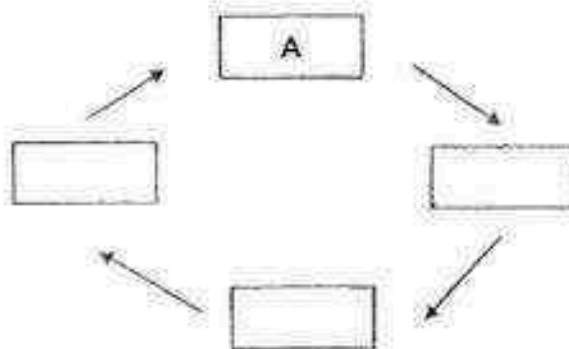
- (a) In the diagram above, write a suitable heading in the box marked X. [1]
- (b) State the number of stages in the life cycle of each animal below. [1]
- butterfly: _____ stages
- grasshopper: _____ stages
- (c) In the box below, draw and label the life cycle of the cockroach. [1]
(do not need to draw the animal)

- (d) State one other animal group not mentioned above that reproduces only by laying eggs. Give an example of an animal in the group. [2]
- (i) Group: _____
- (ii) Example: _____

37. The pictures below show the stages in the life cycle of a ladybird. The pictures have not been arranged in order.



- (a) Arrange the stages of the life cycle of a ladybird in the correct order, by writing A, B, C and D, in the boxes provided. The letter is provided for you. [1]

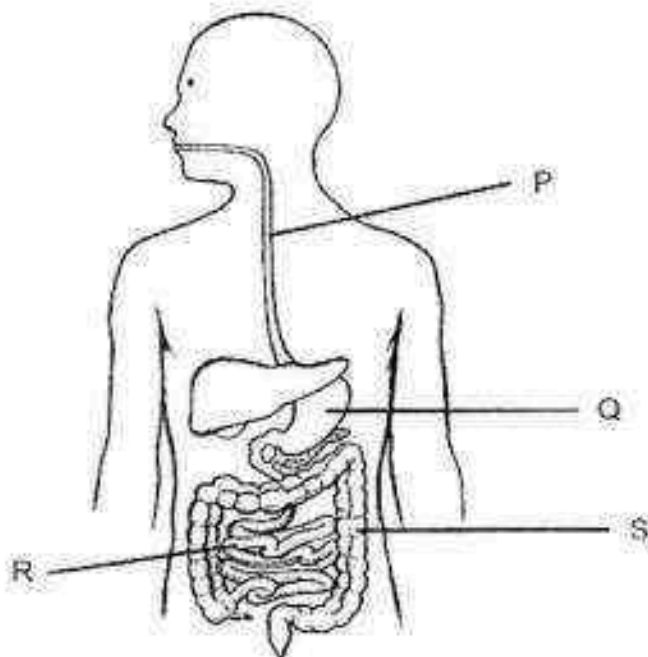


- (b) (i) At which stage, A, B, C or D will the ladybird moult? [1]

- (ii) Give a reason why the ladybird needs to moult. [2]

- (c) Name an organism that has the same stages as the life cycle of the ladybird. [1]

38. The diagram below represents the human digestive system.



- (a) With reference to the diagram, name the parts of the digestive system represented by letters P and S. [1]

Part	Part of Digestive System
P	
S	

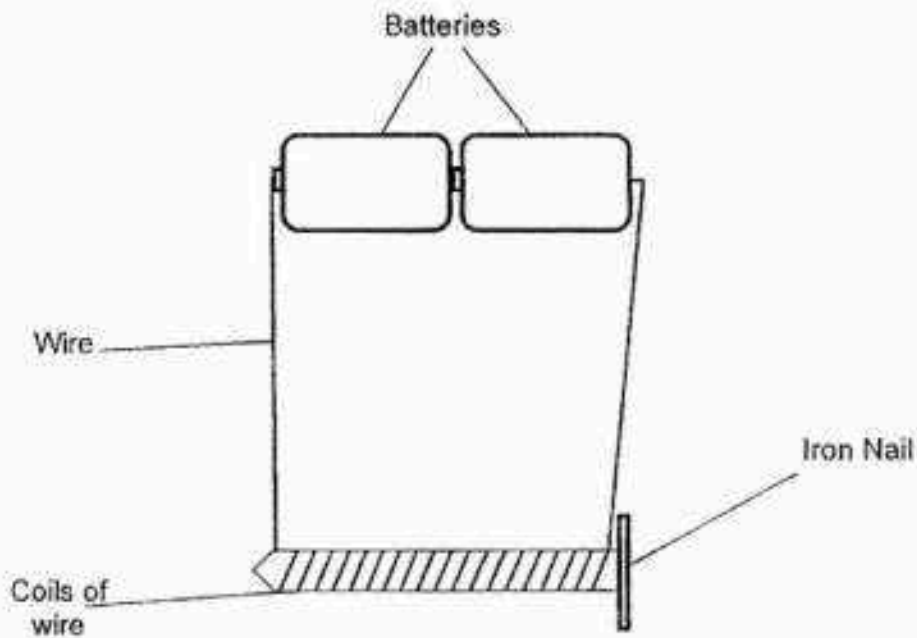
- (b) In which part(s) P, Q, R and S, is/are digestive juices added? [1]

- (c) Write down two things that take place in part R. [2]

(i) _____

(ii) _____

39. Tim tried to set up an electromagnet circuit as shown in the diagram below. When he lowered the iron nail into a tray of steel pins, he observed that it attracted some of the steel pins.



- (a) Give a reason why the steel pins were attracted to the iron nail. [1]

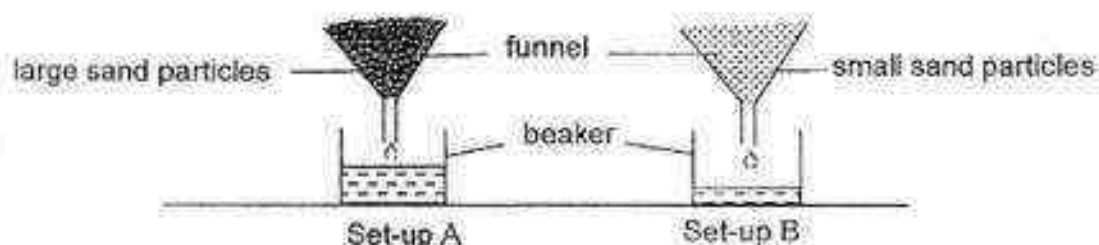
- (b) Thomas wanted to increase the number of steel pins attracted to the iron nail.
Suggest two ways he could do this. [2]

1st way: _____

2nd way: _____

- (c) Give an example of an appliance where Tim can find such an electromagnet. [1]

40. Azman conducted an experiment to investigate the flow of water through two different types of sand using set-ups A and B. He poured 100 cm^3 of water into the funnel of each set-up as shown.



After 10 minutes, he observed and recorded the results as shown in the table below.

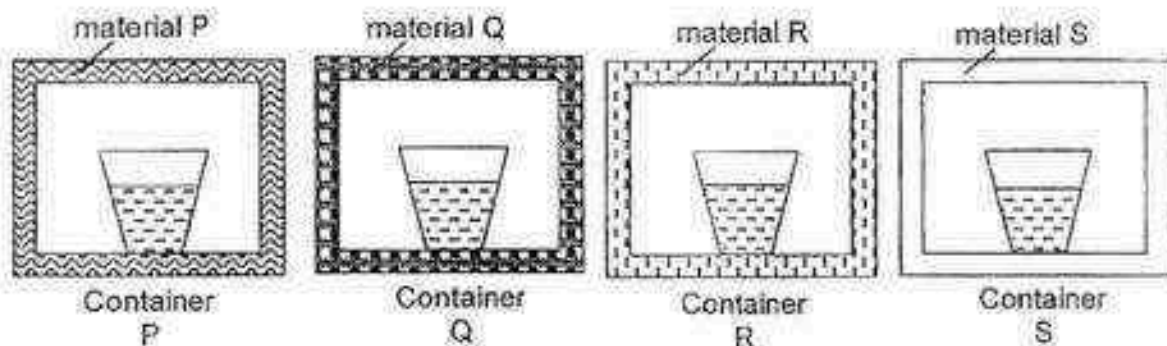
	Set-up A (cm^3)	Set-up B (cm^3)
Amount of water poured at the start	100	100
Amount of water collected in the beaker after 10 mins	67	24

- (a) Which type of sand particle allowed water to pass through faster? [1]

- (b) Based on the table, explain the observation that Azman had made. [2]

- (c) State the property of water that is demonstrated in the experiment. [1]

41. Mrs Tan conducted an experiment using containers of 4 different materials, P, Q, R and S, as shown below.



She had four identical cups of water with a temperature of 5°C in each of the containers in the living room. After 10 minutes, she measured the temperature of the water and recorded the temperature in the table shown below.

Container	Temperature of water ($^{\circ}\text{C}$)	
	At the beginning of experiment	At the end of experiment
P	5	19
Q	5	14
R	5	8
S	5	25

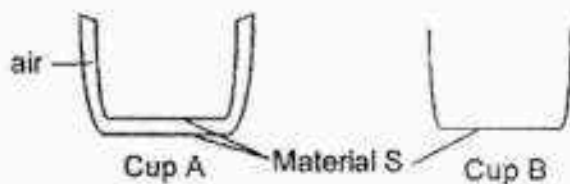
- (a) Other than the temperature of water, name 2 other variables that Mrs Tan must keep constant in order to conduct a fair test. [1]

(i) _____

(ii) _____

- (b) Mrs Tan wants to use a container to place a chocolate bar to ensure it melts the slowest. Which container, P, Q, R or S, should she use? Explain your choice. [2]

- (c) Mrs Tan used Material S to make a cup. She poured the same amount of hot tea into a single-layer cup and a double-layer cup as shown below. The double layer cup has air trapped in between the layers.



Explain why the double-layer cup A felt cooler than the single-layer cup B when she holds the cup. [1]

SCHOOL : NANYANG PRIMARY SCHOOL
LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : SA2

SECTION A


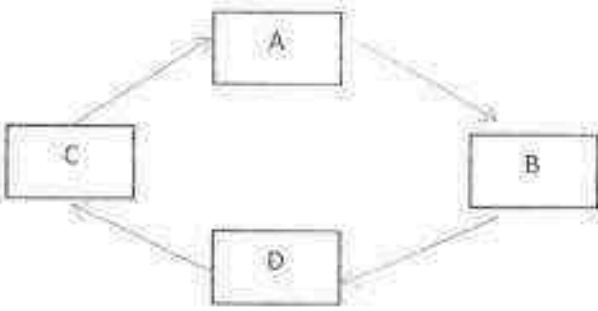
Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	3	2	4	3	2	4	4	3	2

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	2	1	2	3	2	4	3	2	1

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
2	3	2	3	2	3	4	2

SECTION B

Q29)	Roots → It obtains water for the plant Leaf → It makes food for the plant
Q30)	(a) Magnet (b) Magnetic
Q31)	Sun, lamp

Q32)	<p>(a) slower</p> <p>(b) better</p>
Q33)	<p>(a) has the same mass as</p> <p>(b) is lighter than</p>
Q34)	<p>(a) Living things respond to changes around them.</p> <p>(b) (i) There was no food (ii) The grasshopper used up the air in the tank.</p> <p>(c) Living things grow.</p>
Q35)	<p>(a) (i) keep the same (ii) change (iii) keep the same (iv) keep the same</p> <p>(b) Plants make their own food while animals do not make their own food.</p> <p>(c) The plant in Pot S grew taller than the plant in Pot T.</p>
Q36)	<p>(a) X : lay eggs in water</p> <p>(b) Butterfly : 4 stages Grasshopper : 3 stages</p> <p>(c)</p> <p>(d)</p>  <pre> graph TD Egg --> nymph nymph --> adult adult --> Egg </pre> <p>(e) (i) Group : birds (ii) example : penguins</p>
Q37)	<p>(a)</p>  <pre> graph TD A --> B B --> D D --> C C --> A </pre>

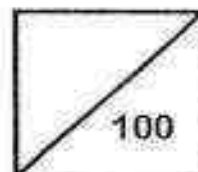
	<p>(b) (i) C (ii) It grows but the outer covering does not grow.</p> <p>(c) butterfly</p>
Q38)	<p>(a) P : gullet S : large intestine</p> <p>(b) Q and R</p> <p>(c) (i) Digested food gets absorbed into the blood stream. (ii) Digestion ends there.</p>
Q39)	<p>(a) The iron nail became an electromagnet.</p> <p>(b) 1st way : Add more batteries to it. 2nd way : Add more coils of wire around the iron nail.</p> <p>(c) Oven</p>
Q40)	<p>(a) Large sand particles</p> <p>(b) Large sand particles has more air spaces between them to allow more water to flow through them faster resulting in more water collected in set up A.</p> <p>(c) Water has no definite shape.</p>
Q41)	<p>(a) (i) The thickness of the materials. (ii) Amount of water in the cups.</p> <p>(b) Container R. The temperature of the water in Container R was the lowest after 10 minutes so Container R is the poorest conductor of heat.</p> <p>(c) Air trapped in cup A is a poor conductor of heat so heat from the hot tea will travel to Mrs Tan's hand slower and she will feel that cup is cooler than Cup B.</p>



Rosyth School
Second Semestral Examination for 2016
SCIENCE
Primary 4

Name: _____

Total
Marks:



Class: Pr 4 _____ Register No. _____ Duration: 1 h 45 min

Date: 25th October 2016 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 28 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.

* This booklet consists of 16 pages.

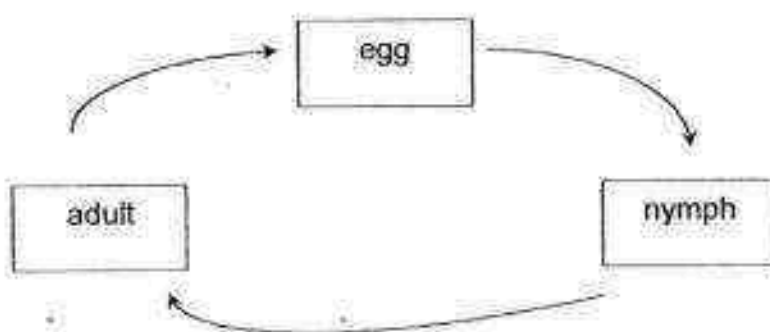
Booklet A (56 marks)

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 statements is true for ALL insects?

- | | |
|-------------------------|------------------------|
| (1) They have six legs. | (2) They have tails. |
| (3) They have wings. | (4) They live on land. |

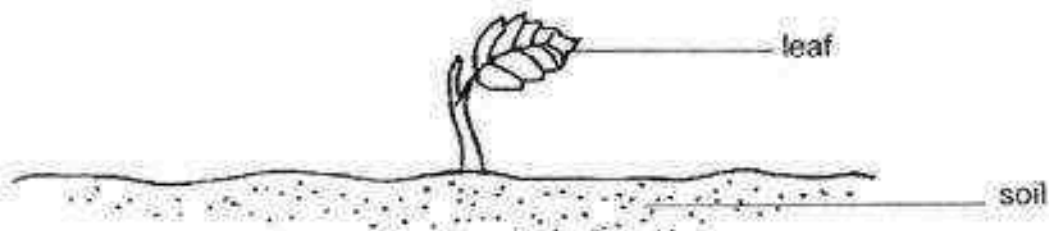
2. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle as shown above?

- | | |
|-------------|---------------|
| (1) beetle | (2) butterfly |
| (3) chicken | (4) cockroach |

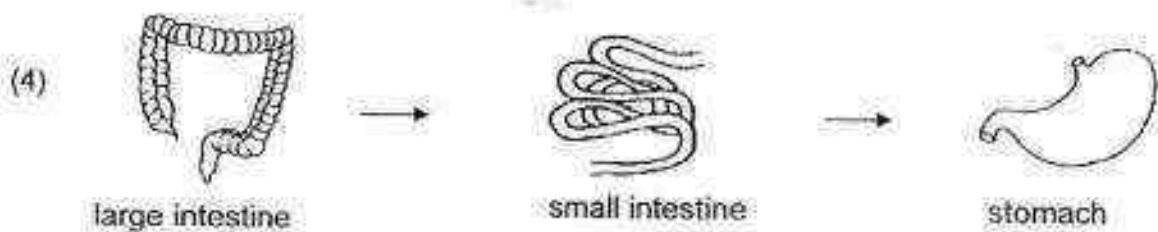
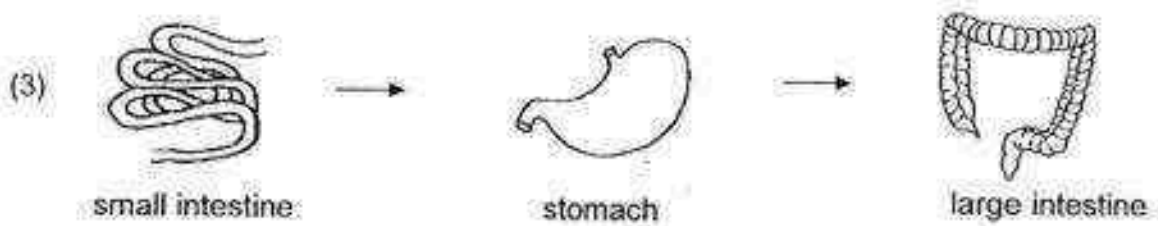
3. The diagram below shows a young plant.



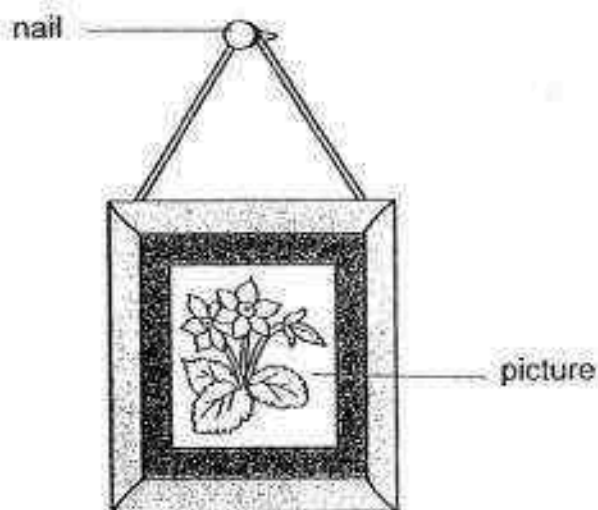
The leaf helps the plant to _____.

- | | |
|------------------|----------------------|
| (1) make food | (2) absorb water |
| (3) grow upright | (4) absorb nutrients |

4. Which one of the following shows the correct order when food moves through some parts of the digestive system?



5. The diagram shows a painting hanging on a wall.



Iron is used to make nails because iron is _____

- | | |
|------------|--------------|
| (1) shiny | (3) heavy |
| (2) strong | (4) flexible |

6. Which one of the following properties is true for both air and a pen?

- | | |
|------------------------------|-----------------------------|
| (1) They can be seen. | (2) They have fixed shapes. |
| (3) They have fixed volumes. | (4) They take up space. |

7. In which one of the following will the two magnets push each other away?

(1)

N	S
---	---

N	S
---	---

(2)

N	S
---	---

N	S
---	---

(3)

S
N

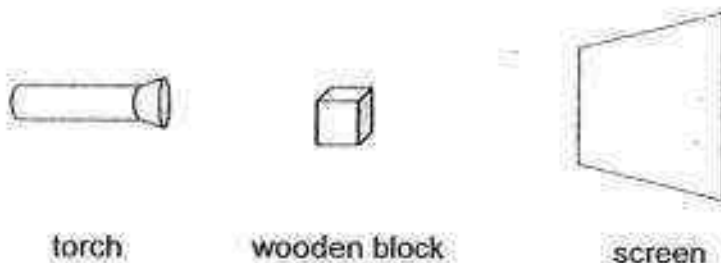
N	S
---	---

(4)

N	S
---	---

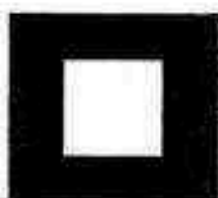
N
S

8. The set-up below shows light shining on a wooden block.



Which one of the following would likely be seen on the screen?

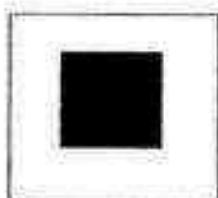
(1)



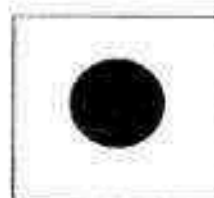
(2)



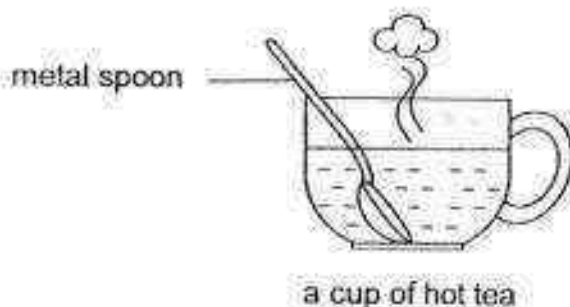
(3)



(4)



9. 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?

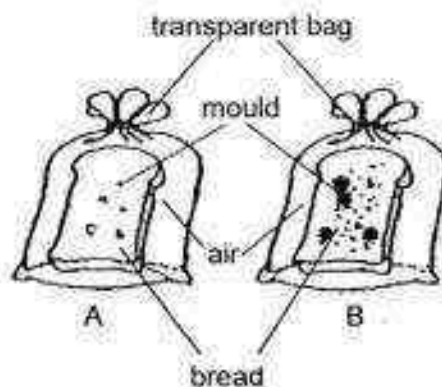
- (1) The cup loses heat to the hot tea.
- (2) The spoon loses heat to the hot tea.
- (3) The hot tea gains heat from the spoon.
- (4) The spoon gains heat from the hot tea.

10. Hashim heated some food in the frying pan shown below.



He is able to hold the frying pan using the plastic handle, X. This is because plastic is a _____.

- (1) light material
 - (2) flexible material
 - (3) poor conductor of heat
 - (4) good conductor of heat
11. Judy set up the experiment below. She put two identical pieces of bread, A and B, into a transparent bag each, and placed them in a dark cupboard.



She added a few drops of water to B but not A. Few days later, she observed that B had more mould than A. Based on the experiment, which of the following is correct?

- (1) Mould grows in dark places.
- (2) Mould needs sunlight to grow.
- (3) Mould needs oxygen to survive
- (4) Mould grows faster on bread with more moisture.

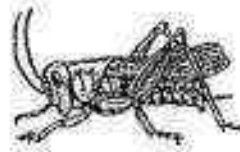
12. Emily had four animals as shown below.



dog



frog

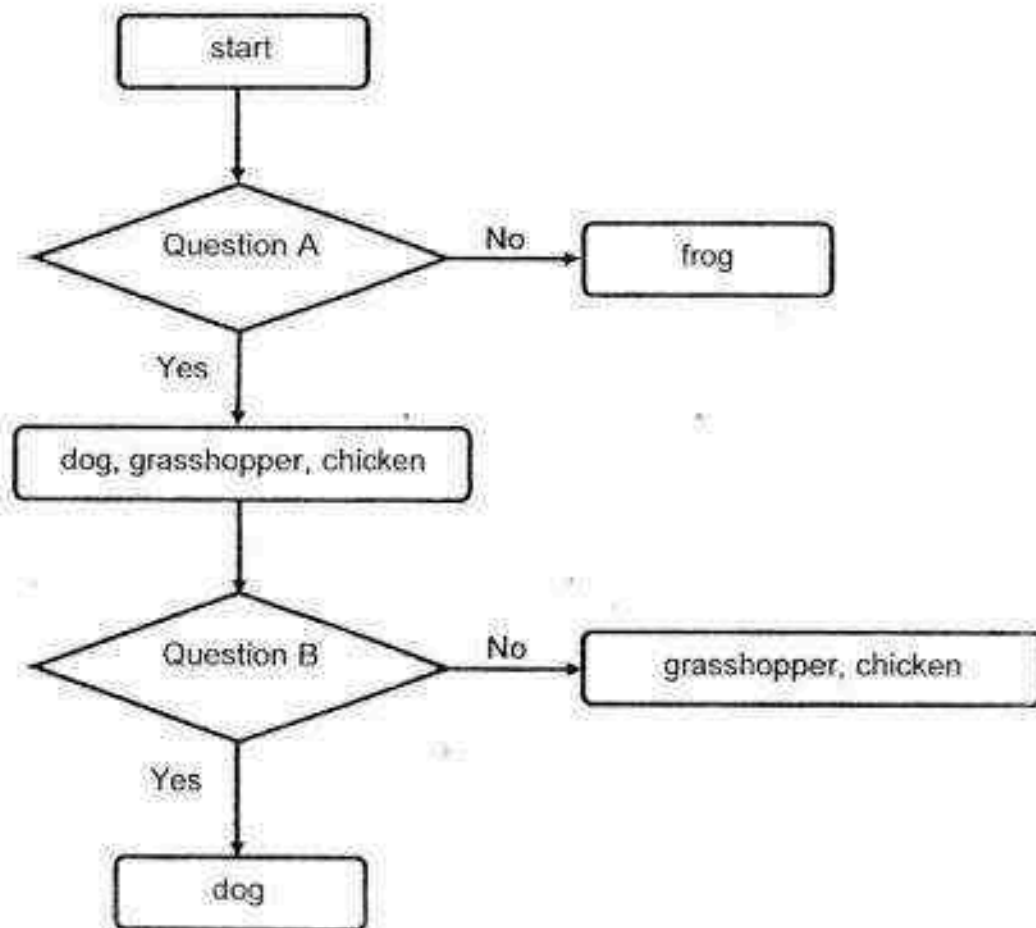


grasshopper



chicken

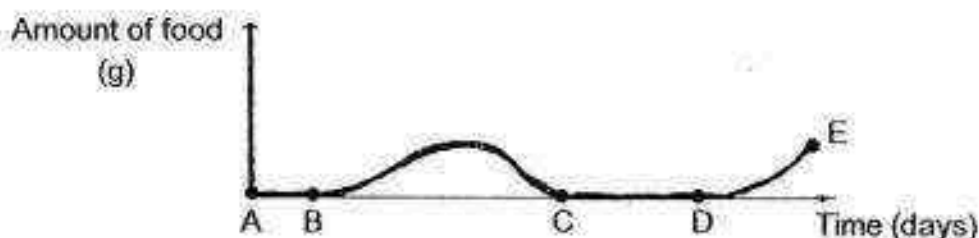
She classified them using the chart below.



What were the two questions, A and B?

	Question A	Question B
(1)	Does it live on land only?	Does it lay eggs?
(2)	Does it lay eggs?	Does it live on land only?
(3)	Does it live on land only?	Does it give birth to young alive?
(4)	Does it lay eggs?	Does it give birth to young alive?

13. The graph shows the amount of food that is eaten at different stages of the life cycle of a mealworm beetle.



If E is the adult stage of the mealworm beetle, which of the statement(s) is/are true about the graph?

P: The length of the egg stage is from A to B.

Q: The least amount of food was eaten from B to C.

R: The mealworm beetle was going through its pupa stage from C to D.

(1) P only

(2) P and R only

(3) Q and R only

(4) P, Q and R

14. Chloe set up an experiment based on the conditions shown in the table below. She wanted to find out how the growth of rose plants was affected by different types of soil. She observed and recorded the heights of her plants for 10 days.

Conditions	Pot X	Pot Y	Pot Z
Types of soil	clayey soil	garden soil	sandy soil
Water given	once daily	once daily	twice daily
Type of plant	rose	rose	rose
Presence of light	Yes	No	Yes

Chloe's friend said that her experimental set-ups were not fair. What must she do to ensure that her set-up was a fair one?

A: Water pot Z once daily.

B: Use the same type of soil.

C: Use different types of plants.

D: Place pot Y in the presence of light.

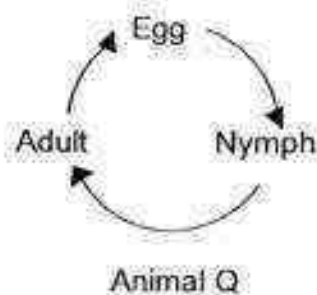
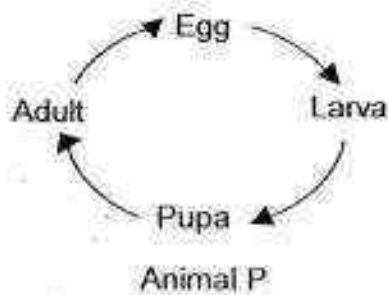
(1) A and B only

(2) C and D only

(3) A and D only

(4) A, B and C only

15. Study the life cycle of animals P and Q below.



Based on the life cycles of animals P and Q, which of the following statement(s) is/are true?

- A: Animal P lays eggs in water but animal Q lays eggs on land.
- B: Animal P has four stages in its life cycle but animal Q has three stages.
- C: Animal P takes a longer time than animal Q to develop from an egg to an adult.
- D: The young of animal P does not look like the adult but the young of animal Q does.

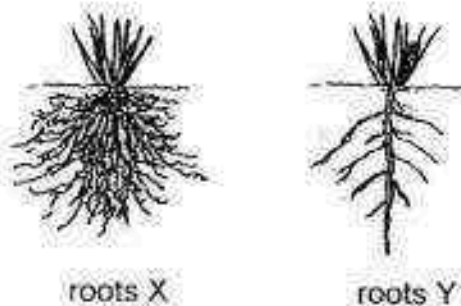
(1) B only

(2) A and C only

(3) B and D only

(4) A, C and D only

16. The diagram below shows the roots of two plants.



How are the roots X different from roots Y?

- A: Roots X are able to make more food than roots Y
- B: Roots X are able to trap more sunlight than roots Y
- C: Roots X are able to absorb more water than roots Y
- D: Roots X are able to hold the plant more firmly to the ground than roots Y

(1) A and B

(2) A and D

(3) B and C

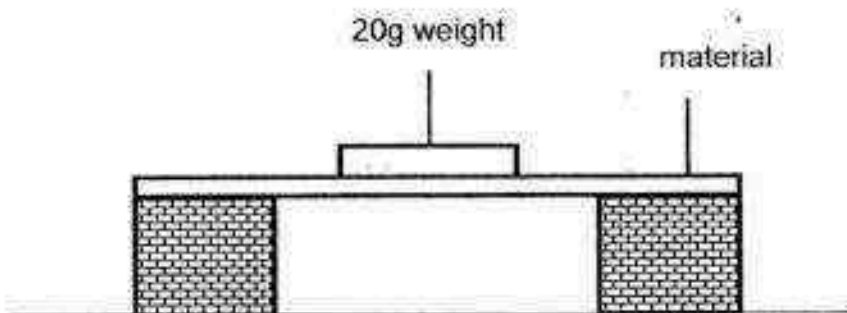
(4) C and D

17. Study the properties of four materials, M, N, O and P, given in the table below.

Material	Properties		
	Transparent	Good conductor of Heat	Magnetic
M	No	No	No
N	No	Yes	Yes
O	No	Yes	No
P	Yes	No	No

Which one of the Materials M, N, O and P is most likely to be iron?

- (1) Material M
(2) Material N
(3) Material O
(4) Material P
18. Huili conducted an experiment to study the strength of four different materials, A, B, C and D. She placed 20g weights on each material and recorded the number of weights it can hold before the material broke.



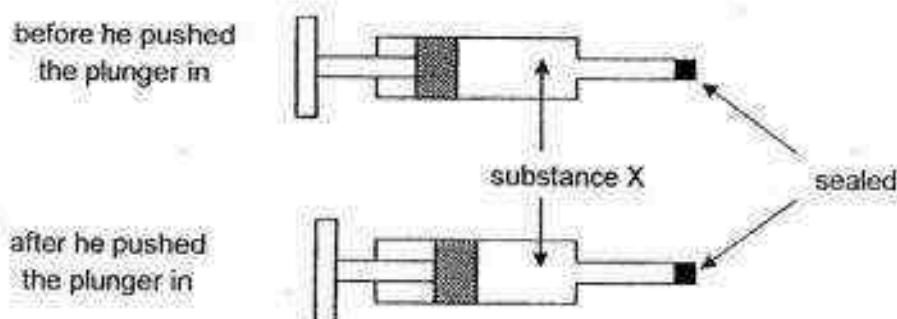
The table below shows her results.

Material	Number of 20g weights it can hold before it broke
A	8
B	13
C	2
D	10

Which one of the following shows the correct order of the materials, starting from the weakest to the strongest?

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

19. Ken conducted the experiment below. He filled the syringe with 500cm^3 of substance X. After that he pushed the plunger in and observed the following.



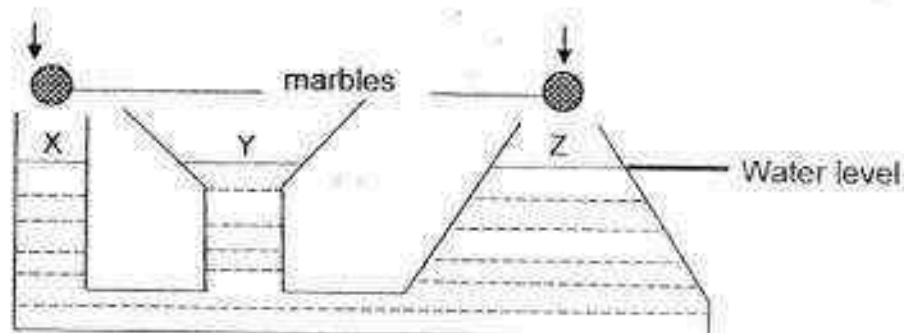
Based on the experiment, which of the following(s) is/are true about substance X?

- A: It has mass.
- B: It has no definite shape.
- C: It has no definite volume.

- (1) C only
- (3) B and C only

- (2) A and B only
- (4) A, B and C

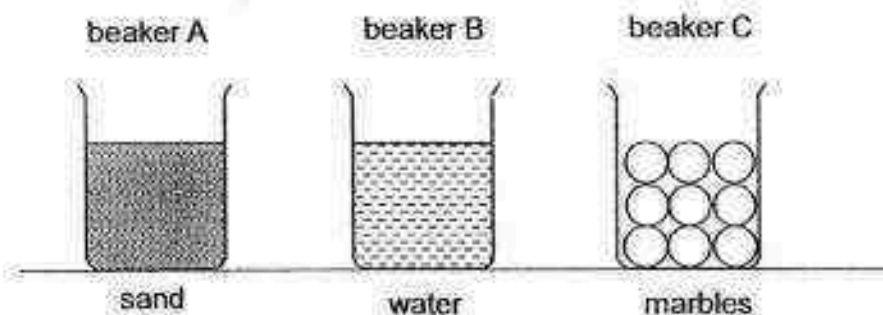
20. A container with 3 openings labelled X, Y and Z is shown in the diagram below.



2 marbles are dropped slowly into the container from openings X and Z as shown. What will happen to the water level at Y?

- (1) Decreases
- (2) Increases
- (3) Remains the same
- (4) Decreases then Increases

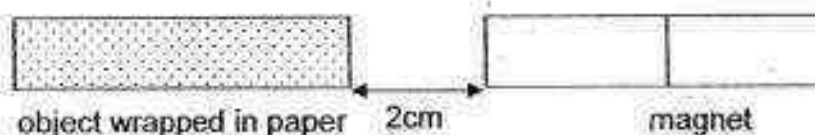
21. The diagram below shows three identical 500ml beakers, A, B and C containing different items.



A jug of 400ml of water is poured into each beaker at the same time. Which one of the following shows the correct order in which the water in the beaker will overflow from the first to the last?

	First	→	Last
(1)	water	marbles	sand
(2)	water	sand	marbles
(3)	marbles	sand	water
(4)	sand	water	Marbles

22. Jerry was given three objects, A, B and C, which were wrapped in paper. The objects were of similar size. He held a magnet about 2cm away from each object as shown below.



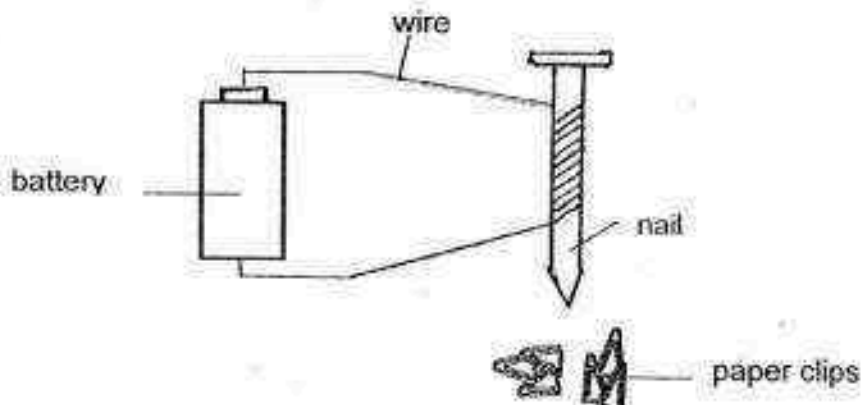
He recorded his observations in the table below.

Object	Observation
A	It remained still.
B	It moved away from the magnet.
C	It moved towards the magnet.

Which one of the objects, A, B or C, is definitely a magnet?

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

23. Ricky set up an experiment as shown below.



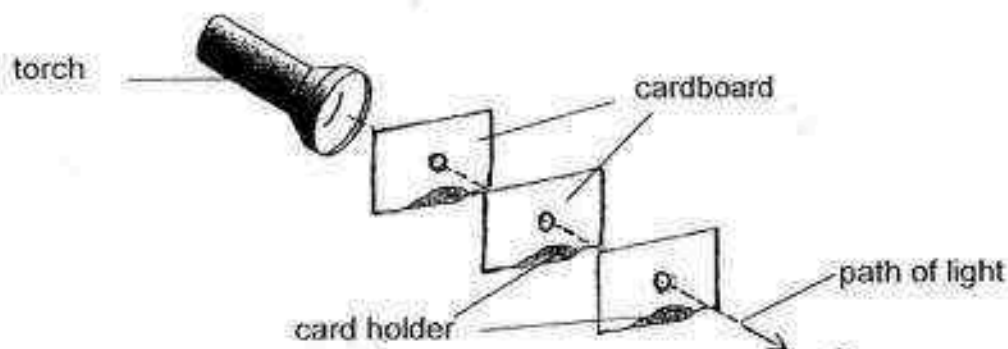
He repeated the experiment by increasing the number of coils around the nail and the result of the experiment was given in the table below.

Number of coils around the nail	Number of paper clips attracted
20	2
25	4
30	7
35	8

What is the possible relationship that can be concluded from the above experiment?

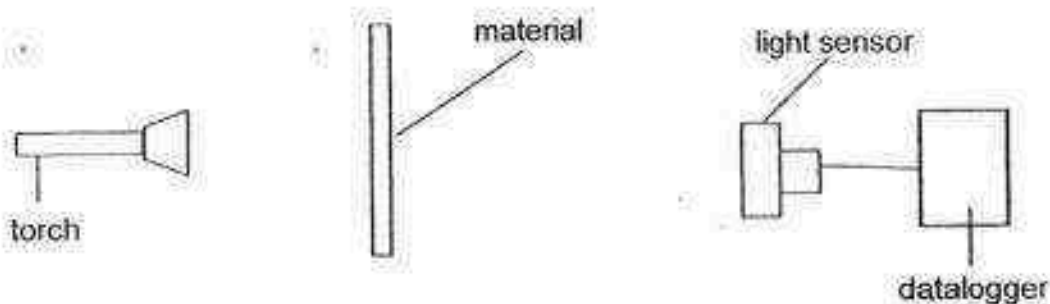
- (1) As the number of coils around the nail increases, the number of paper clips attracted decreases.
- (2) As the number of coils around the nail increases, the number of paper clips attracted also increases.
- (3) As the number of paper clips attracted increases, the number of coils around the nail also increases.
- (4) As the number of paper clips attracted increases, the number of coils around the nail decreases.

24. Vivian set up an experiment as shown below.



What can she conclude from the experiment?

- (1) Light can be reflected.
 - (2) Light can be absorbed.
 - (3) Light travels in straight lines.
 - (4) Light is blocked by opaque objects.
25. Linda set up and conducted an experiment as shown below.

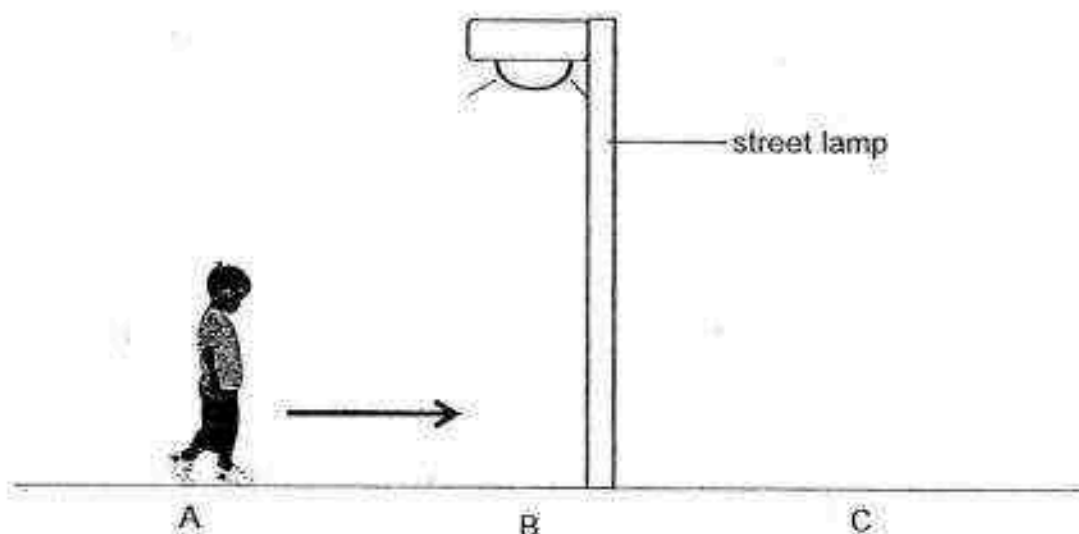


She wanted to find out the amount of light that can pass through the materials. First, she used material A. Then she replaced it with material B, followed by material C.

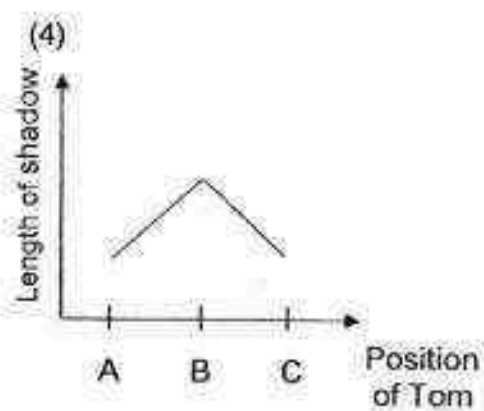
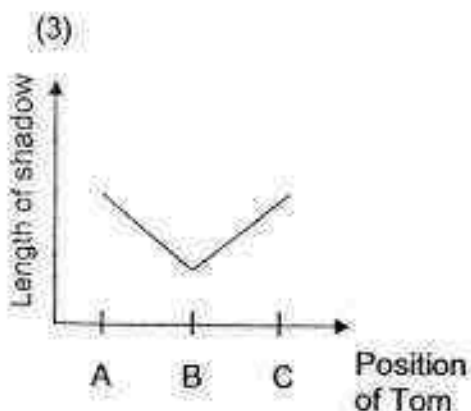
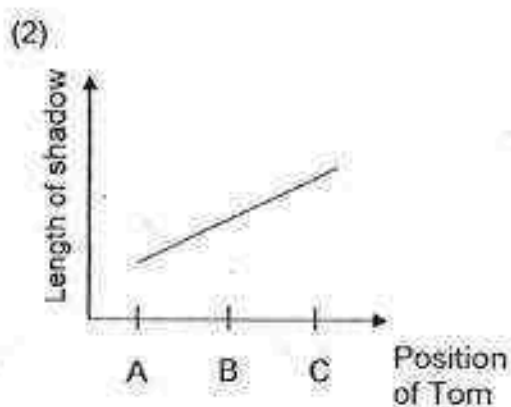
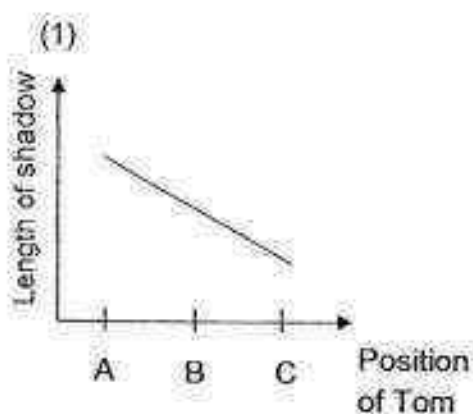
Which one of the following was the changed variable in her experiment?

- (1) Amount of light
- (2) Type of material
- (3) Thickness of material
- (4) Distance between material and the torch

26. One night, Tom noticed that the length of his shadow changed as he walked along the path in the direction of the arrow as shown in the diagram below.

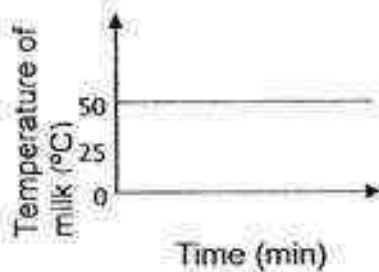


Which one of the following graphs shows the changes in the length of Tom's shadow as he moved from A to C?

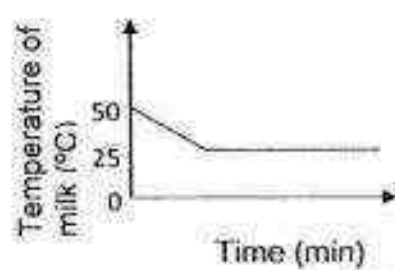


27. Mina placed some ice cubes into a cup of hot milk. Which of the following graphs shows the correct change in the temperature of the milk after some time?

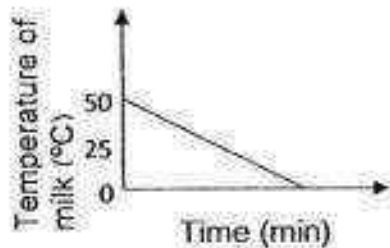
(1)



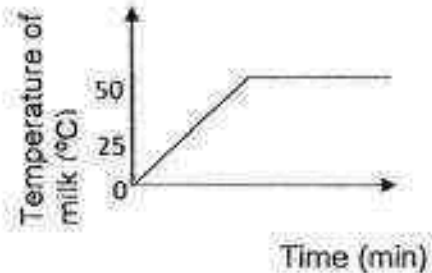
(2)



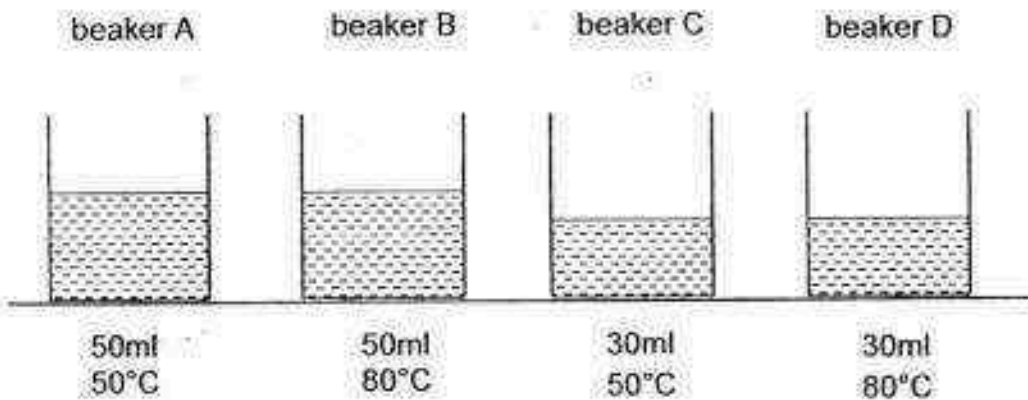
(3)



(4)



28. Study the 4 beakers of water as shown below.



Which one of the following statements is correct about the amount of heat in the beakers of water?

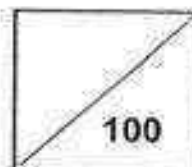
- (1) B has the most amount of heat.
- (2) D has the least amount of water.
- (3) A and C have the same amount of heat.
- (4) B and D have the same amount of heat.

END OF BOOKLET A



Rosyth School
Second Semestral Examination for 2016
SCIENCE
Primary 4

Total
Marks:



Name: _____

Class: Pr 4 _____ Register No. _____ Duration: 1 h 45 min

Date: 25th October 2016 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 29 to 44, give your answers in the spaces given in this Booklet B.

	Maximum	Marks Obtained
Booklet A	56 marks	
Booklet B	44 marks	
Total	100 marks	

* This booklet consists of 15 pages.

Booklet B (44 marks)

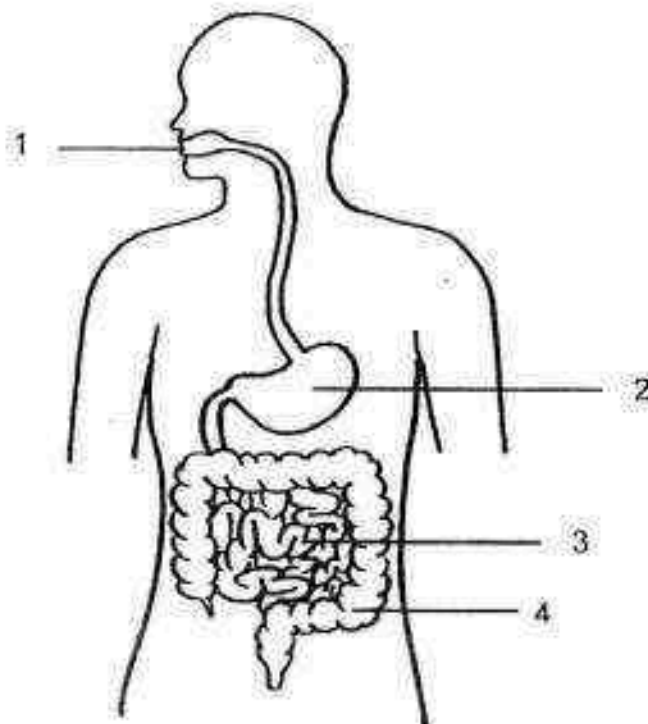
For questions 29 to 44, write your answers in this booklet.

29. Fill in the correct parts of a plant to match its functions.

[2]

Function of plant part	Plant part
It holds the plant upright.	
It obtains water for the plant.	

30. The diagram below shows the human digestive system.



Write the number 1, 2, 3 or 4 in the space below. Identify the part where

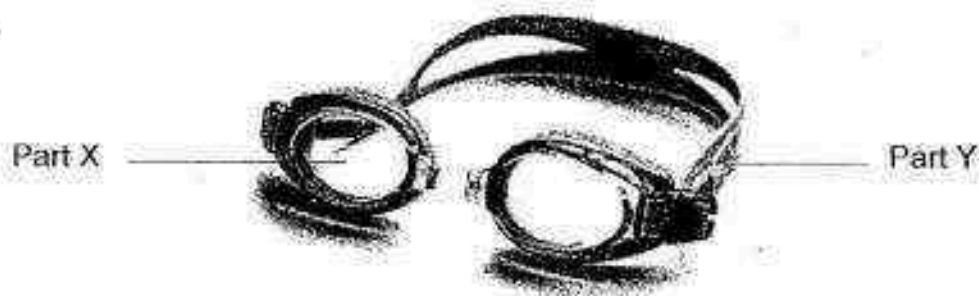
(a) digestion first takes place _____

[1]

(b) no digestive juices are produced _____

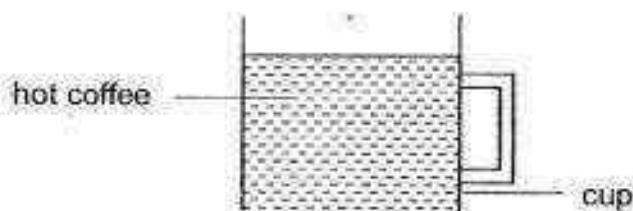
[1]

31. The diagram below shows a pair of goggles.



- (a) Part X is made of clear plastic because it allows _____ to pass through to help the swimmer see under water. [1]
- (b) Part Y is made of _____ because Y has to be flexible. [1]

32. The diagram below shows a cup of hot coffee.



Complete the sentences to state if the parts are solid, liquid or gas.

- (a) The hot coffee is a _____ [1]
- (b) The cup is a _____ [1]

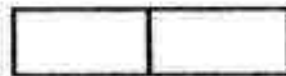
33. Choose the correct word from the box to answer the questions below.

magnetic	push	hard	pull
----------	------	------	------

Susan places a magnet near an iron nail. The iron nail moves towards the magnet.



iron nail



magnet

- (a) The magnet exerts a _____ on the iron nail. [1]
- (b) Susan's observation shows that iron is a _____ material. [1]

34. Read a part of the newspaper report below.

A big earthquake struck an island near Singapore, causing a giant tidal wave to sweep across the land. Thousands of people were seen running from the huge waves. Many did not survive.

- (a) Based on the report above, state two characteristics of living things observed. [2]
- (i) _____
- (ii) _____
- (b) What do living things need in order to survive? [1]

35. The diagrams below show an ant and a bee.



ant



bee

- (a) State one difference and one similarity between the 2 animals above. [2]
(Do not compare their size and colour.)

Difference:

Similarity:

- (b) Do you think a bird can be placed in the same group as the ant and bee? Explain why. [1]

36. Kelly set up an experiment to investigate the life cycle of butterfly W. She wanted to find out if the number of days taken for the egg to develop into an adult is affected by the amount of time exposed to light.

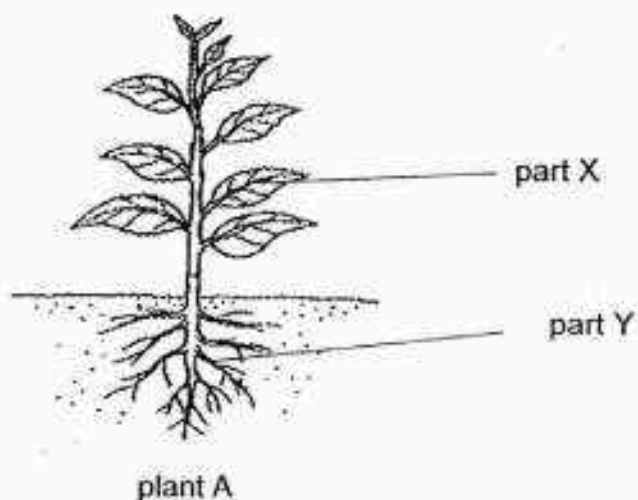
Set-up	A	B	C
Amount of time exposed to light	6	12	18
Number of days taken for the egg to develop to an adult	30	15	10

- (a) State the relationship between the amount of time exposed to light and the number of days taken for the egg to develop to an adult. [1]

- (b) Based on the results, what can be done to increase the number of adults of W? [1]

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

37. The diagram below shows plant A.



- (a) Name of part X. [1]

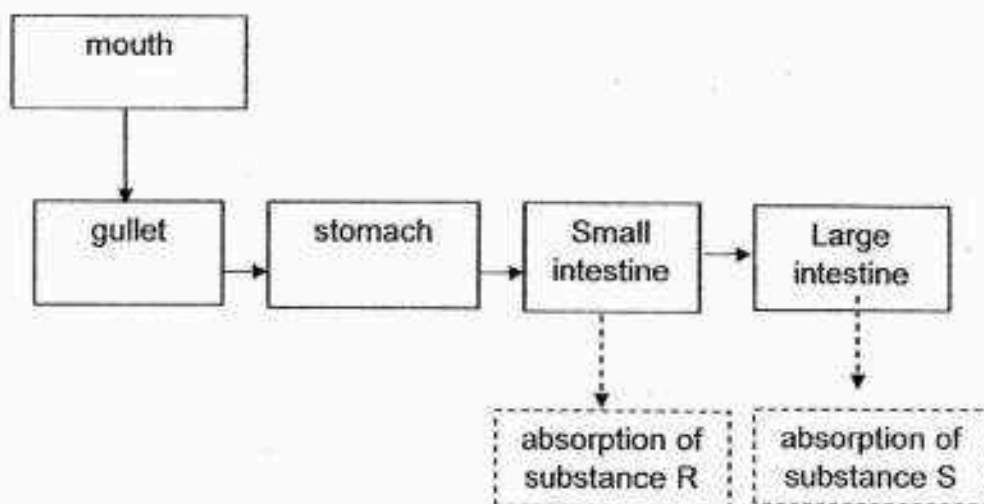
- (b) State the main function of part X. [1]

- (c) State two substances from the soil that is taken in by part Y of the plant. [2]

(i) _____

(ii) _____

38. The flow chart below shows the pathway of food in the human digestive system.



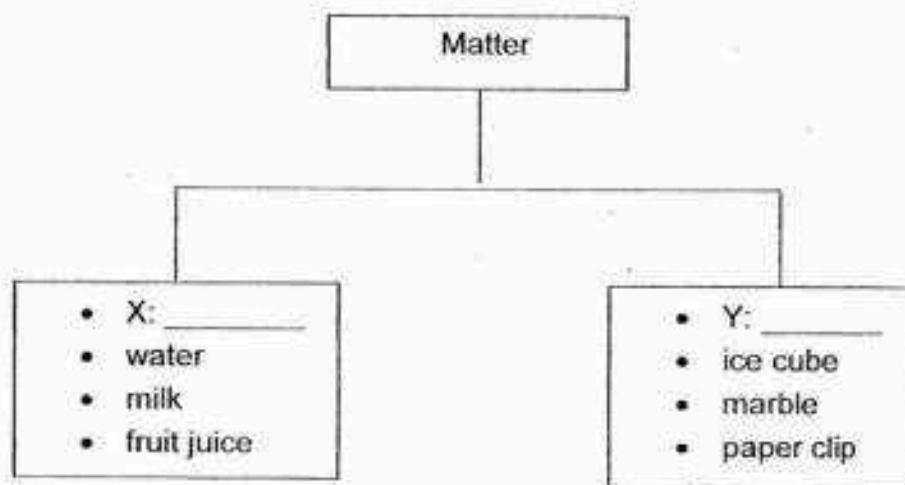
- (a) Identify substances R and S in the flowchart. [2]

R: _____

S: _____

- (b) If a person did not chew the food enough, how will it affect the time taken to complete digestion? [1]

39. Julia grouped some objects according to the classification table below.



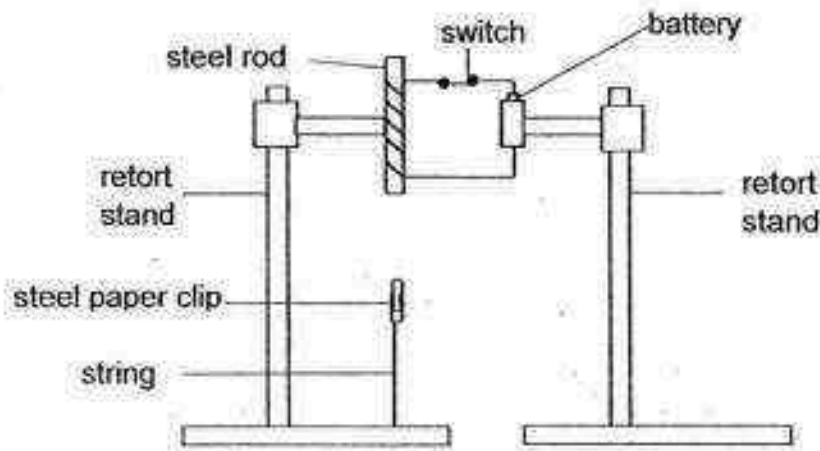
- (a) Suggest a suitable heading for X and Y based on the properties of the items in each box. [2]

X: _____

Y: _____

- (b) Julia wanted to place 'oxygen' in group X. Do you agree with her? Explain why. [1]

40. Rachel prepared the following set-up. She closed the switch and observed the steel paper clip 'floating' in the air.



- (a) Explain why the steel paper clip remained 'floating' in the air. [1]

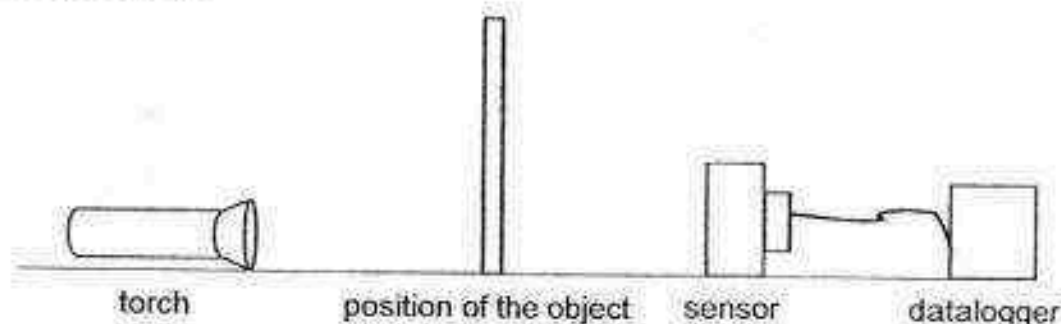
Rachel decided to use a heavier paper clip of the same material for the set up. However the paper clip could not 'float' in the air.

- (b) State two ways in which she can try to make the heavier paper clip 'float' in the air. [2]

- (i)

- (ii)

41. Gavin set up an experiment to find out the degree of transparency of 3 different types of objects (X, Y and Z). The diagram below shows the set-up he had prepared.



He switched on the torch and datalogger and placed the first object. He left the first object at the position for 10 seconds before changing it to second object and then the third object.

The table below shows the result from his datalogger.

Object	Amount of light detected by datalogger (Lux)
X	0
Y	3000
Z	1500

- (a) Based on the results above, write the objects (X, Y and Z) from one that allows most light to pass through to the one that does not allow light to pass through.

[1]

(allows most light to pass through)

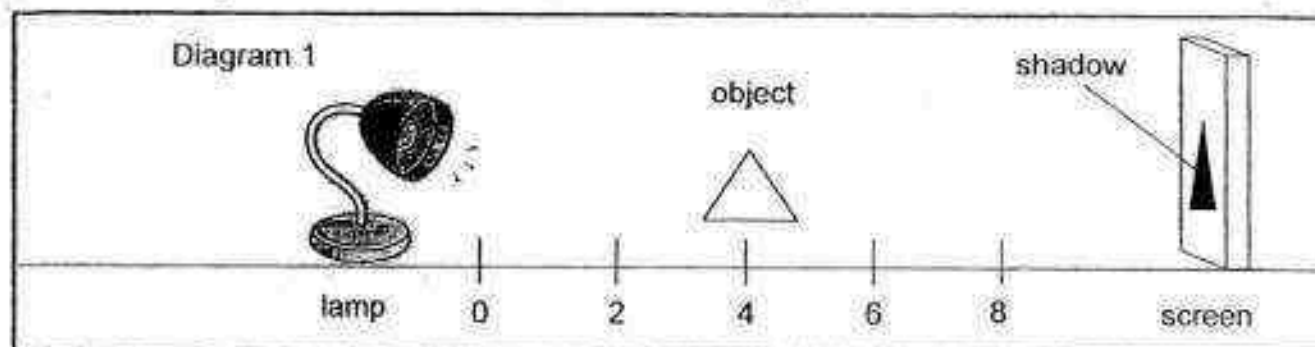
(does not allow light to pass through)

Question 41 continues on page 11

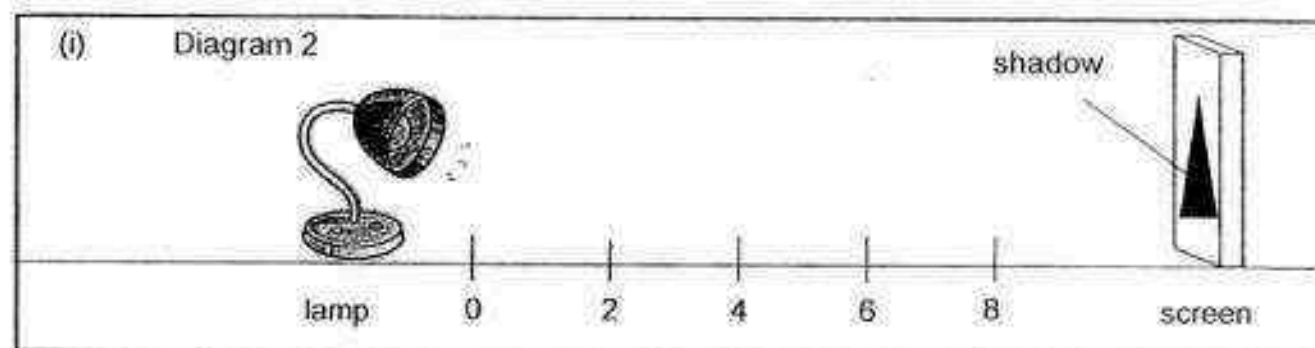
- (b) Identify and tick (✓) the correct variables shown in the table below. [2]

Type of variables	Changed variable	Variable kept the same
(i) Type of object		
(ii) Distance between the torch and the object.		
(iii) Amount of light		
(iv) Time taken to measure the amount of light passing through the object..		

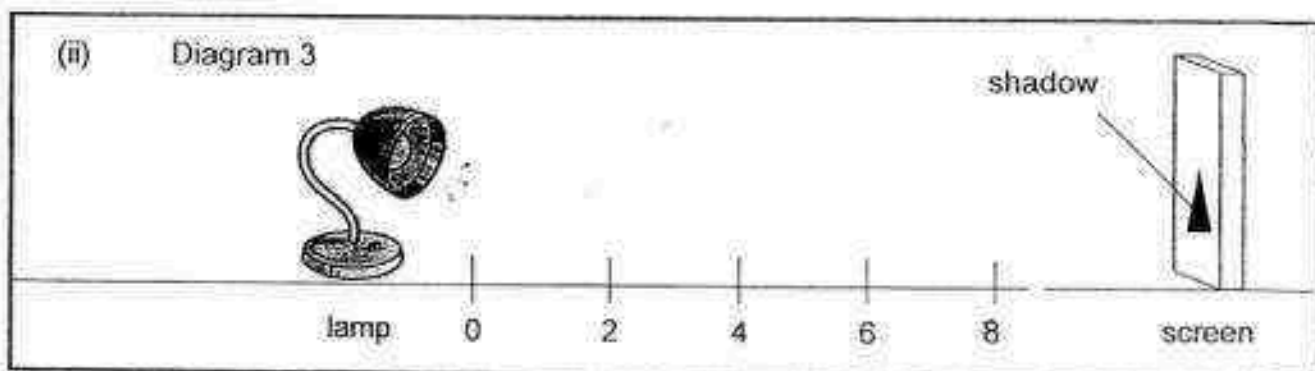
42. Diagram 1 below shows the shadow of an object on a screen.



- (a) A bigger shadow was observed after the object was moved. Draw a \triangle to show the new position of the object in Diagram 2 below. [1]



- A smaller shadow than diagram 1 was observed after the object was moved again. Draw a \triangle to show the new position of the object in Diagram 3 below. [1]

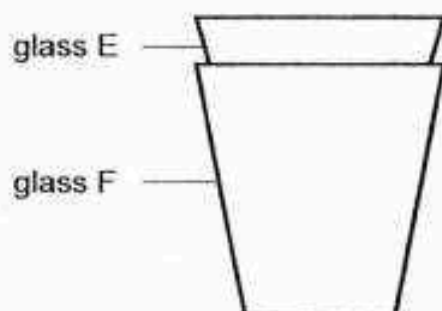


- (b) State 2 properties of light which causes shadow to be formed. [2]

Property 1: _____

Property 2: _____

43. The diagram below shows two glasses stuck together.



- (a) Given a basin of hot water as shown below, state a way the two glasses can be separated? [1]



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

44. Lily filled 4 glasses with equal amount of water at 70°C each. Each glass was wrapped using different materials. After 15 minutes, the temperature of water in each glass was measured. The table below shows the results.

Material wrapped around the glass	Temperature of water after 15 minutes ($^{\circ}\text{C}$)
A	25
B	40
C	35
D	60

- (a) Why do you think the temperature of water decreased in all the glasses? [1]

Lily wanted to choose a material to wrap a block of ice to prevent it from melting quickly.

- (b) Which Material A, B, C or D will Lily choose? Explain why? [2]

End of Paper

YEAR : 2016
 LEVEL : PRIMARY 4
 SCHOOL : ROSYTH
 SUBJECT : SCIENCE
 TERM : SA2

Booklet A

Q1	1	Q5	2	Q9	4	Q13	2	Q17	2	Q21	2	Q25	2
Q2	4	Q6	4	Q10	3	Q14	3	Q18	3	Q22	1	Q26	3
Q3	1	Q7	2	Q11	4	Q15	3	Q19	3	Q23	2	Q27	2
Q4	2	Q8	3	Q12	3	Q16	4	Q20	2	Q24	3	Q28	1

Booklet B

Q29

Function of plant part	Plant part
It holds the plant upright.	Stem
It obtains water for the plant	Root

Q30

- (a) digestion first takes place : 1
- (b) no digestion juices are produced : 4

Q31

- (a) Part X is made of clear plastic because it allows light to pass through to help the swimmer see under water.
- (b) Part Y is made of rubber because Y has to be flexible.

Q32

- (a) The hot coffee is a liquid.
- (b) The cup is a solid.

Q33

- (a) The magnet exerts a pull on the iron nail.
- (b) Susan's observation shows that iron is a magnetic material.

Q34

- (a) (i) Living things respond to changes.
- (ii) Living things die.
- (b) Living things need air, food and water.

- Q35 (a) Difference : The bee has a hairy body but the ant does not /
The bee has a pair of wings but the ant does not have a pair of wings.

Similarity : Both the bee and ant have 6 legs.

- (b) Yes. Because all of them lay eggs.
No. A bird has 2 legs but an ant has 6 legs.

- Q36 (a) The more time the egg is exposed to light, the shorter time taken to develop to an adult.
- (b) Increase the time exposed to light.
- (c) The egg will develop into an adult quicker so more reproduction will happen in a short span of time.

- Q37 (a) Leaves
- (b) It produces food for the plant.
- (c) (i) Water
(ii) Mineral salts

- Q38 (a) R : Digested food
S : Water
- (b) It will take a longer time to complete digestion.

- Q39 (a) X : Has no definite shape.
Y : Has definite shape.
- (b) Yes. They have both indefinite shape.

- Q40 (a) The steel paper clip is attracted to the electromagnet.
- (b) (i) Add more coils around the steel rod.
(ii) Add more batteries.

Q41

(a)



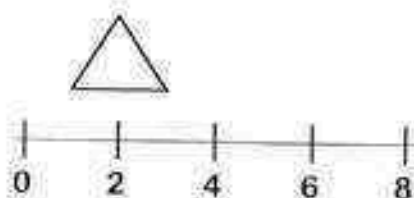
(b)

Type of variables	Changed variable	Variable kept the same
(i) Type of object	✓	
(ii) Distance between the torch and the object.		✓
(iii) Amount of light		✓
(iv) Time taken to measure the amount of light passing through the object.		✓

Q42

(a)

(i)



(ii)



(b) Property 1 : Light travels in straight lines.

Property 2 : Shadows are formed when light is completely blocked by an opaque object.

Q43

(a)

Put glass F in the basin of hot water.

(b)

Glass F will expand as it gains heat, hence separated.

Q44

(a)

All the glasses lost heat to the surrounding air around them.

(b)

Material D. The temperature of water decreased the least, so it is the poorest conductor of heat.

End

Anglo-Chinese School (Junior)



SEMESTRAL ASSESSMENT 2 (2016)

PRIMARY 4

SCIENCE

BOOKLET A

Thursday

3 November 2016

1 hr 30 min

Name: _____ () Class: 4.()

INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 25 questions in this booklet.
- 4 Answer ALL questions.
- 5 Shade your answers in the Optical Answer Sheet (OAS) provided.

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. Matter is anything that has mass and occupies space.

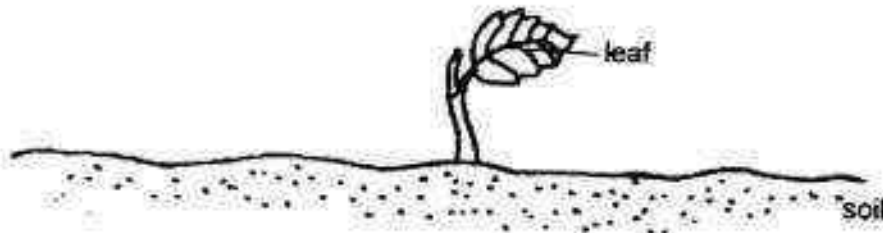
Which of the following is **NOT** matter?

- (1) Soil
- (2) Light
- (3) Wind
- (4) Water

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.

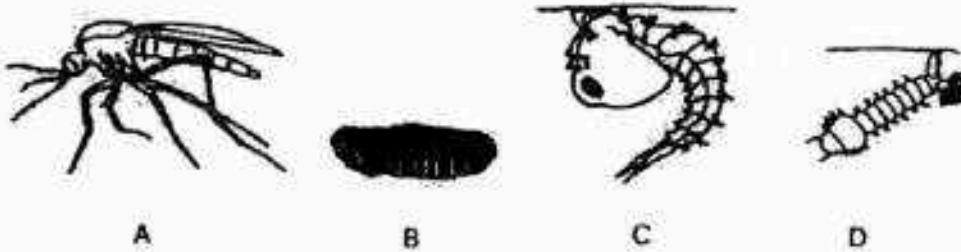
3. The diagram below shows a young plant.



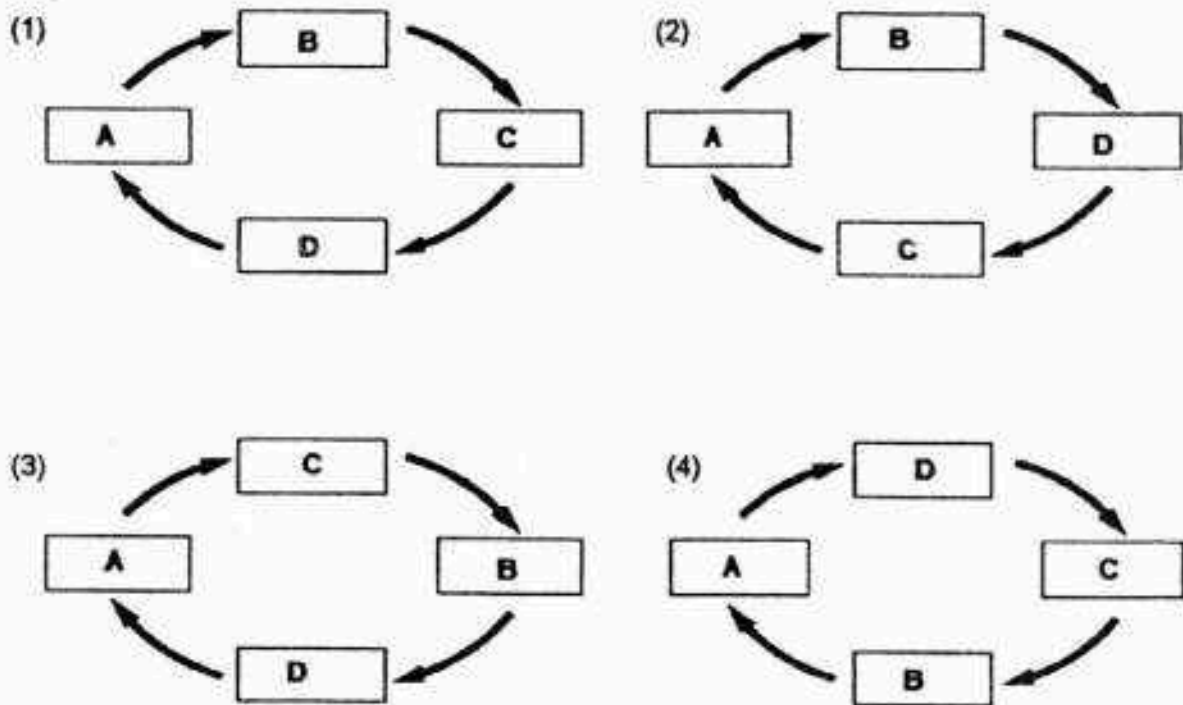
The leaf helps the plant to _____.

- (1) make food
- (2) grow upright
- (3) absorb water
- (4) absorb nutrients

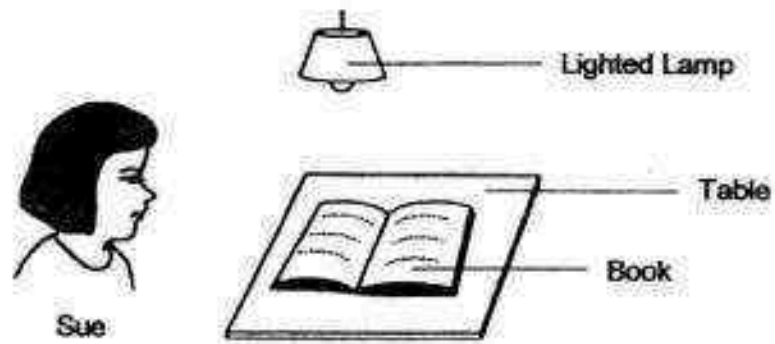
4. A, B, C and D are the various stages in the life cycle of a mosquito.



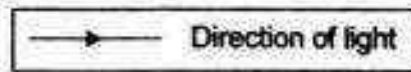
Which of the following correctly shows the life cycle of a mosquito?



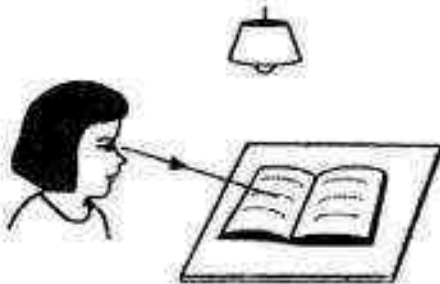
5. Look at the picture below.



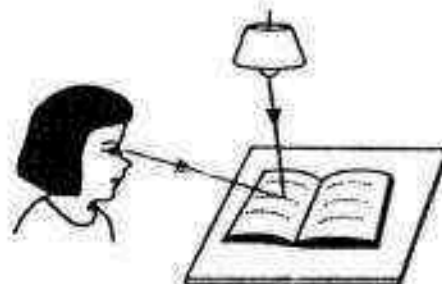
Which one of the following explains why Sue can see the book on the table?



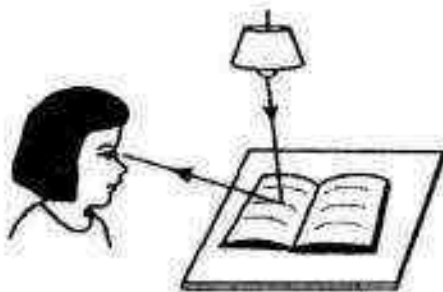
(1)



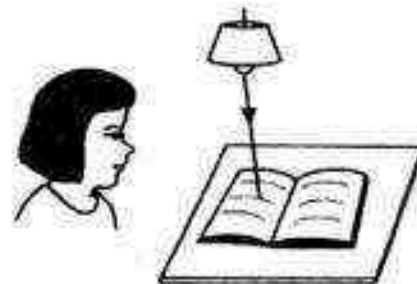
(2)



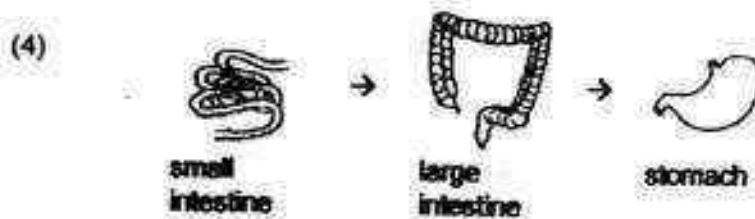
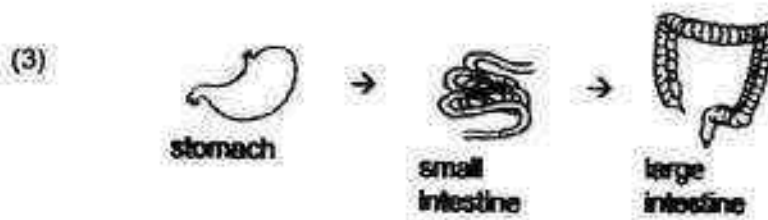
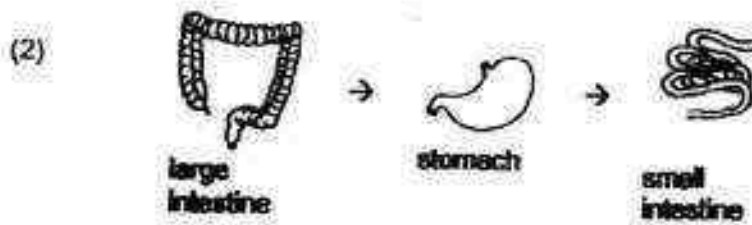
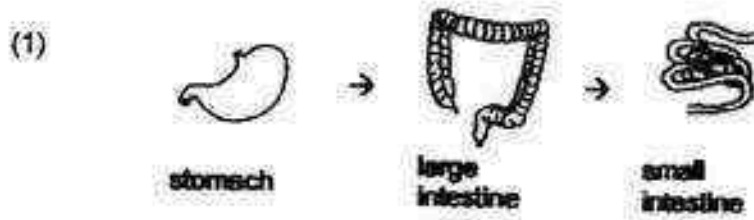
(3)



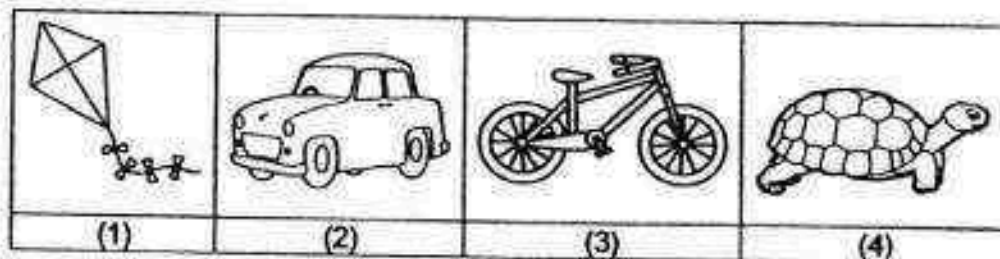
(4)



6. Which one of the following shows the correct order when food moves through some parts of the digestive system?



7. Which one of the following is a living thing?



8. Which one of the following can be attracted by a magnet?

- (1) Steel ball
- (2) Plastic ball
- (3) Rubber ball
- (4) Wooden ball

9. Which of the following statements are true about ^{most} ~~all~~ fungi?

- A Fungi can make its own food.
- B Fungi reproduce from spores.
- C Fungi needs air, food and water to survive.
- D Fungi can only be seen with a microscope.







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

10. Which of the following can be put into a 60 cm^3 container and closed with a lid?

- A 70 cm^3 of air.
- B 70 cm^3 of sand
- C 65 cm^3 of water
- D 65 cm^3 of sponge

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

11. Sue grouped some things as shown below.

Group A	Group B
	
Snail	Nail
	
Dolphin	Spectacles
	
Crocodile	Frying pan

How did she group them?

She grouped them according to _____

- (1) the way they move
- (2) the shape of their bodies
- (3) whether they can reproduce
- (4) the materials that they are made of

12. Why are seed leaves important to a seedling?

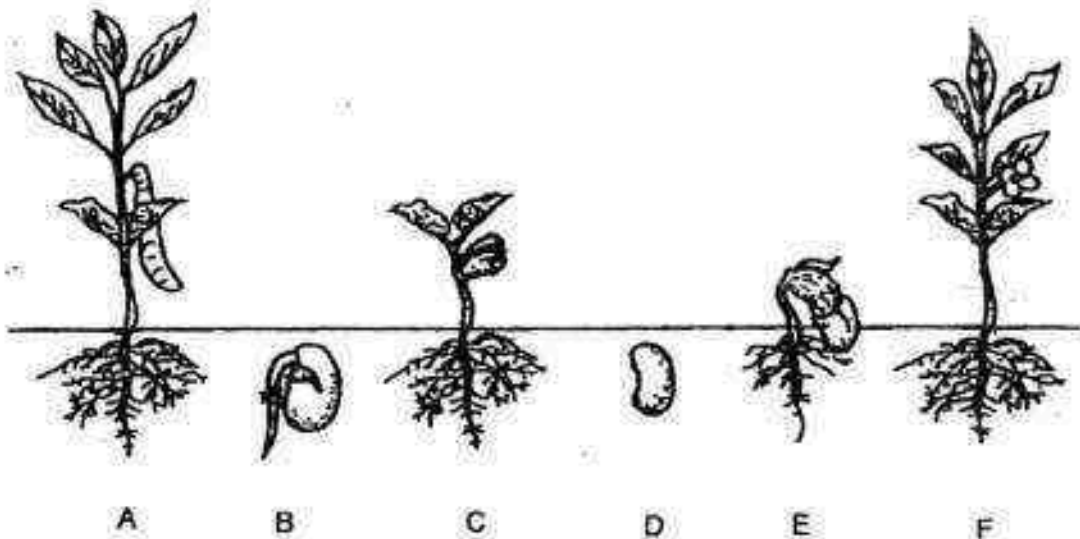
- (1) They are part of its roots.
- (2) They will develop into leaves.
- (3) They form part of the developing stem.
- (4) They provide food for the seedling before the leaves develop.

13. Which of the following are functions of the skeletal system in a human body?

- A To give the body shape.
- B To support the human body.
- C To protect the organs in the body.
- D To absorb digested food into the blood.

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

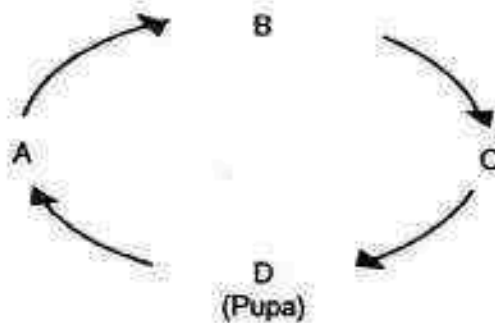
14. The diagram shows the sequence of growth of a green bean plant.



Which of the following shows the correct sequence of growth of a green bean seed into a plant?

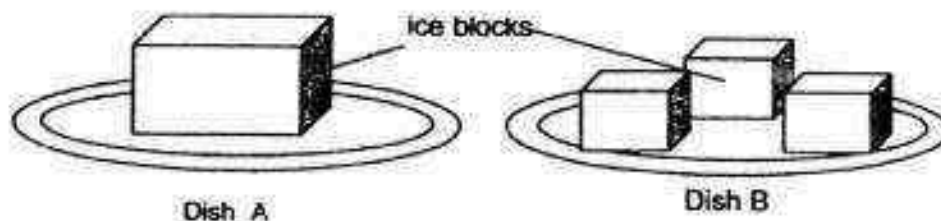
- (1) A → F → C → E → B → D
- (2) F → A → B → D → E → C
- (3) D → B → E → C → F → A
- (4) B → E → C → F → D → A

15. The diagram below shows the life cycle of a butterfly.



At which stage A, B, C or D, does the butterfly cause the most harm to plants?

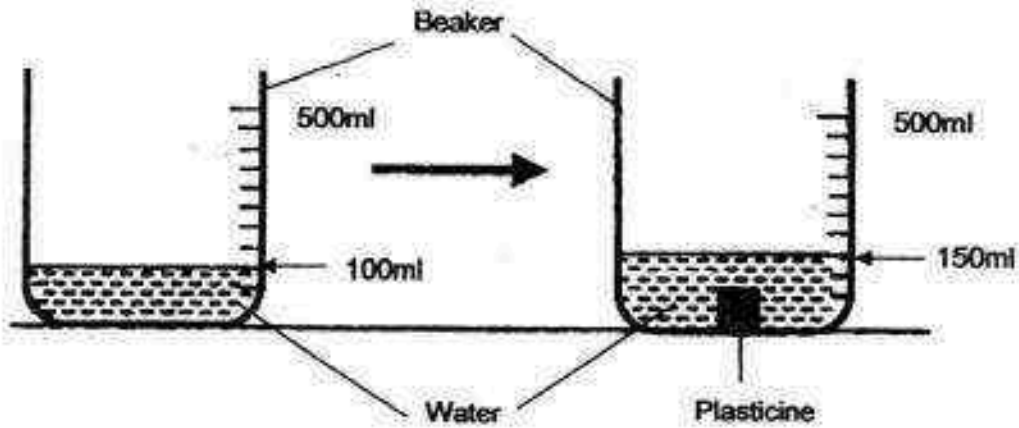
- (1) A
 - (2) B
 - (3) C
 - (4) D
16. Melvin used the same amount of water to make two identical ice blocks. The ice blocks were placed on 2 identical dishes A and B. The ice block on Dish B was cut into smaller pieces.



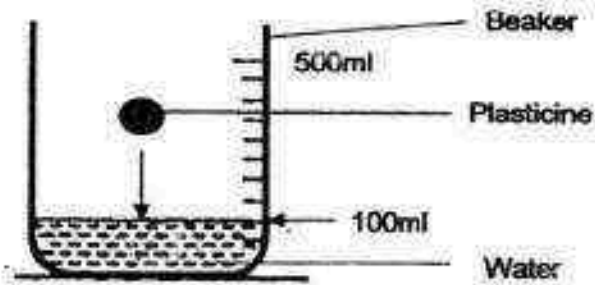
Which one of the following statements is correct?

- (1) The ice block in Dish A has a greater mass than the ice blocks in Dish B.
- (2) The ice block in Dish A has a greater volume than the ice blocks in Dish B.
- (3) The ice block in Dish A occupies the same space as the ice blocks in Dish B.
- (4) The ice block in Dish A is smaller in size compared to the ice blocks in Dish B.

17. Max made a cube out of plasticine and put it into a beaker of water. The water level rises from 100ml to 150ml.



He took the plasticine out of the beaker and rolled it into a ball. Then he placed it into another beaker containing 100ml of water.

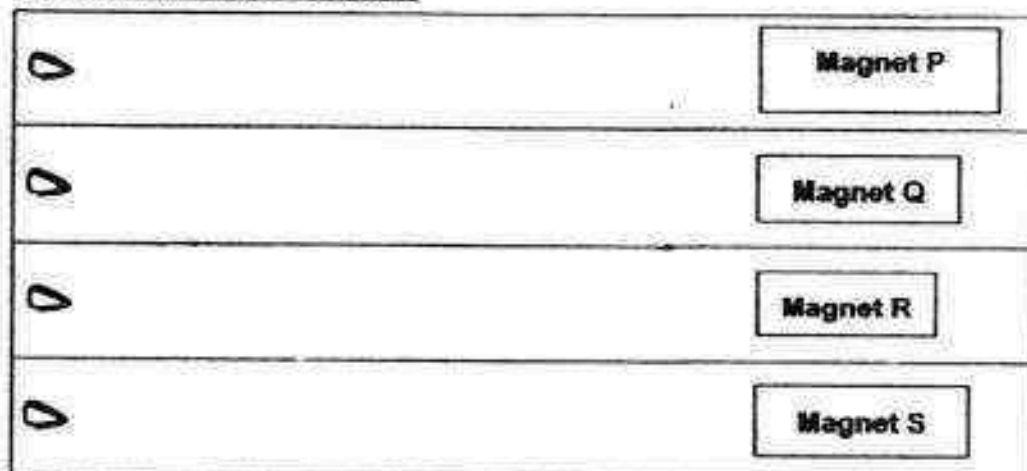


What is the water level of the beaker after the ball is placed into the beaker of water?

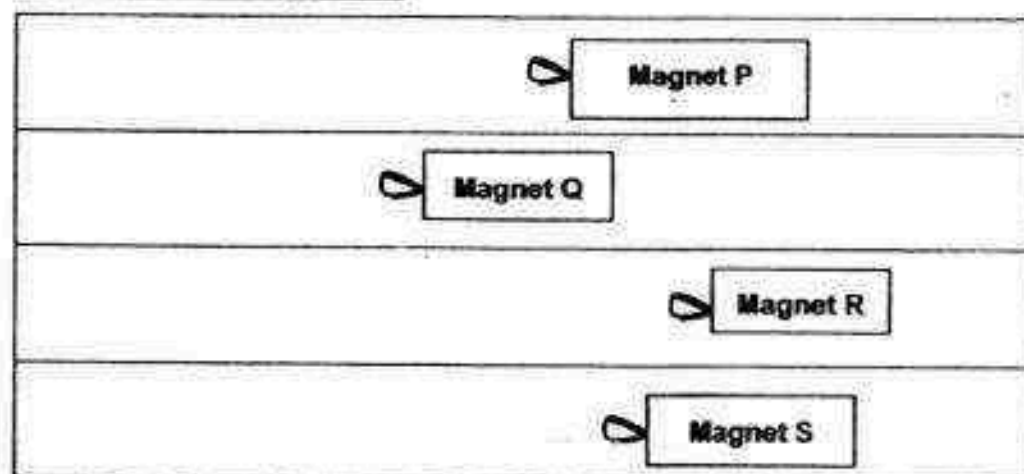
- (1) 100ml
- (2) 130ml
- (3) 150ml
- (4) 170ml

18. Christine set up an experiment to find out the magnetic strength of 4 magnets, P, Q, R and S. She first placed the magnets at equal distances away from the paper clips. She then moved each magnet slowly towards the paper clip and stopped when the paper clip got attracted to it. The diagrams below show the start and the end of the experiment.

At the start of the experiment



At the end of the experiment

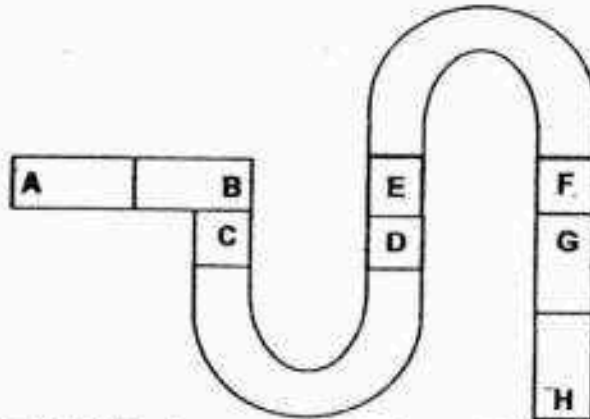


Based on Christine's experiment, which of the following two statements are correct?

- A Magnetic force can act at a distance.
- B The paper clip is made of a magnetic material.
- C The bigger the size of the magnet, the stronger is its magnetism.
- D The shorter distance the paper clip moves towards the magnet, the greater the magnetic strength of the magnet.

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

19. The diagram below shows the arrangement of four magnets when they are attracted to each other.



Which one of the following arrangements is possible?

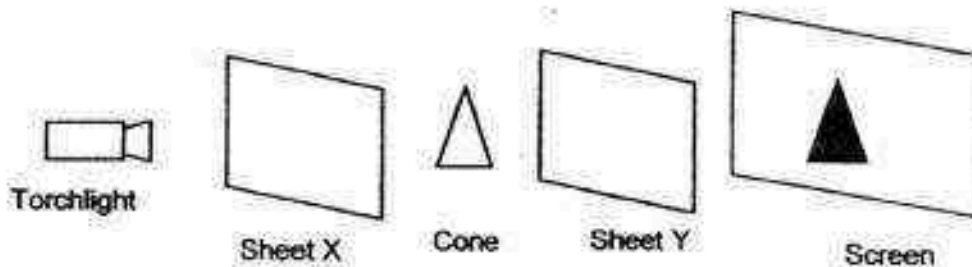
<p>(1)</p>	<p>(2)</p>
<p>(3)</p>	<p>(4)</p>

20. Which of the following gives out both heat and light?

- A Star
- B Torchlight
- C Ceramic Plate
- D Computer Screen

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

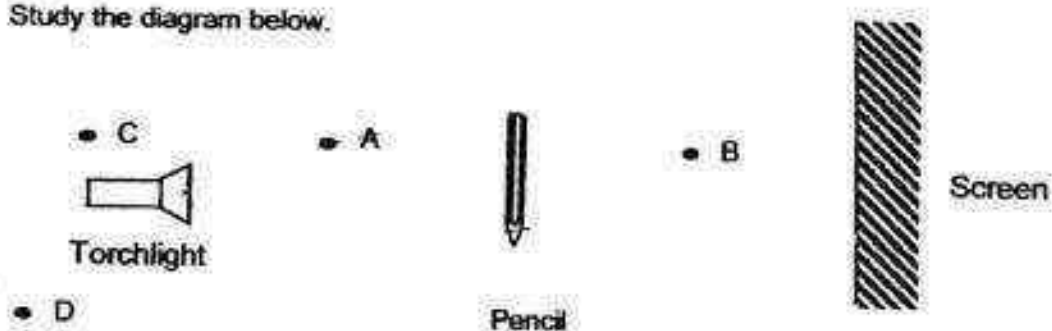
21. Sally placed a cone in between two sheets, X and Y in a straight line. The sheets are made of different materials. A white screen was placed at the end of the line. When she shines a torchlight at Sheet X, a dark shadow can be seen on the screen as shown below.



Which of the following shows the correct materials that sheets X and Y are made of?

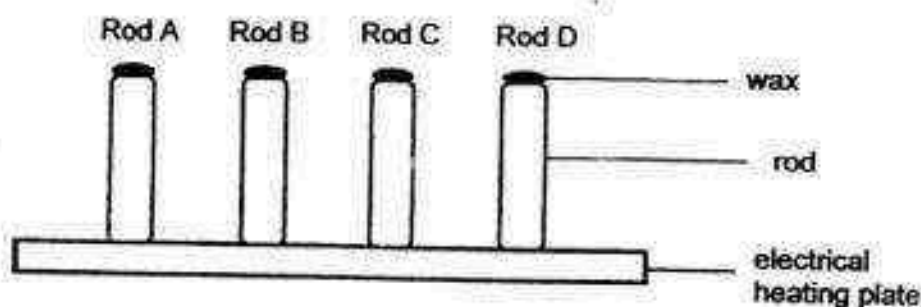
	Sheet X	Sheet Y
(1)	Newspaper	Frosted Glass
(2)	Tracing Paper	Newspaper
(3)	Clear Plastic	Clear Glass
(4)	Clear Plastic	Frosted Glass

22. Study the diagram below.



A shadow can be seen on the screen when the torchlight was switched on. At which point A, B, C or D did the path of light from the torchlight travel through?

- (1) A
 - (2) B
 - (3) C
 - (4) D
23. Four pieces of wax with equal mass were placed on top of four rods, A, B, C and D, made of different materials. The four rods were placed on an electrical heating plate at the same time, as shown in the diagram below.



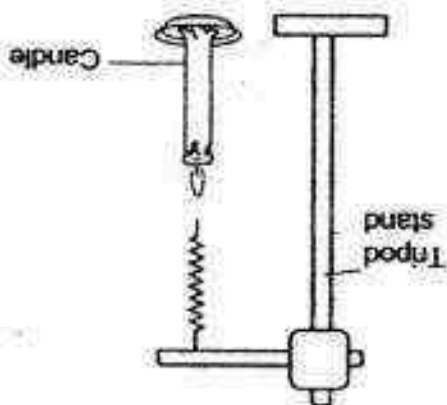
The table below shows the time taken for the wax on each rod to melt.

Rod	Time taken (min)
A	13
B	10
C	5
D	2

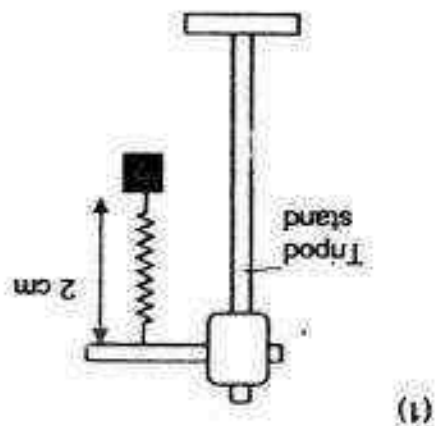
Which rod is the best conductor of heat?

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

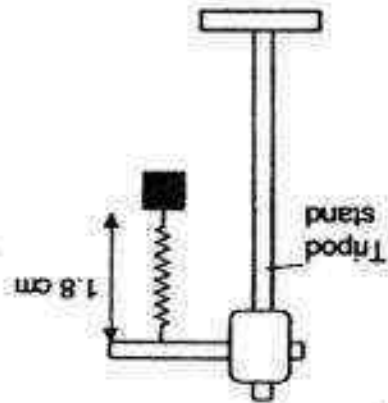
24. Mr Tan hangs a spring made of steel on a tripod stand, as shown below. The original length of the spring is 2 cm long with a weight hung on it. Then, he removed the weight and heated up the spring with a candle for 10 minutes.



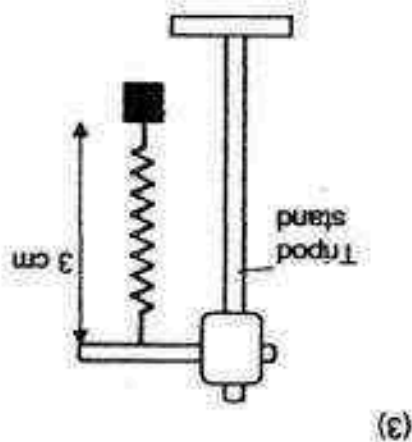
Mr Tan then hung the same weight on the spring that was heated. Which of the following is most likely how the spring will look like?



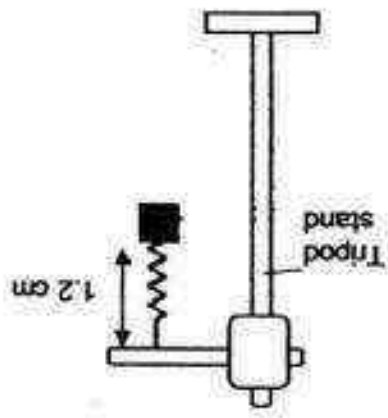
(1)



(2)

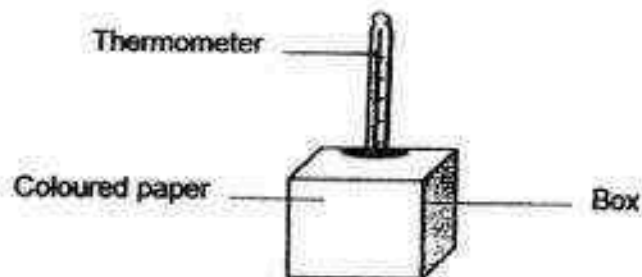


(3)



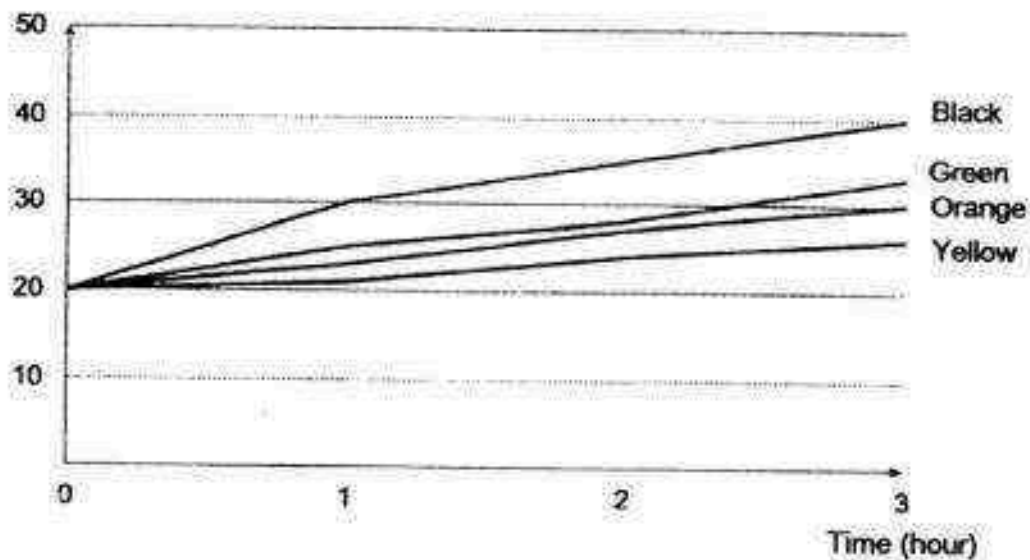
(4)

25. Suzy carried out an experiment to find out the effect of heat on four different coloured papers. The four different coloured papers were of the same mass and thickness. They were used to wrap all around four identical boxes and then left in an open field for six hours.



She recorded the temperature of each box every hour using the graph below.

Temperature ($^{\circ}\text{C}$)



Suzy wants to wear a cotton T-shirt. Based on the graph above, which colour will be most suitable to be worn on a hot day if she wants to keep herself cool?

- (1) Black
- (2) Green
- (3) Yellow
- (4) Orange

End of Booklet A

Anglo-Chinese School (Junior)



SEMESTRAL ASSESSMENT 2 (2016)

PRIMARY 4

SCIENCE

BOOKLET B

Thursday

3 November 2016

1 hr 30 min

Name: _____ () Class: 4.() Parent's Signature: _____

INSTRUCTIONS TO PUPILS

- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 14 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [] at the end of each question or part question.

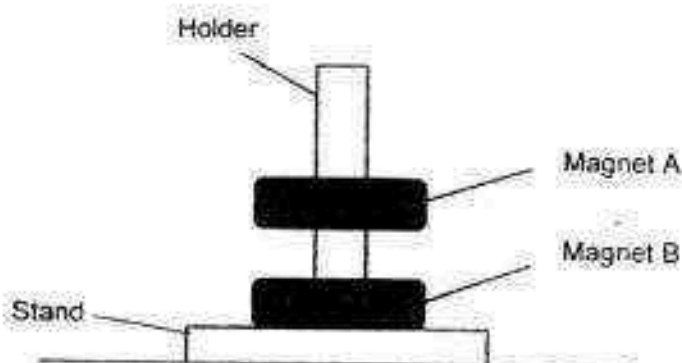
Booklet	Possible Marks	Marks Obtained
A	50	
B	40	
PBA	10	
Total	100	

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. Alice placed two ring magnets, A and B, through a holder as shown below.



- (a) The holder is made of wood and did not attract the magnets.

[1]

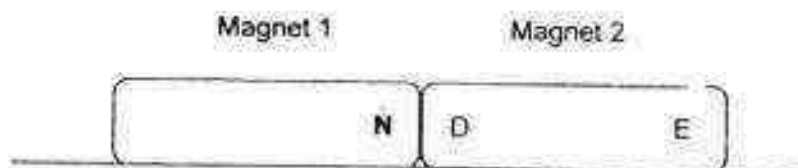
Wood is a _____ material.

- (b) Why is magnet A floating above magnet B?

[1]

Magnet B is _____ magnet A.

- (c) Two magnets are placed together as shown below.



The north pole of magnet 1 is labelled N.

Name the poles labelled D and E on magnet 2.

[2]

D: _____

E: _____

(Go on to the next page)

SCORE	4
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27. Look at the pictures. In the boxes below, tick (✓) the pictures which are sources of light. [2]

(a)



Mirror



Fire



Eyes



Lamp



- (b) The diagram below shows a frying pan. Fill in the blanks below. [1]

Metal plate

Plastic handle

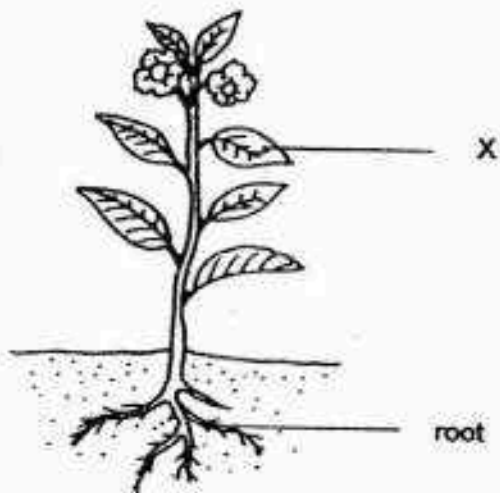


The handle is made of plastic because it is a _____ conductor of heat.

(Go on to the next page)

SCORE	
	3

28. The diagram shows a plant.



- (a) Name plant part X.

[1]

X: _____

- (b) One substance that the roots of plants take in from the soil is

[1]

(Go on to the next page)

SCORE	
	2

29. Classify the following animals according to the number of stages in their life cycle. [2]



Chicken



Mosquito



Beetle



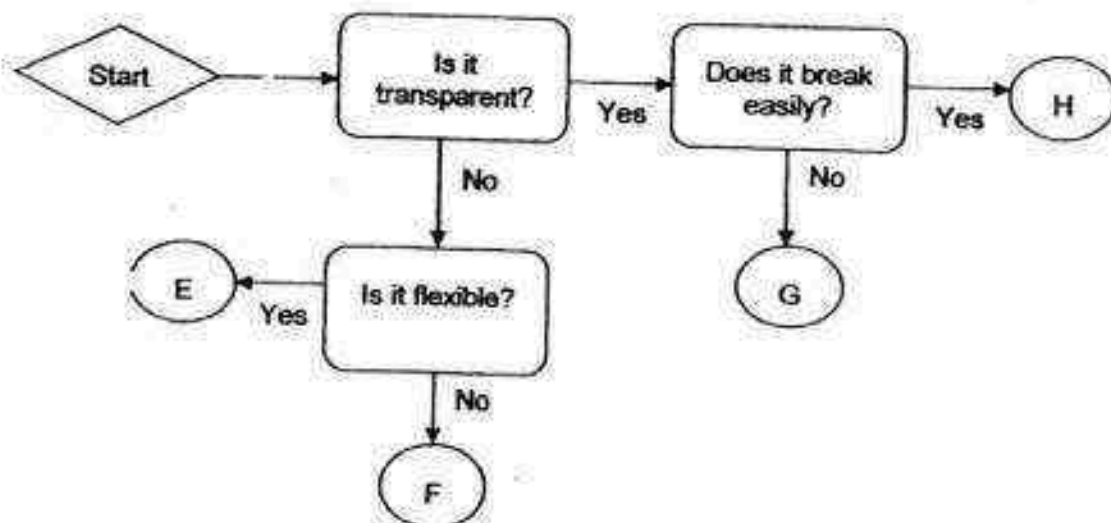
Grasshopper

Three stages	Four stages

(Go on to the next page)

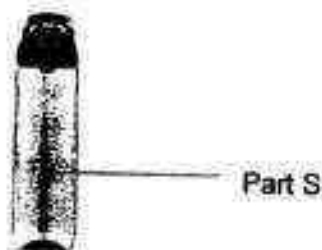
SCORE	2
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30. The flowchart below shows the similarities and differences among materials E, F, G and H.



- (a) Based on the chart, state a similarity between Material E and F. [1]
- _____
- (b) Based on the chart, which material, E, F, G or H, is most likely to be glass? [1]
- _____

The picture below shows a water bottle.



- (c) Mr Navin suggested using Material G instead of Material H to make part S. Give a reason why Material G is a better material for making part S of the water bottle. [1]
- _____
- _____

(Go on to the next page)

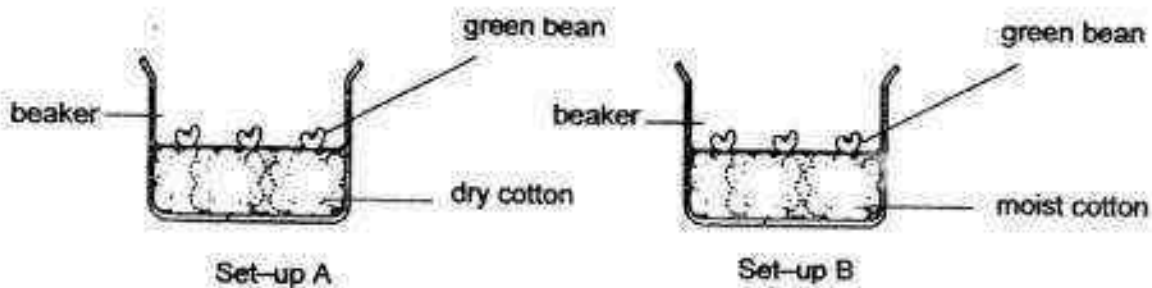
SCORE	
	3

31. (a) In which parts of the digestive system can digestive juices be found? [1]

- (b) What happens to food when it is completely digested? [1]

- (c) What would happen to the undigested food if the large intestine is not working well? [1]

32. Shane placed three green beans each into two beakers and placed them both near the window.



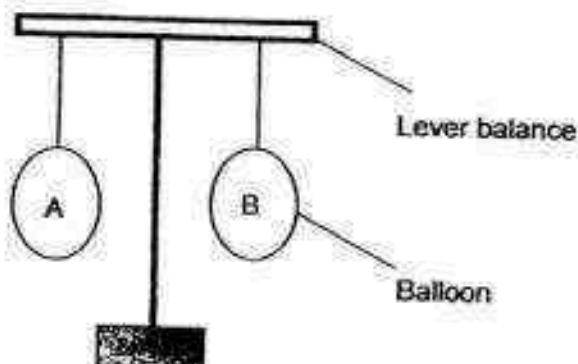
- (a) In which set-up will the seeds germinate? Explain why. [1]

- (b) During germination, which part of the young plant will grow from the seed first? [1]

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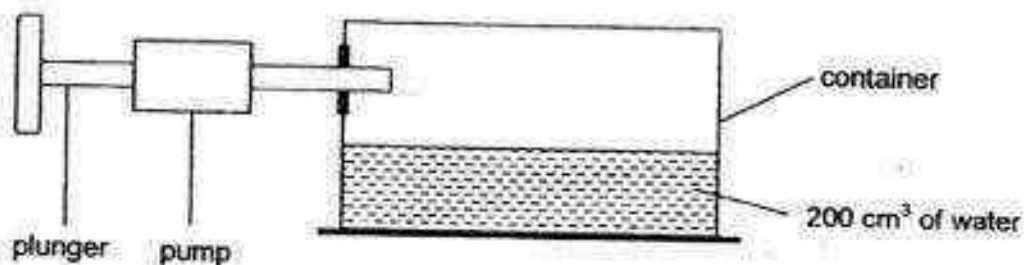
SCORE	
	5

33. Muthu hangs two identical balloons, A and B, on a lever balance. When both balloons are hung at an equal distance from the centre of the lever balance, the lever is balanced.



- (a) One of the properties of air is that air has mass. How can Muthu demonstrate this property by using only the set-up shown above? Explain your answer. [1]

- (b) Muthu's friend, John, gave him a container that has a capacity of 500 cm^3 . It has 200 cm^3 of water inside. Muthu connected a pump to the container and pushed the plunger of the pump twice. Each push allowed 50 cm^3 of air to enter the container.



What was the volume of air before and after air was pumped into the container? [1]

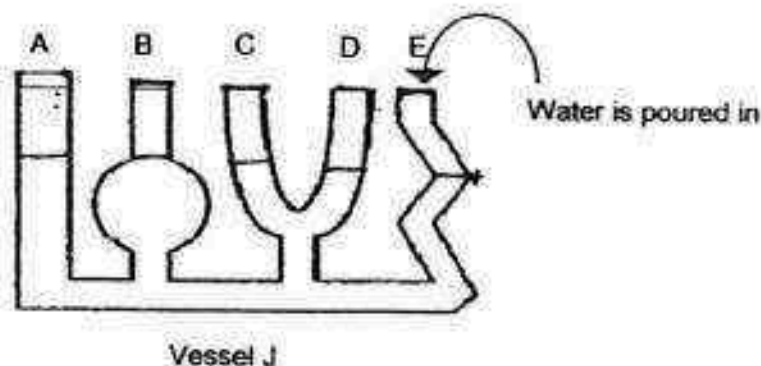
Before air was pumped into the container	After air was pumped into the container twice
i)	ii)

- (c) Explain your answer for (b)(ii). [1]

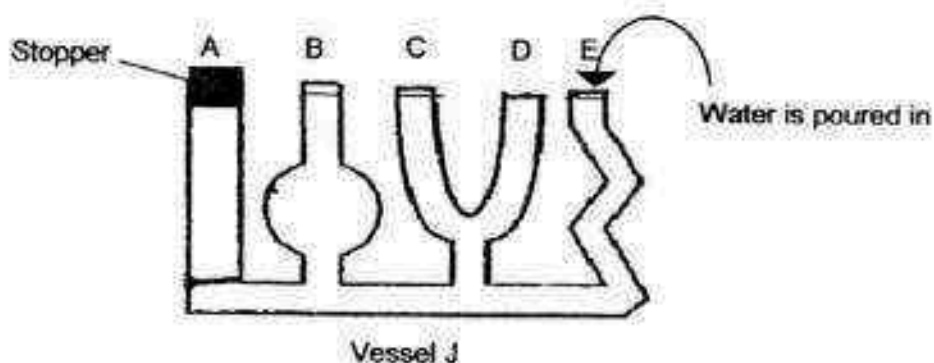
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SCORE	
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- 34(a) (i) Betty poured a jug of water into Vessel J as shown in the diagram below. Draw the water level for tubes A, B, C, D and E. [1]



- (ii) Betty poured out all water from Vessel J and sealed tube A with a stopper as shown in the diagram. She poured water into the vessel until it overflowed at tube E. Draw the water level for tubes A, B, C, D and E. [1]



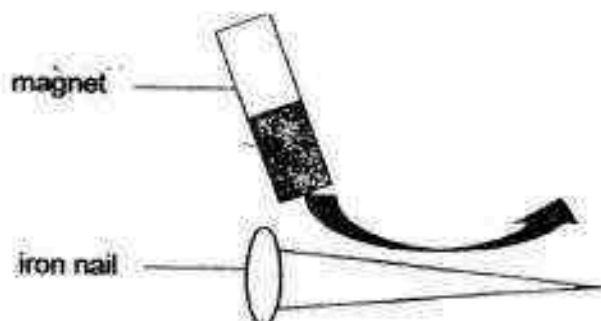
- (b) Explain your answer for (a)(ii). [1]

- (c) What does this experiment show about the property of liquid? [1]

(Go on to the next page)

SCORE	
	3

35. Jack carried out an experiment to find out if the number of times an iron nail is stroked with a magnet affects its magnetic strength. He stroked the iron nail with the north pole of a magnet in the same direction as shown below.



After stroking, he placed the iron nail 5cm away from a tray of paper clips. He recorded his results in the table below.

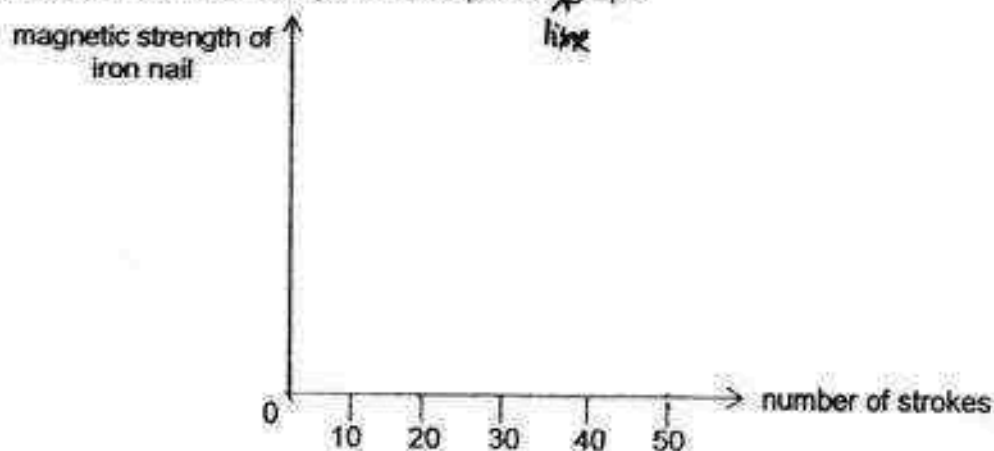
Number of Strokes	Number of paper clips attracted to the nail
10	2
20	4
30	6
40	8
50	10

- (a) Based on his experiment, what is the relationship between the number of strokes and the magnetic strength of the iron nail?

[1]

- (b) Use the results of his experiment to plot the graph.

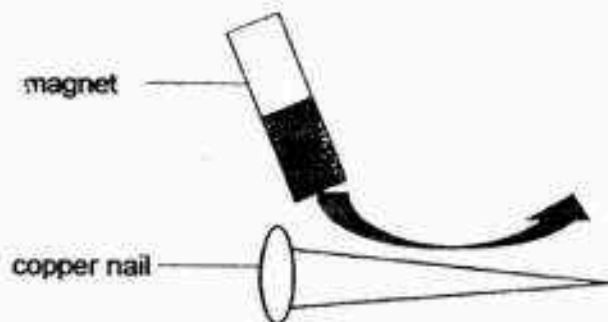
[1]



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SCORE	2
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Jack used the same magnet to stroke a copper nail 10 times. Then, he placed the copper nail 5cm away from the same tray of paper clips.



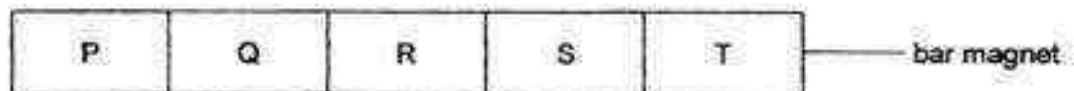
- (c) Predict the number of paper clips that will be attracted to the copper nail. Explain your answer.

{1}

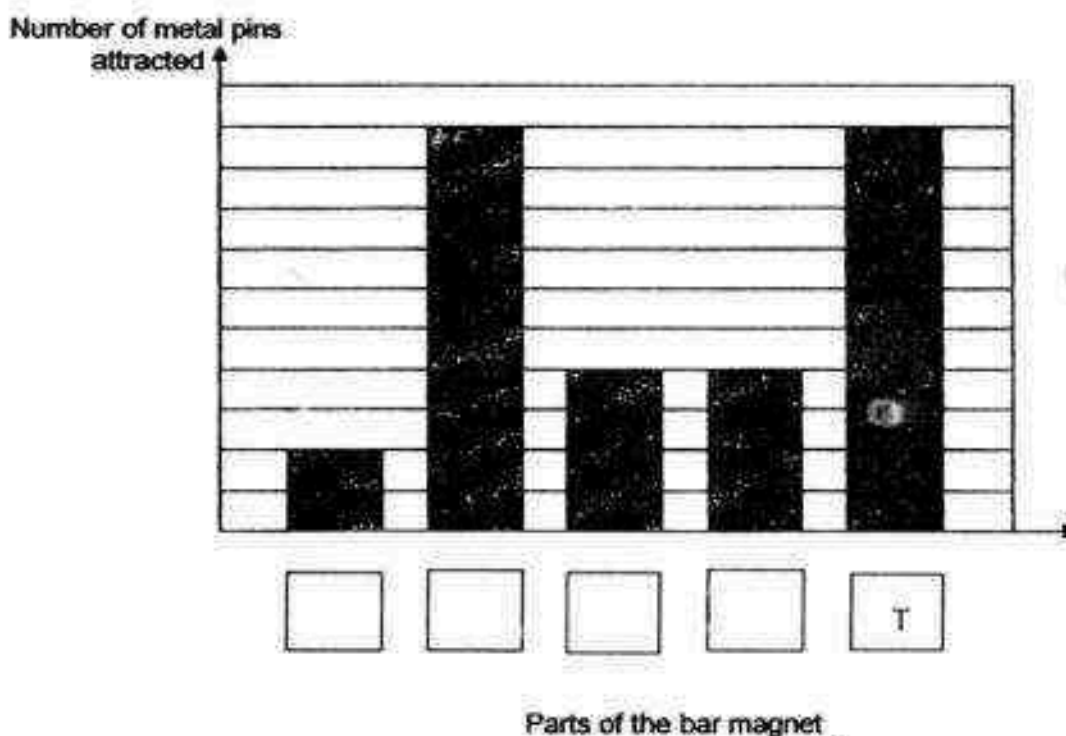
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SCORE	<div>1</div>
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36. Andy's mother gave him a long bar magnet. He wrote the letters, P, Q, R, S and T on different parts of the bar magnet as shown in the diagram below.



Next, he lowered the bar magnet into a tray of metal pins and then counted the number of metal pins attracted to the different parts of the bar magnet. He then plotted his results in the bar graph below.

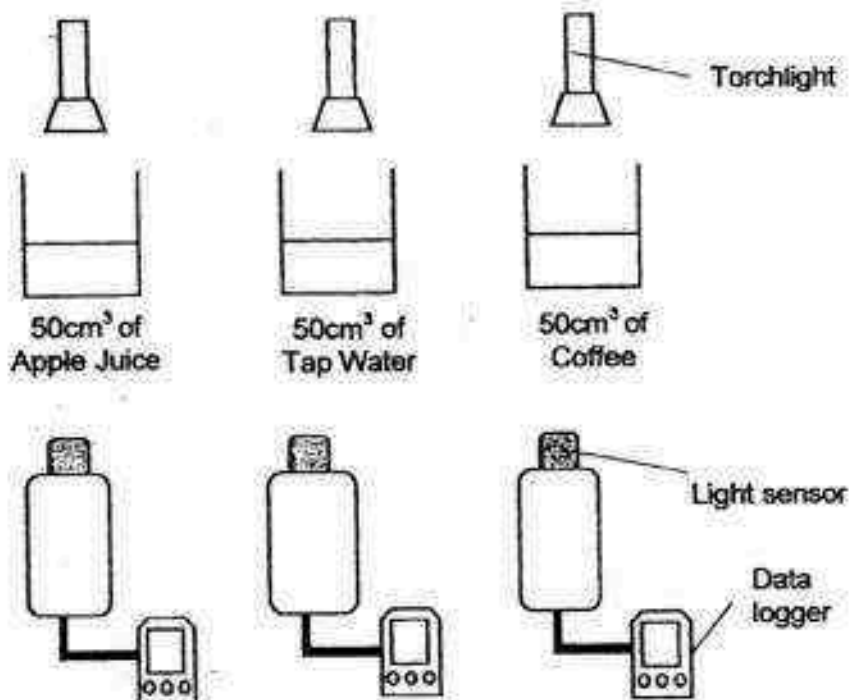


- (a) In the graph above, name the parts, P, Q, R and S of the bar magnet by filling in the boxes. [2]
- (b) What can Andy conclude about the magnetic strength at different parts of the bar magnet? [1]

(Go on to the next page)

SCORE	3
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37. Sharifah sets up the experiment below to measure the amount of light that passes through a container of liquid. She poured 50cm^3 of apple juice, 50cm^3 of tap water and 50cm^3 of coffee into 3 containers. A lighted torch is placed at equal distance from the top of each container.



She used a light sensor connected to a data logger to measure the amount of light that passes through each container of liquid and recorded them in the table below. Her brother labelled the containers in random order as X, Y and Z.

Container	X	Y	Z
Amount of light (Lux)	0	115	1138

- (a) Based on the above results, write down the type of liquid found in each container. [2]

X - _____

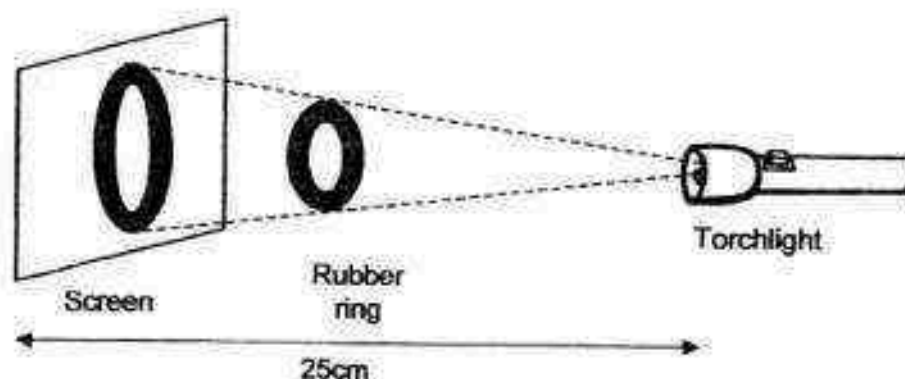
Z - _____

- (b) Explain why no light is able to pass through Container X. [1]

(Go on to the next page)

SCORE	
	3

38. Susan set up the experiment below to find out how the distance between the screen and the rubber ring affects the size of the shadow formed on the screen.



She recorded the results of her experiment in the table below.

Distance between screen and torchlight (cm)	Distance between screen and rubber ring (cm)	Height of shadow formed on the screen (cm)
25	12	16
25	7	13
25	4	10

- (a) Based on the results of the experiment, what can Susan conclude about the relationship between the height of the shadow formed and the distance between the screen and rubber ring?

[1]

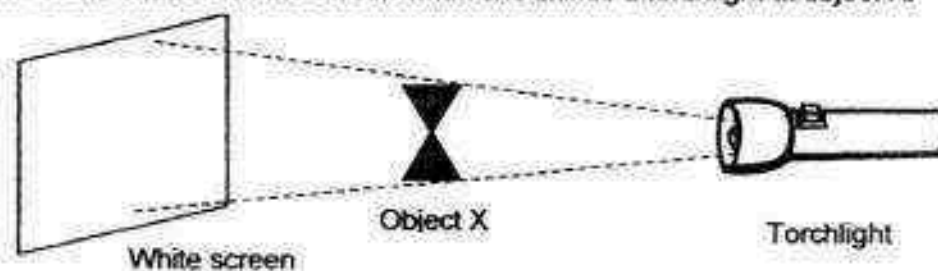
- (b) State two changes Susan can make to the set-up to form a bigger shadow without moving the rubber ring.

[2]

(Go on to the next page)

SCORE	3
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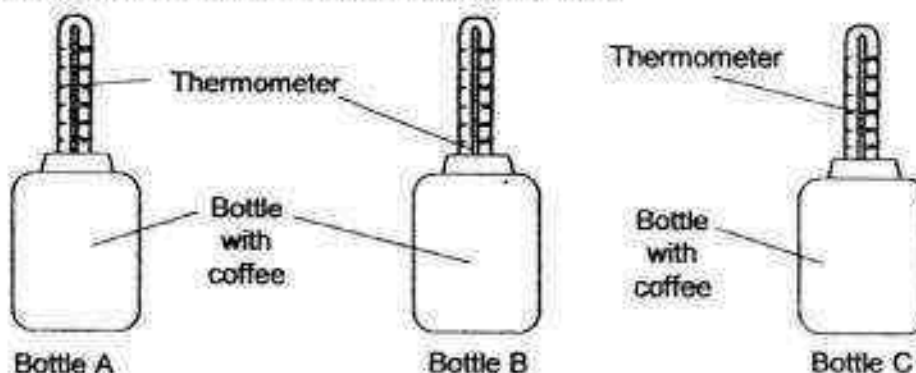
- (c) Susan wanted to perform a 'magic trick' for her brother. She told him that there will be no shadow on the screen when she shines a torchlight at object X.



Suggest a suitable material that object X should be made of so that Susan can achieve this 'magic trick'.

[1]

39. Joe wanted to find out which material is most suitable to keep his coffee warm for the longest period of time. He placed three identical bottles A, B and C made of different materials on the dining table. He put identical thermometers into each bottle to measure the temperature of the 200cm³ of coffee inside it.



Joe recorded the temperature of the coffee in each bottle every 5 minutes and recorded in the table below.

Time (min)	Temperature of coffee in Bottle A (°C)	Temperature of coffee in Bottle B (°C)	Temperature of coffee in Bottle C (°C)
0	38	38	38
5	38	35	31
10	37	32	26
15	37	30	22

- (a) Identify the changed variable and one other constant variable in the experiment. [1]

Changed variable - _____

Constant variable - _____

- (b) Which bottle is most suitable to keep coffee warm for the longest period of time? [1]
Explain your answer.

End of Booklet	SCORE	
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YEAR : 2016
 LEVEL : PRIMARY 4
 SCHOOL : ANGLO-CHINESE (JUNIOR)
 SUBJECT : SCIENCE
 TERM : SA2

Booklet A

Q1	2	Q6	3	Q11	3	Q16	3	Q21	3
Q2	3	Q7	4	Q12	4	Q17	3	Q22	1
Q3	1	Q8	1	Q13	3	Q18	1	Q23	4
Q4	2	Q9	2	Q14	3	Q19	2	Q24	3
Q5	3	Q10	2	Q15	3	Q20	4	Q25	3

Booklet B

Q26 (a) Wood is a non-magnetic material.

(b) Magnet B is repelling magnet A.

(c) D : South pole

E : North pole

Q27 (a) ✓ Fire & ✓ Lamp

(b) The handle is made of plastic because it is a poor conductor of heat.

Q28 (a) X : Leaf

(b) Water

Q29

Three stages	Four stages
Chicken Grasshopper	Mosquito Beetle

- Q30
- (a) They are not transparent.
 - (b) Material H.
 - (c) Material G does not break easily but material H does break easily.

- Q31
- (a) Mouth, stomach and small intestine.
 - (b) The food would be absorbed into the bloodstream.
 - (c) Water in the undigested food will not be absorbed and the undigested food will be watery.

- Q32
- (a) Set-up B. It has warmth, air and water so it can germinate.
 - (b) Roots

- Q33
- (a) He can deflate one balloon. If he deflate one balloon, the balloon at the other end would go down, this shows that air has mass.

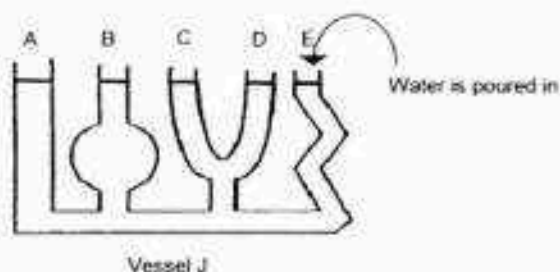
(b)

Before air was pumped into the container	After air was pumped into the container twice
i) 300 cm^3	ii) 300 cm^3

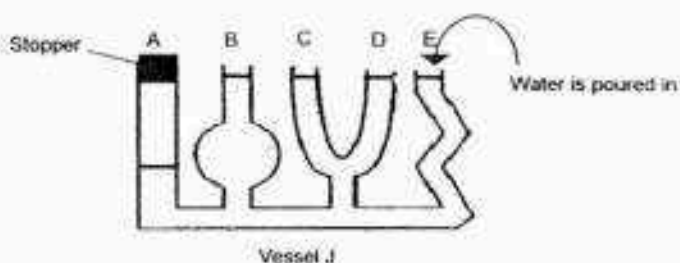
- (c) Air can be compressed.

Q34

(a) (i)



(ii)



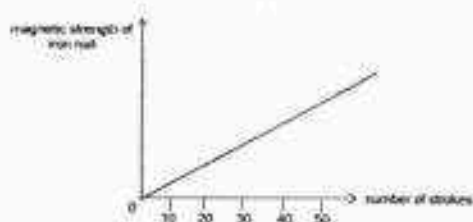
(b) Air occupies space. Air cannot escape in tube A due to the stopper.

(c) Liquid occupy space.

Q35

(a) The more time the iron nail is stroked, the greater the magnetic strength.

(b)



(c) 0. Copper is a non-magnetic material and can't be magnetised.

Q36

(a)

R

P

Q

S

T

(b) The magnetic strength is strongest at the magnet's poles.

- Q37 (a) X – Coffee
Z – Tap water
- (b) Coffee is black in colour and does not allow light to pass through it.
- Q38 (a) The closer the screen is to the rubber ring, the shorter the shadow.
- (b) 1. Move the screen away from the ring.
2. Move the torch closer to the ring.
- (c) Clear glass.
- Q39 (a) Changed variable – Material of bottle.
Constant variable – Location of experiment.
- (b) It has the least change in temperature.

End



AI TONG SCHOOL

**2016 END-OF-YEAR EXAMINATION
PRIMARY FOUR SCIENCE**

DURATION: 1 hour 45 minutes

DATE: 27 October 2016

INSTRUCTIONS

Do not open the booklet until you are told to do so.

Follow all instructions.

Answer all questions.

Name : _____ ()

Class : Primary 4 _____

Parent's Signature : _____

Date : _____

Section A	56
Section B	44
Total	100
Project Work	20
Final Total	120

Section A (28 x 2 marks)

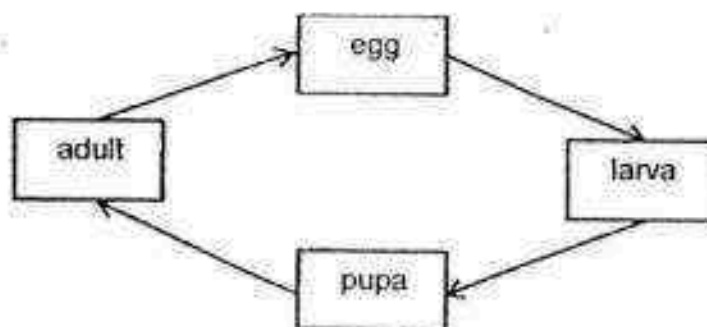
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice and shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. The pictures below show an



This shows that the animal is a living thing because it can _____.

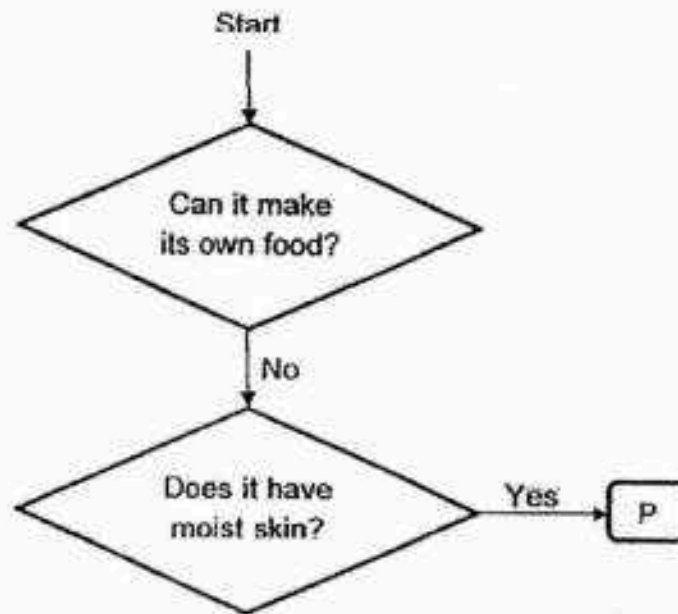
- (1) grow
 - (2) breathe
 - (3) respond
 - (4) reproduce
2. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle as shown above?

- (1) frog
- (2) butterfly
- (3) cockroach
- (4) grasshopper

3. Study the diagram below.



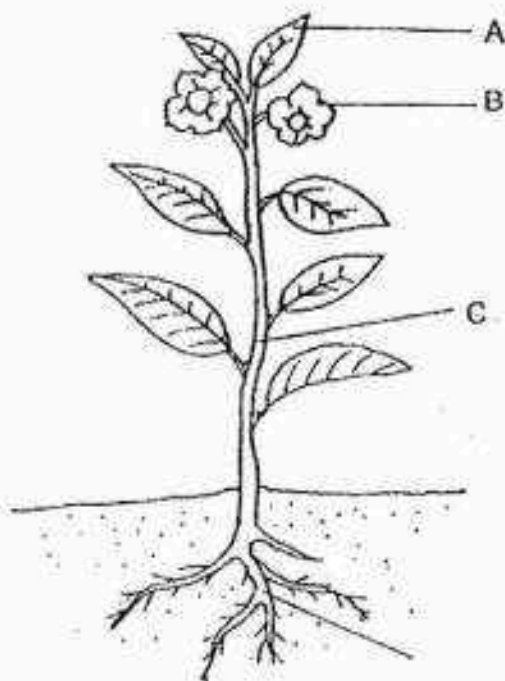
What could P be?

- (1) plant
- (2) reptile
- (3) mammal
- (4) amphibian

4. In which part of the digestive system is water absorbed from undigested food?

- (1) gullet
- (2) stomach
- (3) small intestine
- (4) large intestine

5. The diagram below shows a plant.



Which part ,A, B, C or D, holds the plant upright?

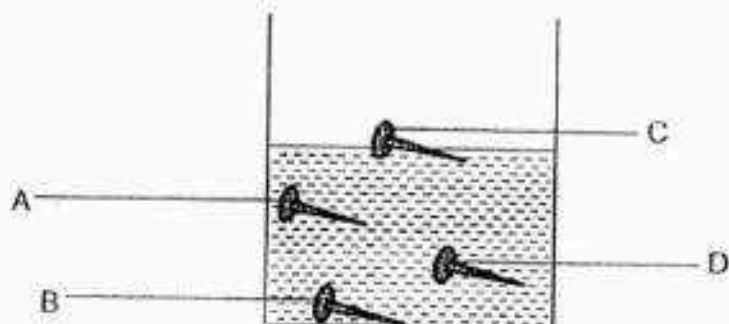
- (1) A
- (2) B
- (3) C
- (4) D

6. Matter is anything that has mass and occupies space.

Which one of the following is NOT matter?

- (1) air
- (2) soil
- (3) light
- (4) water

7. Tiffany put an iron nail into a container of water. At which position, A, B, C or D would the iron nail most likely be found?

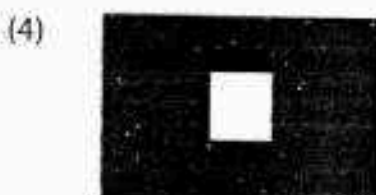
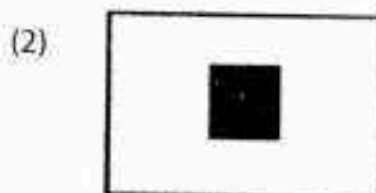


- (1) A
- (2) B
- (3) C
- (4) D

8. The set-up below shows light shining on a wooden cube.



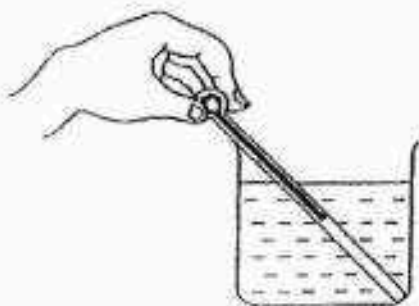
Which of the following would likely be seen on the screen?



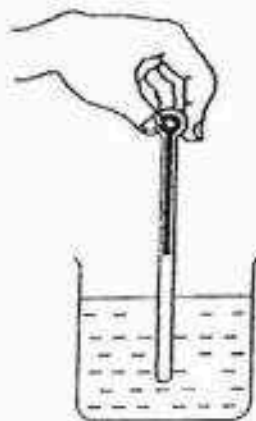
9. James wants to find out the temperature of the water in a beaker.

Which one of the following diagrams show the correct position of the thermometer when taking the temperature reading?

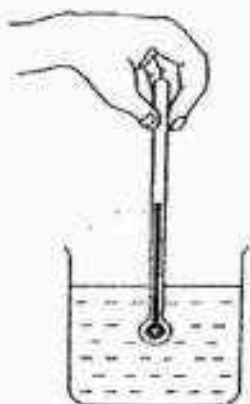
(1)



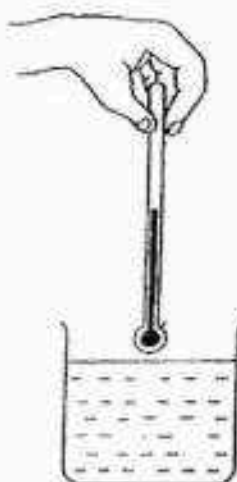
(2)



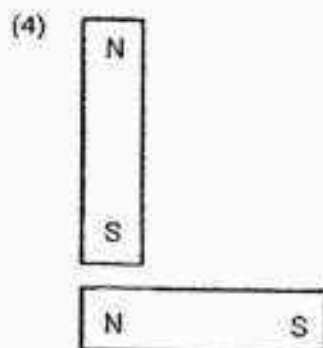
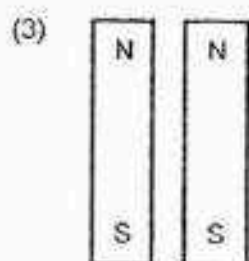
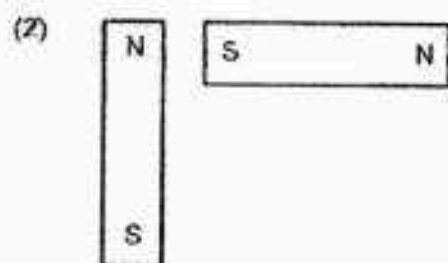
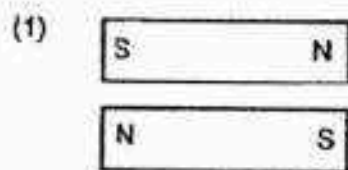
(3)



(4)



10. In which one of the following will the two magnets push each other away?



11. Diagram A below shows a plant with widespread roots. Sam decided to cut the roots of the plant as shown in diagram B.



Diagram A



Diagram B

Which of the following would happen to this plant now that its roots are cut?

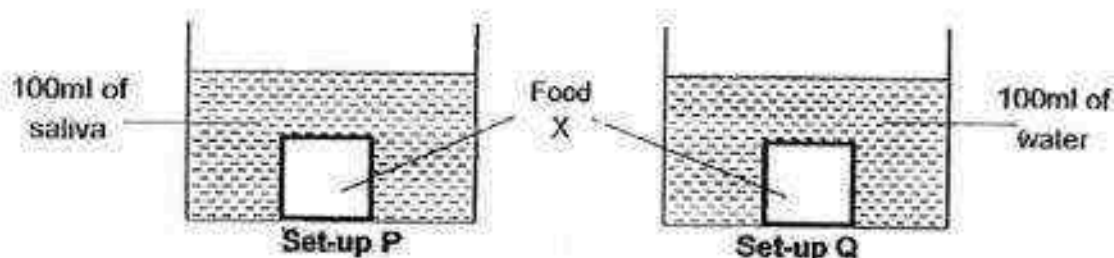
- (1) It would absorb more water.
 - (2) It would absorb less sunlight.
 - (3) It would hold the plant more upright.
 - (4) It would hold the plant less firmly to the ground.
12. Sheryl wanted to find out if the amount of digestive juice affects how fast a piece of bread is digested.

Setup	Amount of digestive juice (ml)	Amount of bread (g)	Duration of experiment (mins)	Location of experiment
W	10	5	15	Field
X	10	5	20	Classroom
Y	20	5	15	Field
Z	20	10	20	Classroom

Which two set-ups above should she use to conduct a fair test for her experiment?

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

- 13 Sally carried out an experiment for twenty minutes using the two set-ups P and Q below.



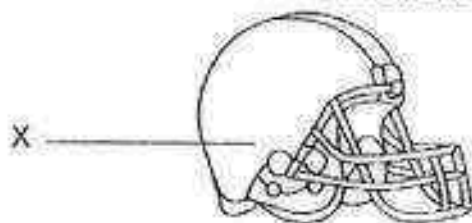
Food X has starch and saliva can digest food X completely in twenty minutes. Iodine solution, which was added to both set ups at the start of the experiment, turns dark blue if starch is present. It remains yellowish-brown if starch is digested. Which of the following shows the correct colour of iodine solution before and after the experiment?

	colour of iodine solution before the experiment		colour of iodine solution after the experiment	
	Set-up P	Set-up Q	Set-up P	Set-up Q
(1)	dark blue	dark blue	dark blue	yellowish-brown
(2)	yellowish-brown	yellowish-brown	yellowish-brown	dark blue
(3)	dark blue	dark blue	yellowish-brown	dark blue
(4)	yellowish-brown	dark blue	dark blue	yellowish-brown

14. Jasmine recorded the mass of four objects, which were of the same size but made of different materials A, B, C and D. She then put them in a container of water. After 20 minutes, she removed the objects from the water. The mass of the objects were measured and recorded again in the table below.

Object made	(g)	
A	9	11
B	13	18
C	15	15
D	10	27

Which of the above materials would be most suitable to make part X of a helmet?



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

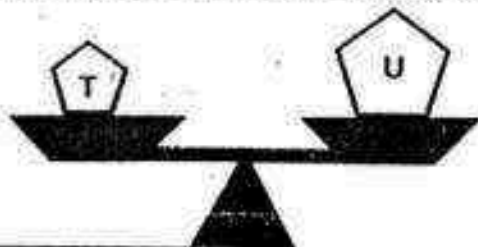
15. In an amusement park, people drive bumper cars and try to bump one another at



What properties must the material used to make part W have

- (1) flexible and smooth
- (2) flexible and strong
- (3) stiff and smooth
- (4) stiff and strong

16. Two objects, T and U, are placed on a balance as shown below.

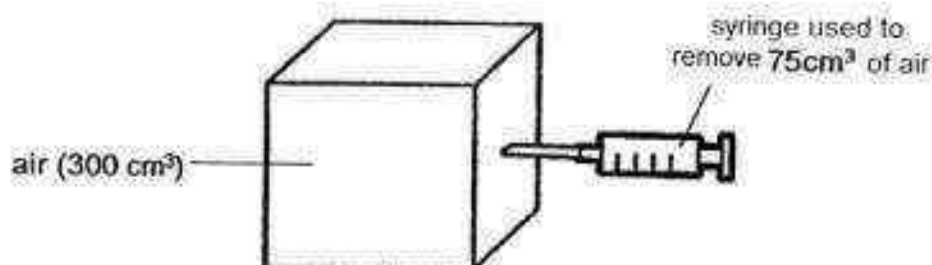


Which of the following statements are correct based on the diagram above?

- A U has more mass than T.
- B T has the same mass as U.
- C T has a larger volume than U.
- D T and U have the same volume.

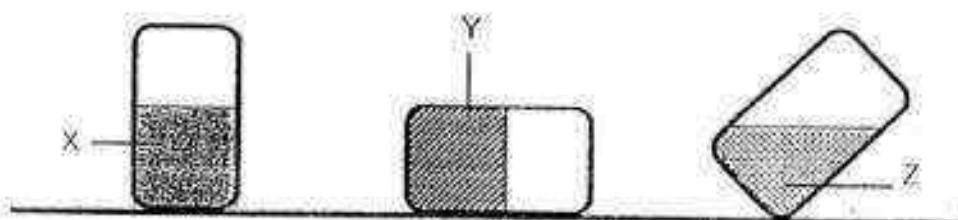
- (1) A only
- (2) B only
- (3) A and C only
- (4) B and D only

17. The diagram below shows a sealed container with a volume of 300 cm^3 which was completely filled with air. A syringe was then used to remove 75 cm^3 of from



What is the final volume of air in the container if the container did not change its shape?

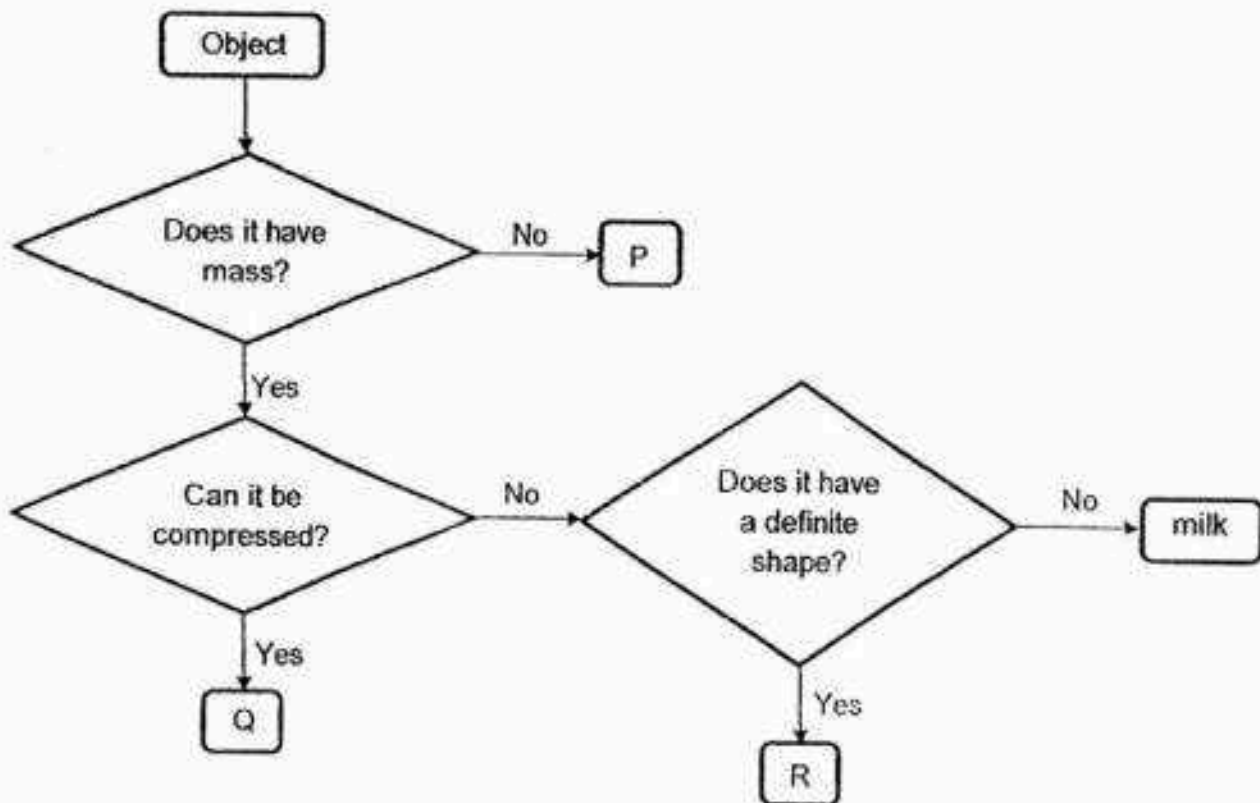
- (1) 75 cm^3
 - (2) 225 cm^3
 - (3) 300 cm^3
 - (4) 375 cm^3
18. The diagram below shows equal amounts of three substances X, Y and Z in three similar containers.



Based on the diagram, which of the statements is **definitely** correct?

- (1) Substance Y is a solid.
- (2) Substances X and Z are liquid.
- (3) Substance Z does not have a definite volume.
- (4) Substances X and Y take the shape of their containers.

19. Study the flowchart below.



Which of the following correctly represent P, Q and R?

	P	Q	R
(1)	wind	shadow	book
(2)	heat	wind	oil
(3)	oil	heat	air
(4)	shadow	air	book

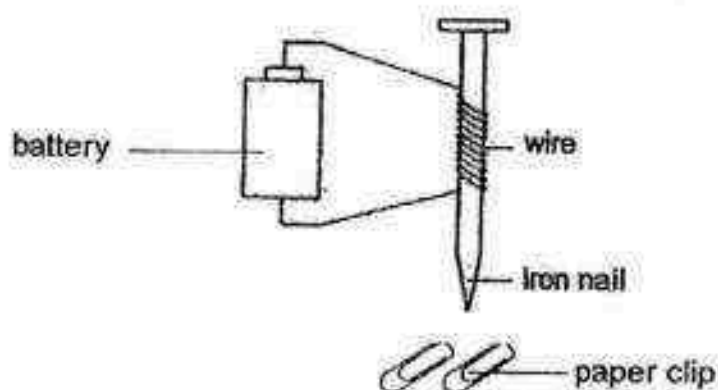
20. Kenneth found three objects and he wanted to test if they were magnets. He placed a bar magnet next to each end of the objects and recorded his observations.

object	D	E	F
Observations	No reaction was observed	One end was attracted to the bar magnet and the other end was repelled by the bar magnet	Both ends were attracted to the bar magnet

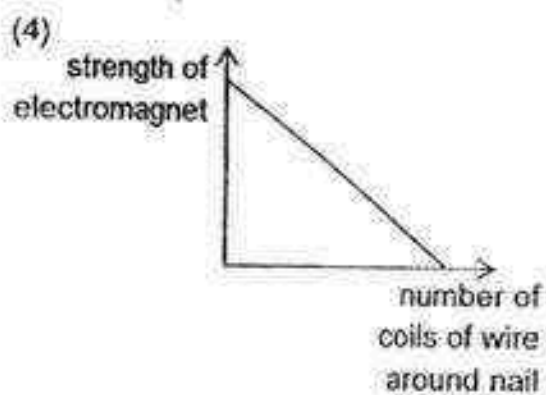
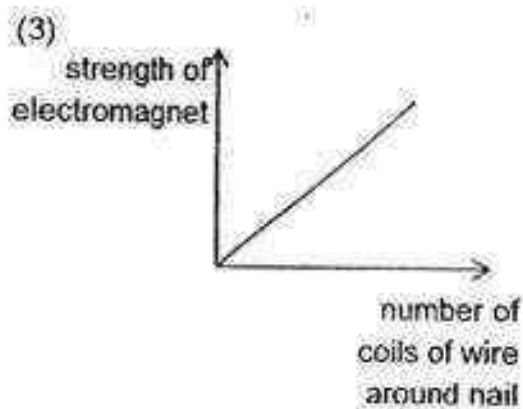
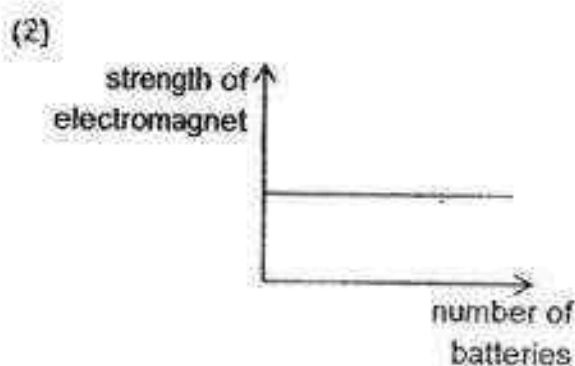
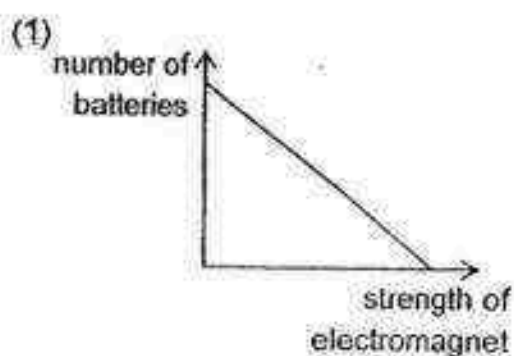
Which of the following correctly shows what objects D, E and F could be?

	D	E	F
(1)	wooden ruler	magnet	steel spoon
(2)	steel spoon	magnet	plastic spoon
(3)	plastic spoon	iron rod	magnet
(4)	magnet	wooden ruler	iron rod

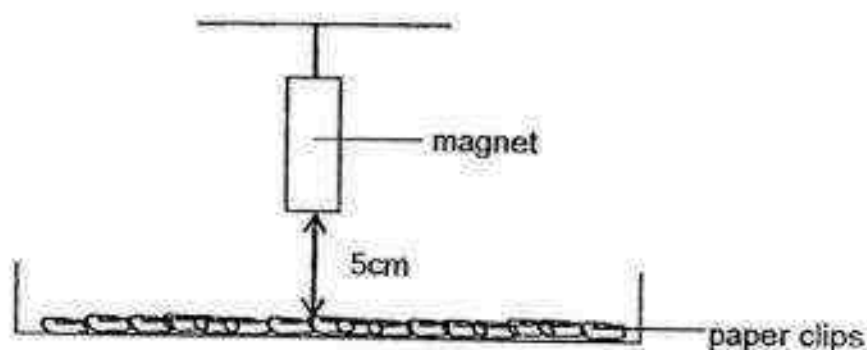
21. Ethan set up an experiment as shown below to test how some variables affect the strength of an electromagnet.



Which of the following graphs correctly shows a possible result of his experiment?



22. Nadia carried out an experiment using some paper clips and a magnet.



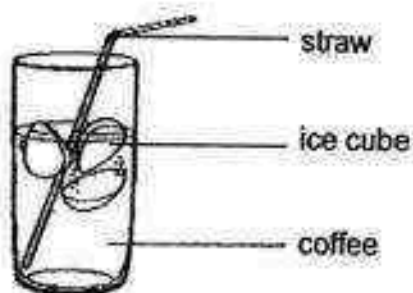
The magnet was hung 5cm above the paper clips. Nadia then counted the number of paper clips that were attracted to it.

She repeated the experiment with the magnet at different distances from the paper clips.

What do you think was the aim of Nadia's experiment?

- (1) To find out if the number of magnets affects the magnetic strength of the magnet
- (2) To find out if the number of paper clips affects the magnetic strength of the magnet
- (3) To find out if the type of magnet affects the number of paper clips attracted
- (4) To find out if the distance between the magnet and paper clips affects the number of paper clips attracted

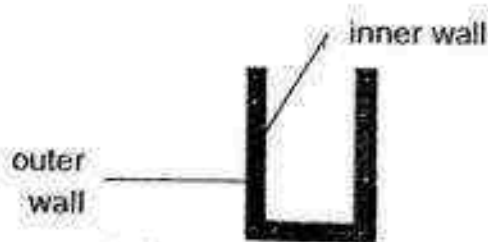
23. Sara bought a glass of hot coffee. As it was too hot to drink, she put some ice cubes in it and used a straw to stir it.



Which of the following correctly shows what happens to the coffee, straw and ice cubes?

	coffee	straw	ice cubes
(1)	loses heat	gains heat	gains heat
(2)	gains heat	gains heat	loses heat
(3)	gains heat	loses heat	gains heat
(4)	loses heat	gains heat	loses heat

24. Ming Hua has a glass cup with thick walls.

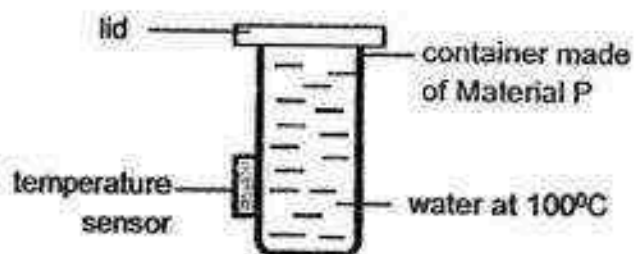


He filled the cup with boiling water and noticed that the cup cracked.

Which of the following explains why the cup cracked?

- (1) The water expanded faster than the glass cup.
- (2) The glass cup contracted faster than the water.
- (3) The outer wall of the glass cup contracted faster than the inner wall of the glass cup.
- (4) The inner wall of the glass cup expanded faster than the outer wall of the glass cup.

25. Raegan wanted to compare the speed at which heat passes through four different materials P, Q, R and S. He set up the apparatus as shown below.



A temperature sensor was placed on the outer surface of a container made of Material P, which was originally at room temperature. Raegan poured water at 100 C into the container.

Thirty seconds later, he recorded the temperature that was captured by the temperature sensor.

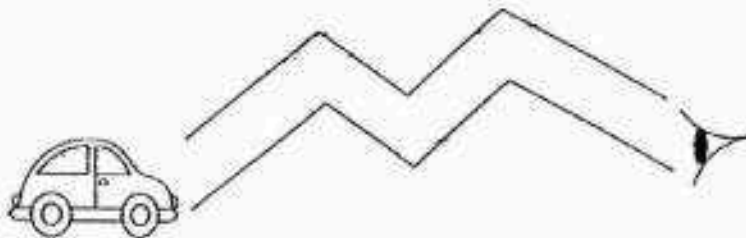
He then repeated the experiment with similar-sized containers made of materials Q, R and S, which were all originally also at room temperature. The table below shows the result obtained.

Material	Temperature (°C)
P	78
Q	55
R	30
S	92

Based on the results, which of the following statements is correct?

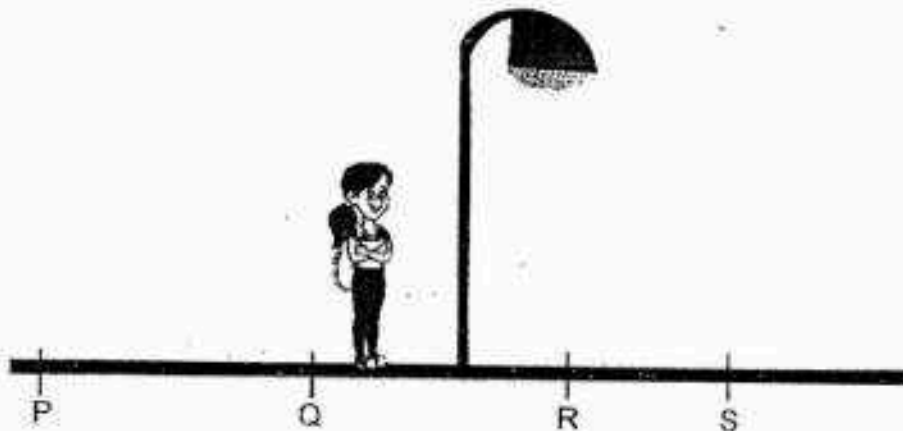
- (1) Material R is the best conductor of heat.
- (2) Material S is the poorest conductor of heat.
- (3) Material Q is a better conductor of heat than Material S.
- (4) Material P is a better conductor of heat than Material Q.

26. The diagram below shows a bent tube.



What is the smallest number of mirrors that must be placed in the tube for Jane to see the toy car?

- (1) 1
 - (2) 2
 - (3) 3
 - (4) 4
27. Ling Li was walking along a street near a street lamp one night.



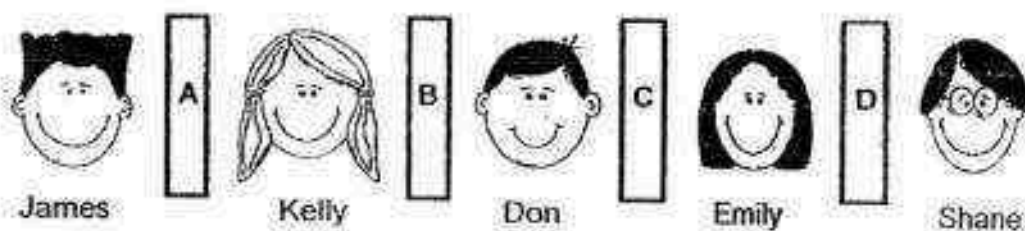
At which point would her shadow be the longest?

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

28. Mrs Tan used four materials, A, B, C, and D, to build four walls in a playroom for her children.

Material	Does not allow light to pass through	Allows some light to pass through	Allows all light to pass through
A	✓		
B			✓
C	✓		
D		✓	

She then asked her five children to stand behind the walls as shown in the diagram below.



Which of the following statements is true?

- (1) Shane cannot see Emily.
- (2) Don can see Kelly and Emily.
- (3) Emily can see Don and Shane.
- (4) Kelly can see Don but not James.

END OF BOOKLET A

Name: _____ (

End-of-Year 2016

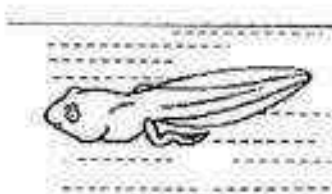
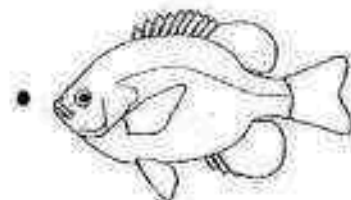
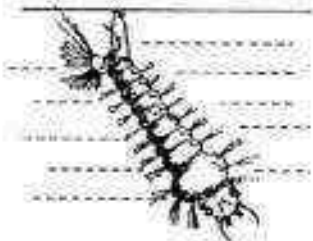
Class P4 ()

Marks: _____ /44

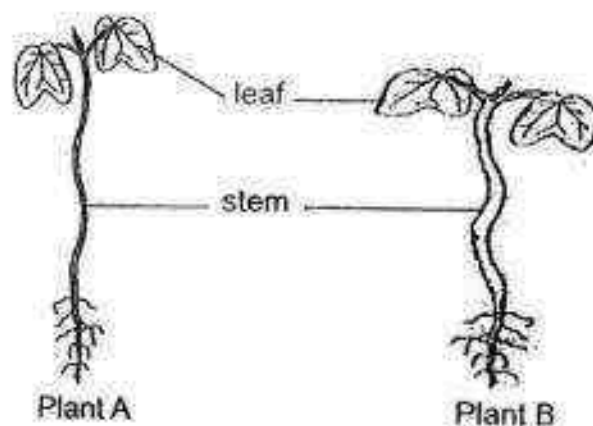
Section B: 44 marks

Read the questions carefully and write down your answers in the spaces provided.

29. The diagram below shows the young and adult of some organisms. Draw lines to match the young with the correct adult. [3]



30. The diagram below shows two plants.

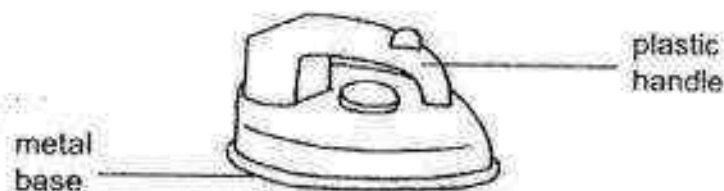


- (a) What is one difference between the stem of plant A and the stem of Plant B? [1]

The stem of Plant A is _____ than the stem of Plant B.

- (b) The leaves help both plants make _____ in the light. [1]

31. The diagram below shows an iron.



- (a) The handle is made of plastic because plastic is a _____ conductor of heat. [1]

- (b) The base is made of metal because metal is a _____ conductor of heat. [1]



32. Susan placed a magnet near an iron rod as shown below.



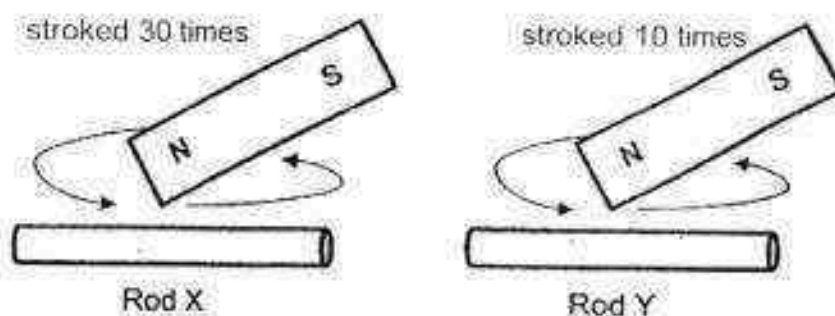
The

- (a) The magnet exerts a _____ on the iron rod. [1]
- (b) Choose the correct word from the box to answer the question below. [1]

flexible	magnetic	strong
----------	----------	--------

Susan's observation shows that the iron is a _____ material.

Susan then stroked two similar iron rods X and Y with the same magnet as shown in the figure below.



Both rods became magnets and were used to attract similar pins.

- (c) Circle the correct answer below. [1]

Rod X attracted ('less pins than' / 'the same number of pins as' / 'more pins than') Rod Y.



33. Megan planted a seed and measured the mass of the seed leaf and height of the plant over 9 days. She recorded her findings in the table below.

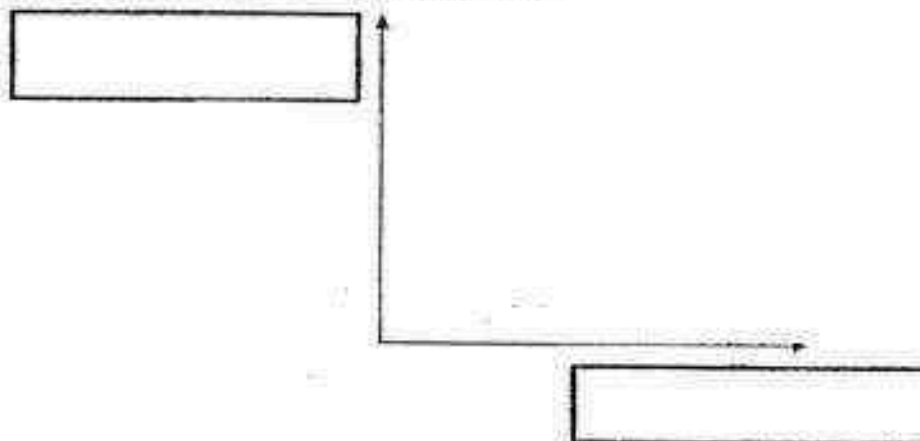
Day	Mass of seed leaf (g)	Height of plant (cm)
1	2.8	1.5
3	1.9	3.0
5	1.0	3.9
7	0.7	5.2
9	0.4	7.0

- (a) Why did the mass of the seed leaf decrease over time?

[1]

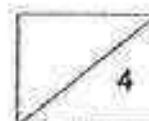
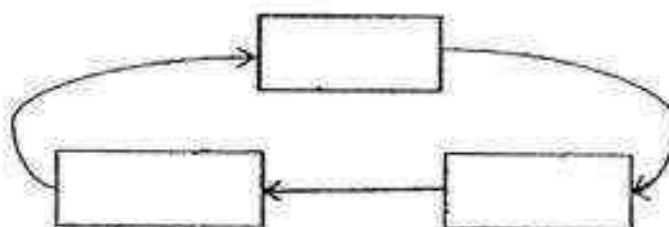
- (b) Based on the findings, draw a graph to show the relationship between the number of days and the mass of seed leaf.

[2]

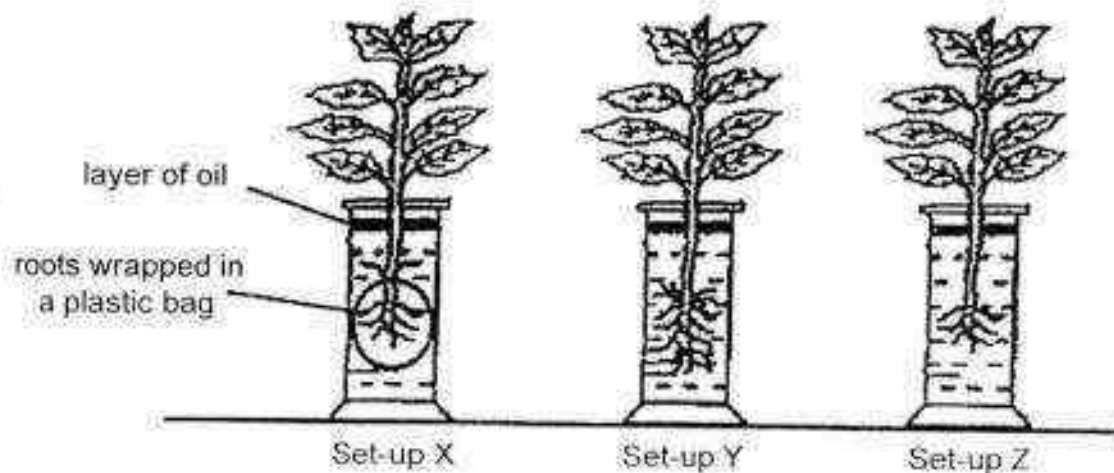


- (c) Fill in the boxes below with suitable words to show the stages of the life cycle of a plant.

[1]



34. Le Xuan placed three plants of the same type in identical jars, each containing the same amount of water as shown below.



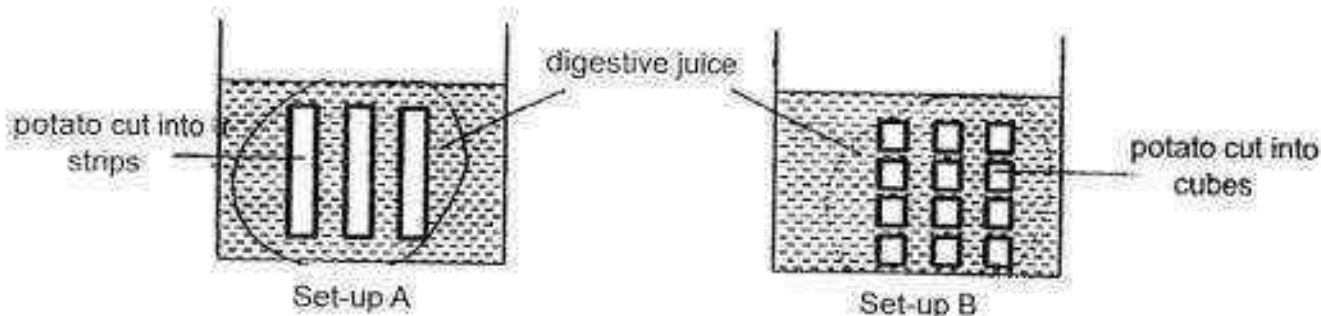
A layer of oil poured on top of the water to prevent any loss of water to the surroundings. The jars were put at the same location for five days.

- (a) Suggest what Le Xuan might observe about the plant in set-up X after five days. Explain your answer. [2]

- (b) Compare the difference between the water levels in set-ups Y and Z after five days? Explain your answer. [2]



35. Jiaqi set up an experiment using potatoes which were cut up into smaller pieces in two different ways as shown below.



Jiaqi wanted to find out if the way the potato was cut would affect the amount of time taken for it to be completely digested.

- (a) Put a tick (✓) in the correct column to indicate the variables that she should change or keep the same in order to conduct a fair test [2]

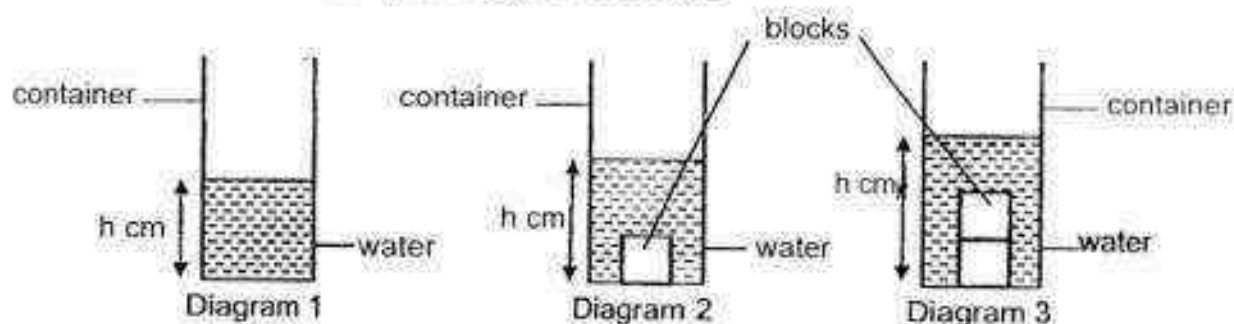
Variable	Variable to change	Variable to keep the same
mass of potato used		
type of potato used		
way potato is cut		
amount of digestive juice used		

- (b) If Jiaqi had conducted a fair test, would the potatoes in set-up A or set-up B take a shorter time to digest? Explain your answer. [1]

- (c) In which part of the digestive system will be the potatoes be fully digested and what happens to the digested potatoes? [1]



36. Melvin wanted to find out if the number of metal blocks in a container would affect the height of water in the container. He obtained a container of water as shown in diagram 1 below and measured h , the height of the water.



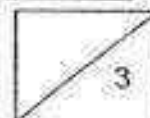
Melvin added similar metal blocks one at a time into the container of water as shown in diagrams 2 and 3. Each time, he measured h , the height of the water, and recorded his results in the table below.

Number of metal blocks added	h (cm)
0	5
1	9
2	13
3	17
4	17

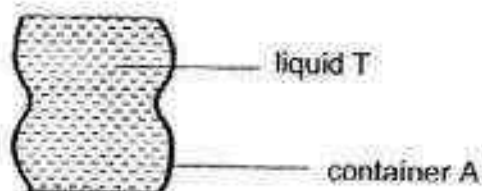
- (a) Explain why h increases as the number of blocks added increases from one to three. [1]

- (b) State a property of metal that allowed Melvin to use the metal blocks to conduct the experiment above. [1]

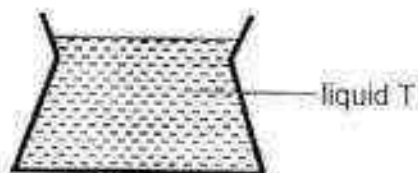
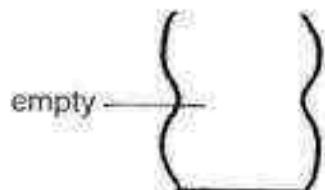
- (c) Give a possible reason why h remained the same when the number of blocks added increased from three to four. [1]



37. James poured liquid T into container A until it was filled to the top as shown below.



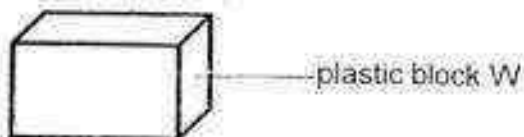
He then poured all of the liquid T in container A into container B as shown in the next diagram. Both containers A and B were at room temperature.



- (a) Put a tick (✓) in the correct boxes below to indicate if the following properties of liquid T had changed or remained the same after it was poured from container A to container B. [2]

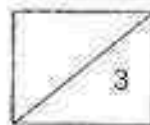
Property of liquid T	The property changed	The property remained the same.
volume		
mass		
shape		
temperature		

Container A could hold 500cm^3 of liquid T when it was filled to the top. Plastic block W shown below also has a volume of 500cm^3 .

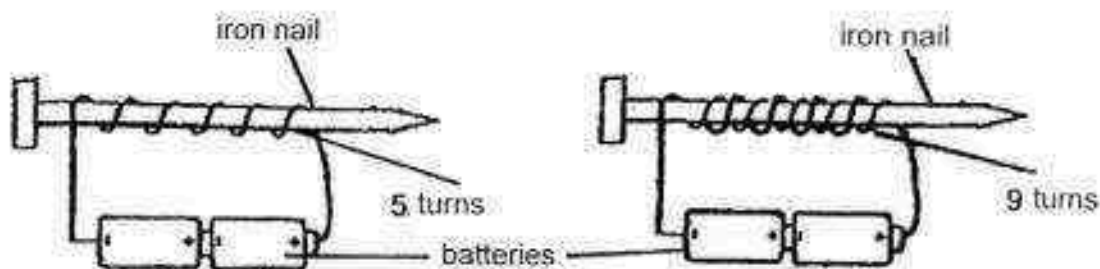


James tried to put plastic block W into container A but he could not.

- (b) What property does liquid T have that plastic block W does not have to explain why container A could hold 500cm^3 of liquid T but not plastic block W. [1]



38. Ashwin wanted to find out if the number of batteries will affect the strength of an electromagnet. He had two set-ups as shown below.



Ashwin's teacher said that his set-ups were not correct.

- (a) Suggest two changes Ashwin must make to his set-up so that he can achieve his aim. [2]

(i) _____

(ii) _____

- (b) What relationship will be observe between the number of batteries and the strength of an electromagnet? [1]

- (c) Can Ashwin carry out his experiment using a copper nail of the same thickness instead of an iron nail? Give a reason for your answer. [1]

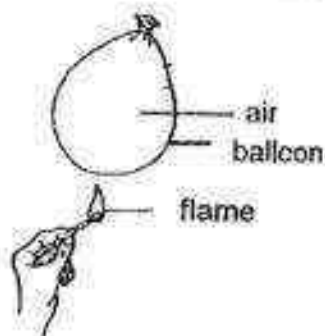


39. Kathy blew up a balloon and placed it in the refrigerator. After half an hour, she took the balloon out of the refrigerator and placed it on the table. She used a thermometer to measure the temperature of the surface of the balloon.

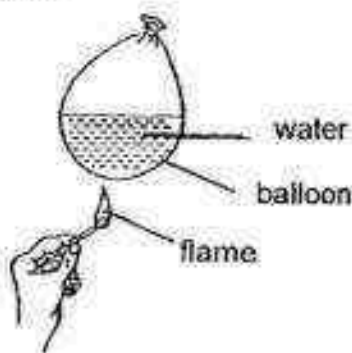
(a) What changes would Kathy observe to the temperature of the surface of the balloon over time? Explain your answer. [1]

(b) Kathy also noticed that the balloon increased in size on its own when she took it out of the refrigerator and placed it on the table. Give an explanation for her observation. [1]

Kathy then heated the balloon over a flame as shown in the diagram below. The balloon burst immediately.



She took another similar balloon, filled it with some water and heated it under the flame. The balloon did not burst this time.



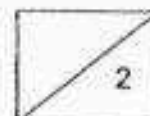
Question 39 continues on the next page.



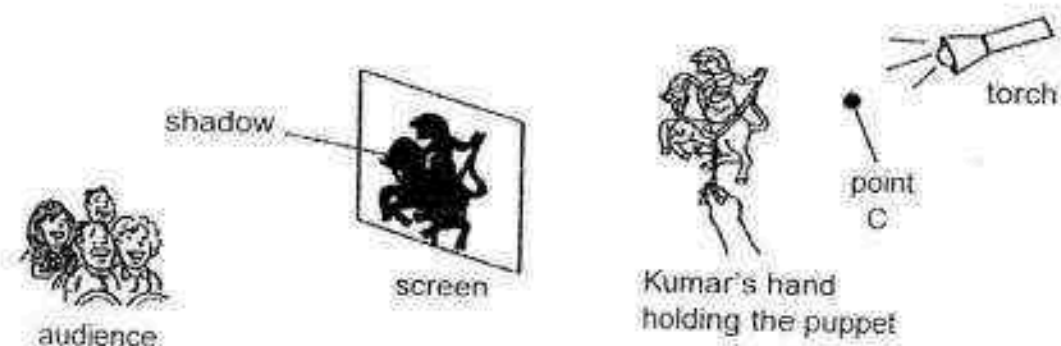
Question 39 continues.

- (c) What does the experiment tell you about the speed at which air and water conducts heat? [1]

- (d) Based on your answer in (c), explain why the balloon with water did not burst while the one filled with air burst when heated under the flame. [1]



40. Kumar was performing a shadow puppet show by placing different puppets in between a screen and a torch. The screen is in a fixed position.



- (a) State two properties of light that enable the shadow to form on the screen. [2]

- (i) _____

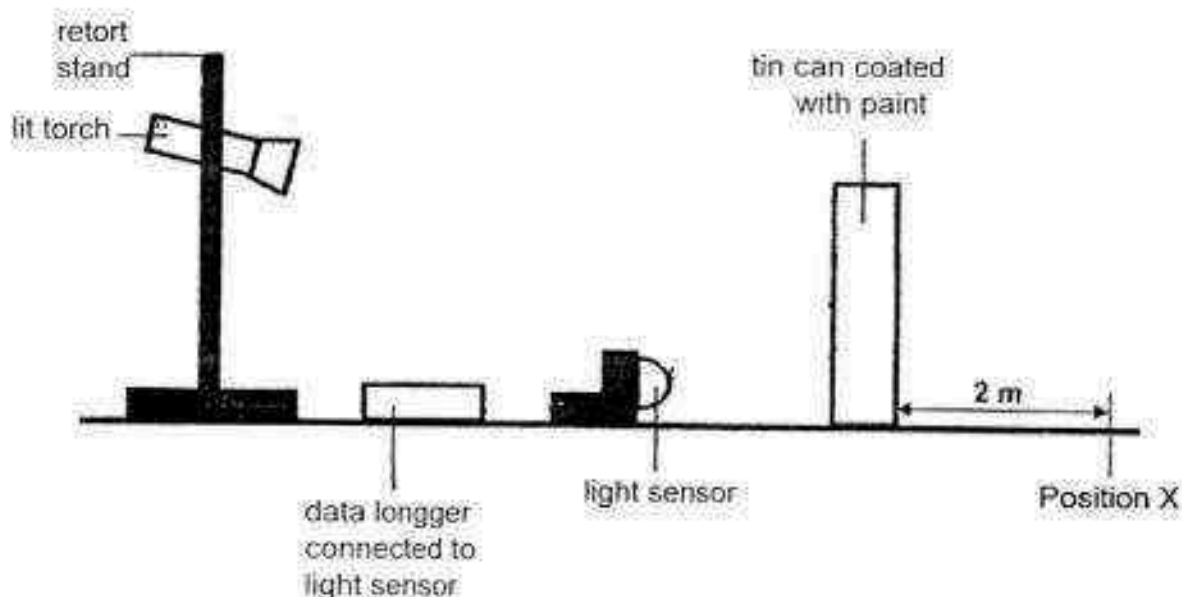
- (ii) _____

- (b) Without removing the puppet, Kumar placed a large piece of clear glass at point C shown in the diagram above. He predicted that a dark shadow will still be formed on the screen. Do you agree with Kumar? Explain your answer. [1]

- (c) Suggest one way Kumar can make the shadow bigger without changing the puppet he is using. [1]



41. Jun Ming carried out an experiment to measure the amount of light reflected by four different types of paints, W, X, Y and Z. Four identical tin cans were each coated with one type of paint. The experiment was carried out in a dark room.

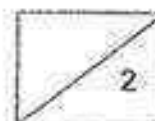


Jun Ming recorded the results of his experiment in the table below.

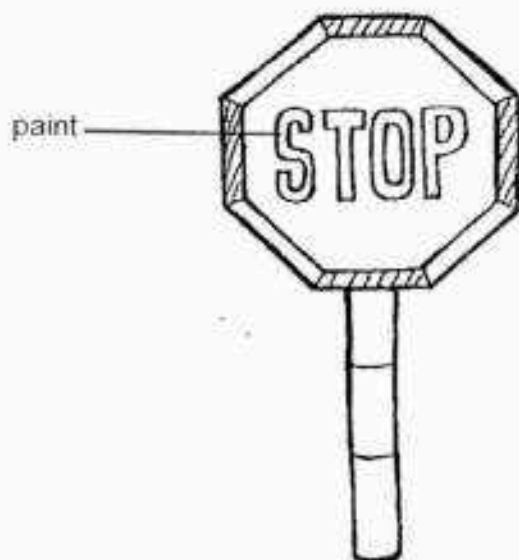
type of paint	amount of light detected by light sensor (units)
W	150
X	80
Y	210
Z	120

- (a) In the diagram above, draw the path of light to show how light from the torch could be reflected by the tin can and detected by the light sensor. [1]

- (b) What is the purpose of doing the experiment in a dark room? [1]

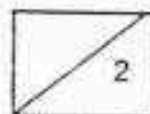


- (c) How would the amount of light detected by the light sensor change for each type of paint if the tin can is placed at position X? Explain your answer. [1]



- (d) Which type of paint, W, X, Y or Z, would be most suitable for painting road signs like that shown above, so that drivers can see it clearly at night? Explain your answer. [1]

END OF PAPER



EXAM PAPER 2016 (P4)

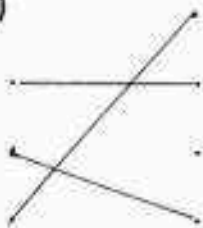
SCHOOL : AI TONG

SUBJECT : SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	2	4	4	3	3	2	2	3	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	2	3	3	2	2	3	1	4	1
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
3	4	1	4	4	3	1	4		

29)



30)a)weaker

b)food

31)a)poor

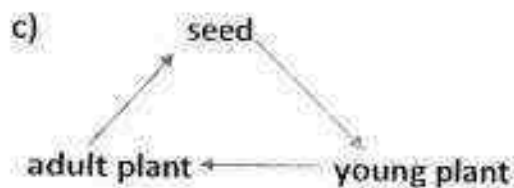
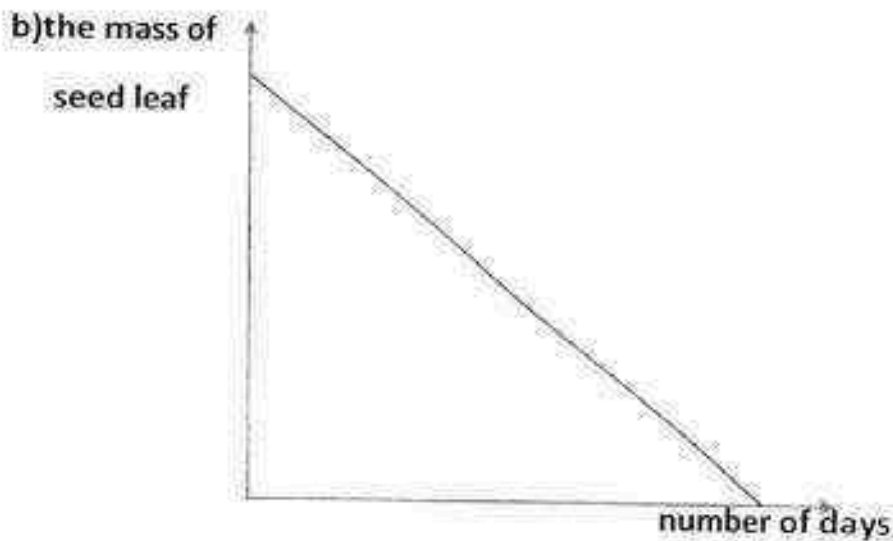
b)good

32)a)force

b)magnetic

c)more pins than

33)a)The seed leaf had used up all the food for the plant to survive.



34)a)The plant will die as it cannot absorb water to survive.

b)The water levels in y is lower than Z. The plant in Y have roots which is more than Z. The roots can absorb more water and minerals salts than Z. Z have roots that are fewer.

35)a)

	✓
	✓
✓	
	✓

b)B. The potatoes in B have a greater exposed surface area for more digestive juice to act on.

c)Small intestine. The digested potato will be absorbed into the bloodstream.

36)a)The blocks take up spaces/has volume so the water moves up to give space to the blocks/displace the water.

b)The metal blocks sink in the water.

c)The water had reached the top of the container.

37)a)

	✓
	✓
✓	
	✓

b)Liquid T takes up the shape of its container.

38)a)i)He should ensure each setup has different number of batteries.

ii)Use the same number of coils around the iron nail.

b)As the number of batteries increases, the strength of an electromagnet increases.

c)No. Copper is a non-magnetic material and cannot be magnetised.

39)a)The temperature increases. The balloon gain heat from the surrounding.

b)The air in the balloon gained heat and expand.

c)Water is a better conductor of heat than air.

d)Water conducts heat away from the balloon faster than air. Thus the heat is not hot enough to melt the rubber.

40)a)i)Light travels in a only straight line.

ii)Light can be blocked.

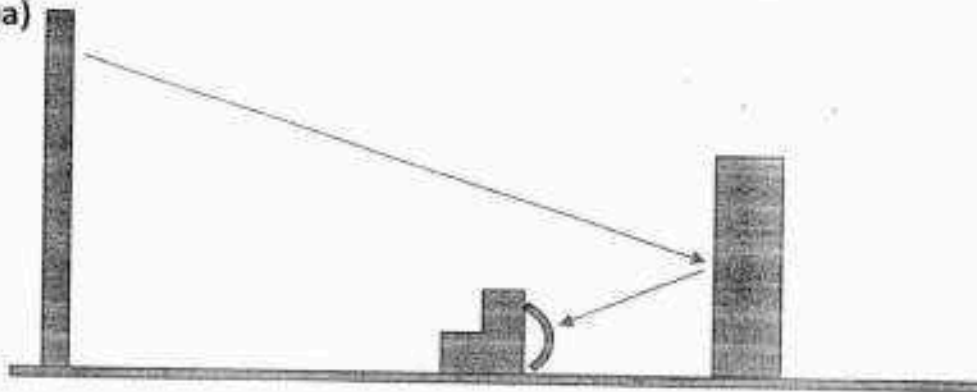
b)Yes, I agree. The clear glass is transparent so the puppet will still block the light casting a dark shadow.

c)He can move the puppet further from the screen.

He can bring the puppet closer to the torch.

He can move the torch nearer to the puppet.

41)a)



b) To ensure that no other light from the surrounding is detected by the light sensor.

c) The amount of light detected would decrease. At a further distance less light will reach the tin can/less light is reflected by the tin can to the light sensor.

d) Y. Y reflects the mist light.



RED SWASTIKA SCHOOL

SCIENCE 2016 SEMESTRAL EXAMINATION 2 PRIMARY 4

Name : _____ ()

Class : Primary 4/ _____

Date : 27 October 2016

BOOKLET A

Total time for Booklets A & B: 1h 30 min

Booklet A: 28 questions (56 marks)

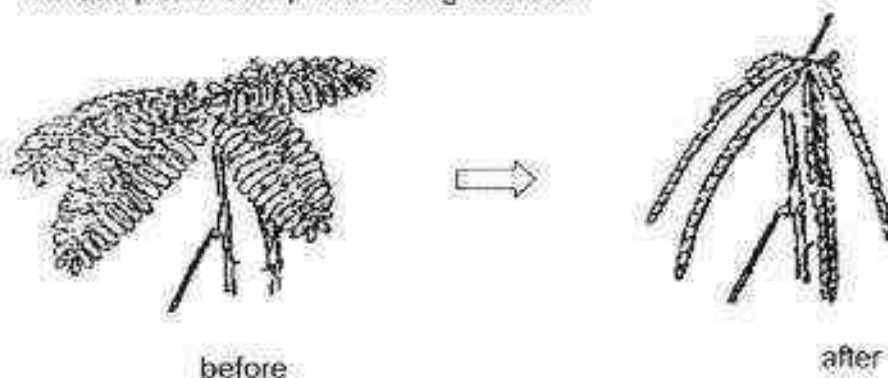
Note:

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 16
 - b. Questions 1 to 28

Section A

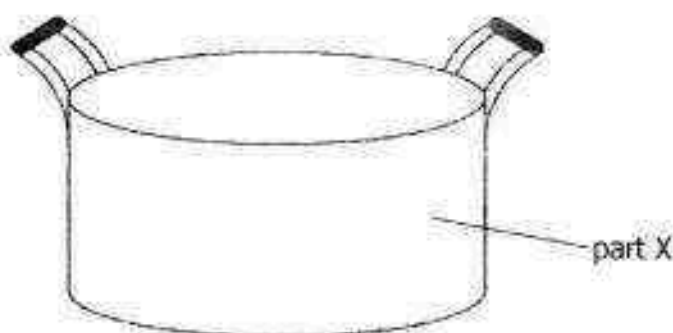
For Questions 1 to 28, choose the most suitable answer and shade its number in the OAS provided.

1. Rahim found a mimosa plant in the garden. He found that the leaves of the mimosa plant fold up after being touched.



This shows that the mimosa plant is a living thing because it can _____.

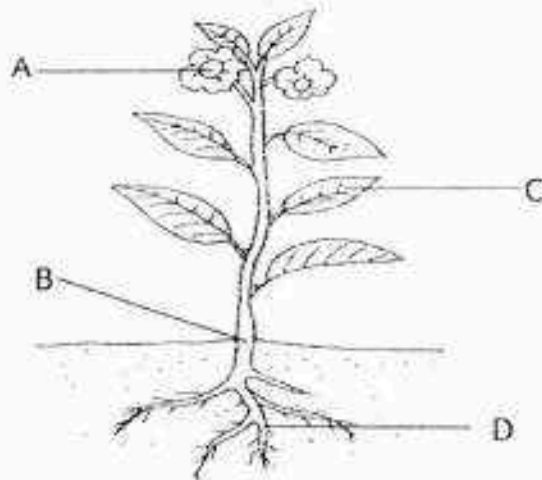
- (1) die
 - (2) grow
 - (3) respond
 - (4) reproduce
2. The diagram shows a pot that can be found in the kitchen.



Metal is used to make part X of the pot because it _____.

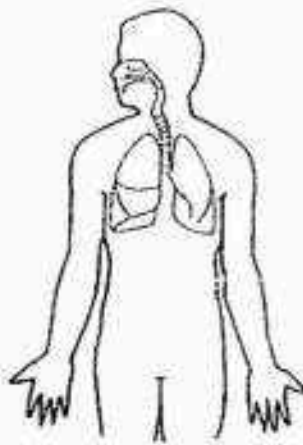
- (1) is shiny
- (2) is transparent
- (3) sinks in water
- (4) conducts heat well

3. Which part, A, B, C or D, holds the plant firmly to the ground?



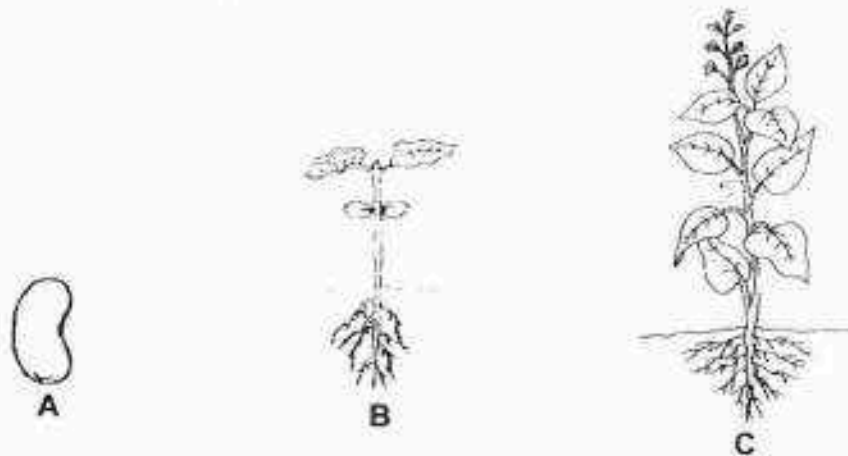
- (1) A
- (2) B
- (3) C
- (4) D

4. Which one of the organ systems is shown below?



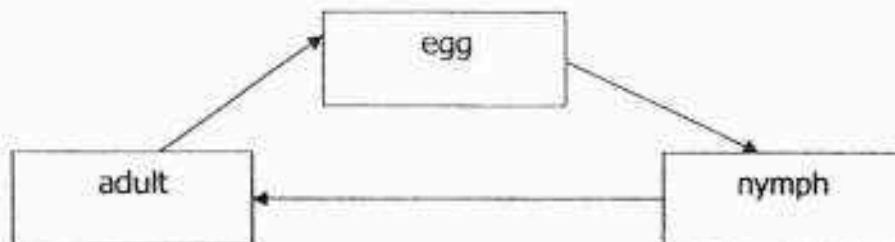
- (1) skeletal system
- (2) muscular system
- (3) respiratory system
- (4) circulatory system

5. The diagram below shows the stages in the life cycle of a plant.



What is stage B in the life cycle of the plant?

- (1) egg
 - (2) seed
 - (3) young plant
 - (4) adult plant
6. 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) butterfly
- (3) mosquito
- (4) grasshopper

7. Which one of the following properties is true for both oxygen and a pencil?

- (1) Both have mass.
- (2) Both can be seen.
- (3) Both can be compressed.
- (4) Both have a definite shape.

8. Which one of the following is not a source of light?

- (1) fire
- (2) glass cup
- (3) lighted bulb
- (4) candle flame

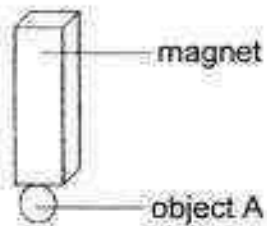
9. Mrs Tay places a cup of hot tea on the table. The hot tea becomes cold after 30 minutes.



Which one of the following best explains this?





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

10. Object A was attracted to a magnet as shown in the figure below.



What can object A be?

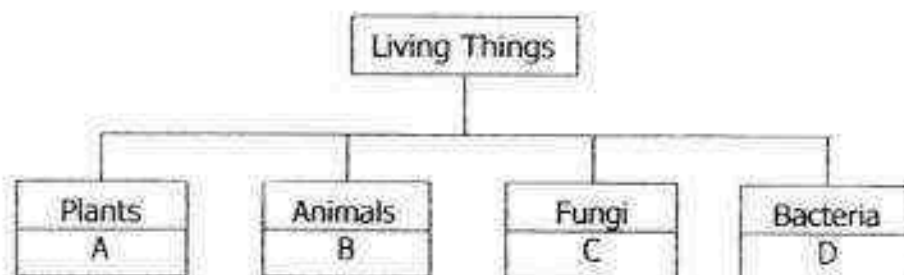
- (1) a steel ball
 - (2) a rubber ball
 - (3) a plastic ball
 - (4) a wooden ball
11. Study the two groups of things carefully.

Group A	Group B
 spoon	 fish
 nail	 plant

Which of the following is correct?

- (1) Only group A can respond.
- (2) Both group A and group B can reproduce.
- (3) Only group B needs water, food and air to live.
- (4) Both group A and group B can move freely on their own.

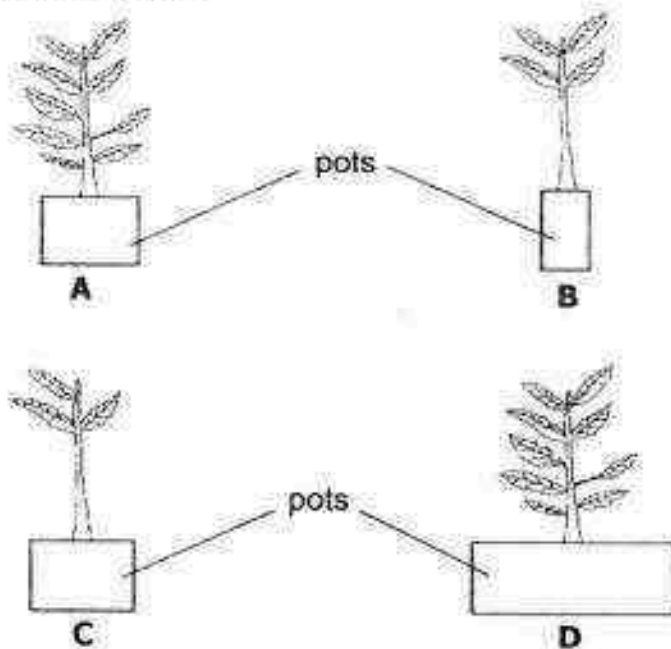
12. Study the classification chart below carefully.



Alden found an unknown organism that has flowers and fruits growing on it. Which letter, A, B, C or D, best represents the unknown organism?

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

13. Brayan wanted to find out if different amount of soil affects the growth of a plant. She had four set-ups of the same type of plants grown in pots completely filled with soil as shown below.



Which two set-ups should she use to carry out a fair experiment?

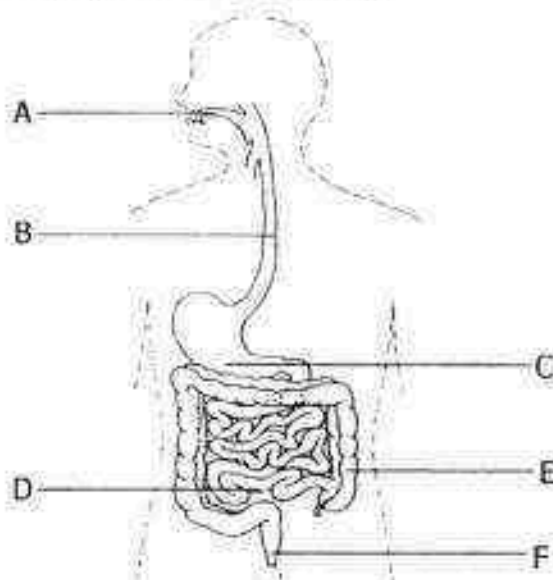
- (1) A and B
- (2) B and C
- (3) C and D
- (4) A and D

14. James placed four similar seeds, A, B, C and D, from a plant under the following conditions as shown below. A tick (✓) represents the presence of the condition.

Seed	Conditions			
	water	air	light	temperature(°C)
A	X	✓	✓	5
B	✓	✓	X	30
C	✓	X	✓	30
D	✓	✓	✓	30

Which of the above seeds, A, B, C or D, will germinate?

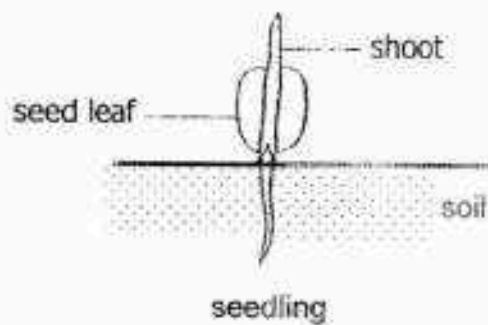
- (1) D only
 - (2) A and B only
 - (3) A and C only
 - (4) B and D only
15. Study the human body system below carefully.



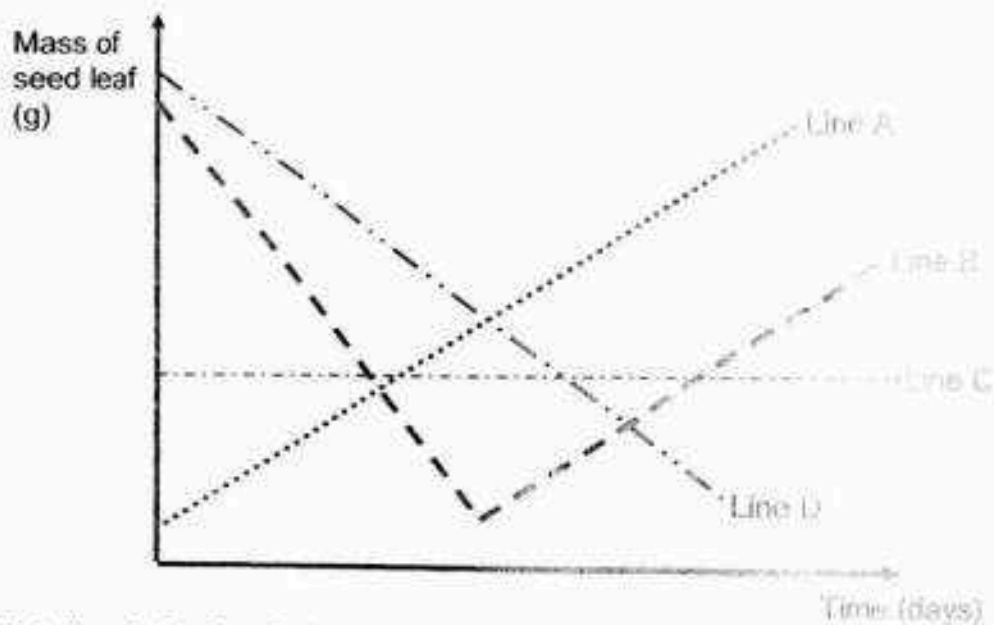
Which of the following correctly identifies the organs where digestive juice is present and the organ where solid waste is passed out of the body?

	Organs where digestive juice is present	Organ where solid waste is passed out
(1)	A, B and C	E
(2)	B, C and D	E
(3)	A, C and D	F
(4)	A, B and D	F

16. A group of students observed the growth of a seedling over a period of time



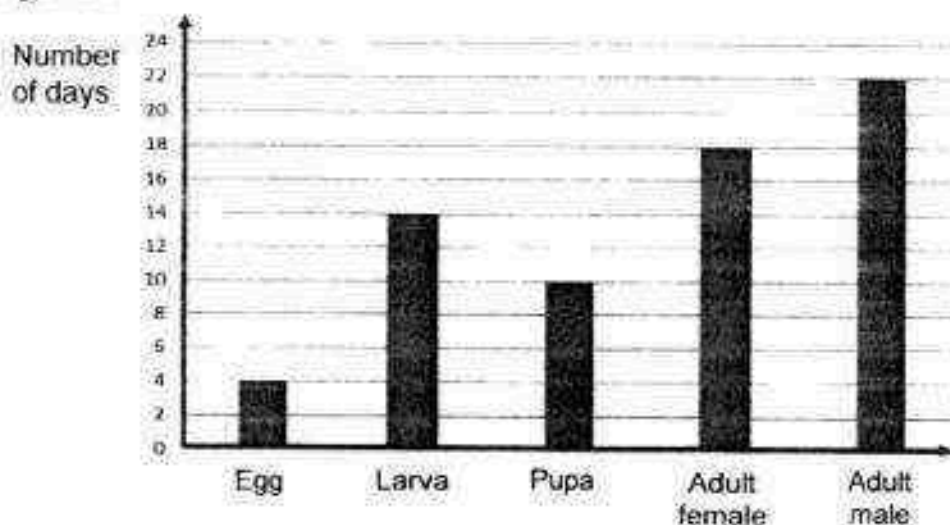
The students also observed how the mass of the seed leaf changed over the same period of time. They plotted the lines, A, B, C and D, as shown in the graph below.



Which line, A, B, C or D, has been plotted correctly?

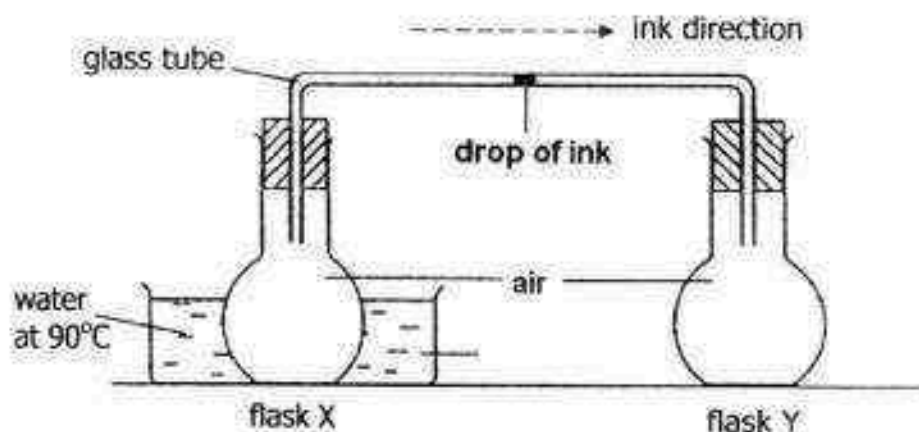
- (1) Line A
- (2) Line B
- (3) Line C
- (4) Line D

17. The graph below shows the number of days for each stage in the life cycle of an organism.



Based on the graph above, which of the following statement is true about the organism?

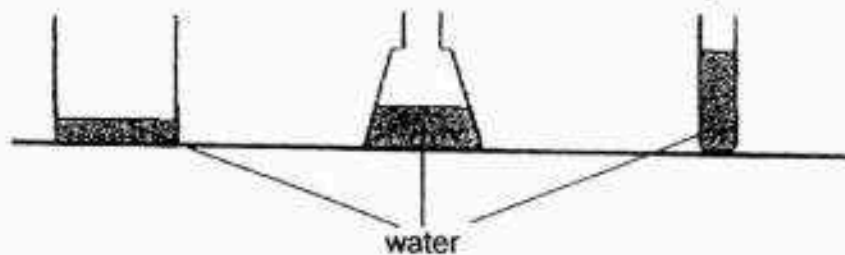
- (1) The organism has 5 stages in its life cycle.
 - (2) The adult female lives longer than the adult male.
 - (3) The organism hatches from the egg after the 4th day.
 - (4) After hatching, the organism takes 10 days to become an adult.
18. Molly set up an experiment as shown below. She discovered that the drop of ink would move towards flask Y when flask X was placed in the hot water.



Why did the drop of ink move towards flask Y?

- (1) The air in flask X has gained heat, hence its volume increased.
- (2) The air in flask X has lost heat, hence its volume increased.
- (3) The air in flask X has gained heat, hence its volume decreased.
- (4) The air in flask X has lost heat, hence its volume decreased.

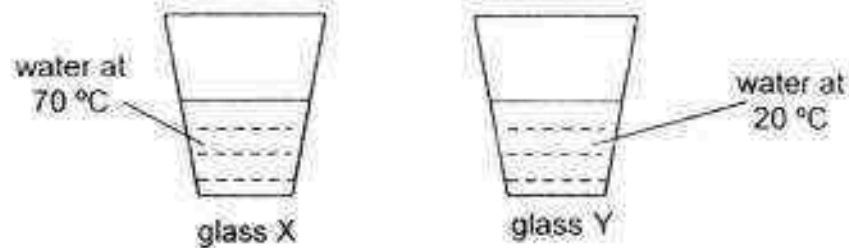
19. Hui Min poured the same amount of water into each of the three different containers as shown below.



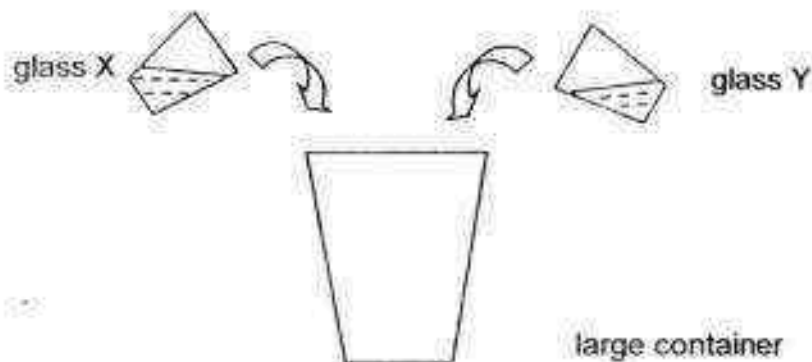
What property of liquid does the above experiment show?

- (1) Liquid can be compressed.
 - (2) Liquid has no definite shape.
 - (3) Liquid has no definite volume.
 - (4) Liquid has mass and occupies space.
20. Which one of the following activities makes use of heat energy?
- (1) Flying a kite.
 - (2) Frying an egg.
 - (3) Listening to music.
 - (4) Eating an ice cream.

21. Jamal poured the same amount of water into each of the two glasses, X and Y. The water in the two glasses was at different temperature as shown below.



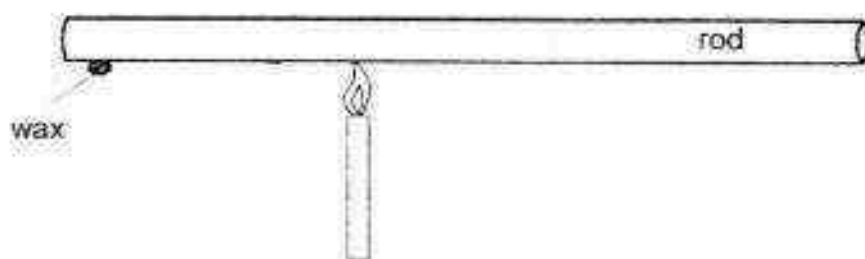
Next, he poured all the water from both glasses into a large container. He immediately measured the temperature of the water in the large container.



What would the temperature of the water in the large container most likely be?

- (1) 20 °C
 - (2) 50 °C
 - (3) 70 °C
 - (4) 90 °C
22. Min Min placed a glass of hot milk on a wooden table. What could she do to cool the milk faster?
- (1) Wrap the glass with a cloth.
 - (2) Place the glass in a paper bag.
 - (3) Pour the milk into a metal cup.
 - (4) Cover the top of the glass with a plastic lid.

23. Eugene prepared four rods, A, B, C and D, of the same size but made of different materials. He placed a drop of wax on each of the four rods as shown below.



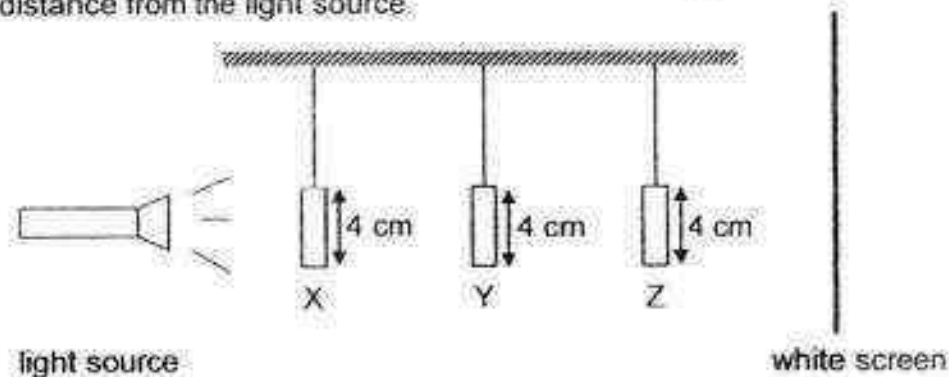
He then heated the rods for three minutes and recorded his observation in the table below.

Rod	State of wax after		
	1 minute	2 minutes	3 minutes
A	liquid	liquid	liquid
B	solid	liquid	liquid
C	solid	solid	liquid
D	solid	solid	solid

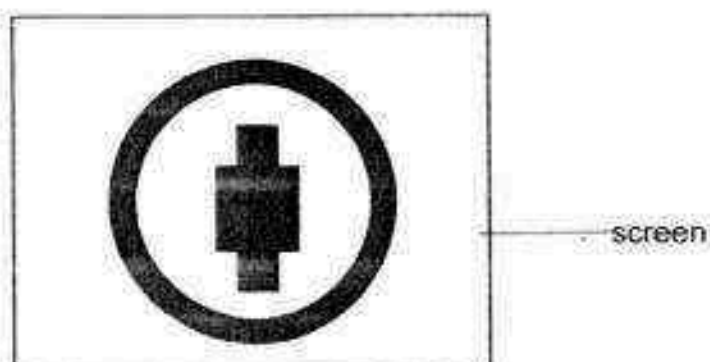
Which one of the following rods is the best conductor of heat?

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

24. Bob set up the experiment below using three shapes, X, Y and Z made of cardboard. He conducted the experiment in a dark room. The three shapes were placed at different distance from the light source.



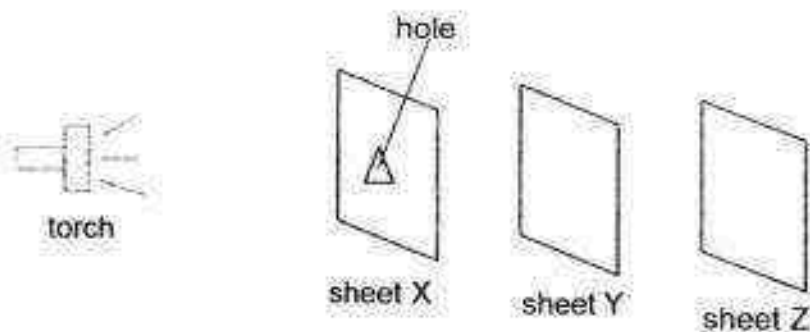
He observed the following diagram on the white screen when the light source was switched on.



Which of the following shows correctly the three shapes, X, Y and Z respectively?

	X	Y	Z
(1)	circle	ring	rectangle
(2)	circle	rectangle	ring
(3)	ring	rectangle	square
(4)	ring	square	rectangle

25. Azmi conducted an experiment in a dark room as shown. He placed a sheet of cardboard, clear glass and metal at different distances from the torch. A bright triangular patch of light can be seen on sheet Y only when he switched on the torch.



Which of the following shows the most likely materials for sheets X, Y and Z?

	Sheet X	Sheet Y	Sheet Z
(1)	clear glass	metal sheet	cardboard
(2)	metal sheet	clear glass	cardboard
(3)	cardboard	metal sheet	clear glass
(4)	clear glass	cardboard	metal sheet

26. A torch is shone on a mug as shown.



torch



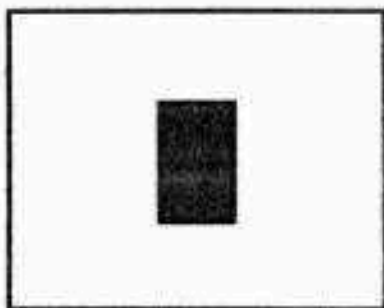
mug



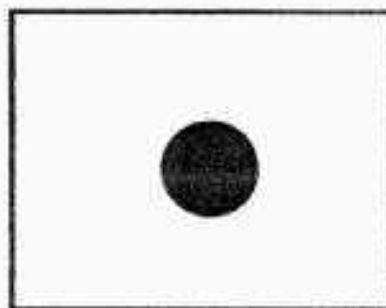
white screen

Which one of the following is likely to be seen on the screen?

(1)



(2)



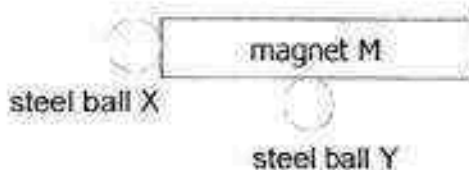
(3)



(4)

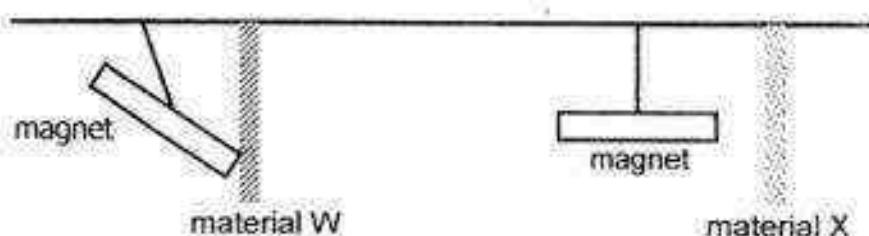


27. Guo Wei set up the following experiment using a magnet and two steel balls as shown. When he lifted up magnet M, steel ball X remained attached to it while steel ball Y fell off the magnet.



Why was steel ball Y not attached to magnet M when magnet M was lifted up?

- (1) The magnetic strength of steel ball Y is greater than that of steel ball X.
 - (2) The magnetic strength of magnet M is too weak to attract the two balls.
 - (3) The magnetic strength of magnet M is stronger at the centre than at the poles.
 - (4) The magnetic strength of magnet M is weaker at the centre than at the poles.
28. Alice set up the following experiment using two similar magnets and two different materials, W and X.



What are the materials, W and X, made of?

	Material W	Material X
(1)	plastic	nickel
(2)	iron	gold
(3)	wood	copper
(4)	iron	steel

END OF SECTION A



RED SWASTIKA SCHOOL

SCIENCE 2016 SEMESTRAL EXAMINATION 2 PRIMARY 4

Name : _____ ()

Class : Primary 4/ _____

Date : 27 October 2016

BOOKLET B

13 Questions
44 Marks

In this booklet, you should have the following:

- a. Page 17 to Page 33
- b. Questions 29 to 41

MARKS

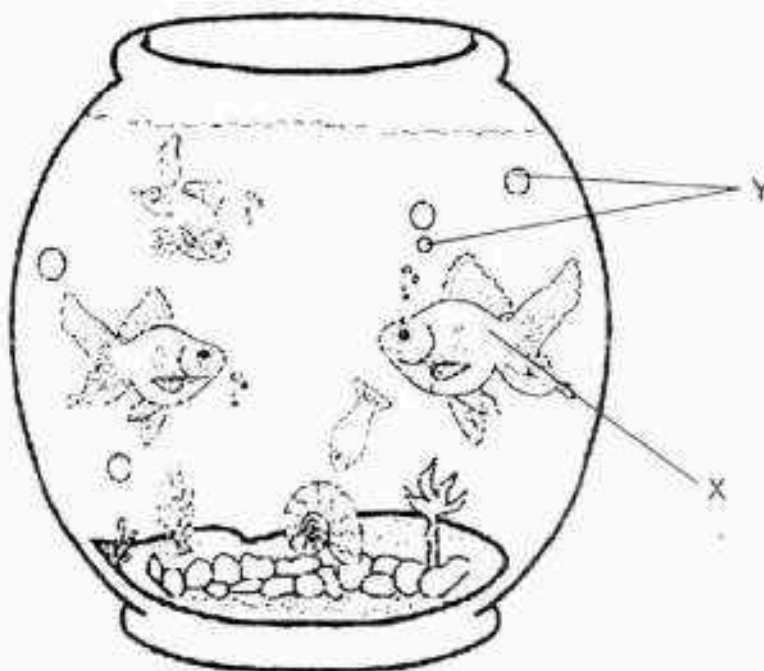
	OBTAINED	POSSIBLE
BOOKLET A		56
BOOKLET B		44
TOTAL		100

Parent's Signature : _____

Section B

Answer all the questions in the spaces provided.

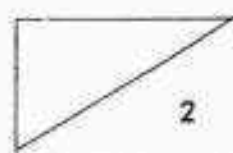
29. Reiden saw some living things and non-living things in the fish tank.



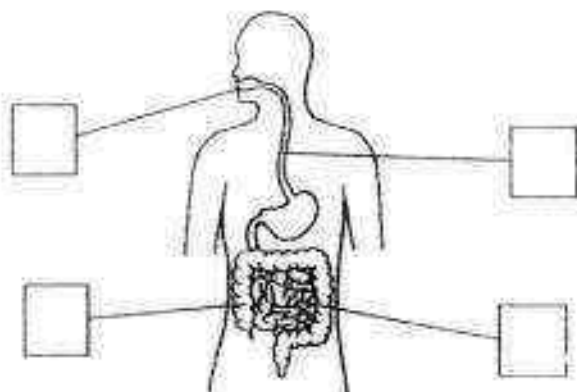
State if X and Y are living things or non-living things. (2m)

(a) X is a _____

(b) Y is a _____



30. The diagram below shows the human digestive system.

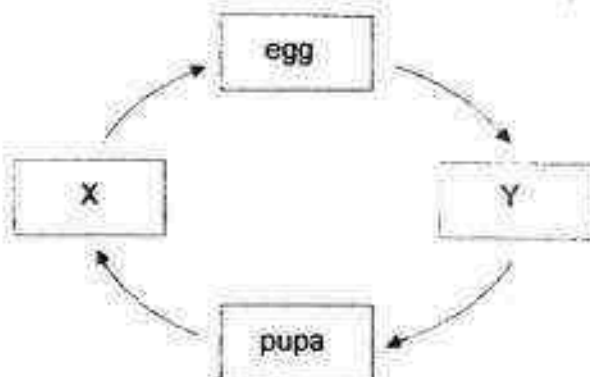


- (a) Tick (✓) one box in the above diagram to show where the small intestine is. (1m)
 (b) Fill in the blank using the following helping words.

small intestine	gullet	large intestine	stomach
-----------------	--------	-----------------	---------

Food from the mouth moves on to the _____ (1m)

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.

adult	seed	larva	wiggler
-------	------	-------	---------

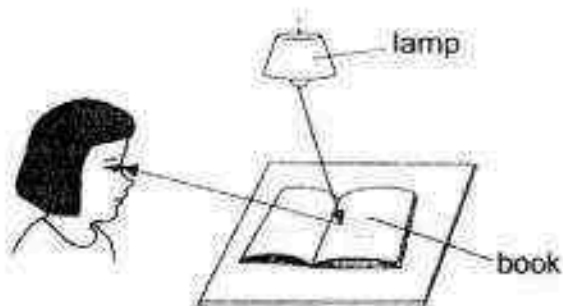
Name the two stages X and Y.

X: _____ (1m)

Y: _____ (1m)

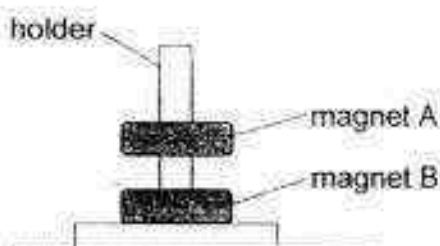


32. The diagram below shows how Mei Ling reads a book.



The _____ from the lamp is _____ by the book and enters Mei Ling's eye. (2m)

33. Sam placed two ring magnets, A and B, through a holder as shown below.

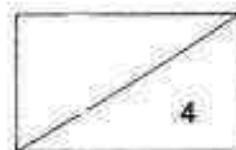


- (a) The holder was made of plastic and did not attract the magnets. Why? (1m)

Plastic is a _____ material.

- (b) Why was magnet A floating above magnet B? (1m)

The like poles of magnet A and magnet B are facing each other. Hence, magnet A _____ magnet B.



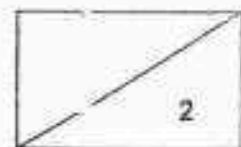
34. Ryan went to the zoo and saw an animal as shown in the picture below.



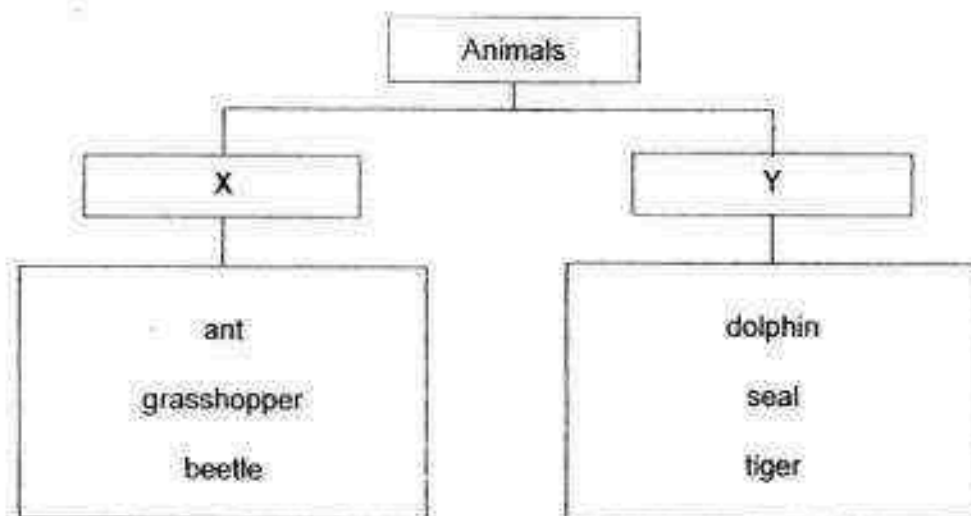
animal X

- (ai) Which group of living things does animal X belong to? (1m)

- (aii) What is the function of the feathers for animal X? (1m)



34. (b) Julie grouped some animals in a classification chart as shown below.



- (i) Based on the classification chart above, what should be the headings for X and Y? (1m)

X: _____

Y: _____

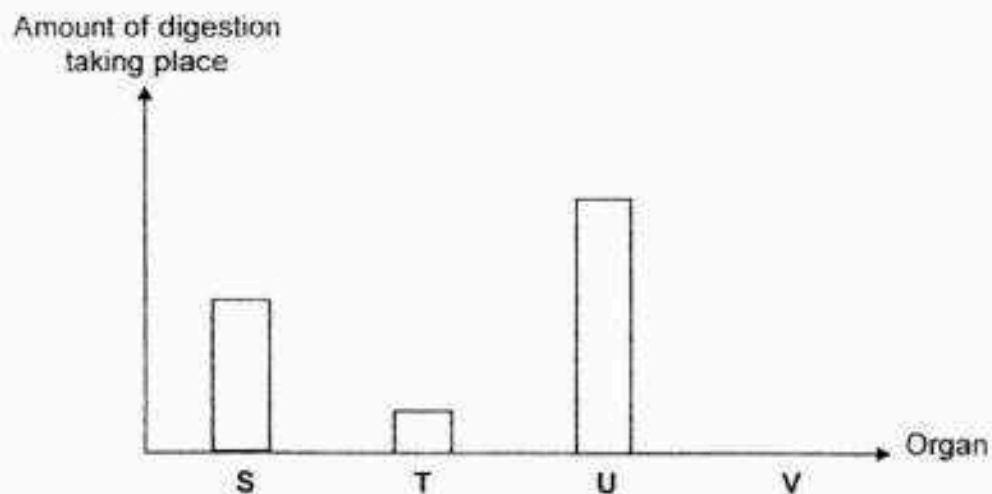
Study the following organism W carefully



- (ii) Based on the classification chart above, which group, X or Y, would you classify organism W? Explain your answer. (1m)

- (iii) State one similarity among the animals in group X in the way they reproduce. (1m)

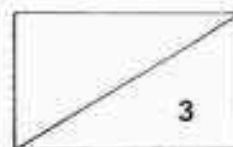
35. The graph shows the amount of digestion taking place in four different organs of the human digestive system.



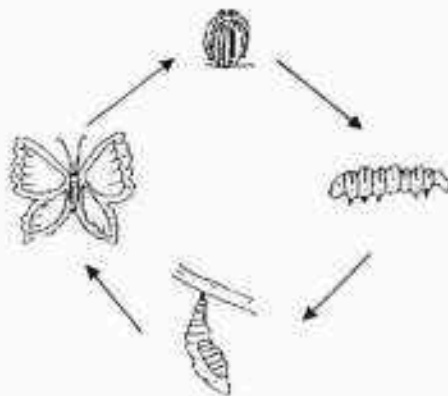
- (a) From the graph above, which part, S, T, U or V, most likely represents the small intestine? (1m)

- (b) What happens to the digested food in the small intestine? (1m)

- (c) What happens to the undigested food in the large intestine? (1m)



36. Study the life cycles of organisms A and B below carefully.



Organism A



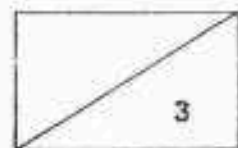
Organism B

- (a) Based only on the diagram above, state one similarity and one difference between the life cycles of organisms A and B. (2m)

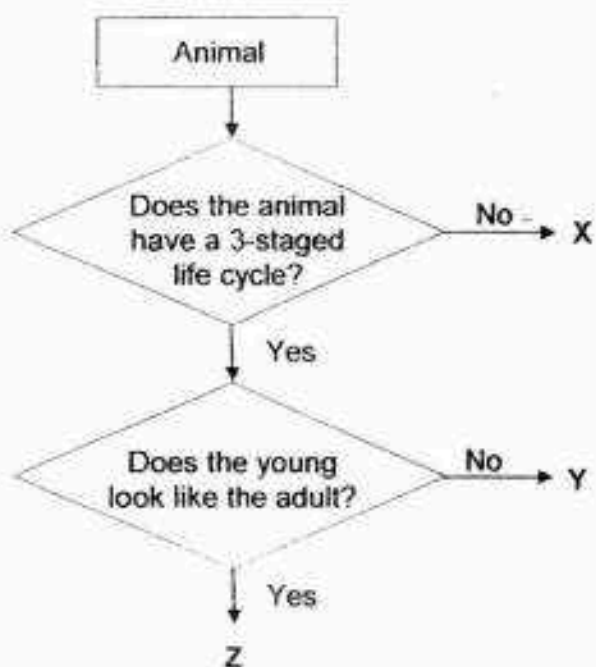
Similarity:

Difference:

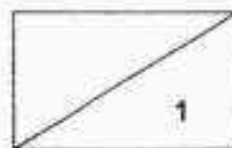
- (b) Which stage in the life cycle of organism A is the most harmful to the crops of a farmer? Why? (1m)



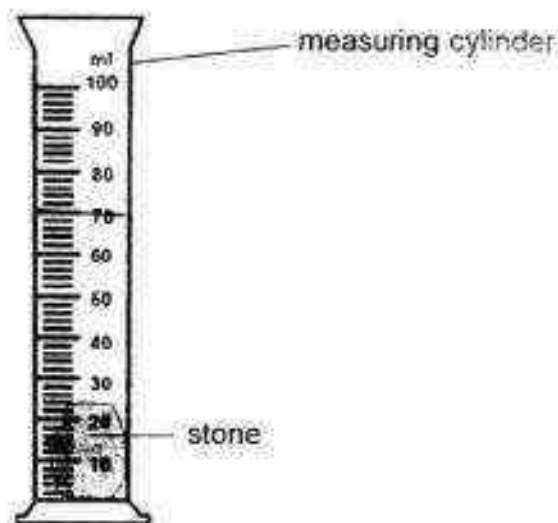
36. Study the flowchart below carefully.



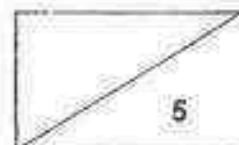
- (c) Which letter, X, Y or Z, represents organism B in part (a)? (1m)



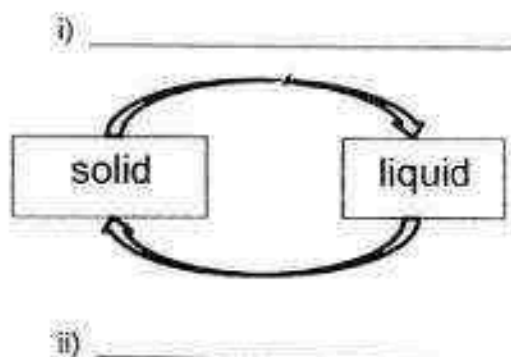
37. Jennifer filled a measuring cylinder with 50 ml water. Next, she dropped a piece of stone into the measuring cylinder. She observed that the water level rose by 20 ml.



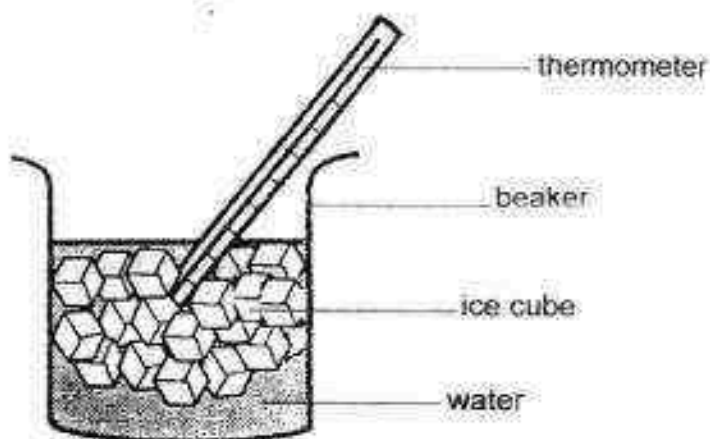
- (a) In the diagram above, draw a line to show the final water level on the measuring cylinder. (1m)
- (b) What is the state of matter for the stone? (1m)
-
- (c) What would happen to the water level if Jennifer were to drop another similar stone into the measuring cylinder? Explain your answer. (2m)
-
- (d) The water flowed out when Jennifer dropped four more stones into the measuring cylinder. What does it tell you about the property of water? (1m)
-



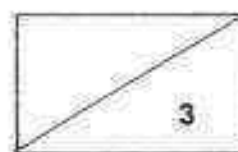
- 38 (a) The diagram below shows the change in state between ice and water. Fill in the blanks with the words 'heat gain' or 'heat loss' correctly. (1m)



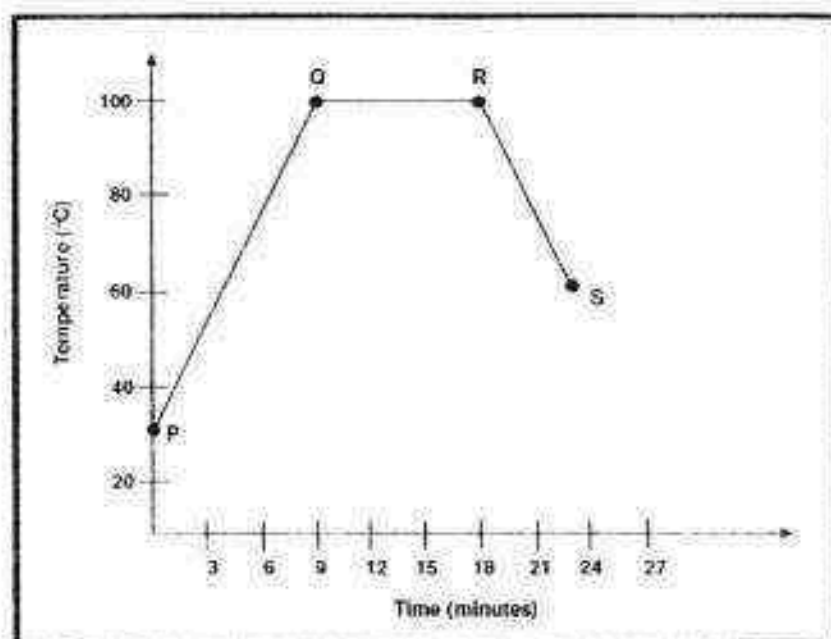
- (b) Ken conducted an experiment in the Science Room. He placed a thermometer into a beaker of water with ice cubes as shown below.



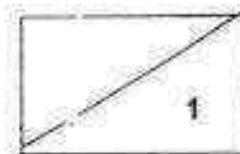
Ken observed that the reading on the thermometer was the same as the room temperature after two hours. Explain why. (2m)



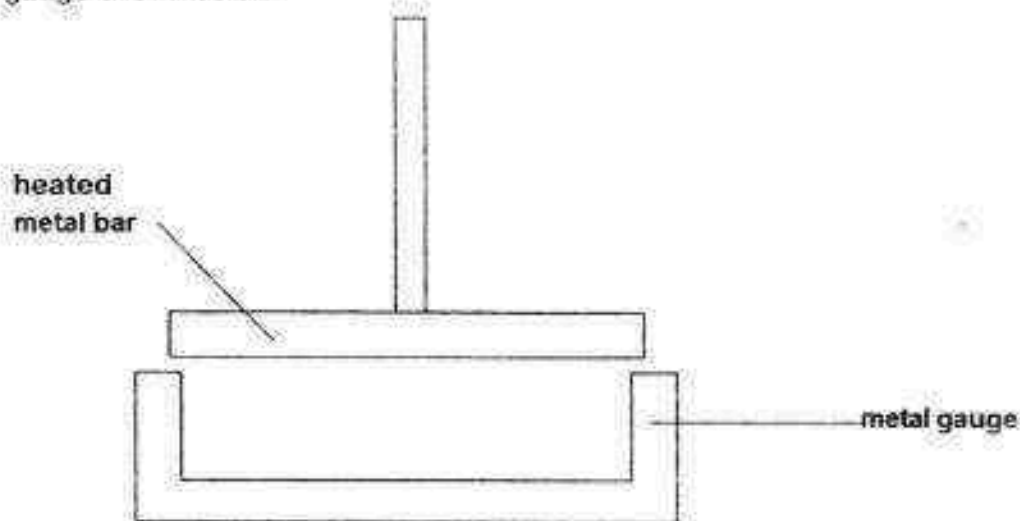
38. Next, Ken heated the water in the beaker until bubbles started to form. He continued to allow the water to boil for some time before it was left on a table to cool down again. He plotted the graph using the results obtained from the experiment. However, he plotted the graph half-way and stopped at point S as shown below.



- (c) What would be the temperature of the water when it had completely cooled down with no more heat loss? (1m)



38. Ken heated a metal bar under high temperature and found that it could not fit into the metal gauge shown below.

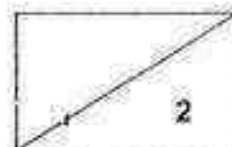


- (d) Explain what could have happened to the metal bar after being heated. (1m)

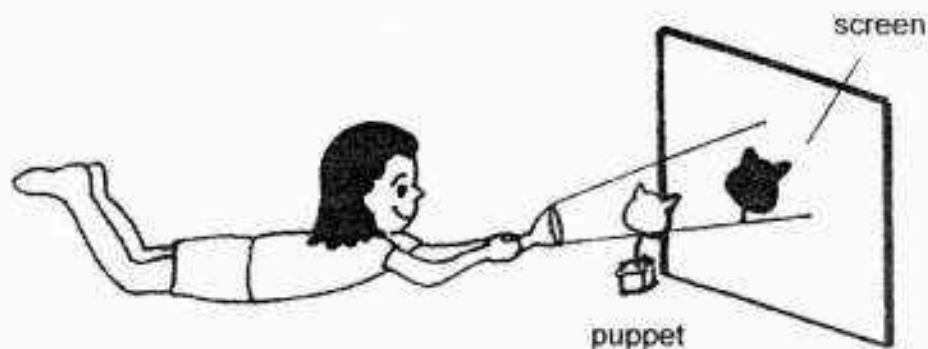
Ken conducted another experiment using three different materials, A, B and C. He heated the materials to 50°C . He wanted to find out the change in temperature of the materials after he had stopped heating.

	Temperature of material		
	A	B	C
Immediately after heating	50	50	50
15 minutes after he had stopped heating	45	48	41

- (e) What can he conclude about the heat conductivity of material C? (1m)

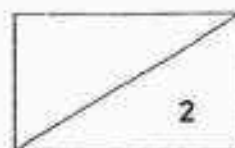


39. Melissa switched on a torch and placed a puppet in front of the torch as shown in the set-up below.

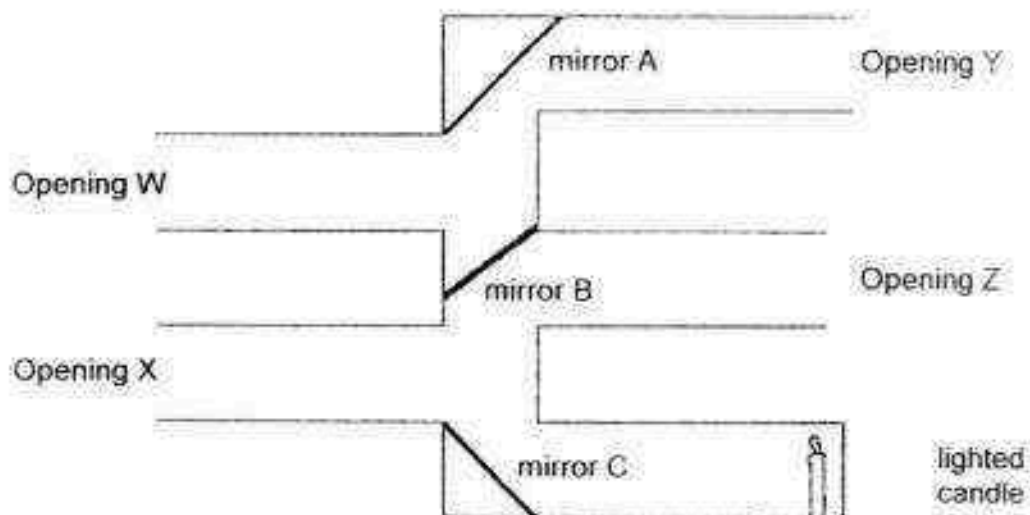


- (a) Explain how the shadow of the puppet was formed on the screen. (1m)

- (b) Suggest a way to make the shadow of the puppet smaller without moving the torch and the screen. (1m)

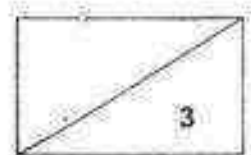


39. Peter looks into a pipe as shown below in a lighted room. He looks into one of the openings W, X, Y and Z.



- (c) Draw arrows in the above diagram to show how light travels so that Peter can see the lighted candle at the end of the pipe. (1m)
- (d) Peter looks through opening W. Why is he not able to see the lighted candle? (1m)

- (e) Which properties of light are shown in the above experiment? (1m)



40. Jensen conducted an experiment to find out if four types of materials, S, T, U and W, allow light to pass through them. He tabulated his results as shown below.

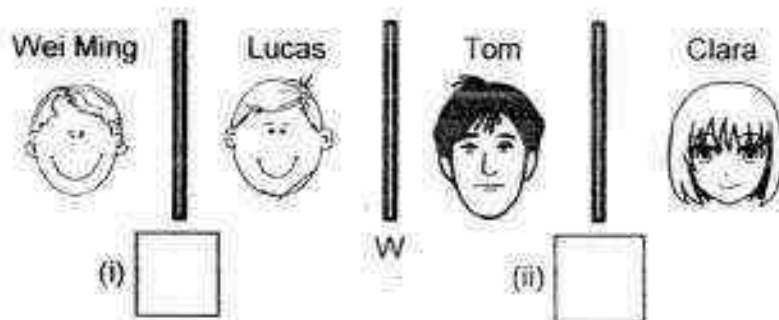
Materials	Property of the material
S	Allows most light to pass through
T and U	Allows some light to pass through
W	Does not allow light to pass through

- (a) Which of the following variables should be kept constant to ensure a fair test? Put a tick (✓) in the box(es) accordingly. (1m)

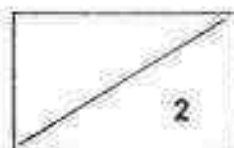
<input type="checkbox"/>	The brightness of the light source.
<input type="checkbox"/>	Thickness of each material
<input type="checkbox"/>	Type of materials

Three of the materials were used to make partitions in a play room and they were placed in between four children as shown below.

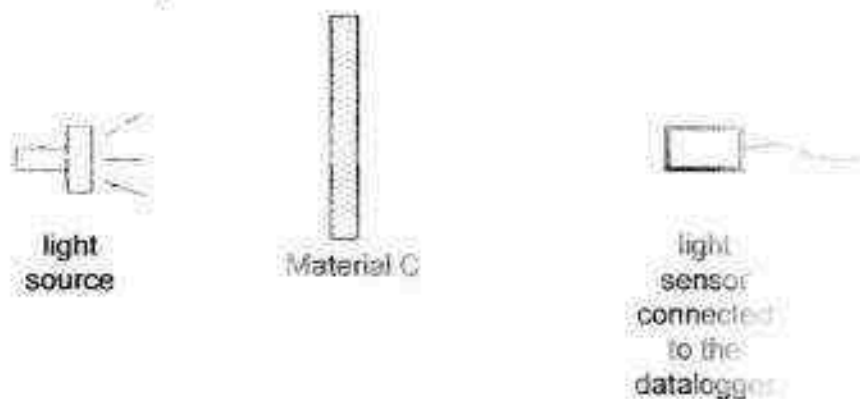
Lucas could not see Wei Ming but Tom could see Clara clearly.



- (b) Fill in each of the boxes (i) and (ii) above with the correct letter, S, T, U or W. Each letter may be used more than once. (1m)



40. Next, Jensen conducted another experiment in a dark room to find out how the readings on a datalogger were affected by the number of sheets of material C used.



He repeated the experiment by increasing the number of sheets of material C and recorded the results in the table below.

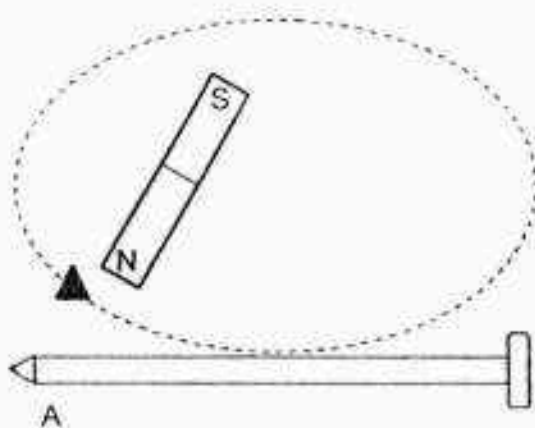
Number of sheets of material C	Amount of light detected (units)
0	1000
1	600
2	250
3	0

- (c) What is the relationship between the number of sheets of material C and the amount of light detected? (1m)

- (d) Based on the results above, what would Jensen observe about the amount of light detected if he increased the number of sheets of material C to 5? Explain your answer. (1m)



41. Raju stroked a steel nail in the same direction using a bar magnet as shown below.

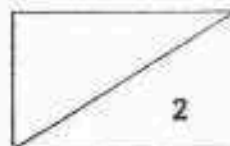


He then used the steel nail to attract some pins. He repeated the steps a few times and recorded his observation in the table below.

Number of strokes	Number of pins attracted
15	0
25	4
35	5
45	6

- (a) What is the aim of the experiment? (1m)

- (b) What is the pole at part A of the magnetised steel nail? (1m)



END OF SECTION B
Please check your work carefully.

YEAR : 2016
 LEVEL : PRIMARY 4
 SCHOOL : RED SWASTIKA
 SUBJECT : SCIENCE
 TERM : SA2

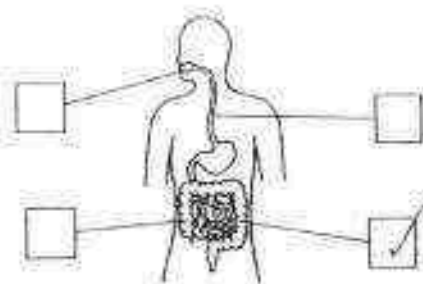
Booklet A

Q1	3	Q5	3	Q9	3	Q13	4	Q17	3	Q21	2	Q25	3
Q2	4	Q6	4	Q10	1	Q14	4	Q18	1	Q22	3	Q26	1
Q3	4	Q7	1	Q11	3	Q15	3	Q19	2	Q23	1	Q27	4
Q4	3	Q8	2	Q12	1	Q16	4	Q20	2	Q24	3	Q28	2

Booklet B

- Q29 (a) X is a living things.
- (b) Y is a non-living things.

- Q30 (a)



- (b) Food from the mouth moves on to the gullet.

- Q31 (a) X : Adult
- Y : Larva

- Q32 The light from the lamp is reflected by the book and enters Mei Ling's eye.

- Q33 (a) Plastic is a non-magnetic material.
- (b) The like poles of magnet A and magnet B are facing each other. Hence, magnet A repelled magnet B.

Q34

(ai) Bird

(aia) The feathers help them to keep warm.

(b) (i) X : Insects

Y : Mammals

(ii) Group Y. It gives birth to its young alive.
Group Y as all the animals in group Y has hair as their outer covering but group X has a hard outer covering.

(iii) They reproduce by laying eggs.

Q35

(a) Part U represents the small intestine.

(b) The digested food is passed through the walls of the small intestine into the circulatory system.

(c) Water in the digested food is absorbed and the undigested food is then passed out through the anus.

Q36

(a) Similarity : Both organisms have an egg / adult stage.

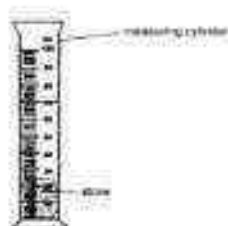
Difference : Organism A has 4 stages but organism B has 3 stages in its life cycle.

(b) The larva stage as it will eat the leaves that the farmer has planted.

(c) Letter Y.

Q37

(a)



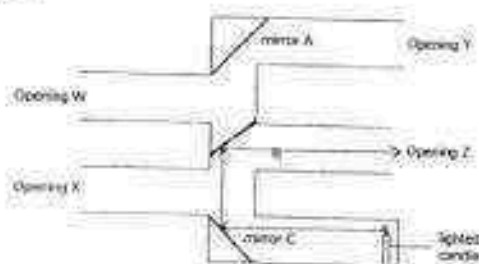
- (b) The solid state.
- (c) The water level will increase as the stone has a definite volume and it occupies the space that is previously taken by the water.

Q38

- (a)
 - (i) Heat gain
 - (ii) Heat loss
- (b) The ice cubes have gained heat from the surroundings and melted. The cold water then gained heat from the surroundings and increased in temperature until it reached room temperature.
- (c) 30 °C
- (d) The metal bar gained heat and expanded so the metal bar could not fit into the metal gauge.
- (e) Material C is the best conductor of heat as material C loses heat the fastest.

Q39

- (a) Light is blocked by the puppet.
- (b) Move the puppet nearer to the screen.
- (c)



- (d) Light from the lighted candle is blocked by mirror B and cannot reach his eyes.
- (e) Light travels in a straight line and light can be reflected.

Q40

(a)

✓	The brightness of the light source
✓	Thickness of each material
	Type of materials

(b) (i) W

(ii) S

(c) As the number of sheets of material C increased, the amount of light detected decreased.

(d) There would be no light detected when 3 or more sheets of material C were used.

Q41

(a) He wanted to find out if the number of strokes will affect the magnetic strength of the steel nail.

(b) North-seeking pole.

End



PRIMARY 4 END-OF-YEAR EXAMINATION 2016

Name : _____ ()

Date: 25 October 2016

Class : Primary 4 ()

Time: 1 hour 30 minutes

Parent's Signature : _____

Marks: _____ / 44

**SCIENCE
BOOKLET A**

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

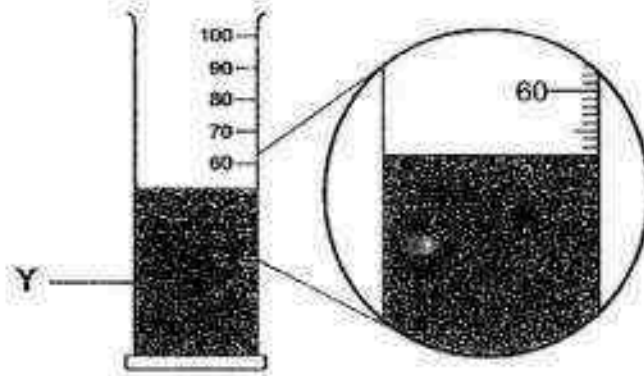
Follow all instructions carefully.

Answer all questions.

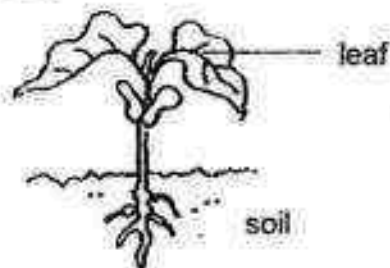
Section A (44 marks)

For each question from 1 to 22, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.

1. In the diagram, what is the volume of liquid Y?



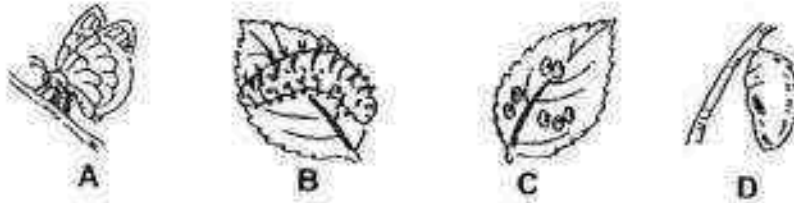
- (1) 50 ml
 - (2) 52 ml
 - (3) 62 ml
 - (4) 68 ml
2. The diagram below shows a young plant.



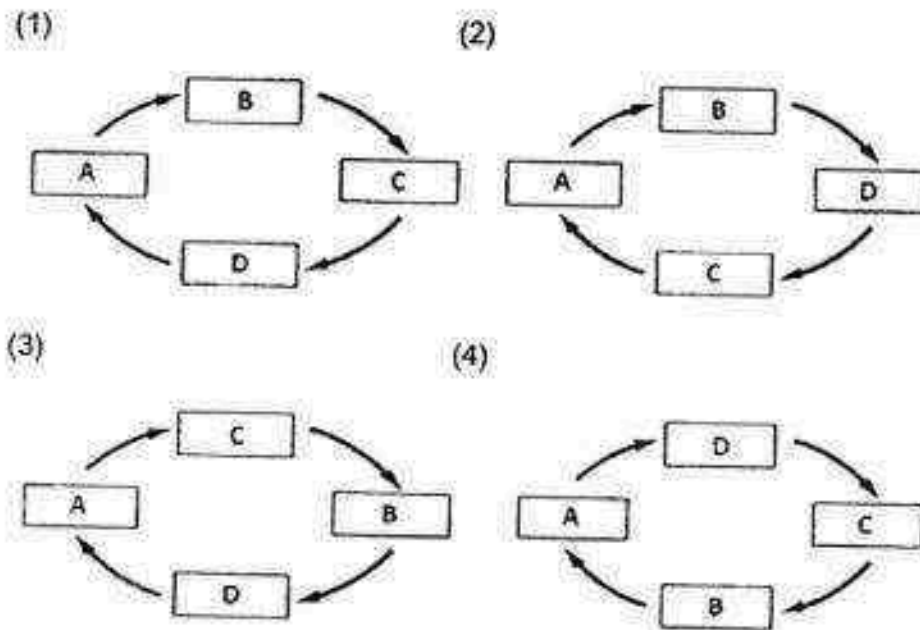
The leaf helps the plant to _____.

- (1) make food
- (2) grow upright
- (3) absorb water
- (4) absorb mineral salts

3. A, B, C and D are the various stages in the life cycle of a butterfly.



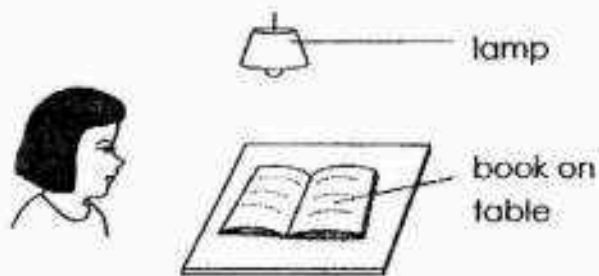
Which one of the following correctly shows the life cycle of a butterfly?



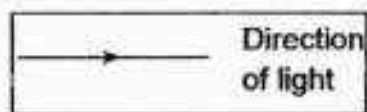
4. In which part of the digestive system is food absorbed into the blood?

- (1) gullet
- (2) stomach
- (3) small intestine
- (4) large intestine

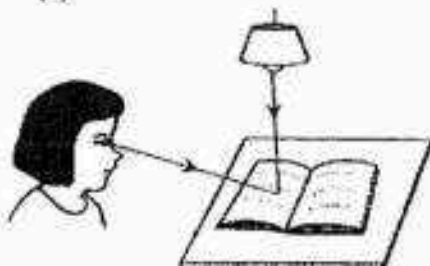
5. Look at the picture below.



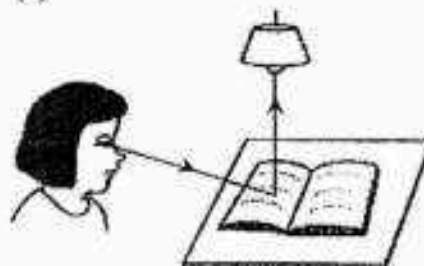
Which one of the following explains why Mary can see the book on the table?



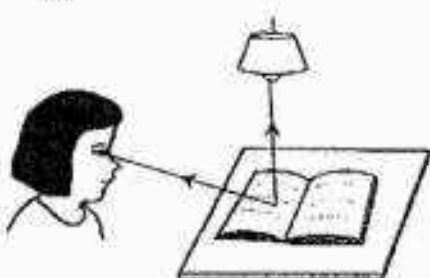
(1)



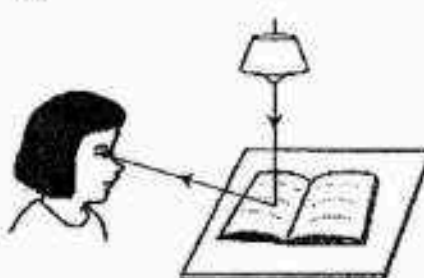
(2)



(3)



(4)



6. Ronald places a metal spoon in a bowl of ice cream as shown below.



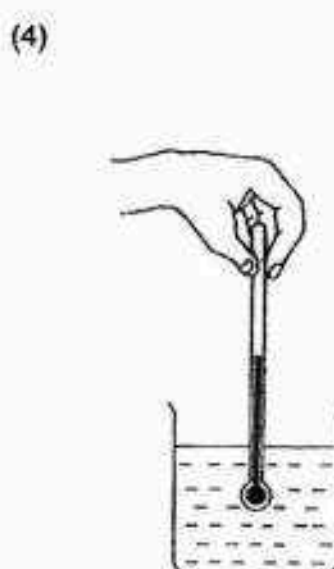
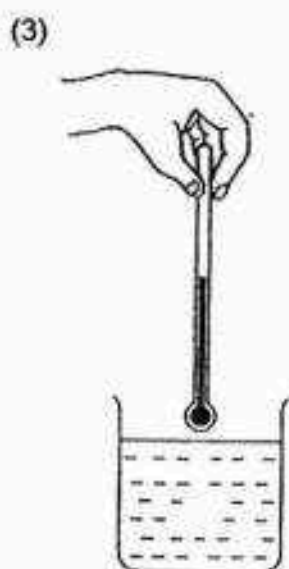
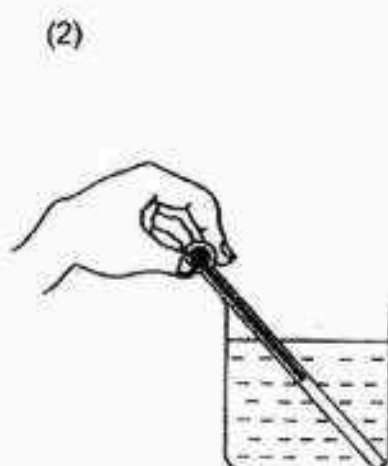
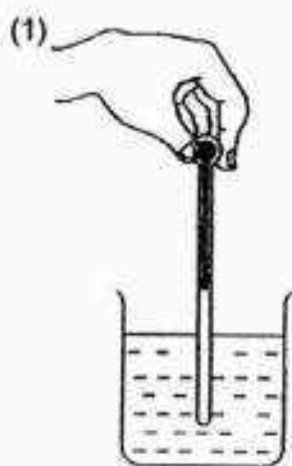
The spoon becomes colder after a while.

Which of the following explains this?

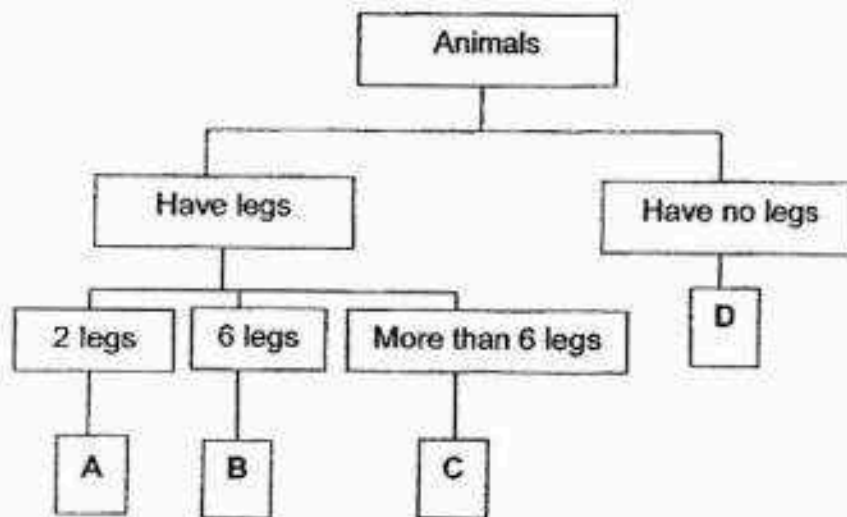
- (1) The spoon loses heat to the ice cream.
- (2) The ice cream loses heat to the spoon.
- (3) The spoon gains heat from the ice cream.
- (4) The ice cream loses heat to the surroundings.

7. Catherine wants to measure the temperature of cold water in a beaker.

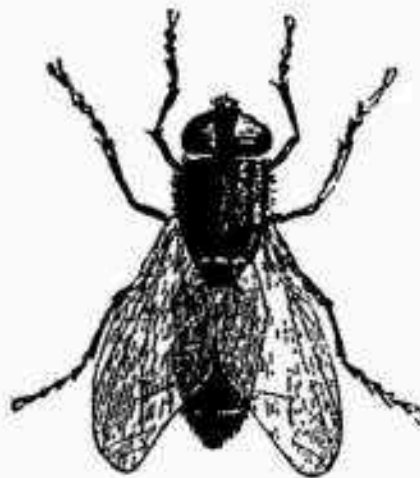
Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?



8. Study the chart below.



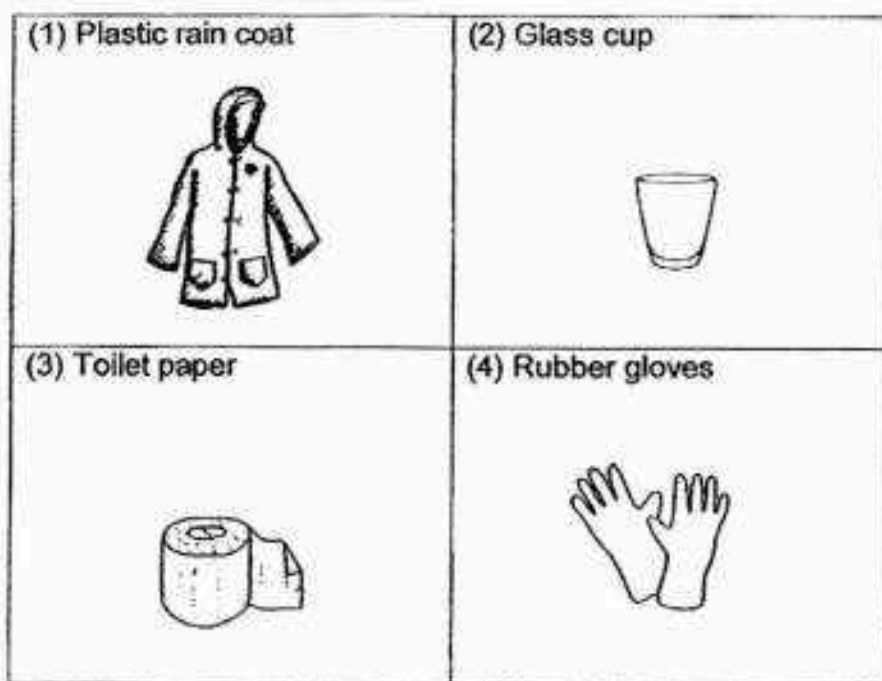
Where would you put Organism X in the chart above?



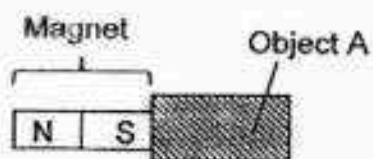
Organism X

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

9. Which one of the following objects is not made of waterproof material?



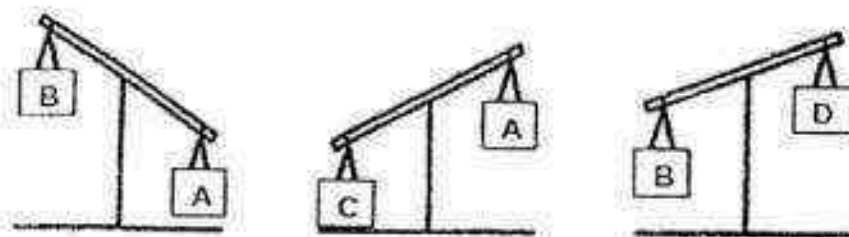
10. An object A was attracted to a magnet, as shown in the figure below.



Object A could be made of _____.

- (1) steel
- (2) wood
- (3) plastic
- (4) rubber

11. Study the diagrams below.



Based on your observation of the above set-ups, the order of the objects from the lightest to the heaviest is _____.

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

12. The table below shows some observations of Organisms X and Y.

Observation	Organism X	Organism Y
Eggs are laid in water	✓	✓
There are 4 stages in the life cycle	X	✓
It has six legs	X	✓

Which of the following could be Organisms X and Y?

	Animal X	Animal Y
(1)	frog	mosquito
(2)	frog	cockroach
(3)	mosquito	frog
(4)	cockroach	mosquito

13. A pupil germinated some seeds and recorded his observations in the table shown below.

Day	Observation
3	Seeds become swollen
6	Seed coats break
8	Roots appear
11	Shoots appear
18	Shrivelled seed leaves drop off

On which day would the seedling make its own food?

- (1) Day 4
- (2) Day 9
- (3) Day 10
- (4) Day 19

14. Mei Mei wanted to find out how the type of soil affects the growth of a plant. She used 3 similar plants X, Y and Z as shown below.



In order to carry out a fair test, which of the following variables should she keep the same?

- A: Type of soil
- B: Amount of soil
- C: Amount of water
- D: Height of the plant

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

15. Mr Wong was eating a meal as shown below.



Which of the following systems(s) is/are working in Mr Wong?

A: Circulatory System

B: Digestive System

C: Muscular System

D: Respiratory System

E: Skeletal System

(1) B only

(2) B and D only

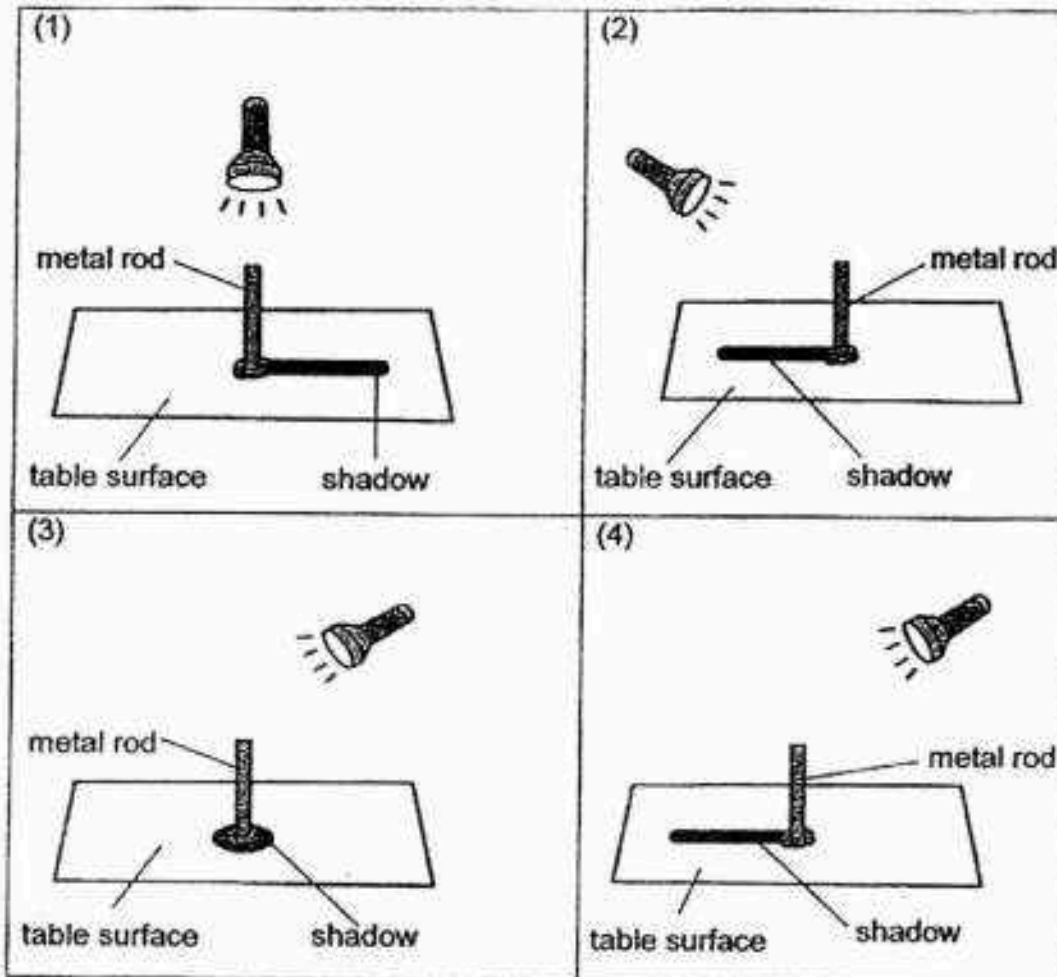
(3) A, B and D only

(4) A, B, C, D and E

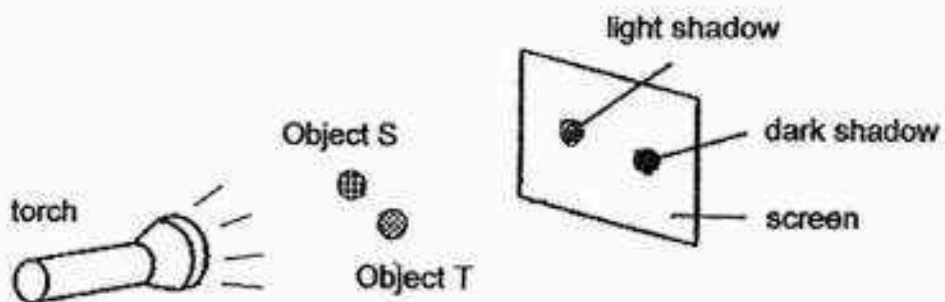
16. Liam saw his reflection on the smooth refrigerator door painted grey.
Which one of the following statements explains why he is able to see his reflection?

- (1) The refrigerator door is a mirror.
- (2) He is in a completely dark kitchen.
- (3) The refrigerator door gives off light.
- (4) The surface of the refrigerator can reflect light.

17. Which one of the following diagrams correctly represents the shadow of a metal rod when a torch light is shone at it in a dark room?



18. A torch was shone onto two round objects, S and T, as shown below.

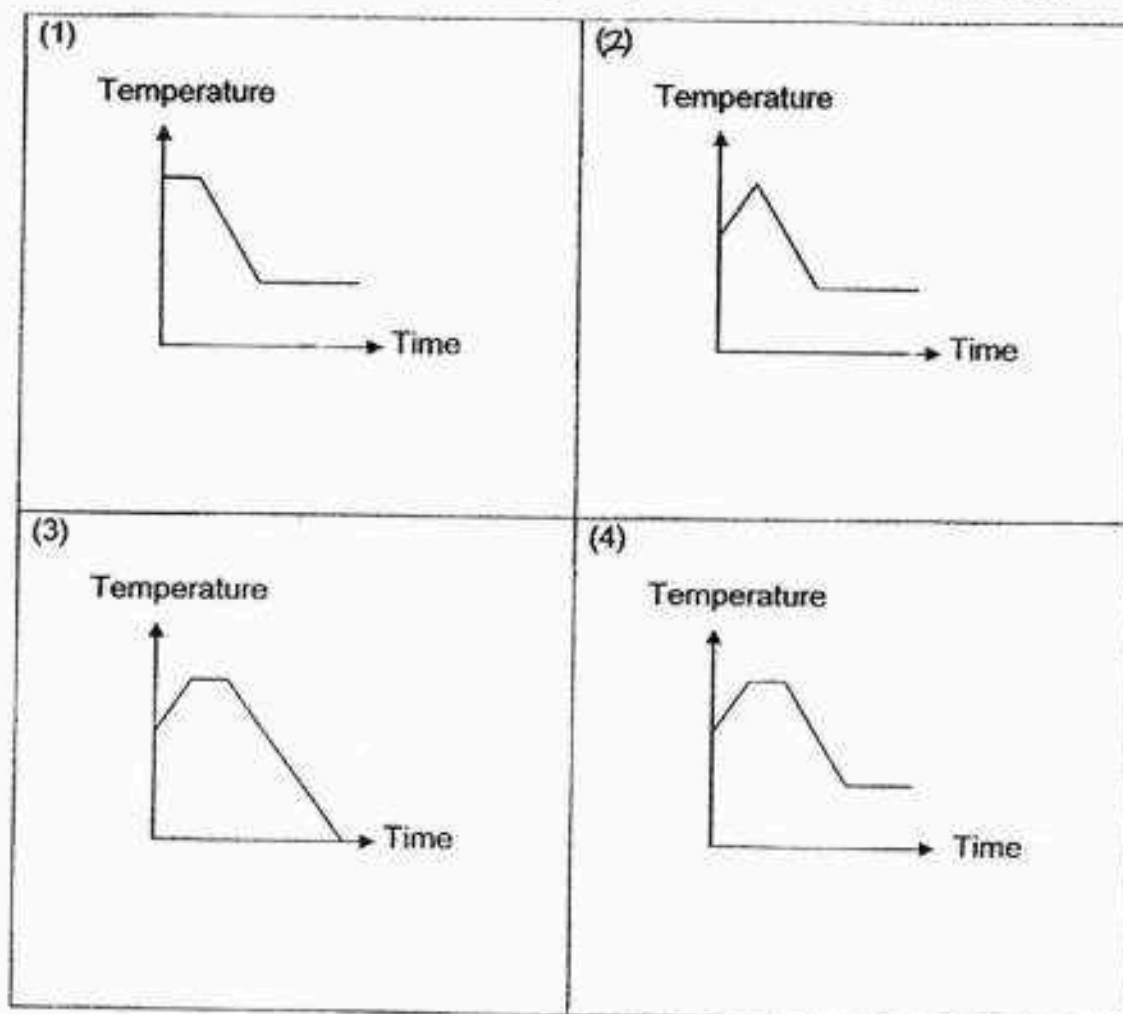


What are Objects S and T likely to be made of?

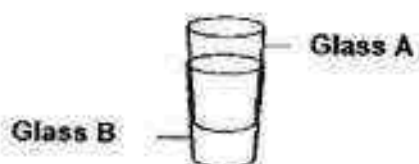
	Object S	Object T
(1)	Cardboard	Iron
(2)	Wood	Frosted glass
(3)	Frosted glass	Steel
(4)	Frosted glass	Clear glass

19. Rachel heated some tap water in a beaker until it boiled. She allowed it to boil for another 5 minutes and then left it to cool to room temperature.

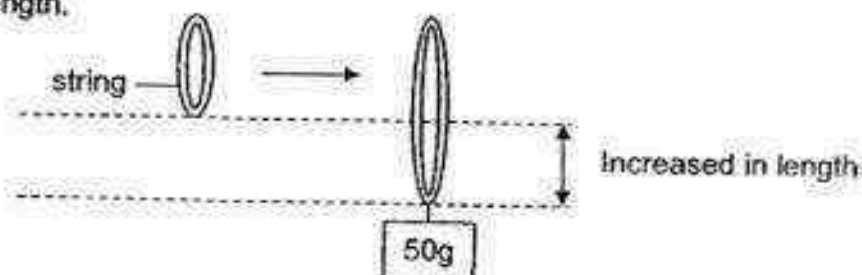
Which one of the following graphs would correctly represent the temperature of the water from the beginning to the end of what Rachel did?



20. Betty found two glasses, A and B, stuck together. A was inside B. Which one of the following is the best possible way for her to separate them?



- (1) Pour hot water into glass A and put glass B in hot water.
 - (2) Pour cold water into glass A and put glass B in hot water.
 - (3) Pour hot water into glass A and put glass B in cold water.
 - (4) Pour cold water into glass A and put glass B in cold water.
21. Vincent learnt that the more elastic a string is, the more it can stretch. He hung a 50g weight onto 4 different types of string and measured their increase in length.



String made of material	Increase in length (cm)
W	0.3
X	0.8
Y	0.9
Z	0.4

From the results in the table above, which material is the least elastic?

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

22. Ahmad did an experiment using Magnet A, B, C and D. He brought a paper clip slowly toward each magnet and observed the distance at which the paper clip could be attracted to it.



The table below shows the furthest distance a magnet could attract a paper clip.

Magnet	A	B	C	D
Furthest distance the magnet could attract the paper clip (cm)	6	14	9	11

Which magnet, A, B, C or D has the strongest magnetism?

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

End of Booklet A



PRIMARY 4 END-OF-YEAR EXAMINATION 2016

Name : _____ ()

Date: 25 October 2016

Class : Primary 4 ()

Duration: 1 hour 30 minutes

Parent's Signature : _____

SCIENCE BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

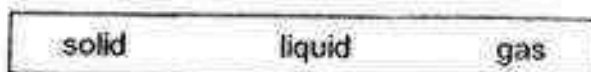
Answer all questions.

Booklet A	44
Booklet B	36
Total	80

Section B (36 marks)

Write your answers in the spaces provided.

23. Choose the correct words from the box to fill in the blanks below.



(a) Jessica pours milk from a bottle onto a table as shown below.

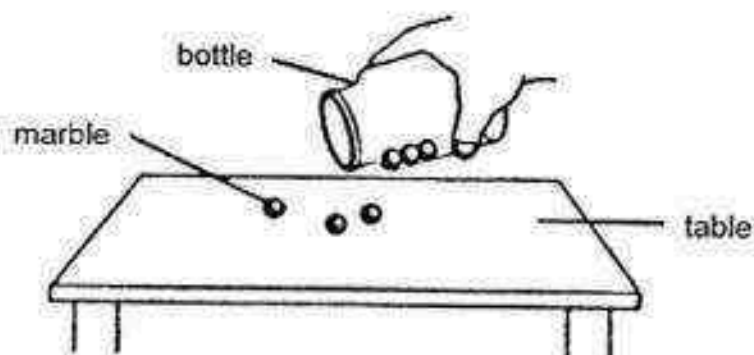


The volume of milk remains the same but the shape changes.

This shows that milk is a _____.

[1]

(b) Jessica pours some marbles from a bottle onto a table as shown below.



The shape and volume of the marbles remained the same.

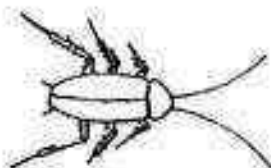
This shows that a marble is a _____.

[1]

24. Classify the following animals according to the number of stages in their life cycle. [2]



butterfly



cockroach



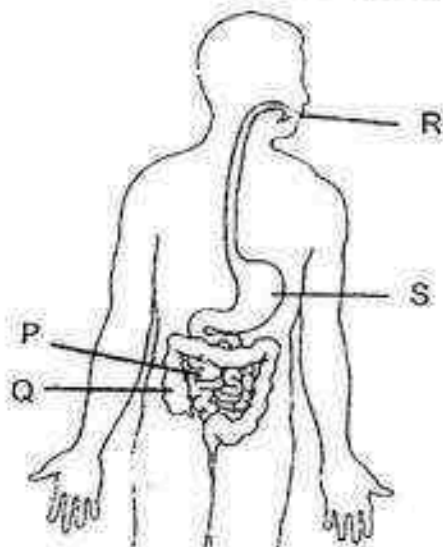
frog



mosquito

Three stages	Four stages

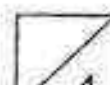
25. The diagram below shows the human digestive system.



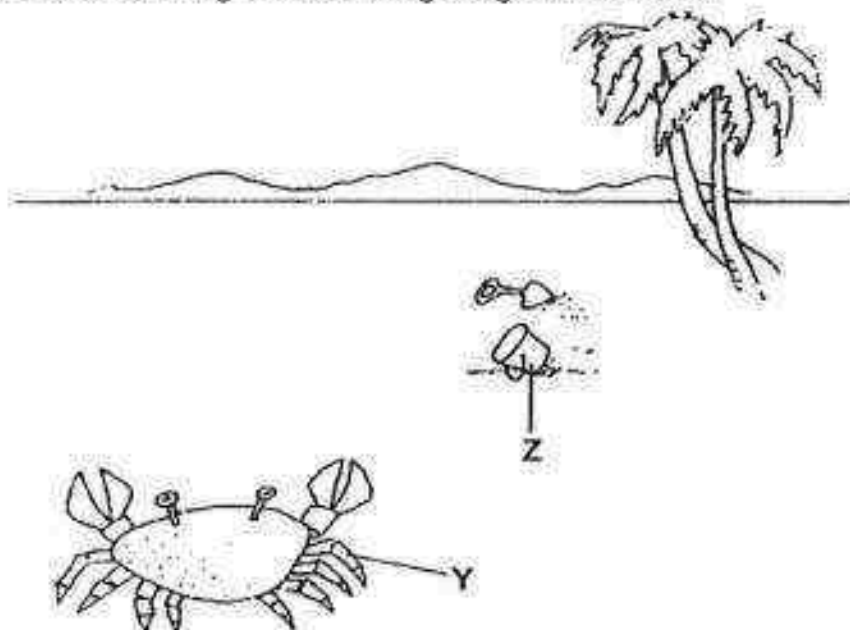
Identify and state the parts, P, Q, R or S, where

(a) digestion first takes place : _____ [1]

(b) there is no digestion : _____ [1]



26. Muthu saw some living and non-living things on the beach.

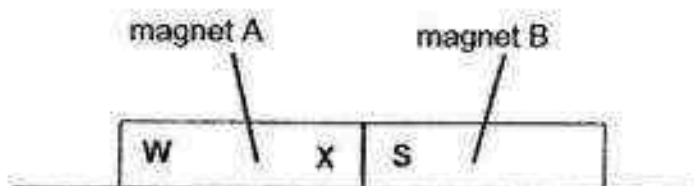


State if Y and Z are living things or non-living things.

(a) Y is a _____ [1]

(b) Z is a _____ [1]

27. Bobby placed two bar magnets together as shown below.

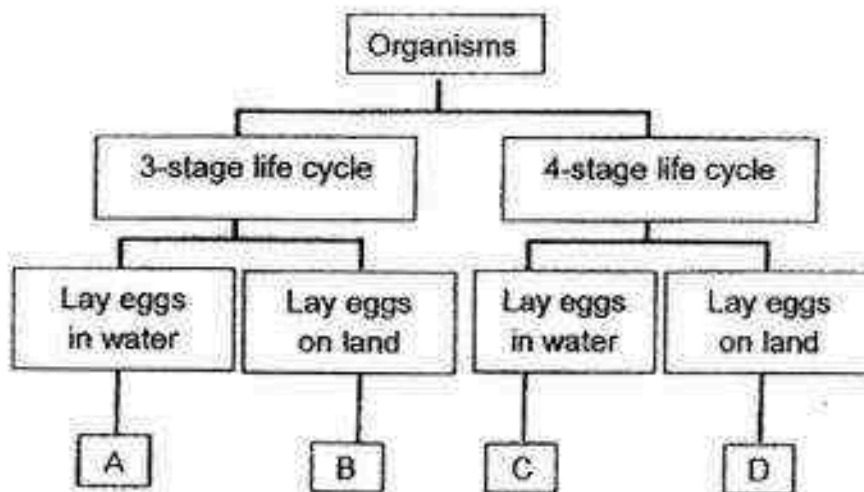


The south-seeking pole of magnet B is labelled S.
Name the poles labelled W and X on magnet A.

(a) W : _____ [1]

(b) X : _____ [1]

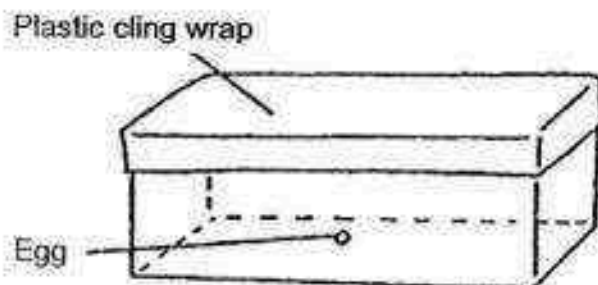
28. Study the classification chart below.



(a) Based on the chart above, state one difference between Organism A and Organism C. [1]

(b) Which of the letters, A, B, C or D, represents a mealworm beetle? [1]

(c) Siti placed a butterfly egg in a box as shown below. She learnt that butterfly larvae feed on leaves.

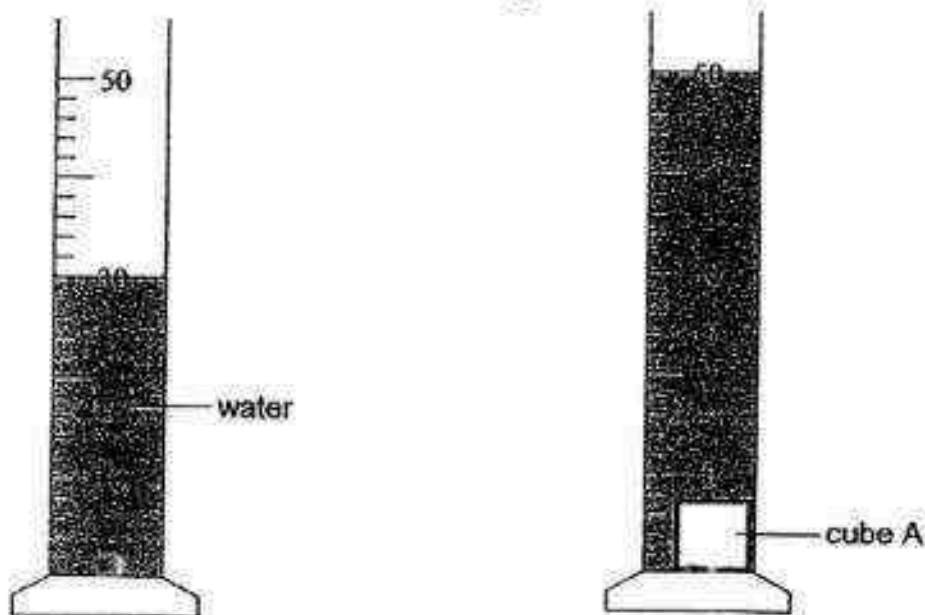


Give two suggestions that Siti can do to the above set-up to ensure the butterfly larva survives in the box once it is hatched? [2]

Suggestion 1: _____

Suggestion 2: _____

29. Ali used two cubes of the same shape and size to carry out an experiment. The mass of cube A was 50 g and the mass of cube B was 80 g. When he lowered cube A gently into a measuring cylinder containing 30 cm³ of water, the water level rose as shown in the diagram below.



- (a) What was the volume of cube A?

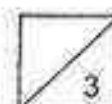
[1]

_____ cm³

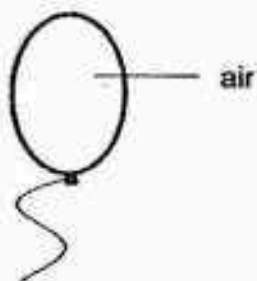
- (b) Ali then took out cube A and put cube B into the water. Will the water level be the same, higher or lower than when cube A was put into the water? [1]

- (c) Explain your answer in (b).

[1]



(d) Ali received a balloon shown below in an air-conditioned shopping mall.

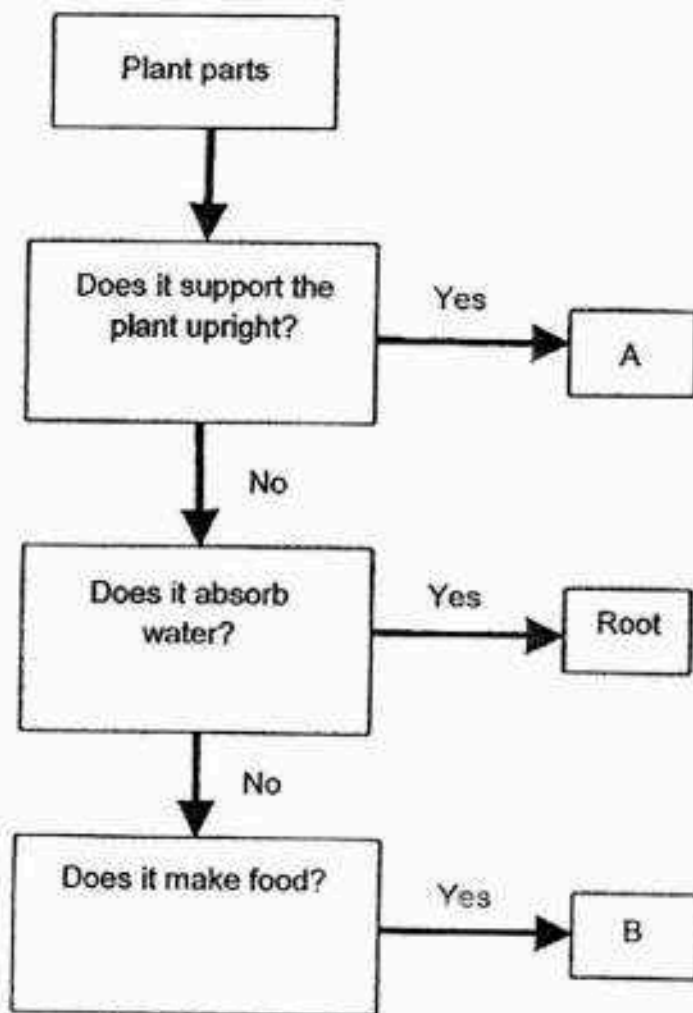


He stepped out of the mall with the balloon and walked home under the blazing sun for 20 minutes. Then, he realised that his balloon has increased slightly in size. Explain why the balloon increased slightly in size.

[1]



30. The flowchart below describes the functions of the different parts of Plant Z.



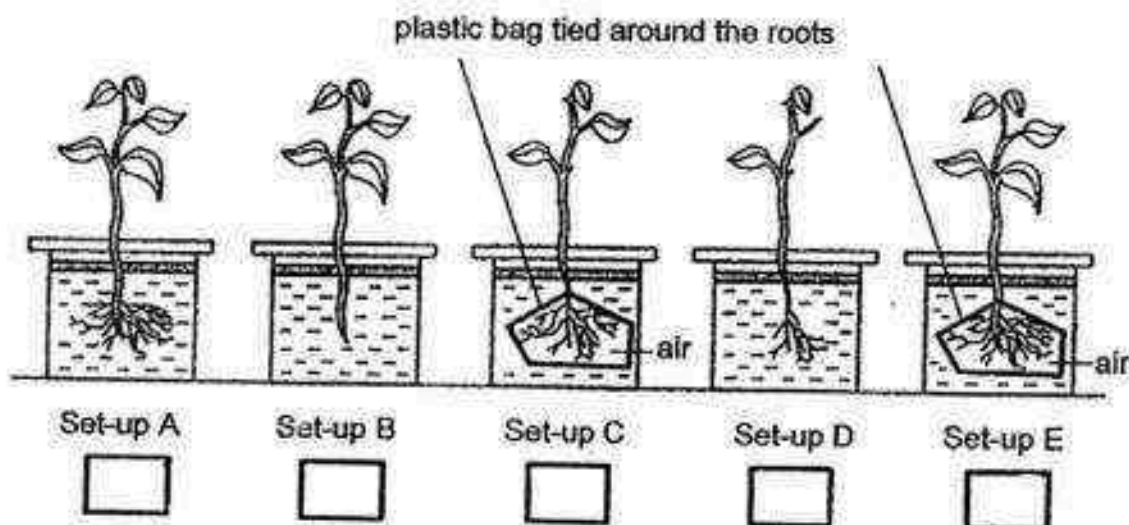
(a) Identify the parts of Plant Z by writing "A" and "B" in the blanks below.

Stem : _____ [$\frac{1}{2}$]

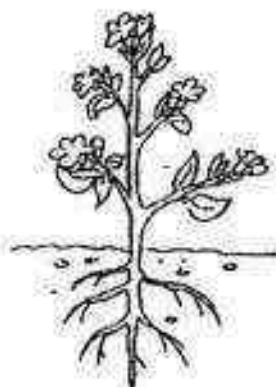
Leaves : _____ [$\frac{1}{2}$]

- (b) Beng Han wants to show that a plant takes in water through its roots. Which two set-ups should he use for his experiment? Tick the correct boxes below.

[1]



- (c) Beng Han has a plant K as shown below which was watered daily.



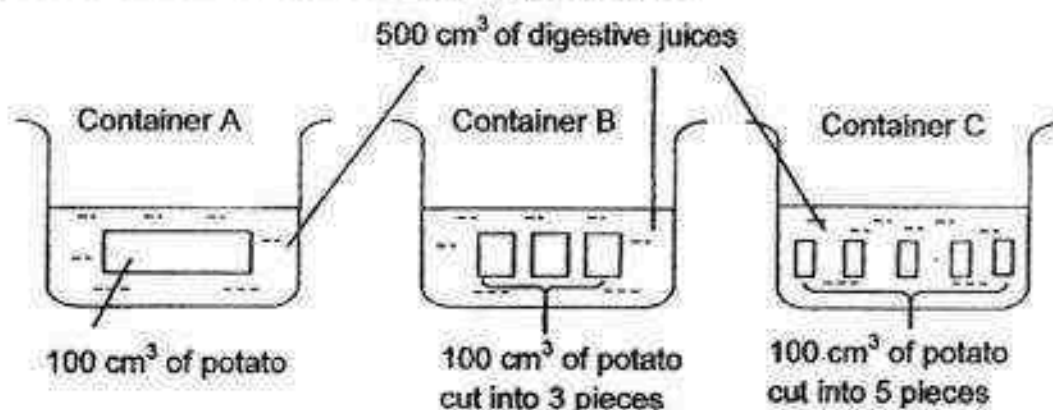
He found many caterpillars on the plant. Due to the caterpillars, the leaves of the plant had all been eaten up and so the plant died. Give 2 reasons why the plant died.

[2]

Reason 1: _____

Reason 2: _____

31. Lisa placed some cooked potatoes in Containers A, B and C as shown below. She filled the containers with 500 cm^3 of digestive juice.



- a) In which container would the potato take the longest time to completely digest? Explain why this is so. [1]

- b) Lisa cut a baked potato into smaller pieces to cool it faster for her baby to eat. Explain how cutting the potato into smaller pieces help to cool the potato faster. [2]

- c) Name a part in our mouth that helps us cut our food into smaller pieces. [1]

32. (a) In a garden, spades are used by gardeners to dig and scoop stones and soil.



Suggest a property of the material used to make part A.

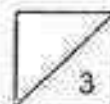
[1]

- (b) 4 different types of cloth A, B, C and D of identical mass and size were dipped into a tub of water for 30 seconds and removed from the tub. Their final masses are shown below.

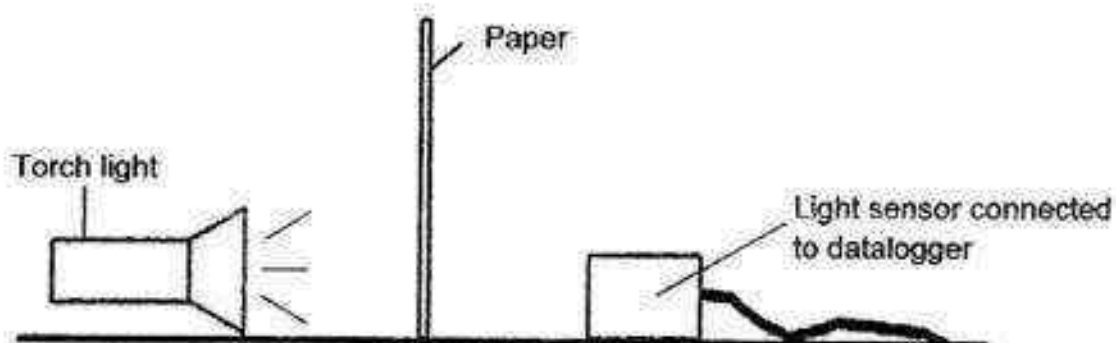
Cloth	Cloth A	Cloth B	Cloth C	Cloth D
Mass (g)	170	280	145	50

- (i) Arrange the cloths from the least waterproof to the most waterproof.[1]

- (ii) Which one of the cloths, A, B, C or D, will be the best choice to make a towel to clean up spills? Explain your answer. [1]



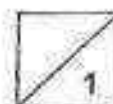
33. Jia Leng set up the following equipment in a dark room to find out how much light passes through different number of sheets of paper.



She repeated the experiment by increasing the number of sheets of the same type of paper. She recorded the results in the table below.

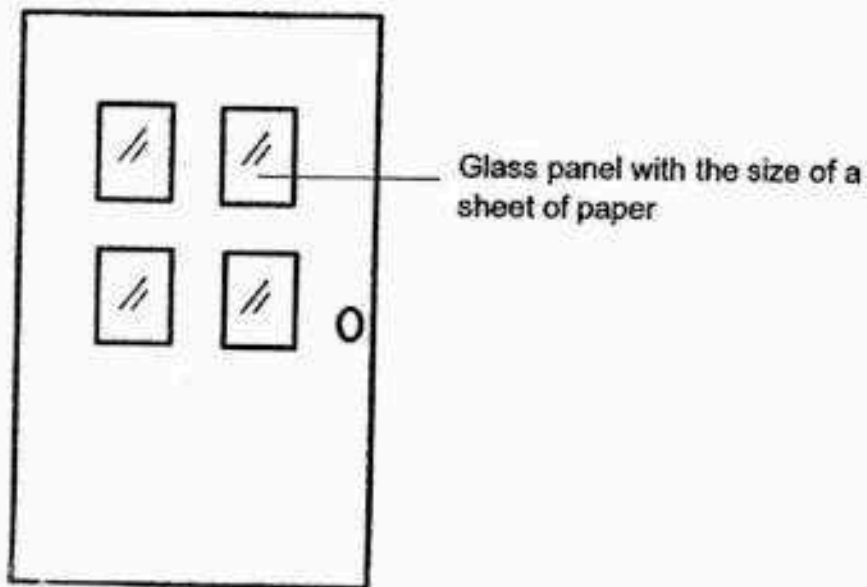
Number of sheets	Amount of light detected (units)
0	160
2	109
4	53
6	4
8	0
10	0
12	0

- (a) What is the relationship between the number of sheets of paper and the amount of light detected? [1]



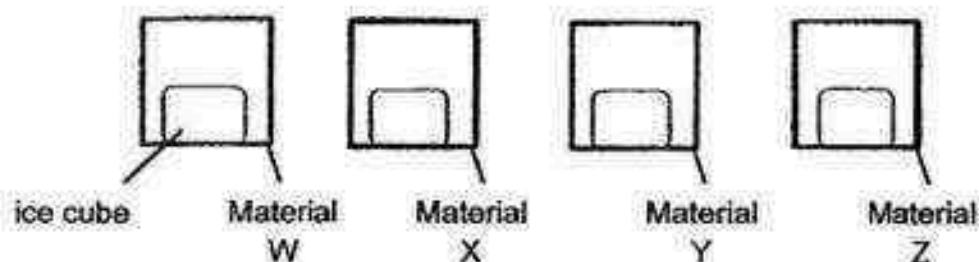
- (b) If at 6 sheets of paper, Jia Leng decides to shift the torch light towards the paper, how will it change the amount of light detected earlier? [1]
-

- (c) Jia Leng wants to paste the glass panels on her door shown below with the papers to block out all the light coming through.

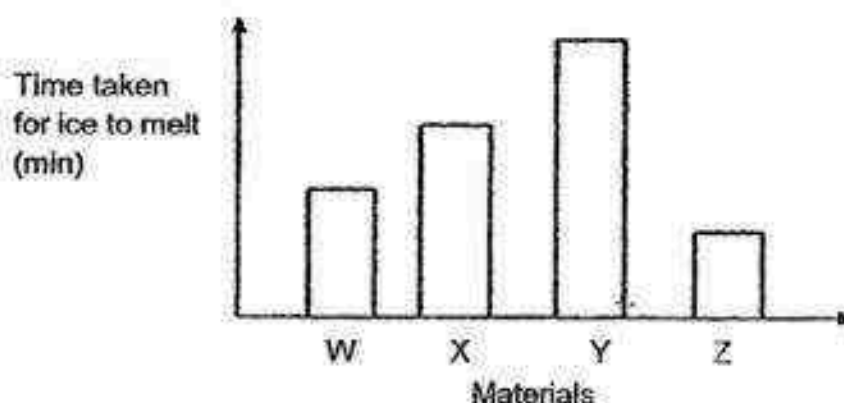


- Based on her results on page 11, what is the least number of sheets of papers she should use for each panel? [1]
-

34. Calvin placed four similar ice cubes in four sealed containers. The containers W, X, Y and Z are made of different materials which are of equal thickness and identical in size as shown below.

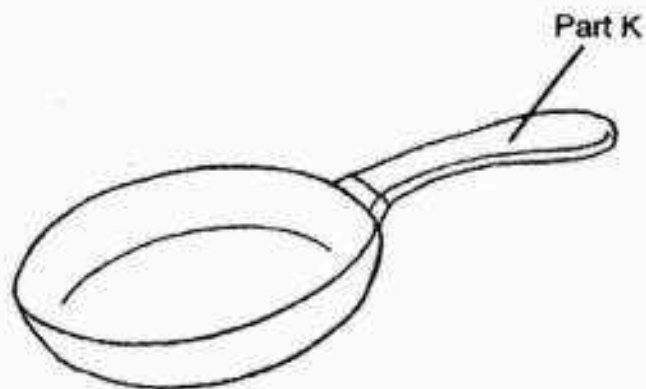


He drew the graph below to show the time taken for the ice in each container to melt completely.



- (a) Which material, W, X, Y or Z, should he use if he wants to make a container to keep his hot coffee warm for the longest period of time? Explain your choice. [2]

- (b) Which material, W, X, Y or Z, is the best for him to make Part K of a frying pan shown below? Explain your choice. [2]



End of Booklet B

EXAM PAPER 2016 (P4)

SCHOOL : TAO NAN

SUBJECT : SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	1	3	3	4	1	4	2	3	1
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	1	4	3	4	4	4	3	4	2
Q21	Q22								
1	2								

23)a)liquid b)solid

24)Three stages

Cockroach

Frog

Four stages

butterfly

mosquito

25)a)Mouth (R)

b)Large intestine (Q)

26)a)living thing

b)non-living thing

27)a)South-seeking pole

b)North-seeking pole

28)a) Organism A have a 3-stage life cycle but Organism C have a 4-stage life cycle.

b) D.

c) 1) Put some leaves in the box.

2) Poke some holes for air to enter.

29)a) 20 cm³

b) The water level will be the same.

c) Cube A and Cube B have the same volume.

d) The air inside the balloon gained heat from the sun and expanded slightly heated.

30)a) Stem : A

Leaves: B

b) Set-up A

c) 1) The caterpillars ate all the leaves so without the leaves, the plant cannot make food.

2) The plant cannot take in or give out gases.

31)a) Container A. It has lesser surface area so it must take the longest time to digest.

b) Cutting the potato increases the surface area which allows greater heat loss.

c) Our teeth.

32)a) Strong.

b) i) Cloth B, Cloth A, Cloth C, Cloth D.

ii) Cloth B. It absorbs the most water.

33)a) The more the number of sheets of the paper, the lesser light detected.

b) The amount of light decreases.

33)c)Eight sheets of paper.

34)a)It is poorest conductor of heat and the coffee will lose heat the slowest.

b)Y. It is the poorest conductor of heat and heat from the frying cannot pass through easily so we will not get burned.

24
Name: _____ ()

Class: Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4
Semestral Assessment 2 – 2016
SCIENCE
BOOKLET A
27 October 2016

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

28 questions
56 marks

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

This booklet consists of 21 printed pages.

Section A (28 x 2 marks = 56 marks)

For each question from 1 to 28, 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 animal has a pupa as a stage in its life cycle?

- (1) frog
- (2) duck
- (3) beetle
- (4) grasshopper

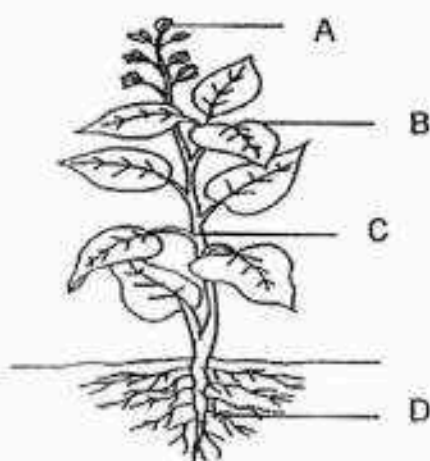
2. Selina had four identical pots, A, B, C and D. She put two seeds into each pot and placed them under the conditions as shown in the table below.

Pot	Air	Light	Water	Temperature (°C)
A	yes	no	yes	32
B	no	yes	yes	32
C	yes	no	no	15
D	yes	yes	no	15

In which pot, A, B, C or D, will the seeds most likely germinate?

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

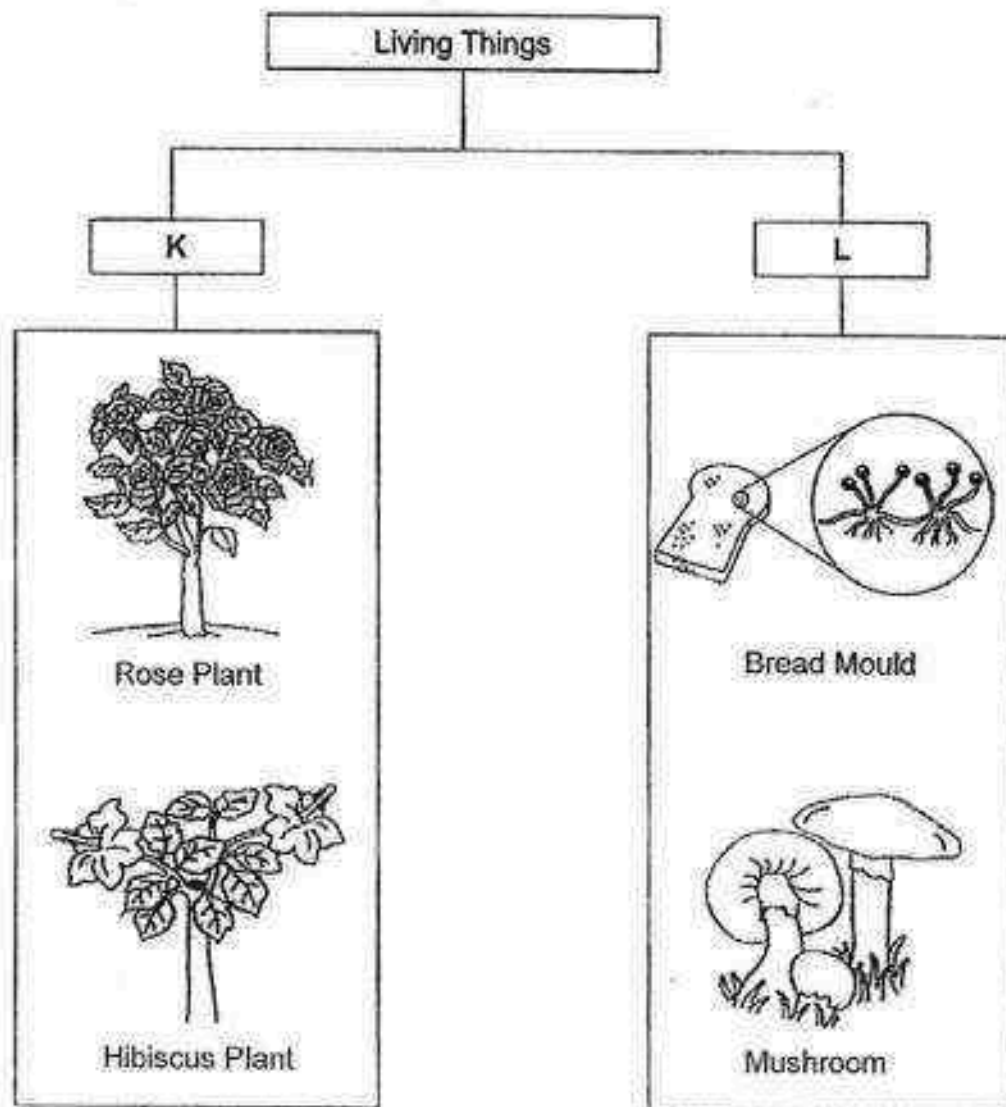
3. The diagram below shows parts of a plant.



Which one of the following functions of the plant parts is correct?

	Make food	Support the plant
(1)	A	B
(2)	B	D
(3)	B	C
(4)	C	D

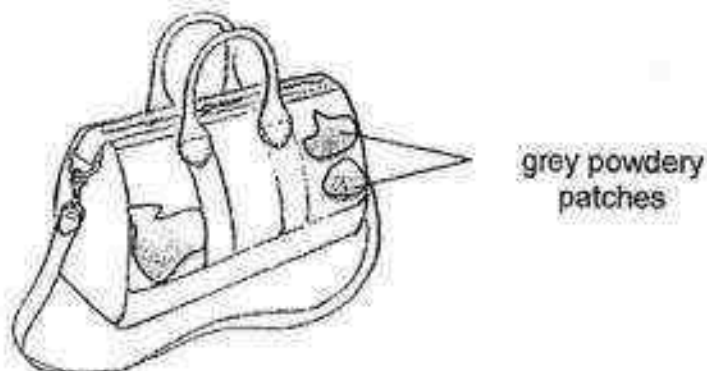
4. Study the classification chart below.



Which one of the following would be the most appropriate headings for K and L?

	K	L
(1)	Flowering Plant	Fungi
(2)	Flowering plant	Bacteria
(3)	Non-flowering plant	Bacteria
(4)	Non-flowering plant	Flowering plant

5. While clearing her cupboard, Charmaine discovered that her leather handbag was covered with grey powdery patches as shown in the diagram below.



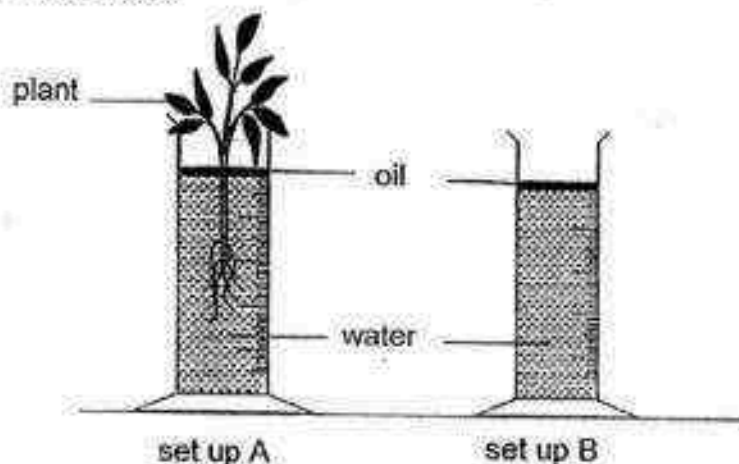
Her mother said that the small grey patches were mould.

Condition	Cupboard			
	E	F	G	H
Presence of oxygen	✓	✓	X	✓
Presence of water	X	✓	✓	X
Temperature in the Cupboard	80°C	27°C	26°C	10°C

Based on the table above, in which of the following cupboard(s), E, F, G or H, did Charmaine place her leather handbag?

- (1) E only
- (2) F only
- (3) F and G only
- (4) E and H only

6. Liping conducted an experiment using the set ups shown below and left them in the classroom for a week.

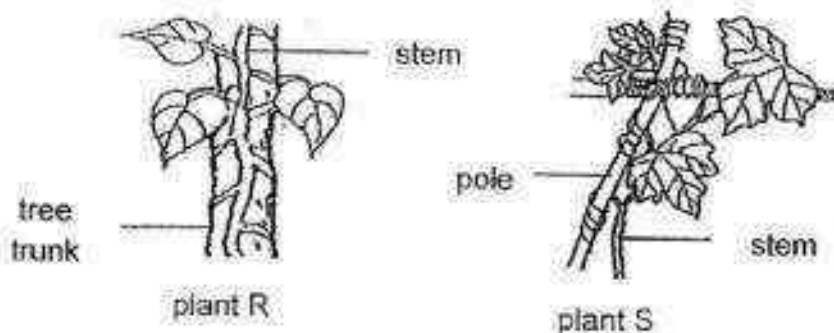


She observed that the water level in set up A dropped while the water level in set up B remained the same.

What can she conclude from this experiment?

- (1) The roots had taken in the water.
- (2) The oil is lost to the surroundings.
- (3) The leaves had absorbed the water.
- (4) The water is lost to the surroundings.

7. The diagram below shows plant R growing on the trunk of a tree and plant S growing around a pole.



Which one of the following explains why the stem of plant R and plant S grow in this manner?

- (1) Both have broad stems to make more food for the plant.
- (2) Both have broad stems to transport more water and food.
- (3) Both have weak stems to twirl around the tree trunk or pole.
- (4) Both have weak stems and need support to get more sunlight.

8. Jane had to classify the four animals given below.



parrot



bat

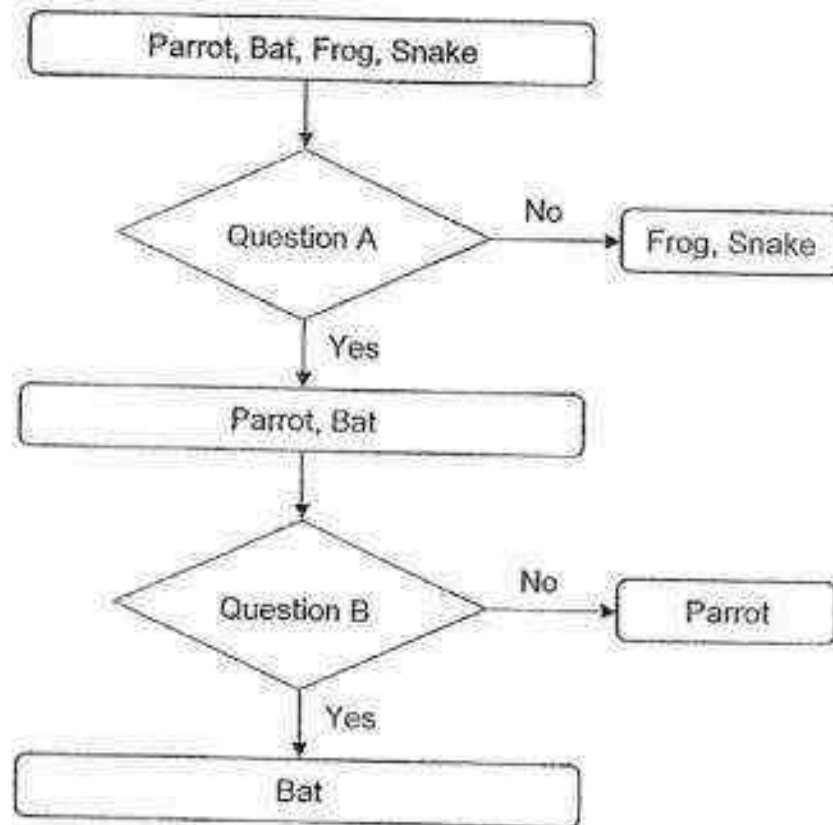


frog



snake

She classified them with the help of the chart below.



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

	Question A	Question B
(1)	Can they fly?	Do they lay eggs?
(2)	Do they have wings?	Do they lay eggs?
(3)	Can they fly?	Do they have hair / fur?
(4)	Do they have wings?	Do they have feathers?

9. Study the diagram given below.



dolphin



shark

Based only on what is observable in the diagram above, how is the dolphin similar to the shark?

- A Both have tails.
- B Both breathe through lungs.
- C Both give birth to their young alive.
- D Both their bodies are broader in the middle.

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

10. Which one of the following is an insect?

(1)



(2)



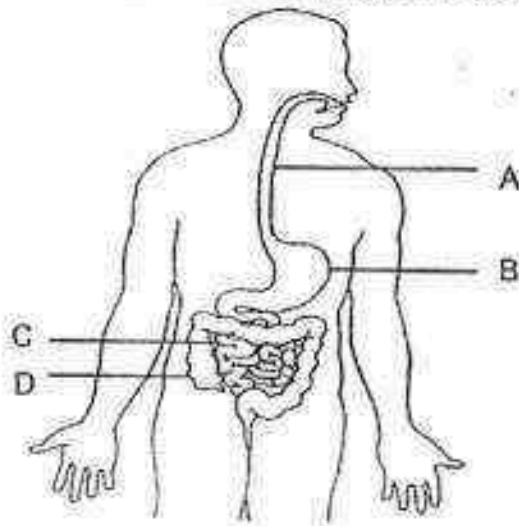
(3)



(4)



11. The diagram below shows the human digestive system.



In which of the above parts, A, B, C and D, does digestion not take place?

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

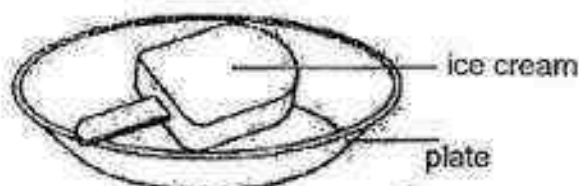
12. Which one of the following is not matter?

- (1) soil
- (2) pencil
- (3) shadow
- (4) oxygen

13. Which one of the following substances has a definite shape?

- (1) oil
- (2) air
- (3) water
- (4) marble

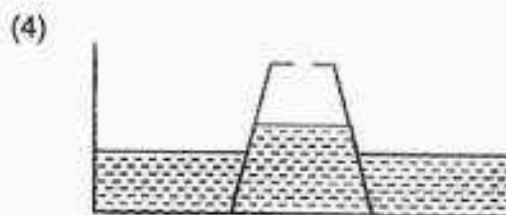
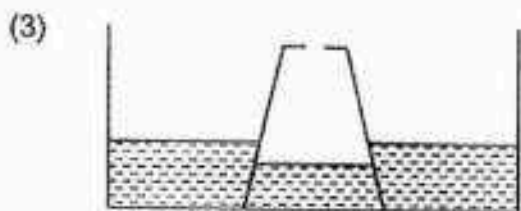
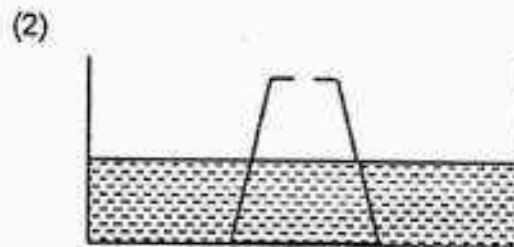
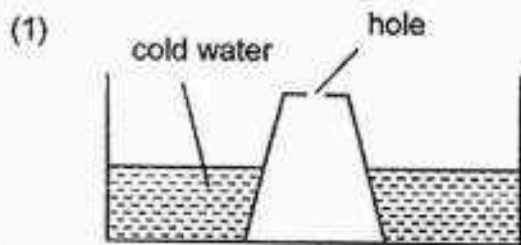
14. An ice cream has been left on a plate in the kitchen as shown below.



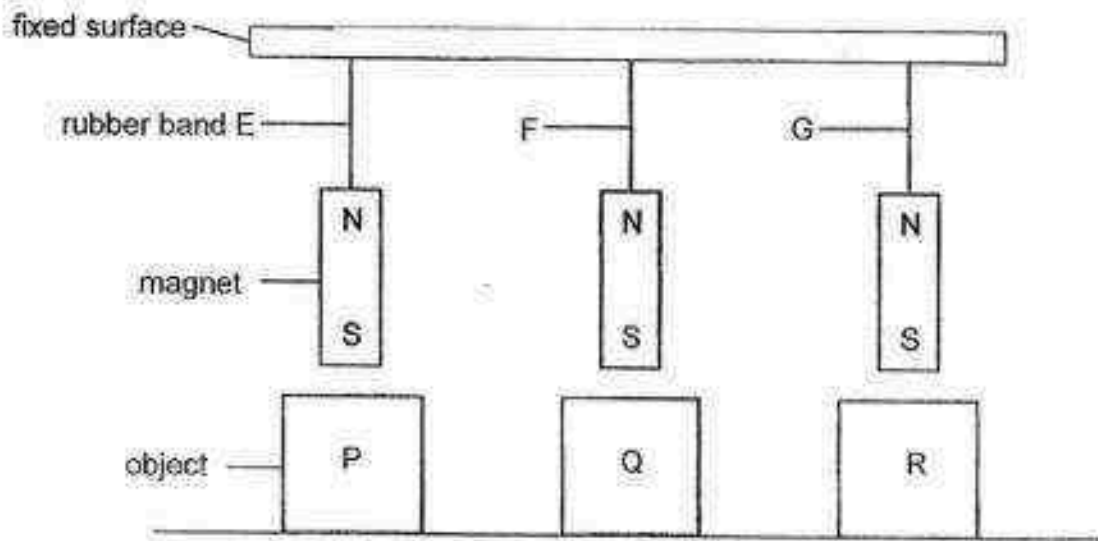
Which of the following correctly shows the change(s) that would take place in the ice cream after 10 minutes?

	Change in state	Change in shape	Heat gain
(1)	yes	yes	no
(2)	yes	yes	yes
(3)	no	no	yes
(4)	no	yes	no

15. A cup with a hole in the bottom is inverted and placed into a basin of cold water. Which one of the following shows the correct water level in the cup?



16. Pam suspended three identical magnets from a fixed surface using similar rubber bands, E, F and G. She then placed objects, P, Q and R, below the magnets as shown in the diagram below.



She recorded the lengths of the rubber bands in the table below.

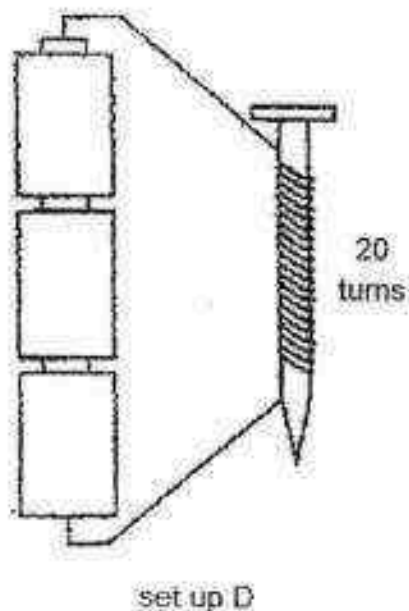
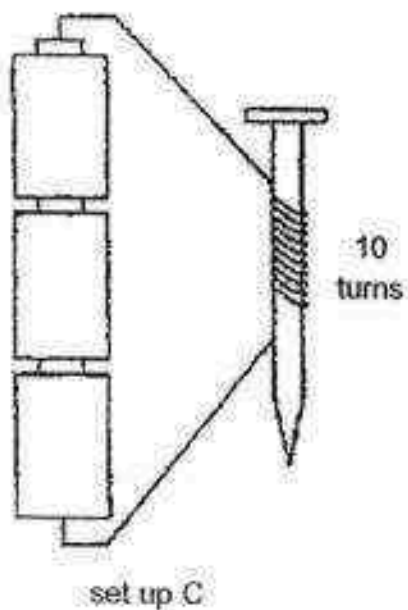
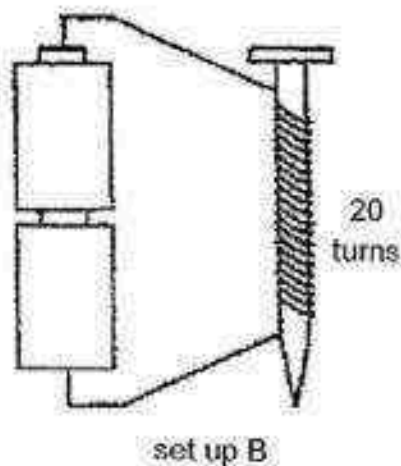
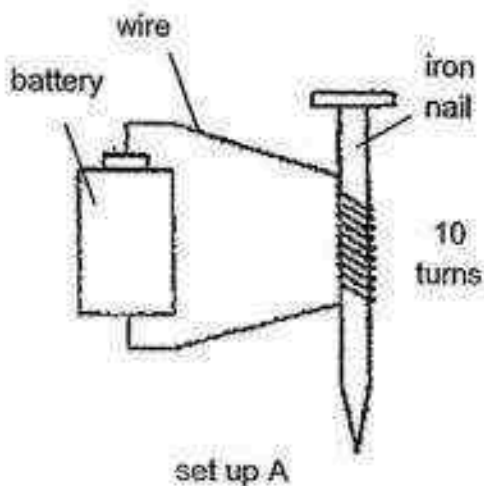
Rubber Band	Length of the Rubber Band (cm)	
	Before object was placed	After object was placed
E	3	1.5
F	3	3
G	3	5.5

Based only on the information given in the table above, which one of the following statements is true?

- (1) Object R repels the magnet.
- (2) Object P attracts the magnet.
- (3) Object Q is made from a non-magnetic material.
- (4) The magnet suspended from rubber band F has the greatest magnetic strength.

17. An iron nail becomes an electromagnet when it is placed in a coil of wire connected to battery / batteries.

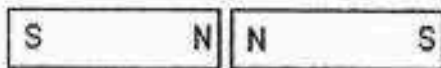
Sandra wants to find out if the number of turns of the coil around an iron nail would affect the strength of the electromagnet. Which two set ups should she choose to conduct a fair test?



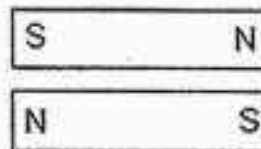
- (1) set up A and set up B
- (2) set up B and set up C
- (3) set up C and set up D
- (4) set up A and set up D

18. In which one of the following will the two magnets attract each other?

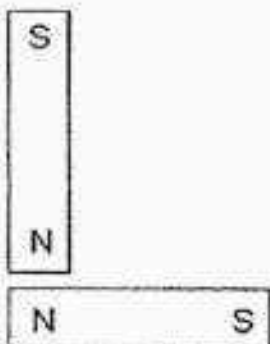
(1)



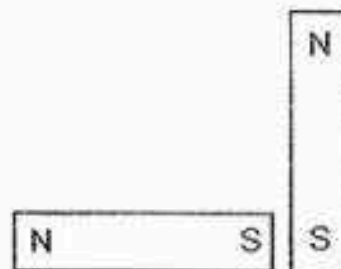
(2)



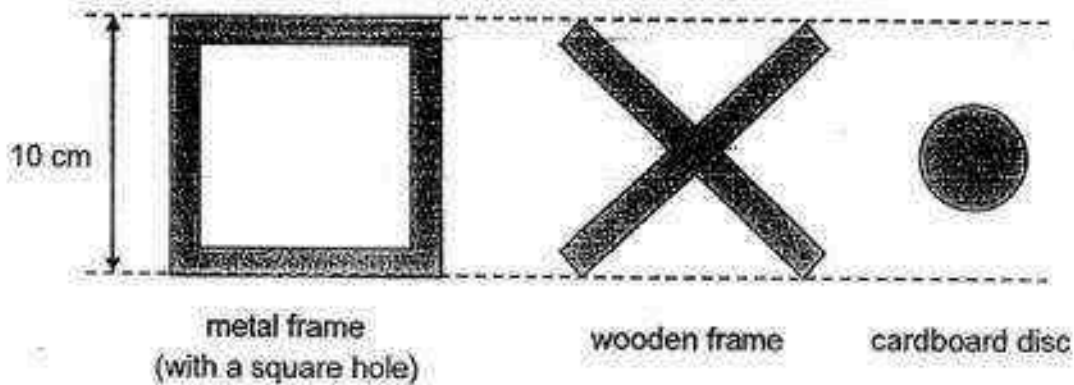
(3)



(4)



19. Sandra had three objects as shown below.



All three objects were placed in the same order as above, at positions A, B and C, respectively as shown in the diagram below. A torch was then used to cast a shadow on a smooth wall.



Which one of the following is the most likely shadow cast on the smooth wall?

(1)



(2)



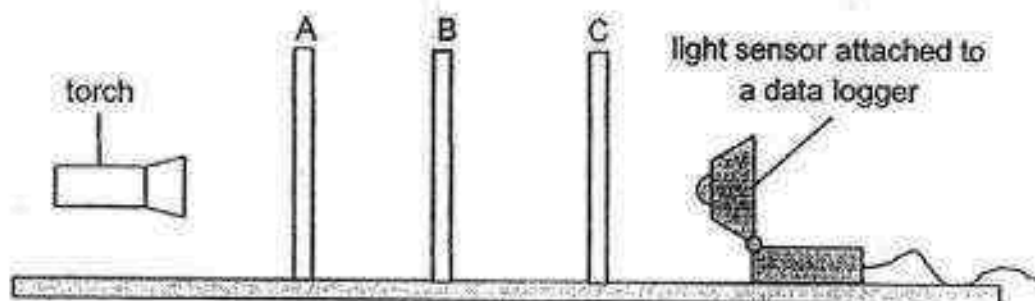
(3)



(4)



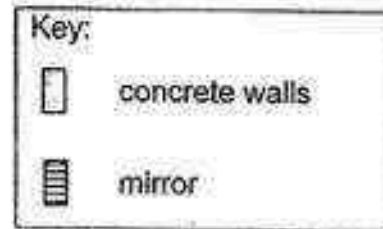
20. Joan wanted to conduct an experiment to find out the amount of light that can pass through different materials of the same size and thickness. They were placed at positions, A, B and C, in a dark room as shown below.



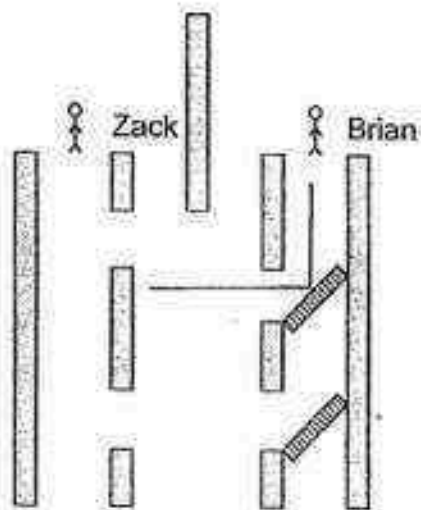
Which one of the following best represents the materials at positions, A, B and C, as shown above?

	A	B	C	Reading on Light Sensor (units)
(1)	tracing paper	wooden plate	clear glass	0
(2)	frosted glass	clear glass	wooden plate	25
(3)	clear glass	clear plastic sheet	frosted glass	0
(4)	wooden plate	clear glass	cardboard sheet	125

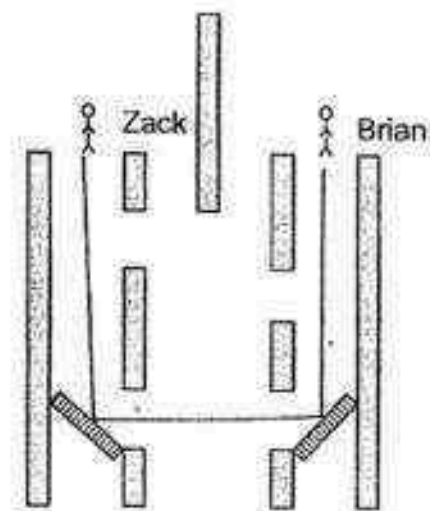
21. Zack and Brian were standing at different positions as shown in the diagrams below.
Which one of the following arrangement of mirrors would allow them to see each other clearly?



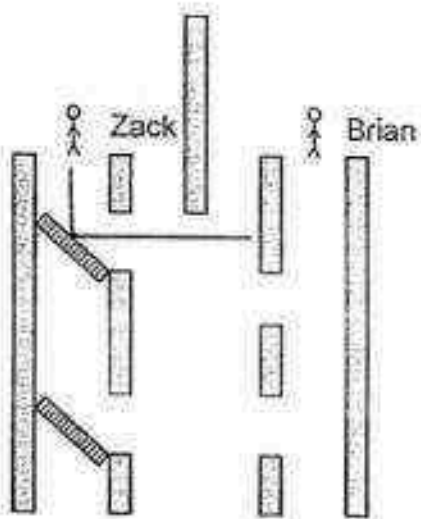
(1)



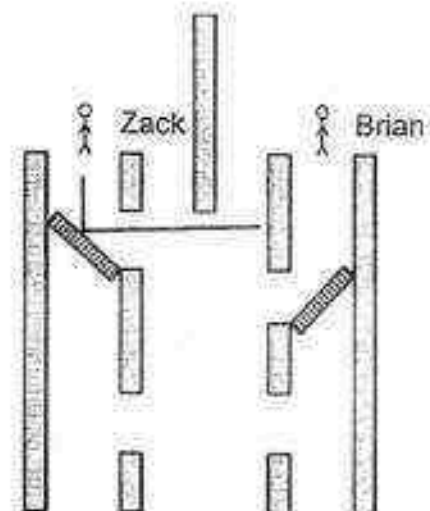
(2)



(3)

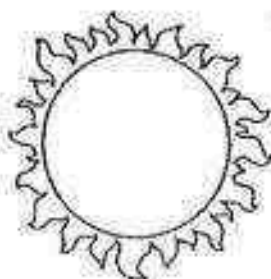


(4)



22. Which one of the following is not a source of light?

(1)



the Sun

(2)



electric night lamp

(3)



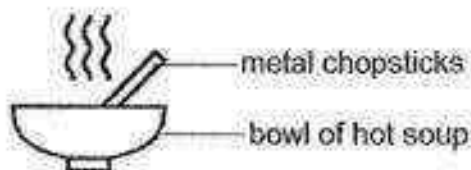
fire

(4)



yellow highlighter

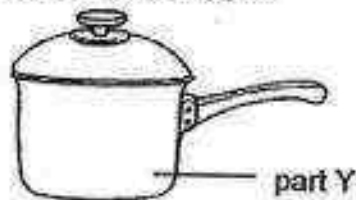
23. A pair of metal chopsticks is placed in a bowl of hot soup as shown below.



After five minutes, the chopsticks become _____.

- (1) cooler because the bowl loses heat to the hot soup
- (2) cooler because the chopsticks lose heat to the hot soup
- (3) hotter because the chopsticks gain heat from the hot soup
- (4) hotter because the hot soup gains heat from the chopsticks

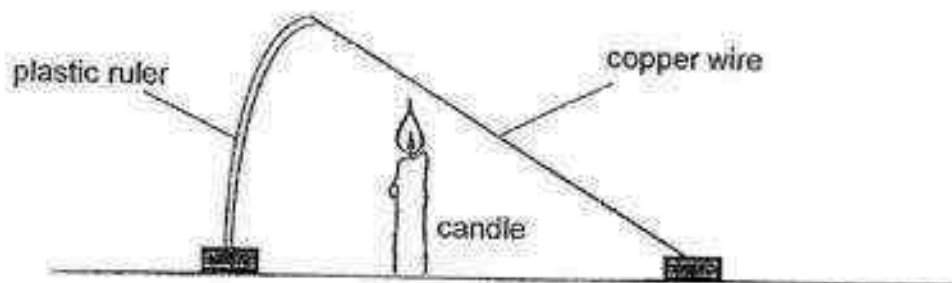
24. The diagram below shows a cooking pot.



Which of the following shows the property of the material used to make part Y and its function?

	Part Y	Function
(1)	Poor conductor of heat	It does not allow heat to pass through easily.
(2)	Good conductor of heat	It is shiny and can reflect light.
(3)	Poor conductor of heat	It allows the hot water in the pot to cool down faster.
(4)	Good conductor of heat	It allows the hot water in the pot to boil faster.

25. A plastic ruler is attached to a copper wire and a lit candle is placed under the copper wire as shown in the diagram below.



Which one of the following is the most likely observation after ten minutes?

- (1) The copper wire breaks.
- (2) The plastic ruler bends less.
- (3) The plastic ruler bends more.
- (4) The copper wire becomes shorter.

26. Mary took out a piece of meat from the freezer and left it on a plate to defrost.

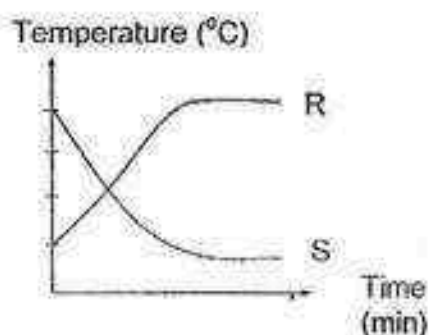
Which one of the following would take place?

- (1) The plate does not gain or lose any heat.
- (2) The plate gains heat from the piece of meat.
- (3) The piece of meat loses coldness to the plate and the surroundings.
- (4) The piece of meat gains heat from the plate and the surroundings.

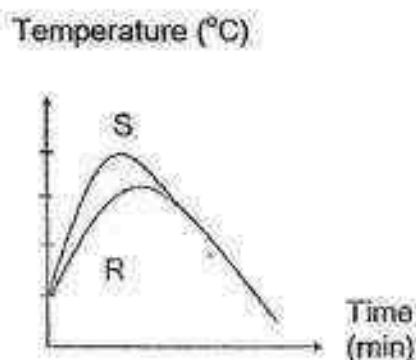
27. Two beakers, R and S, were filled with 100 ml and 200 ml of tap water respectively. Both beakers were heated continuously and the temperatures of the water were recorded every five minutes and plotted in a line graph.

Which one of the following graphs best represents the change in temperature for both beakers, R and S?

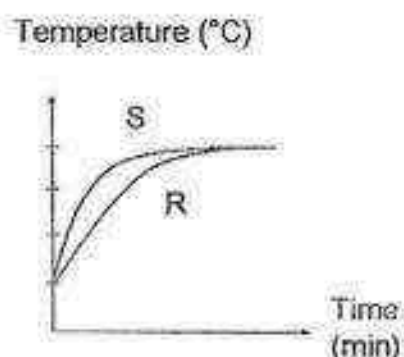
(1)



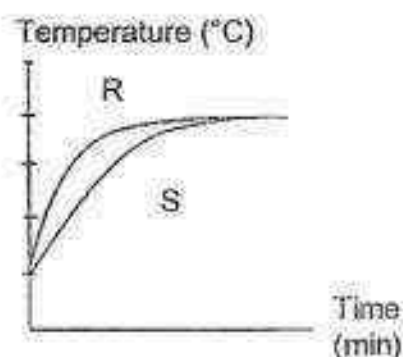
(2)



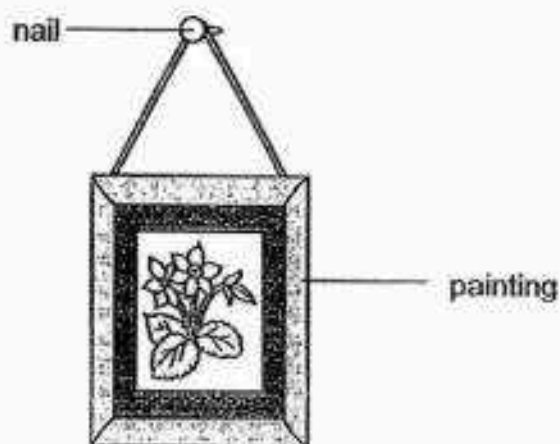
(3)



(4)



28. The diagram below shows a painting hanging on a wall.



Steel is used to make nails because steel is _____.

- (1) a good conductor of heat
- (2) shiny and will reflect light
- (3) strong and able to hold the painting
- (4) flexible and able to hold the painting

Name : _____ ()

Class : Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4 Semestral Assessment 2— 2016 SCIENCE

BOOKLET B
27 October 2016

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

13 questions
44 marks

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

This paper consists of 17 printed pages.

Booklet A	56
Booklet B	44
Total	100

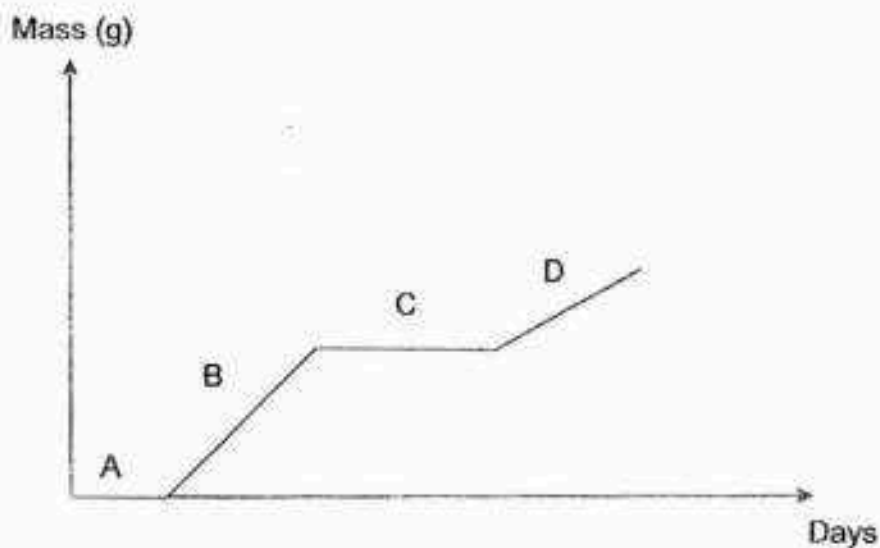
Parent's Signature/Date

Section B (44 marks)

For questions 29 to 41, write your answers in this booklet.

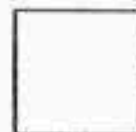
The number of marks available is shown in the brackets at the end of each question or part question.

29. The line graph below shows the mass of a butterfly during the 4 stages of its life cycle.

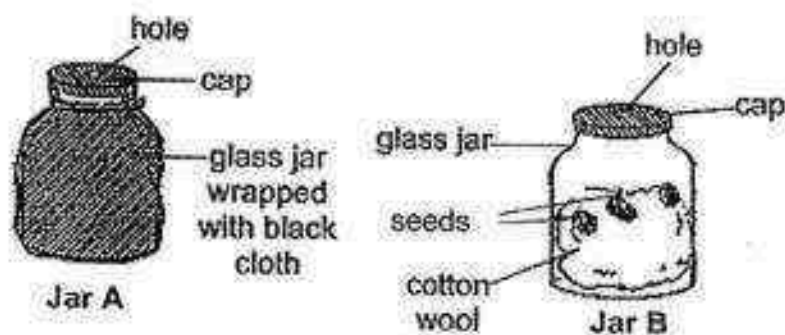


- (a) Explain why the mass remains the same at stage C. [1]

- (b) At which stage of its life cycle is the butterfly considered a pest to the farmers? [2]
Explain your answer.



30. Kelly conducted an experiment on the germination of seeds using the set ups shown below. She placed three similar seeds in each of the two identical glass jars, A and B, lined with an equal amount of damp cotton wool. Jar A was wrapped with a piece of black cloth while Jar B was not. Both set ups were left in the garden.

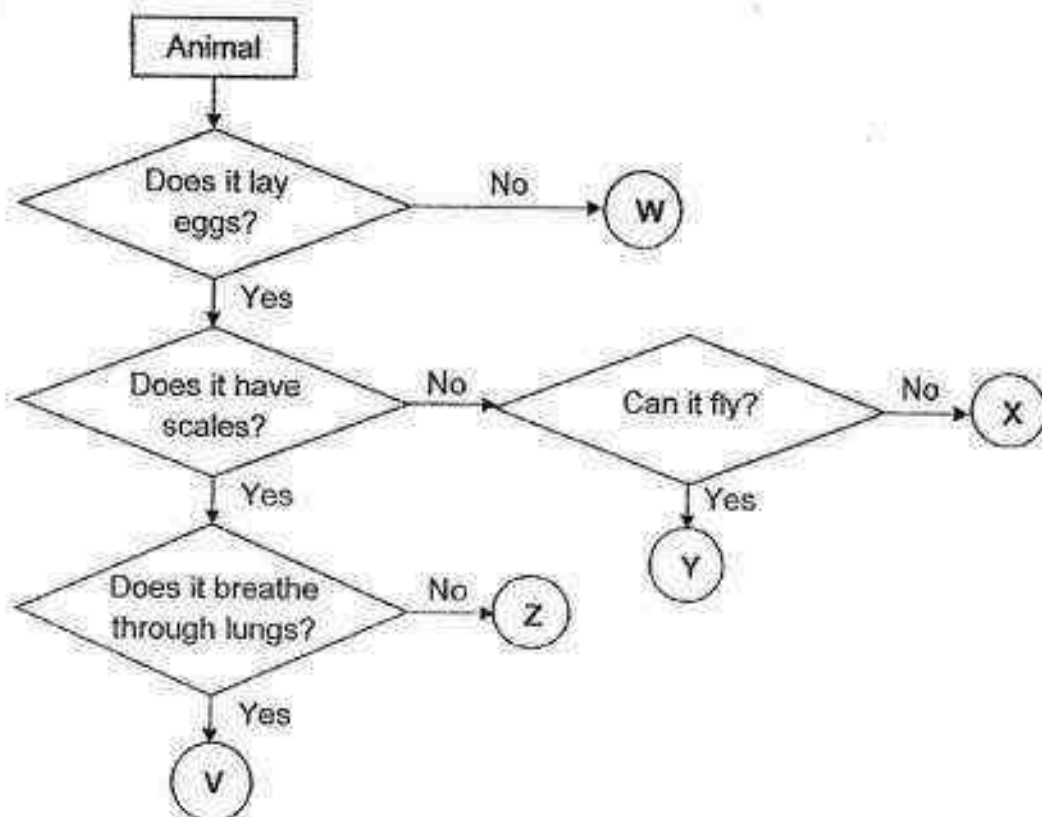


- (a) What was Kelly trying to find out in her experiment? [1]

- (b) In which of these jars, A or B, would the seeds germinate? Explain your answer. [2]



31. Study the flowchart given below.



- (a) Based on the flowchart above, state one similarity and one difference between X and V.

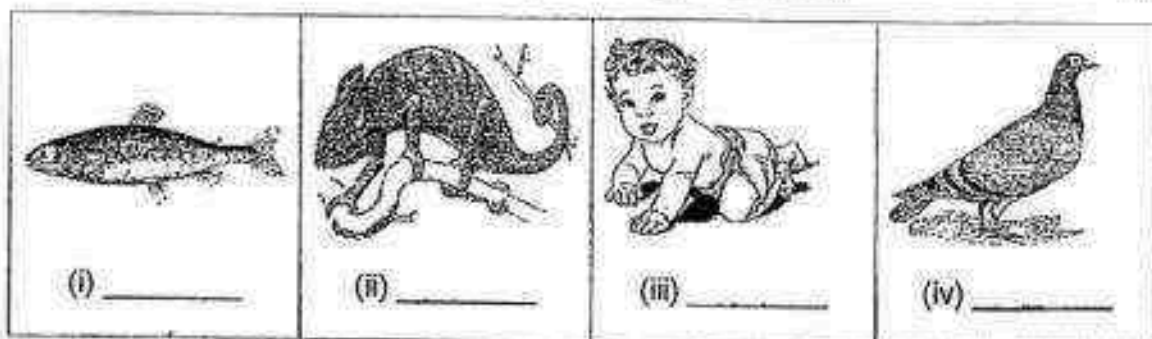
[2]

Similarity : _____

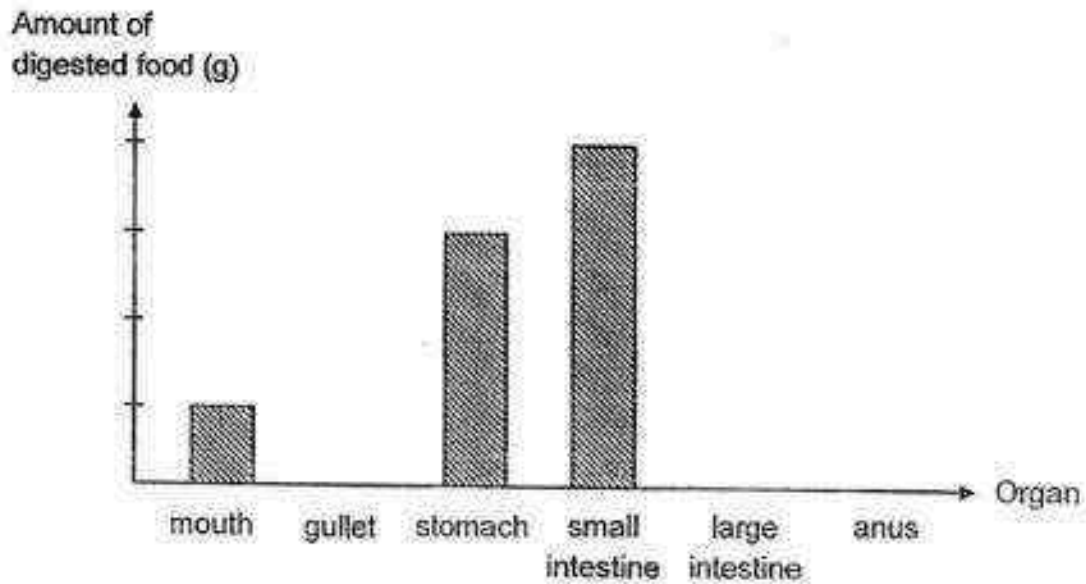
Difference: _____

- (b) Based on the flowchart above, which of the above letters, V, W, X, Y or Z, best represents the animals shown below? (Write only the letters.)

[2]



32. John ate a bar of chocolate. The table below shows the amount of digested and undigested food found in different parts of his digestive system as the food passed through them.



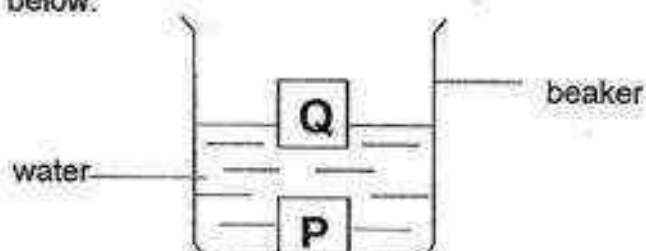
- (a) Complete the graph above by drawing the bar for the amount of digested food in the gullet. [1]

- (b) What will happen to the undigested food if the large intestine is not functioning properly? [1]

- (c) State the function of the human digestive system. [1]



33. Alex placed two objects, P and Q, made of different materials into a beaker of water as shown below.



- (a) Based on the diagram shown above, which of the following materials best represent objects, P and Q? (Write the **letter** only).

[1]

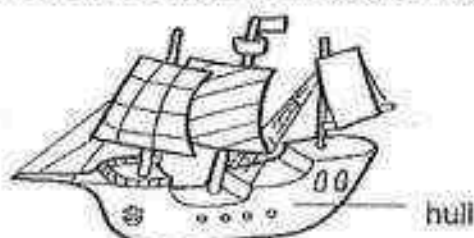
Styrofoam: _____

Metal : _____

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

[1]

Alex wanted to build a toy sail boat for a race as shown below.

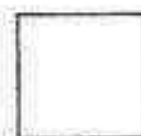


Materials given

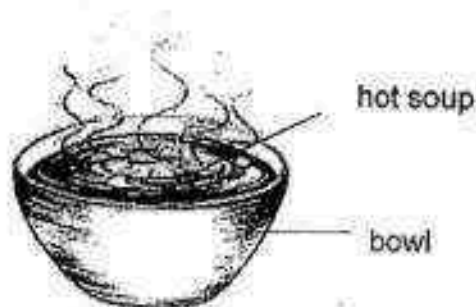
styrofoam, ceramic and fabric

- (c) Using the materials given above, state the material that is most suitable for making the hull of the toy sailboat. Give a reason for your answer.

[2]



34. The diagram below shows a bowl of hot soup.



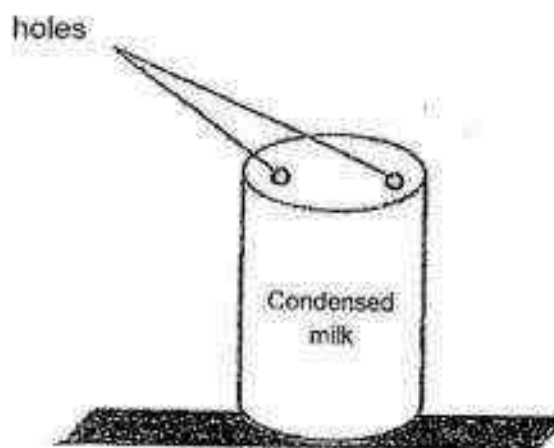
- (a) Write the correct state of matter for the following parts.

[2]

Bowl : _____

Hot soup : _____

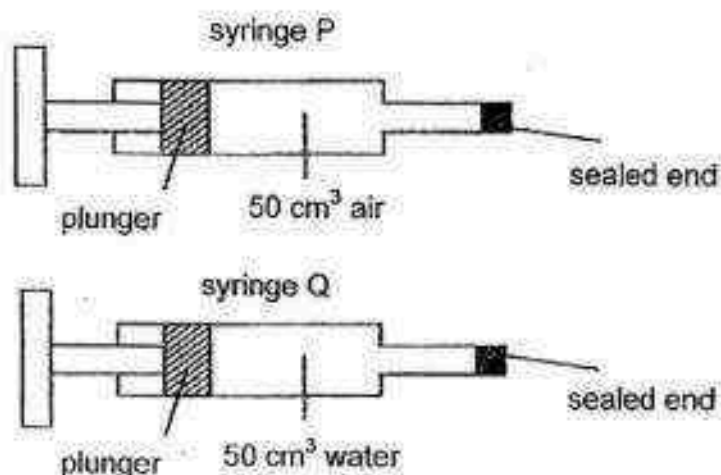
Susan noticed that her mum poked two holes through the lid of the can of milk as shown in the diagram below.



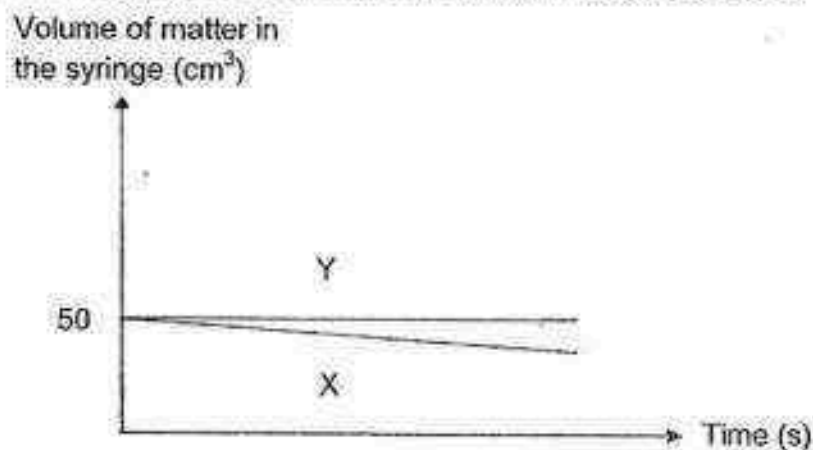
- (b) She observed that the milk was flowing out very fast. Explain why having two holes instead of one makes the milk flow out faster.

[1]

35. Jimmy conducted an experiment to demonstrate a property of matter. There are two syringes, P and Q. Syringe P contains 50 cm^3 of air while syringe Q contains 50 cm^3 of water.



The ends of both syringes are sealed and the plungers are pushed in. He observed both syringes to see if there were any changes to the volume of air and water in the syringes. The results are shown in the graph below.



- (a) Based on the results of the experiment, identify which line, X or Y, best represents syringe, P and Q. (Write the **letter** only).

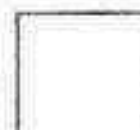
[1]

Syringe P: Line _____

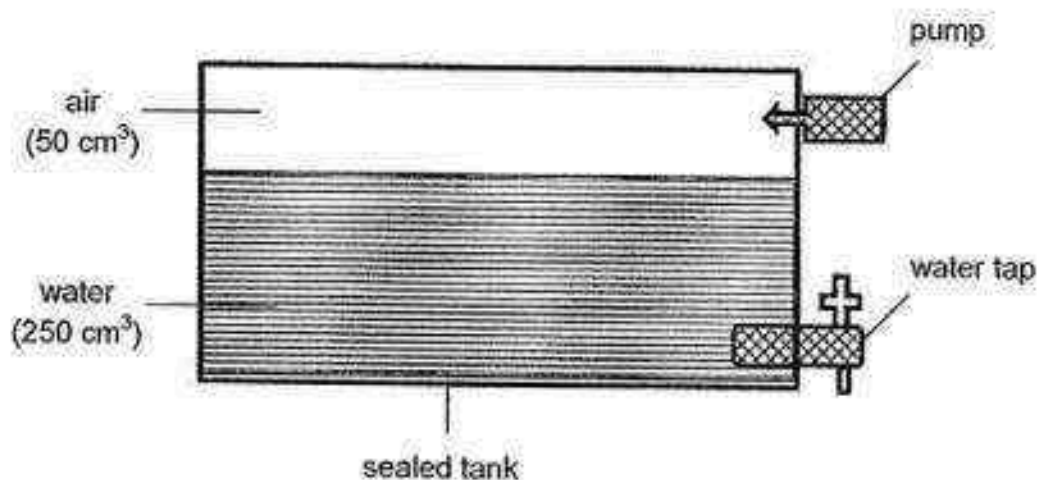
Syringe Q: Line _____

- (b) Give a reason for your observation for line X in (a).

[1]



Jimmy conducted another experiment using the set up shown below.



- (c) He used the tap to remove 50 cm³ of water. He then used the pump to add 40 cm³ of air into the container.

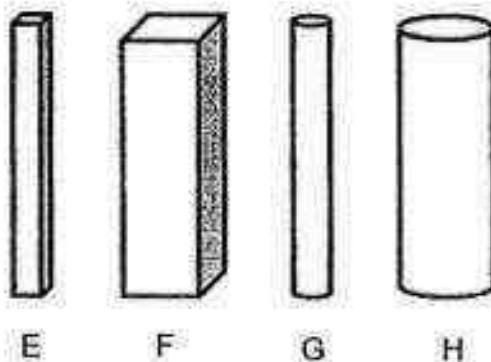
In the table below, write down the volume of air and water in the sealed tank. [1]

	Volume at Start(cm ³)	Volume at End (cm ³)
air	50	
water	250	

- (d) Give a reason for your answer in (c). [1]



36. Steve bought four magnets of different sizes, E, F, G and H, shown below. All four magnets are of the same height.



In order to find out if the size of a magnet affects its magnetic strength, he placed each of the magnets near some iron nails.

He then recorded the results in a table as shown below.

Magnet	Distance between magnet and iron nails (cm)	Number of iron nails attracted to the magnet
E	10	20
F	10	30
G	10	30
H	10	20

- (a) Based on this experiment, what can he conclude about the size of the magnet and its magnetic strength?

[1]



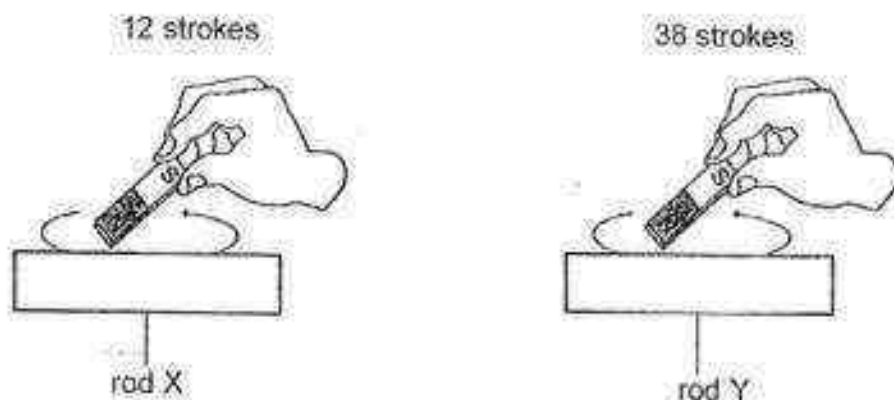
He conducted another experiment using four similar magnets, P, Q, R and S, to find out if the distance between the magnet and iron nails affects its magnetic strength. He then recorded the results in a table as shown below.

Magnet	Distance between magnet and iron nails (cm)	Number of iron nails attracted to the magnet
P	9	40
Q	3	40
R	12	40
S	7	40

- (b) Based only on the results given in the table above, state which magnet, P, Q, R or S, has the greatest magnetic strength? Give a reason for your answer.

[1]

Steve then stroked two similar iron rods, X and Y, with the same magnet as shown in the diagram below.

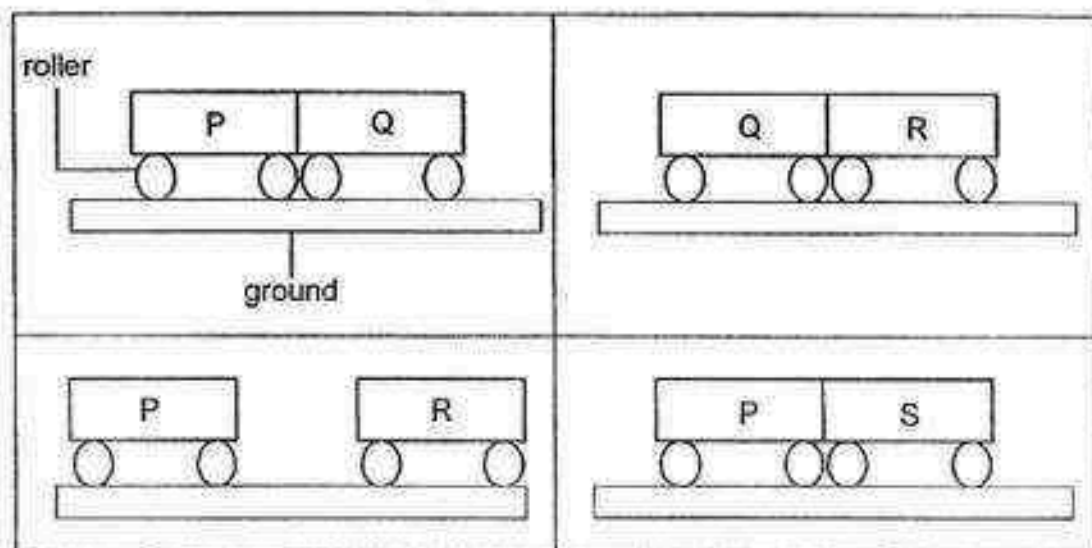


Both rods became magnets and were used to attract similar iron pins. Circle the correct answer below.

[1]

- (c) Rod Y attracted 'less pins than' / 'the same number of pins as' / 'more pins than' rod X.

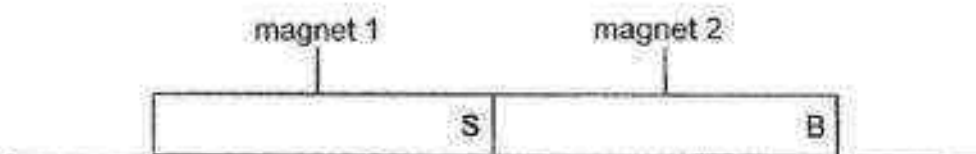
37. The table below shows how objects, P, Q, R and S, interact with each other when moved towards each other.



- (a) Based on the interactions between the four objects shown above, state which two objects are magnets. [1]

- (b) Give a reason for your answer in (a). [1]

- (c) Two magnets are placed together as shown below.



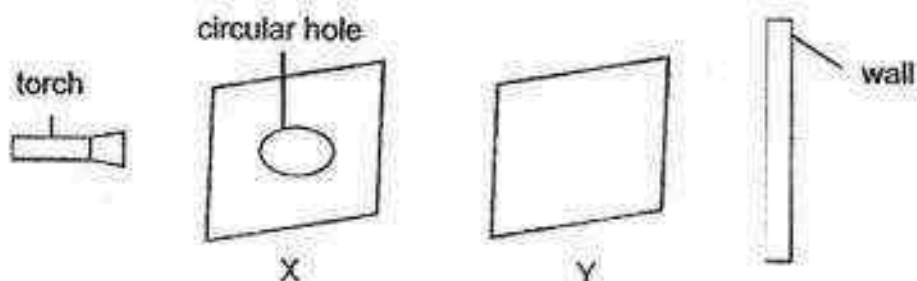
The south pole of magnet 1 is labelled S. Name the poles labelled A and B on magnet 2. [1]

A: _____ Pole

B: _____ Pole

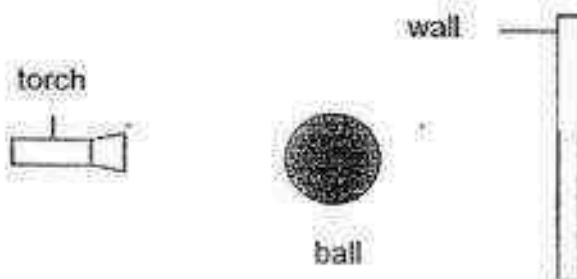


38. Tom carried out an experiment in a dark room using the set up as shown below. He arranged two sheets, X and Y, made of different materials in a straight line. When the torch was switched on, a dim patch of light was seen on the wall.



- (a) Based on Tom's observation, state the property of **sheet Y** in terms of its transparency. [1]

Tom then removed both sheets, X and Y, and replaced it with a ball as shown below. He then shone a torch on the ball and a shadow was formed on the wall.



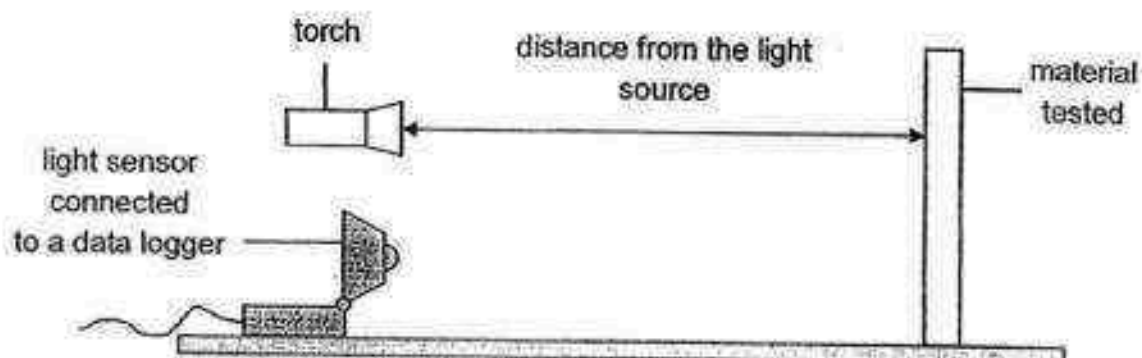
- (b) A shadow is formed when light which travels in a straight line, is [1]

_____ by an object.

- (c) Draw and shade the shadow of the ball that is formed on the wall. [1]

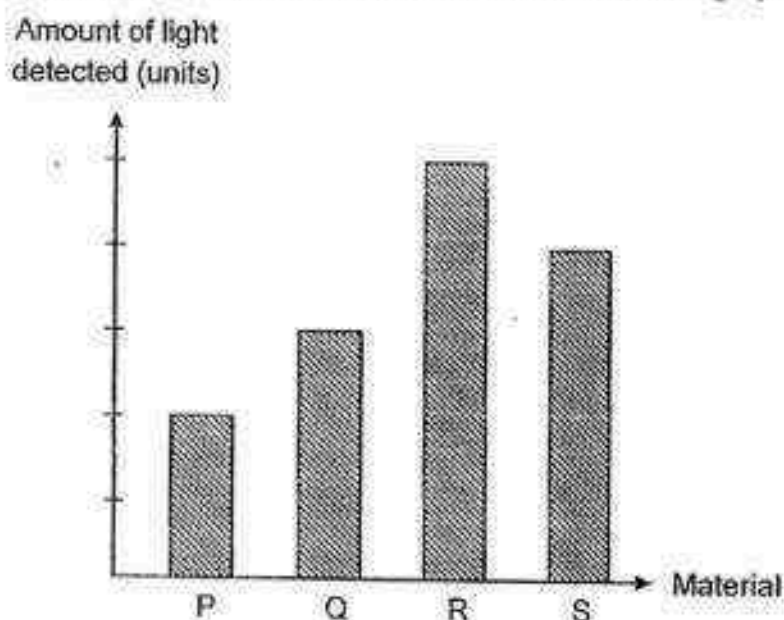


39. Jamal conducted an experiment to measure the amount of light reflected by four different materials, P, Q, R and S, from a light source. He set up his experiment as shown below.



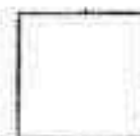
He placed each material at the same distance away from the torch. A light sensor connected to a data logger was used to determine the amount of light that was reflected off the material.

The results of this experiment were recorded as shown in the bar graph below.



- (a) State the property of light that is shown in this experiment.

[1]



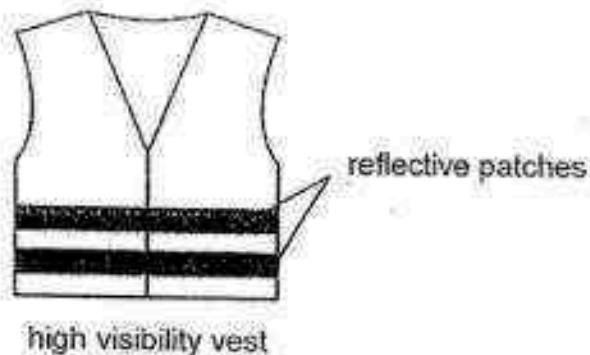
- (b) Jamal conducted his experiment in a dark room. Explain how this condition ensures that a fair test is carried out.

[1]

- (c) State one other variable that should be kept unchanged for this experiment to be a fair test.

[1]

The diagram below shows a high visibility vest used by construction workers who work during night time.

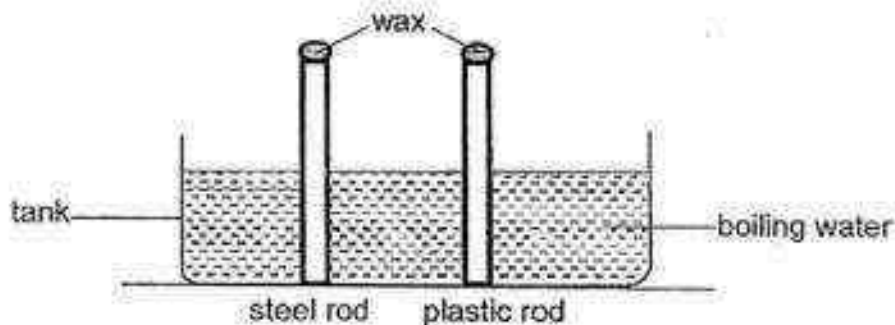


- (d) Based only on the results of Jamal's experiment, state which material, P, Q, R or S, would be most suitable for making the reflective patches on the high visibility vest. Give a reason for your answer.

[1]



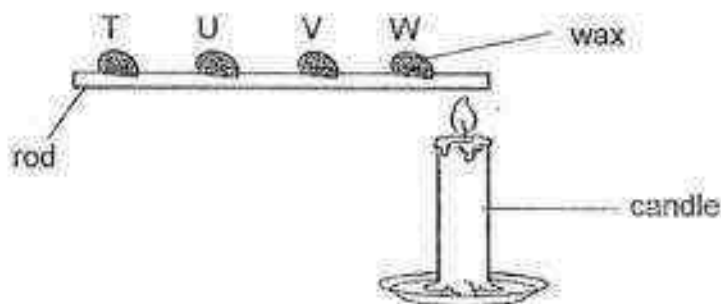
40. James placed two similar rods, made of steel and plastic, into a tank of boiling water for ten minutes as shown below. Equal amounts of wax were placed on both rods.



- (a) On which rod, steel or plastic, would the wax melt first? Give a reason for your answer.

[2]

In another experiment, James placed four drops of wax at different positions on a rod. A candle was placed at one end of the rod as shown below.



- (b) Arrange the drops of wax, T, U, V and W, in the order that they melted and dropped off, starting with the fastest.

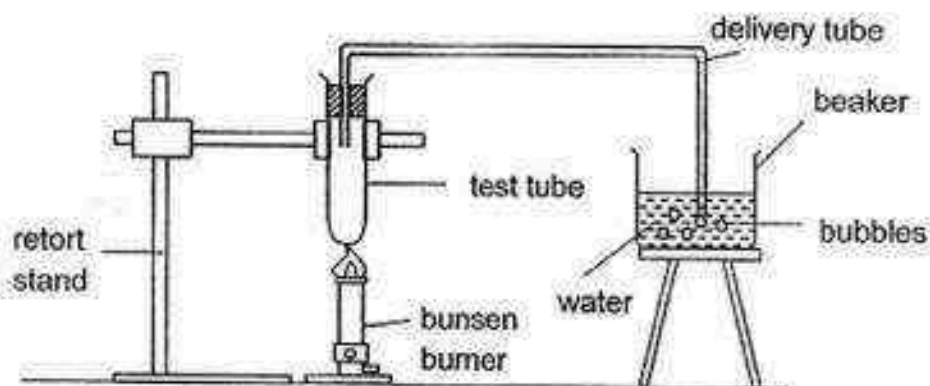
[9]

fastest

slowest



41. A delivery tube was fitted on a test tube as shown below. It had its other end placed in a beaker of water. When the test tube was heated with a bunsen burner, tiny bubbles could be seen in the beaker of water.



- (a) Explain clearly why bubbles were observed in the beaker of water when the test tube was heated. [2]

- (b) State what could be observed when the bunsen burner was turned off. Give a reason for your answer. [2]



EXAM PAPER 2016 (P4)

SCHOOL : CHIJ

SUBJECT : SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	3	1	2	1	4	3	1	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	3	4	2	2	3	3	2	1	1
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
2	4	3	4	2	4	4	3		

29)a)Stage C is the pupal stage and the pupa does not need to eat or drink as it is in the cocoon.

b)Stage B, the caterpillar stage caterpillar will eat the farmers' harvest and plants.

30)a)Kelly was trying to find out whether sunlight is needed for germination.

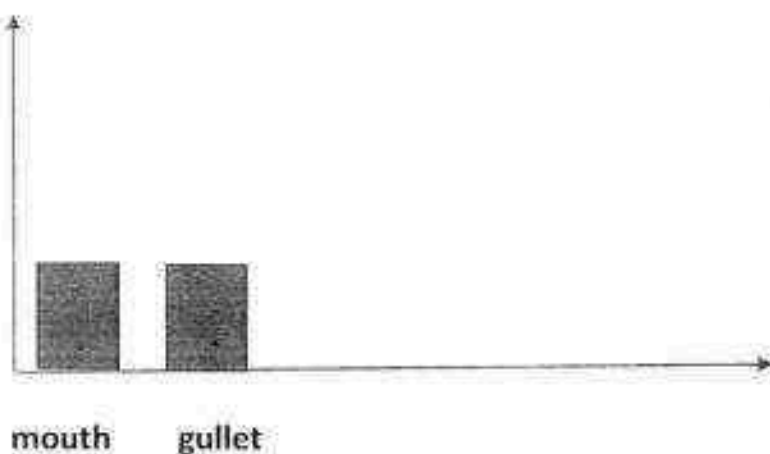
b)Seeds in both Jars A and B will germinate. There was air, water and warmth for the germination and sunlight is not needed for germination.

31)a)Similarity : Both X and V lay eggs.

Difference : X does not have scales while V has scales.

b)i)Z ii)V iii)W iv)Y

32)a)



b)The large intestine will not be able to absorb water from the undigested food and the undigested food will be watery when it is passed out of the body.

c)It breaks food into simpler substances and digest food to give energy to the body.

33)a)Styrofoam : Q

Metal : P

b)Styrofoam is light and able to float in water but metal is heavier and able to sink in water.

c)Styrofoam. It is light, waterproof and will not sink in water.

34)a)Bowl : Solid

Hot soup : Liquid

b)Air occupies space and by opening another hole, there will be air entering through one hole that pushes the milk out of the can from another hole.

35)a)Syringe P : Line X

Syringe Q : Line Y

b)Air in syringe P can be compressed and it does not have a definite volume.

c)air : 100

water : 200

35)d)Air in the sealed tank does not have a definite volume and air is able to take up the space which is available after removal of 50cm³ of water and water in the tank has a definite volume.

36)a)The magnetic strength does not depend on the size of the magnet.

b)Magnet R. The distance between magnet R and the iron nails is the furthest even though it attracted the same number of iron nails as other magnets.

c)more pins than

37)a)Objects P and R are magnets.

b)Both objects P and R can attract and repel and only magnets can repel.

c)A: North

B: South

38)a)Sheet Y is translucent and it allows some light to pass through it.

b)blocked



39)a)Light can be reflected by an object and light travels in a straight line.

b)A dark room ensure that any light shining on the material comes only from the torch.

c)The size of the materials.

d)Material R. It reflected the most amount of light and other people can see the construction workers clearly when light is reflected into other people's eyes.

40)a)The steel rod. Steel is a better conductor of heat than plastic and is able to conduct heat faster to the wax.

b)W , V , U , T

41)a)The air in the tested tube gained heat from the bunsen burner and expanded and some of the air moved through the delivery tube and into the beaker, forming bubbles.

b)There were no more bubbles in the beaker. The air in the test tube did not gain more heat and stopped expanding.

55

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END-OF-YEAR EXAMINATION 2016
PRIMARY 4
SCIENCE

BOOKLET A

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: _____

Date : 28 October 2016

This booklet consists of 16 printed pages including this page.

For each question from 1 to 28, 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).

[56 marks]

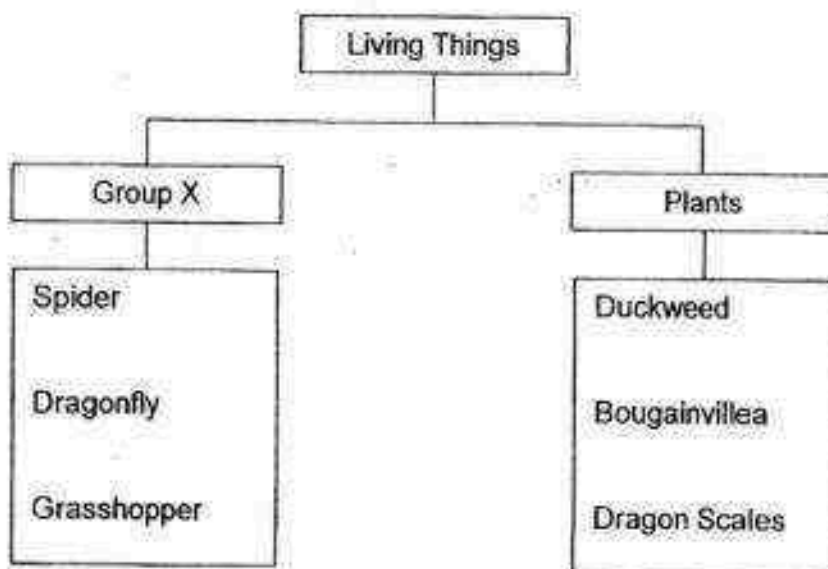
1. A tadpole swims away when a twig drops into the pond.



This shows that the tadpole is a living thing because it can _____.

- (1) grow
- (2) breathe
- (3) respond
- (4) reproduce

2. 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) Fungi
- (2) Insects
- (3) Animals
- (4) Bacteria

(Go on to the next page)

3. Siva made the following observations on the life cycle of an animal.

- There are four stages in the life cycle
- The young does not look like the adult

Which animal was Siva observing?

- (1) toad
- (2) mosquito
- (3) cockroach
- (4) grasshopper

4. Which one of the following is the function of the stem of a rose plant?

- (1) makes food
- (2) absorbs water
- (3) absorbs mineral salts
- (4) holds the plant upright

5. In which part of the digestive system does digestion take place?

- (1) anus
- (2) gullet
- (3) mouth
- (4) large intestine

6. Which one of the following shows the correct order when food moves through some parts of the digestive system?

- (1) mouth → stomach → gullet
- (2) gullet → stomach → small intestine
- (3) small intestine → stomach → gullet
- (4) large intestine → small intestine → stomach

(Go on to the next page)

7. Which one of the following objects is not made of a waterproof material?

(1) raincoat

(2) bath towel



(3) water bottle

(4) plastic umbrella



8. Which one of the following properties is true for both air and a nail?

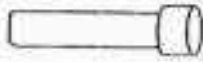
- (1) They can be seen.
- (2) They occupy space.
- (3) They have fixed shapes.
- (4) They have fixed volumes.

9. Which one of the following materials is the best conductor of heat?

- (1) metal
- (2) paper
- (3) plastic
- (4) wood

(Go on to the next page)

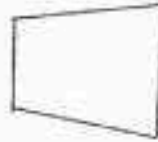
10. The set-up below shows light shining on a wooden cube.



Torch



Wooden cube



Screen

Which one of the following would likely be seen on the screen?

(1)



(2)



(3)

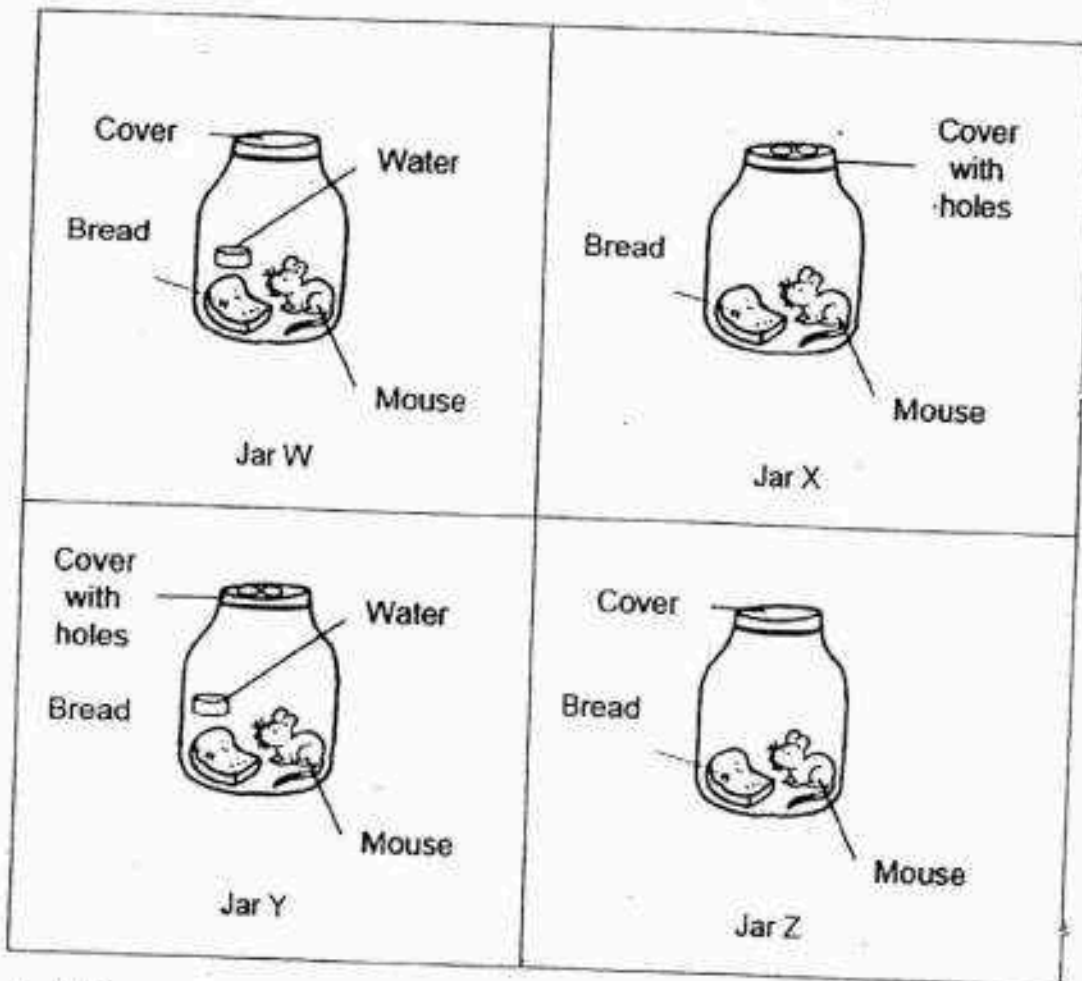


(4)



(Go on to the next page)

11. Study the following set-ups of four identical jars, W, X, Y and Z.



In which one of the following jars would the mouse be able to survive the longest?

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

(Go on to the next page)

12. Study the classification table below.

Group A	Group B
Maiden Hair's fern	Tomato plant
Dragon Scales fern	Papaya plant
Staghorn fern	Sunflower plant

Which one of the following options best represent the headings for Group A and Group B?

	Group A	Group B
(1)	Have no roots	Have roots
(2)	Have green leaves	Have brown leaves
(3)	Produce flowers	Do not produce flowers
(4)	Reproduce by spores	Reproduce by seeds

13. The young of a cockroach goes through moulting. Which one of the following statements is not true of this process?

- (1) The nymph moults more than once.
- (2) Both the adult and nymph undergo moulting.
- (3) The nymph moults because it is growing bigger.
- (4) The nymph sheds its old body covering and grows a new one.

14. Which of these statements are true of plants?

- A: Plants grow only from seeds.
- B: Leaves help to make food as the seedling grows.
- C: Seeds found inside fruits can grow into new plants.
- D: Each new plant goes through the same life cycle as the parent plant.

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

(Go on to the next page)

15. The diagram below shows a plant that takes in nutrients from another plant as it grows. The plant, however, will die if its leaves are removed.



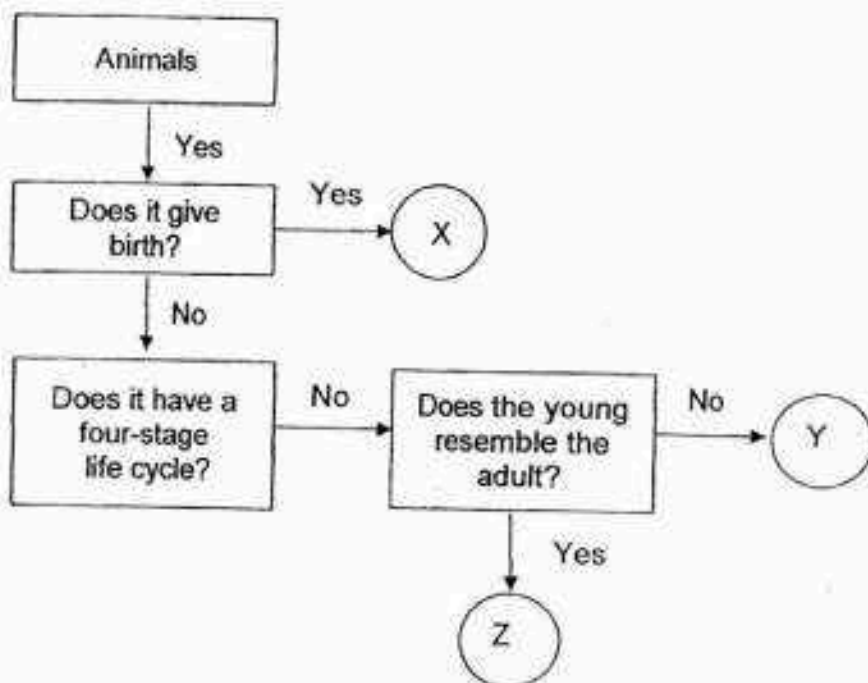
Which one of the following statements correctly explains why the plant dies when its leaves are removed?

- (1) It cannot make food.
 - (2) It cannot absorb water.
 - (3) It cannot obtain enough nutrients from other plants.
 - (4) It cannot grow on other plants to obtain more nutrients.
16. Which one of the following options describes the functions of leaves?

	Take in	Give out
(1)	Water	Gases
(2)	Mineral	Light
(3)	Light	Minerals
(4)	Gases	Gases

(Go on to the next page)

17. Study the flowchart below.

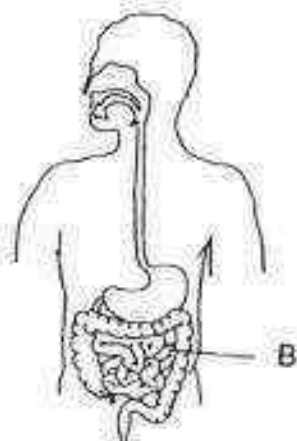


Based on the information given in the flow chart, which of the following correctly represents X, Y and Z?

	X	Y	Z
(1)	Molly	Mosquito	Donkey
(2)	Monkey	Frog	Penguin
(3)	Ostrich	Cockroach	Turtle
(4)	Alligator	Toad	Grasshopper

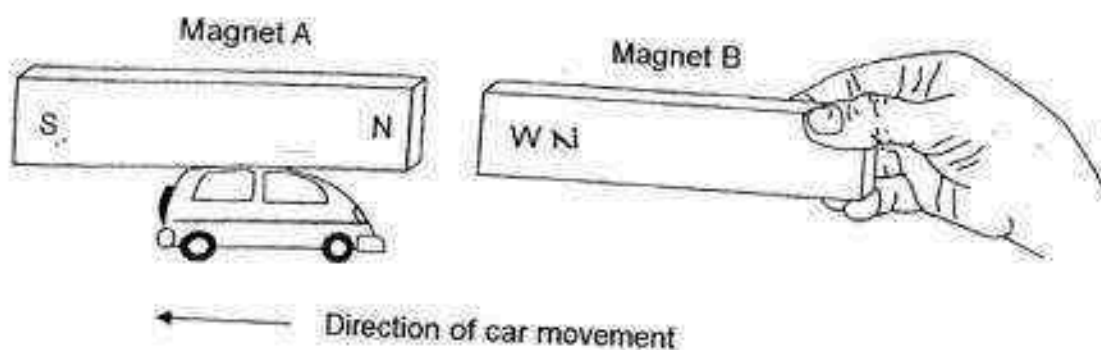
(Go on to the next page)

18. The diagram below shows the human digestive system.



What takes place at the part labelled B?

- (1) Absorption of water.
 - (2) Absorption of digested food.
 - (3) Production of more digestive juices.
 - (4) Undigested food is broken into smaller pieces.
19. Edward attached a bar magnet A to a toy car as shown and used another bar magnet B to move the car backwards.

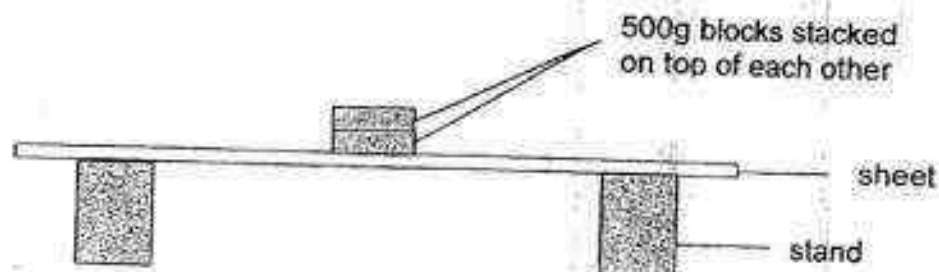


Which one of the following options shows the correct pole of W and the reason why the car moves backwards?

	W	Reason
(1)	North pole	Like poles repel
(2)	North pole	Like poles attract
(3)	South pole	Unlike poles repel
(4)	South pole	Unlike poles attract

(Go on to the next page)

20. Hong Kai set up an experiment using four identical sheets, W, X, Y and Z, of different materials. He used the experimental set-up shown below for each sheet. He kept stacking blocks on each sheet until it broke.



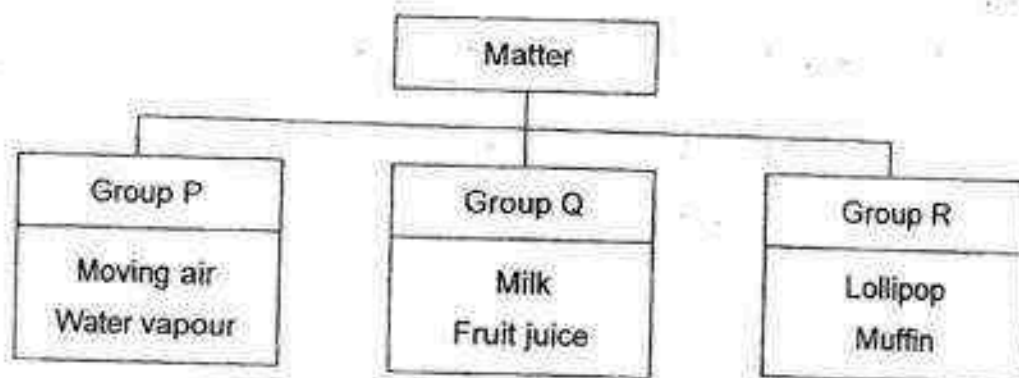
He recorded his observations in the table below.

	Sheet W	Sheet X	Sheet Y	Sheet Z
Number of 500g blocks that caused the sheet to break	2	18	9	31

What could Hong Kai conclude from his observations?

- (1) Sheet Y is most flexible sheet.
- (2) Sheet Z is the strongest sheet.
- (3) Sheet X is stronger than Sheet Z.
- (4) Sheet W is more flexible than Sheet Y.

21. Study the classification chart as shown below.

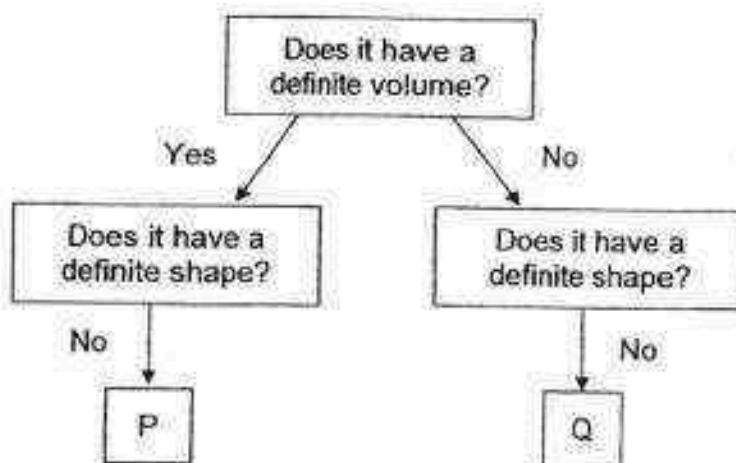


In which group can uncooked egg white be classified?

- (1) P only
- (2) Q only
- (3) R only
- (4) None of the above

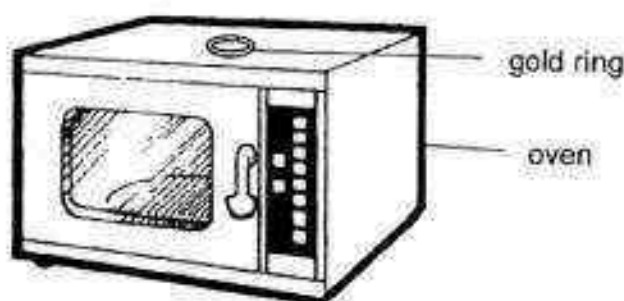
(Go on to the next page)

22. Study the flowchart below.



Which of the following is correct?

- (1) P is a solid, Q is a gas.
 - (2) P is a solid, Q is a liquid.
 - (3) P is a liquid, Q is a solid.
 - (4) P is a liquid, Q is a gas.
23. Donovan's mother left her gold ring on a hot oven while she was cooking. When she put her ring on, she found that it was loose.

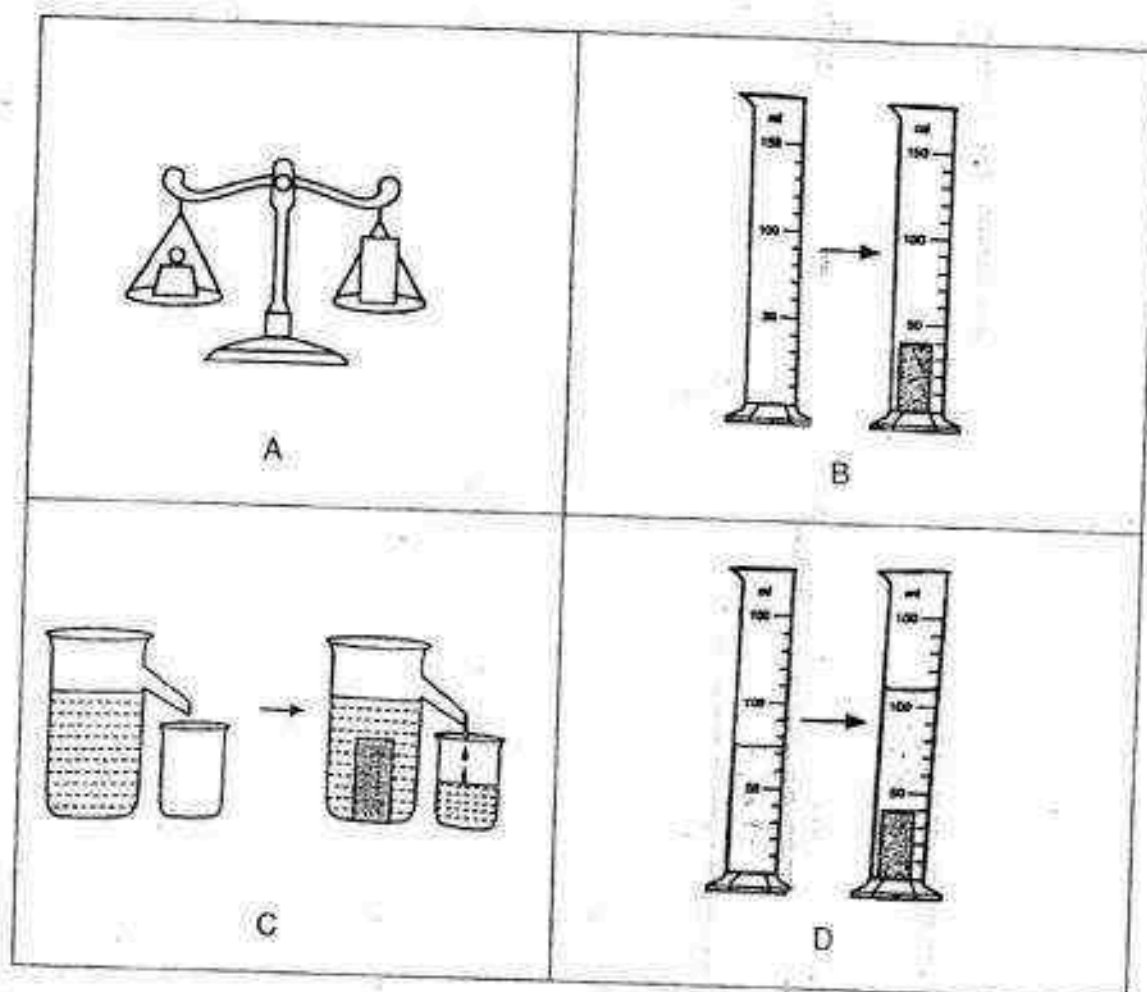


Why was the ring on her finger loose?

- (1) The ring lost heat to the hot oven and expanded.
- (2) The ring lost heat to the hot oven and contracted.
- (3) The ring gained heat from the hot oven and expanded.
- (4) The ring gained heat from the hot oven and contracted.

(Go on to the next page)

24. Study the diagram below carefully.

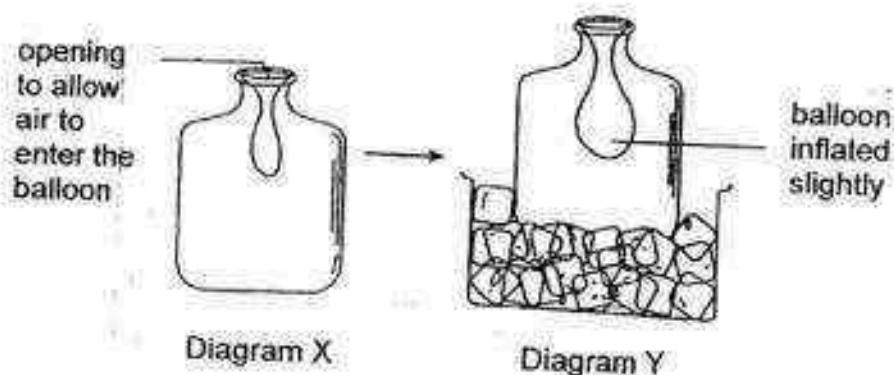


Which one of the following diagrams shows the correct way to measure the volume of a solid?

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

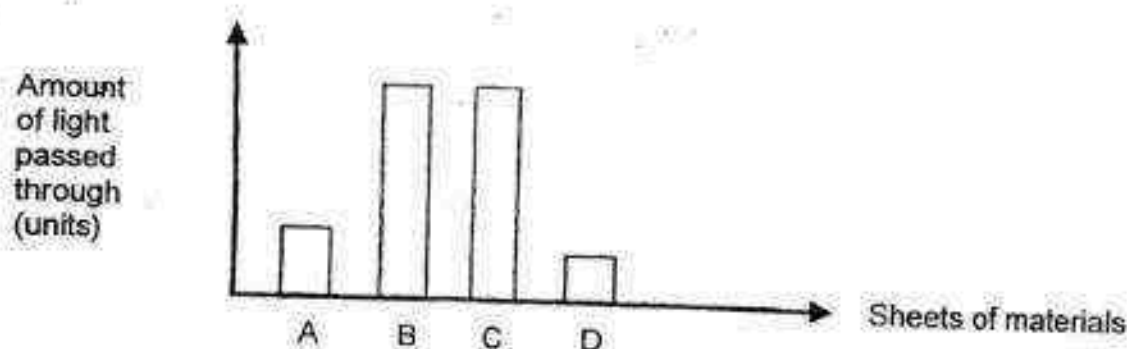
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25. Diagram X shows a balloon inside a bottle with the opening of the balloon stretched over the mouth of the bottle. Diagram Y shows that the balloon became slightly inflated after the bottle was placed in a container of ice cubes for some time.



The balloon had inflated because the _____.

- (1) air inside the bottle contracted and occupied a smaller space.
 - (2) air inside the balloon contracted and occupied a bigger space.
 - (3) bottle expanded and caused the balloon to expand as well.
 - (4) bottle expanded and caused the air in it to expand as well.
26. Sharifah used a light sensor and data logger to find out how much light could pass through four sheets, A, B, C and D. Each sheet is made of a different material. She drew the graph below to show her results.

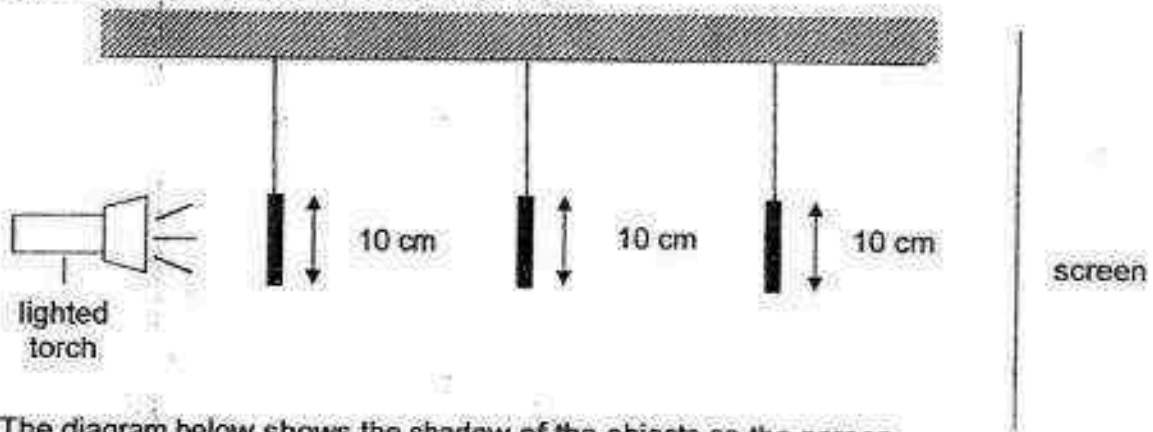


What materials could sheets C and D be made of?

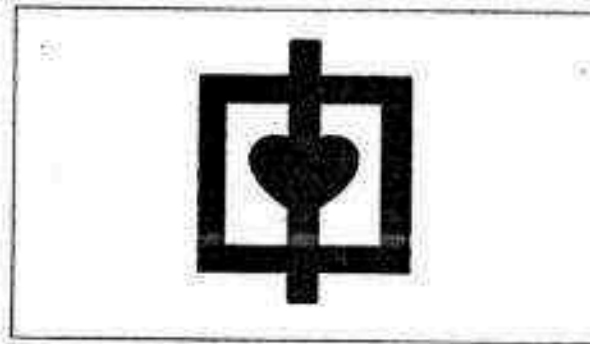
	C	D
(1)	Clear glass	Fabric
(2)	Wood	Clear plastic
(3)	Ceramic	Wood
(4)	Clear plastic	Clear glass

(Go on to the next page)

27. Mabel uses a lighted torch to shine on three wooden objects A, B and C. They are placed at different distances from the torch.



The diagram below shows the shadow of the objects on the screen.

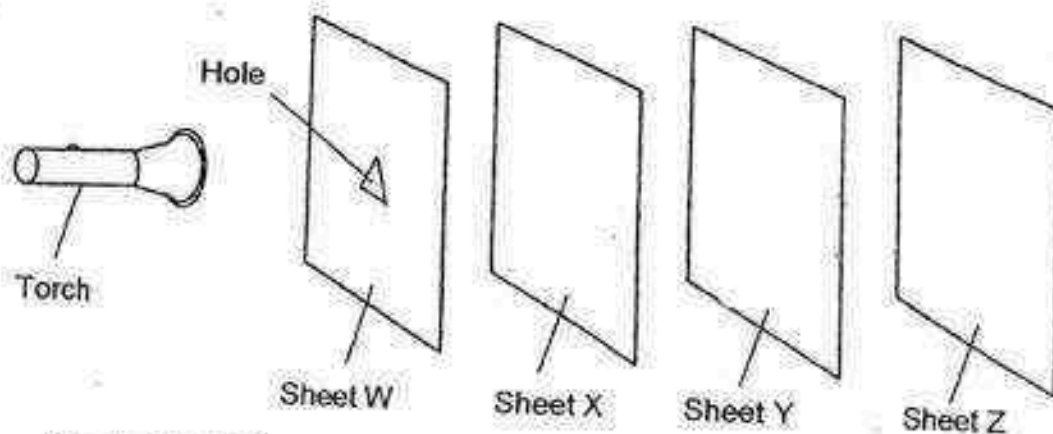


What are objects A, B and C?

- | | A | B | C |
|-----|---|---|---|
| (1) | | | |
| (2) | | | |
| (3) | | | |
| (4) | | | |

(Go on to the next page)

28. The experiment shown below is carried out in a dark room.



Sheets W, X, Y and Z are arranged in a straight line. When the torch is switched on, a bright triangular patch of light is seen on Sheet Y only.

Which one of the following options correctly describes the properties of the materials that sheets W, X, Y and Z are made of?

	Allows light to pass through	Does not allow light to pass through	Not possible to tell
(1)	X	Y	W and Z
(2)	X	W and Y	Z
(3)	W and X	Z	Y
(4)	W and Z	Y	X

End of Booklet A

(Go on to the next page)

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END-OF-YEAR EXAMINATION 2016
PRIMARY 4
SCIENCE

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.

Name _____

Class: _____

Date : 28 October 2016

	56
Booklet B1	17
Booklet B2	17
Total	90
Parent's Signature	

This booklet consists of 8 printed pages including this page.

For questions 29 to 34, 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

[17 marks]

29. The pictures below show animals A, B, C and D.



A: Frog



B: Ladybird



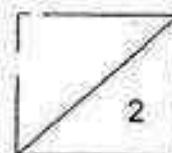
C: Turtle



D: Bird

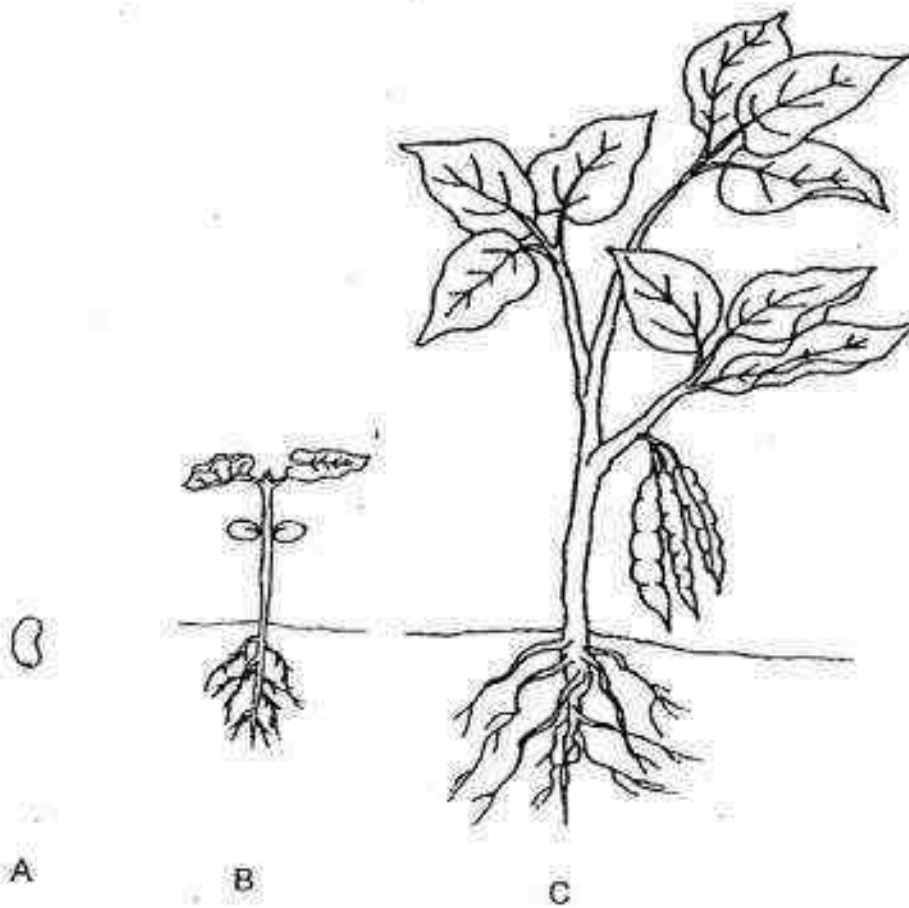
Classify the animals, A, B, C and D according to the number of stages in their life cycle. [2]

Three stages	Four stages



(Go on to the next page)

30. The diagram below shows the stages in the life cycle of a plant.



Choose the correct words from the box to answer the question below.

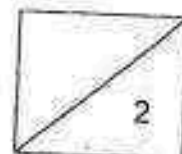
young plant	fruit	seed leaves	seed	adult plant
-------------	-------	-------------	------	-------------

Name the stages A and C in the life cycle of the plant.

[2]

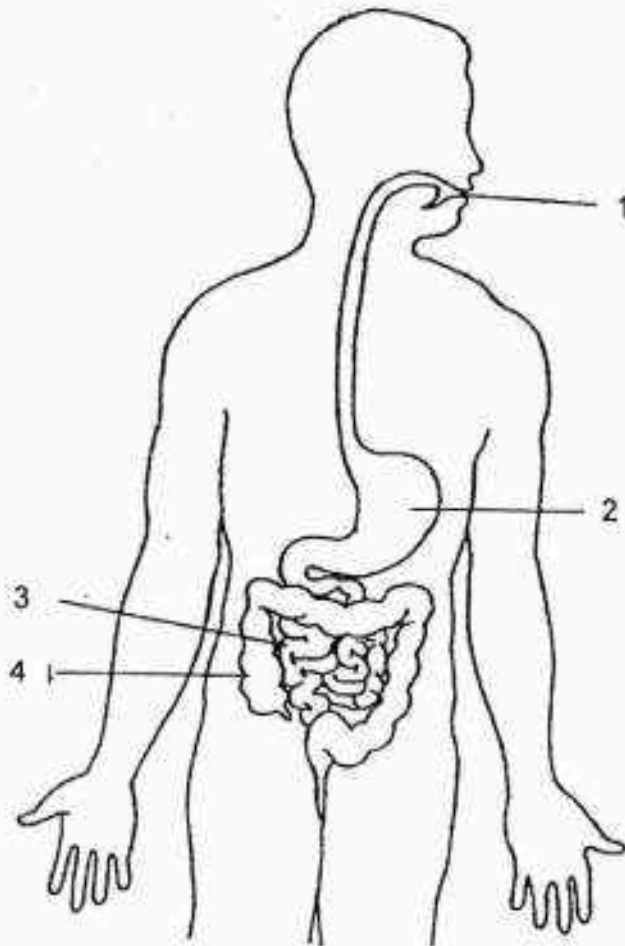
A: _____

C: _____



(Go on to the next page)

31. The diagram below shows the human digestive system with parts labelled 1, 2, 3 and 4.



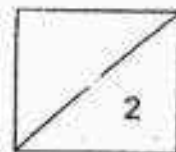
Write the number 1, 2, 3 or 4 in the boxes to show where

(a) digestion first takes place

[1]

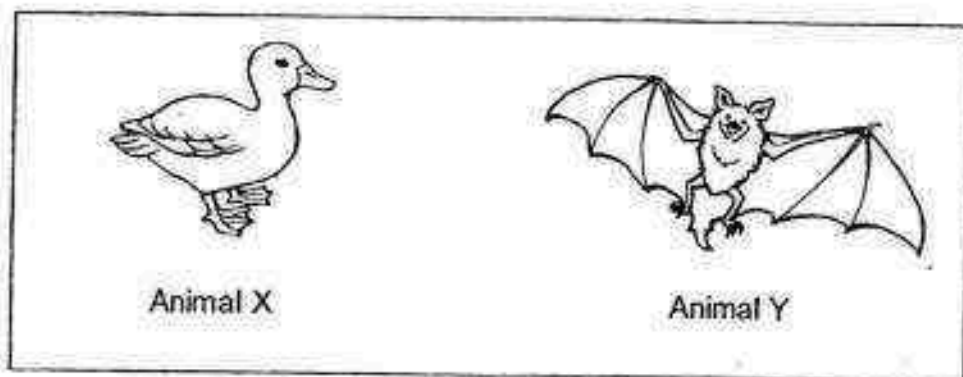
(b) there is no digestion

[1]



(Go on to the next page)

- 32 Study the two pictures below.

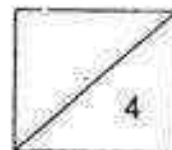


- (a) How are the animals X and Y similar in the way they move? [1]

- (b) Which group of animals do they belong to and what are their body coverings? [2]

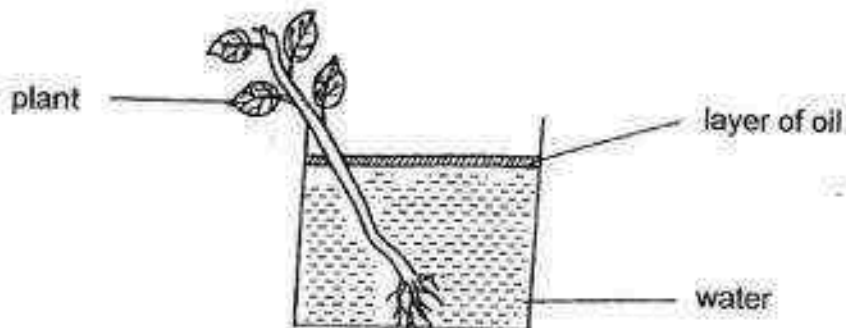
Animals	Group of animals	Body coverings
Duck		
Bat		

- (c) Do animals X and Y reproduce in the same way? Give a reason for your answer. [1]



(Go on to the next page)

33. Emdias wanted to find out what happens when a plant is placed in a beaker of water. She carried out an experiment as shown below and left it in the sun for 8 hours.



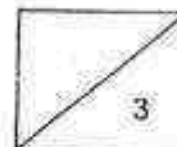
Emdias recorded the results after 8 hours in the table below.

Time	Amount of water in the beaker
At 8 am	100 cm ³
At 4 pm	90 cm ³

- (a) Explain the decrease in the amount of water in the beaker after 8 hours. [1]

- (b) Would Emdias' results be the same if she used a plant with more leaves? Explain your answer. [1]

- (c) What could Emdias do if she wants to show that the stem has a water-carrying tube? [1]



(Go on to the next page)

34. The diagram below shows a human body system.



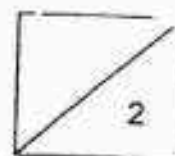
- (a) Name the two organs that the ribcage protects.

[1]

- i) _____
ii) _____

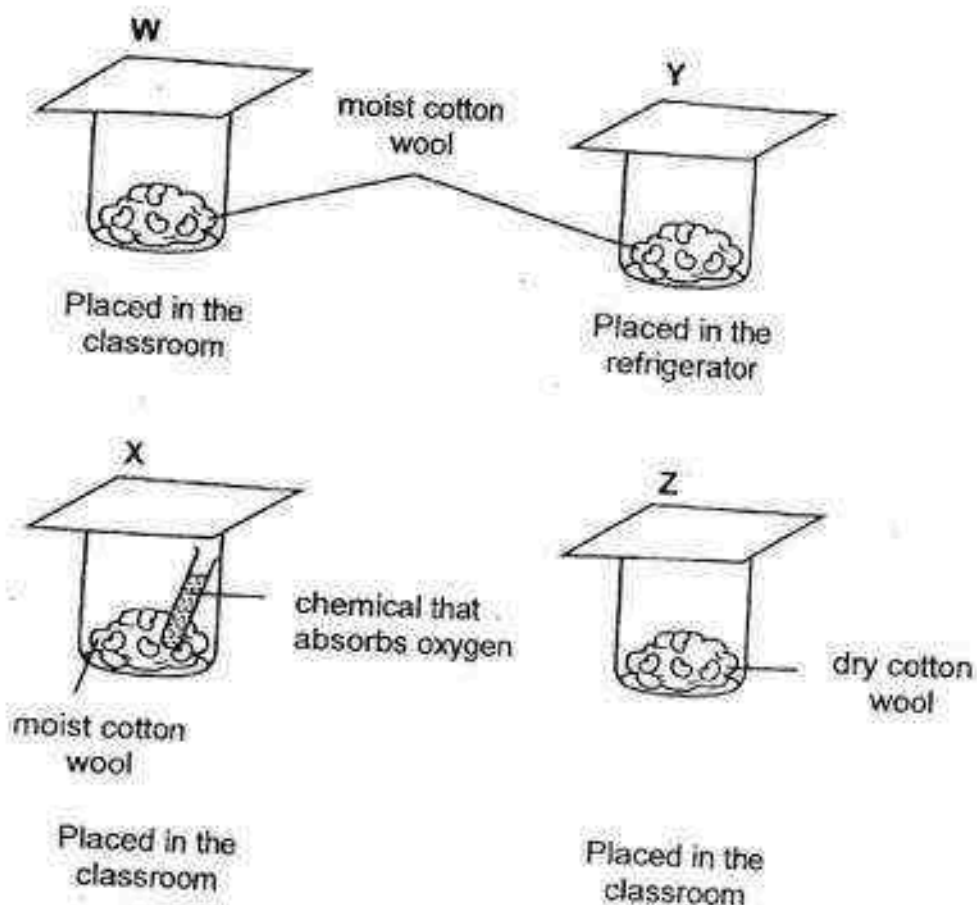
- (b) What is the other function of the above system.

[1]



(Go on to the next page)

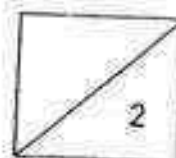
35. Junita prepared set-ups W, X, Y and Z as shown below.



- (a) Junita wanted to find out if oxygen is required for the germination of seeds. Which two set-ups should she use to carry out her experiment? [1]

- (b) Besides oxygen, what are the other conditions necessary for germination to take place. [1]

End of Booklet B1



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PRIMARY 4
SCIENCE

BOOKLET B2

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

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Follow all instructions carefully.

Answer all questions.

Shade your answers in the Optical Answer Sheet (OAS) provided.

Name _____

Class _____

Date : 28 October 2016

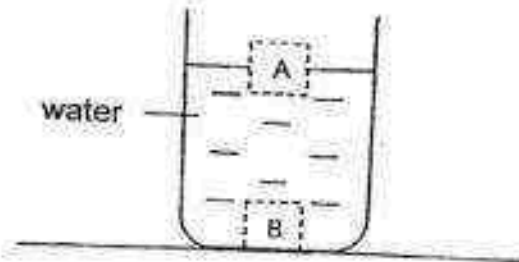


This booklet consists of 7 printed pages including this page.

For questions 35 to 41, 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.

[17 marks]

36. Jane placed two different blocks, A and B, into a beaker of water as shown below.



Fill in the blanks using the correct words in the box.

repels	sinks	floats	soaks
--------	-------	--------	-------

This shows that block A _____ in water, and block B _____ in water.

[2]

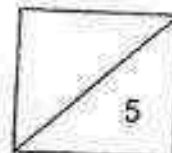
37. Classify the following items into matter and non-matter.

[3]

A: flour	B: thunder	C: oxygen
D: fire	E: snow	F: light

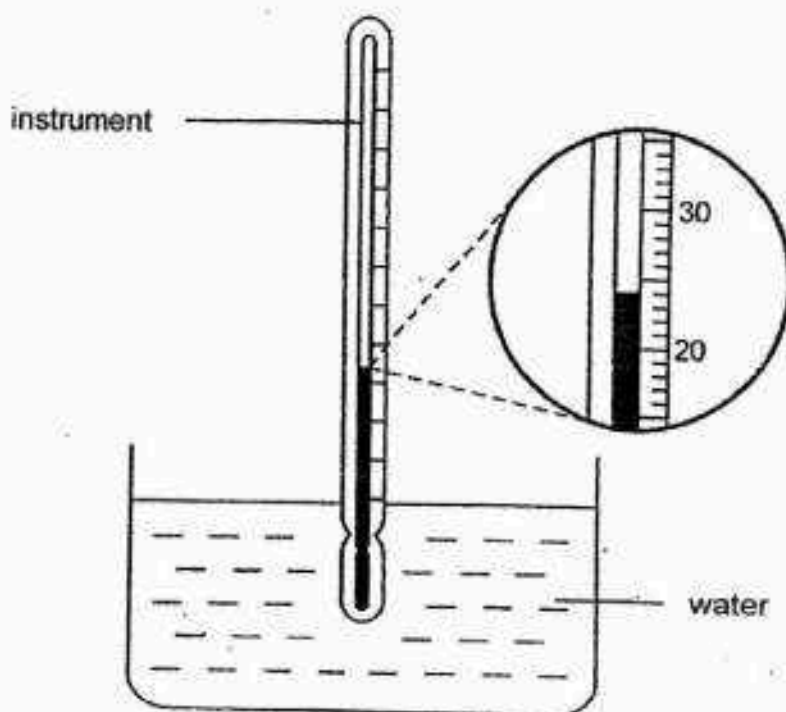
Write the letters A, B, C, D, E and F into the classification table below.

Matter	Non-matter



(Go on to the next page)

38. Sopiati used an instrument to measure the temperature of the water in a basin.



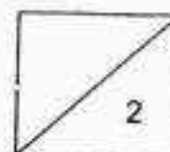
(a) What is the instrument called?

[1]

(b) What is the temperature of the water in the basin?

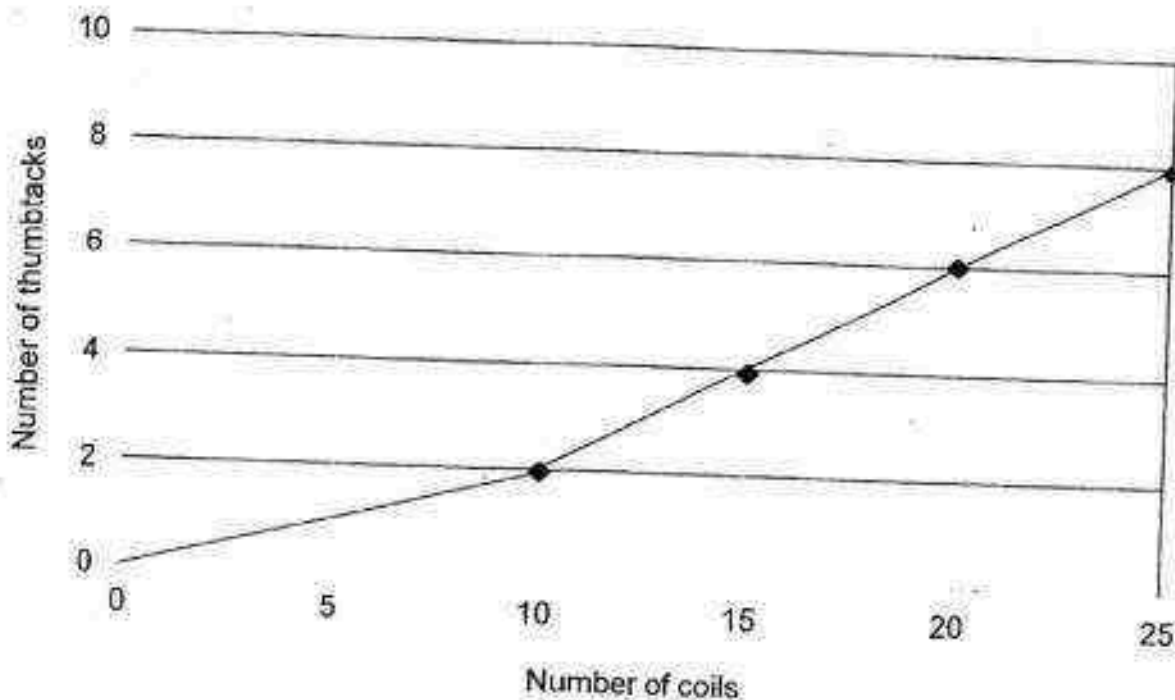
[1]

_____ °C



(Go on to the next page)

39. Yvette used the electrical method to turn an iron nail into a magnet. The line graph below shows that the number of thumbtacks attracted by the magnet depends on the number of coils of wire.



- (a) Use the information from the line graph to fill in the table below.

[1]

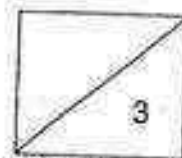
Number of coils	10		20	25
Number of thumbtacks attracted	2	4		8

- (b) What does the graph above tell you about the relationship between the number of coils and the strength of the electromagnet?

[1]

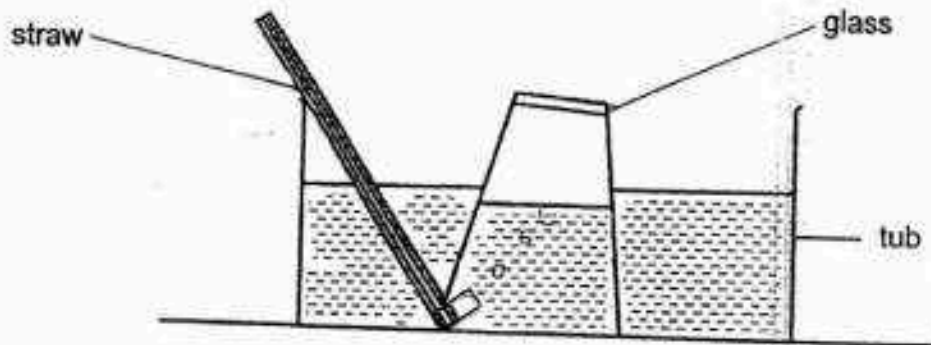
- (c) If Yvette were to use a copper nail instead of the iron nail, would she get the same results? Explain your answer.

[1]



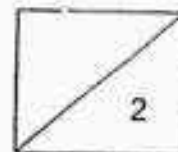
(Go on to the next page)

40. Jonas set up an experiment as shown below.



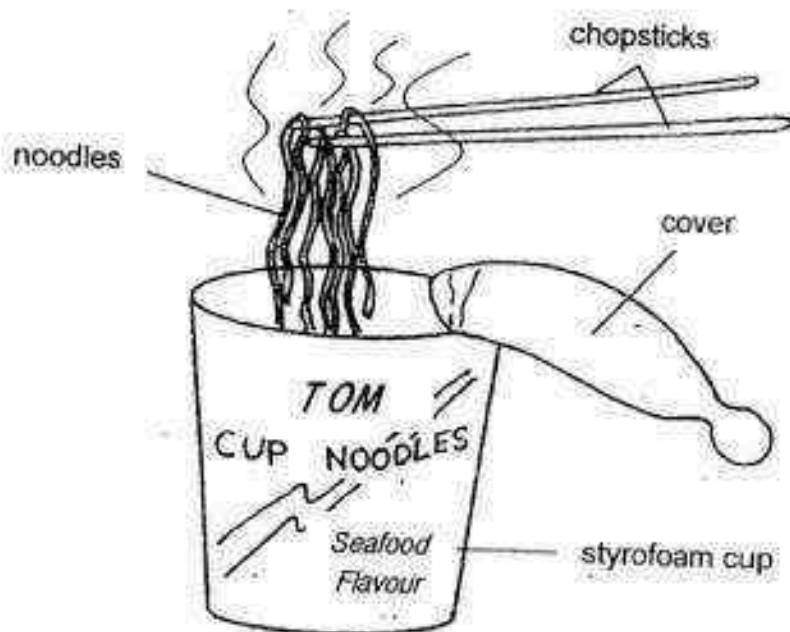
- (a) What would happen to the water level in the glass if Jonas used the straw to blow air into the glass? Explain your answer. [1]

- (b) Which property of matter does the above experiment demonstrate? [1]



(Go on to the next page)

41. Jasper bought cup noodles to eat for lunch. He tore open the cover of the styrofoam cup and poured boiling water into the container. He then covered the cup again. After ten minutes, he started eating his noodles which were now soft but still very hot.

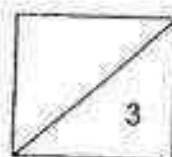


- (a) How was the styrofoam cup able to keep the noodles hot for ten minutes?

[1]

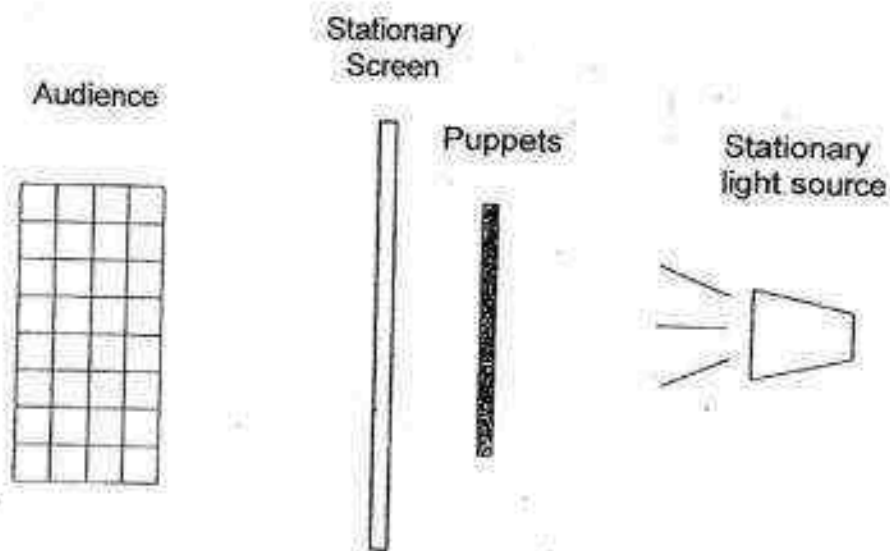
- (b) Before eating, Jasper held the noodles above the cup for a while to cool them. How does this action help to cool the noodles?

[2]



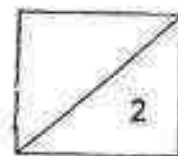
(Go on to the next page)

42. The picture below shows a shadow play of "Little Red Riding Hood" which was held in a dark room. The story was played out with the puppets' shadows thrown onto a screen.



- (a) What must the puppeteer do if he wants to create a bigger shadow on the screen? [1]

- (b) If the puppeteer were to use clear plastic to make the puppets on sticks, would the audience be able to enjoy the show? Explain why. [1]



End of Booklet B2

YEAR : 2016
 LEVEL : PRIMARY 4
 SCHOOL : METHODIST GIRLS'
 SUBJECT : SCIENCE
 TERM : SA2

Booklet A

Q1	3	Q5	3	Q9	1	Q13	2	Q17	2	Q21	2	Q25	1
Q2	3	Q6	2	Q10	4	Q14	4	Q18	2	Q22	4	Q26	1
Q3	2	Q7	2	Q11	3	Q15	1	Q19	1	Q23	3	Q27	1
Q4	4	Q8	2	Q12	4	Q16	4	Q20	2	Q24	4	Q28	2

Booklet B1

Q29

Three stages	Four stages
A C D	B

Q30

A : seed
C : adult plant

Q31a

1

Q31b

4

Q32a

Both animals X and Y can fly.

Q32b

Animals	Group of animals	Body coverings
Duck	Birds	Feathers
Bat	Mammals	Hair

Q32c

No. Animal X reproduces by laying eggs but animal Y gives birth to its young alive.

- Q33a The roots of the plant have absorbed some water.
- Q33b No. More water would be required by the leaves to make food.
- Q33c She could use coloured water instead of plain water and cut the stem.
- Q34a i) Heart
ii) Lungs
- Q34b It is to work together with the muscular system to allow body movement OR It is to give the body its shape.
- Q35a Set-up W and Y.
- Q35b Water and warmth.

Booklet B2

- Q36 This shows that block A floats in water, and block B sinks in water.

Q37

Matter	Non-matter
A	B
C	D
E	F

- Q38a Laboratory thermometer

Q38b 24 °C

Q39a

Number of coils	10	15	20	25
Number of thumbtacks attracted	2	4	6	8

- Q39b As the number of coils increases, the magnetic strength of the electromagnet increases.
- Q39c No. Copper is a non-magnetic material so it cannot be magnetised, so she would not get the same results.

Q40a The water level in the glass will decrease. The air blown into the glass takes up space and pushes the water out of the water.

Q40b Air / matter occupies space.

Q41a Styrofoam is a poor conductor of heat so heat loss from the noodles to the surrounding air was reduced.

Q41b Doing this action allows more surface area of the noodles to be exposed and more heat to escape into the air.

Q42a He should move the puppets away from the screen and closer to the light source.

Q42b No because clear plastic is transparent and does not block any light so there will be no shadows cast on the screen.

End



PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SEMESTRAL EXAMINATIONS 2

PRIMARY 4
SCIENCE
(BOOKLET A)

27 OCT 2016

Name: _____ ()

Class: Teamwork _____

Total time for Booklets A and B: 1 h 45 min

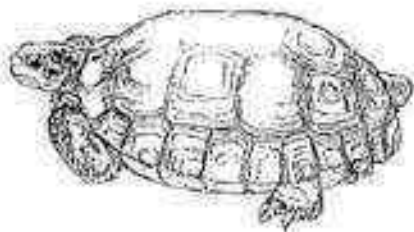
INSTRUCTIONS TO CANDIDATES

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 15 printed pages, excluding the cover page.

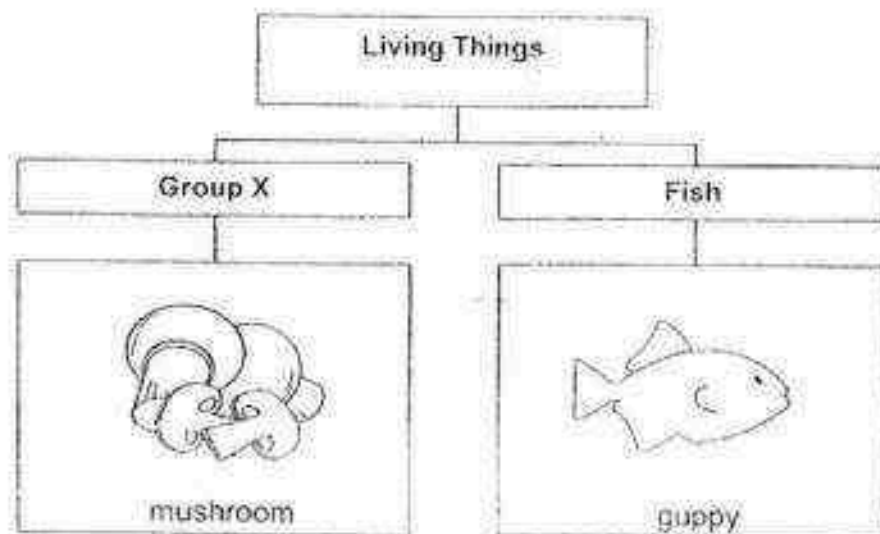
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet.
(56 marks)

- 1 A tortoise hides itself in its shell when it senses harm.



This shows that the tortoise is a living thing because it can _____.

- (1) grow
 - (2) breathe
 - (3) respond
 - (4) reproduce
- 2 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) fungi
- (2) insects
- (3) bacteria
- (4) mammals

3 Which one of the following objects can be bent easily without breaking?

(1)



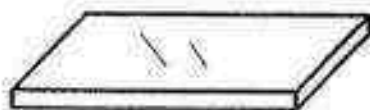
A plastic fork

(2)



A rag

(3)



A sheet of glass

(4)



A wooden pencil

4 In which part of the digestive system is water removed from undigested food?

(1) gullet

(2) stomach

(3) small intestine

(4) large intestine

5 The table below describes animals X and Y.

Description	X	Y
Does it have six legs?	No	Yes
Does it lay eggs in water?	Yes	Yes
Number of stages in life cycle	3	4

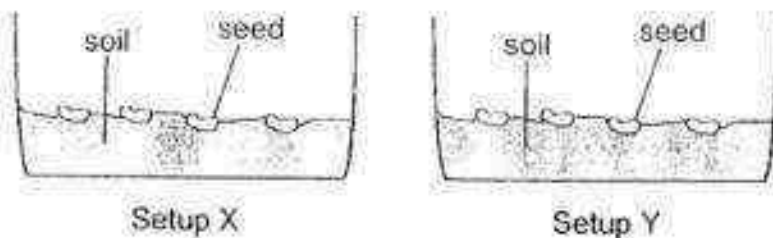
Which of the following correctly represents animals X and Y?

	X	Y
(1)	frog	butterfly
(2)	toad	mosquito
(3)	toad	cockroach
(4)	mosquito	frog

6 Which animal has a pupa stage in its life cycle?

- (1) duck
- (2) beetle
- (3) cockroach
- (4) grasshopper

7 James grew the same type of seeds in 2 setups, X and Y, as shown below. The description of the setups is given in the following table. A tick (✓) means it fits the description.



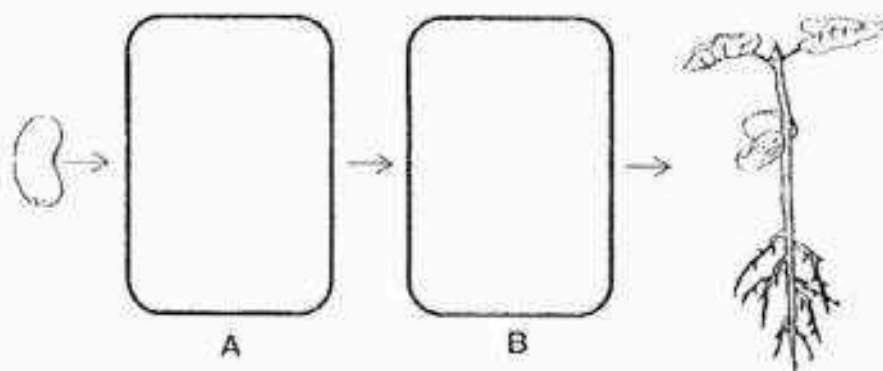
Description	Setup X	Setup Y
Soil is used.	✓	✓
The seeds are heated.		✓
15ml of water given daily.	✓	✓
Surrounding temperature at 29°C	✓	✓
Exposed to 5 hours of sunlight daily.		✓

After a week, James noticed that the seeds in setup X grew into seedlings but not the seeds in setup Y.









Which one of the following statements was the likely reason for his observations? The seeds in setup Y _____

- (1) received insufficient water
- (2) did not have enough sunlight
- (3) were dead after being heated
- (4) did not have a warm surrounding

- 8 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?

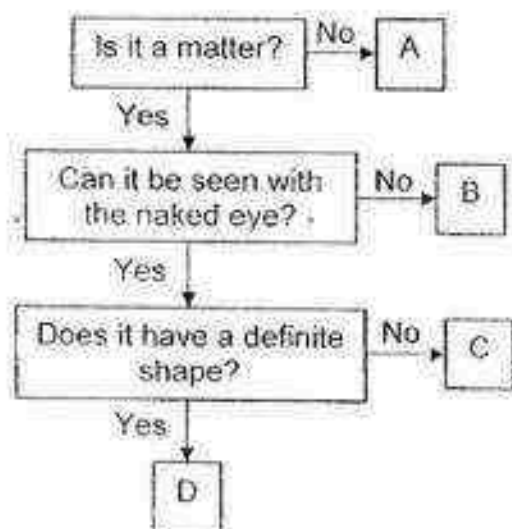
	A	B
(1)		
(2)		
(3)		
(4)		

- 9 Alan, Betty, Cindy and Damian measured the mass of the same seed leaves of a seed during its growth and recorded it in the table as shown below.

Which student is correct based on the results in the table?

	Student	Mass of seed leaves (grams)			
		Day 1	Day 2	Day 3	Day 4
(1)	Alan	2	2	2	2
(2)	Betty	2	1.5	1	0.5
(3)	Cindy	2	1	0	1
(4)	Damian	2	3	4	5

- 10 Study the flowchart below.



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

	A	B	C	D
(1)	heat	air	rock	lemon
(2)	noise	chair	oil	ice
(3)	oxygen	eraser	air	pencil
(4)	shadow	oxygen	water	stone

11 Matter is anything that has mass and occupies space.

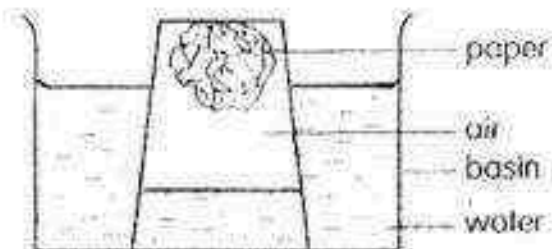
Which one of the following is NOT matter?

- (1) milk
- (2) light
- (3) sand
- (4) smoke

12 Which one of the following substances has a fixed shape?

- (1) handphone
- (2) orange juice
- (3) water vapour
- (4) hair shampoo

13 James glued some paper to the bottom of a plastic cup. The cup was then inverted and pushed into a container of water as shown below. The paper remained dry.

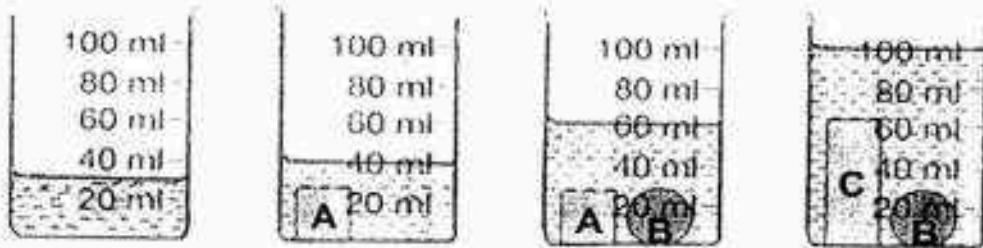


What can James do to wet the paper in the cup?

- A Add water into the container.
- B Remove some water from the container.
- C Poke a hole through the bottom of the cup.
- D Tilt the cup before pushing it into the container.

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

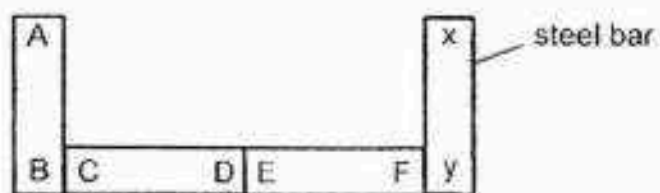
- 14 Felicia placed three different solids, A, B and C, into a beaker containing 30 ml of water as shown below.



Which one of the following correctly arranges the solids according to their volume, from the **smallest to the largest**?

- (1) A, B, C
- (2) B, A, C
- (3) C, B, A
- (4) C, A, B

15. Vishnu set up three bar magnets, AB, CD and EF and a steel bar XY, as shown in the arrangement below.



Which of the following arrangements is possible?

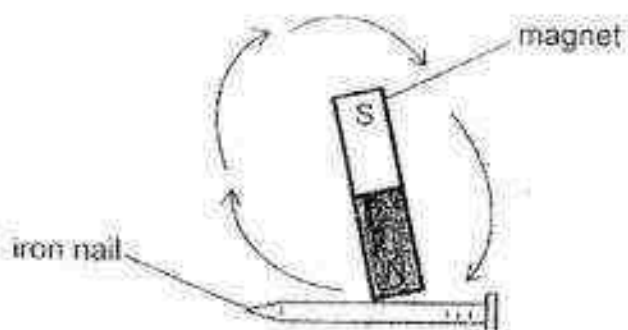
<p>(1)</p>	<p>(2)</p>
<p>(3)</p>	<p>(4)</p>

- 16 Object X was attracted to a magnet, as shown in the figure below.



Object X is made of _____

- (1) iron
 - (2) wood
 - (3) rubber
 - (4) aluminium
- 17 Brian used a bar magnet to stroke an iron nail in one direction with the same pole as shown in the diagram below. He stroked the iron nail 20 times. He then brought the iron nail near a pile of paper clips. He found that the iron nail attracted 4 paper clips.

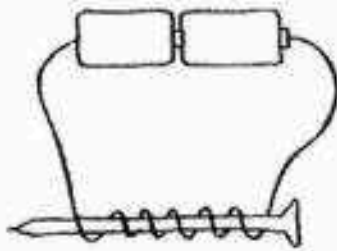


Predict how many paper clips the iron nail could attract if it was stroked 60 times.

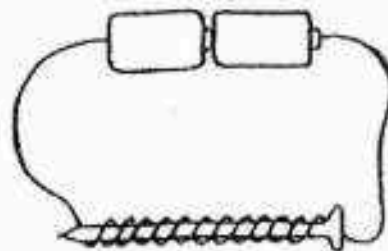
- (1) 1
- (2) 2
- (3) 3
- (4) 5

18 Which of the following arrangements of electromagnets is the strongest?

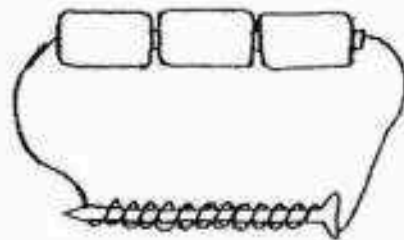
(1)



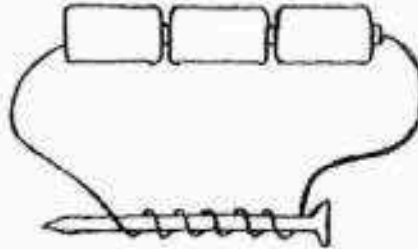
(2)



(3)



(4)



19 Which one of the following is **NOT** a source of light?

(1)



The moon

(2)



A lit candle

(3)



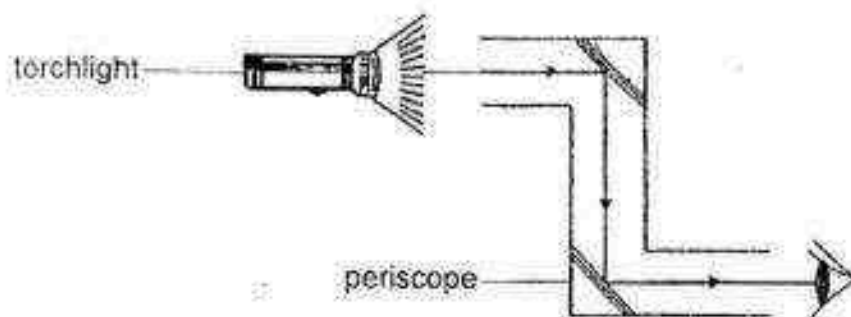
The sun

(4)



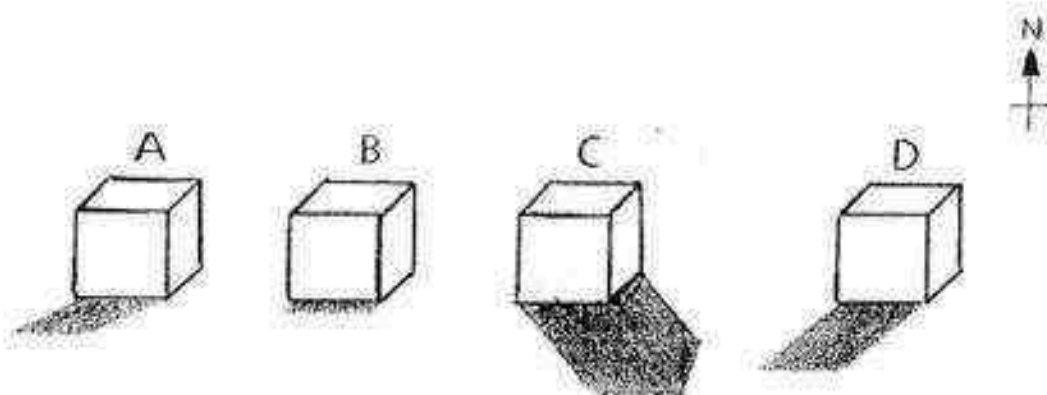
A lit lamp

- 20 The diagram below shows a periscope.



Which property of light is used to construct the periscope?

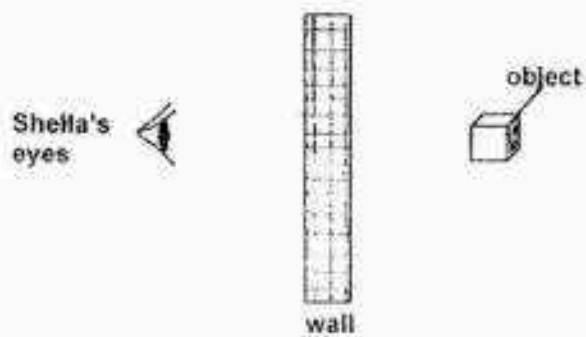
- (1) Light has no mass.
 - (2) Light does not occupy space.
 - (3) Light travels in a straight line.
 - (4) Light travels at a very fast speed.
- 21 Sammy placed a wooden block in the garden on a sunny day over a period of time. He knows that the sun rises from the east. The diagram below shows the positions and lengths of the shadows formed by the block.



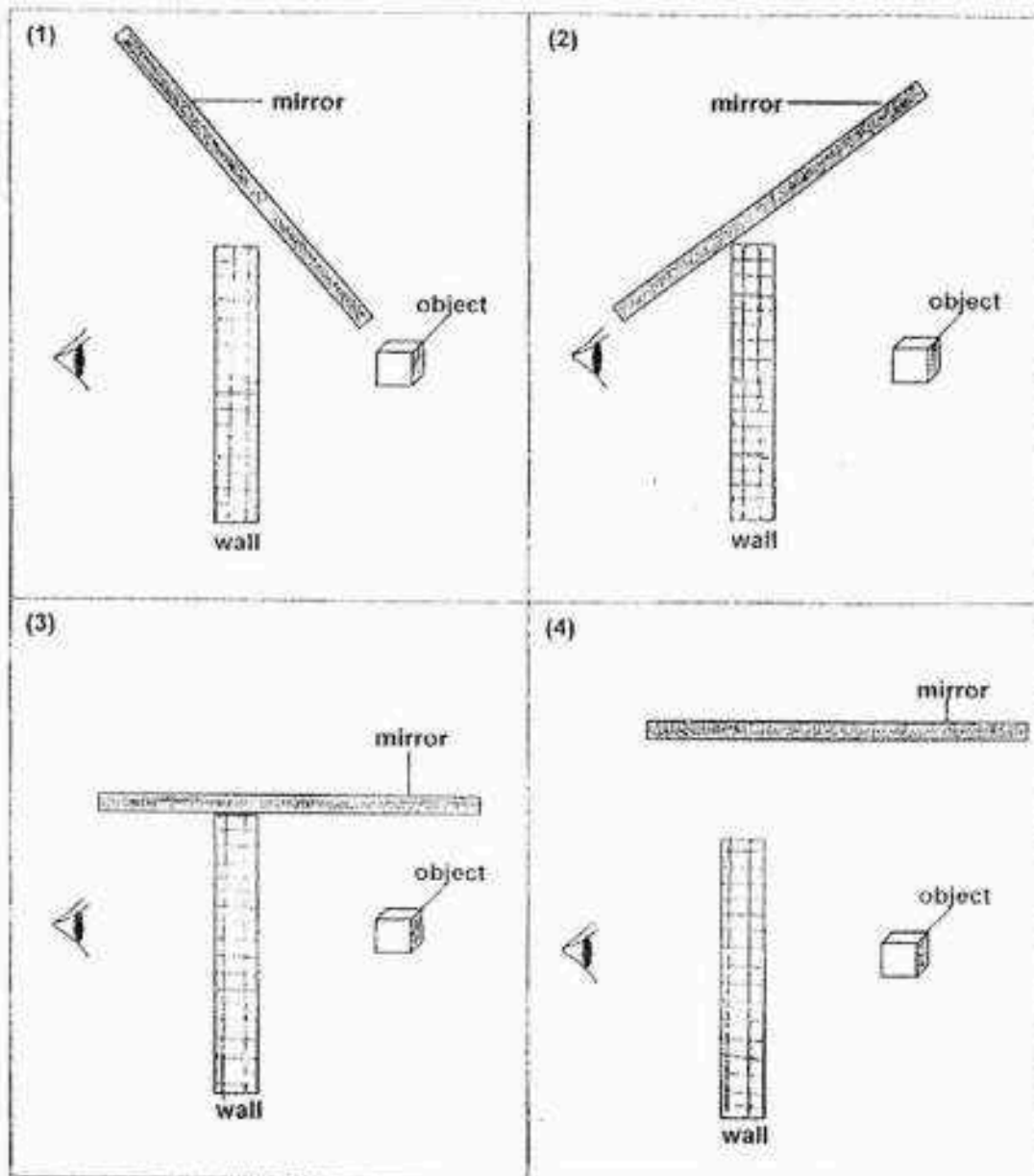
Which of the following shows the correct times when the shadows were formed?

	A	B	C	D
(1)	8 am	Noon	9 am	2 pm
(2)	9 am	2 pm	Night	8 am
(3)	10 am	3 pm	Noon	9 am
(4)	10 am	Noon	3 pm	9 am

- 22 Sheila wants to see the object behind the wall using a mirror.



Where should she place the mirror?



23. Which of the following do **NOT** allow any light to pass through them?

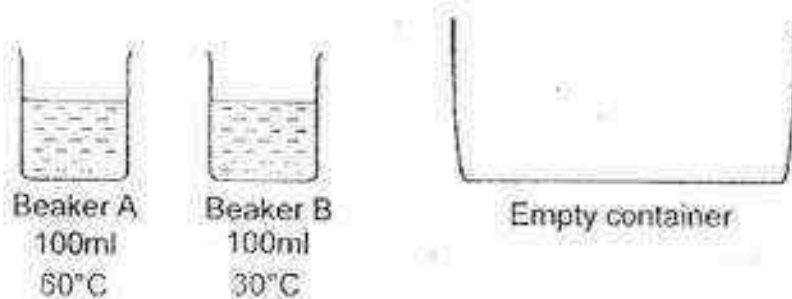
- A Ceramic
- B Cardboard
- C Tissue paper
- D Frosted glass

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

24. Which one of the following is **NOT** a source of heat?

- (1) A lit bulb
- (2) A sweater
- (3) A hot engine
- (4) A burning firewood

25. Ali had 2 beakers, A and B, containing the same amount of water with different temperatures as shown below.



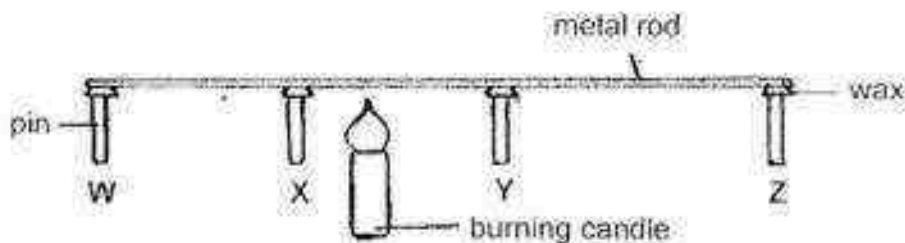
He poured all the water from beaker A and B into the empty container and measured the temperature of the water immediately. What is the likely temperature of the water?

- (1) 30°C
- (2) 40°C
- (3) 70°C
- (4) 90°C

- 26 Kevin found 2 glasses stacked together as shown below. He wanted to separate them but could not. How could he separate Glass X from Glass Y?



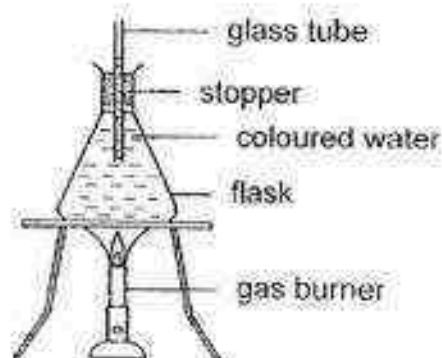
- (1) Place Glass X into cold water and pour hot water into Glass Y.
 - (2) Place Glass Y into cold water and pour hot water into Glass X.
 - (3) Place Glass Y into hot water and pour cold water into Glass X.
 - (4) Place Glass X into hot water and pour cold water into Glass Y.
- 27 Sam stuck 4 pins, W, X, Y and Z, on a metal rod with wax. The metal rod was then heated with a burning candle as shown below.



Which of the following shows the order in which the pins dropped?

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

- 28 Devi heated a flask containing coloured water as shown in the set-up below.



She noticed that the water level in the glass tube fell slightly. Upon further heating, the coloured water quickly rose up the tube. Which of the following explains her observation?

- (1) The flask expanded first and then the glass tube expanded upon further heating.
- (2) The flask contracted first and then the glass tube contracted upon further heating.
- (3) The coloured water expanded first and then the flask expanded upon further heating.
- (4) The flask expanded first and then the coloured water expanded upon further heating.



**PEI HWA PRESBYTERIAN PRIMARY SCHOOL
SEMESTRAL EXAMINATIONS 2**

**PRIMARY 4
SCIENCE
(BOOKLET B)**

27 OCT 2016

Name: _____ ()

Class: Teamwork _____

Parent's Signature

Total time for Booklets A and B: 1 h 45 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.

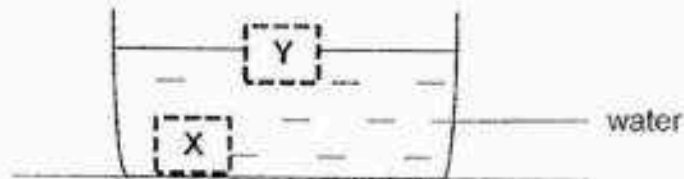
Marks (Booklet A) :	56
Marks (Booklet B) :	44
Total Marks (Booklets A & B) :	100

This booklet consists of 15 printed pages, excluding the cover page.

For questions 29 to 42, write your answers in the booklet.

The number of marks available is shown in brackets [] at the end of each question or part question. (44 marks)

- 29 Mary placed 2 different objects, A and B, into a tub of water as shown below.



Object A was found at position X, while object B was found at position Y.

Fill in the blanks using the correct words in the box.

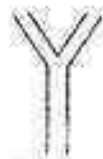
expands	contracts	floats	sinks
---------	-----------	--------	-------

This shows that object A _____ in water, while object

B _____ in water.

[2]

- 30 (a) Li Ling was given the items below by her teacher to make a model of a system in the human body



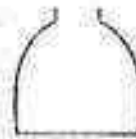
Y- tube



2 balloons

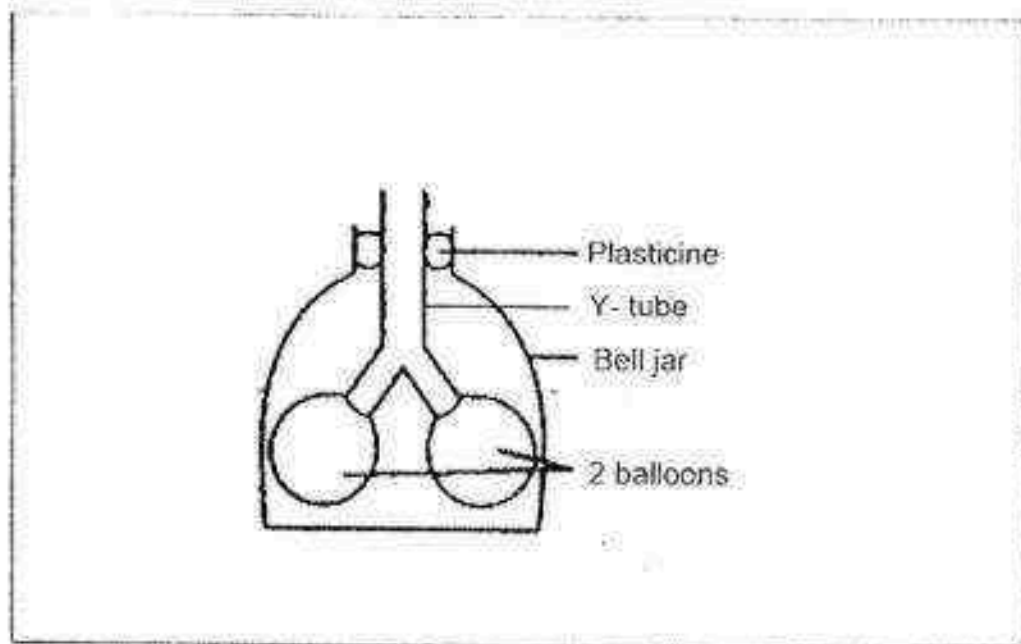


Plasticine



Bell jar

She put the items together and came up with a model as shown in the box below.



- (i) Which system in the human body does the model represent? [1]

- (ii) Which organ in the human system does the Y-tube represent? [1]

- (b) (i) During a traffic accident, Sheila had serious injuries to her rib cage. What organs in her body could have been hurt as a result? [1]

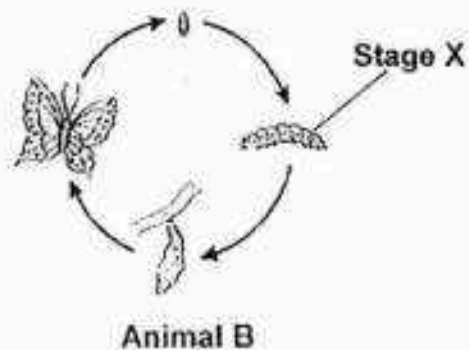
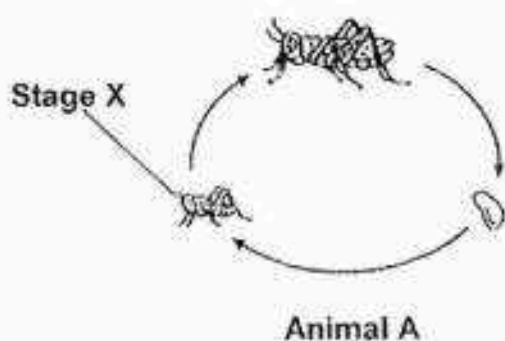
- (ii) Besides the rib cage, which other part of the skeletal system serves to protect an important organ? Which organ is this? [1]

- 31 Nina placed Plant A in a dark cupboard and Plant B in her room by the window. She watered both plants daily.

- (a) After a few days, one of the plants died. Which plant is most likely to be it? [1]

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

32 Study the life cycles below.

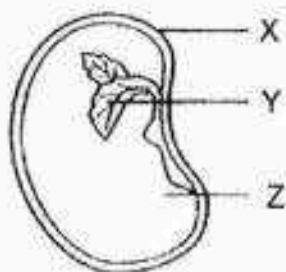


- (a) State one similarity between the life cycles of the two animals. [1]

- (b) State one difference between the life cycles of the two animals. [1]

- (c) Name the process that both animals undergo to increase their size at stage X. [1]

33 The diagram below shows the various parts of a seed.

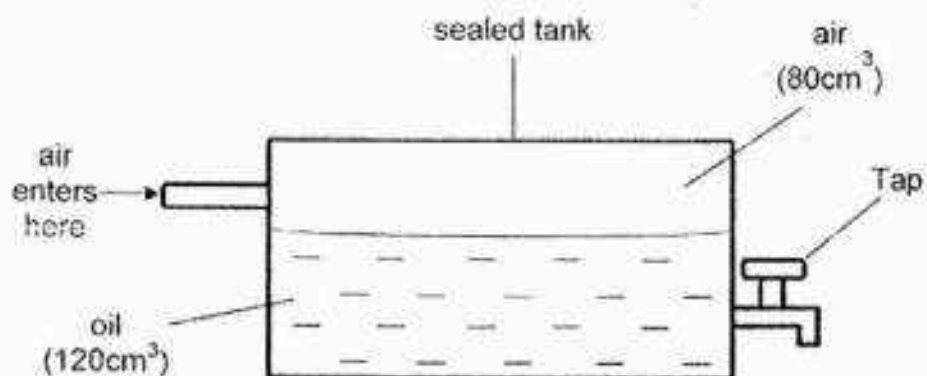


(a) What will happen to part Y when the seed germinates? [1]

(b) What will happen to the seed if part Z is removed? [1]

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

- 34 Doreen conducted an experiment using the set-up shown below.

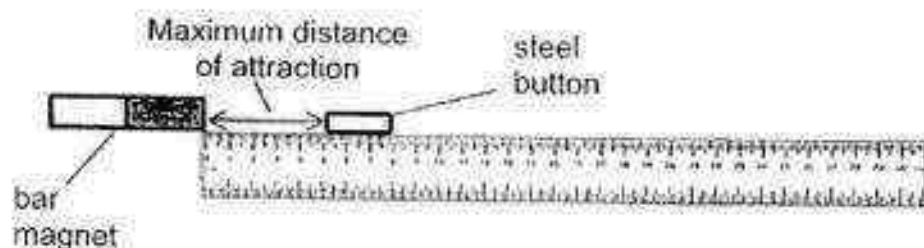


She used the tap to remove 30 cm³ of oil. She then pumped 20 cm³ of air into the tank through the air inlet.

- (a) What was the final volume of air in the container? [1]

- (b) Which properties of air and oil did you use to obtain your answer in (a)? [1]

- 35 Karen pushed a steel button towards bar magnet, A, slowly as shown below. The maximum distance at which the steel button was attracted to the magnet was measured. Then the bar magnet was replaced with 2 other bar magnets, B and C, of different sizes before she repeated the process of measuring. The results were recorded in the following table.



Magnet	Size of magnet	Maximum distance of attraction (cm)
A	Small	2
B	Medium	4
C	Big	3

- (a) What was the aim of Karen's experiment?

[1]

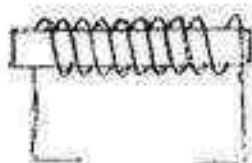
- (b) What could Karen conclude from the experiment?

[1]

- (c) What are 2 variables to be kept the same for the experiment to be fair?

[1]

- 36 The diagram below shows some materials that can be used to conduct a science investigation.



coiled iron rod



batteries



paper clips

- (a) Gary wanted to investigate whether increasing the number of batteries will cause the coiled iron rod to become a stronger electromagnet. Describe how he should carry out the experiment. [2]

Step 1: Connect the coiled iron rod to 1 battery.

Step 2:

Step 3:

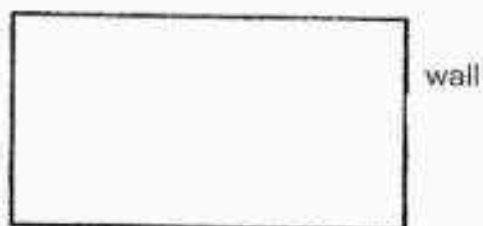
Step 4: Repeat step 1 and step 2 with 2 and 3 batteries.

- (b) Gary changed the iron rod to an aluminium rod and found out that the paper clips were not attracted. Explain why. [1]

- 37 Brian shines a torch on a tissue box 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 tissue box that is formed on the wall. [1]



- (c) What would Brian observe if he were to move the torchlight nearer to the tissue box? [1]

- 38 The diagram below shows the shadows cast by 2 cylinders, A and B, under a similar light source.



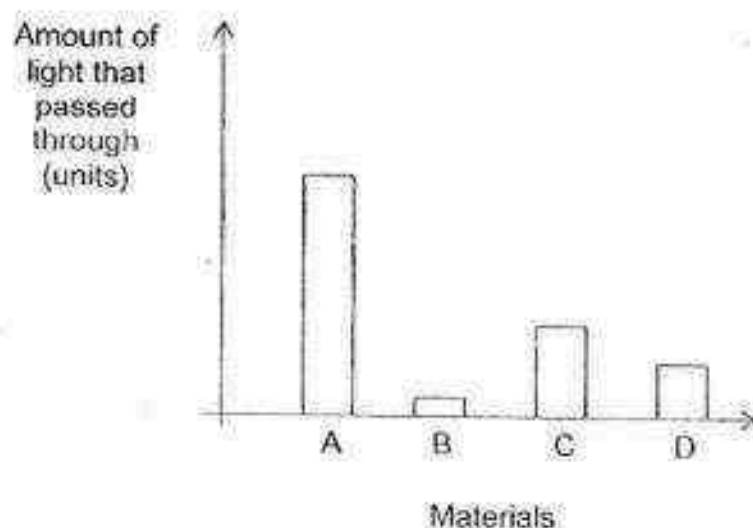
- (a) Cylinder A cast a lighter shadow than cylinder B. Why? [1]

- (b) Suggest the materials that cylinders A and B are made of. [2]

Cylinder A: _____ Cylinder B: _____

- (c) Give a reason why a slightly darker glass is commonly used as window panes [1]

- 39 The graph below shows the amount of light that passes through four different materials, A, B, C and D.



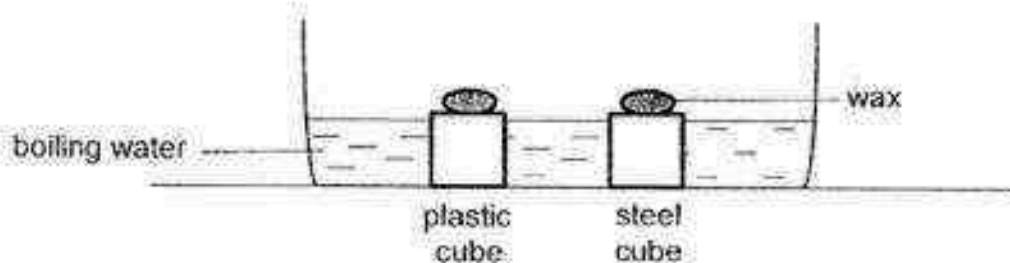
- (a) What electrical device can be used to measure the amount of light passing through a material? [1]

- (b) Which material (A, B, C or D) is most suitable to be made into an aquarium? [1]

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

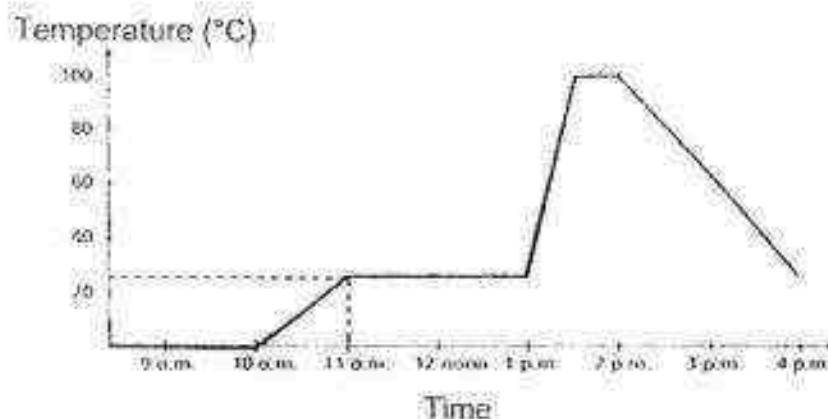
- (d) 3 pieces of material C is placed together. Would the amount of light passing it increase, decrease or remain the same. [1]

- 40 Wendy placed a steel cube and a plastic cube into a tub of boiling water as shown below. Equal amounts of wax were put on all cubes.



- (a) The wax on the _____ cube melted the slowest. [1]
- (b) She can conclude that _____ is a better conductor of heat than [2]

- 41 (a) Sam took out some ice from the fridge and put them into a beaker just before 9 am. He then left it on the table. The graph below shows the change in temperature of the ice in the beaker over time. Study it and answer the following questions.



- (i) What state of matter is ice? State the 2 properties of that matter. [1]

- (ii) Based on the graph, explain what was happening between 10am to 11am. [1]

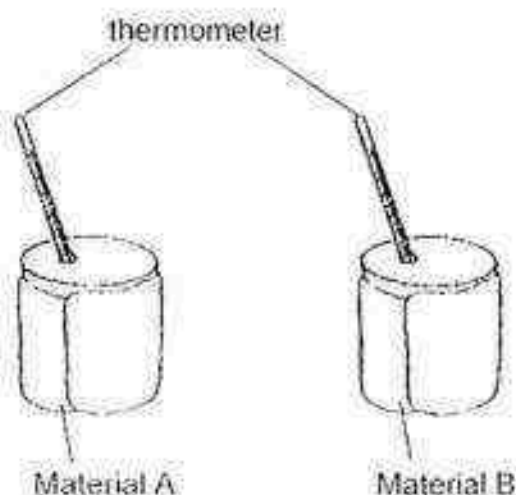
- 41 (b) The diagram below shows a metal ball that cannot pass through the metal ring.



- (i) Without changing the metal ball and ring, suggest one way to allow the metal ball to pass through the metal ring. [1]

- (ii) Explain your answer in (b) (i). [1]

- 42 Jayden carried out an experiment using the set-up shown below.



He wrapped two metal cans with a layer of material, A and B, respectively. He poured equal amounts of hot water into each metal can. He took the temperature of the water at every 5 minute interval for the next 20 minutes and recorded the results as shown in the table below.

Time (min)	Temperature ($^{\circ}\text{C}$) of hot water in metal can wrapped with material A	Temperature ($^{\circ}\text{C}$) of hot water in metal can wrapped with material B
5	90	90
10	84	80
15	78	65
20	74	54

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

- (b) What can he conclude from the results of the experiment? [1]

- (c) Which material would you choose to wrap your piping hot chicken wings with to enjoy it at home after buying them? [1]

- (d) Explain why you chose the above material and [1]

EXAM PAPER 2016 (P4)

SCHOOL : PEI HWA

SUBJECT : SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	2	4	2	2	3	4	2	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	1	3	1	3	1	4	3	1	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	4	1	2	2	4	3	4		

29) sinks / floats

30)a)i) Respiratory system.

ii) The windpipe.

b)i) The lungs and heart could have been hurt.

ii) The skull. It protects the brain.

31)a) Plant A.

b) Plant A did not receive any sunlight so it cannot make food and died.

32)a) Both Animal A and Animal B reproduce by laying eggs.

b) Animal A has a 3 stage life cycle but Animal B has a 4 stage life cycle.

c) Moulting.

33)a)It will grow.

b)The seed will die.

c)Part Z gives the seed its food so when it is removed, Part Z cannot make food and will die.

34)a)110cm³.

b)Oil has a definite volume and air does not have a definite volume.

35)a)To find out if the size of the magnet affects the distance of attraction.

b)The strength of the magnet does not depend on the size of the magnet.

c)The size of the steel button and the poles of the magnet used to attract the steel button.

36)a)2)Out the electromagnet to the paper clips.

3)See how many paper clips was attracted.

b)Aluminium is a non-magnetic material and only magnetic can be magnetised.

37)a)blocked



c)The shadow will get bigger.

38)a)Cylinder A allowed more light to pass through than cylinder B, so cylinder A cast a lighter shadow.

b)A: Frosted glass B: Metal

c)So not a lot of sunlight can enter the window.

39)a)A light sensor.

b)Material A.

c)Material A allowed the most light to pass through so people can see the fishes in the aquarium.

d)The amount of light passing through will decrease.

40)a)plastic

b)steel / plastic

41)a)i)Solid. Solid has a definite shape and a definite volume.

ii)The ice gained heat from the surroundings and its temperature increased.

b)i)Put the metal ball in a basin of cold water.

ii)The metal ball will lose heat and contract, decreasing in size , so the metal ball can pass through the metal ring.

42)a)To see which material is a better conductor of heat.

b)Material B was a better conductor of heat than material A as it lose heat faster.

c)Material A.

d)Since Material A is a poorer conductor of heat than B, it will not gain heat from the chicken wings as much as material B.



Temasek Primary School

Semestral Assessment 2

Primary Four

2016

SCIENCE
(Booklet A)

Name: _____ ()

Class: Primary 4 _____

Date: 25 October 2016

Parent's Signature: _____

60 Marks

Total Time for Booklet A and B: 1h 45 min

INSTRUCTIONS TO CANDIDATES

1. Write your name, class and register number in the spaces provided clearly.
2. Do not open this booklet 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.

For each question from 1 to 28, 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.

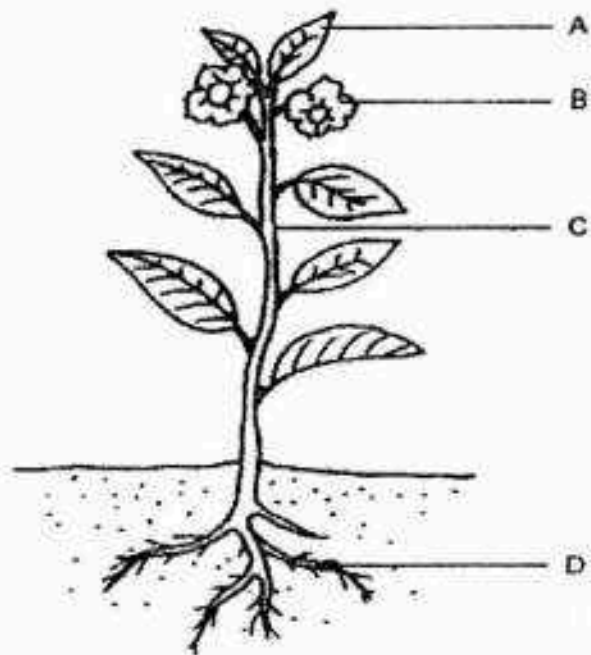
(56 marks)

1. Matter is anything that has mass and occupies space. Which one of the following is not an example of matter?

- (1) air
- (2) light
- (3) bottle
- (4) motorcycle

(Go on to the next page)

2. 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

(Go on to the next page)

3. Which of the following explains why a shadow is formed?

- A Light is blocked.
- B Light travels in a straight line.
- C Light is reflected from objects.
- D Light passes through some objects.

(1) A and B only

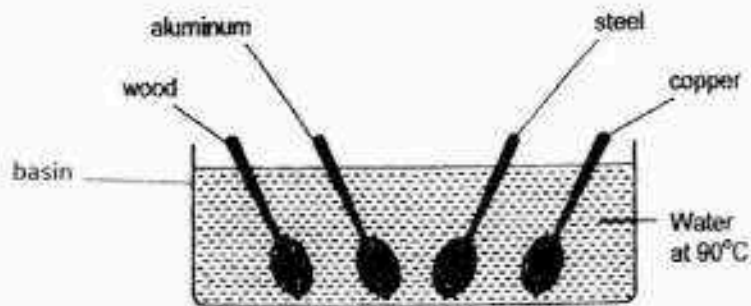
(2) A and C only

(3) B and D only

(4) C and D only

(Go on to the next page)

4. Hashim placed four spoons of different materials in a basin of hot water at 90°C as shown in the diagram below.

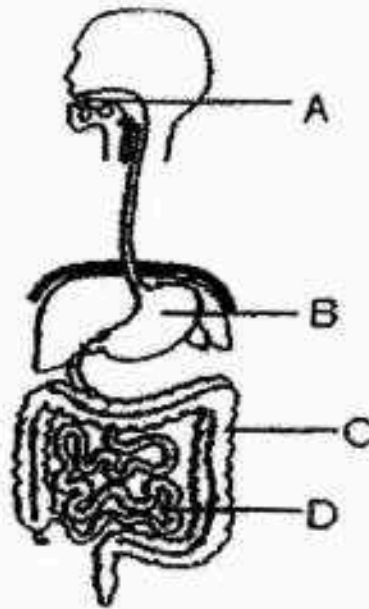


Which spoon is he able to hold comfortably in his hands after 5 minutes?

- (1) steel spoon
- (2) copper spoon
- (3) wooden spoon
- (4) aluminium spoon

(Go on to the next page)

5. The diagram below shows a human digestive system.

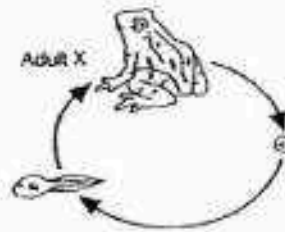


At which part of the human digestive system is water absorbed from the undigested food?

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

(Go on to the next page)

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



Based on the diagram above, which of the following statements are not true about the life cycle of 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 parents.

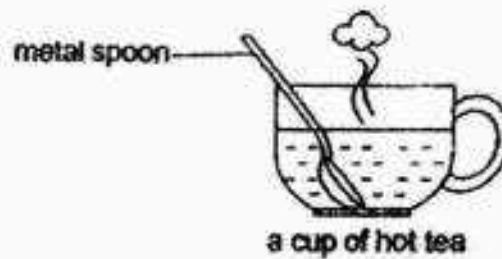
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

7. Which one of the following can be attracted by a magnet?

- (1) steel spoon
- (2) plastic spoon
- (3) wooden spoon
- (4) rubber spoon

(Go on to the next page)

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

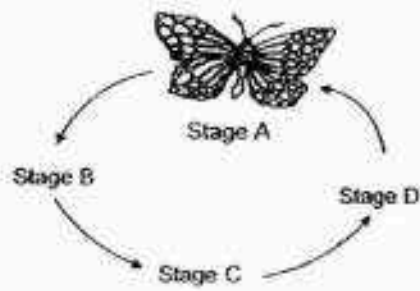


The spoon becomes hotter after a while. Which one of the following explains this?

- (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.

(Go on to the next page)

9. The diagram below shows the stages in the life cycle of a butterfly.

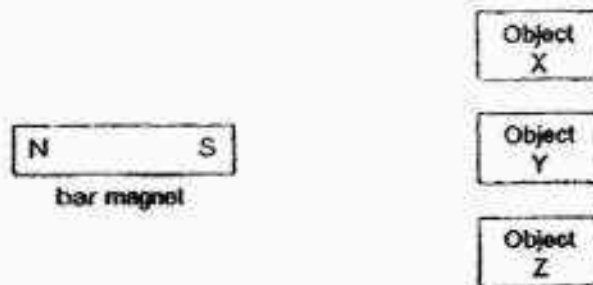


Which of the following is the correct stage for stage C?

- (1) egg
- (2) pupa
- (3) larva
- (4) adult

(Go on to the next page)

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



She recorded her observations below.

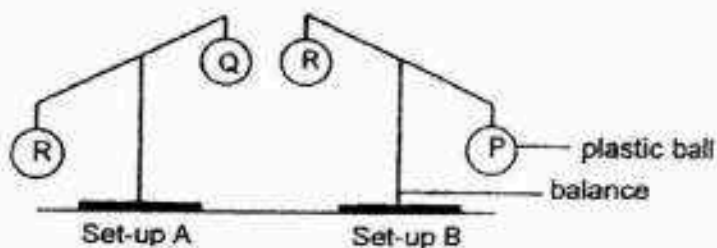
- Object X is repelled.
- Object Y is attracted.
- Object Z does not move.

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

- (1) Object X only
- (2) Object Z only
- (3) Object X and Y only
- (4) Object Y and Z only

(Go on to the next page)

11. Daryl set up two balances using three types of 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.



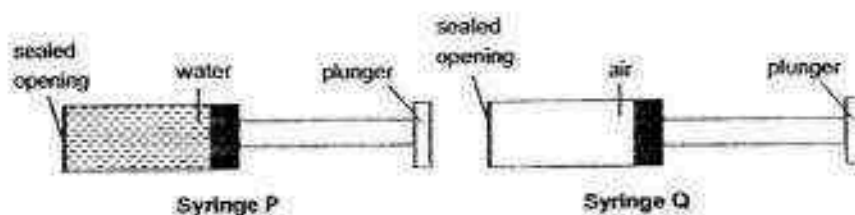
Which of the following statement(s) made by Daryl about the set-ups is/are correct?

- 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

(Go on to the next page)

12. 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 Syringe Q when the plungers were pushed in?

	Syringe P	Syringe Q
(1)		
(2)		
(3)		
(4)		

(Go on to the next page)

13. Linda 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 Linda keep constant to ensure a fair experiment?

- A Amount of soil
- B Amount of sunlight
- C Amount of water
- D Amount of fertilizer

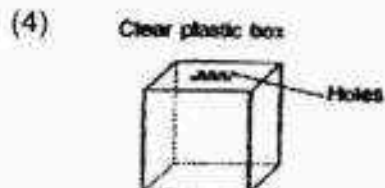
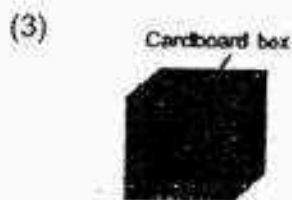
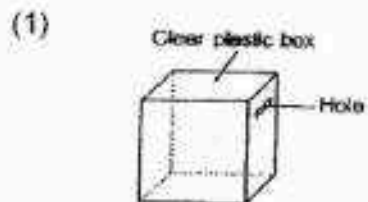
- (1) A and D only
- (2) B and C only
- (3) A, B and C only
- (4) A, C and D only

(Go on to the next page)

14. Gary's Science teacher showed him a potted plant. He was told that it had been kept in a box for one week and had been watered daily. The box was placed in the open school field.

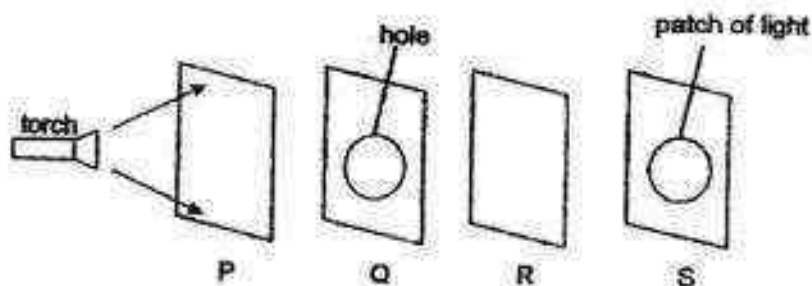


Which of the following boxes could the potted plant have been placed in?



(Go on to the next page)

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

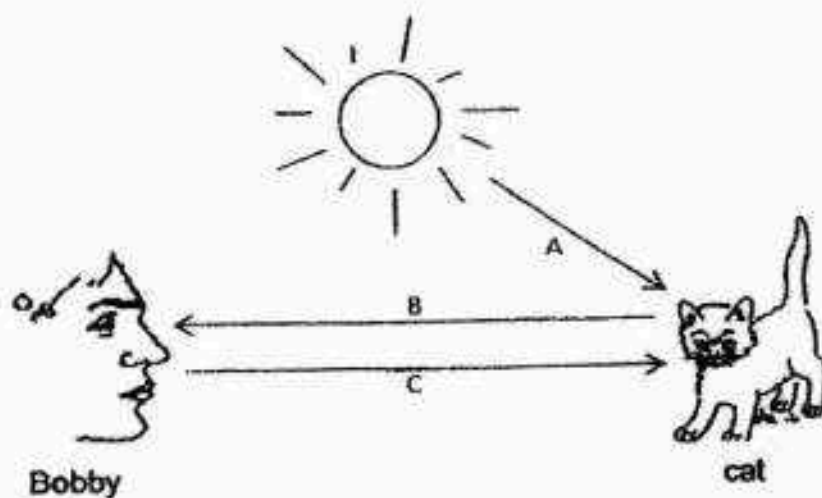


Which of the following materials are sheets, P, Q, R and S, most likely made of?

	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

(Go on to the next page)

16. The diagram below shows some paths of light, A, B, C, D, E and F.

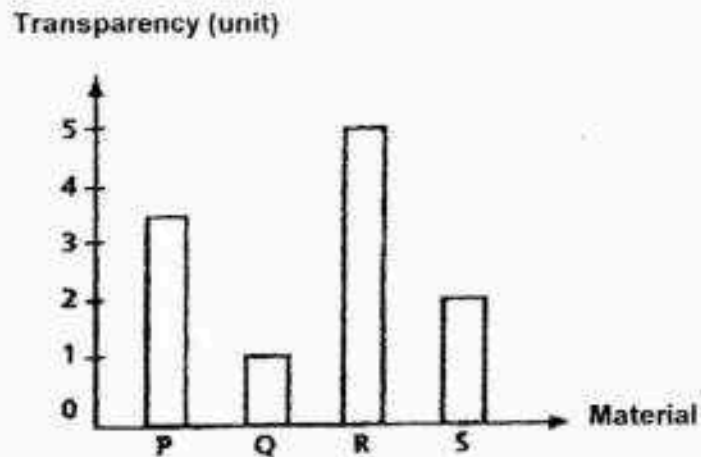


Which path(s) of light allowed Bobby to see the cat?

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

(Go on to the next page)

17. Sean wanted to investigate the degree of transparency of four materials, P, Q, R and S. Before he began measuring the transparency of the four materials, he noted that the transparency of a clear plastic sheet is 10 units. The results of his experiment are shown in the graph below.

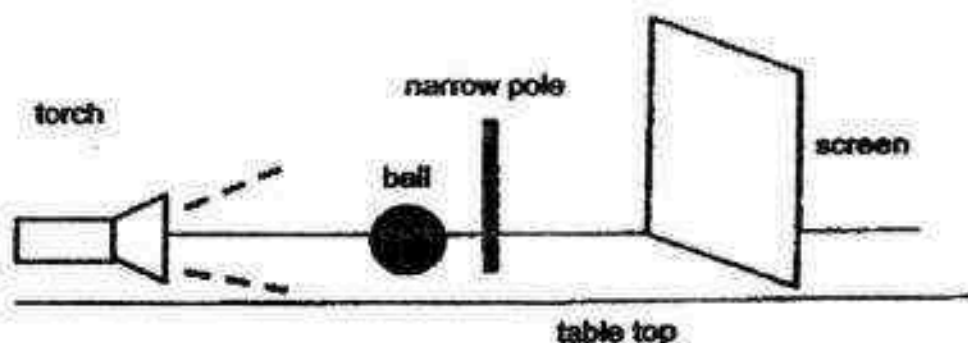


Which material will cast the lightest shadow when the torchlight is shone on it in a dark room?

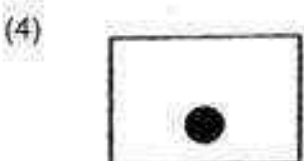
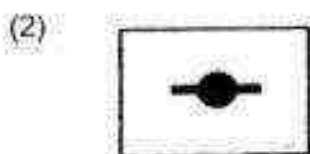
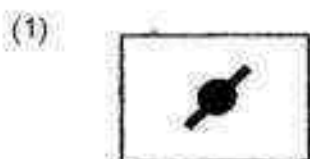
- (1) Material P
- (2) Material Q
- (3) Material R
- (4) Material S

(Go on to the next page)

18. Study the diagram of an experiment below which was carried out in a dark room. A torch, a ball, a narrow pole and a screen were placed on a table in a straight line directly in front of one another. The torch was switched on and the direction of light was indicated below.

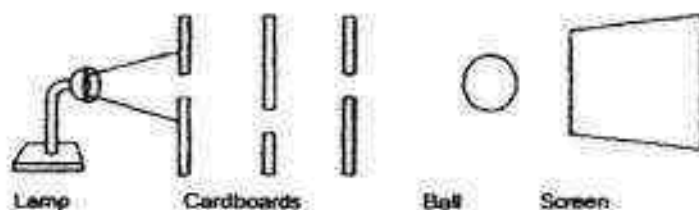


Which one of the following shadows could most likely be formed on the screen?

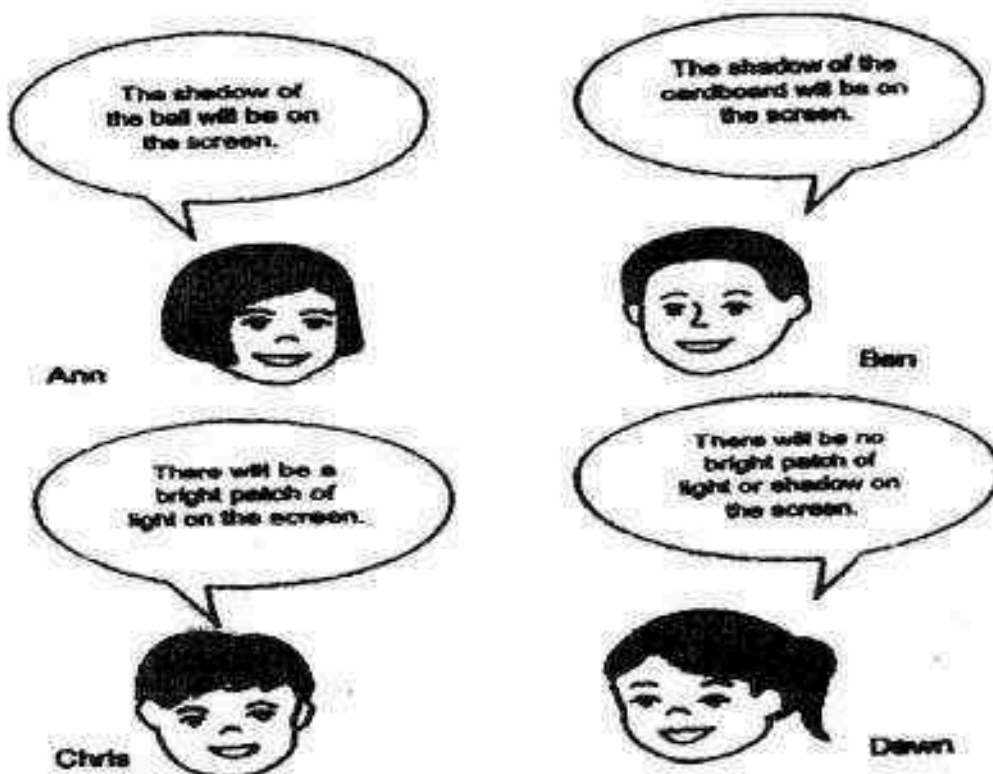


(Go on to the next page)

19. The diagram below shows an experiment set-up.



4 students, Ann, Ben, Chris and Dawn, each makes a statement based on the set-up.

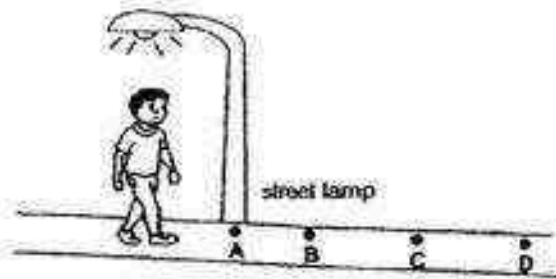


Whose statement is correct?

- (1) Ann
- (2) Ben
- (3) Chris
- (4) Dawn

(Go on to the next page)

20. Jack 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
21. Miss Wong conducted an experiment as shown below.

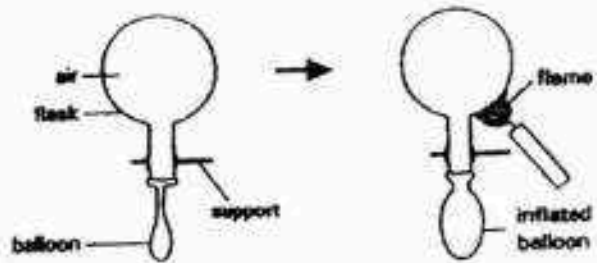


After a few minutes, the ice cubes have not melted completely. What can you conclude from the above experiment?

- (1) Metal is a poor conductor of heat.
- (2) Water is a poor conductor of heat.
- (3) Test tube is a good conductor of heat.
- (4) Water is a good conductor of heat.

(Go on to the next page)

22. Study the experiment shown in the diagram below.

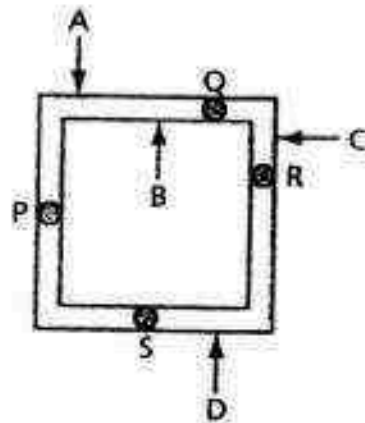


What does this experiment show us about the property of air?

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

(Go on to the next page)

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



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

She recorded her observations in the table shown below.

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

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

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

(Go on to the next page)

24.



After boiling some water, Fahmi poured the water into a jug and a cup as shown in the diagram above.

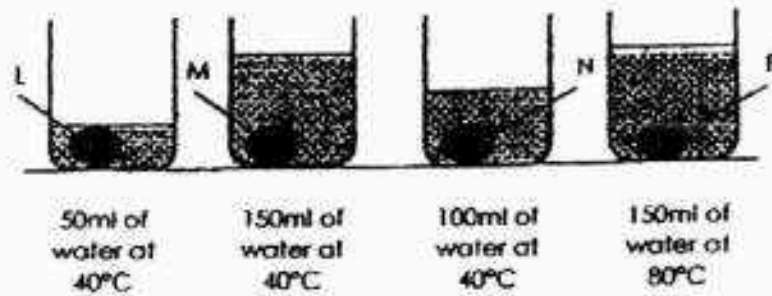
Which statement(s) below about the jug and the cup of water is/are correct?

- A The temperature of the water 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 water in both the jug and the cup.

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

(Go on to the next page)

25. Four similar eggs, L, M, N and P, were each dropped into four similar beakers at the same time as shown in the diagram below.



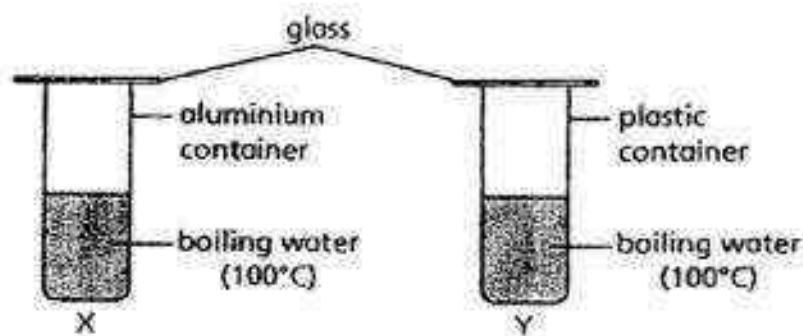
They were left in the beakers for three minutes. Then the eggs were taken out and cracked.

Which one of the following shows the correct order of the eggs starting from the most cooked to the least cooked?

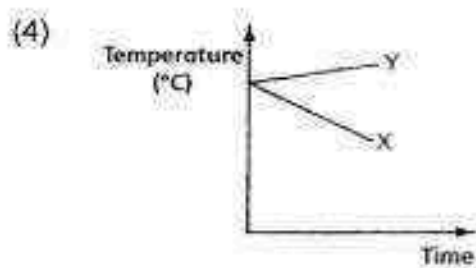
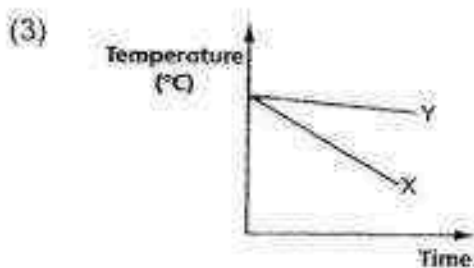
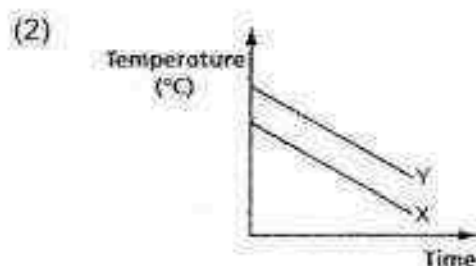
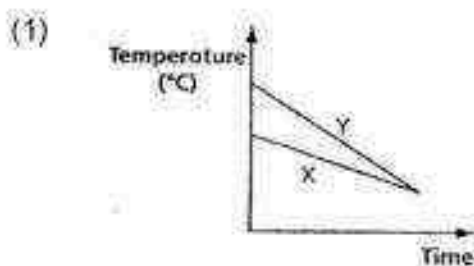
- (1) P, N, M, L
- (2) L, N, M, P
- (3) P, M, N, L
- (4) L, M, N, P

(Go on to the next page)

26. There are two containers, X and Y, of equal size and equal thickness. Container X is made of aluminium but container Y is made of plastic. Each container is filled with 500 ml of boiling water before they are covered with a sheet of glass and left at room temperature for 30 minutes.



Which of the following line graphs shows the most possible changes in the temperature of the water in the two containers?



(Go on to the next page)

27. The table below shows a comparison between what happens in our small and large intestines.

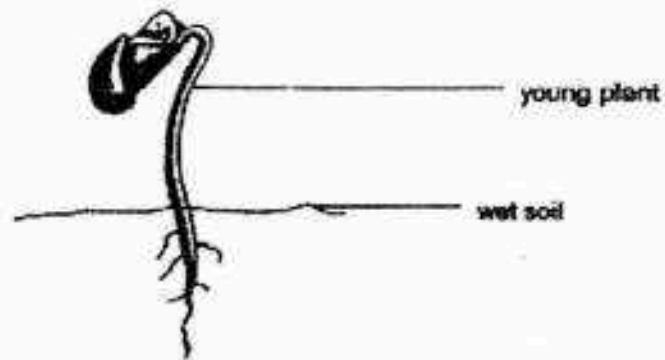
	Small intestine	Large intestine
A	Food is completely digested.	Some of the food is being digested.
B	Digested food is absorbed into the blood.	Undigested food is absorbed into the blood.
C	Digested food is absorbed into the blood.	Digested food is not absorbed into the blood.

Which of the 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

(Go on to the next page)

28. 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.

(Go on to the next page)



Temasek Primary School

Semestral Assessment 2

**Primary Four
2016**

**SCIENCE
(Booklet B)**

Name: _____ ()

Class: Primary 4 _____

Date: 25 October 2016

Parent's Signature: _____

Total Time for Booklet A and B: 1h 45 min

INSTRUCTIONS TO CANDIDATES

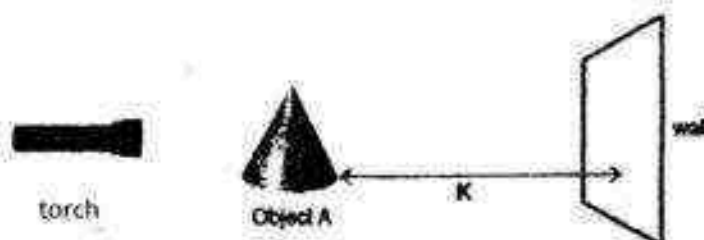
1. Write your name, class and register number in the spaces provided clearly.
2. Do not open this booklet until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Paper	Marks	Scores
Booklet A	60	
Booklet B	40	
Total	100	

For each question, write your answers in the spaces provided.

(44 marks)

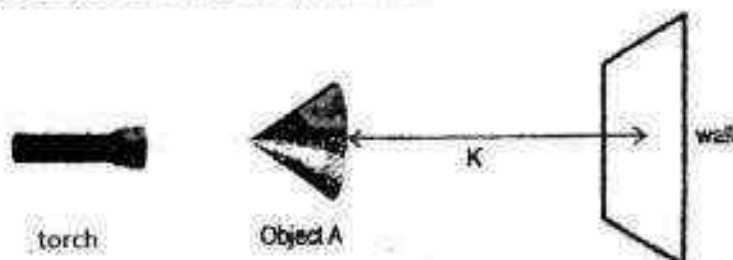
29. Lila shines a torch on Object A.



She draws the shadow that forms on the wall and label it as shadow L.

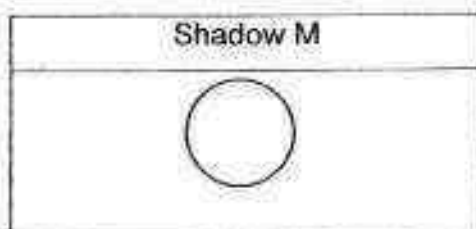


Lila then flips Object A on its side, as shown below.



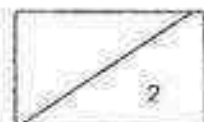
- (a) Draw in the box below the shadow, M, that will form on the wall when Lila shines the torch again

[1]



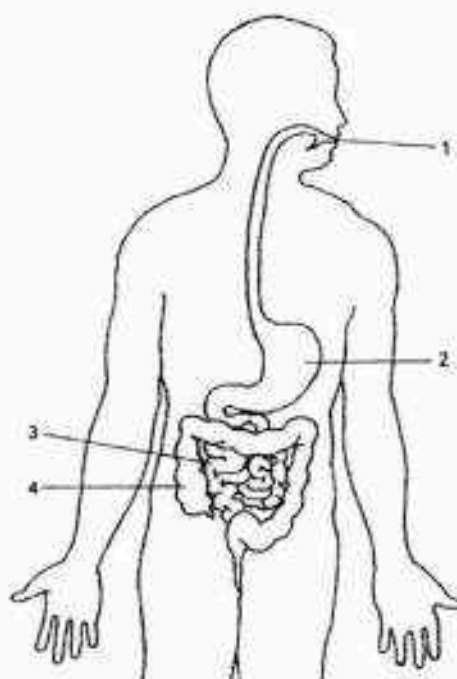
- (b) A shadow is formed when light is _____ by an opaque object.

[1]



1

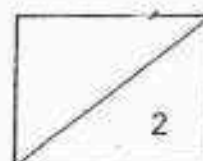
30. The diagram below shows the human digestive system.



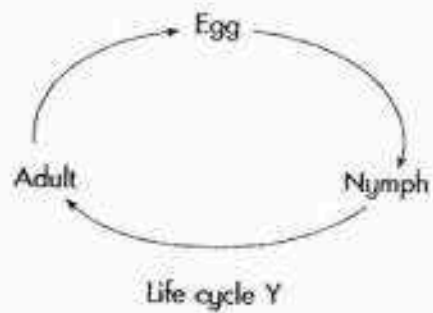
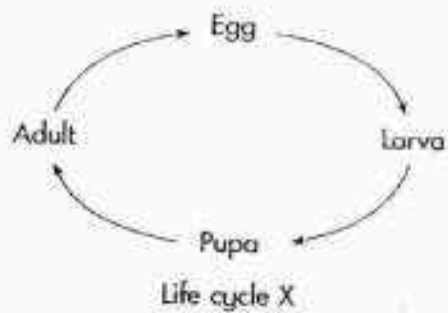
Identify the part where

(a) digestion first takes place: _____ [1]

(b) there is no digestion: _____ [1]



31. The diagrams below show the two life cycles, X and Y, of insects.



Classify the following insects according to the life cycles they have. [3]



Mosquito

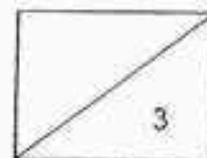


Butterfly



Cockroach

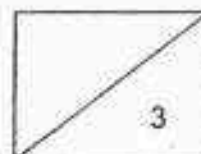
Life cycle X	Life cycle Y



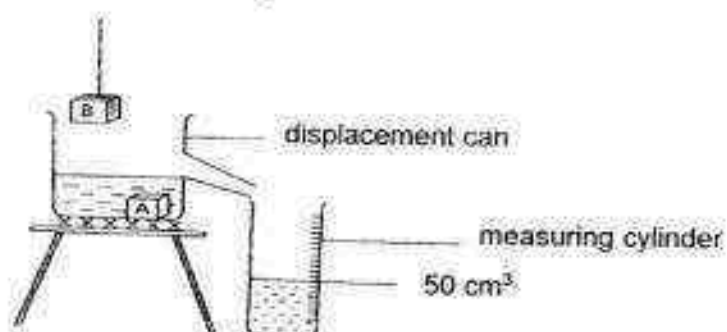
32. Put a tick (✓) in the correct box to indicate if each statement is True or False.

[3]

	Statement	True	False
(a)	A piece of aluminium can be magnetized by passing electricity through it.		
(b)	A smaller magnet always has a weaker magnetic force than a larger magnet.		
(c)	The magnetic force of a magnet is the strongest at its poles.		



33. Study the diagram below carefully.



When block A is lowered into the displacement can, 50cm³ 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 120 cm³.

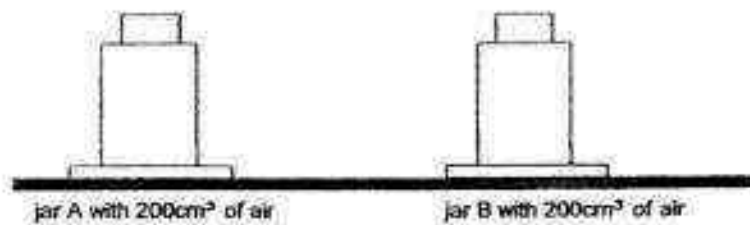
- (a) What can be concluded about the volume of block B compared to block A? [1]

- (b) State one property of a solid that can be shown from the experiment. [1]

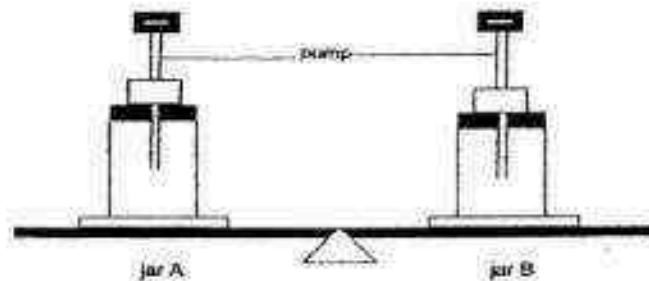
- (c) Block A was removed from the displacement can and heated evenly over a flame for five minutes. The volume of block A after heating was 52cm³. Explain why. [1]



34. The capacity of jar A and B is 200cm^3 each. Each jar contains 200cm^3 of air.



Jenny conducted an experiment and connected a pump to each jar as shown in the diagram below. She pumped another 100cm^3 of air into jar A. Both jars were then placed on a mass balance.



- (a) State one observation she would make when 100cm^3 of air is pumped into jar A. [1]

- (b) What is the volume of the air in jar A in the end? [1]

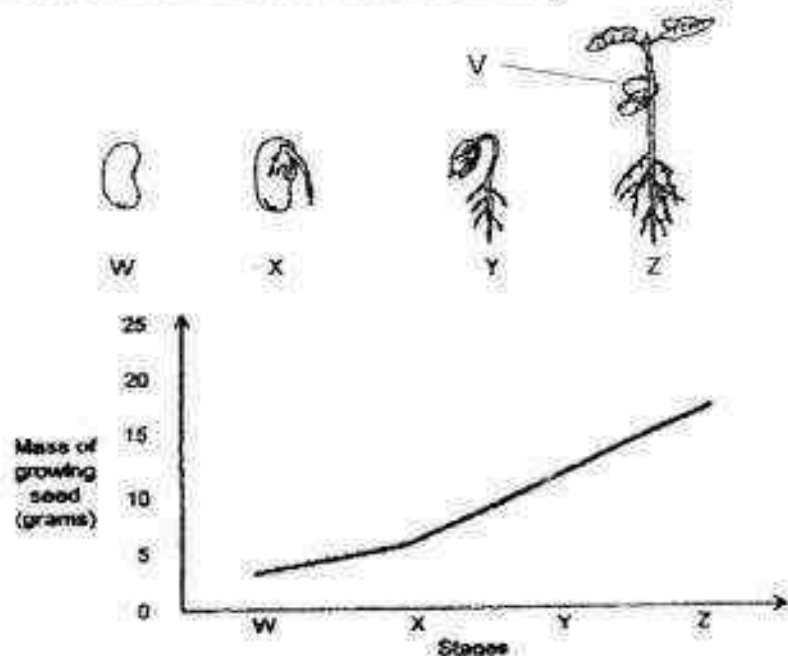
- (c) State two properties of air that are shown in the experiment above. [2]

Property 1: _____

Property 2: _____



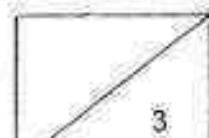
35. Faith observed the growth of a seed as shown below.
She then recorded the mass of the seed from stage W to stage Z.



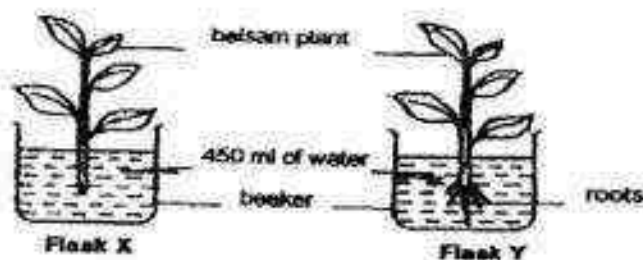
- (a) From the results, the mass of the growing seed increased from stage W to stage Z. Explain why. [1]

- (b) Look at stage Z. Name the part labelled V. [1]

- (c) Faith removed the part labelled V. Will the young plant continue to grow? Explain your answer. [1]

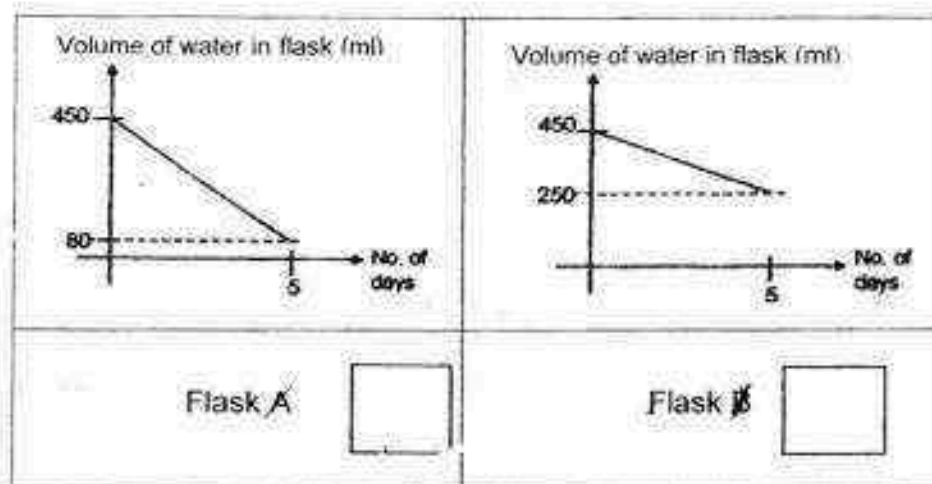


- 36(i) Sheila puts a balsam plant each into Flask X and Flask Y. She removed only the roots of the balsam plant in Flask X. Both flasks were then left in the open at the same location and the volume of water in each flask was measured and recorded over five days.

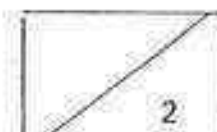


The graphs below show the changes in the volume of water in both flasks over a period of five days.

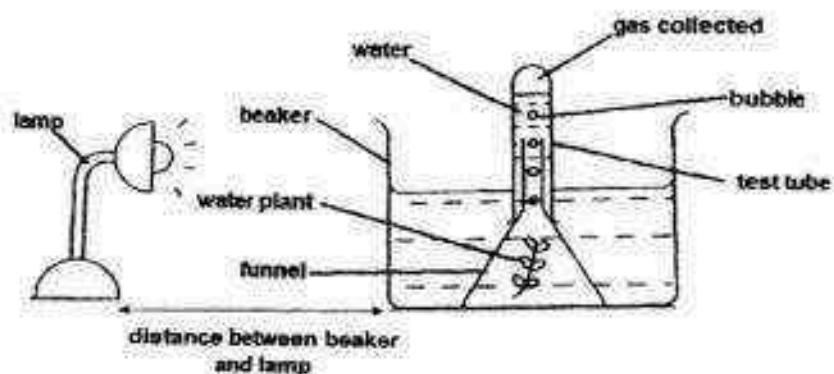
- (a) Study the two graphs shown below. Which graph best represents the change in volume of water in Flask X and Flask Y over a period of five days? Label X and Y in the two boxes below. [1]



- (b) Give a reason for your answer in (a). [1]



36(ii) Then, Sheila set up another experiment in a dark room.

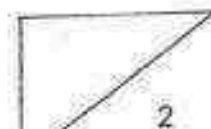


She counted the number of gas bubbles released by a water plant per minute when the beaker was placed at different distances away from the lamp. Her results were as follows:

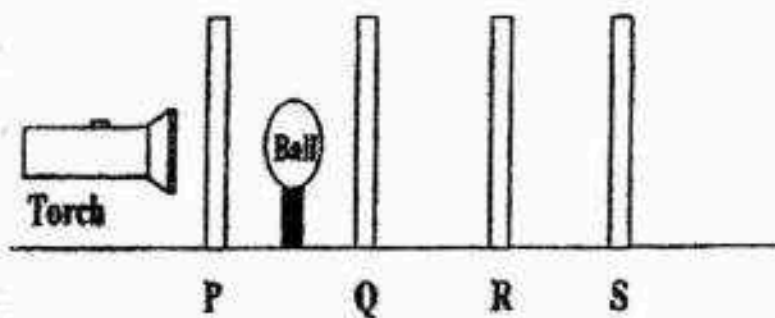
Distance between beaker and lamp (cm)	5	10	15	20	25
Number of gas bubbles released per minute	15	11	9	?	2

- (a) Predict the likely number of gas bubbles released per minute when the distance between the beaker and lamp is 20cm. [1]

- (b) What is the relationship between the distance between the beaker and the lamp and the number of gas bubbles released per minute? [1]

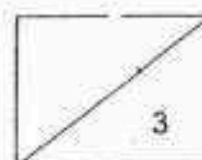


37. Andy set up an experiment in a dark room as shown below. A ball was placed in between sheets P and Q. When the torch was switched on, a dark shadow of the ball was cast on sheet R only.

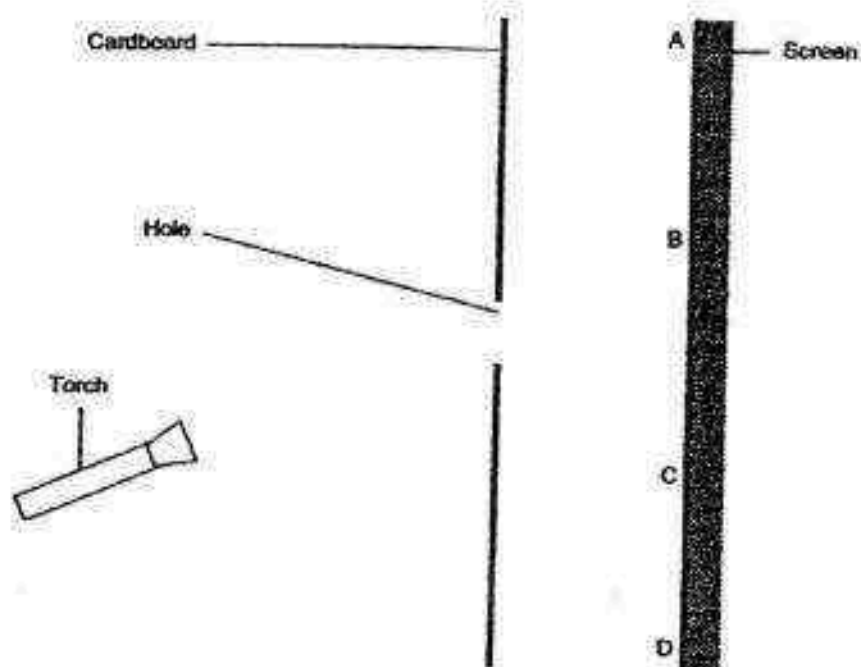


- (a) What conclusion could Andy draw about sheets P and Q? [1]

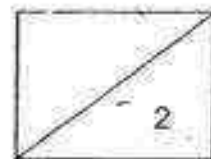
- (b) If Andy removed sheet S, what would happen to the shadow formed on sheet R? Explain your answer. [2]



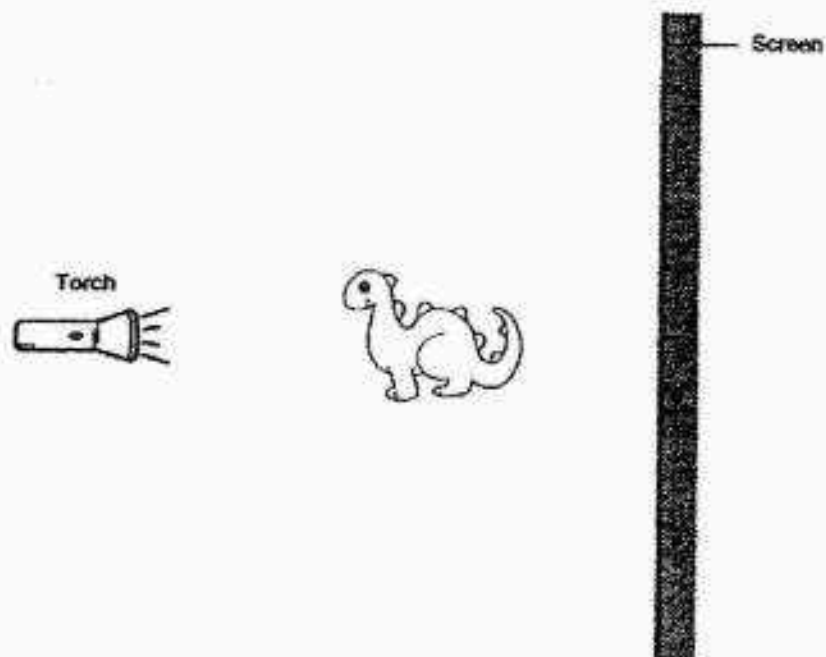
38. In a dark room, Johnny placed a torch and a ~~cup~~^{cardboard} board with a hole in front of a screen as shown below. He then switched on the torch and a bright spot was observed on the screen.



- (a) Which point on the screen, A, B, C or D, was the bright spot most likely observed. [1]
- _____
- (b) Johnny also noticed that there were no bright spots observed on the other points on the screen. Explain this observation. [1]
- _____
- _____

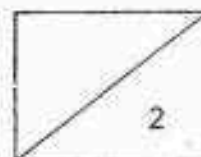


- (c) Johnny later replaced the cardboard with a toy dinosaur. Upon switching on the torch, he observed a shadow of the toy dinosaur on the screen.

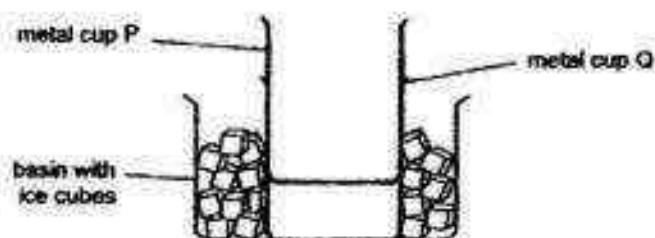


- (i) Explain how the shadow of the toy dinosaur was formed. [1]

- (ii) Describe how the size of the dinosaur's dark shadow will change if Johnny moves his dinosaur closer to the screen. [1]

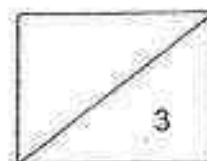


39. Two metal cups, P and Q, were stacked together and could not be separated. Sam placed the cups in a basin filled with ice cubes as shown below. He realised that the cups still remained stuck together. His mother suggested that he should also use hot water.

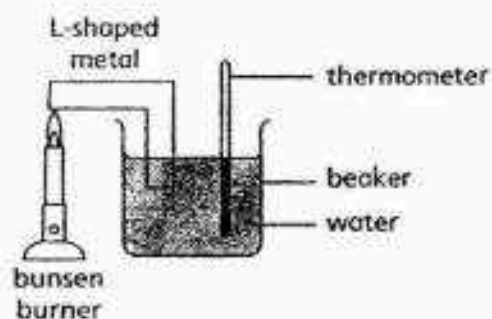


- (a) Using both ice cubes and hot water, what could Sam do to separate the two metal cups? [1]

- (b) Explain your answer in ⁽⁴⁾ ~~(2)~~ [2]



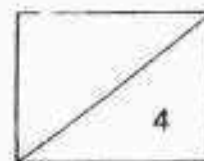
40. Joseph set up the experiment below.



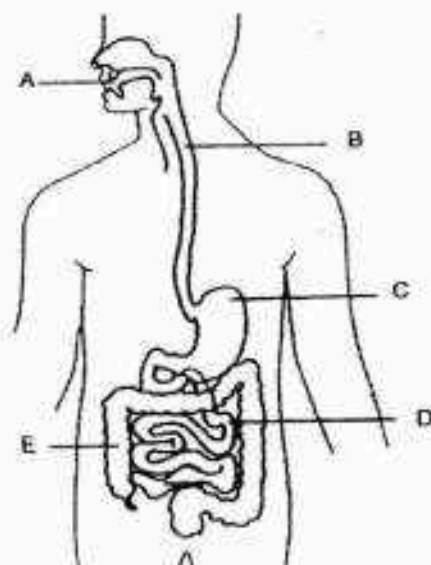
(a) Why did Joseph place a thermometer in the beaker of water? [1]

(b) What will happen to the temperature of the water after the L-shaped metal bar is heated strongly for five minutes? Why? [2]

(c) What was he trying to find out from the experiment? [1]

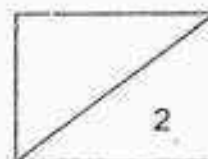


41. The diagram below shows the digestive system of a human body.

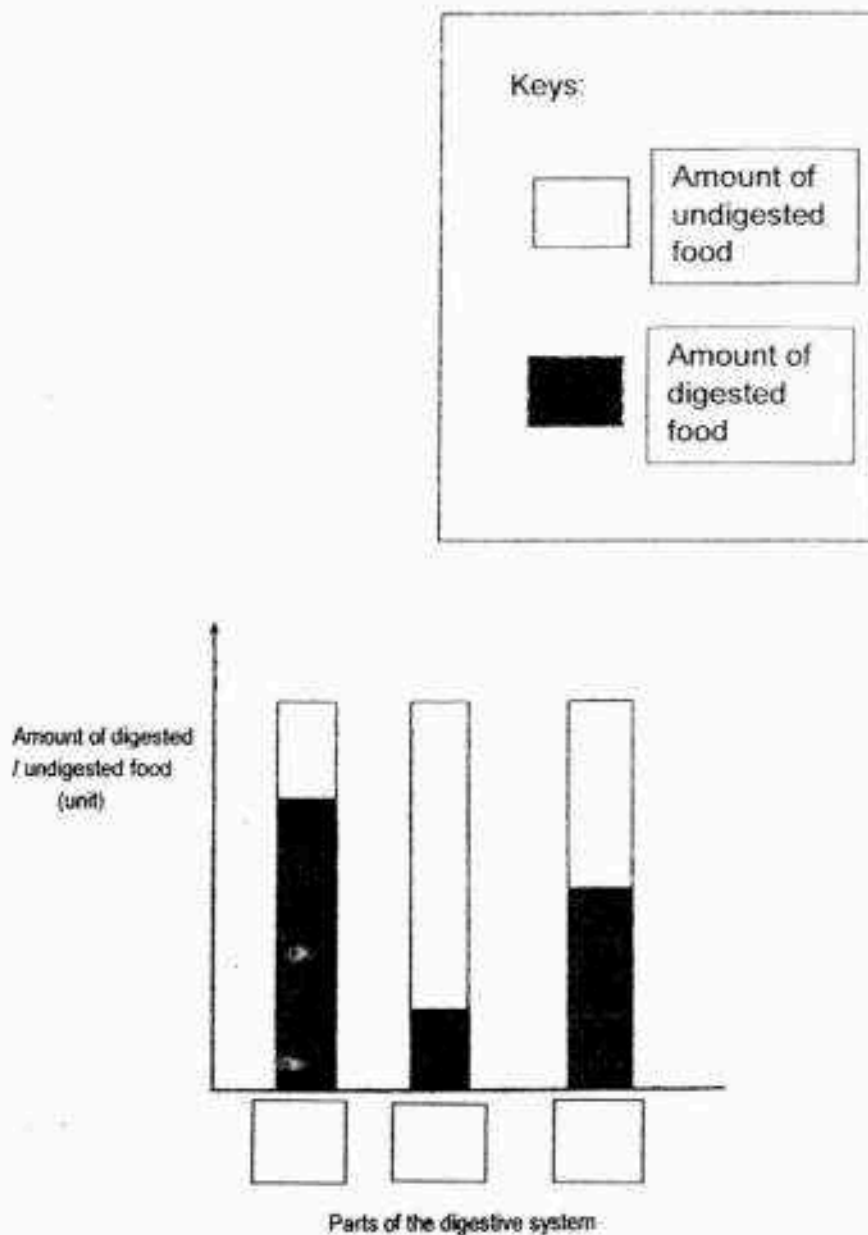


- (a) State the function of part B in the diagram above. [1]

- (b) What is the substance found in Part C that helps break down the food into simpler substances? [1]



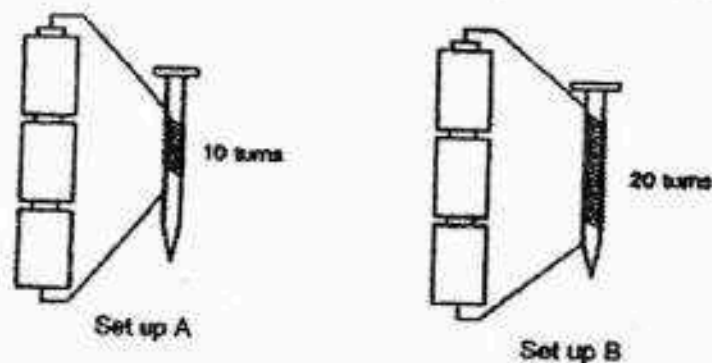
- (c) The graph below shows the amount of digested and undigested food in parts A, C and D of the digestive system.



Write the letters, A, C and D in the respective boxes above. [1]



42. Adam 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.

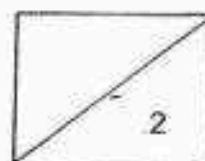


Adam's teacher said that the experimental set-up was wrong.

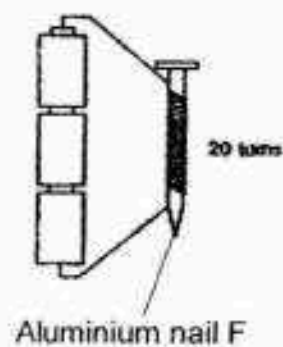
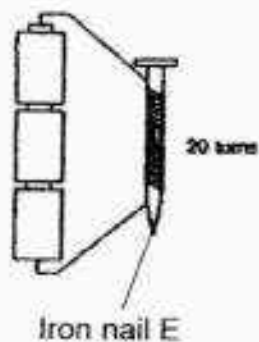
- (a) Suggest two ways in which Adam should do to ensure that the experimental set-ups were correct. [2]

Suggestion 1:

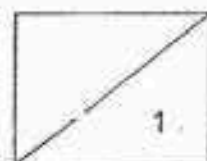
Suggestion 2:



- (b) Adam repeated the experiment by comparing two set ups. One of the set-ups had an aluminium nail as shown below. He then placed each nail into a tray of paper clips.



If the electromagnet with Iron nail E attracted 10 paper clips, what would be the number of paper clips attracted by the electromagnet with Aluminium nail F? Explain your answer. [1]



YEAR : 2016
 LEVEL : PRIMARY 4
 SCHOOL : TEMASEK PRIMARY
 SUBJECT : SCIENCE
 TERM : SA2

Booklet A

Q1	2	Q5	3	Q9	3	Q13	4	Q17	3	Q21	2	Q25	3
Q2	3	Q6	2	Q10	1	Q14	2	Q18	3	Q22	3	Q26	3
Q3	1	Q7	1	Q11	2	Q15	2	Q19	4	Q23	4	Q27	2
Q4	3	Q8	3	Q12	4	Q16	4	Q20	4	Q24	2	Q28	3

Booklet B

Q29

(a)



(b) A shadow is formed when light is blocked by an opaque object.

Q30

(a) digestion first takes place : 1

(b) there is no digestion : 4

Q31

Life cycle X	Life cycle Y
Butterfly Mosquito	Cockroach

Q32

	Statement	True	False
(a)	A piece of aluminium can be magnetized by passing electricity through it.		✓
(b)	A small magnet always has a weaker magnetic force than a larger magnet.		✓
(c)	The magnetic force of a magnet is the strongest at its poles.	✓	

- Q33
- (a) Block B has a greater volume than block A.
 - (b) It has a definite volume.
 - (c) Block A gained heat from the flame and expanded allowing A mass to increase.
- Q34
- (a) Jar A would be lower than Jar B / Jar A will go down.
 - (b) 200 cm^3
 - (c) Property 1: Air can be compressed.
Property 2: Air has mass / Air has no definite volume.
- Q35
- (a) The mass of the growing seed increases as the growing seed develop more leaves and roots.
 - (b) Seed coat.
 - (c) Yes. The young plant has leaves so it can make its own food.
- Q36(i)
- (a)

Flask	Y	Flask	X
-------	---	-------	---
 - (b) The plant in flask Y have roots therefore more water is absorbed while the plant in flask X has no roots so lesser water is absorbed.
- Q36(ii)
- (a) 5
 - (b) The greater the distance between the beaker and the lamp, the lesser air bubble was released per minute.
- Q37
- (a) Sheets P and Q are both transparent.
 - (b) Nothing would happen to the shadow as the removal of sheet 5 does not affect the set up above.

Q38

- (a) Point B.
- (b) Light travels in a straight line and cardboard is opaque and is blocking the other points while the hole allows the light to enter and shine on point B.
- (c)
 - (i) The toy dinosaur is an opaque object and block all light.
 - (ii) The size of the dinosaur's shadow will be smaller but sharper.

Q39

- (a) Put the ice cubes into cup P and pour hot water in the basin.
- (b) Cup P would lose heat and contract while cup Q will gain heat and expand.

Q40

- (a) Joseph wanted to find out if the water will gain heat or lose heat.
- (b) The temperature of water will rise. As the L-shaped metal transport heat to the water, the water will gain heat.
- (c) Metal is a good conductor of heat / Heat travels from a hotter region to a colder region.

Q41

- (a) To transport food from the mouth to the stomach.
- (b) Digestive juices.
- (c)

D

A

C

Q42

- (a) Suggestion 1 : Coil more wire in set up A.
- (b) Suggestion 2 : Take one battery from set-up A or B.
- (c) 0. Aluminium is a non-magnetic material and will not attract any paper clips.

SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

SECOND SEMESTRAL ASSESSMENT 2016

NAME: _____ ()

DATE: 21 October 2016

CLASS: PRIMARY 4 SY / C / G / SE / P

Parent's Signature:

SCIENCE
BOOKLET A

28 questions

56 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.

Part I (56 marks)

For each question from 1 to 28, 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 millipede will move when touched.



This shows that the millipede is a living thing because it can _____.

- | | |
|------------|--------------|
| 1) grow | 3) respond |
| 2) breathe | 4) reproduce |
2. Which one of the following objects is made of material that was once alive?

- 1) metal spoon



- 3) ceramic cup



- 2) wrapping paper



- 4) plastic pail



3. Which animal has a pupal stage in its life cycle?

- | | |
|---------|----------------|
| 1) toad | 3) beetle |
| 2) duck | 4) grasshopper |

4. Which one of the following shows the correct order when food moves through some parts of the digestive system?

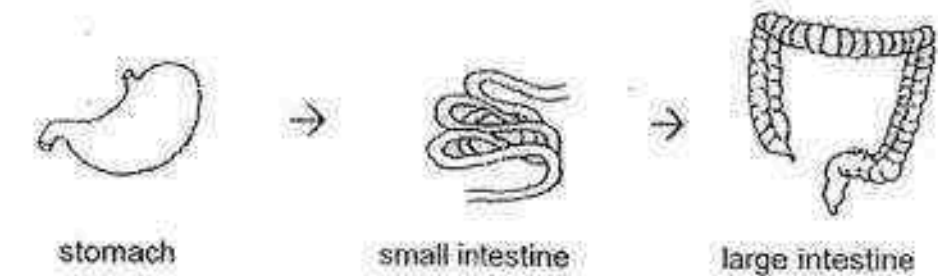
1)



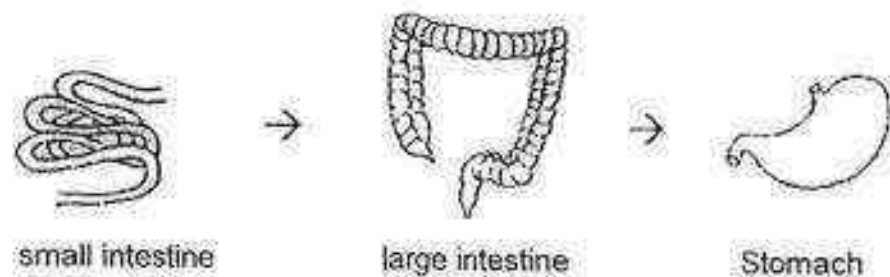
2)



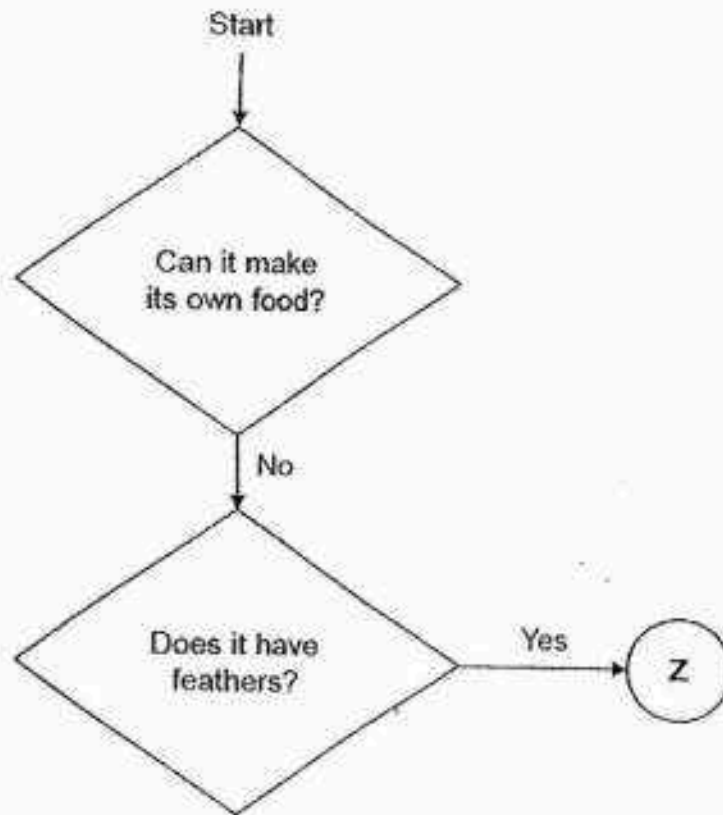
3)



4)



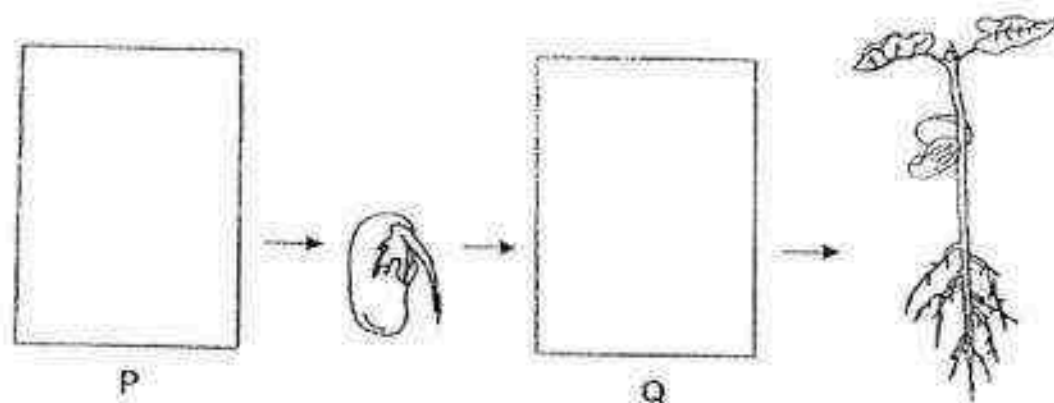
5. Study the diagram below.



What could Z be?

- | | |
|----------|-----------|
| 1) bird | 3) insect |
| 2) plant | 4) mammal |

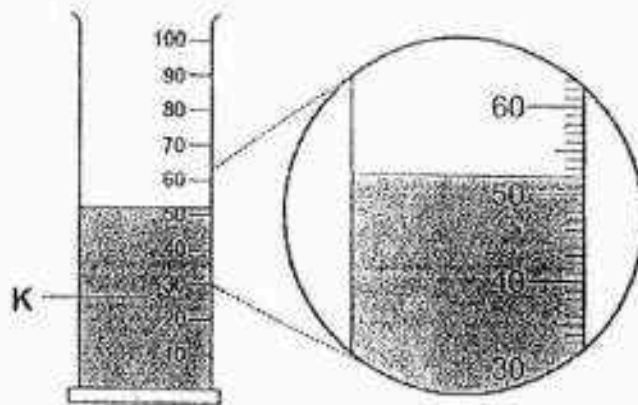
6. The diagram below shows the growth of a young plant with two missing stages P and Q.



Which one of the following shows the correct stages for P and Q?

	P	Q
1)		
2)		
3)		
4)		

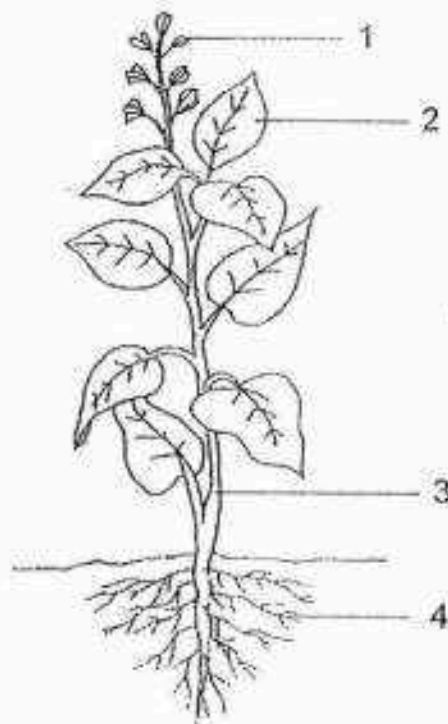
7. In the diagram, what is the volume of Liquid K?



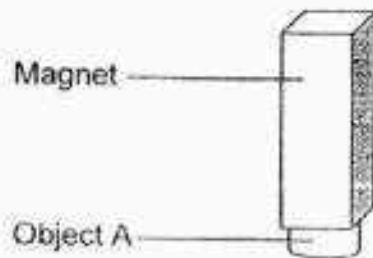
- 1) 50 ml
- 2) 52 ml

- 3) 62 ml
- 4) 68 ml

8. Which part, 1, 2, 3 or 4 makes food for the plant?



9. An object A was attracted to a magnet, as shown in the figure below.



Object A is made of _____

- 1) steel
 - 2) wood
 - 3) plastic
 - 4) rubber
10. Which one of the following is the best conductor of heat?
- 1) A metal plate
 - 2) A paper plate
 - 3) A plastic plate
 - 4) A wooden plate

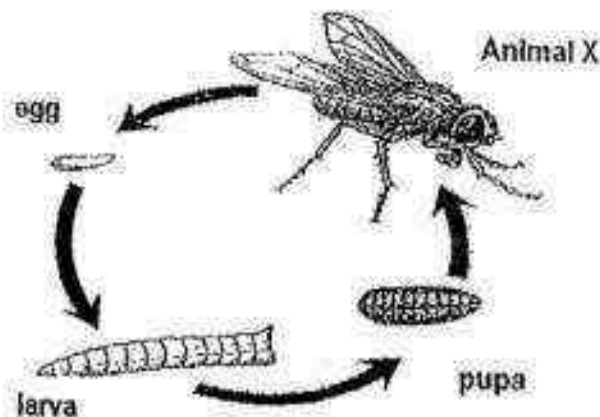
11.

Group A	Group B	Group C
snake	horse	crow
guppy	polar bear	eagle
crocodile	spiny anteater	pigeon

The above animals are grouped according to their _____

- 1) habitats
- 2) eating habits
- 3) body coverings
- 4) method of reproduction

12. The diagram below shows the life cycle of Animal X.



Which statements describe Animal X correctly?

- A) Its young looks like its adult.
- B) It has 4 stages in its life cycle.
- C) It gives birth to its young alive.
- D) Its young does not have wings.

- | | |
|-----------------|-----------------|
| 1) A and B only | 3) B and D only |
| 2) A and C only | 4) C and D only |

13. Marion accidentally dented a ping pong ball as shown below.

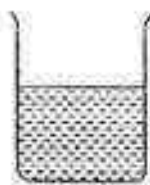


What conclusions can she draw from the above activity?

- A) Air can be compressed.
- B) Air has no definite volume.
- C) The ball has a definite shape.

- | | |
|-----------------|-----------------|
| 1) A and B only | 3) B and C only |
| 2) A and C only | 4) A, B and C |

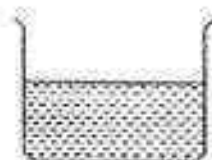
14. Ivan wanted to find out whether the exposed surface area of water affects the rate of evaporation of water. He filled three containers, A, B and C, with water and then left them near an open window.



A
200ml



B
150ml



C
250ml

What should Ivan do to conduct a fair test for his aim?

- 1) Cover the containers.
 - 2) Use the same type of containers.
 - 3) Place the containers in different places.
 - 4) Use the same amounts of water in the containers.
15. Two identical potted plants, G and H, were left outside in the sun for a few days. The diagram below shows how the plants looked like at the end of the day. What was lacking in pot H but not in pot G?



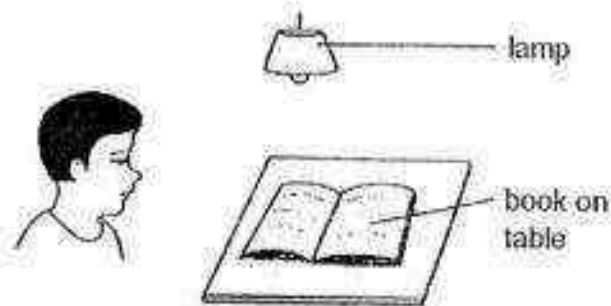
G



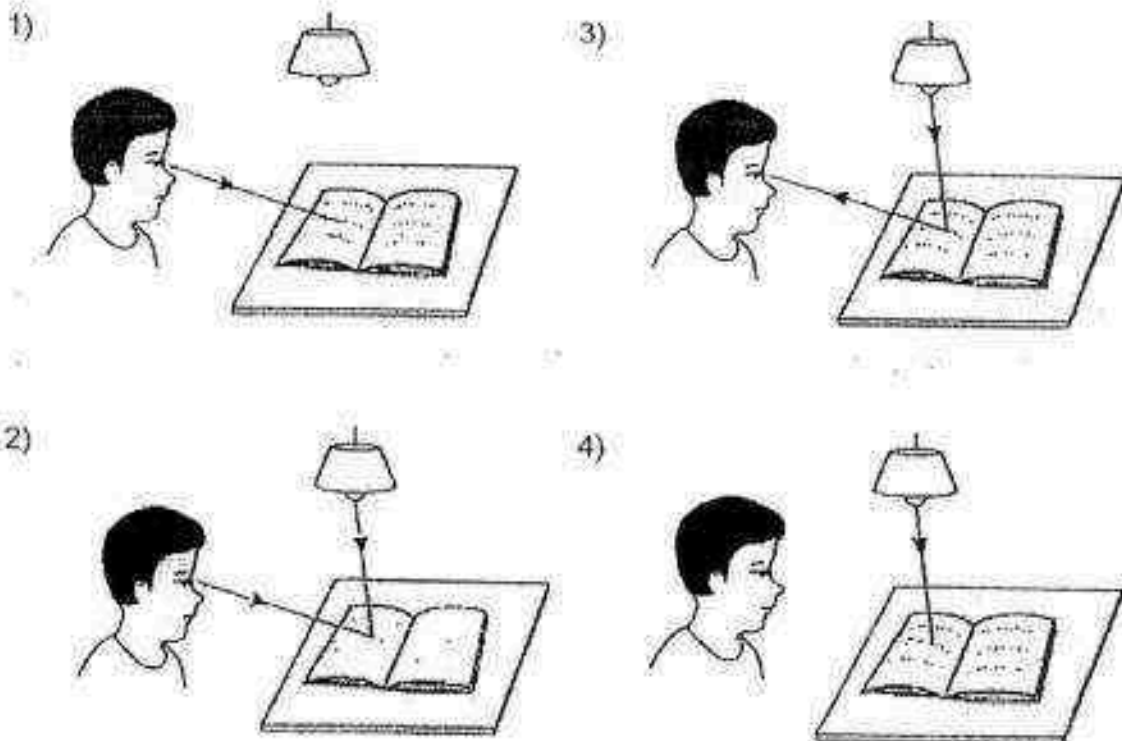
H

- | | |
|----------|-------------|
| 1) air | 3) warmth |
| 2) water | 4) sunlight |

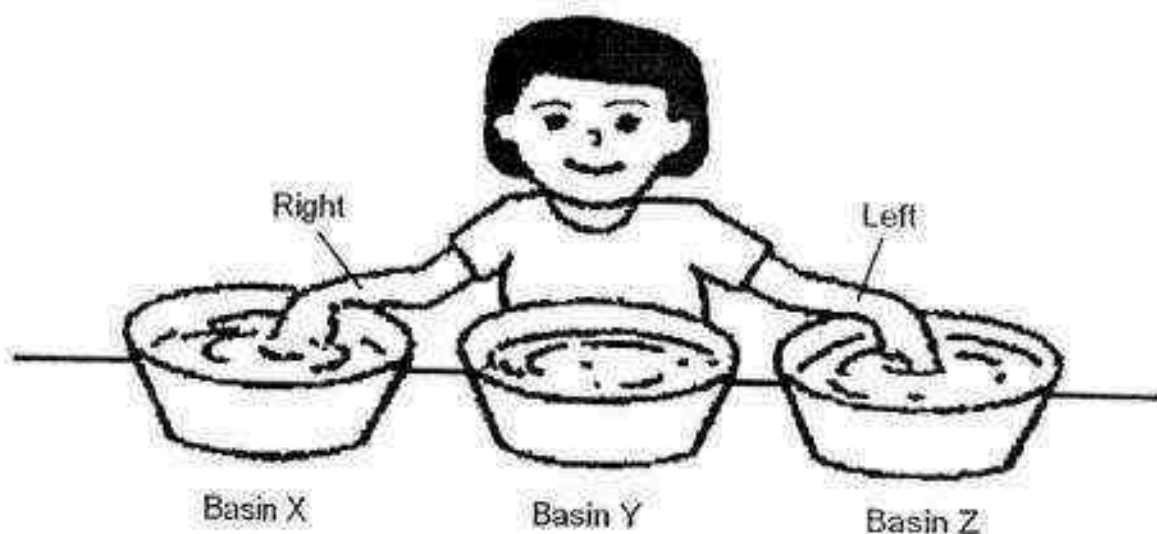
16. Look at the picture below.



Which one of the following explains why Felix can see the book on the table?



17. Jia En prepared three basins of water, X, Y and Z, at different temperatures for an experiment. She put her right hand into Basin X and her left hand into Basin Z as shown below.

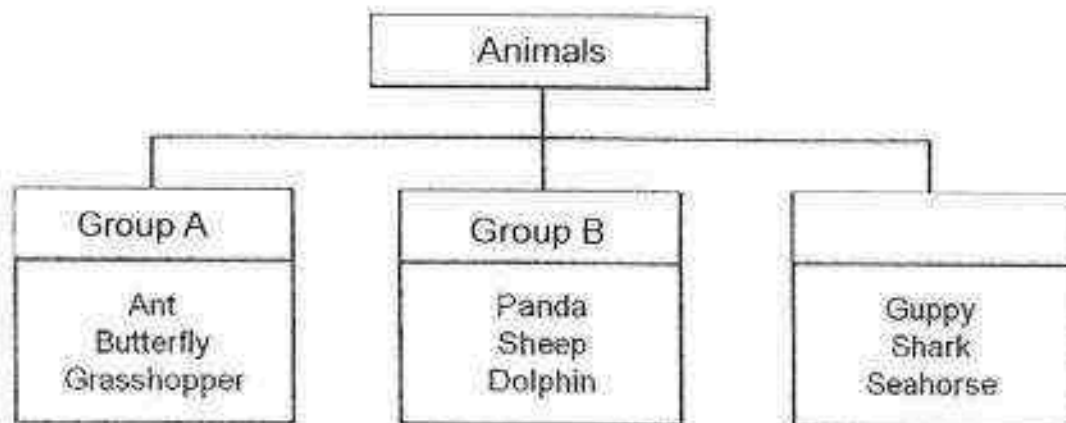


Two minutes later, she put both of her hands into Basin Y. She found that the water in Basin Y felt warm to her right hand but felt cold to her left hand.

Which one of the following shows the most likely temperature for water in the basins, X, Y and Z?

	X	Y	Z
1)	50°C	30°C	10°C
2)	10°C	50°C	30°C
3)	50°C	10°C	30°C
4)	10°C	30°C	50°C

18. Look at the classification table below.



After studying the classification table, 4 pupils, Ali, Bethany, Chandra and Deborah, made the following statements.

Ali: Dolphin should be placed in Group C.

Bethany: The animals are grouped according to the different habitats they live in.

Chandra: The animals are grouped according to the different groups, insects, mammals and fish.

Deborah: The animals are grouped according to the types of food they eat.

Whose statement is correct?

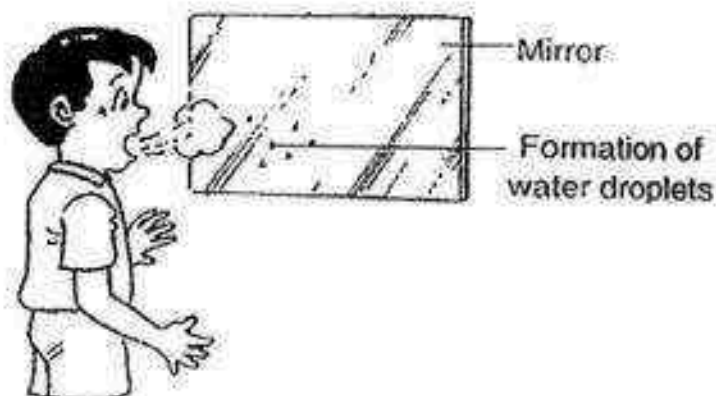
- 1) Ali
- 2) Bethany

- 3) Chandra
- 4) Deborah

19 Which one of the following statements describes the difference between a seedling and an adult flowering plant?

- 1) An adult plant has roots but a seedling does not have roots.
- 2) An adult plant can respond to changes but a seedling cannot.
- 3) An adult plant needs water but a seedling does not need water.
- 4) An adult plant has flowers but a seedling does not have flowers.

20. When David breathed on the mirror, he noticed water droplets collecting on the mirror. After a short while, the water droplets disappeared.



Where did the water droplets disappear to?

- 1) They were absorbed into the mirror.
- 2) They moved to the top of the mirror.
- 3) They returned back into David's mouth.
- 4) They evaporated into the surrounding air.

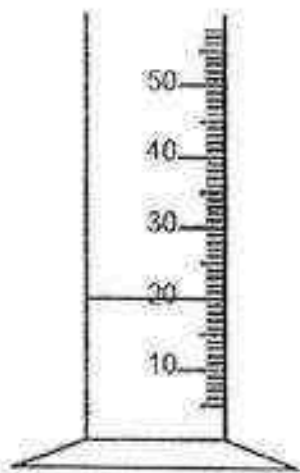
21. An experiment was conducted to find out how much light can pass through three different materials, A, B and C, using a light sensor connected to a datalogger. The table below shows the amount of light that passed through each material.

Material	Amount of light (lux)
A	600
B	400
C	0

Based on the table above, which one of the following statements is **not** true?

- 1) Material C allows no light to pass through.
- 2) Material B allows less light to pass through than Material A.
- 3) When Material A and Material C are stacked together, no light can pass through them.
- 4) The total amount of light that can pass through Material A and Material B when they are stacked together is 1000 lux.

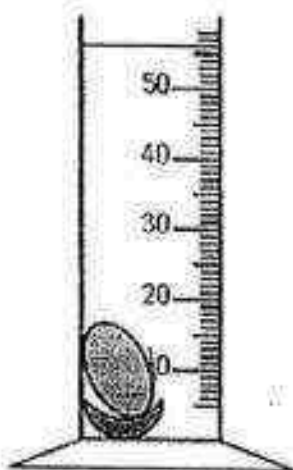
22. June wants to find the volume of a small piece of bamboo by using a measuring cylinder. She uses a stone to keep the bamboo under water. The results of each stage of his experiment are shown below.



Water



Water and stone

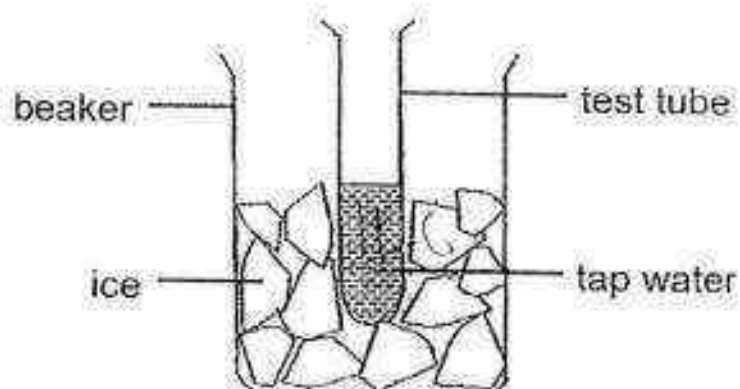


Water, bamboo
and stone

What are the volumes of the bamboo and the stone respectively?

	Volume of bamboo (cm ³)	Volume of stone (cm ³)
1)	3	22
2)	6	24
3)	11	30
4)	12	24

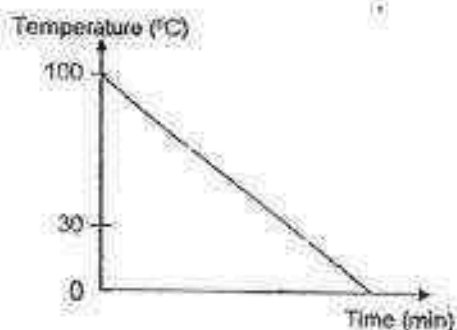
23. Tania placed a test tube of tap water into a beaker of ice as shown in the diagram below.



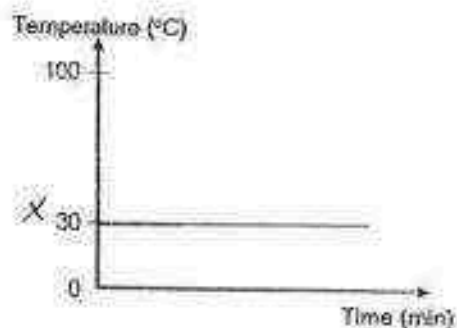
She used a thermometer to measure the temperature of tap water over a period of time. She then plotted a graph to show the change in the temperature of the water for 30 minutes.

Which one of the graphs below shows the change in the temperature of the tap water correctly?

1)

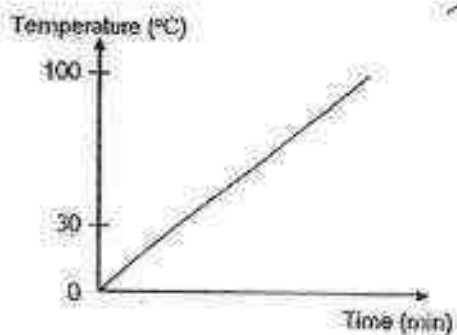


3)

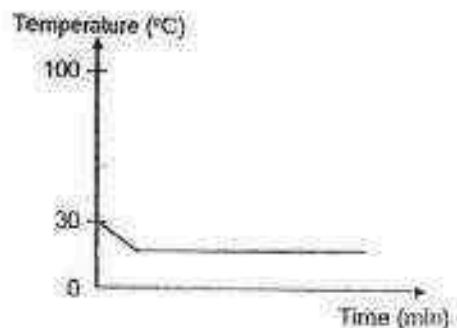


2)

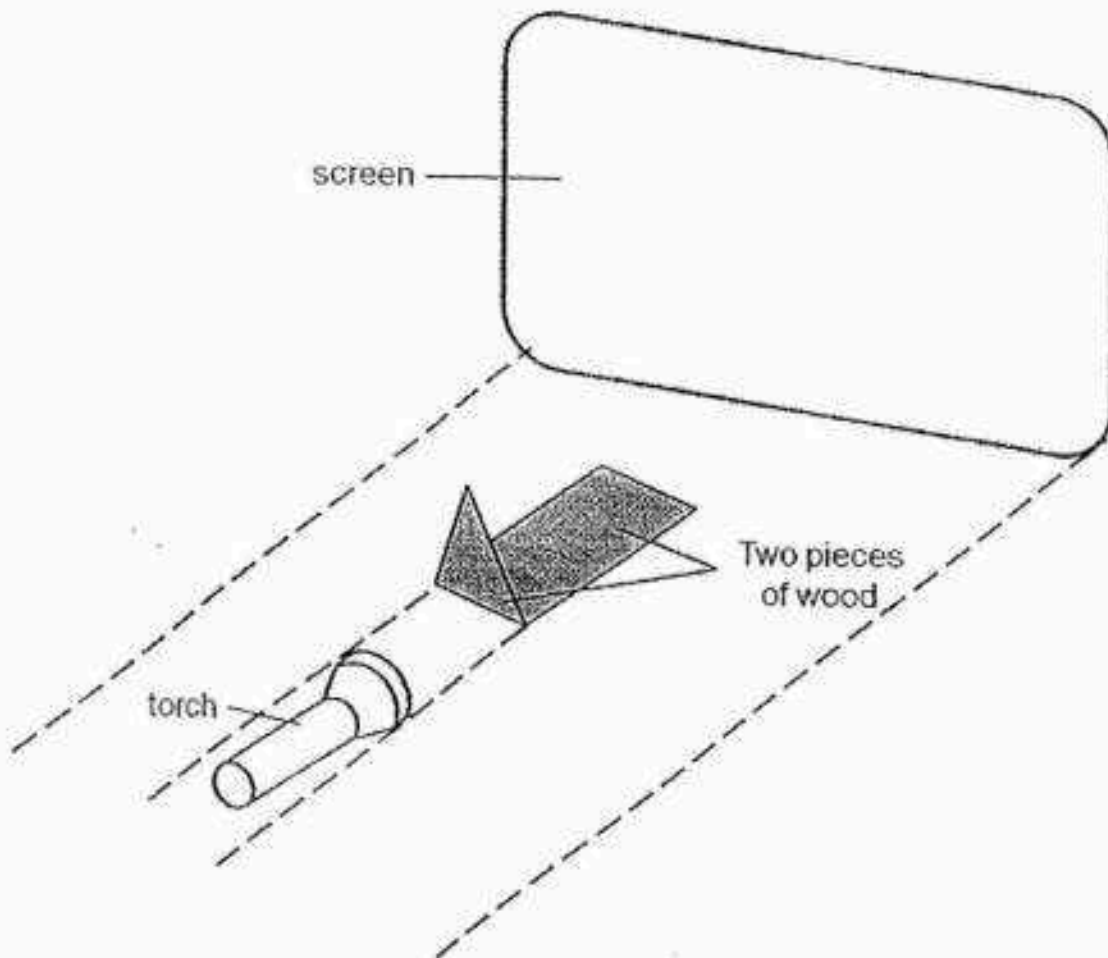
X



X (4)



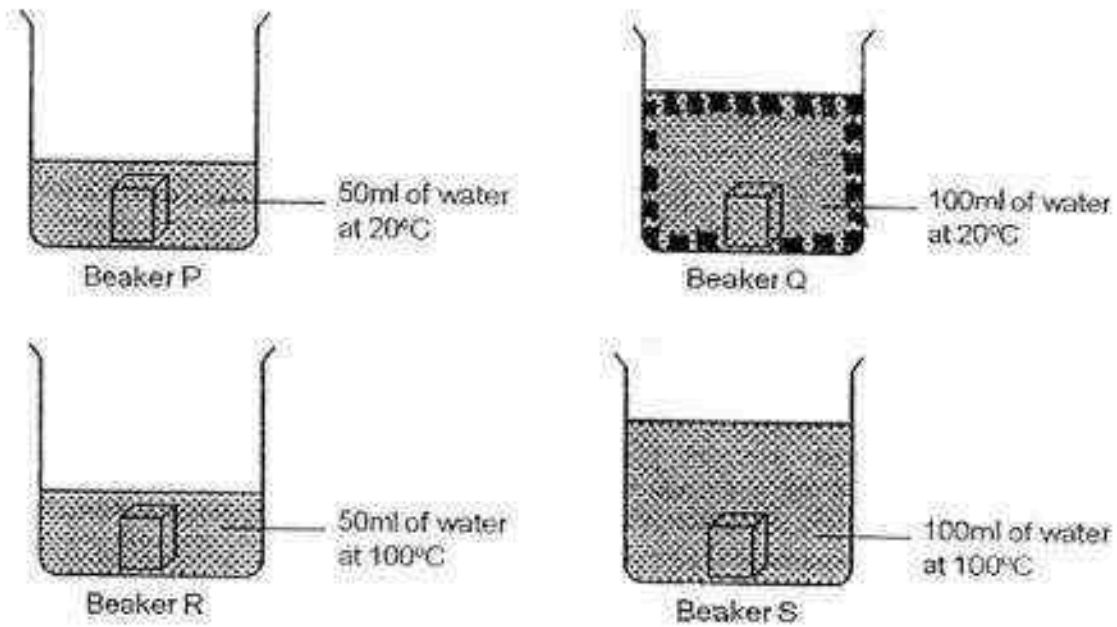
24. Two pieces of wood are glued together and placed between a torch and a screen as shown below.



Which one of the following shadows will be formed on the screen?



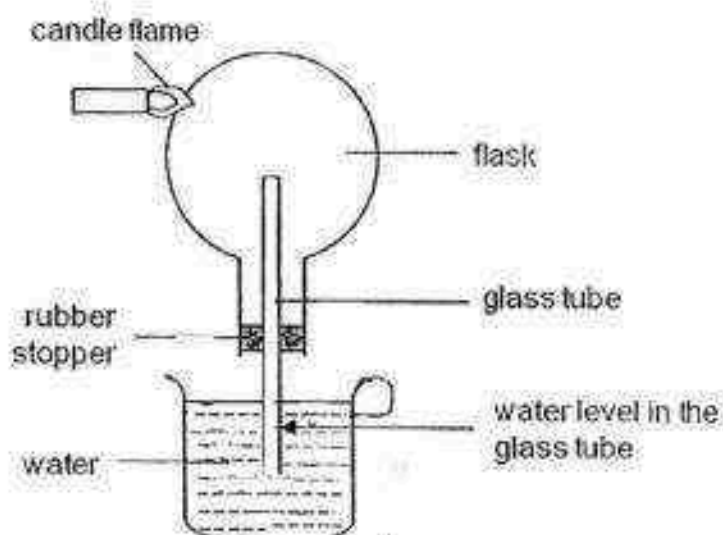
25. Muthu filled up 4 identical beakers with different amounts of water at different temperatures. He then heated 4 identical blocks to a temperature of 70°C . After heating, he dropped each block into a beaker of water as shown in the diagrams below.



In which beaker would the water show the greatest rise in temperature?

- | | |
|------|------|
| 1) P | 3) R |
| 2) Q | 4) S |

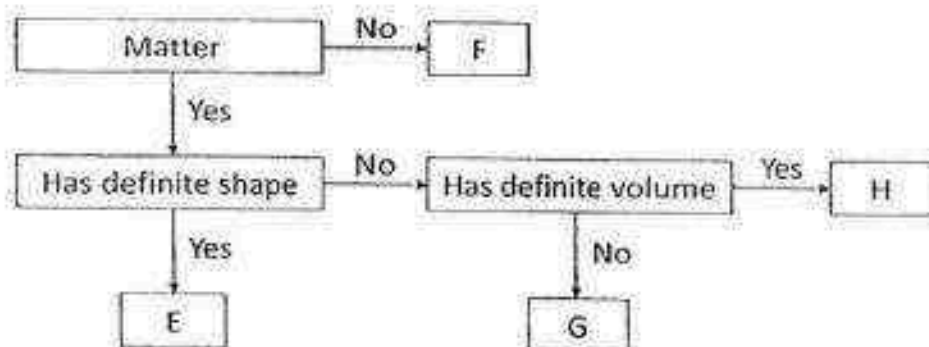
26. Aminah used a candle flame to heat up the side of an inverted flask as shown in the set-up below.



Aminah removed the candle flame and allowed the flask to cool. Which one of the following could be observed by Aminah after removing the candle?

- 1) Water level in the basin increased.
- 2) Water level in the glass tube increased.
- 3) More air bubbles were seen in the water.
- 4) A few large air bubbles entered the flask.

27. Study the flowchart below.

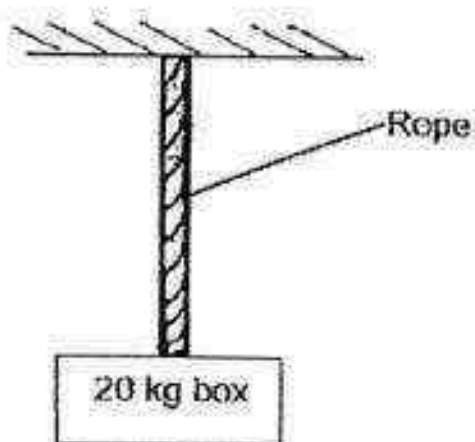


Which of the following best represents steam in the flowchart?

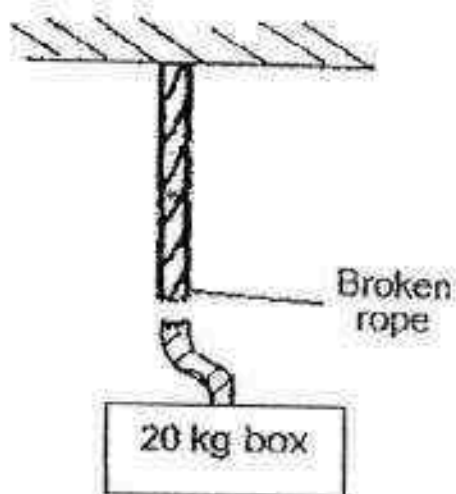
- 1) E
- 2) F
- 3) G
- 4) H

28. 20kg were hung from two ropes made from two different materials, A and B. Both have the same width. After half an hour, the rope made from Material B snapped while the rope made from Material A was still able to hold the box.

Rope made from Material A



Rope made from Material B



Based on the observation, which one of the following statements is correct?

- 1) Material A is harder than Material B.
- 2) Material A is thicker than Material B.
- 3) Material A is stronger than Material B.
- 4) Material A is more flexible than Material B.

End of Booklet A

SINGAPORE CHINESE GIRLS' SCHOOL (PRIMARY)

SECOND SEMESTRAL ASSESSMENT 2016

NAME: _____ ()

DATE: 21 October 2016

CLASS: PRIMARY 4 SY / C / G / SE / P

Parent's Signature:

SCIENCE

BOOKLET B

	Total Actual Marks	Total Possible Marks
Booklet A		56
Booklet B		44
Total		100

14 questions

44 marks

Total time for Booklets A & B: 1 h 45 min

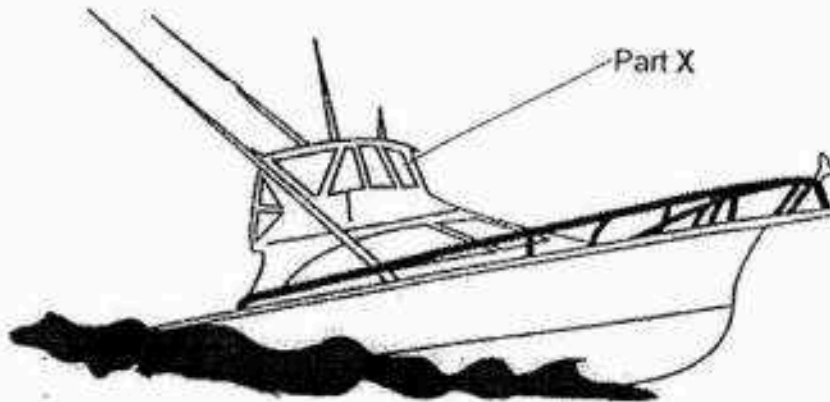
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

Part II (44 marks)

Answer all the following questions.

29. The diagram below shows a boat.

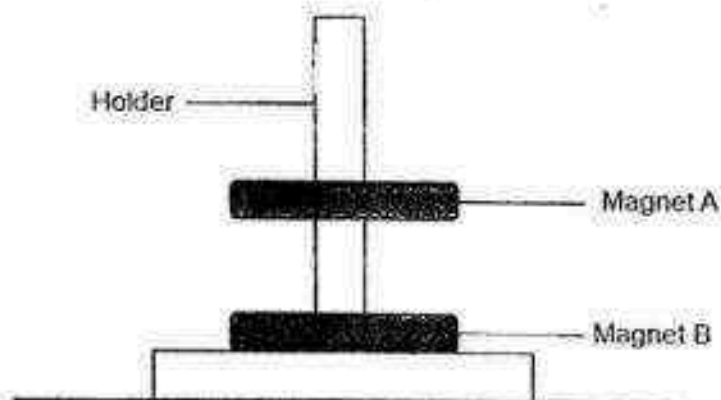


a) Part X is made of clear glass because it allows _____ to pass through so that the sailor can see where he is going. [1]

b) Suggest another material that can be used to make Part X. [1]

c) Mr. Tan built Part Y using steel instead of glass. Explain why. [1]

30. Ali placed two ring magnets, A and B, through a holder as shown below.



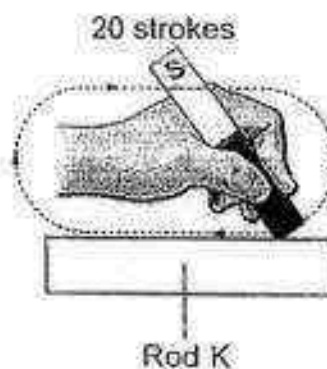
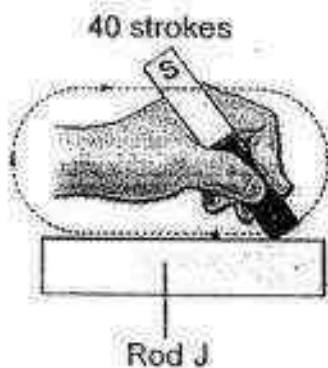
a) The holder was made of wood and did not attract the magnets.

Wood is a _____ material. [1]

b) Why was Magnet A floating above Magnet B?

Magnet B was _____ magnet A. [1]

c) Shi Hui stroked two similar iron rods, J and K, with the same magnet as shown in the figure below.



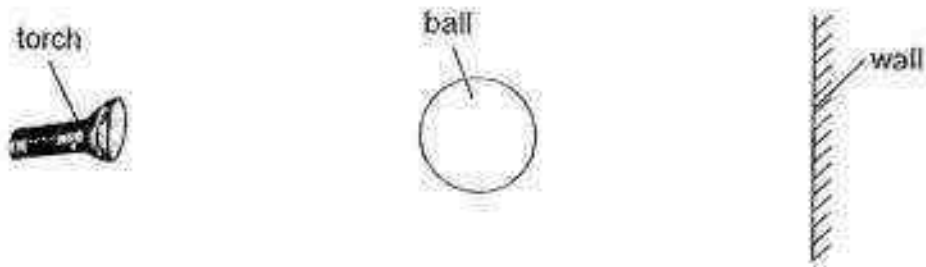
Both rods became magnets.

Tick the statement(s) that is/are correct. [1]

Statement	Tick if correct
Rod J attracted less pins than Rod K.	
Rod J attracted more pins than Rod K.	
Rod J attracted the same number of pins as Rod K.	



31. Lily 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]



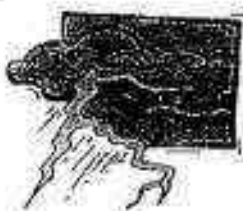
c) Look at the pictures. Tick the source(s) of light. [2]

☐

mirror


☐

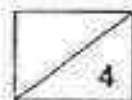
lightning


☐

star in the sky


☐

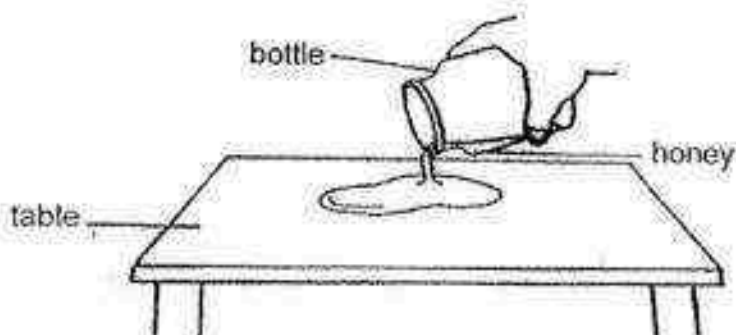
eyes



32. Choose the correct words from the box to fill in the blanks below.

solid	liquid	gas
-------	--------	-----

- a) Benny pours honey from a bottle onto a table as shown below

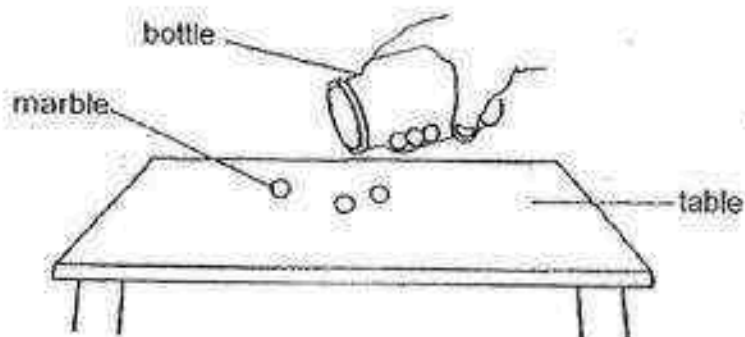


The volume of the honey remains the same but its shape changes.

This shows that honey is a _____

[1]

- b) Benny pours some marbles from a bottle onto a table as shown below

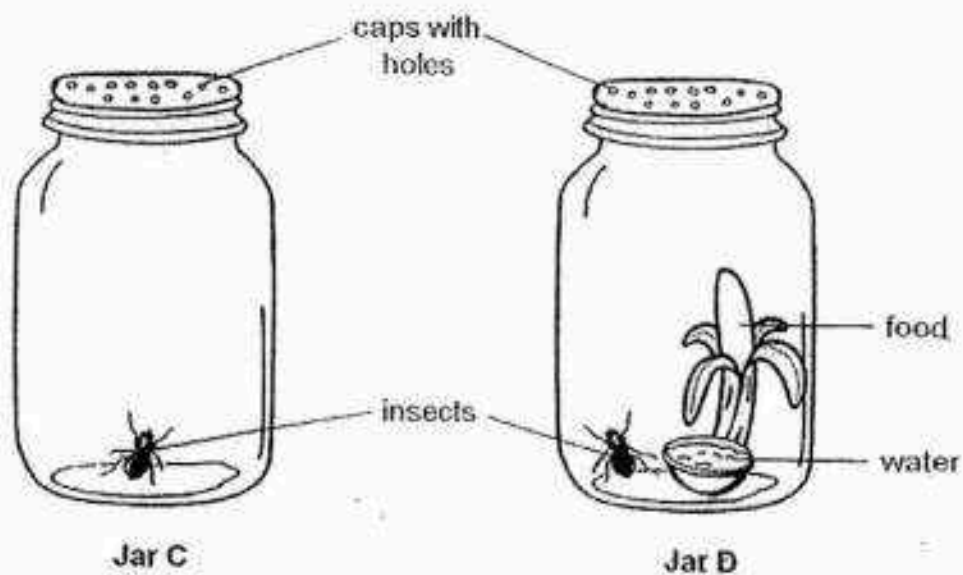


The shape and volume of the marbles remain the same.

This shows that a marble is a _____

[1]

33. Ah Ming carried out an experiment set-up as shown below.



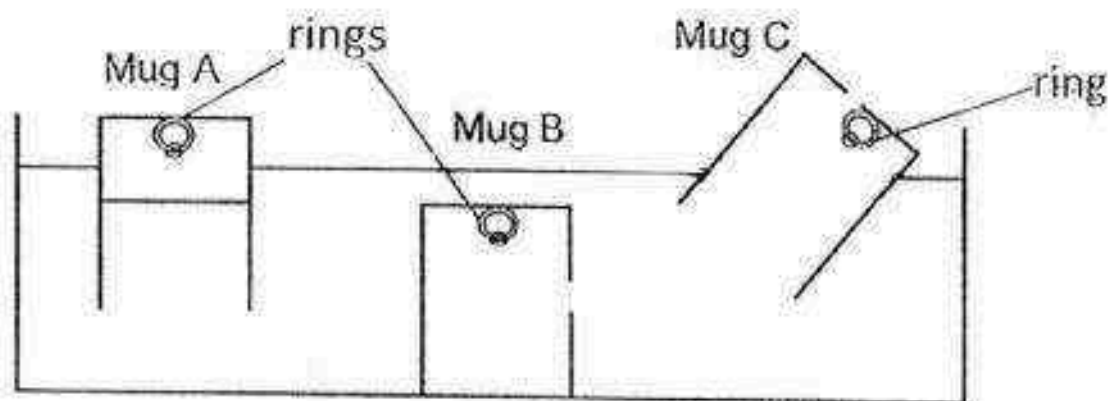
a) What would happen to the insect in each jar after several days? [1]

Jar C: _____

Jar D: _____

b) What conclusion can Ah Ming draw from this experiment? [1]

34. Three mugs, A, B and C, and a basin of water were used in an experiment. Three identical rings were attached to the bottom of the mugs. A hole was only made in Mugs B and C. Then, the 3 mugs were pushed into the water in the positions as shown in the diagram below.



- a) In the diagram above, draw the water level in Mug C. [1]
- b) The ring in Mug B became wet. Explain how this happened. [2]

35. The table below shows the duration of each stage in the life cycle of Insect S.

Stage	Days
Egg	5
Nymph	12
Adult Male	8
Adult Female	9

a) How many stages are there in the life cycle of Insect S? [1]

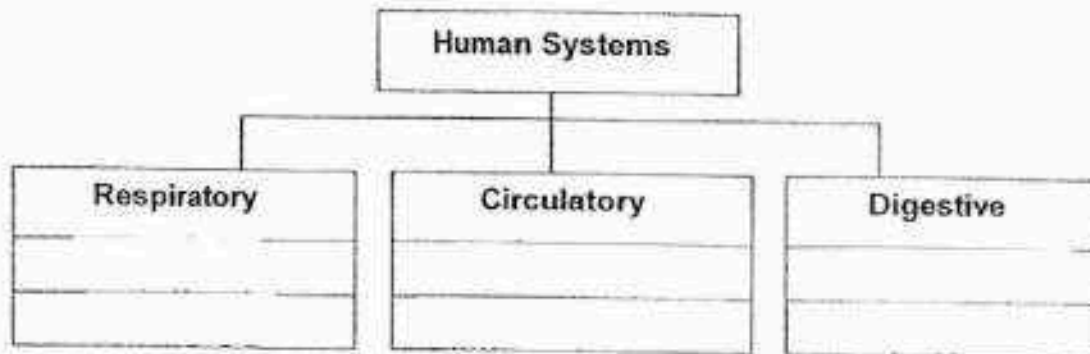
b) How many days would Insect S take to become an adult after the egg is hatched? [1]

c) The adults do not take care of their young. Why do the adult female live longer than the adult male? [1]

36. Group the different body parts into the chart below.

[3]

lungs	mouth	blood vessels
gullet	heart	windpipe



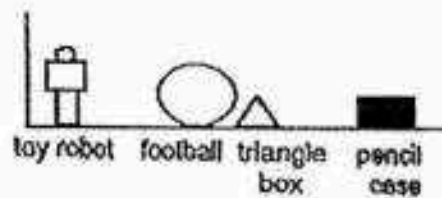
37. Shi Xuan wanted to investigate if the size of the shadow of Shawn's head will be affected when he sat at different distances away from the lamp.



- a) Shi Xuan traced the shadows and recorded her results in the following table.
Write 'T' for every true statement and 'F' for every false statement. [2]

Results	T / F
When Shawn moved closer to the paper, the size of the shadow became smaller.	
When Shawn moved closer to the spot light, the size of the shadow remained unchanged.	
When the spot light was moved closer to Shawn, his shadow became bigger.	
When the spot light was moved further away from Shawn, his shadow became bigger.	

37b) Study the diagram below.

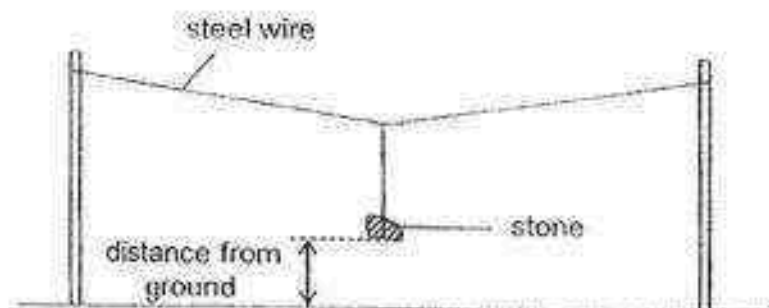


Some objects are placed in a box. Alvin looks into the box from a distance.

i) Which object(s) can Alvin see clearly? [1]

ii) What property of light prevents him from seeing the other things? [1]

38. A stone was hung outdoors on a steel wire that was tied to 2 wooden poles as shown in the following diagram. The temperature ranged from 19°C to 40°C at different times of the day.



The following table shows the stone's distance from the ground at different temperatures during the day.

Temperature ($^{\circ}\text{C}$)	19	23	29	40
Distance from ground (cm)	29.0	28.5	28.0	20.5

- a) Circle the likely distance of the stone from the ground if the temperature is 45°C .

19 cm	25.5 cm	32 cm
-------	---------	-------

[1]

- b) Explain why the stone was closest to the ground at the highest temperature of the day.

[2]

- c) If the stone is replaced by a plastic weight of equal mass, what is the most likely distance from the ground when the temperature is 23°C ?

[1]

39. The table below charts the growth of a green bean seed.

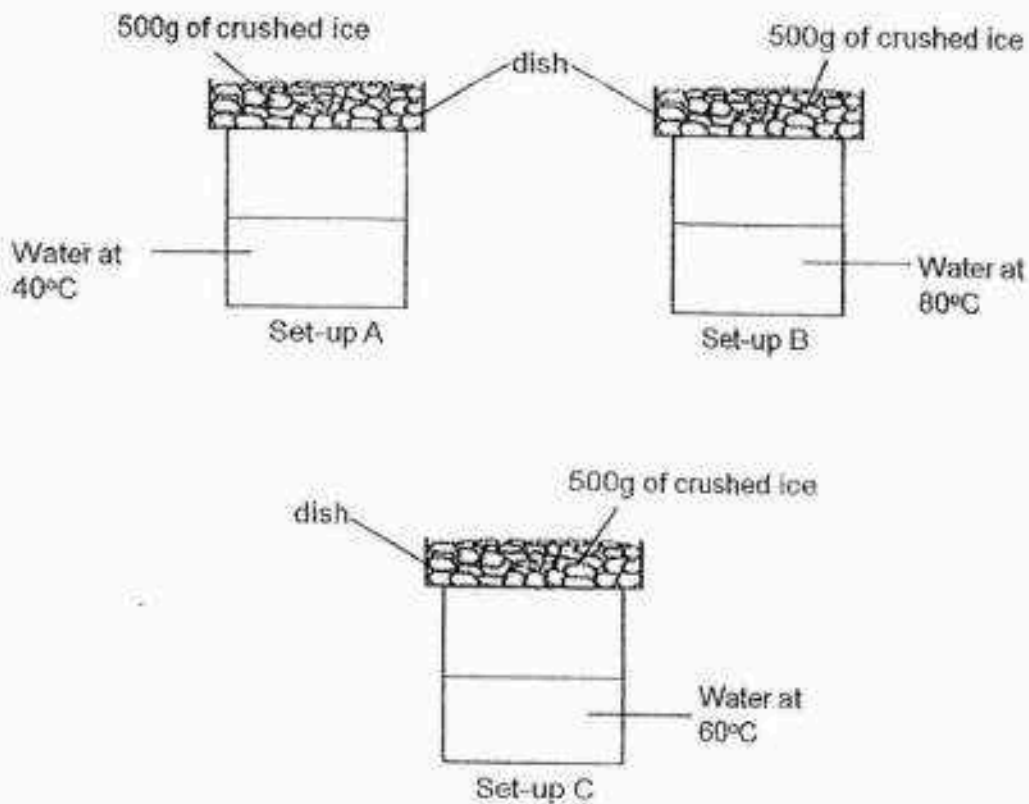
Number of days	0	1	2	3	4	5	6	7
Mass of seed leaves (mg)	10	8	5.8	?	4	3.7	2	1

a) What is the mass of seed leaves on Day 3? [1]

b) Explain why the mass of the seed leaves decreased. [1]

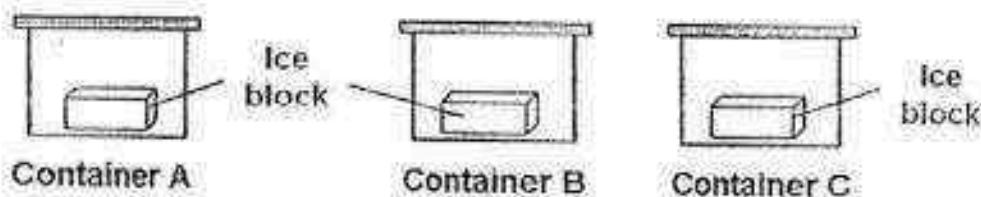
c) Why do you think the plant can survive without any seed leaves after Day 8? [1]

40. David prepares the following set-ups to 'make' rain. Study them carefully.



In which of the above set-ups will most water droplets be found on the underside of the dish? Give a reason to for your answer. [2]

41. Jessy placed 3 similar blocks of ice in 3 similar containers made of different materials, A, B and C, for 30 minutes.



After 30 minutes, she took out the ice block from each container. She then measured the amount of water collected in each container and recorded her findings in the table below.

Container	Amount of water collected (cm^3)
A	65
B	36
C	103

- a) Which variable did Jessy change in this experiment?

[1]

- b) If Jessy is going for a picnic, which container should she use if she wants to transport ice cream? Explain your answer.

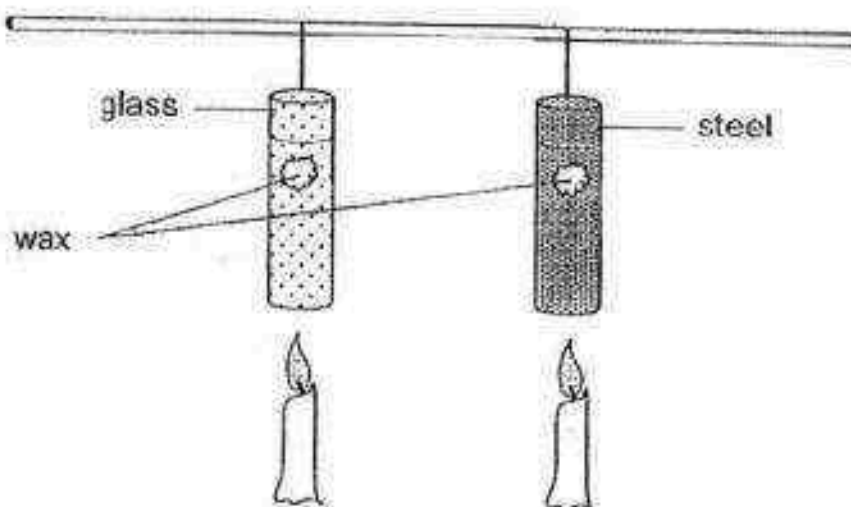
[2]

- c) If Jessy wants to heat up her soup on a stove in the shortest time, which container should she use?

[1]



42. Ahmad conducted an experiment using two rods of the same size as shown in the diagram below. He recorded the time taken for the wax to melt.



- a) State the likely aim of Ahmad's experiment. [2]

- b) Based on Ahmad's aim as stated in part (a), put a tick (✓) in the appropriate column to indicate which variables are to be changed, kept the same or used as results in his experiment. [2]

Variables	Changed	Used as results	Kept the same
Length of material			
Amount of wax used			
Time taken for wax to melt			
Distance between wax and flame			

~ End of Booklet ~



EXAM PAPER 2016 (P4)

SCHOOL : SCGS


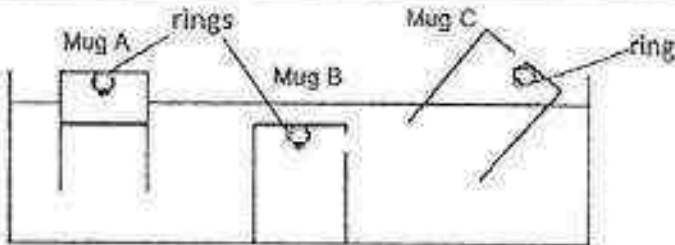
SUBJECT : SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	3	3	1	2	2	2	1	1
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	3	1	4	2	3	4	3	4	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	4	4	3	1	2	3	3		

Name: _____ Class: _____

SCGS SA2 PRIMARY 4 SCIENCE

QN	Suggested Answers								
29a	light								
29b	clear plastic								
29c	Steel is stronger than glass.								
30a	non-magnetic								
30b	repelling								
30c	<table border="1"> <thead> <tr> <th>Sentence</th><th>Tick</th></tr> </thead> <tbody> <tr> <td>Rod J attracted less pins than Rod K.</td><td></td></tr> <tr> <td>Rod J attracted more pins than Rod K.</td><td>✓</td></tr> <tr> <td>Rod J attracted the same number of pins as Rod K.</td><td></td></tr> </tbody> </table>	Sentence	Tick	Rod J attracted less pins than Rod K.		Rod J attracted more pins than Rod K.	✓	Rod J attracted the same number of pins as Rod K.	
Sentence	Tick								
Rod J attracted less pins than Rod K.									
Rod J attracted more pins than Rod K.	✓								
Rod J attracted the same number of pins as Rod K.									
31a	blocked								
31b									
31c	lightning and star in sky								
32	a) liquid b) solid								
33a	Jar C: The insect will die. Jar D: The insect will still be alive.								
33b	The experiment shows that living things/ Insects need water and food to stay alive.								
34a									
34b	Air in mug B escaped through the hole so that water from the basin could then enter the mug to occupy the space.								
35a	3 stages								
35b	12 days								
35c	The adult female needs to lay eggs.								

QN	Suggested Answers																				
36	<ul style="list-style-type: none">• Respiratory – Windpipe and lungs• Circulatory – Blood vessels and heart• Digestive – Mouth and gullet																				
37a	<table><tr><td>1.</td><td>True (T)</td></tr><tr><td>2.</td><td>False (F)</td></tr><tr><td>3.</td><td>True (T)</td></tr><tr><td>4.</td><td>False (F)</td></tr></table>	1.	True (T)	2.	False (F)	3.	True (T)	4.	False (F)												
1.	True (T)																				
2.	False (F)																				
3.	True (T)																				
4.	False (F)																				
37b(i)	Football and pencil case																				
37b(ii)	Light travels in straight lines.																				
38a.	19 cm																				
38b.	On the hottest day, the steel wire gained the most heat and expanded the most. The steel wire became the longest so the stone was the closest to the ground.																				
38c.	28.5 cm																				
39a	Any mass between 4.1mg to 5.7mg																				
39b	The baby plant depends on the seed leaves for food and it used up the food in the seed leaves over time.																				
39c	The plant is able to make its own food as it has grown leaves.																				
40)	Set-up B has the greatest temperature difference between hotter water vapour and cooler underside of dish so water vapour will condense fastest into water droplets on the cooler surface.																				
41a	Material of container																				
41b	Container B. As B is the poorest conductor of heat so the heat from the surroundings will be lost to the ice cream in the container the slowest . Thus the ice cream will melt the slowest.																				
41c	Container C																				
42a	To find out which material, glass or steel, is a better/ poorer conductor of heat..																				
42b	<table><tr><th>Variables</th><th>Changed</th><th>Result</th><th>Same</th></tr><tr><td>Length of material</td><td></td><td></td><td>✓</td></tr><tr><td>Amount of wax used</td><td></td><td></td><td>✓</td></tr><tr><td>Time taken for wax to melt</td><td></td><td>✓</td><td></td></tr><tr><td>Distance between wax and flame</td><td></td><td></td><td>✓</td></tr></table>	Variables	Changed	Result	Same	Length of material			✓	Amount of wax used			✓	Time taken for wax to melt		✓		Distance between wax and flame			✓
Variables	Changed	Result	Same																		
Length of material			✓																		
Amount of wax used			✓																		
Time taken for wax to melt		✓																			
Distance between wax and flame			✓																		



MARIS STELLA HIGH SCHOOL (PRIMARY)

SEMESTRAL ASSESSMENT 2

SCIENCE

27 OCTOBER 2016

BOOKLET A

NAME: _____ ()

CLASS: Primary 4 ()

30 questions

60 marks

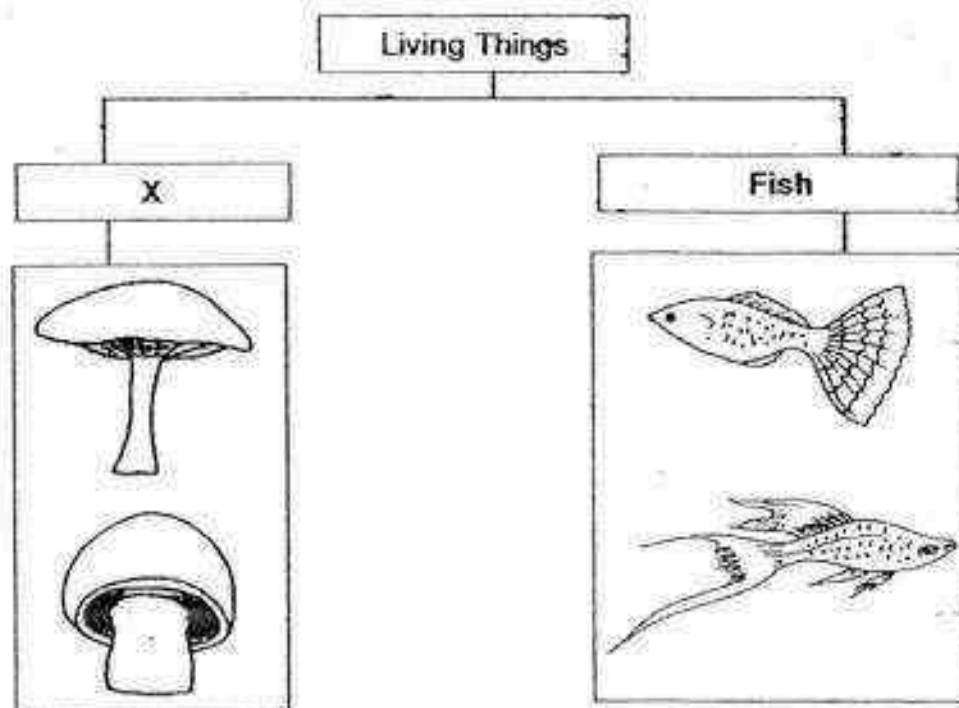
Total Time for Booklets A & B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

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 The table below shows how some living things can be grouped.



Which one of the following is the most suitable heading for group X?

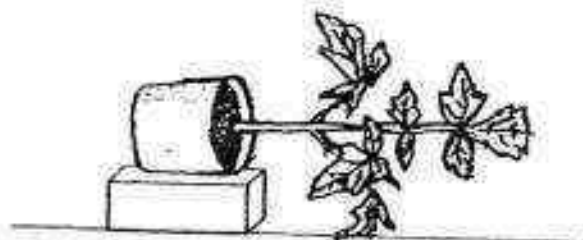
- (1) Fungi
 - (2) Insects
 - (3) Bacteria
 - (4) Mammals
- 2 Matter is anything that has mass and occupies space.
- Which of the following is not a matter?

- (1) Soil
- (2) Water
- (3) Oxygen
- (4) Lightning

3. Which of the following properties about air and pencil is true?

- (1) Both can be seen.
- (2) Both take up space.
- (3) Both have fixed shape.
- (4) Both have fixed volume.

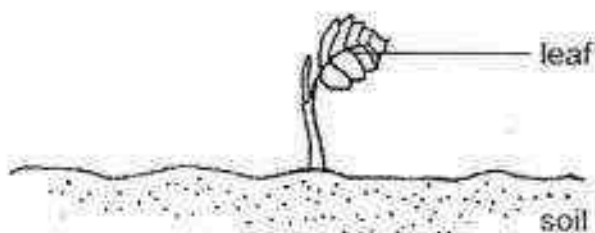
4. Ali left a pot of plant in an open space in the garden as shown below.



What will happen to the plant after a few days?

- (1) The plant will begin to grow upwards.
- (2) The plant will begin to grow downwards.
- (3) The plant will continue to grow horizontally.
- (4) The plant will stop growing and will eventually die.

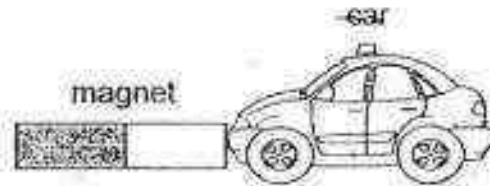
5. The diagram below shows a young plant.



The leaf helps the plant to _____.

- (1) make food
- (2) grow upright
- (3) takes in water
- (4) take in nutrients

- 6 When a toy is placed near a magnet, it becomes attracted to the magnet as shown in the figure below.



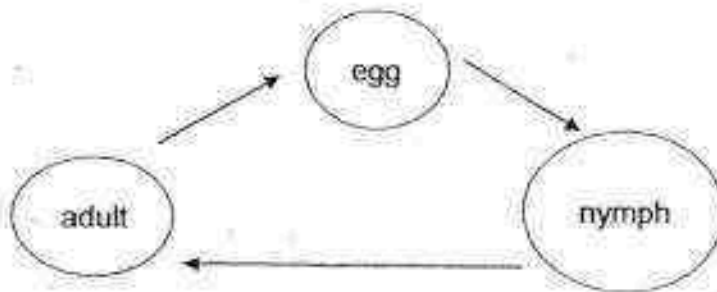
The toy is made of _____.

- (1) iron
 - (2) plastic
 - (3) rubber
 - (4) copper
- 7 Which one of the following statements is true for ALL insects?
- (1) They have tails.
 - (2) They have wings.
 - (3) They live on land.
 - (4) They have six legs.
- 8 Hui Lin is able to roll up 10 metres of rope shown below because the material used is _____.



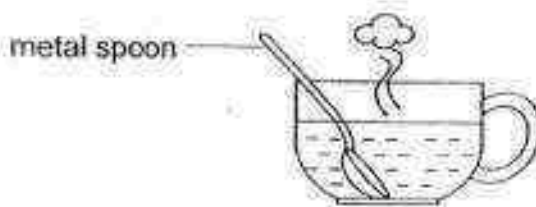
- (1) hard
- (2) strong
- (3) flexible
- (4) waterproof

- 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) butterfly
 - (3) chicken
 - (4) cockroach
- 10 Which one of the following substances has a fixed shape?
- (1) air
 - (2) oil
 - (3) water
 - (4) stone
- 11 Rex 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.

12. Lexter did a study on animals X and Y. He recorded his observations in the table below.

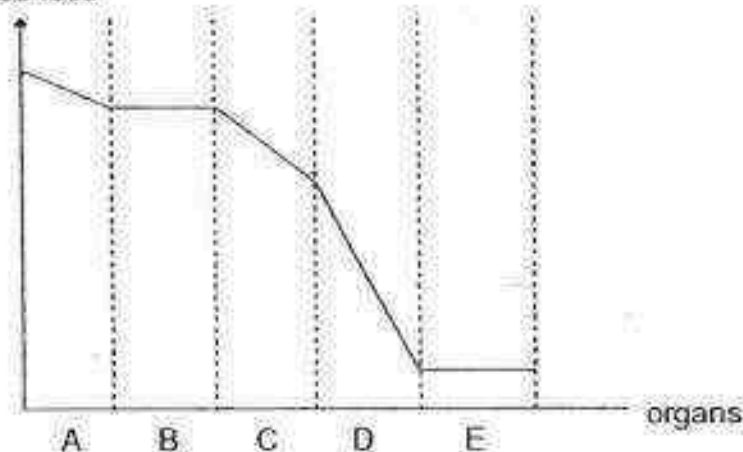
Animal X	Animal Y
Gives birth to its young alive	Lays eggs
Has no wings	Has wings

Which one of the following is most likely true about both animals X and Y?

	Animal X	Animal Y
(1)	Amphibian	Insect
(2)	Bird	Mammal
(3)	Mammal	Bird
(4)	Insect	Amphibian

13. The graph below shows the amount of undigested food as it passes through the different organs in the human digestive system.

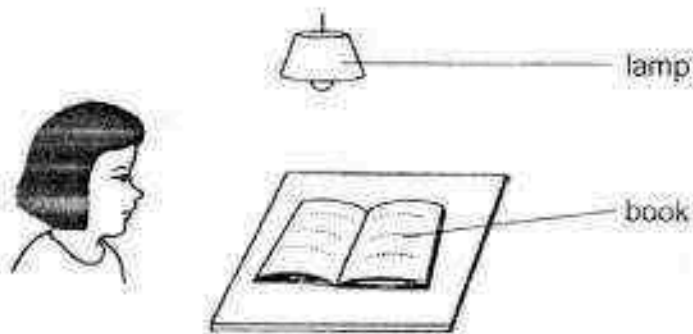
Amount of undigested food



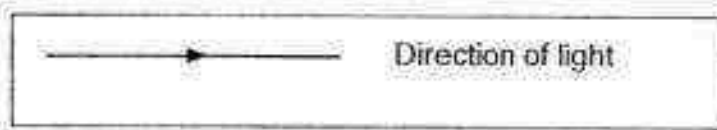
Which of the following sets of organs best represents A, C and D?

	A	C	D
(1)	small intestine	stomach	mouth
(2)	mouth	stomach	small intestine
(3)	gullet	mouth	stomach
(4)	mouth	gullet	small intestine

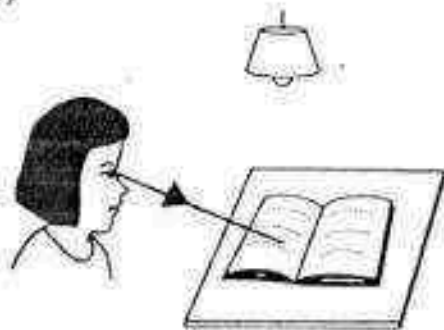
14 Look at the picture below.



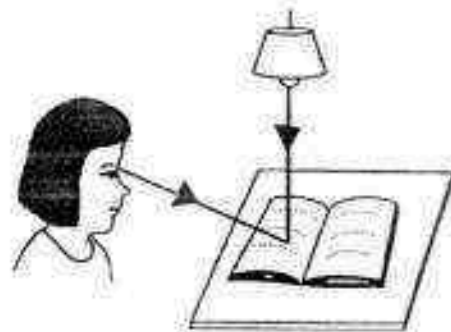
Which one of the following shows how Sue can see the book on the table?



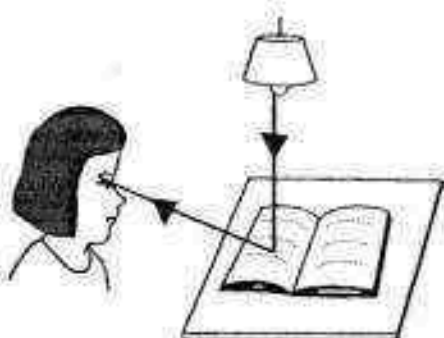
(1)



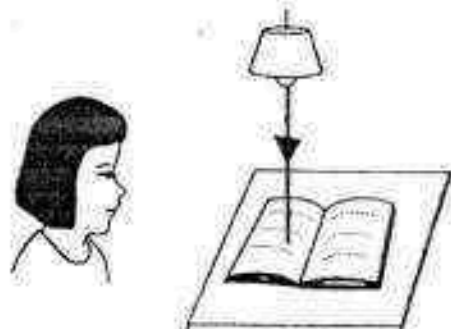
(2)



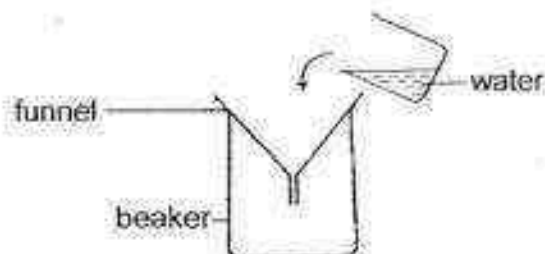
(3)



(4)



- 15 Ben poured water into an empty beaker as shown below. However, he observed that water did not flow easily into the beaker.



Which of the following statement(s) is/are able to explain his observation?

- A Water cannot be compressed.
- B The air in the beaker cannot escape.
- C The air in the beaker takes up space.
- D Water has a definite shape and definite volume.

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

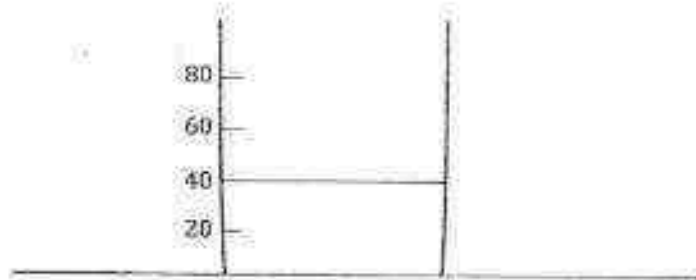
- 16 The diagram below shows a plastic bottle spray filled with some water.



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

- 17 40 ml of water was poured into a beaker as shown below.



Then, a bottle completely filled with water was submerged into the beaker of water as shown below.



What is the most likely volume of water in the bottle?

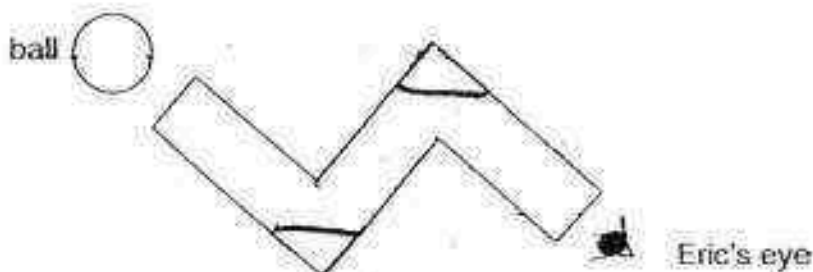
- (1) Exactly 40 cm^3
 - (2) Exactly 60 cm^3
 - (3) Between 10 cm^3 to 20 cm^3
 - (4) Between 20 cm^3 to 30 cm^3
- 18 Study the human body system below.



Which one of the following statements is not correct about the above human system?

- (1) It supports the body.
- (2) It gives the body its shape.
- (3) It takes in air into the body.
- (4) It protects the heart and lungs.

- 19 The diagram below shows a bent tube.

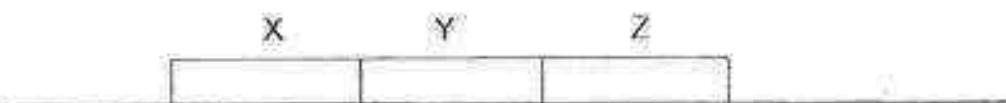


What is the least number of mirrors that has to be placed inside the bent tube so as to enable Eric to see the ball?

- (1) 1
 - (2) 2
 - (3) 3
 - (4) 4
- 20 Items X, Y and Z were placed on a smooth surface as shown below.



The below was immediately observed after the items were placed on the surface.



Which of the following statements are possibly true about the items?

- A All three items are magnets.
 - B Item Y is a magnet while X and Z are non-magnetic.
 - C Item X is magnet, Y is non-magnetic and Z is magnetic.
 - D Item X is non-magnetic, Y is magnetic and Z is a magnet.
- (1) A and B only
 - (2) A and C only
 - (3) C and D only
 - (4) A and D only

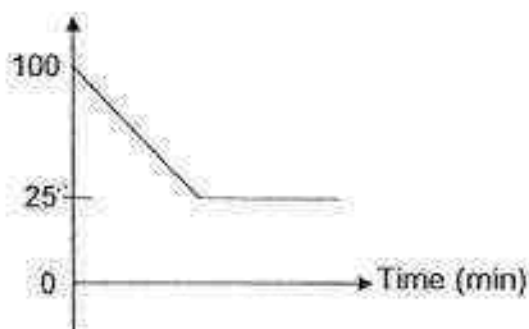
- 21 Matthew wants to find out if the type of batteries used affects the magnetism of an electromagnet.

Set-up	Number of coils	Number of batteries	Brand of batteries
A	20	2	Sonny
B	20	4	Engiz
C	40	2	Sonny
D	20	2	Engiz

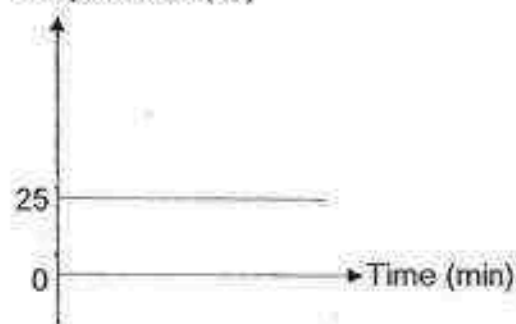
Which two set-ups should Matthew use for his experiment?

- (1) A and B
 (2) A and C
 (3) B and D
 (4) A and D
- 22 Which of the following graphs correctly shows the temperature of a basin of tap water when left over time on a table?

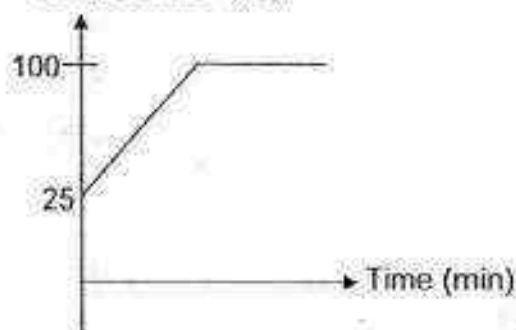
(1) Temperature ($^{\circ}\text{C}$)



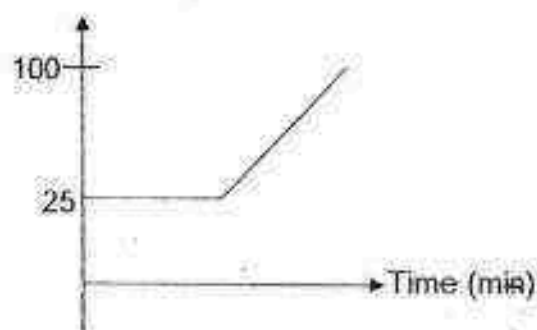
(2) Temperature ($^{\circ}\text{C}$)



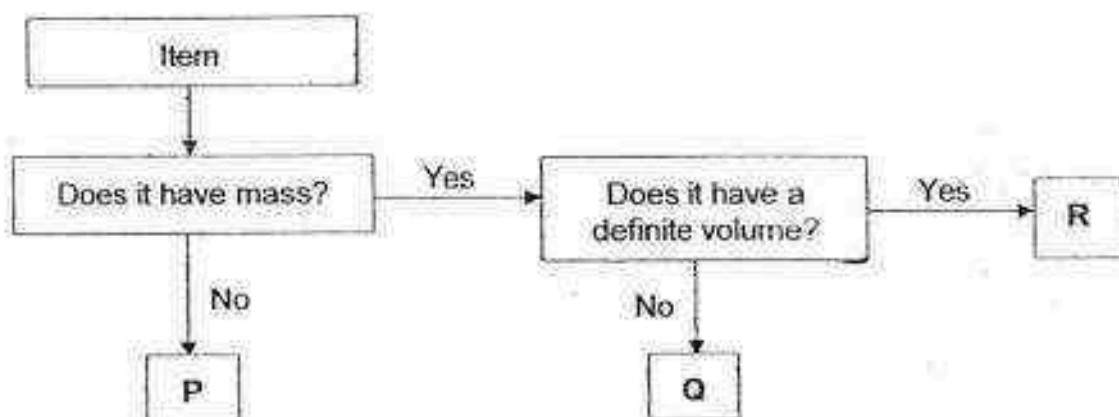
(3) Temperature ($^{\circ}\text{C}$)



(4) Temperature ($^{\circ}\text{C}$)



23 Study the flowchart below.



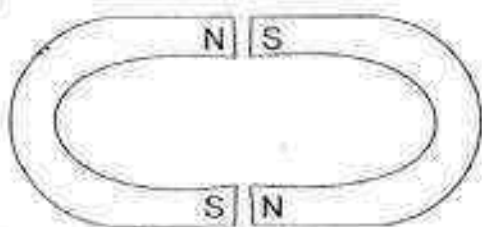
Which one of the following is most likely items P, Q and R?

	Item P	Item Q	Item R
(1)	Air ✓	Shadow ✗	Water ✓
(2)	Sound ✗	Water ✗	Rocks ✗
(3)	Water ✓	Shadow ✗	Air ✗
(4)	Shadow	Air	Water

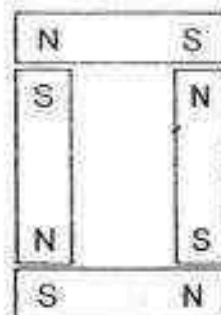
24 Study the arrangements of the magnets below.

Which arrangement is not possible?

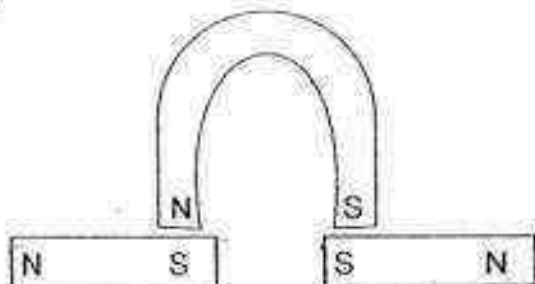
(1)



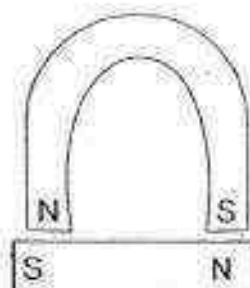
(2)



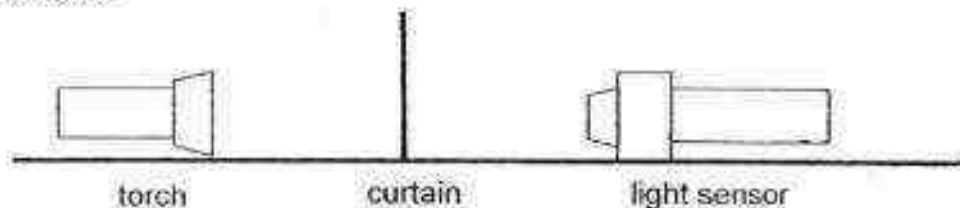
(3)



(4)



- 25 Mrs Lee used a light sensor to measure the amount of light passing through different types of curtains.

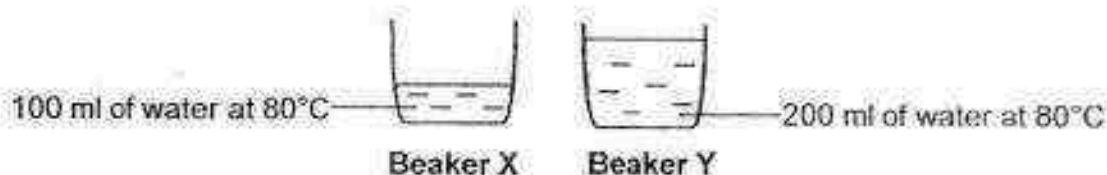


Curtain	Amount of light (units)
A	0
B	330
C	1000
D	3300

Which type of curtain should Mrs Lim choose for her bedroom if she wants the room to be as dark as possible?

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

- 26 The diagrams below show two identical beakers, X and Y. The two beakers contain different amounts of water.



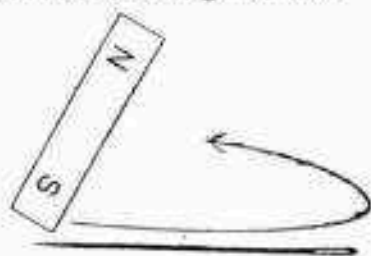
Three students made the following statements.

- Ann: The water in Y has more heat energy ^{than} that X.
- Ben: The water in both beakers has the same temperature.
- Claire: The water in both beakers has the same amount of heat energy.

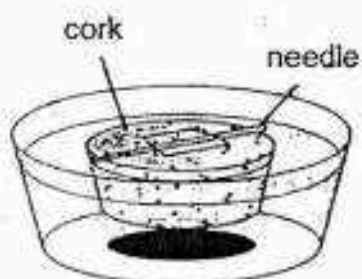
Whose comment(s) is/are correct?

- (1) Ann only
- (2) Claire only
- (3) Ann and Ben only
- (4) Ann and Claire only

- 27 Sue magnetised a needle in the following manner.



Then, the needle was placed on a piece of cork and allowed to float freely on water till it comes to a complete stop.

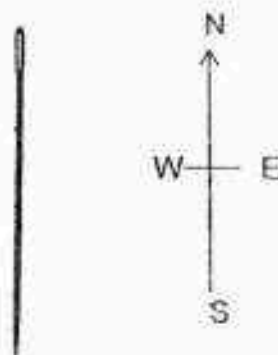


Which of the following shows the correct direction of the needle when it comes to a complete stop?

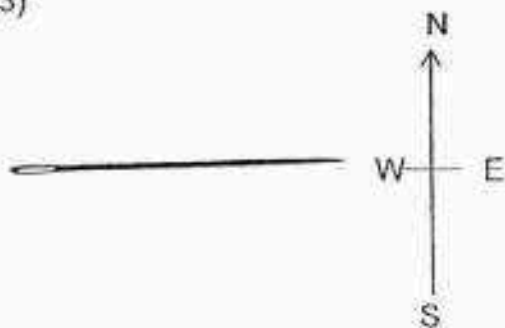
(1)



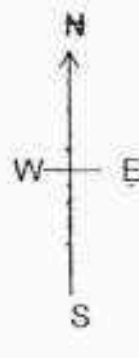
(2)



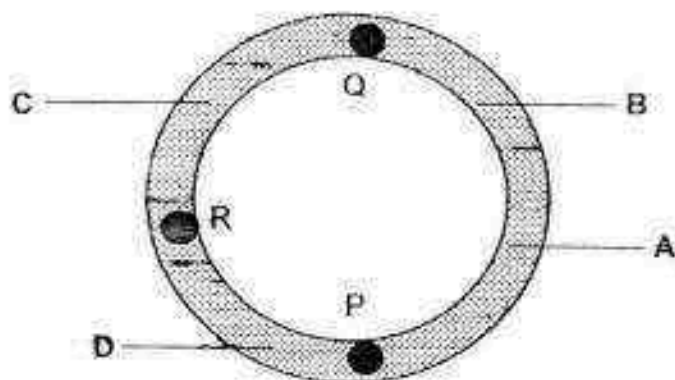
(3)



(4)



- 28 The diagram below shows a metal ring with three pieces of wax attached at points P, Q and R.



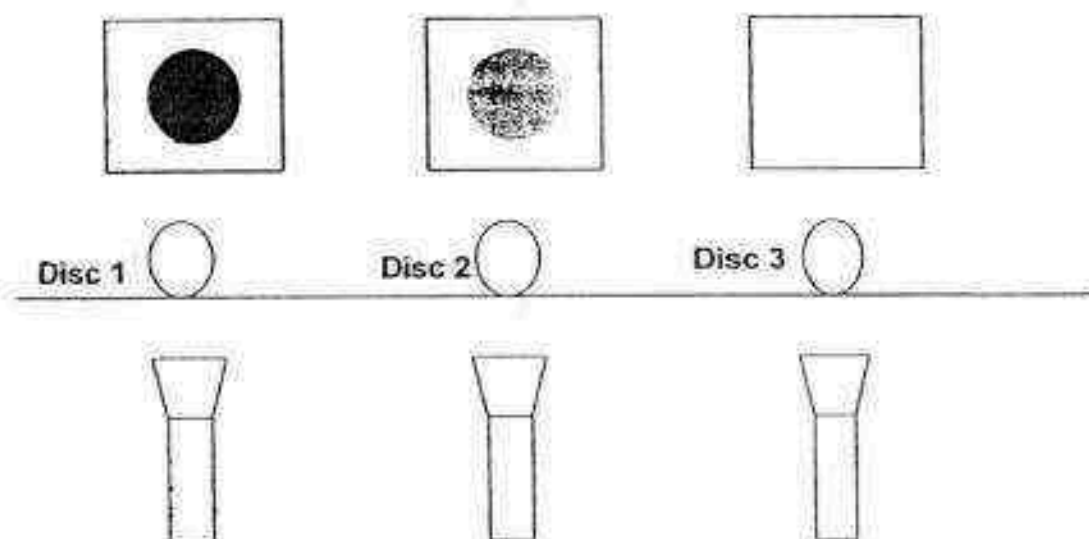
The metal ring was then heated at one of the points. The time taken for each piece of wax to melt completely is shown in the table below.

Wax	Time taken for the drop of wax to melt completely (min)
P	2
Q	5
R	3

Based on the results, at which point, A, B, C or D, was heat most likely applied?

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

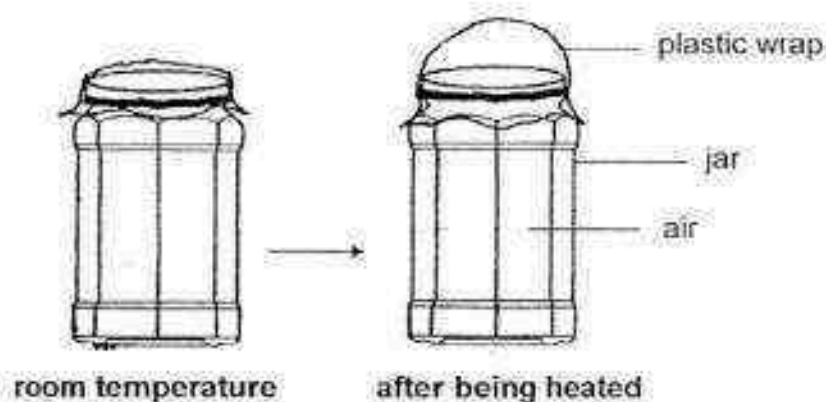
- 29 Three similar light sources with similar light intensity were shone at three different discs. The results can be seen on the screen as shown below.



Which materials are the three discs most likely made of?

	Disc 1	Disc 2	Disc 3
(1)	Wood	Clear plastic	Metal
(2)	Clear plastic	Frosted glass	Tracing paper
(3)	Metal	Frosted glass	Clear glass
(4)	Clear glass	Tracing paper	Metal

- 30 Mrs Chew covered a jar tightly with a piece of plastic wrap so that air could not enter it. The pictures below show the jar before and after she heated it.



What happened to the mass and volume of the air in the jar after it was heated?

	Mass of jar	Volume of air in the jar
(1)	increased	increased
(2)	remained the same	increased
(3)	increased	remained the same
(4)	remained the same	remained the same

End of Booklet A



MARIS STELLA HIGH SCHOOL (PRIMARY)

SEMESTRAL ASSESSMENT 2

SCIENCE

27 OCTOBER 2016

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

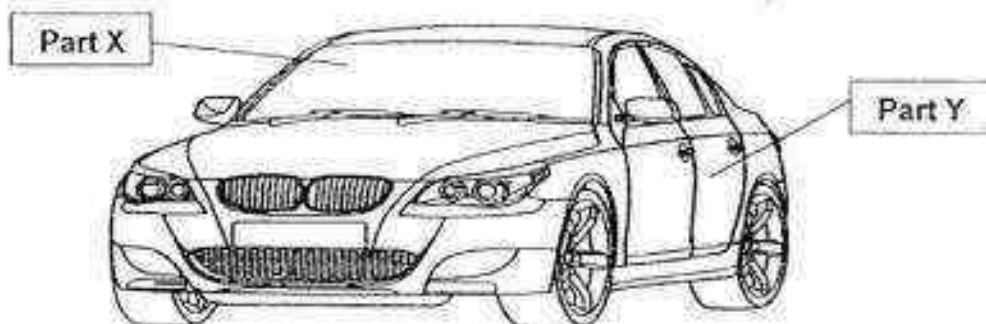
BOOKLET B: _____ / 40

TOTAL: _____ / 100

PARENT'S SIGNATURE: _____

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 The diagram below shows a car.

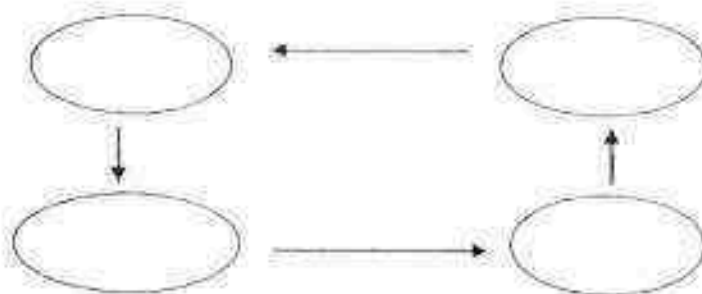


- (a) Part X is made of glass because it allows _____ to pass through so that the driver can see the road. [1]
- (b) Part Y is made of _____ because Y has to be strong. [1]

32 The stages in the life cycle of a mosquito are shown below.

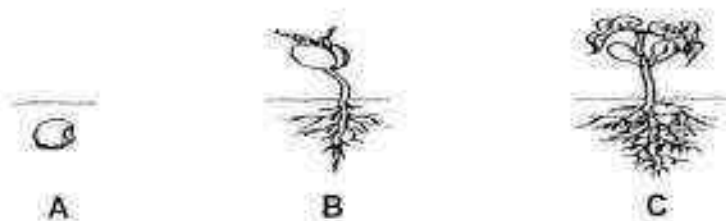


- (a) Arrange the stages of the life cycle in the correct order and fill them in the diagram below. [1]



- (b) Name another insect that has a similar life cycle as the mosquito? [1]

- 33 The diagram below shows the stages in the life cycle of a plant.



Choose the correct words from the box to answer the questions below.

egg	seed	young plant	adult plant
-----	------	-------------	-------------

- (a) Name stages A and B in the life cycle of the plant. [2]

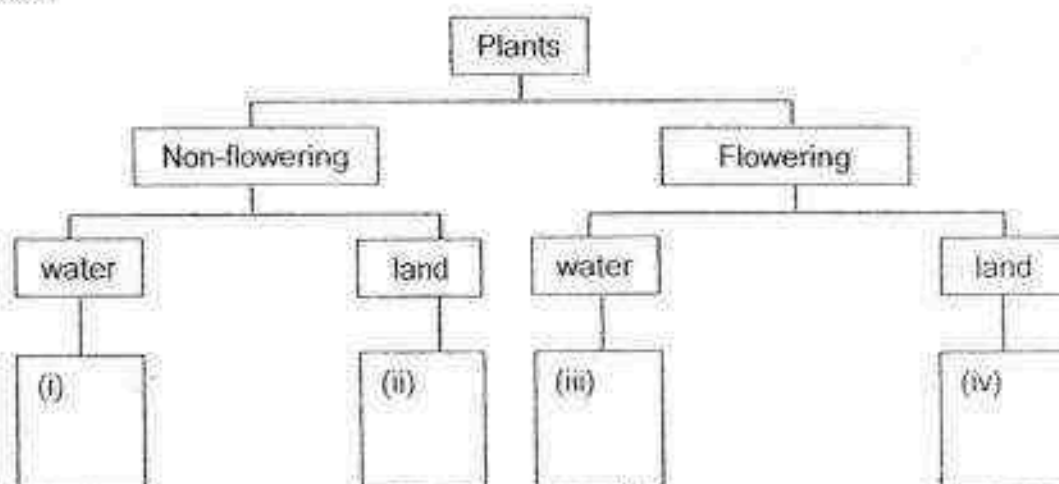
Stage A: _____ Stage B: _____

- (b) Name the part of the seed that grows out first. _____ [1]

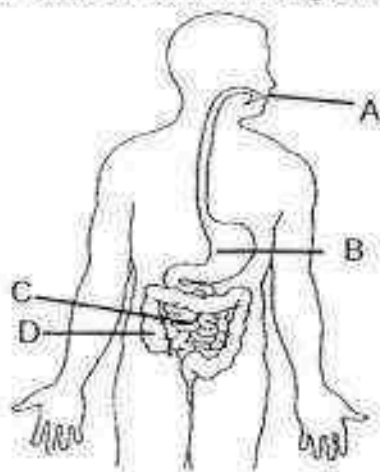
- 34 Study the table below.

Characteristics	Plants			
	A	B	C	D
Has flowers		✓		✓
Grows in water	✓			✓

Based on the table above, classify plants, A, B, C and D, in the classification chart below. [2]



- 35 The diagram below shows the human digestive system.

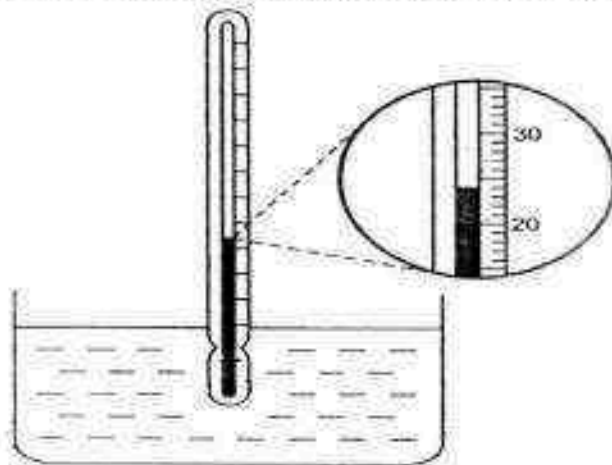


Identify the parts (A, B, C or D) to the functions below.

[3]

	Function	Part
(i)	Water is absorbed	
(ii)	Digestion first takes place	
(iii)	Digested food is absorbed	

- 36 Jane used an instrument to measure the temperature of water in a basin.



- (a) What is the instrument called?

[1]

- (b) What is the temperature of the water in the glass?

_____ °C

[1]

	5
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(Go on to the next page)

- 37 Susan places a magnet near an iron rod. The iron rod moves towards the magnet.



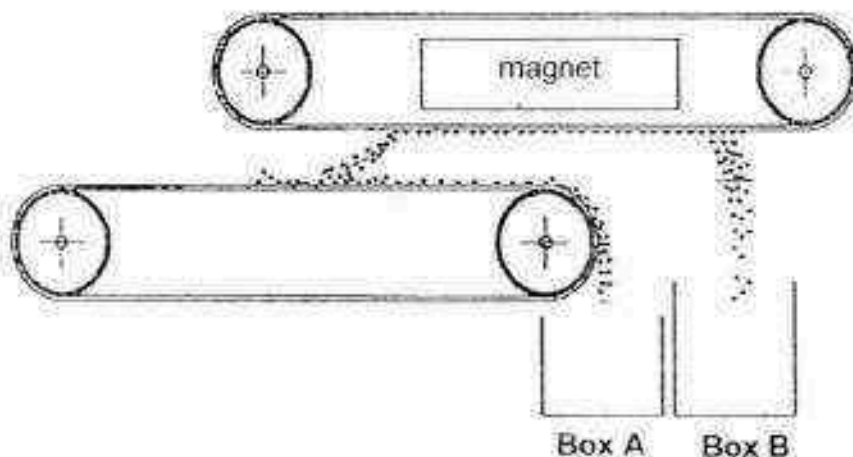
- (a) The magnet exerts a _____ on the iron rod. [1]

- (b) Choose the correct word from the box to answer the question below. [1]



Susan's observation shows that iron is a _____ material.

- (c) Susan makes use of a machine with magnet to separate the objects into different boxes as shown below.



The table below shows the list of objects that are sent through the machine. Put a tick (✓) in the correct boxes to identify if the objects will drop into box A or box B. [2]

	Object	Drop into Box A	Drop into Box B
(i)	Nickle ring		
(ii)	Steel balls		
(iii)	Silver coins		
(iv)	Glass marbles		

38 The pictures below show an amphibian and a fish.



amphibian



fish

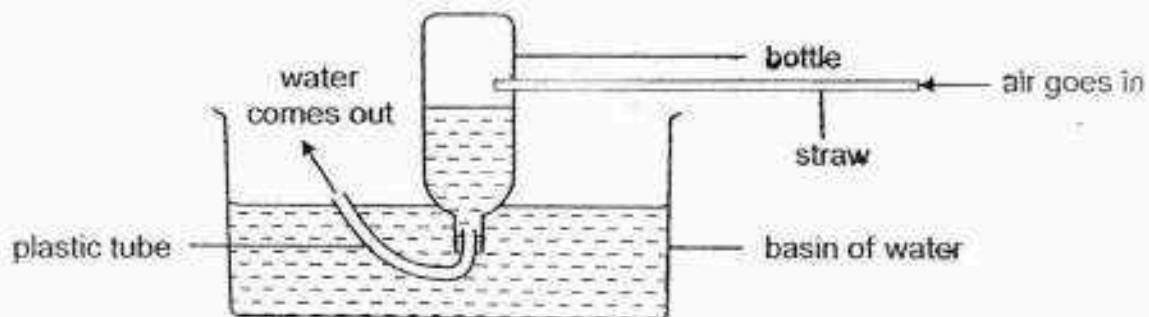
(a) State one similarity in the way the amphibian and fish reproduce. [1]

(b) State two differences between the amphibian and fish in terms of their: [2]

(i) Body covering

(ii) Method of breathing

- 39 Ryan set up an experiment as shown below. He took a deep breath and blew as much air as he could into the bottle through the hole using the straw.

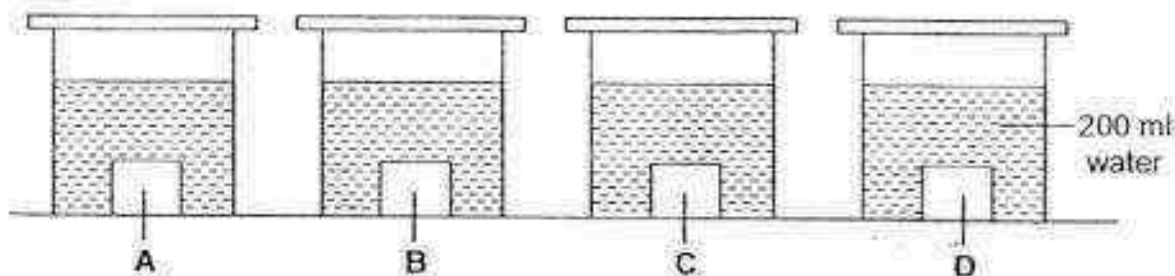


- (a) What will happen to the water level in the bottle after he blew air into the bottle? [1]

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

- (c) What property of water is shown in this experiment? [1]

- 40 Four cubes, A, B, C and D, made of different materials were placed in four identical covered containers. Each container was filled with 200 ml of water as shown below:



After 10 minutes, the cubes were removed and the amount of water left in each container was recorded in the table below:

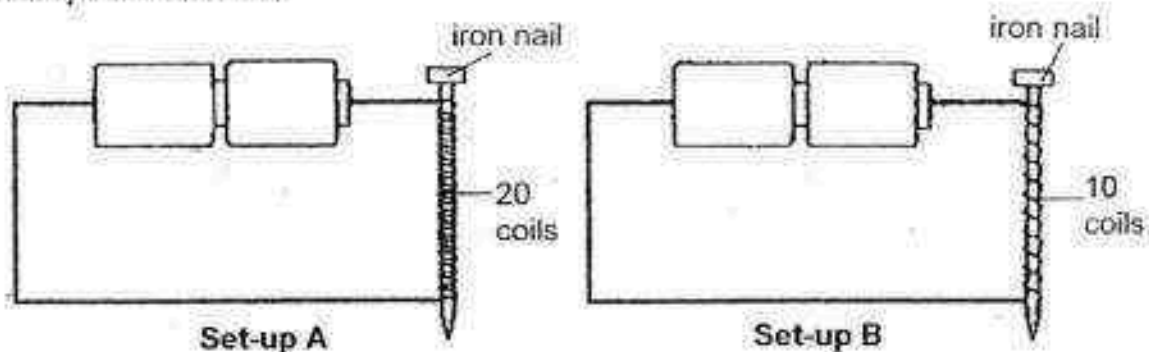
Material of cube	A	B	C	D
Amount of water left in the container (ml)	140	168	200	185

- (a) Based on the result above, which material, A, B, C or D, absorbed the most water? [1]

- (b) Which material, A, B, C or D, is best suited to make a water bottle? Why? [1]

- (c) State another important variable that must be kept the same for the experiment to be fair. [1]

- 41 John set up the two electromagnets as shown below. The materials used for both set-ups are identical.



He then recorded the number of paper clips attracted by the electromagnets in the table below.

Set up	Number of paper clips attracted
A	25
B	10

- (a) State the following variables of John's experiment. [2]

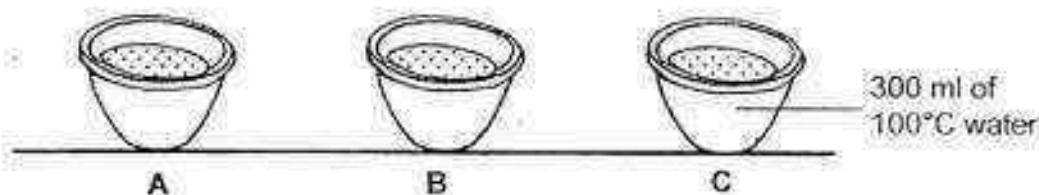
(i) Manipulated variable: _____

(ii) Responding variable: _____

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

- (c) State the relationship between the number of coils around the iron nail and the number of paperclips attracted. [1]

42. Fred filled three cups, A, B and C, of different materials with 300 ml of boiling water. He placed them on the table as shown below.



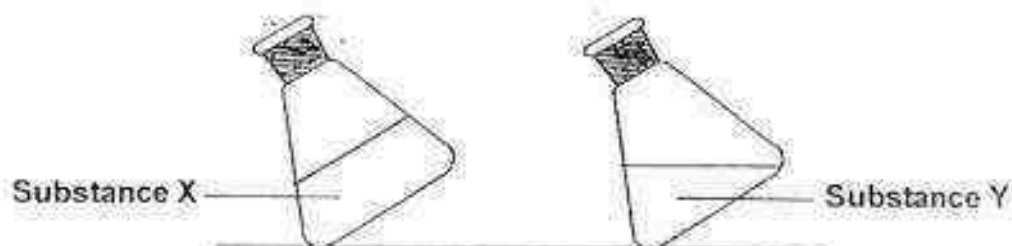
After 20 minutes, he measured the temperature of water in each cup in the table below.

Cup	Temperature after 20 min ($^{\circ}\text{C}$)
A	80
B	65
C	55

- (a) Which cup, A, B or C, should Fred use to serve ice-cream such that the ice-cream will melt the slowest? [1]

- (b) Give a reason for your answer (a). [1]

- (c) Fred took two identical flasks filled with 300 ml of two different substances, X and Y. He tilted both flasks as shown below.



Based on the observations above, what are the likely states of substances X and Y? [1]

X: _____

Y: _____



(Go on to the next page)

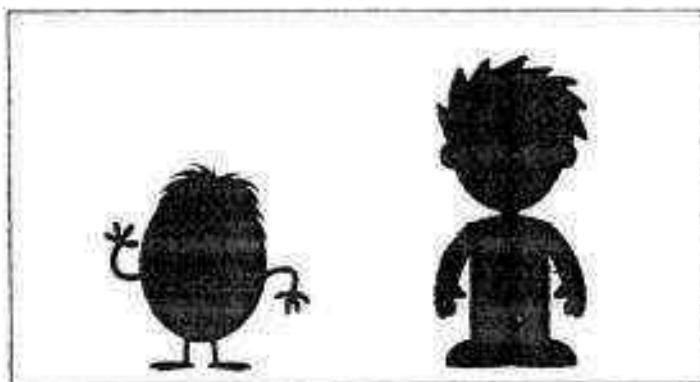
- 43 Jim positioned 2 puppets between a torch and a big screen.



The 2 puppets, A and B, are of similar height, as shown below.



The shadows cast on the screen are as shown below.



- (a) Which puppet, A or B, is placed nearer to the torch?

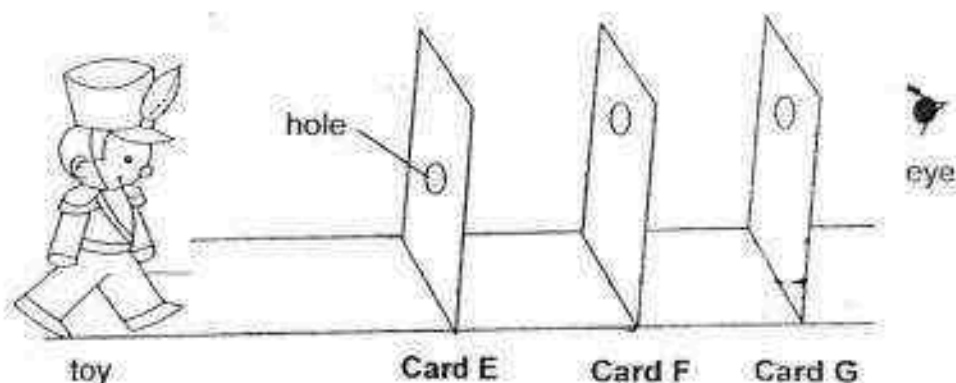
[1]

- (b) Without changing the items used, state two other changes that can be made to increase the size of shadows cast on the screen. [2]

(i) _____

(ii) _____

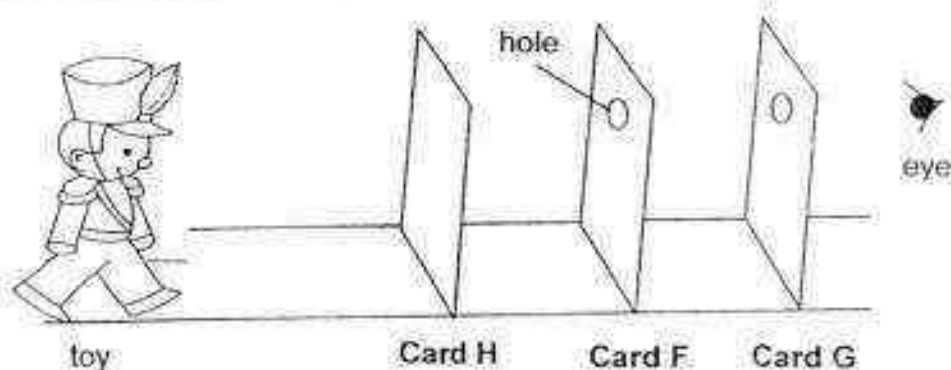
- 44 June set up an experiment with a toy and three pieces of card, E, F and G, in a lighted room as shown below. There was a hole on each of the card.



- (a) June looked through the holes but discovered that she was unable to see the toy. Give a reason why June was unable to see the toy. [1]

- (b) State a property of light that is demonstrated in this experiment. [1]

- (c) June replaced card E with another piece of card, H, of the same size but with no hole on it as shown below.



Although there was no hole on the card H, June was able to see the toy. Name the property of card H that allows June to see the toy? [1]

END OF BOOKLET B

YEAR : 2016
 LEVEL : PRIMARY 4
 SCHOOL : MARIS STELLA HIGH
 SUBJECT : SCIENCE
 TERM : SA2

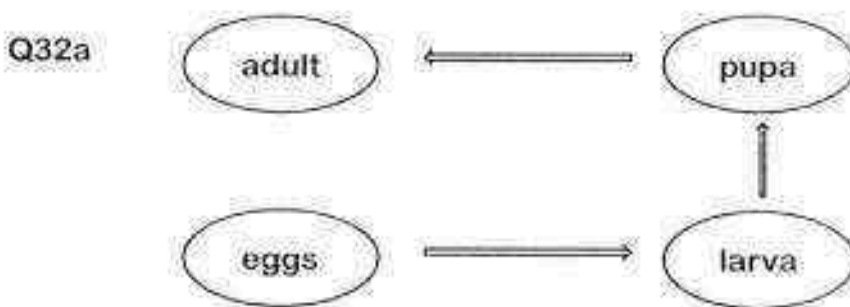
Booklet A

Q1	1	Q6	1	Q11	3	Q16	2	Q21	4	Q26	3
Q2	4	Q7	4	Q12	3	Q17	4	Q22	2	Q27	2
Q3	2	Q8	3	Q13	2	Q18	3	Q23	4	Q28	4
Q4	1	Q9	4	Q14	3	Q19	2	Q24	3	Q29	3
Q5	1	Q10	4	Q15	3	Q20	2	Q25	1	Q30	2

Booklet B

Q31a Part X is made of glass because it allows light to pass through so that the driver can see the road.

Q31b Part Y is made of metal because Y has to be strong.



Q32b Butterfly

Q33a Stage A : seed Stage B : young plant

Q33b Roots

Q34 (i) A (ii) C (iii) D (iv) B

Q35

	Function	Part
(i)	Water is absorbed	D
(ii)	Digestion first takes place	A
(iii)	Digested food is absorbed	C

Q36a Thermometer

Q36b 24 °C

Q37a The magnet exerts a pull on the iron rod.

Q37b Susan's observation shows that iron is a magnetic material.

Q37c

	Object	Drop into Box A	Drop into Box B
(i)	Nickle ring		✓
(ii)	Steel balls		✓
(iii)	Silver coins	✓	
(iv)	Glass marbles	✓	

Q38a They both lay eggs.

Q38b (i) The amphibian has moist skin but the fish has scales.

(ii) The amphibian breathes through lungs and skin but the fish breathes through gills.

Q39a The water level would decrease.

Q39b Air takes up space, so when the air goes into the flask, it would push all the water out.

Q39c Water occupies space.

Q40a Material A absorbed the most water.

Q40b Material C. It is waterproof, so when water is inside the water bottle, it will not be absorbed by the material.

Q40c The size of the cube.

Q41a (i) Manipulated variable : The number of coils.

(ii) Responding variable : Number of clips attracted.

Q41b To find if the number of coils around the iron nail effects its magnetism.

Q41c The more amount of coils, the more paper clips it would be attracted.

- Q42a Material A.
- Q42b A is the poorest conductor of heat and it will lose heat to the ice cream the slowest.
- Q42c X : solid Y : liquid
- Q43a Puppet A
- Q43b (i) Move the screen further away from the puppets.
(ii) Move the torch nearer to the puppets.
- Q44a Light reflected from the toy is blocked by card E and did not go into June's eyes.
- Q44b Light travels in a straight line.
- Q44c Card H was transparent.