



AI TONG SCHOOL
2013
CONTINUAL ASSESSMENT 1
PRIMARY FOUR
SCIENCE

DURATION : 1hr
DATE: 7th March 2013

INSTRUCTIONS

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

Name : _____ ()

Class : Primary _____

Parent's Signature : _____

Date : _____

MARKS	50
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Section A (15 x 2 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 the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. A robotic toy dog can run and bark when its head is patted. However, it will definitely not be able to _____.

- A grow
- B move
- C respond
- D reproduce

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

2. Ahmad, Ben, Clara and David are given some blocks to arrange into 2 groups, A and B.



Ahmad	
A	B

Ben	
A	B

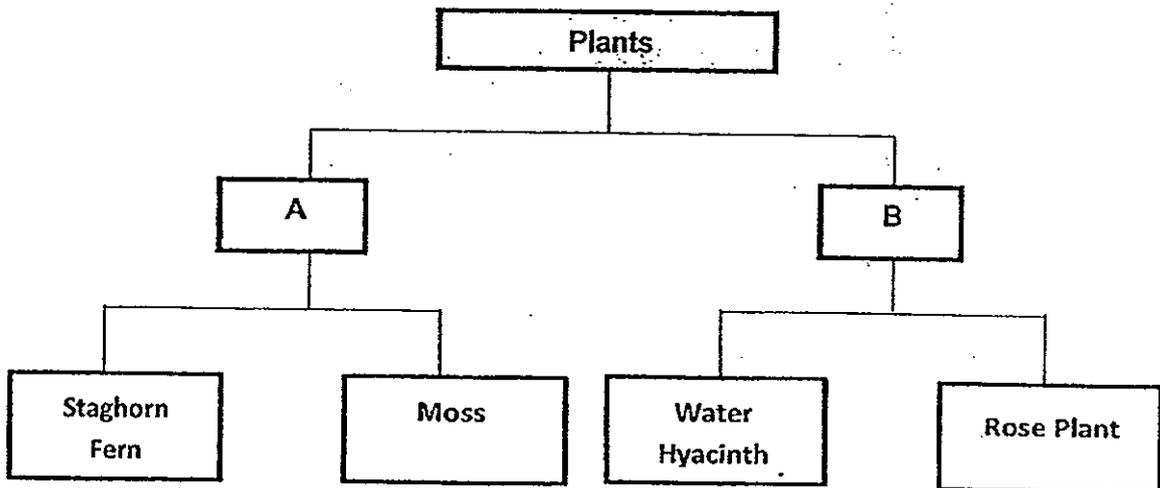
Clara	
A	B

David	
A	B

Who has classified the blocks correctly?

- (1) Ahmad
- (2) Ben
- (3) Clara
- (4) David

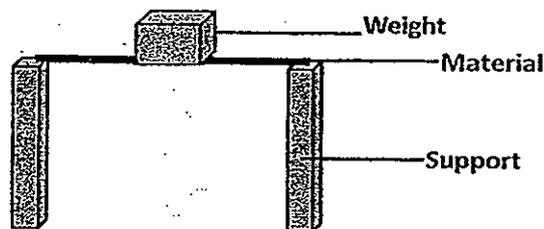
3. Study the classification chart below.



Which of the following are suitable headings for A and B?

	A	B
(1)	Poisonous	Non-Poisonous
(2)	Fungi	Plant
(3)	Live on land	Live in water
(4)	Non-Flowering	Flowering

4. Jill carried out an experiment as shown in the diagram below. A piece of material was placed on top of two supports. Weights were then stacked on the material one at a time until it broke.

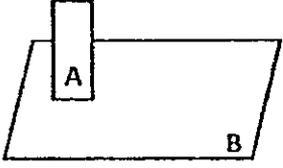
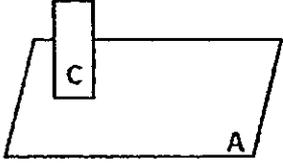
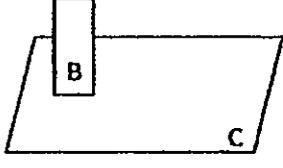
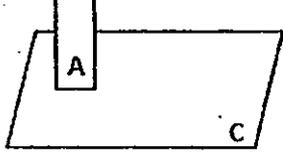
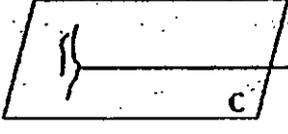


This was repeated using a different material placed on top of the supports each time.

What was the aim of the experiment?

- (1) To find out which material is the hardest.
- (2) To find out which material is the heaviest.
- (3) To find out which material is the strongest.
- (4) To find out which material is the most flexible.

5. Jamie carried out an experiment to test the hardness of objects A, B and C. The results of the experiment are shown in the table below.

Scratch Test	Results
	
	
	
	

Which of the following shows the correct order of hardness of A, B and C starting from the softest?

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

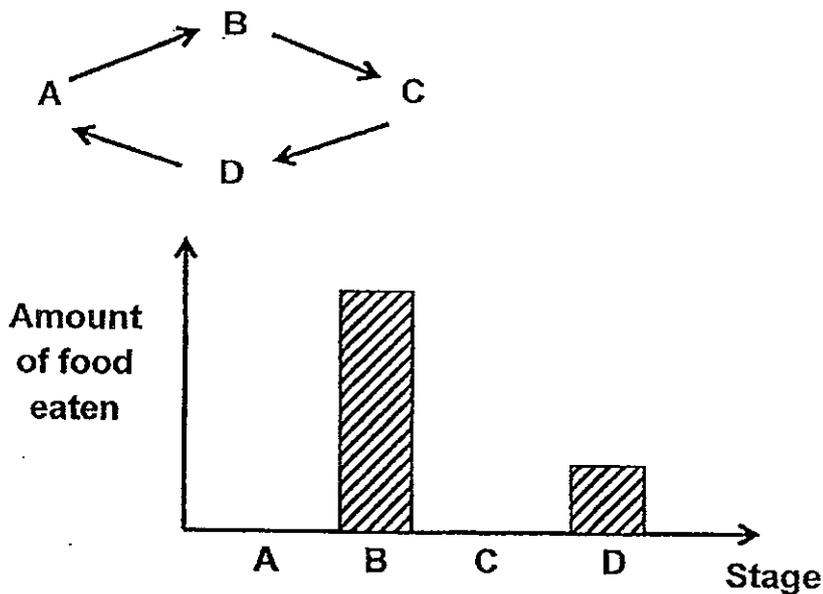
6. Peter wanted to conduct an experiment to find out if plants can take in water without roots.

Which of the following variables should he keep constant in order for the experiment to be fair one?

- A Type of plant
- B Amount of water given to each plant daily
- C Number of leaves
- D Presence of roots

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

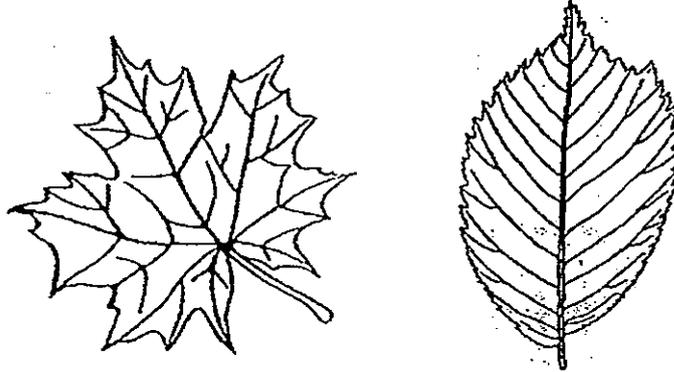
7. The graph below shows the life cycle and the amount of food eaten by a mealworm beetle. A, B, C and D are stages in the life cycle.



At which stage is the mealworm beetle in its pupa stage?

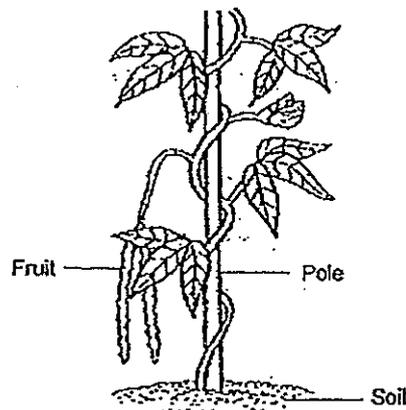
- (1) A
- (2) B
- (3) C
- (4) D

8. Study the diagram of the two leaves shown below.



Based on the diagram, which of the following statements is incorrect?

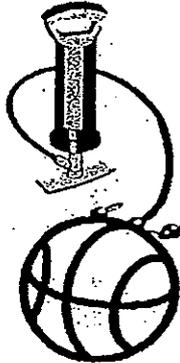
- (1) Both leaves have veins.
 - (2) Both leaves have stalks.
 - (3) Both leaves have jagged edges.
 - (4) Both leaves have the same shape.
9. The diagram below shows a plant growing in a garden.



Based on the diagram, which of the following statements are correct?

- A The fruit is edible.
 - B The plant has a weak stem.
 - C The plant is a flowering plant.
- (1) A and B only
 - (2) A and C only
 - (3) B and C only
 - (4) A, B and C

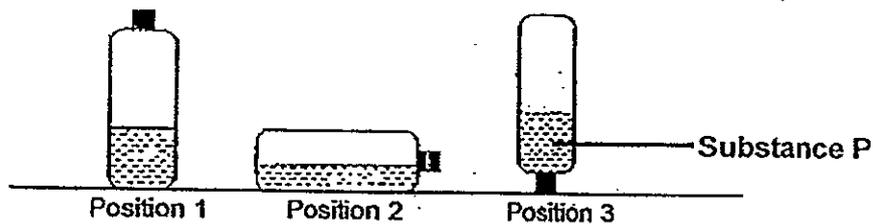
10. Peter pumps in more air into a fully inflated ball.



What happens to the mass and volume of the air in the ball?

	Volume of Air	Mass of Air
(1)	Decrease	Increase
(2)	No Change	Increase
(3)	Decrease	Decrease
(4)	No Change	Decrease

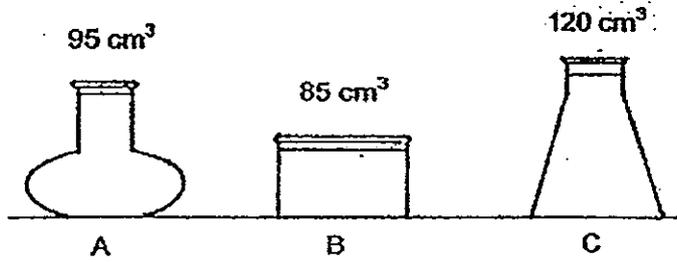
11. A bottle was filled with substance P and put into 3 different positions.



Based on this experiment, what can you conclude about substance P?

- A It has no mass.
 - B It has no definite shape.
 - C It has no fixed volume.
- (1) B only
 (2) A and B only
 (3) B and C only
 (4) A, B and C

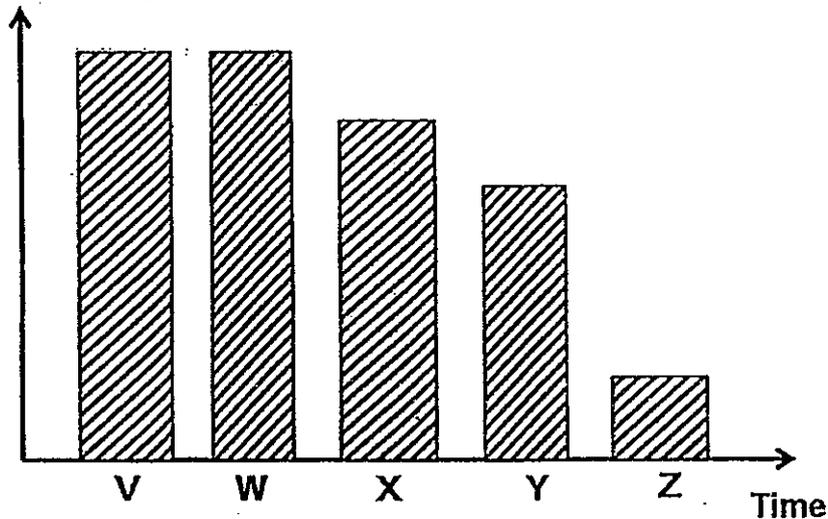
12. In which container, A, B or C, can 95cm^3 of air be pumped into?



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

13. Jack ate chicken rice for lunch. V, W, X, Y and Z represent the sections present in the digestive system in sequence. The amount of undigested food present at each section is shown in the graph below.

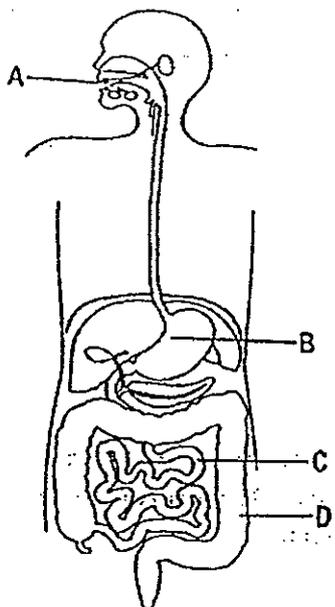
Amount of Undigested Food



Based on the graph, which of the following best represents W, X and Y?

	W	X	Y
(1)	Gullet	Stomach ✓	Small intestine
(2)	Gullet	Stomach	Large intestine
(3)	Stomach	Small intestine	Large intestine
(4)	Small	Large intestine	Rectum

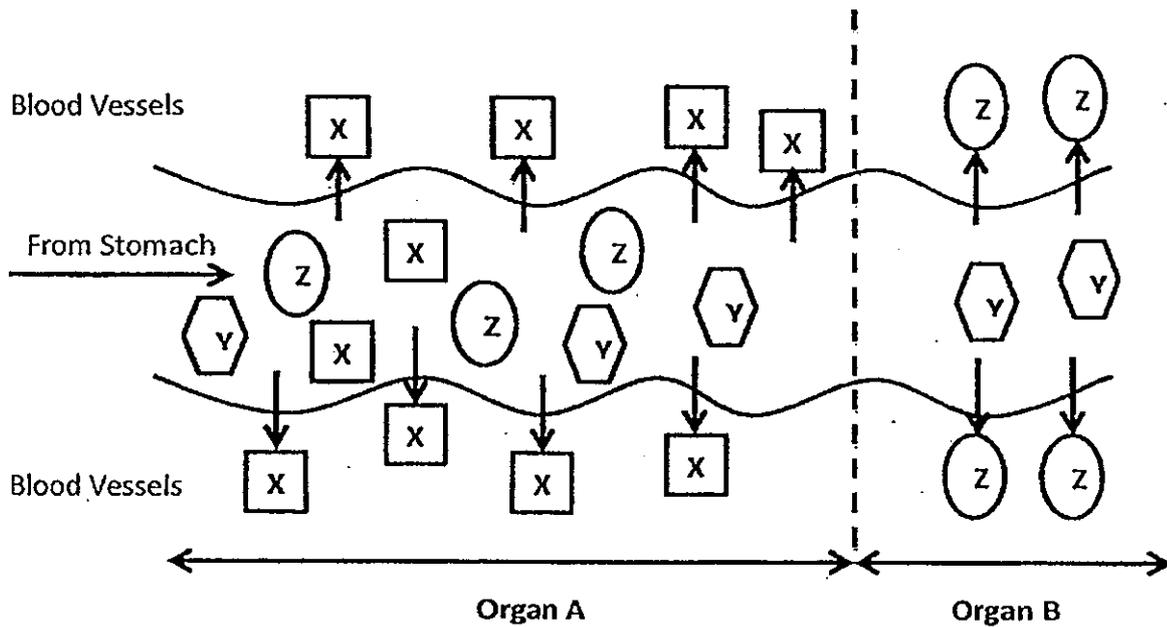
14. Look at the picture below.



At which parts of the digestive system does digestion take place?

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

15. The diagram below represents part of the digestive system of a boy. X, Y and Z represent different substances that are being absorbed into the bloodstream at different parts as shown below.



Based on the diagram above, which of the following best represents organ B, substances X, Y and Z?

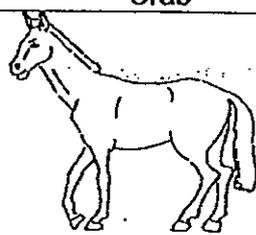
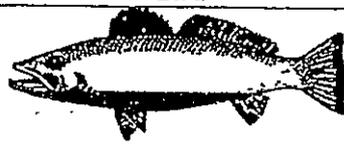
	Organ B	Substance X	Substance Y	Substance Z
(1)	Large Intestine	Water	Digested Food	Undigested Food
(2)	Large Intestine	Digested Food	Undigested Food	Water
(3)	Anus	Water	Digested Food	Undigested Food
(4)	Anus	Digested Food	Undigested Food	Water

Name: _____ ()
Class P4 ()

Section B: 20 marks

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

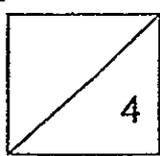
16. Study the animals below and state their outer coverings. [2]

(a)	Animal	Outer Covering
(i)	 Crab	
(ii)	 Horse	
(iii)	 Bird	
(iv)	 Fish	

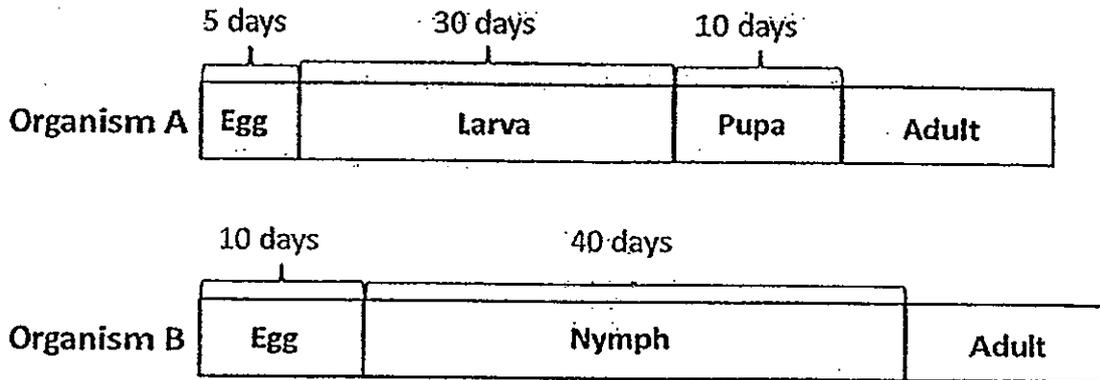
(b) State two functions of the horse's outer covering. [2]

- i) _____

- ii) _____

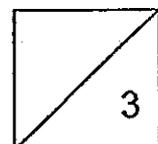


17. The diagram below shows the life cycles of organisms A and B. Organism A goes through the larva and pupa stage while Organism B goes through the nymph stage.

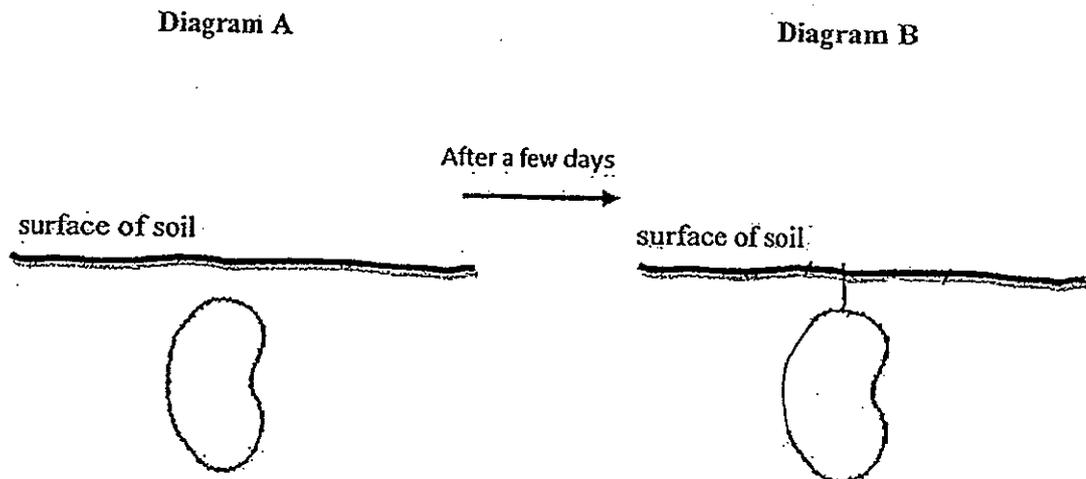


- (a) Based on the information given in the diagram above, write down one difference between the life cycles of Organisms A and B. [1]

- (b) The young and adult of Organism A live in different places. Explain how this would benefit Organism A. [2]

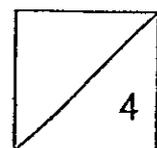


18. Diagram A shows a seed beneath some soil. After a few days, the seed would have germinated.

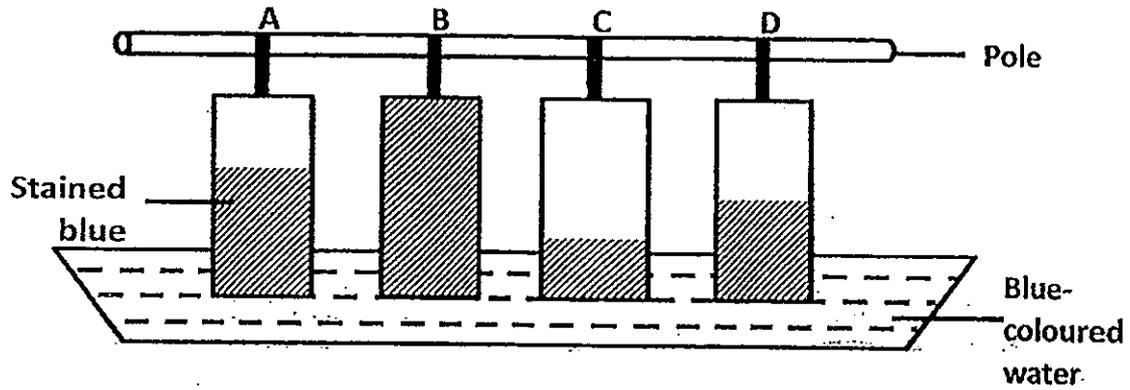


- (a) On diagram B, draw what the root and shoot of the seedling would look like after germination. Label the shoot and root on Diagram B above. [2]

- (b) Explain why the shoot and root grew in the directions as drawn on Diagram B. [2]

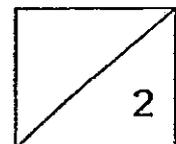


19. Jane carried out an experiment using 4 different types of materials, A, B, C and D of equal lengths. She dipped them into a container of blue-coloured water. The shaded portions show the amount of water absorbed by the materials after half an hour.

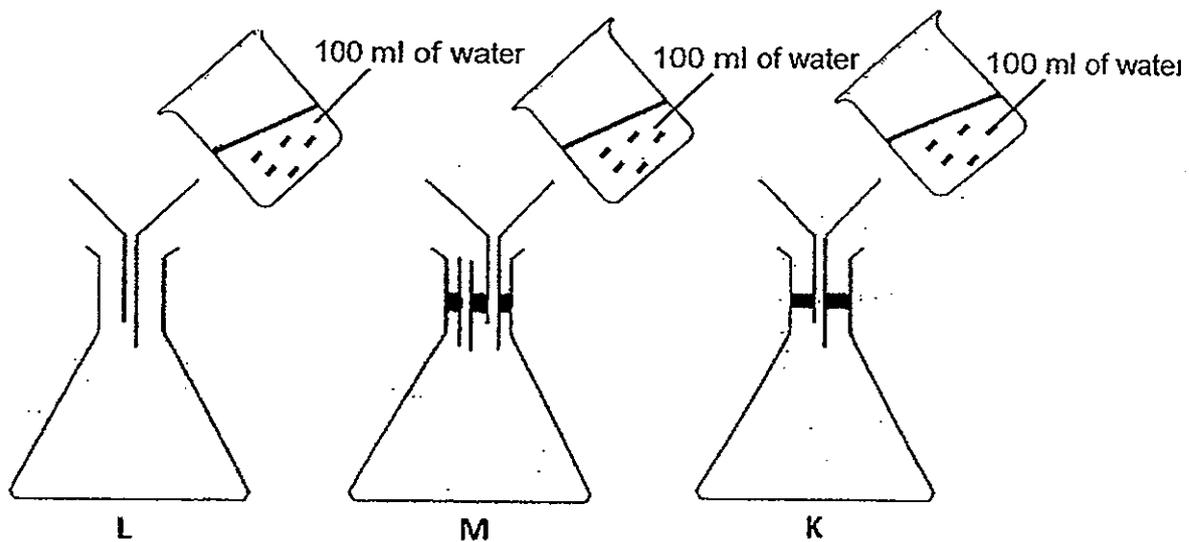


- (a) Which variable did Jane change in the experiment? [1]

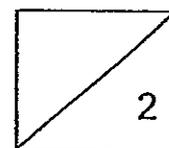
- (b) What was the aim of the experiment? [1]



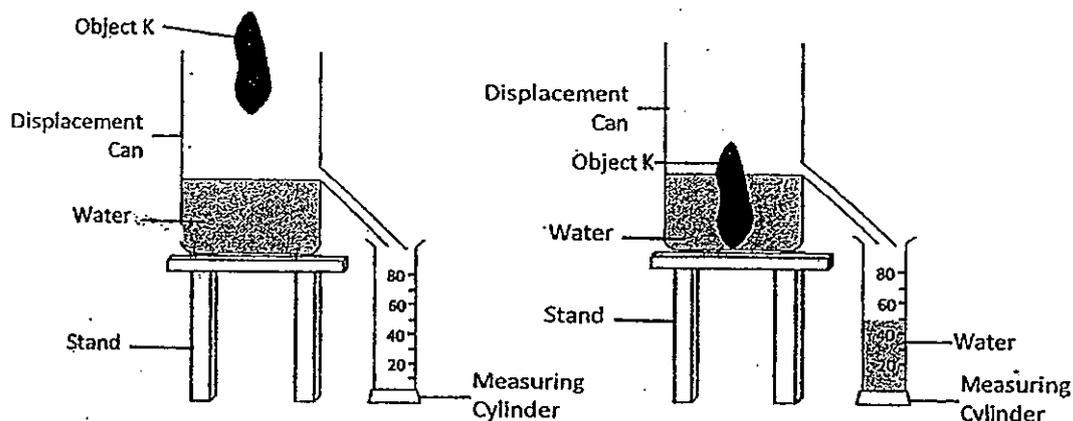
20. Ricky prepared 3 set-ups as shown below. He then poured 100ml of water into each flask.



Based on the diagram above, which flask would collect the least amount of water in 2 minutes? Explain your answer. [2]

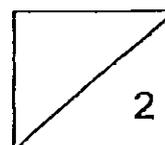


21. Gary wanted to find out the volume of object K. He used a displacement can filled with water and placed object K gently into the water as shown below.

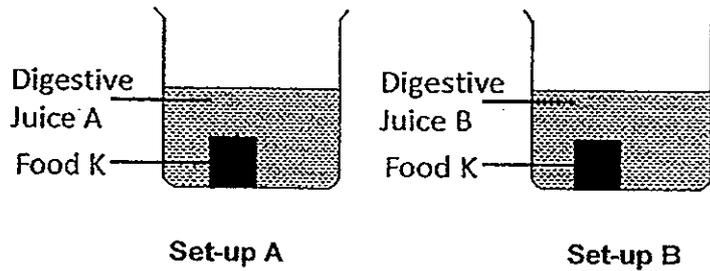


Gary concluded that the volume of object K was 50ml as shown in the measuring cylinder.

Do you agree that the volume of object K was 50ml? Explain your answer. [2]



22. Anita carried out an experiment using 2 types of digestive juices A and B and Food K. She placed equal amounts of digestive juices A and B in each set-up. 2 drops of iodine were placed in each set-up after 10 minutes.

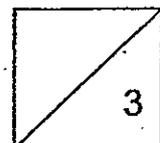


Anita recorded down her observations of the colour of the mixture in the table below.

Type of Digestive Juice	Colour of Mixture after Adding Iodine Solution
A	Solution turns dark blue.
B	Solution remains yellowish-brown.

- (a) What is the purpose of adding iodine solution to the mixture after 10 minutes? [1]

- (b) Based on the results, in which set-up, A or B, did digestion take place? Explain your answer. [2]



- END OF PAPER -

ANSWER SHEET

EXAM PAPER 2013

SCHOOL : AI TONG SCHOOL

SUBJECT : PRIMARY 4 SCIENCE

TERM : CA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
2	3	4	3	3	3	3	4	3	2	1	3	1	3	2

Section B

Q16

ai) shell

aii) fur

aiii) feathers

aiv) scales

bi) Keep warm during cold days

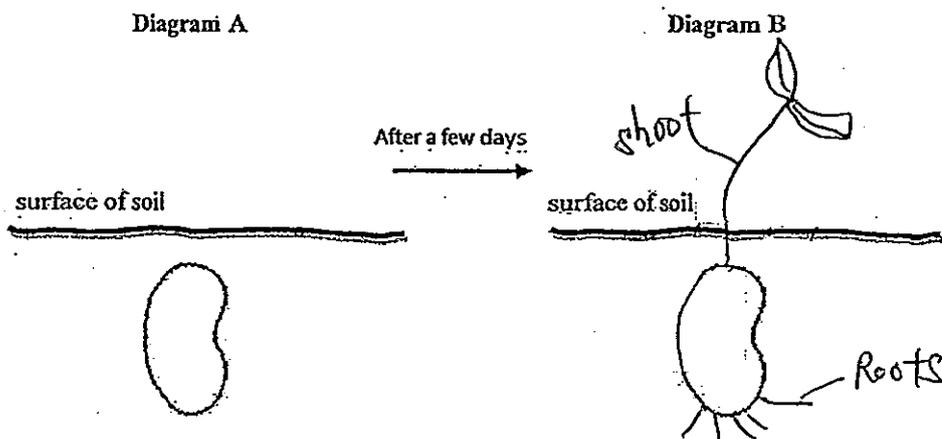
bii) Protect it

Q17

a) Organism A has a four staged life cycle while organism B only have three stages

b) The young organism does not have to compete for space with the adult organism.

Q18) a)



b) As it germinates the root grows downwards and deeper in search of water. The shoot grows upwards towards the surface of the soil and the sun.

Q19

a) The types of materials

b) To observe the rates at which each material absorbs the water.

Q20

Flask L . Air is able to escape as it has the largest opening.

Q21

No. The object was not fully submerged in the water, so the correct volume of water was not displaced.

Q22

a) To find out which Digestive juice had digested the food

b) A. Iodine turns dark blue in the presence of sugar. Sugar is formed when food gets digested. As solution in Set up A changed to dark blue, only A had digestion take place.

METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887



CONTINUAL ASSESSMENT 2013 PRIMARY 4 SCIENCE

BOOKLET A

Total Time : 1 h

INSTRUCTIONS TO CANDIDATES

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

Name: _____ ()

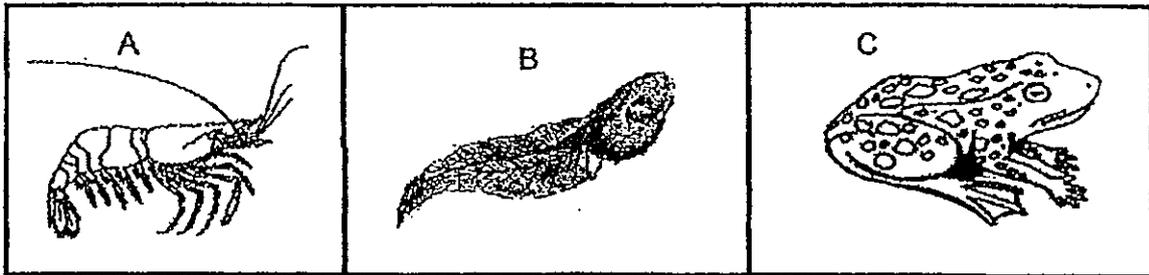
Class: Primary 4 _____

Date: 7 March 2013

This booklet consists of 11 printed pages including this page.

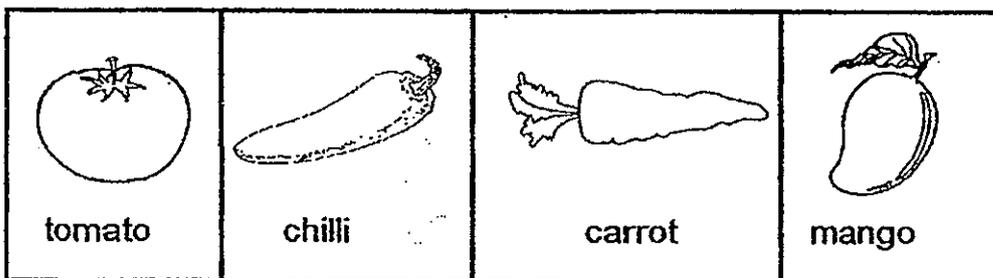
For each question from 1 – 15, four options are given. One of them is the correct answer. Make your choice (1,2,3 or 4). Shade the correct oval (1,2,3 or 4) on the optical answer sheet.

1. Which of these animals have similar breathing parts?



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

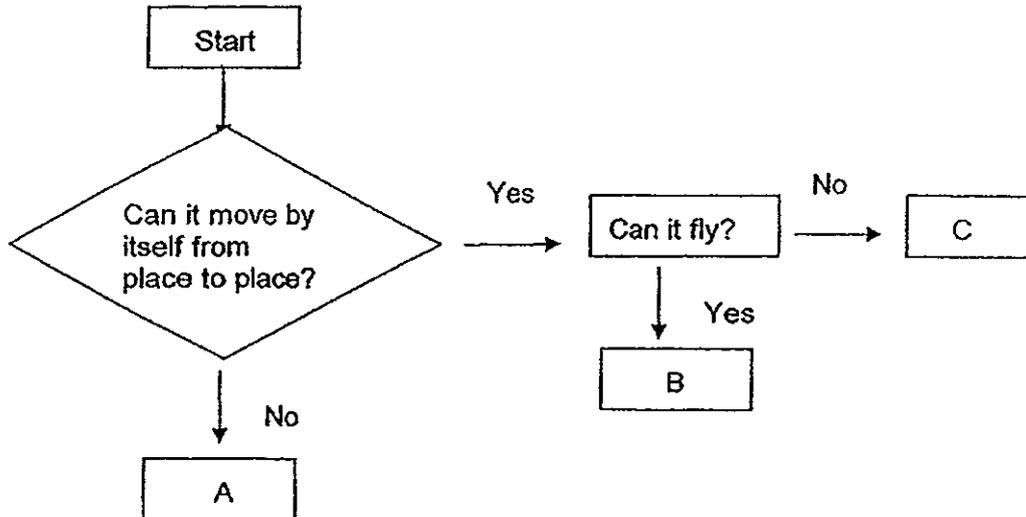
2. Look at the pictures below. Which of the following is not a fruit?



- (1) Chilli
 (2) Carrot
 (3) Mango
 (4) Tomato

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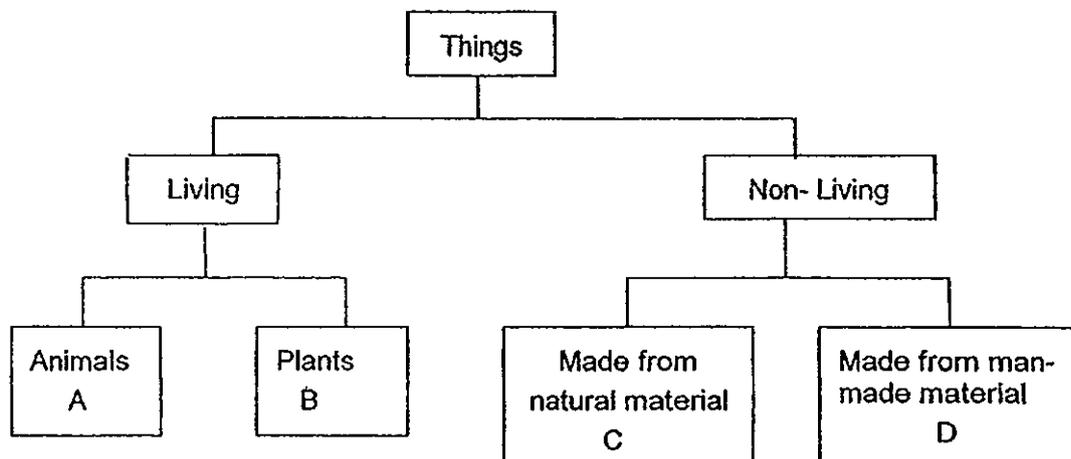
5. Study the flow chart below.



Which of the following correctly describes organisms A, B and C?

	A	B	C
(1)	moss	bat	lizard
(2)	maggot	mosquito	beetle
(3)	hibiscus	sparrow	bee
(4)	mushroom	angsana	balsam

3. Study the classification table below carefully.



Which of the following would best be represented in the above classification.

	A	B	C	D
(1)	fly	moss	eraser	porcelain bowl
(2)	butterfly	mushroom	feather duster	metal spoon
(3)	squirrel	fern	nylon string	cotton dress
(4)	penguin	rose	wooden ruler	plastic cup

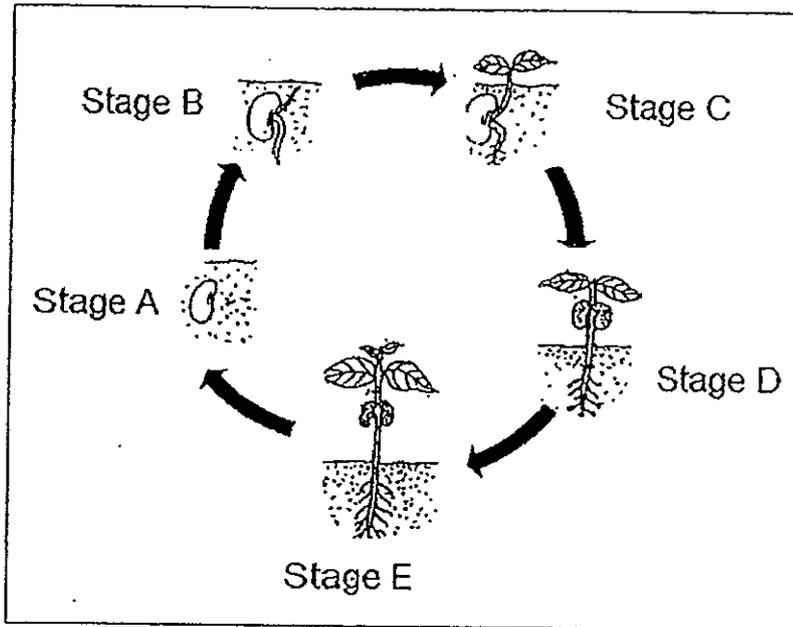
4. Fungi and bacteria are similar in that they both _____.

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

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

Go on to the next page

6. The diagram below shows the life cycle of a plant.

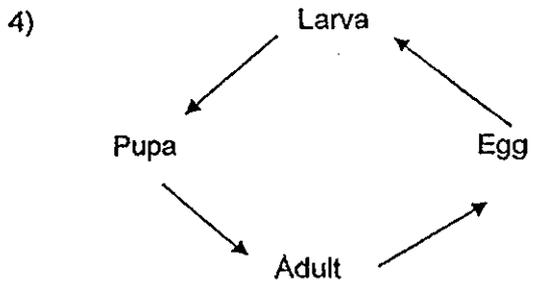
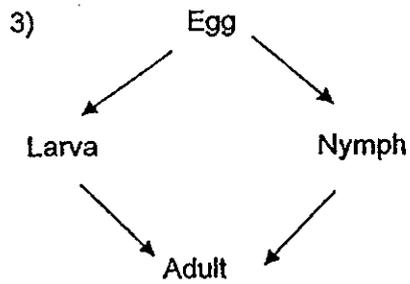
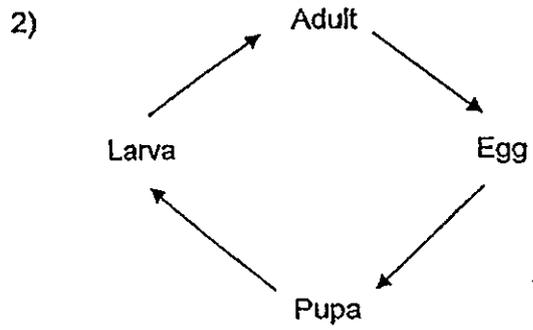
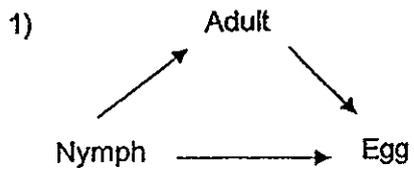


Which of the following statements are true?

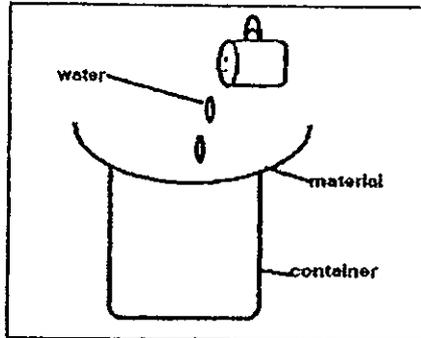
- A : Sunlight is not needed at Stage B.
 B : Photosynthesis takes place at **only** at Stages C and D.
 C : Stage A is not affected by what happens at Stage E.
 D : The seed at Stage A needs air, water and warmth to reach Stage B.
- (1) A and D only
 (2) B and C only
 (3) A, C and D only
 (4) All of the above

Go on to the next page

7. Which of the following shows the correct order of stages in the life cycle of an insect?



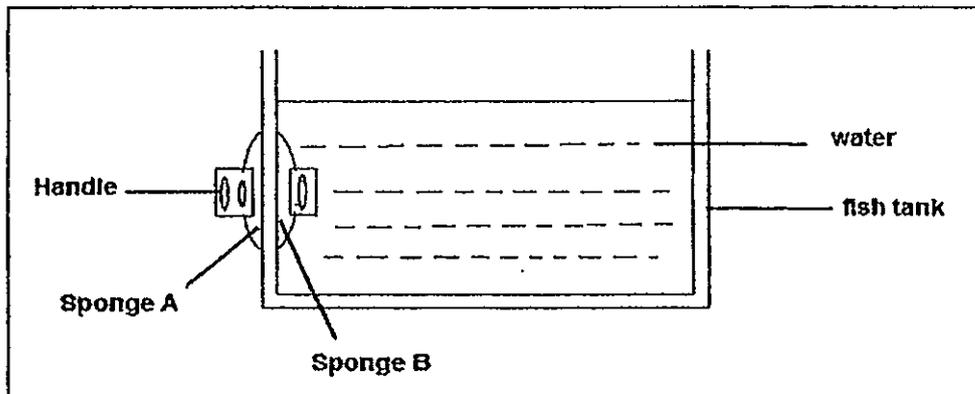
8. Jeremy wanted to choose a material to make an umbrella. He conducted an experiment to find out which material A, B, C or D is best suited for the making of the umbrella. He poured 60 ml of water over each of the materials as shown in the diagram and then measured the amount of water collected in the container after 1 minute.



Which material is best suited to make the umbrella?

	Material	Amount of water collected (ml)
(1)	A	30
(2)	B	0
(3)	C	10
(4)	D	40

9. Sam invented a device to clean both sides of the fish tank. As Sponge A is moved across the plastic fish tank, Sponge B also moved along too.

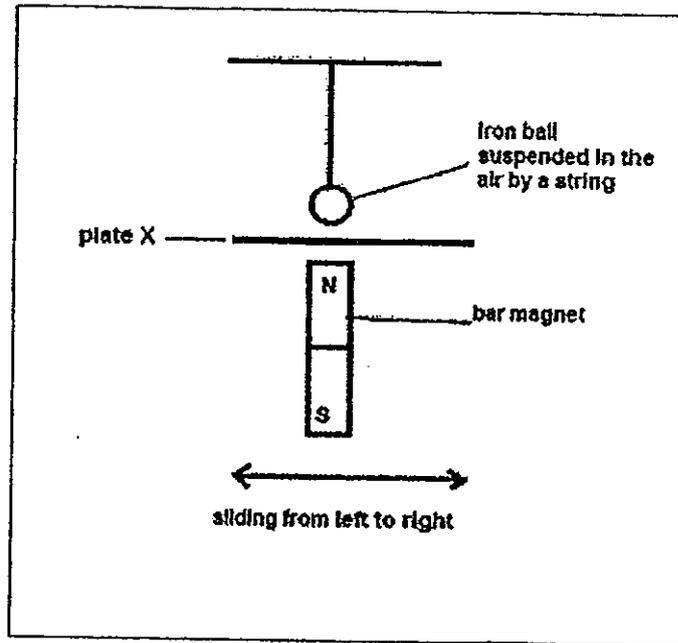


What characteristics of a magnet are applied here?

- A : Like poles of a magnet repel each other.
- B : Unlike poles of a magnet attract each other.
- C : The poles of the magnet produce the maximum pull.
- D : Plastics allow magnetism to pass through.

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

10. Study the set-up below. Plate X represents different types of materials. It was used to test the effects of sliding a strong bar magnet on the suspended iron ball as shown in the diagram below.



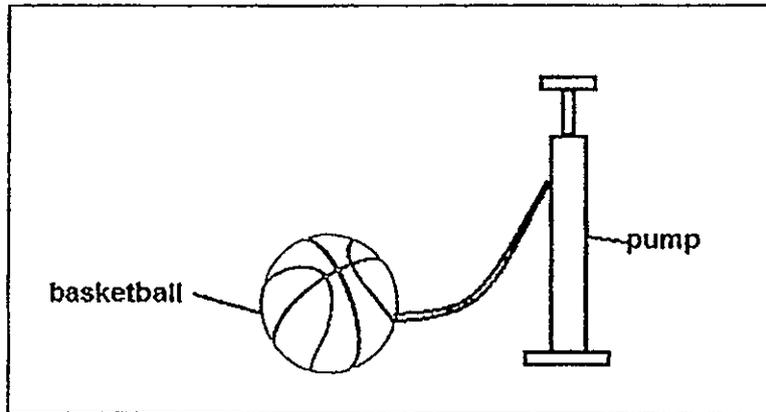
Which of the following observations are true?

Observation	Plate X	Effect of magnet on suspended iron ball
A	iron	did not move
B	steel	moved
C	glass	moved
D	cardboard	did not move

- (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

11. A basketball has a volume of 500cm^3 . An air pump is used to pump in 480cm^3 of air at the start of the day. Another 40cm^3 of air is pumped into the basketball at the end of the day.



What is the new volume of air inside the basketball?

- (1) 480cm^3
- (2) 500cm^3
- (3) 520cm^3
- (4) 540cm^3

12. Zoe and Faye investigated the properties of P and Q and recorded their results in the table below. (Note: ' \checkmark ' means 'Yes' and 'x' means 'No'.)

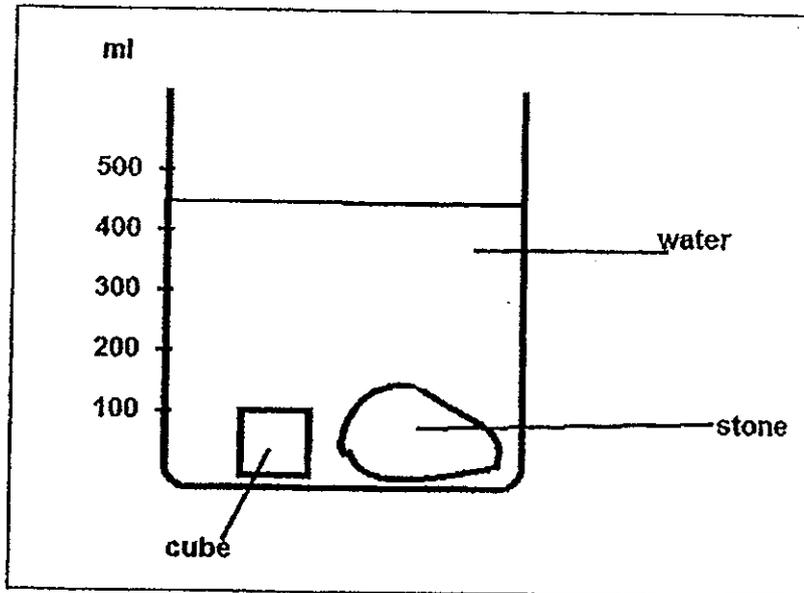
Property	P	Q
Definite volume	\checkmark	\checkmark
Definite shape	x	\checkmark
Transparent	\checkmark	x

What could P and Q be?

	P	Q
(1)	oxygen	water
(2)	water	eraser
(3)	oil	oxygen
(4)	air	milk

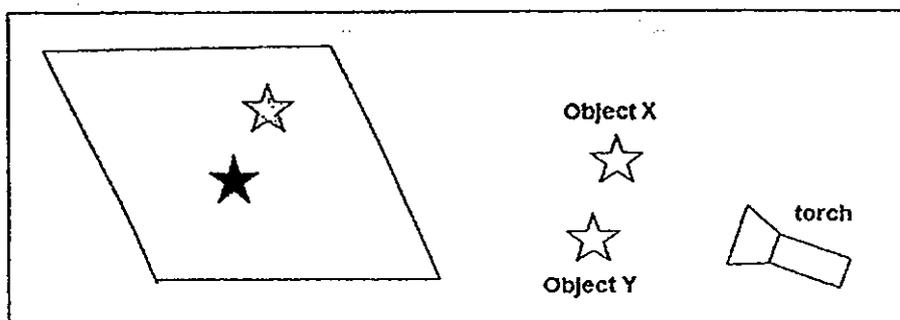
Go on to the next page

13. A cube of 50 cm^3 and a stone are placed into a beaker containing 300 ml of water. Which one of the following statements is NOT true?



- (1) The water level is now more than 400 ml.
- (2) The stone has a volume of 150 ml.
- (3) The stone has a greater volume than the cube.
- (4) The stone and the cube cause the water level to rise.

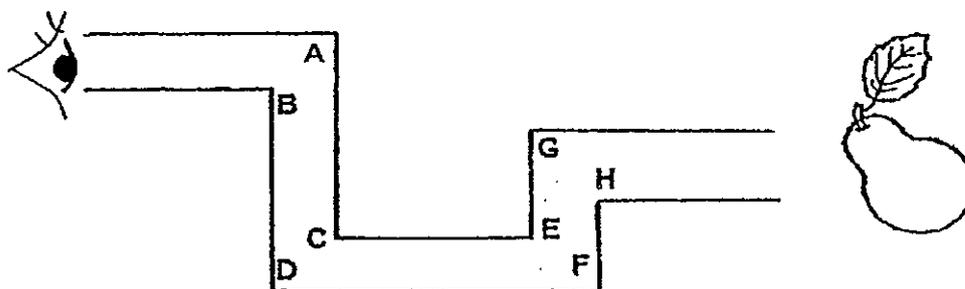
14. A torch was shone onto two objects, X and Y, as shown in the diagram below.



The shadow formed by Object X is much lighter than the one formed by Object Y. What are the likely materials that Object X and Object Y are made of?

	Object X	Object Y
(1)	styrofoam	frosted glass
(2)	frosted glass	copper
(3)	clear plastic	wood
(4)	aluminum	iron

15. Look at the diagram below.



In order for May to see the pear through the bent tube, she needs to place mirrors in it. At which point(s) should she place the mirrors?

- (1) A, C, E, G
- (2) A, D, F, G
- (3) B, D, E, H
- (4) A, D, F, H

END OF BOOKLET A

Go on to the next page

METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887



CONTINUAL ASSESSMENT 2013 PRIMARY 4 SCIENCE

BOOKLET B

Total Time: 1 h

INSTRUCTIONS TO CANDIDATES

Answer all questions.

Write your answers in this booklet.

Name: _____ ()

Class: Primary 4. _____

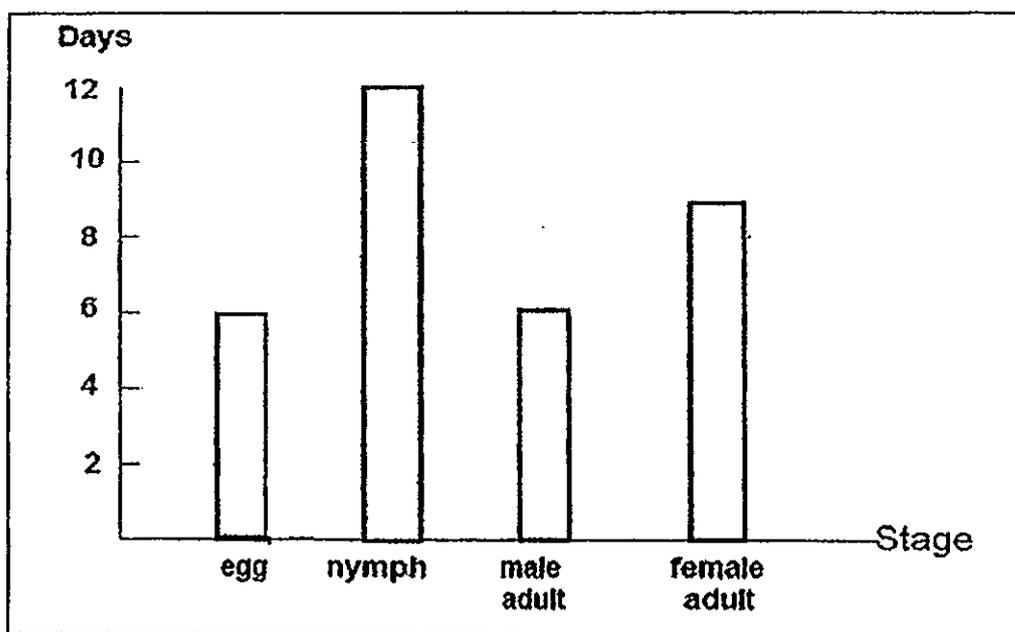
Date: 7 March 2013

Booklet A	/ 30
Booklet B	/ 20
TOTAL	/ 50

This booklet consists of 9 printed pages including this page.

For questions 16 – 24, write your answers in the blanks provided.

16. The graph below shows the number of days at each stage in the life cycle of an insect.

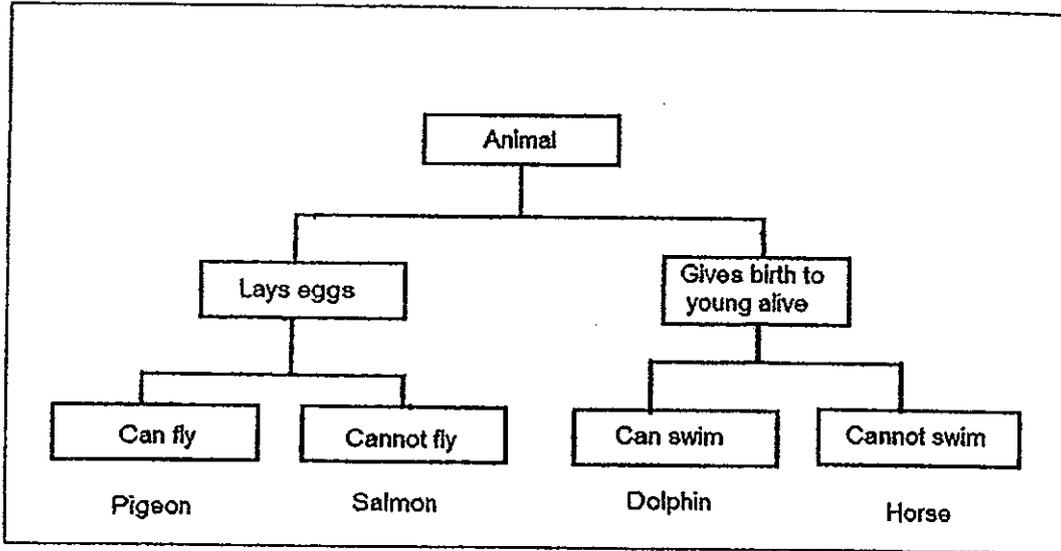


- a) How many stages are there in the life cycle of this insect? (1m)

- b) Suggest a reason why the female lives longer than the male adult. (1 m)

Go on to the next page

17. The table below shows how four animals are classified. Use the information provided to answer the questions.



a) State one difference between the salmon and horse. (1m)

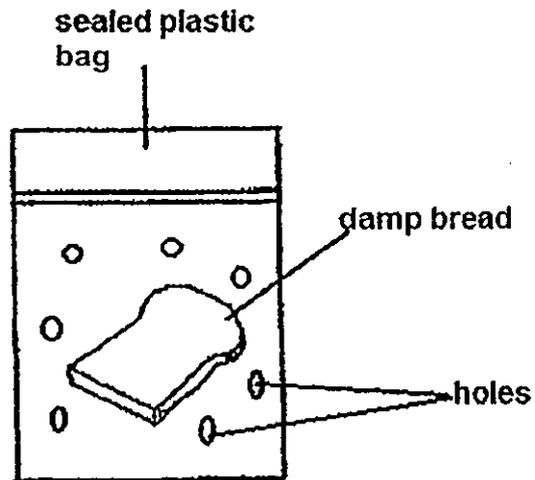
b) A platypus is a mammal that lays eggs. It can swim but cannot fly. With which animal in the table would you classify a platypus? (½m)

c) Which characteristic in the table describes a mammal? (½m)

d) In the table below, fill in the blanks (i) and (ii) with different words to show another way of classifying the four animals. (1m)

(i)		(ii)	
Feathers	Scales	Live in water	Live on land
Pigeon	Salmon	Dolphin	Horse

18. Benny placed a slice of damp bread into a plastic bag as shown below. He poked some holes on the plastic bag and left it inside a cupboard.

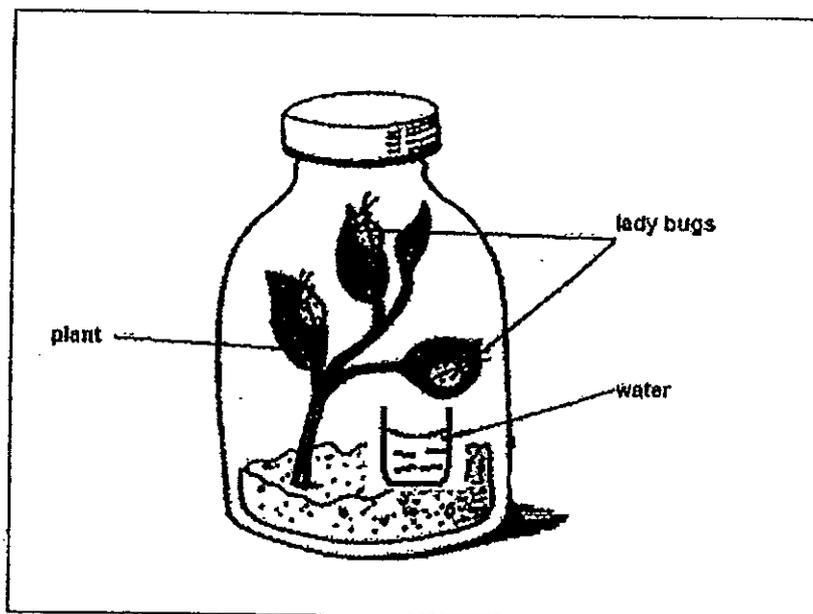


- a) Why did he poke holes in the plastic bag? (1m)

- b) What would likely happen to the bread after five days? (1m)

Go on to the next page

19. A few ladybirds were placed in a large enclosed glass jar with a potted plant. The plant had a few green leaves. A dish of water was placed inside the jar as shown in the diagram below.

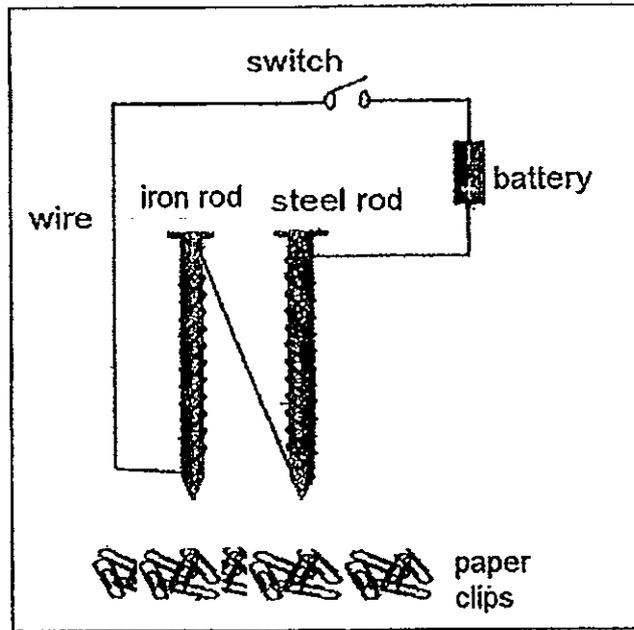


- a) What would likely happen to the ladybirds after a fortnight? (1m)

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

Go on to the next page

20. A similar length of wire was coiled around a similar sized iron rod and a steel rod. The ends of the wires were connected to an electrical circuit.



The two rods were placed 5cm above a pile of paper clips which were evenly spread on the table and when the circuit was closed, the number of paper clips attracted to each rod was shown below.

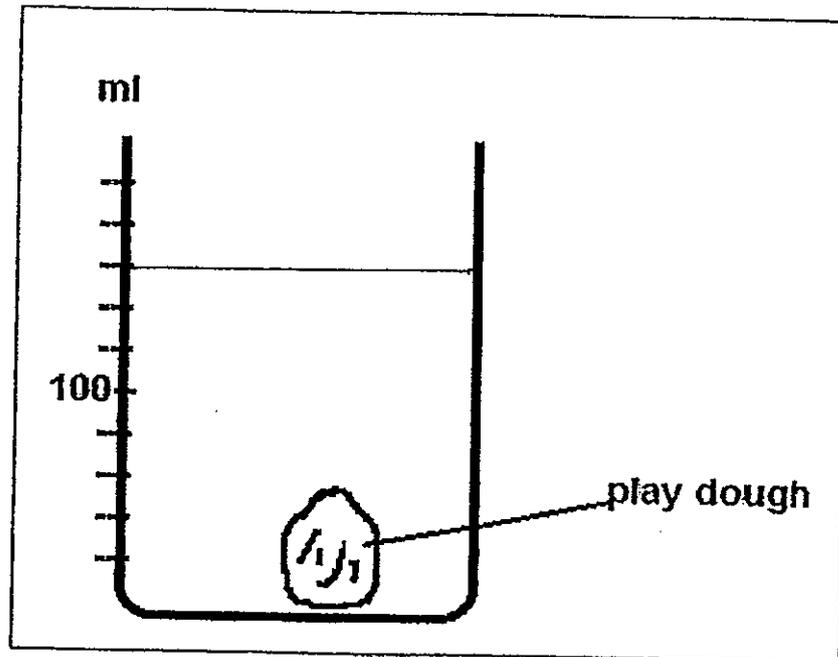
Number of tries	Iron rod	Steel rod
1 st try	16	9
2 nd try	14	10
3 rd try	15	8

- a) Based on the table above, what conclusion can be drawn about the Iron rod and the steel rod? (1m)

- b) Why was the experiment repeated three times? (1m)

Go on to the next page

21. Elsie dropped a lump of play dough into a beaker containing 100ml of water. The volume of the play dough was 60cm^3 .

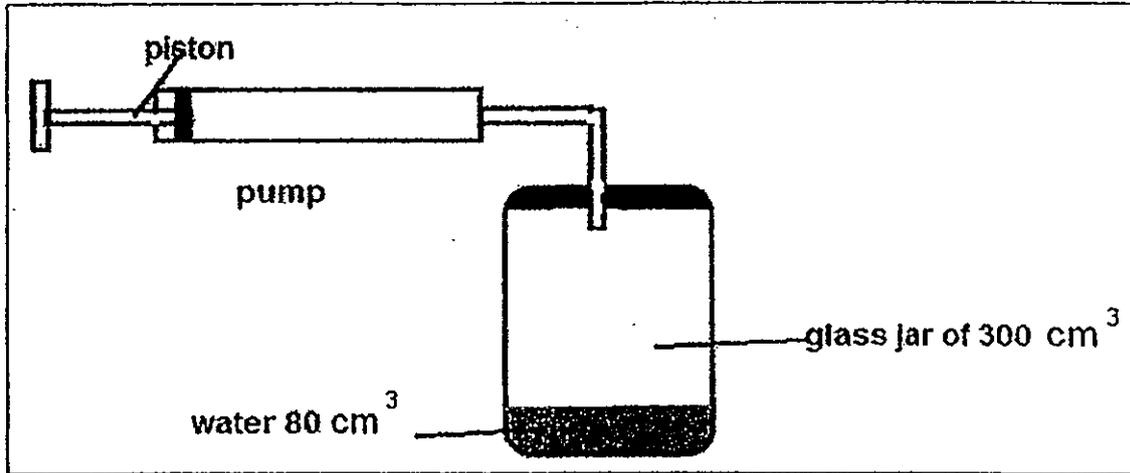


- a) Draw the water level with the play dough in the diagram above. (1m)
- b) She then took out the lump of play dough and made it into a shape of a cylinder. What will the water level be when she dropped it back into the beaker? (1m)

- c) What can Elsie conclude about the play dough from this experiment? (1m)

Go on to the next page

22. Look at the diagram below. The pump is connected to a glass jar that has a capacity of 300 cm^3 . The glass jar contains 80 cm^3 of water.

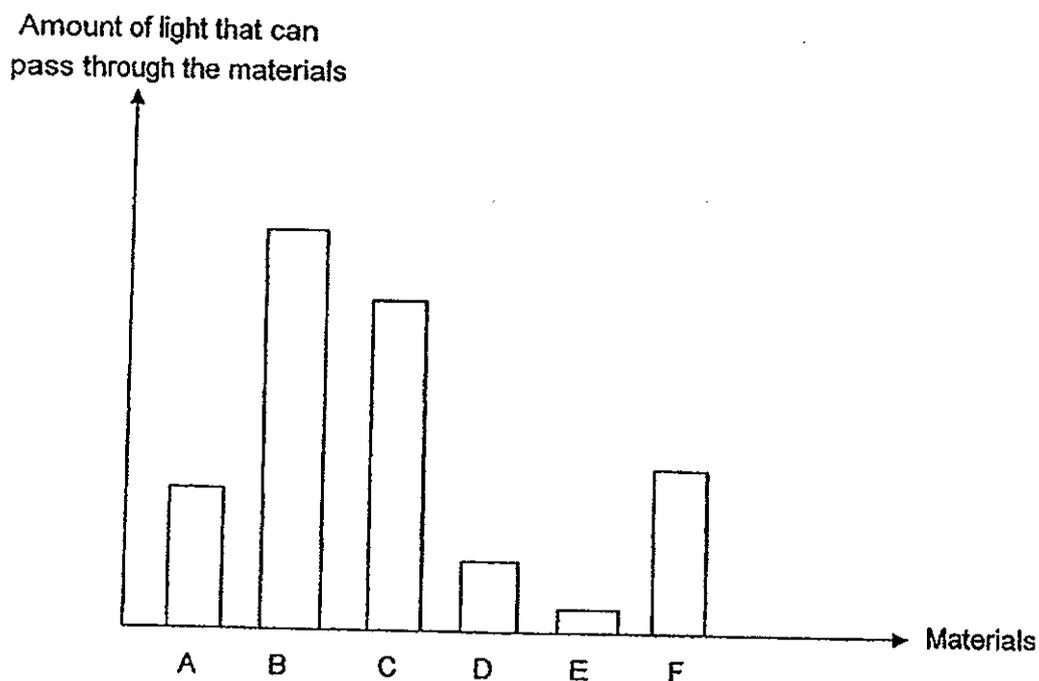


- a) When the piston is pushed completely into the pump, 40 cm^3 of air is forced into the jar. What is the volume of air in the jar now? (1m)

- b) Explain your answer for part (a). (1m)

Go on to the next page

23. Kelly conducted an experiment to measure the amount of light that can pass through six materials. She used a datalogger to do so and recorded her results in the chart below.

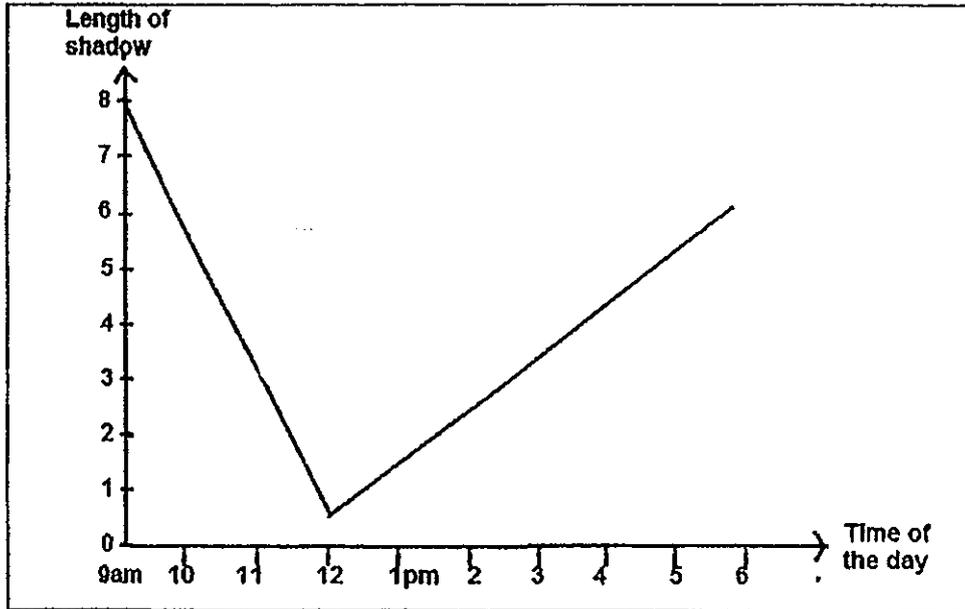


Based on her results given in the bar graph above, answer the following questions. Read the statements and put a tick (✓) in the appropriate boxes below. (2m)

Statements	True	False	Not possible to tell
Material B is opaque.			
Material A is able to partially block the light.			
Material E is darker in colour than Material D.			
Material C allows more light to pass through than Material F.			

Go on to the next page

24. The graph below shows the changes in the length of a shadow of a tree throughout a sunny day.



- a) Why does the length of shadow change throughout the day? (1m)

- b) At what time of the day is the shadow the shortest and why? (1m)

END OF PAPER

Go on to the next page

ANSWER SHEET

EXAM PAPER 2013

SCHOOL : METHODIST GIRLS' SCHOOL

SUBJECT : PRIMARY 4 SCIENCE

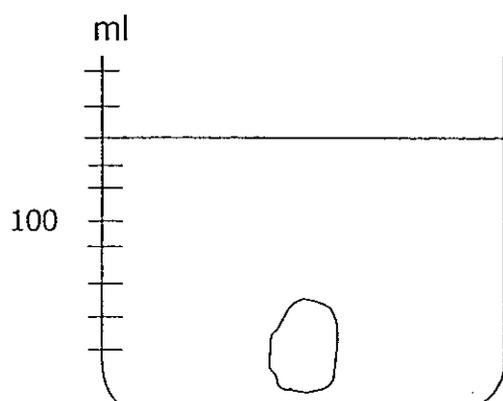
TERM : CA1

BOOKLET A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
2	2	4	2	1	3	4	2	4	2	2	2	2	2	2

- Q16. a) There are 3 stages in the life cycle of this insect.
b) The female adult needs to lay the eggs in order for the life cycle to be complete.
- Q17. a) Salmons lay eggs, but horses give birth to young alive.
b) Salmon
c) Gives birth to young alive.
d) (i) Do not have hair on their body
(ii) Have hair on their body
- Q18. a) So air could go in.
b) Spores floating in the air would go in the holes and the bread would have bread mould.
- Q19. a) The ladybirds would die.
b) There was no air. The ladybirds would not have sufficient food and oxygen to feed on.
- Q20. a) The iron rod is a better electromagnet than the steel rod.
b) It is to ensure that the results of the experiment are reliable and consistent.

Q21. a)



- b) It will be the same.
- c) Play dough has a definite volume.

Q22. a) 220 cm^3

- b) Air has no definite volume and can be compressed.

Q23.

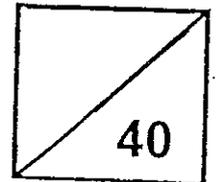
Statements	True	False	Not possible to tell
Material B is opaque.		✓	
Material A is able to partially block the light.	✓		
Material E is darker in colour than Material D.			✓
Material C allows more light to pass through than Material F.	✓		

Q24. The sun changes the position in the sky. It changes because the sun moves across the sky throughout the day.

Q25. At 12 am the shadow is the shortest, because the sun is directly above the tree.



Rosyth School
Topical Test, 2013
Science
Primary 4



Name: _____

Class: Pr. 4 _____ Register No. _____ Duration: 50 minutes

Date: 04 March 2013

Parent's Signature: _____

Instructions to Pupils:

1. Do not open this booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 parts, Part I and Part II.

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

* This paper consists of 13 pages altogether.

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Part I (20 MARKS)

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

1. Mary observed two animals, R and S, and completed the table as shown below. A tick (√) means the animal has the characteristic and a cross (X) means the animal does not have the characteristic.

Observation	Animal R	Animal S
Eggs are laid in water	√	X
There are 3 stages.	√	X
It has six legs	X	√

Based on the table above, which of the following animals would most likely represent animals, R and S?

	Animal R	Animal S
(1)	Chicken	Mealworm beetle
(2)	Frog	Cockroach
(3)	Frog	Butterfly
(4)	Mosquito	Cockroach

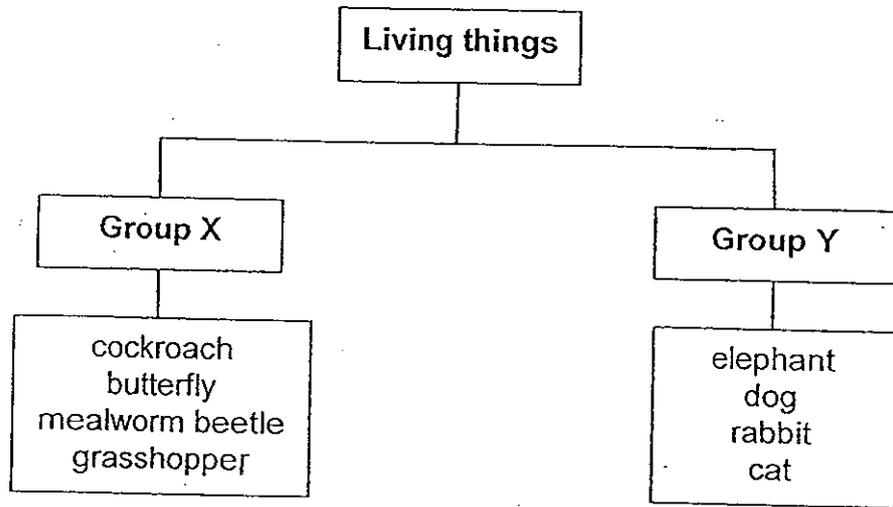
()

2. Which one of the following statements correctly describes the difference between a cockroach nymph and an adult cockroach?

- (1) The adult cockroach eats animals but the nymph eats plants.
 (2) The adult cockroach has six legs but the nymph has four legs.
 (3) The adult cockroach has wings but the nymph does not have wings.
 (4) The adult cockroach has feelers but the nymph does not have feelers.

()

3. Study the two groups of animals below.



Which of the following are suitable headings for the two groups of animals above?

	Group X	Group Y
A	Insects	Mammals
B	Young does not resemble adult	Young resembles adult
C	4-stage life cycle	3-stage life cycle
D	Lays eggs	Give birth to young alive

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

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

()

4. The pictures below show the developmental growth of a bean plant at various stages of its life cycle.



Picture A



Picture B



Picture C



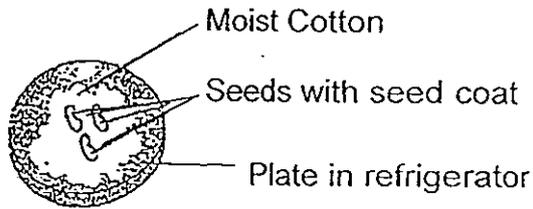
Picture D

Arrange the pictures to show the correct order in the developmental growth of a bean plant.

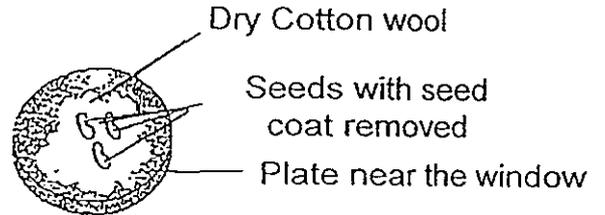
- (1) A, B, C, D
(2) B, A, D, C
(3) D, B, C, A
(4) D, A, B, C

()

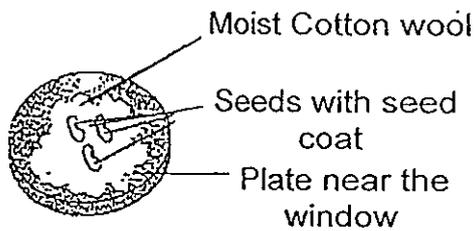
5. John prepared four set-ups, A, B, C and D, as shown below to find out about the conditions needed for seed germination.



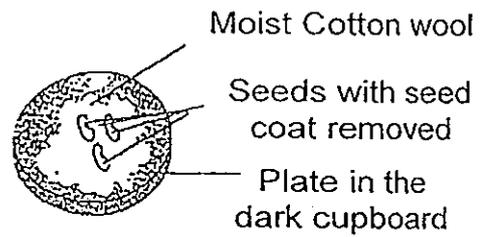
Set-up A



Set-up B



Set-up C



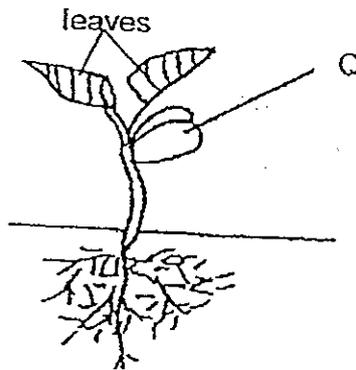
Set-up D

In which of the set-up(s), would the seeds germinate?

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

()

6. The diagram below shows a young seedling with Part Q.



The following pupils, Anna, Betty, Charles and Devi, made some statements about Part Q of the seedling.

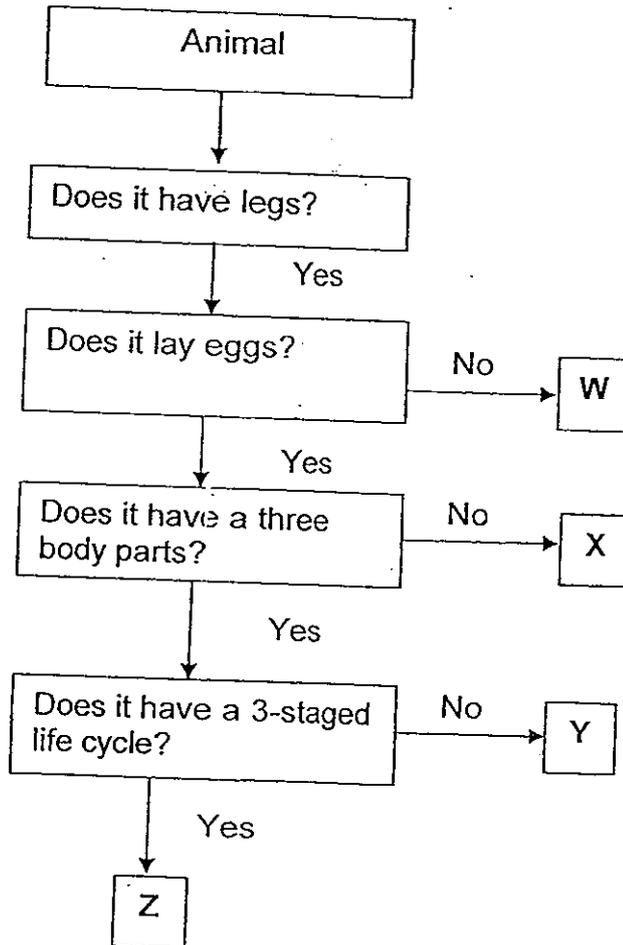
- Anna: Part Q makes food for the adult plant.
Betty: Part Q traps light for the seedling to make food.
Charles: Part Q takes up water and minerals for the seedling.
Devi: Part Q provides food for the seedling before its leaves make food.

Which one of the pupils' statement is correct?

- (1) Anna
(2) Betty
(3) Charles
(4) Devi

()

9. Refer to the flowchart below.

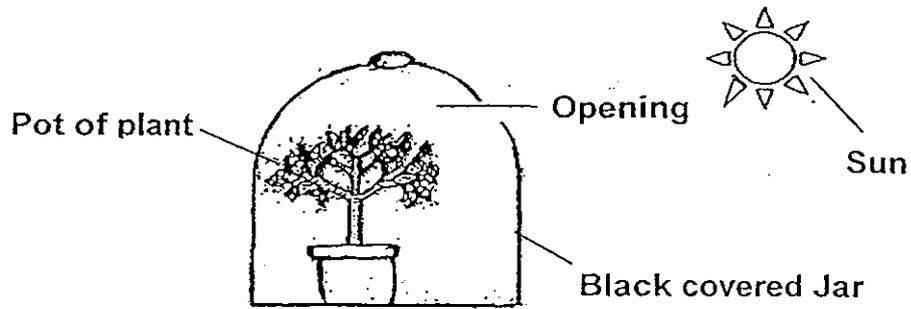


Based on the flowchart, which is most likely to be a butterfly?

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

()

10. Jolly put a pot of plant in a black covered jar. A few days later she observed that the plant was growing towards the opening.



What could the above set-up be used to show?

A	Plants grow taller.
B	Plants need water to survive.
C	Plants need sunlight to survive.
D	Plants respond to changes.

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

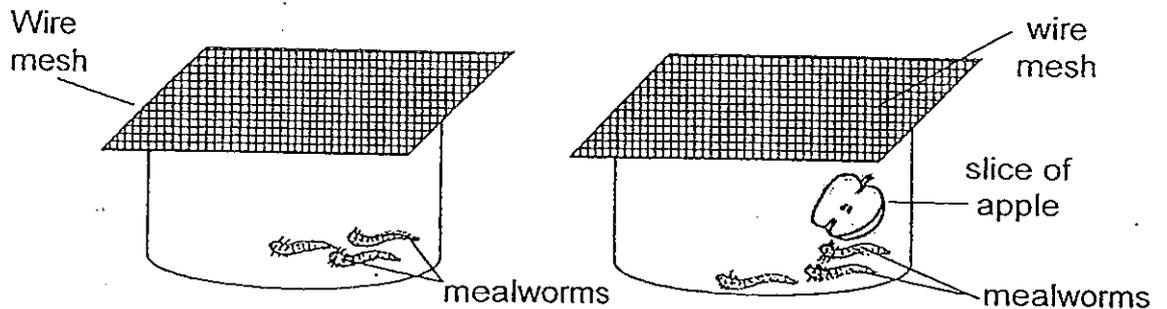
- (2) A and C only
 (4) A, B, C and D. ()

End of Part I

Part II (20 MARKS)

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

11. Suresh bought some mealworms and decided to keep them in two containers as shown in the two set-ups below.



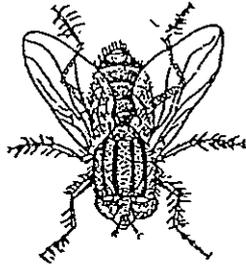
Set up 1

Set up 2

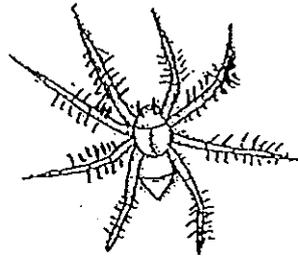
- a) In which set-up will the mealworms not survive after some time? Explain why. (1 m)

- b) After certain time, some of the mealworms changed to mealworm beetles and Suresh released them all. Why did he need to do so for the survival of the mealworm beetles? (1 m)

12. Study the two animals as shown below.



Animal P



Animal Q

Based on the pictures above, state three differences between the two animals. (Do not compare its shape and size) (3m)

Difference 1:

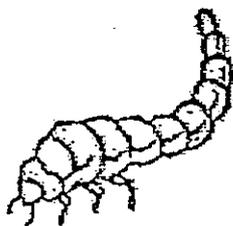
Difference 2:

Difference 3:

13. The pictures below show the stages of growth of a mealworm beetle.



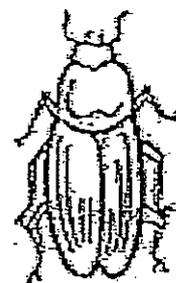
Stage A



Stage B



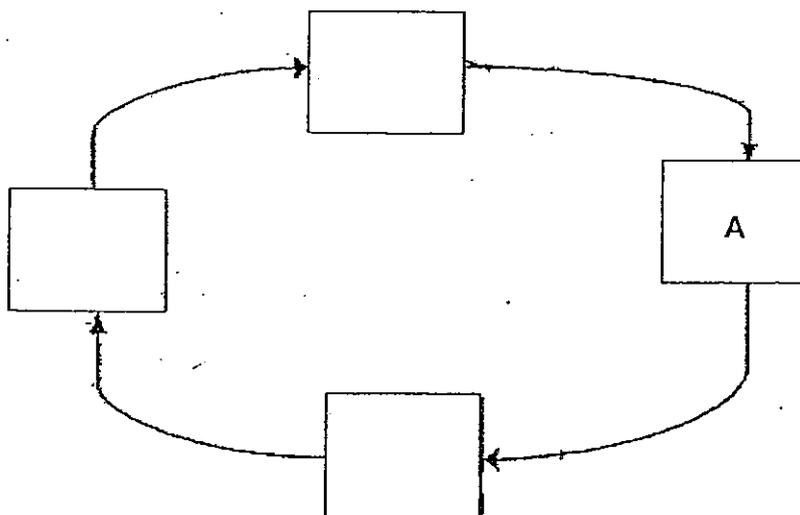
Stage C



Stage D

a) At which stage, A, B, C or D does moulting occur most often? Give a reason for your choice. (1 m)

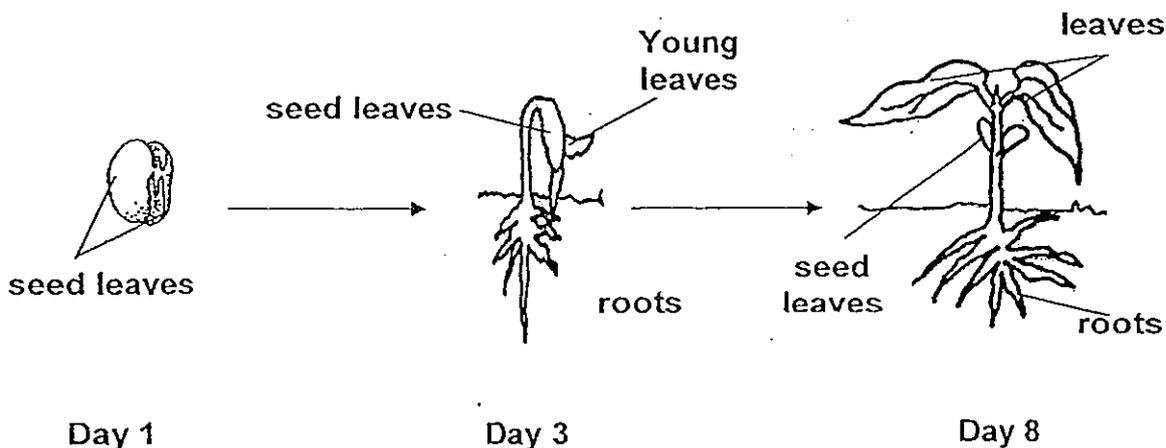
b) Complete the life cycle of the beetle by filling in the letters, B, C and D in the boxes below. (1m)



Life cycle of a mealworm beetle

c) Give a reason why living things reproduce. (1 m)

14. Jason measured the mass of the seed leaves as the seedling grew and recorded the results in the table. He carried out the entire experiment in a dark room.



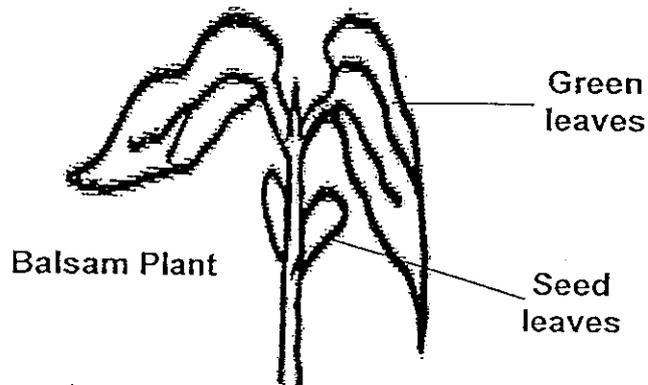
- a) Which set of results (X, Y or Z) in the table below shows the mass of the seed leaves as the seedling grew? Support your choice. (1 m)

Day	Mass in grams		
	X	Y	Z
Day 1	10	2	10
Day 3	6	4	10
Day 8	2	8	10

- b) What will happen to the seedling if it is still kept in the dark room after day 8? (1 m)

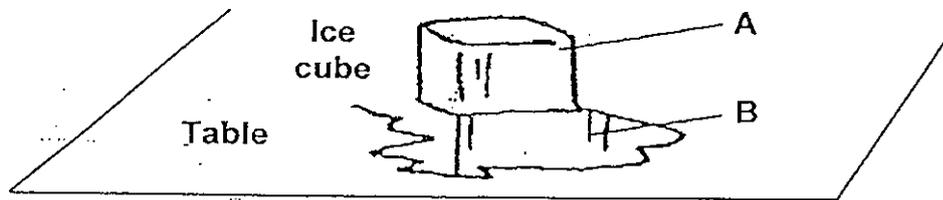
- c) What are the conditions needed for germination?

15. Observe the seedling of a balsam plant as shown below.



- a) Draw the part of the plant which is not shown in the picture. (1m)
b) State two functions of the part drawn in (a). (2m)

16. An ice cube was left on a table with the room temperature at 33°C . The ice started to melt as shown in the diagram below.



- a) Name the state of matter labelled A and B respectively. (2 m)
A: _____
B: _____
- b) State two similarities between the matter A and B. (1 m)

17. Bala wanted to use either Bag A or Bag B to pack the items needed for his camping trip. The properties of the materials of both bags are shown below.

	Bag A	Bag B
Properties	Waterproof	Non-waterproof
	Strong	Strong
Mass of the empty bag (g)	80	160

Bala decided that Bag A is a better choice than Bag B for his camping trip. Based on the table above, support his choice by stating two properties of Bag A and explaining why each of the property make Bag A his choice. (3 m)

Properties	Reason
Property 1:	
Property 2:	

End of Paper

ANSWER SHEET

EXAM PAPER 2013

SCHOOL : ROSYTH PRIMARY

SUBJECT : PRIMARY 4 Science

TERM : CA1

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

Part II

Q11

- Set up 1. The mealworms in set-up 1 will not survive as it has no food or water.
- To all the beetle to look for new sources of food

Q12

Difference 1 : Animal P has a pair of wings but Animal Q does not have a pair of wings

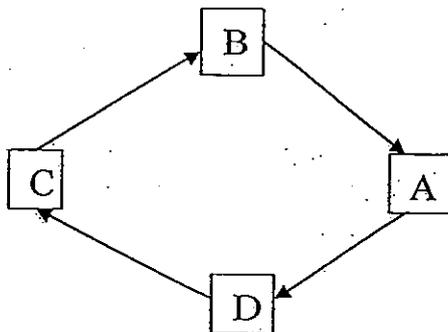
Difference 2: Animal P has six legs but Animal Q has 8 legs

Difference 3: Animal P has 3 body parts but Animal Q has only 2 body parts

Q13

- Stage B. It is growing the most.

b)



c) To ensure continuity of the same types of animals

Q14

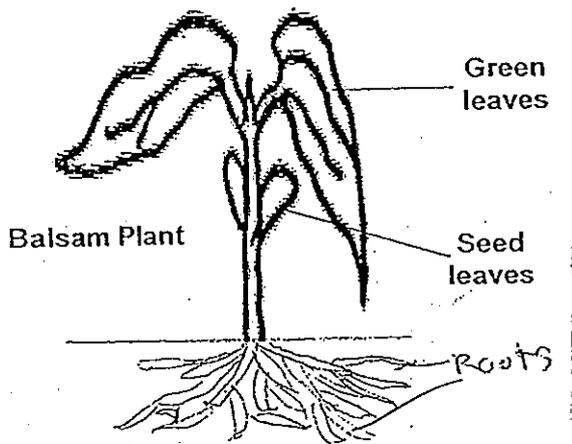
a) X. As the seedling grows, it uses the food in the seed leaves therefore it decreases.

b) It will wither

c) The conditions are Air, Warmth and Water.

Q15

a)



b) It absorbs mineral salts and water from the soil. It holds the plant firmly to the ground

Q16

a) A: Solid B: Liquid

b) Matter A and B has the same mass and volume.

Q17

Properties	Reason
Waterproof	The items will not get wet when it rains.
Lightweight	It will not be too heavy for Bala to carry



AI TONG SCHOOL

2013 CONTINUAL ASSESSMENT (2)

PRIMARY FOUR SCIENCE

DURATION : 1hr 45 min

DATE: 27 August 2013

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 : _____

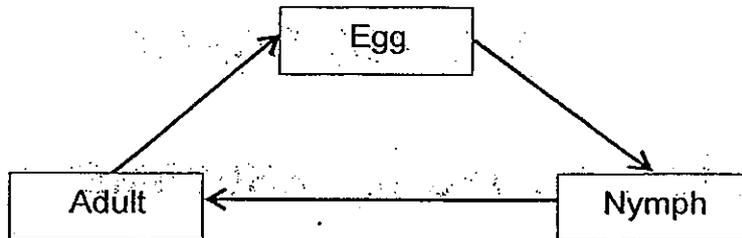
Date : _____

Section A	60
Section B	40
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 (1, 2, 3, or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. The diagram below shows the life cycle of an animal.

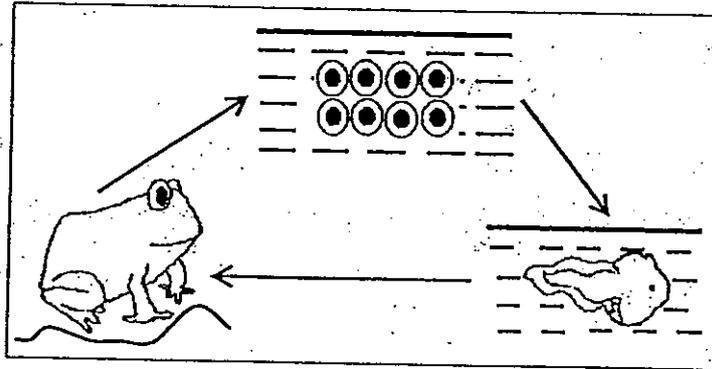


Which of the following animals have the same life cycle as that shown above?

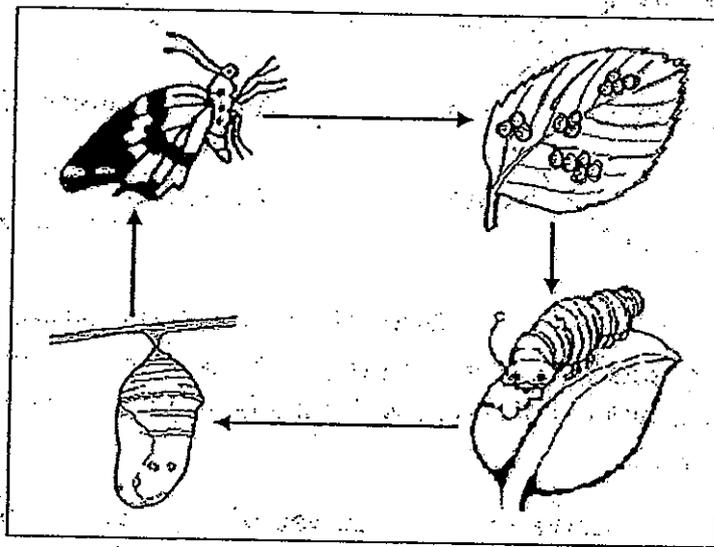
- A Housefly
- B Dragonfly
- C Grasshopper
- D Mealworm beetle

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

2. The diagrams below show the life cycle of a frog and a butterfly.



Life cycle of a frog



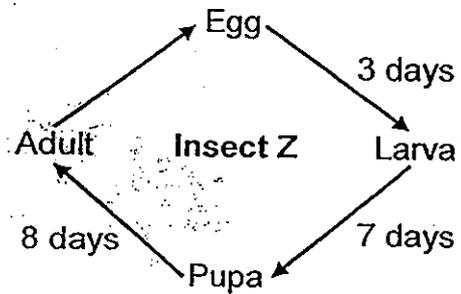
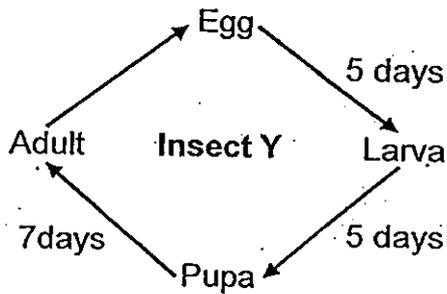
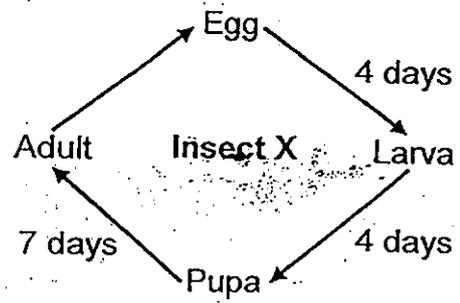
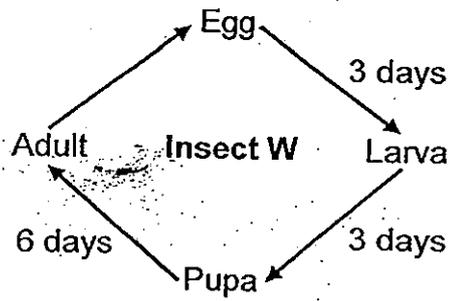
Life cycle of a butterfly

Based on the above diagrams only, which of the following statements are incorrect about the life cycles of both organisms?

- A The adults lay eggs.
- B The adults have 6 legs.
- C The young live in water.
- D The young do not resemble the adults.

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

3. The diagrams below show the life cycles of 4 different types of insects.



The larvae of insects W, X, Y and Z feed on the leaves of Plant A. The table below shows the amount of leaves which the larvae of insects W, X, Y and Z feed on per day.

	Larvae of insect W	Larvae of insect X	Larvae of insect Y	Larvae of insect Z
Amount of leaves eaten by the larvae per day (grams)	200g	200g	100g	100g

From the information given above, which one of these insects is likely to be the most destructive to Plant A?

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

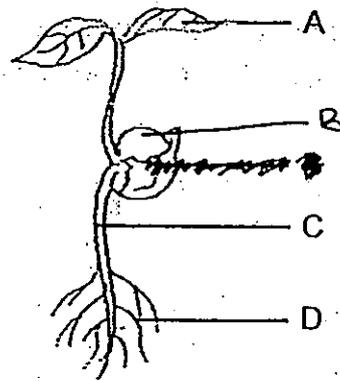
4. Selina planted 6 seeds in 5 identical pots, P, Q, R, S and T. She left each pot at different locations with different temperatures. Every day, she would give each pot of plant the same amount of water. After one week, she measured and recorded the average height of the seedlings in each pot in the table below.

	Pot				
	P	Q	R	S	T
Average temperature of location ($^{\circ}\text{C}$)	6	15	22	35	50
No. of seeds germinated	2	3	4	6	0
Average height of seedling (cm)	1	7	10	19	0

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

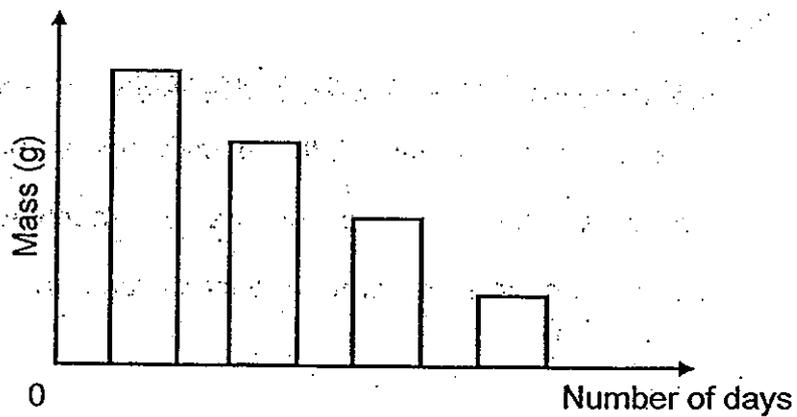
- (1) The amount of water affects the rate of germination.
- (2) Seeds cannot germinate if the temperature is above 50°C .
- (3) The greater the amount of light the seed receives, the taller the seedling.
- (4) Seeds germinate best when the temperature of the surroundings is above 35°C .

5. The diagram below shows Plant X with its parts labelled A, B, C and D.



Plant X

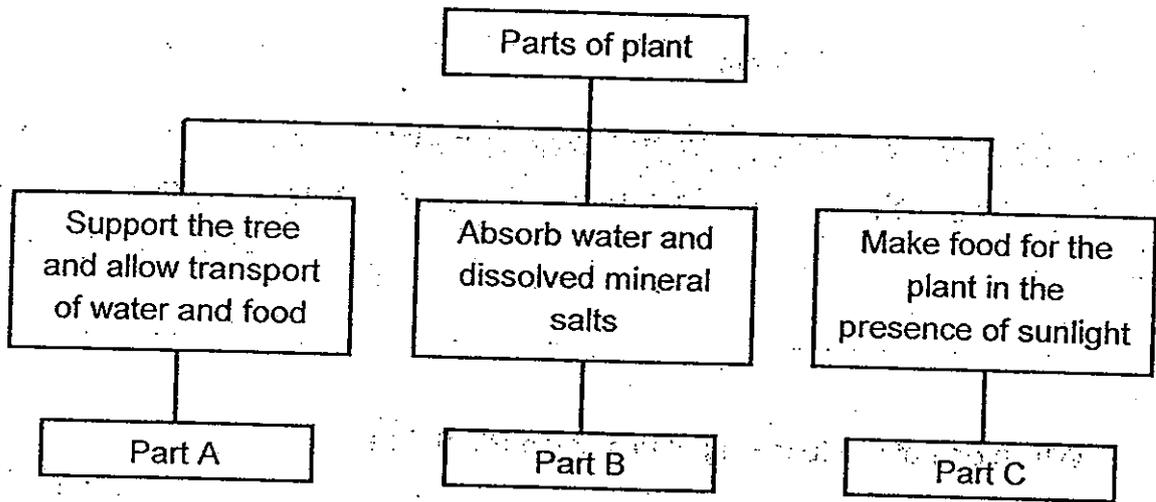
Alicia plotted a graph to show the change in mass of a part of Plant X as it grows healthily from a seedling into an adult.



Which part of Plant X does the above graph show?

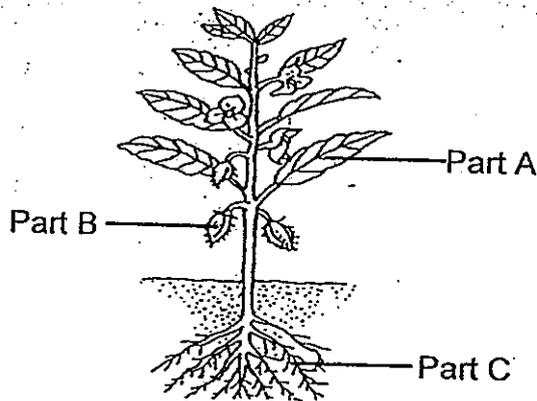
- (1) A
- (2) B
- (3) C
- (4) D

6. Study the chart carefully. The plant parts are grouped according to their functions.

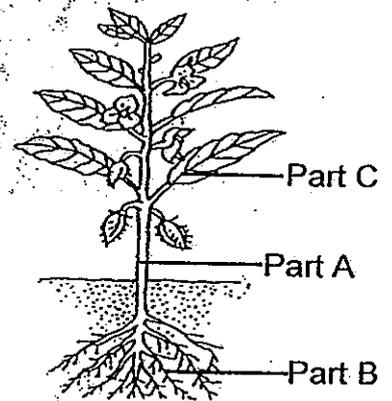


Which of the following represents Plant parts A, B and C correctly?

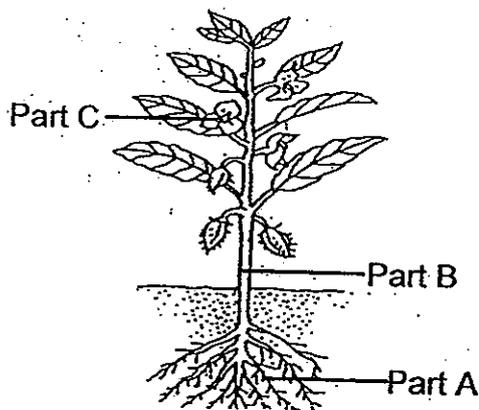
(1)



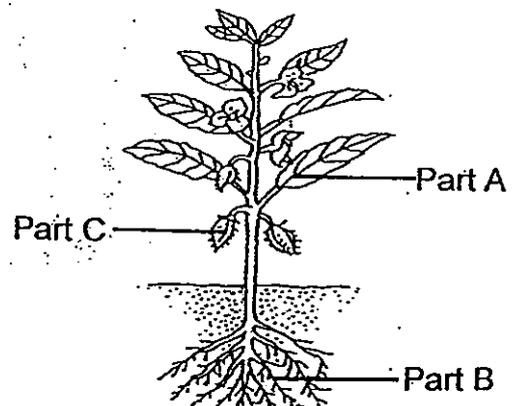
(2)



(3)



(4)

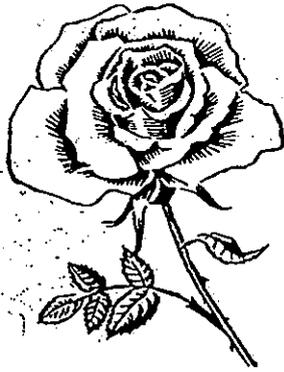


7. The classification table below shows how plants D, E, F and G are classified:

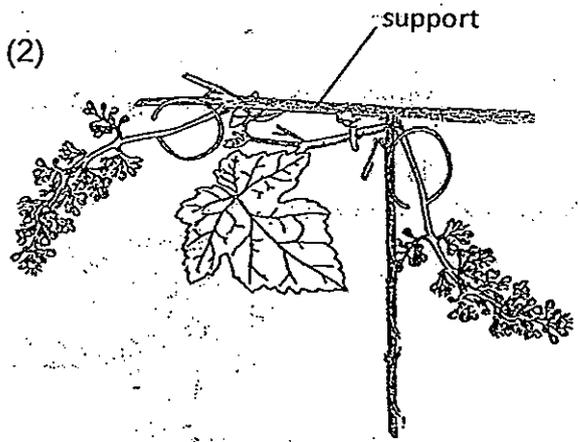
Plants			
Weak Stem		Strong stem	
Flowers that grow singly	Flowers that grow in clusters	Flowers that grow singly	Flowers that grow in clusters
D	E	F	G

Which one of the following plants could Plant F be?

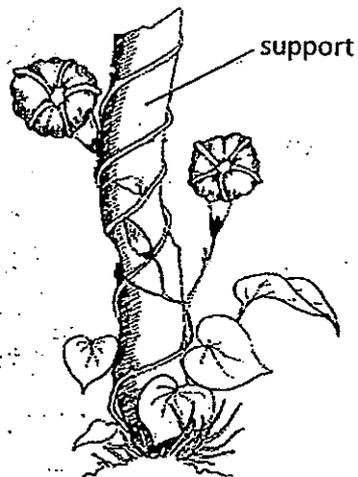
(1)



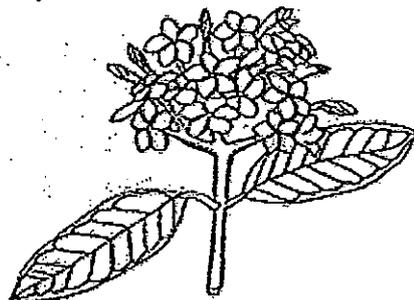
(2)



(3)



(4)



8. Four students each made a statement about the skeletal system.

- Alan: It supports the body.
Bob: It gives the body shape.
Calvin: It helps different parts of the body move.
Dylan: It does not protect the delicate organs in our body.

Which of the above students have made the correct statements?

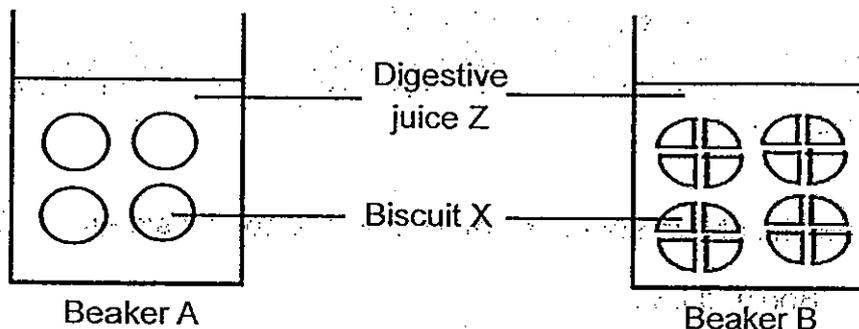
- (1) Bob and Dylan only
(2) Alan and Calvin only
(3) Calvin and Dylan only
(4) Alan, Bob and Calvin only
9. Saliva contains substance A which helps to digest starch. Leonard wants to conduct an experiment to find out the effect of the amount of saliva on starch. Iodine solution is added to test for the presence of starch. The table below shows the variables for the different set-ups he had for his experiment.

Dish	Amount of saliva (ml)	Amount of starch solution (ml)	Amount of iodine solution (ml)	Duration of experiment (min)
W	2	20	1	20
X	2	10	1	20
Y	4	10	1	20
Z	4	20	2	40

Which two dishes should Leonard use to ensure a fair test?

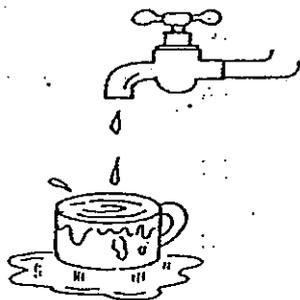
- (1) W and X only
(2) W and Y only
(3) X and Y only
(4) Y and Z only

10. Penny carried out an experiment as shown in the diagram below. She set up 2 beakers, A and B, containing the same amount of biscuit X but each biscuit was cut into pieces of different sizes. She then poured the same amount of digestive juices Z into each beaker and recorded the time taken for the biscuits to be digested.



Which one of the following statements best describes the aim of Penny's experiment?

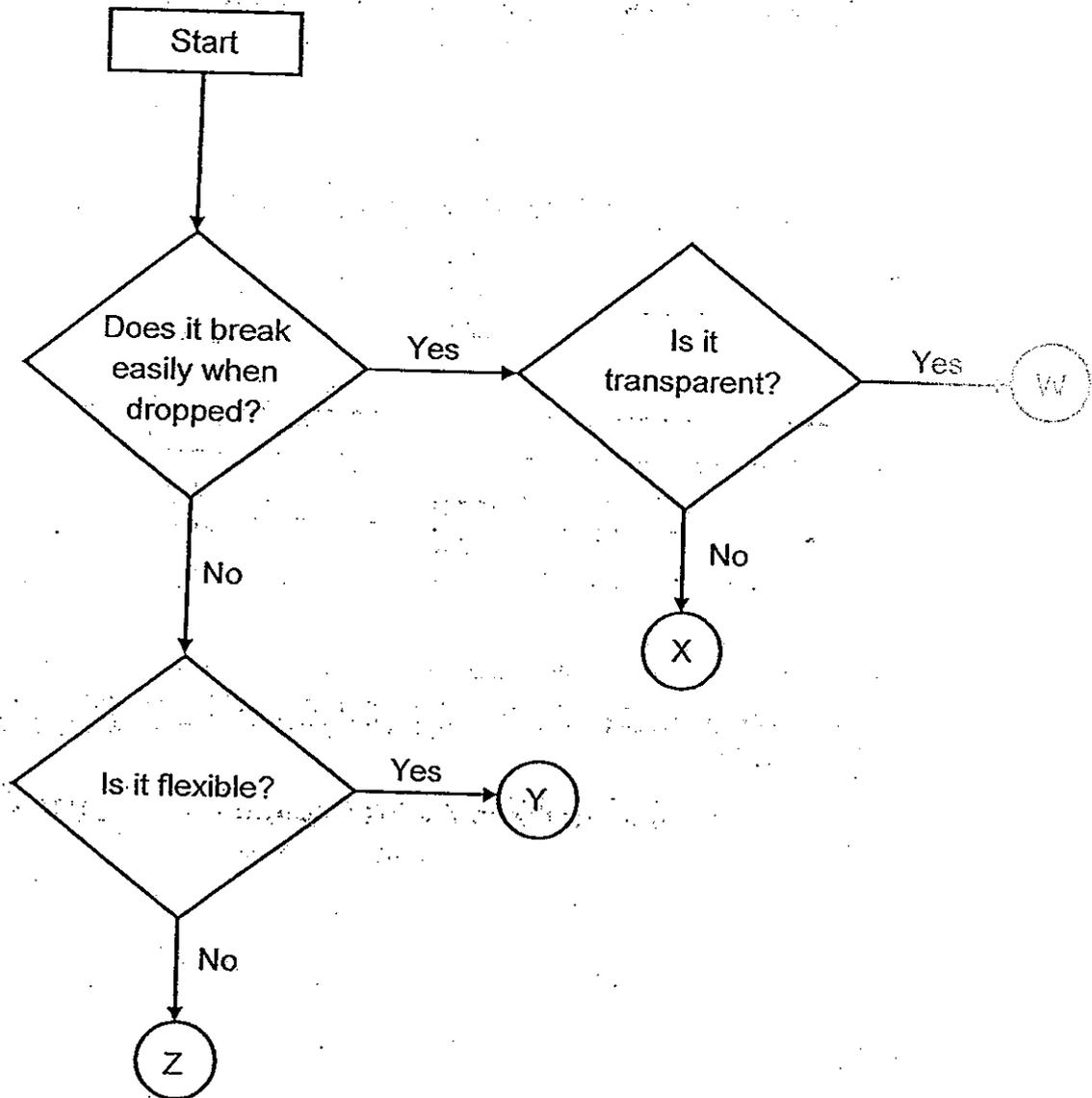
- (1) To find out if the type of food particles affects the rate of digestion.
 - (2) To find out if the size of food particles affects the rate of digestion.
 - (3) To find out if the amount of digestive juice affects the rate of digestion.
 - (4) To find out if the type of digestive juice affects the size of food particles.
11. Kate placed a cup under a dripping tap. An hour later, a puddle of water was seen around the cup.



What conclusion can Kate make from this observation?

- (1) Water occupies space.
- (2) Water can be compressed.
- (3) Water has a definite shape.
- (4) Water does not have a definite volume.

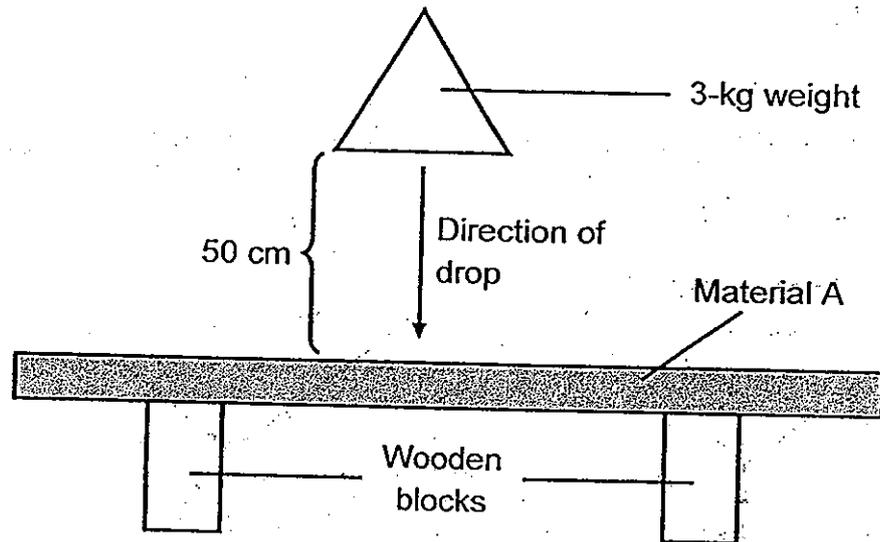
12. The flowchart below shows the characteristics of objects W, X, Y and Z.



Which of the following could objects W and Z be?

	W	Z
(1)	Plastic bag	Coin
(2)	Window panes	Cotton T-shirt
(3)	Window panes	Wooden toothpick
(4)	Plastic bag	Rubber band

13. June carried out an experiment as shown in the diagram below. She repeatedly dropped a 3-kg weight from a height of 50cm onto material A until it broke.



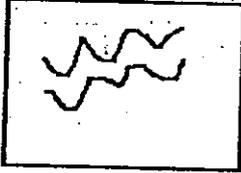
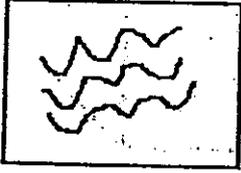
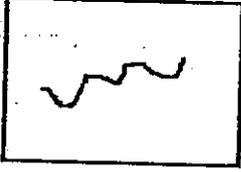
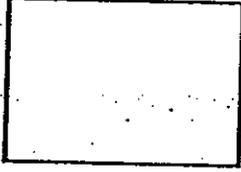
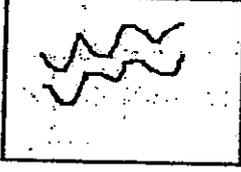
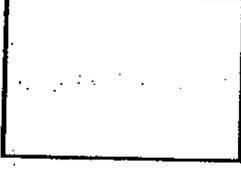
June recorded the number of times the 3-kg weight was dropped before the material broke in the table below. She then repeated the experiment using materials B, C and D.

Material	Number of times the 3-kg weight was dropped before material broke
A	10
B	5
C	25
D	27

Based on the results above, which of the following statements is true?

- (1) Material C is weaker than material B.
- (2) Material A is stronger than material B.
- (3) Material D will break first if a heavy load was placed on it.
- (4) Material B is the best material to choose to make into a table top.

14. Wei Liang conducted an experiment to study the hardness of three different materials A, B and C. He used the sharp ends of an iron rod and a wooden rod to scratch each of these materials. He recorded his observations in the table below.

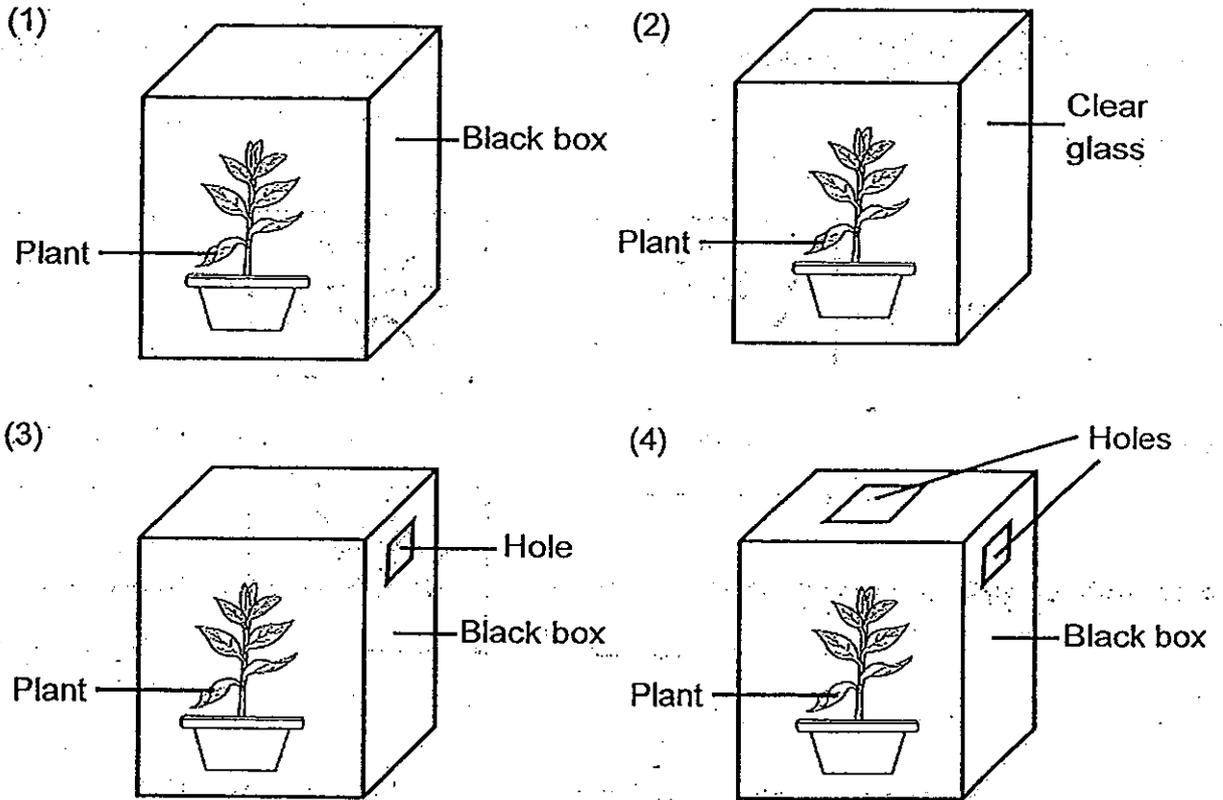
Rod used to scratch material	Observations of scratch marks on the material		
	A	B	C
Iron			
Wood			

Based on the table above, which one of the following statements is true about the hardness of materials A, B and C?

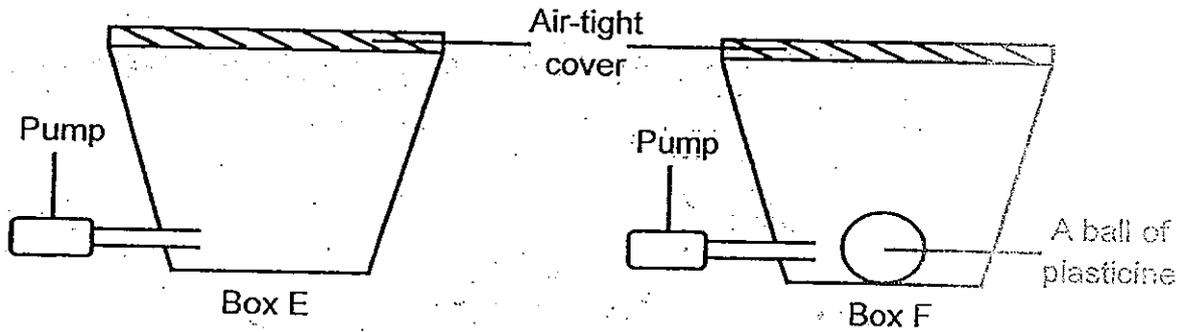
- (1) Material A is harder than Material C.
- (2) Material B is harder than Material A.
- (3) Materials A and C are harder than wood.
- (4) Materials A, B and C are harder than iron.

15. Jenny set up an experiment using 4 similar plants as shown below. She wanted to find out if plants respond to sunlight.

Which one of the following set-ups would be the most suitable for her experiment?



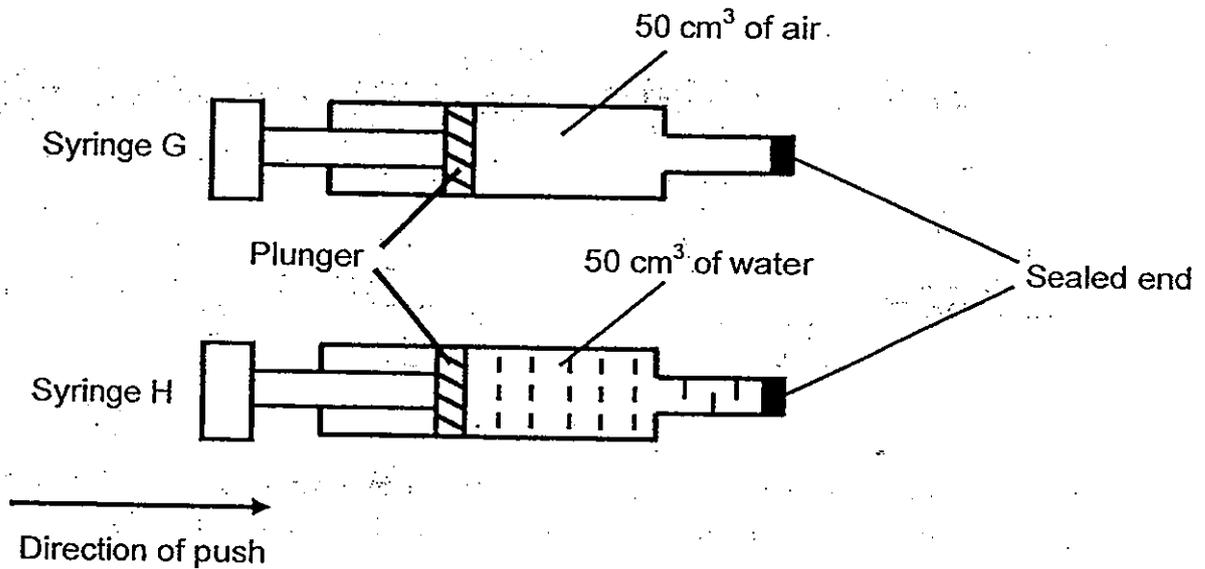
16. Two boxes, E and F, attached to a pump, have the same capacity of 1500 cm^3 each. A ball of plasticine of volume 400 cm^3 was placed inside box F. Both boxes are then sealed with an air-tight cover.



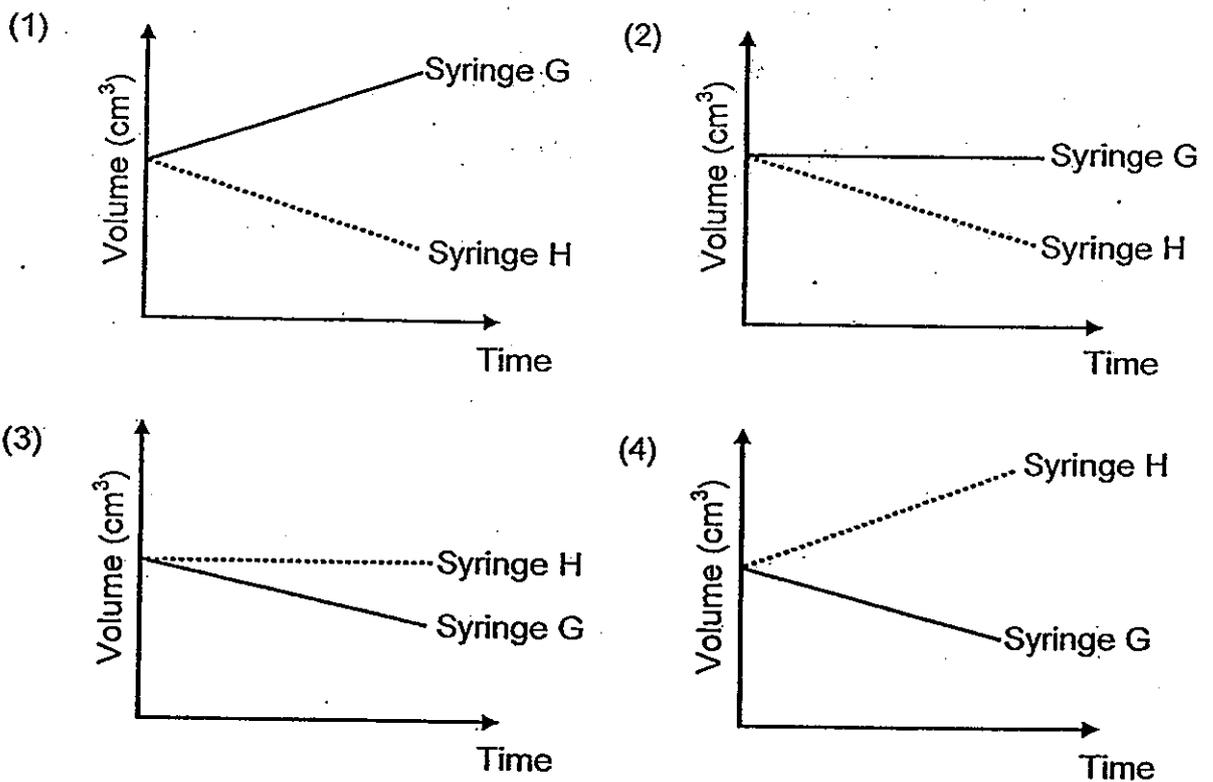
An additional 500 cm^3 of air was pumped into box E and 300 cm^3 of air was pumped into box F. Which one of the following shows the final volume of air in each box?

	Box E	Box F
(1)	1500 cm^3	1100 cm^3
(2)	1500 cm^3	1500 cm^3
(3)	2000 cm^3	1900 cm^3
(4)	2000 cm^3	1400 cm^3

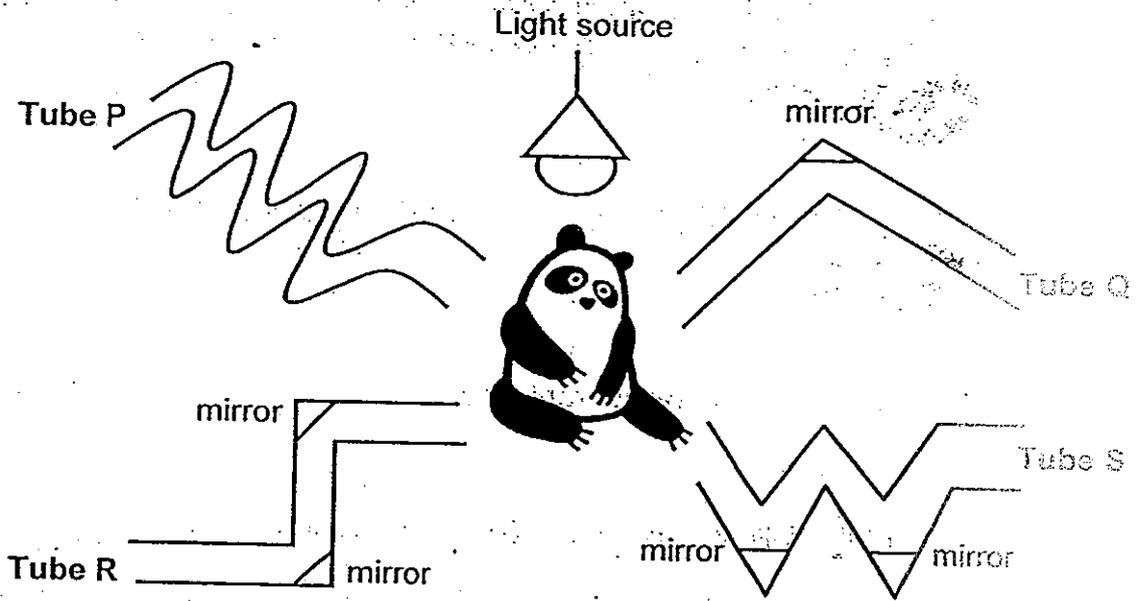
17. The diagram below shows two syringes, G and H. Syringe G contains 50 cm^3 of air while syringe H contains 50 cm^3 of water. The ends of both syringes are sealed and the plungers are then pushed in.



Which one of the following graphs correctly shows the volume of air in syringe G and volume of water in syringe H as the plunger was pushed in?



18. Xin Yi did an experiment to try to view a toy panda through tubes P, Q, R and S.



Which tubes enable Xin Yi to see parts of the toy panda clearly?

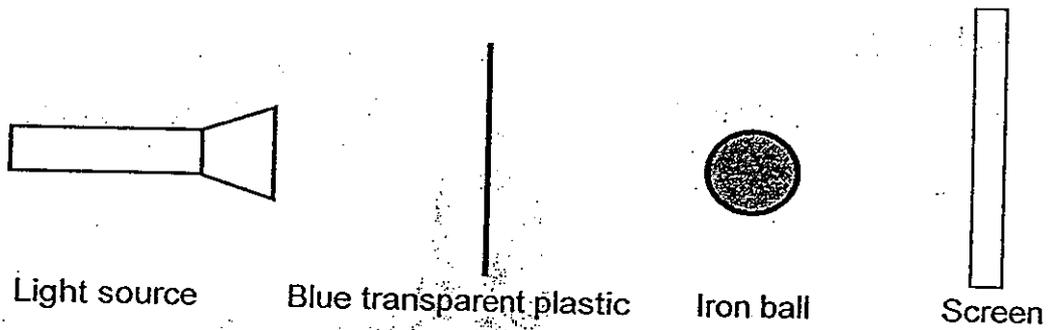
- (1) P and Q only
- (2) P and R only
- (3) Q and R only
- (4) R and S only

19. Which of the following statements about light are true?

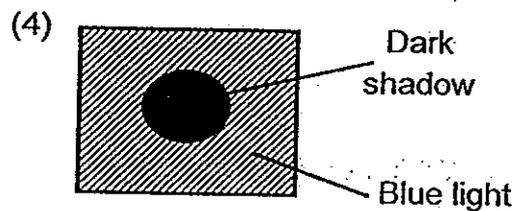
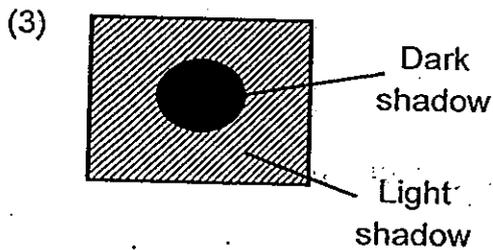
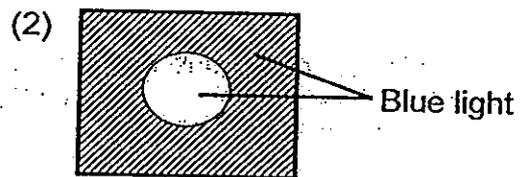
- A Light is matter.
- B Light travels in a straight line.
- C Shadows are formed when light is blocked by an object.
- D We can see an object because it is reflected from our eyes.

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

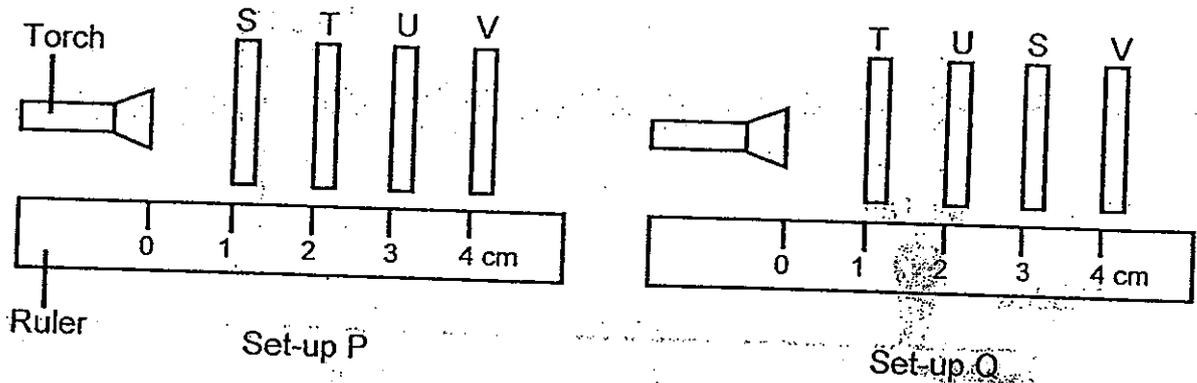
20. Rasi set up an experiment as shown below. She placed a piece of blue transparent plastic in front of an iron ball. She then shone a light on both objects such that a shadow was cast on the screen.



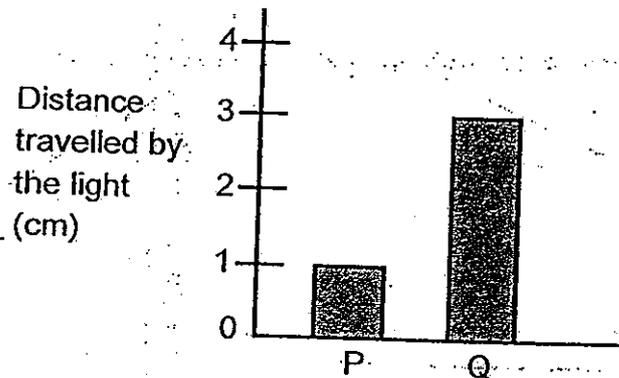
Which one of the following is most likely what she saw on the screen?



21. Ahmad conducted an experiment to investigate the degree of transparency of four different materials, S, T, U and V. The sheets were arranged in two set-ups P and Q as shown.



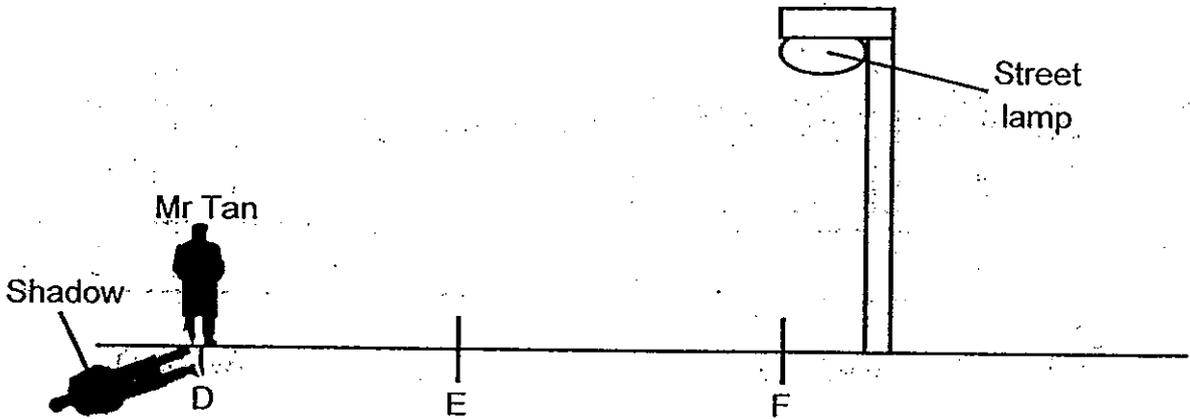
The distance travelled by the light for each set-up was measured and the results are shown in the bar graph below.



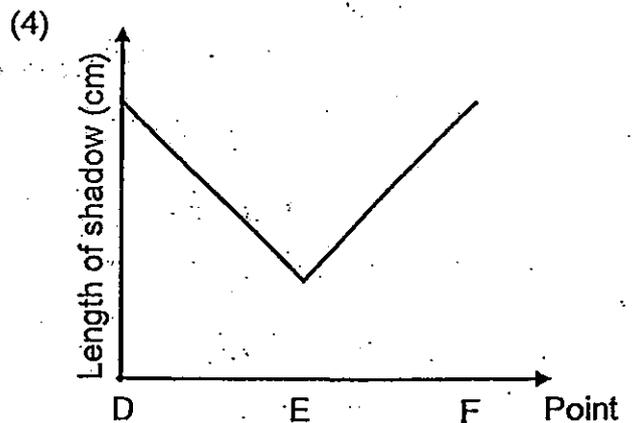
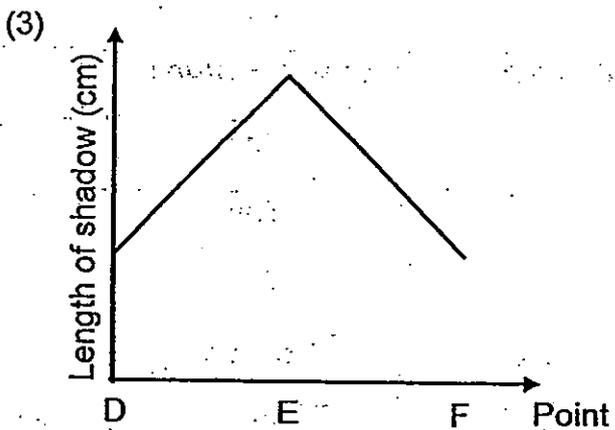
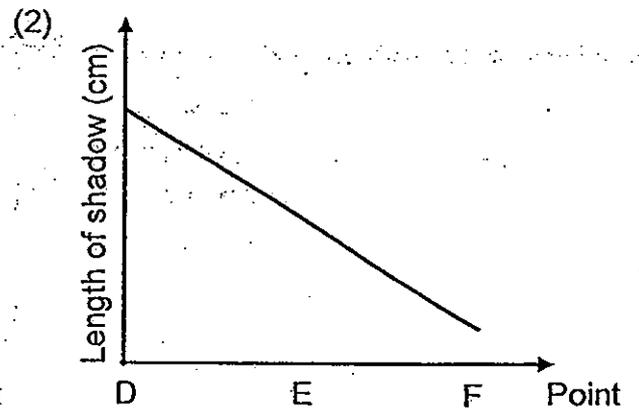
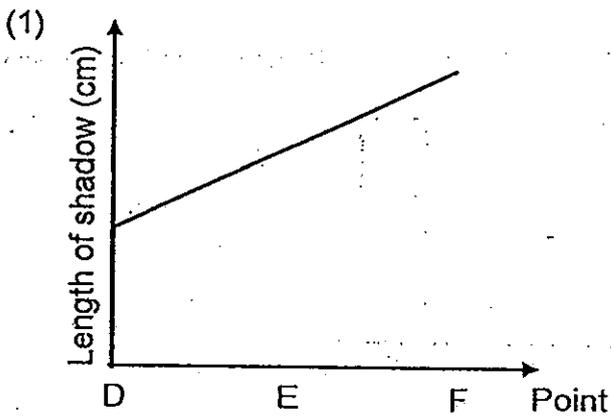
Which of the following best describes the degree of transparency of materials S, T, U and V?

	Does it allow light to pass through?			
	S	T	U	V
(1)	Not sure	No	Yes	No
(2)	No	Yes	Yes	Yes
(3)	Yes	Yes	Not sure	No
(4)	No	Yes	Yes	Not sure

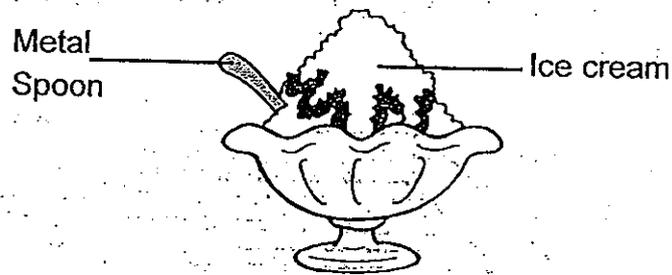
22. Mr Tan was walking along a street at night. He stood at point D and observed that his shadow was cast behind him. He then noticed that the length of his shadow changed as he walked towards the street lamp.



Which one of the following graphs shows the correct changes in the length of the shadow as Mr Tan walked from Point D to Point F?



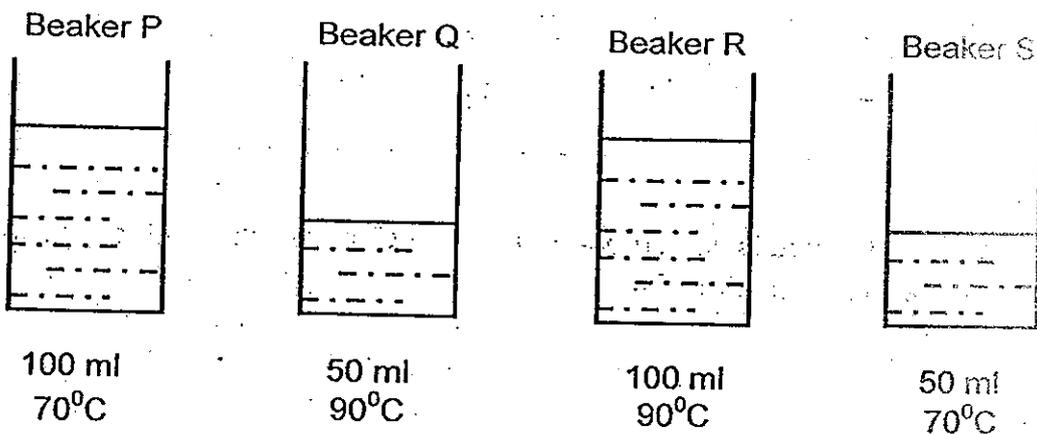
23. Sathish placed a metal spoon into a bowl of ice cream and the spoon became colder after some time.



Which one of the following statements explains why the spoon became cold?

- (1) The spoon lost heat to the ice cream.
- (2) The spoon lost heat to the surroundings.
- (3) The ice cream transferred coldness to the spoon.
- (4) The ice cream transferred coldness to the surroundings.

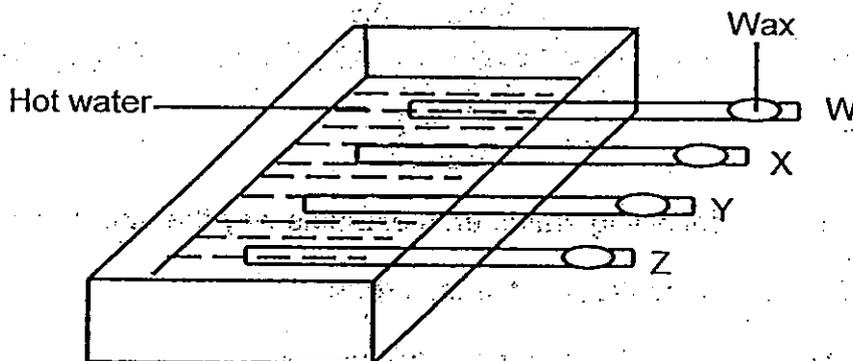
24. The diagram below shows 4 beakers of water, P, Q, R and S, at different temperature and volume.



Which one of the following statements is true?

- (1) Beaker P has the most heat energy.
- (2) Beaker R has more heat energy than beaker Q.
- (3) Beaker S has more heat energy than beaker R.
- (4) Beaker P and Beaker S have the same amount of heat energy.

25. Sammy set up an experiment as shown in the diagram below. He attached four rods of the same length and thickness but made of different materials, W, X, Y and Z, to a container of hot water. The ends of the rods are coated with the same amount of wax.



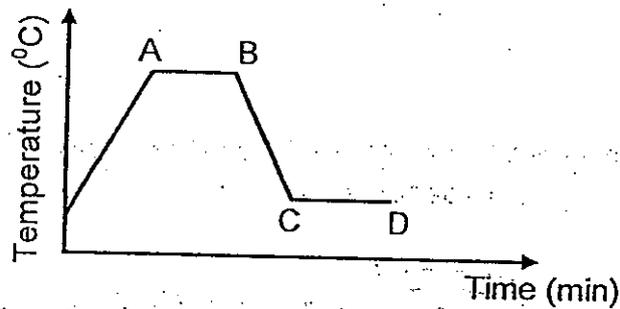
Sammy then recorded the time taken for the wax to melt completely.

Material	Time taken for wax to melt completely (min)
W	13
X	15
Y	18
Z	10

Based on the results, which one of the following materials is the most suitable for making an ice cooler box?

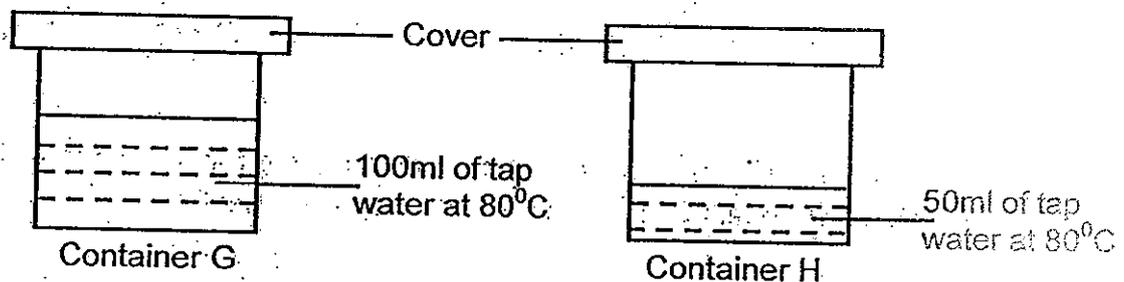
- (1) W
- (2) X
- (3) Y
- (4) Z

26. Fatimah heated a beaker of water over a short period of time. She measured and recorded the temperature of water in the beaker. The graph below shows the changes in temperature of water over time.



At which point was the heat source removed?

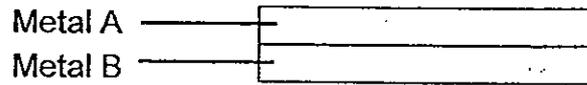
- (1) Point A
 - (2) Point B
 - (3) Point C
 - (4) Point D
27. The diagram below shows two similar containers, G and H. Containers G and H are of the same size and are made of the same material, W, which is a good conductor of heat. The containers are filled with different amount of water and are left in a living room. The temperature of water in both containers is then recorded after 30 minutes.



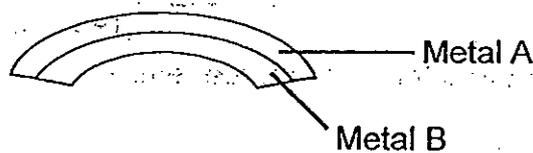
Which of the following statements correctly describes the change of temperature in water for containers G and H?

- (1) Water in container G cools down faster than water in container H.
- (2) Water in container H cools down faster than water in container G.
- (3) The temperature of water in containers G and H remains unchanged.
- (4) The drop in temperature of water in containers G and H would be the same.

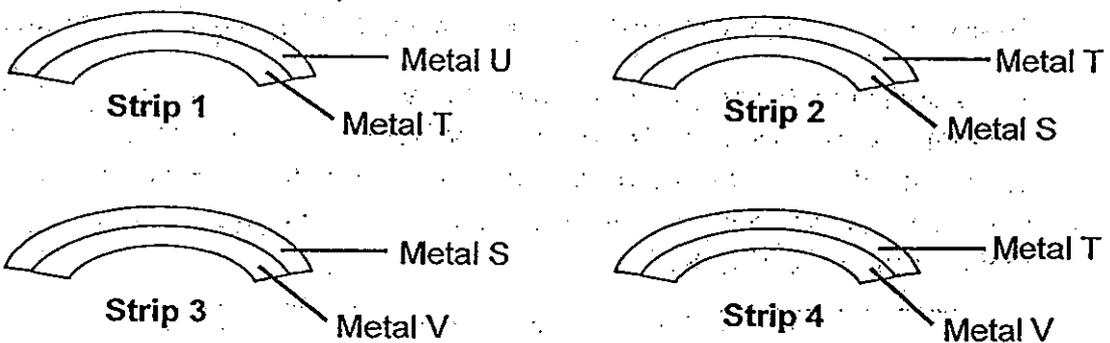
28. A bimetallic strip is formed when two different metals are joined together as shown in the diagram below.



When the bimetallic strip is heated, it will bend like this as shown below. This is because when heated, metal A expands more than metal B.



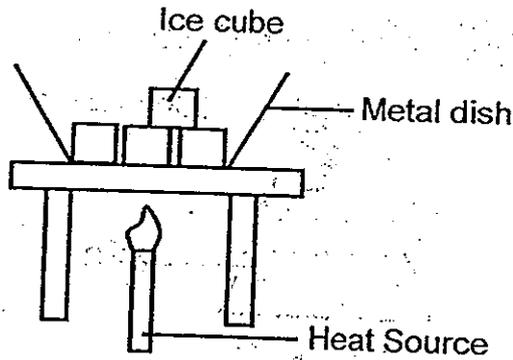
Four metals, S, T, U and V, each of equal length were used in different combinations to form 4 bimetallic strips. The diagrams below show how each strip bent when heated.



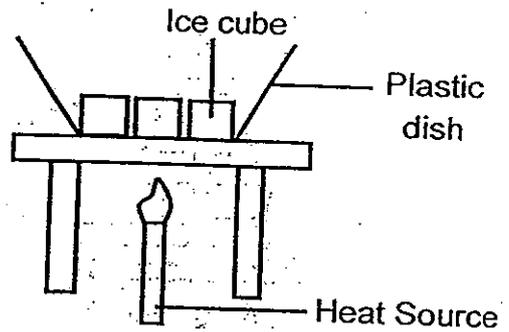
Based on the information given above, which of the following shows the expansion of metals S, T, U and V in the correct order?

	Expands least \longrightarrow Expands most			
(1)	T	U	V	S
(2)	U	T	S	V
(3)	V	S	T	U
(4)	S	V	U	T

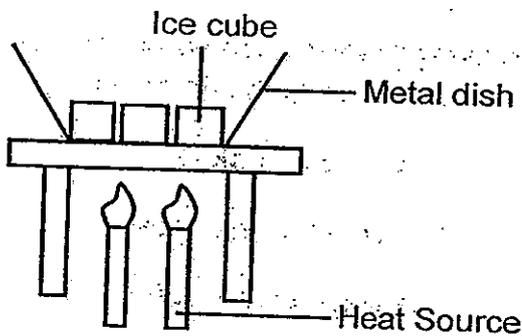
29. Sharon was given four different set-ups, P, Q, R and S, as shown below. She wanted to conduct an experiment to find out if the number of heat sources affects the rate of heat conductivity of a dish. Some ice cubes were placed in the dish and was heated for 5 minutes. The time taken for all the ice cubes to melt completely was recorded.



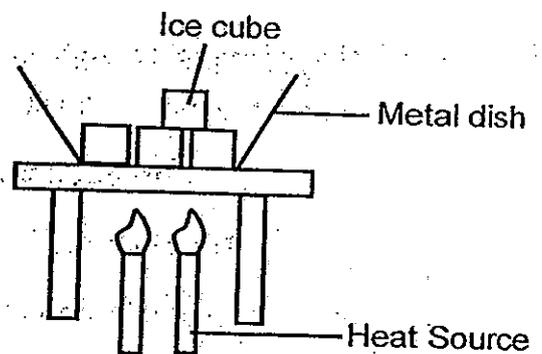
Set-up P



Set-up Q



Set-up R

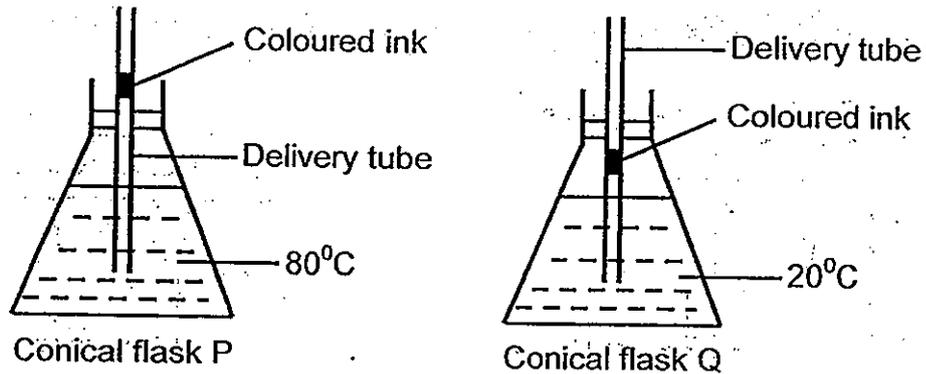


Set-up S

Which two set-ups should Sharon use in her experiment to ensure that it is a fair test?

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

30. Amreet set up an experiment as shown in the diagram below. He measured the temperature of the water in conical flasks, P and Q, and recorded it as 80°C and 20°C respectively. He observed that the coloured ink drop was at different heights in each delivery tube at the start of the experiment.



Amreet then placed the two conical flasks, P and Q, into a basin of water at 50°C .

Which one of the following best describes Amreet's observation on the coloured ink in both the conical flasks after it was placed in the basin of water?

	Conical flask P	Conical flask Q
(1)	The coloured ink rises.	The coloured ink rises.
(2)	The coloured ink falls.	The coloured ink rises.
(3)	The coloured ink rises.	The coloured ink falls.
(4)	The coloured ink falls.	The coloured ink falls.

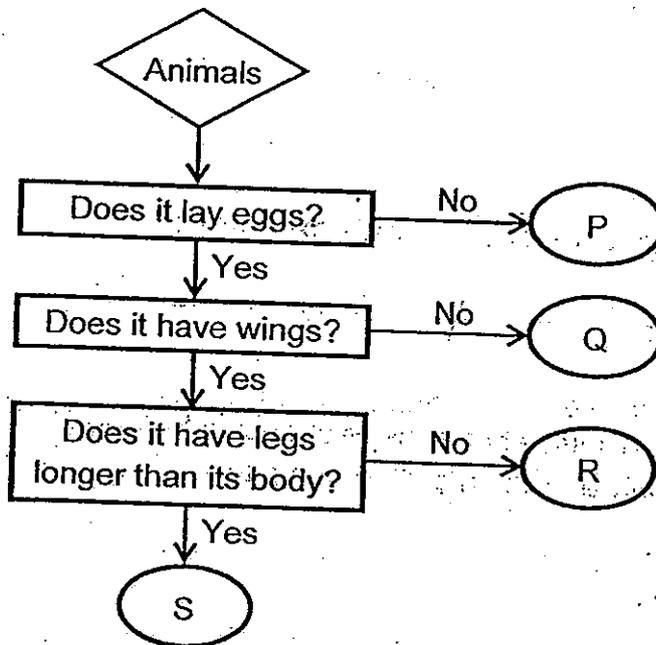
Name: _____ ()

Class: P4 ()

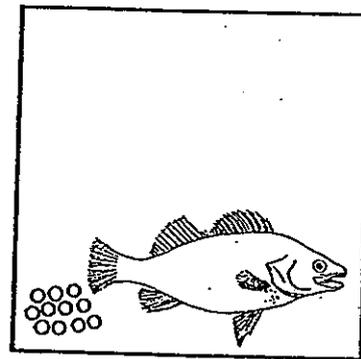
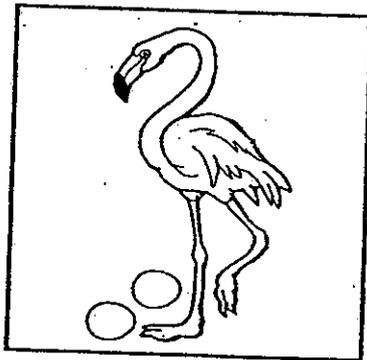
Section B: 40 marks

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

31. The flow chart below shows the characteristics of 4 animals P, Q, R and S.



(a) Which animal, P, Q, R or S, best represents the animals as shown below? [2]



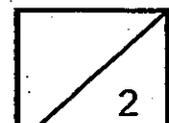
(b) Based on the flow chart, state one physical difference between animals Q and R. [1]

32. Julia wanted to find out if the amount of water given to a plant daily affects the growth of the plant. She placed two similar plants, A and B, under the sun and watered each plant with different amounts of water daily. She then observed the growth of the plants after 5 days and recorded the results.

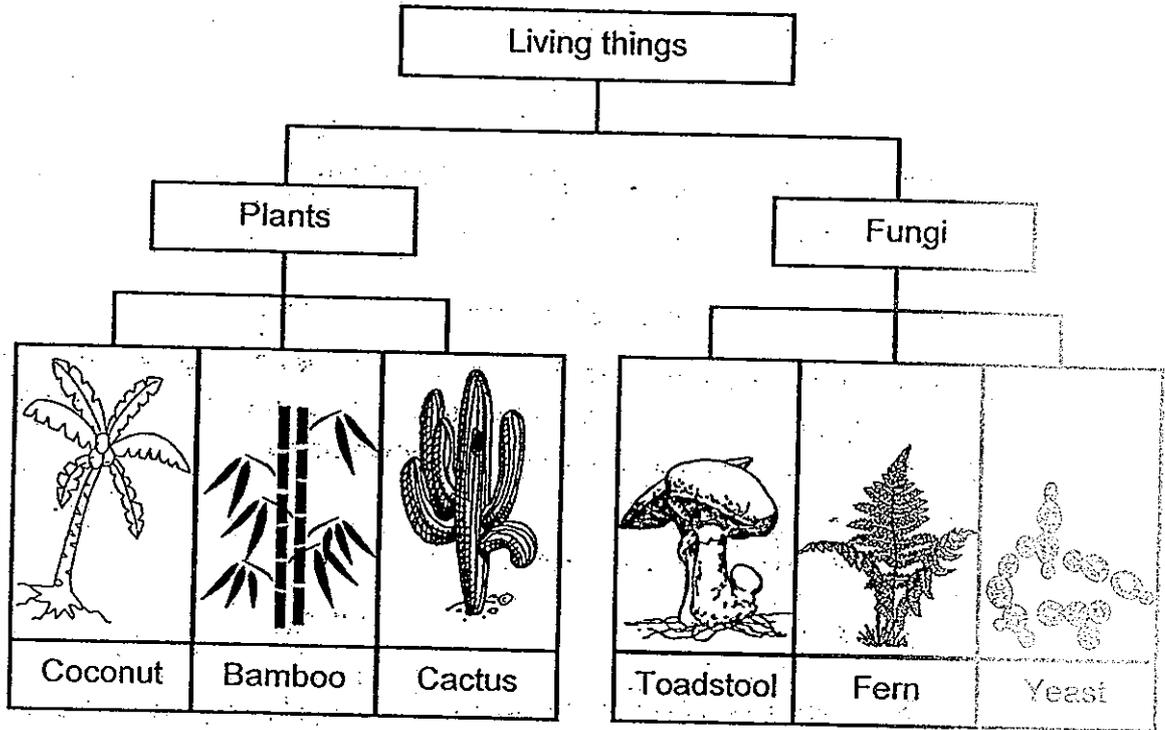
	Plant A	Plant B
Amount of water given daily (ml)	20	5
Increase in height of plant growth after 5 days (cm)	14	6

(a) State the changed variable in Julia's experiment. [1]

(b) Based on the results, what is the relationship between the amount of water given daily and the growth of the plant? [1]



33. Study the classification chart below.



- (a) Which one of the organisms above has been classified wrongly?
Explain your answer.

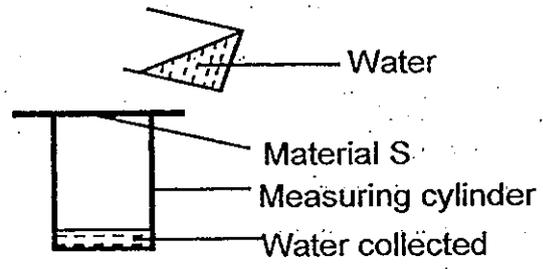
[2]

- (b) How does the toadstool obtain its food?

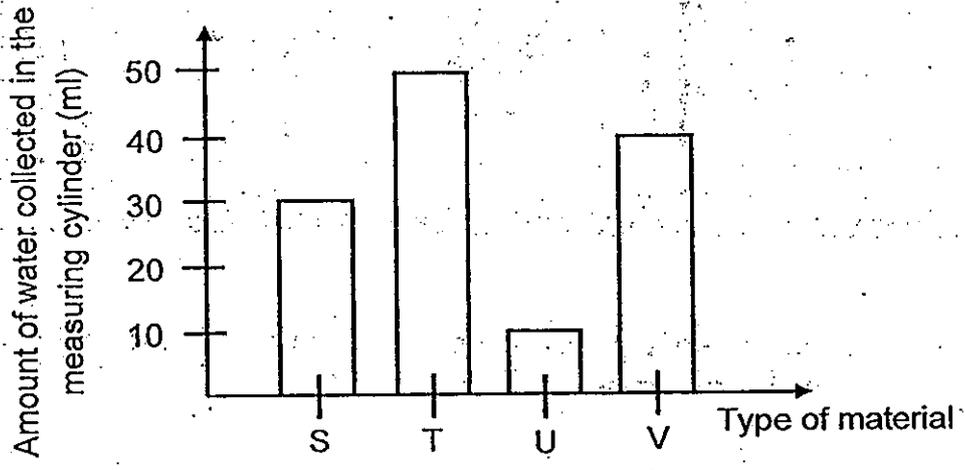
[1]



34. Isaac conducted an investigation to find out how much water a material can absorb. He put a sheet of material S over a measuring cylinder. He then gently poured 200ml of water over material S without spilling any water.



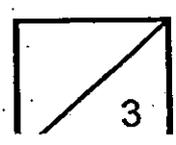
Isaac recorded the amount of water collected in the measuring cylinder. He repeated the experiment using different materials T, U and V, one piece at a time. With his results, he plotted a graph as shown below.



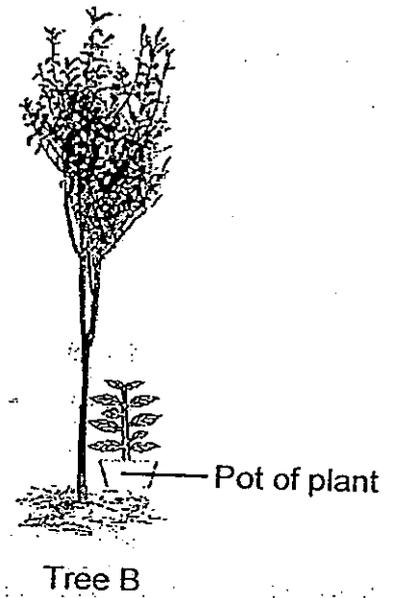
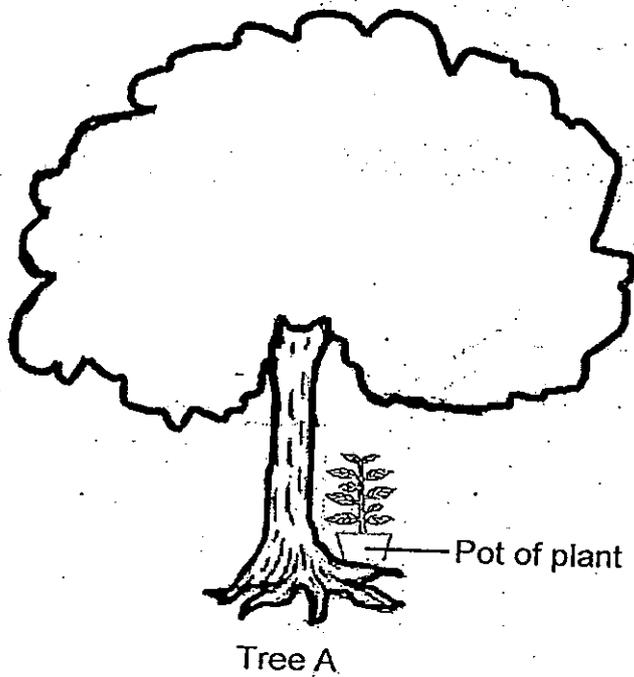
(a) Arrange materials S, T, U, V, according to its absorbency. [1]

Least absorbent		Most absorbent	
→			

(b) Which one of the materials, S, T, U, V, is most suitable to be made into a mop to clean up wet spills most effectively? Explain your answer. [2]



35. Two similar pots of plants were placed under 2 different trees of different sizes as shown below.



Both plants were given the same amount of water every day. After 3 weeks, it was observed that one of the plants had wilted while the other plant continued to grow healthily.



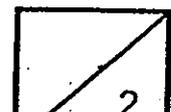
Healthy plant with green leaves



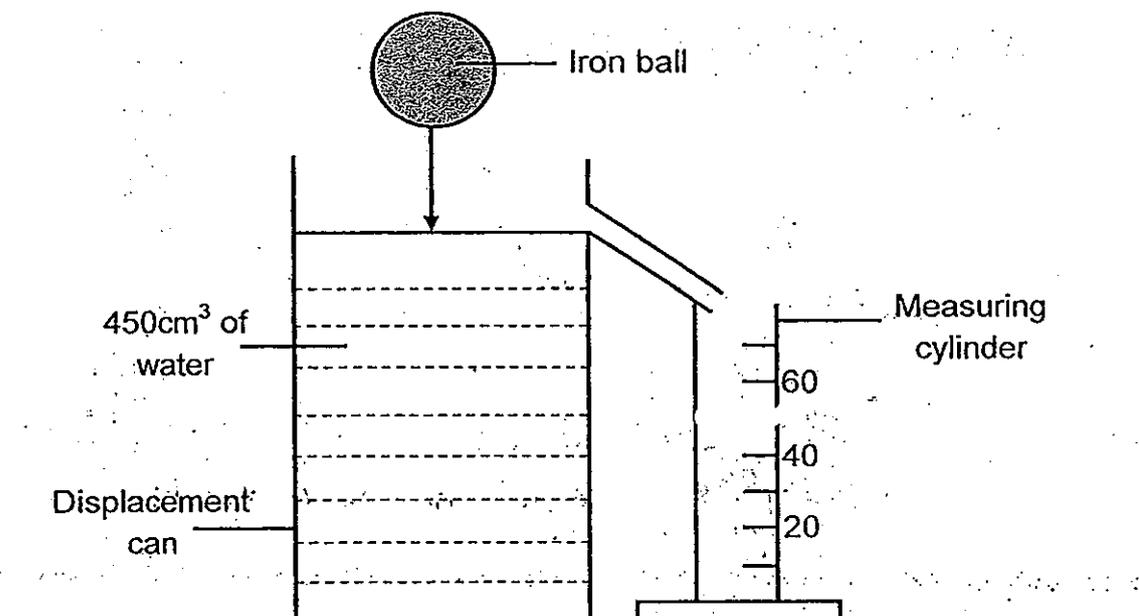
Wilted plant with yellow leaves

Under which tree was the wilted plant with yellow leaves placed? Explain your answer.

[2]



36. Rasyidah filled a displacement can with 450cm^3 of water as shown in the diagram below. She then gently lowered a 50cm^3 iron ball to the bottom of the displacement can. She observed that some water overflowed from the displacement can into the measuring cylinder.

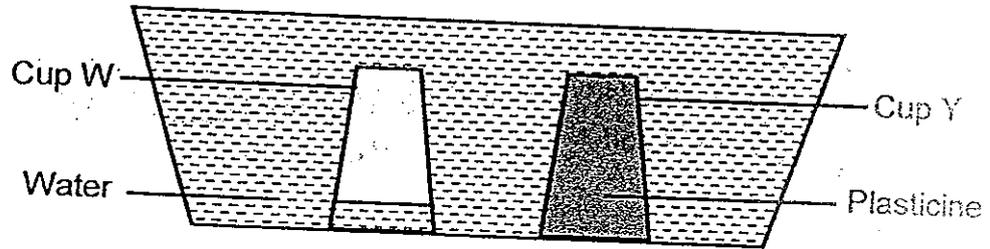


(a) Draw on the measuring cylinder, the amount of water collected. [1]

(b) Rasyidah then repeated the experiment using a 50cm^3 rubber ball. She realised that the amount of water collected in the measuring cylinder is the same as the amount of water collected in (a). She then concluded that the iron ball has the same mass as the rubber ball.

Do you agree with her conclusion? Explain your answer. [2]

37. Yuki set up an experiment as shown in the diagram below. She inverted an empty cup W and pushed it into a container of water. She then inverted another cup Y, filled with plasticine, and pushed it into the same container of water.



- (a) Yuki observed that some water entered cup W. Explain her observation.

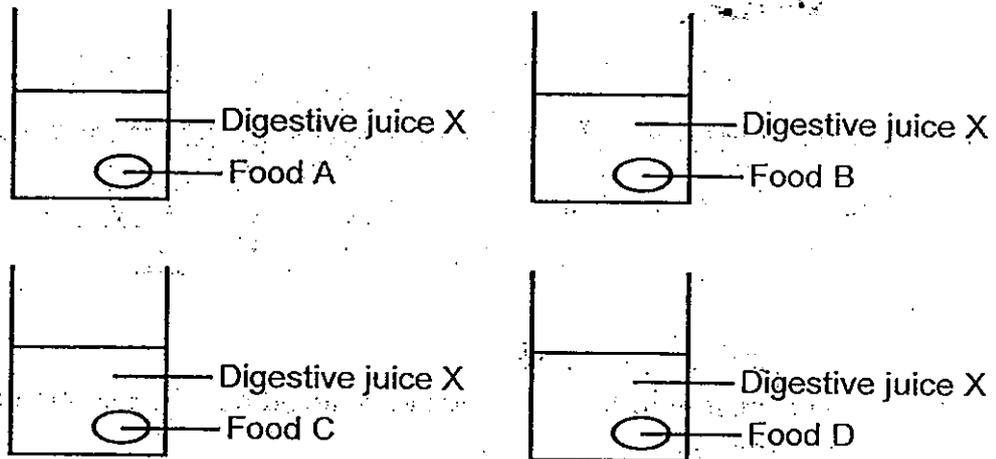
[2]

- (b) Do you think any water can enter plastic cup Y which is filled with plasticine? Explain your answer.

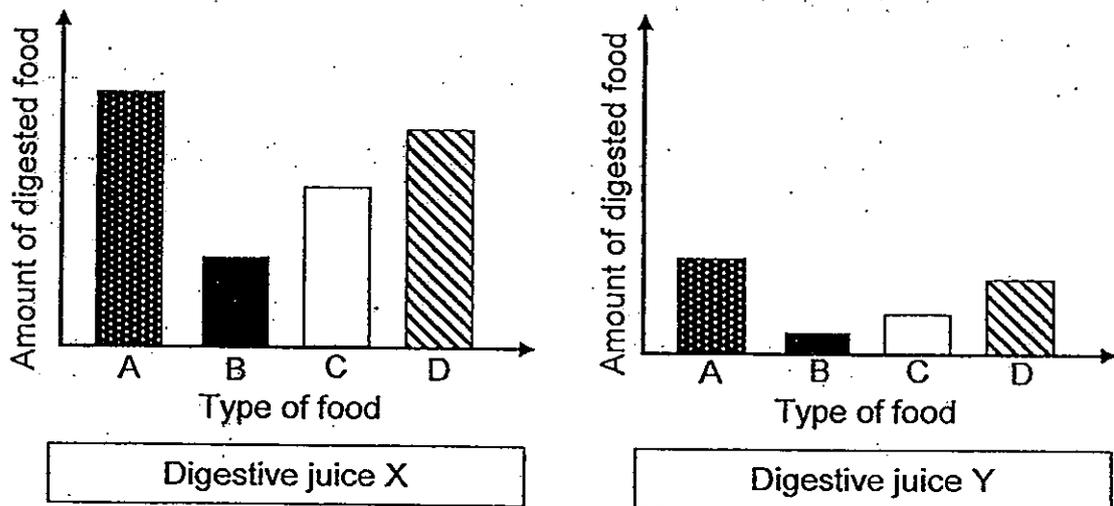
[1]



38. Fahmi placed equal amount of food A, B, C and D in digestive juice X for 3 hours. The set-up is shown below.



After 3 hours, he recorded the amount of digested food in each set-up. He then repeated the experiment using digestive juice Y. The results of the 2 experiments are shown in the graphs below.



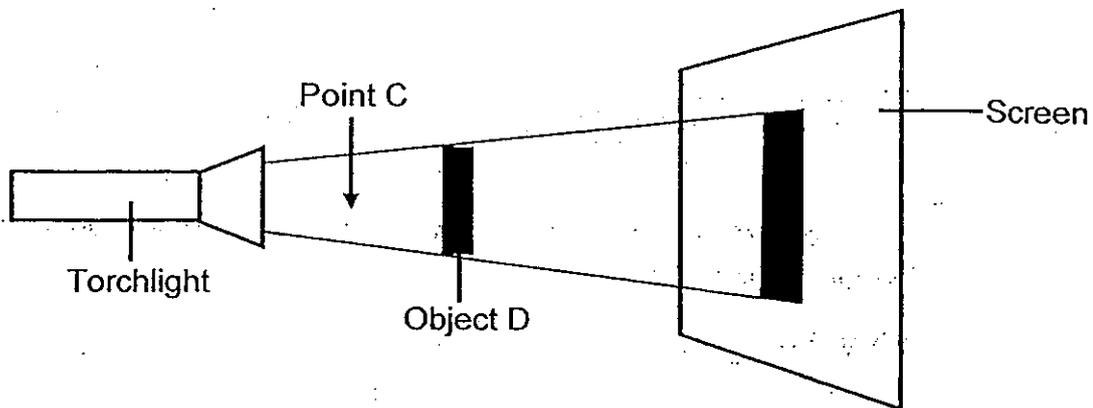
(a) Based on the information given in the graph above, which type of food is the least easily digested? Explain your answer. [1]

(b) Which digestive juice, X or Y, has a faster rate of digestion for food A? Explain your answer. [1]

(c) Fahmi's brother accidentally swallowed the seed of an apple. The next day, he passed out the seeds in his waste. Explain why the seed passed out looked exactly the same as before. [1]



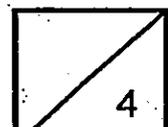
39. Wilson placed a torchlight in front of object D and a dark shadow was cast on the screen as shown in the diagram below.



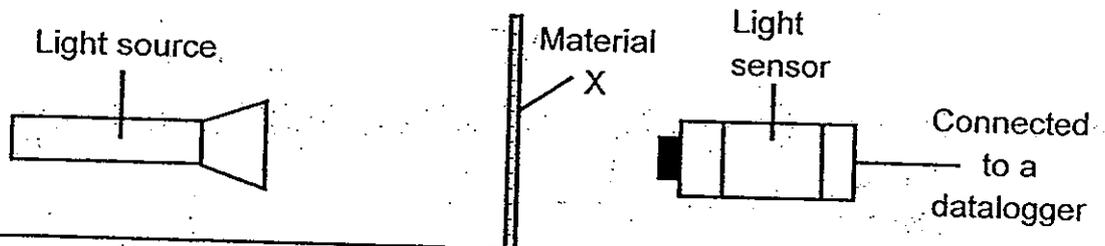
- (a) From the observation above, what can Wilson infer about the property of object D? [1]

- (b) Without removing object D, Wilson then placed a large piece of clear glass at point C as shown above. He predicted that a dark shadow will still be formed on the screen. Do you agree with Wilson? Explain your answer. [1]

- (c) Wilson decided to change object D to object B, which is made of frosted glass. What will the difference between the shadows cast by object B and object D be? Explain your answer. [2]



40. Raja carried out an investigation as shown in the diagram below. He placed a sheet of material X between a light source and a light sensor. The amount of light that passed through material X was detected and recorded.

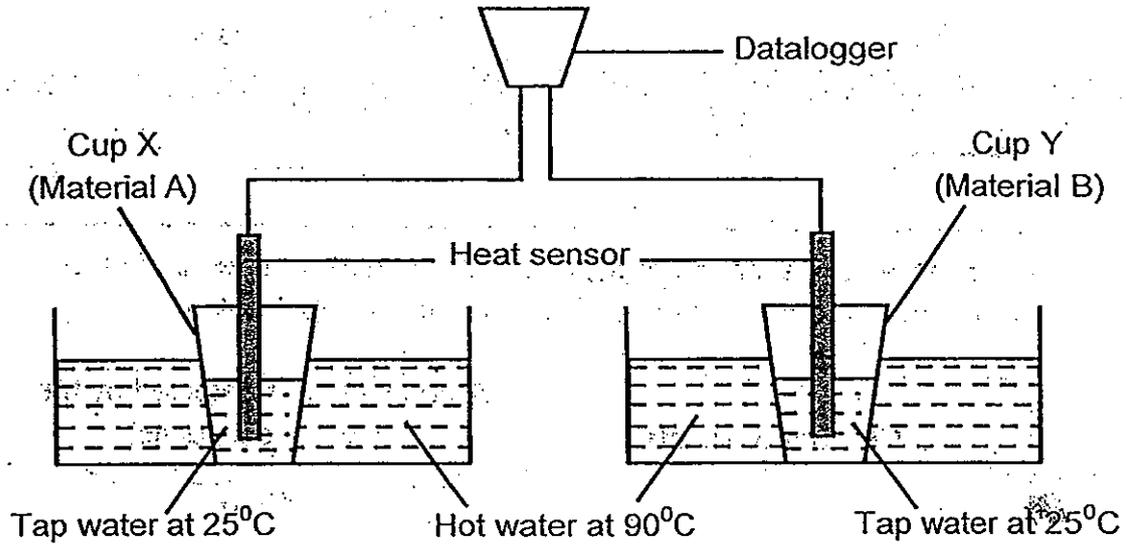


Raja repeated his experiment with different number of sheets of material X. He then recorded the amount of light detected in the table below.

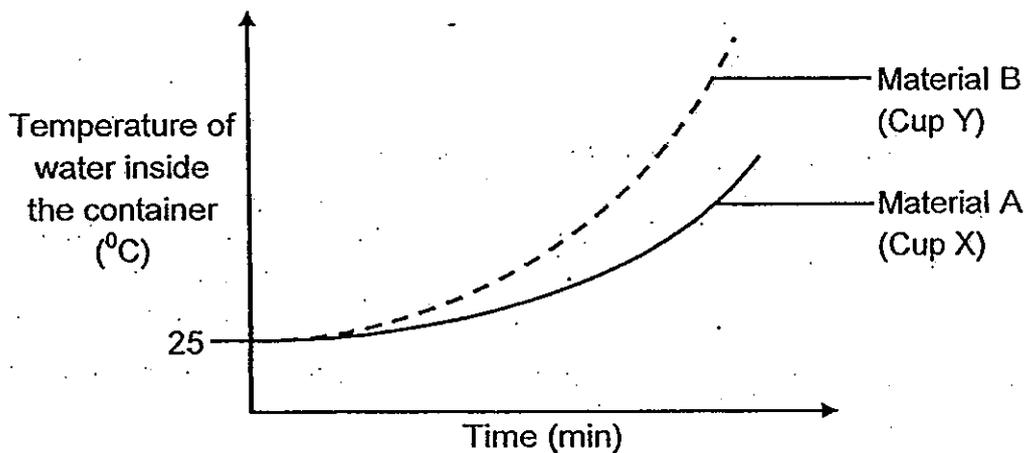
Number of sheets	Amount of light detected by the light sensor (units)
1	4050
5	2820
7	780
9	0
11	0

- (a) What was the aim of Raja's experiment? [1]
- _____
- _____
- (b) What conclusion can Raja make from the results shown in the table? [1]
- _____
- _____
- (c) State what Raja can do to confirm that the maximum number of sheets that is needed to completely block light from passing through material X is 9 sheets. [1]
- _____
- _____

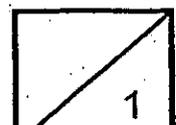
41. Jun Jie conducted an experiment using two cups X and Y made of different materials A and B respectively. He filled both cups with the same volume of tap water at a temperature of 25°C and placed them each into a basin of hot water at 90°C .



Jun Jie then used a datalogger to measure and record the temperature of water inside cups X and Y for ten minutes. The results were plotted in the graph as shown below.



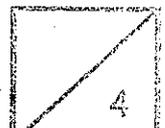
- (a) Which material, A or B, is a better conductor of heat? Explain your answer. [1]



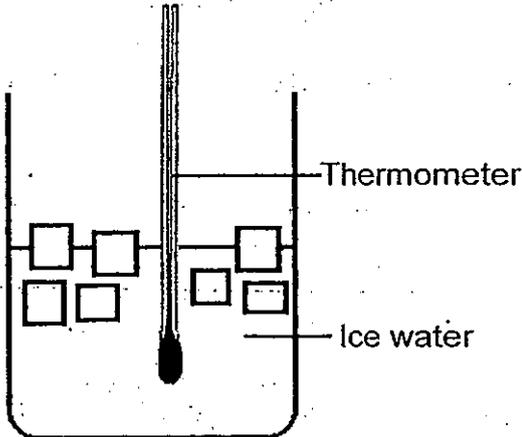
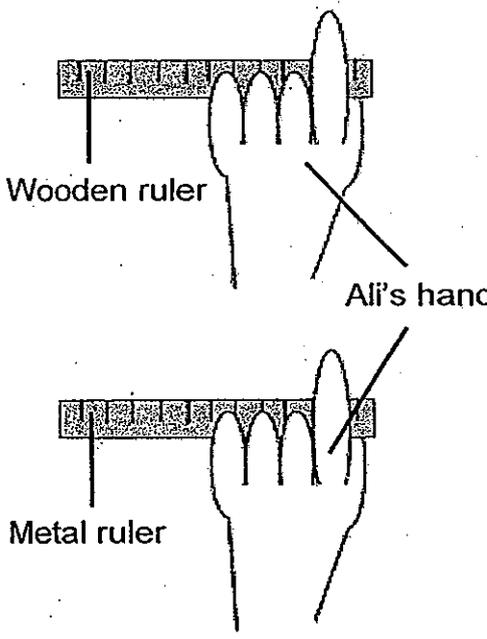
(b) Describe the heat transfer which causes the temperature change in the water inside cup X. [1]

(c) When will the heat transfer between the water in the cups and the hot water stop? [1]

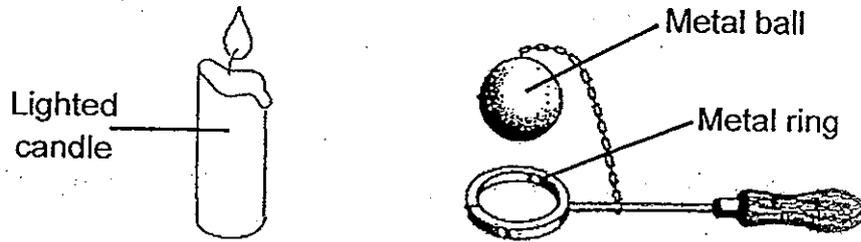
(d) If Jun Jie wants to keep his drink cold for the longest time, which cup would he choose to use? Explain your choice. [2]



42. Explain the observations for each of the following experiments:

	Description and observation	Question
a)	 <p>When the thermometer was placed into a beaker of ice water, the alcohol level in the thermometer drops.</p>	<p>(a) Explain why the alcohol level in the thermometer drops when placed in the beaker of ice water. [2]</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
b)	 <p>Ali's hand felt colder when he touched the metal ruler compared to the wooden ruler.</p>	<p>(b) Explain why Ali's hand felt colder when he touched the metal ruler. [2]</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

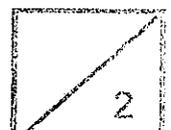
43. You are given a lighted candle, a metal ball and a metal ring as shown below.



Describe what you would do to show that metal expands when heated.

[2]

End of Paper





ANSWER SHEET

EXAM PAPER 2013

SCHOOL : AI TONG

SUBJECT : PRIMARY 4 SCIENCE

TERM : CA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	3	2	2	2	2	1	4	3	2	1	3	2	3	3	1	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	2	4	4	2	1	2	3	2	2	3	1	2

Q31a) Animal S, Animal Q

Q31b) Animal R has a pair of wings but animal Q does not have a pair of wings.

Q32a) The amount of water given daily

Q32b) As the amount of water given daily increase, the growth of the plant increases.

Q33a) Fern. Fern is a plant as it has leaves to make its own food.

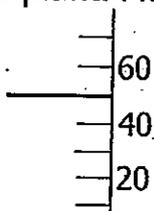
Q33b) Toadstool feeds on decaying matter/dead matters/living things/animals and plants dead or alive.

Q34a) T, V, S, U

Q34b) Material U. The amount of water collected in the measuring cylinder is the least. Material U is the most absorbent. It is able to absorb the most amount of water of the wet spill most effectively.

Q35) Tree A has more leaves/thicker canopy which blocked the sunlight from reaching plotted plant. Plotted plant did not receive enough sunlight to make food/grow healthily.

Q36a)



- Q36b) No, I do not agree. The amount of water displaced/collected in the measuring cylinder is the volume of the rubber ball/iron ball, not the mass.
- Q37a) There is air (trapped) in the (inverted plastic) cup which takes up space. Since air can be compressed, some water compressed the air and entered the cup.
- Q37b) No water will enter plastic cup Y. Plasticine takes up space and cannot be compressed.
- Q38a) Type B. The amount of digested food is the least.
- Q38b) Digestive juice X. The amount of digested food A in digestive juice X is more.
- Q38c) The seed cannot be digested.
- Q39a) Object D is opaque.
- Q39b) Yes, I agree. The clear glass is transparent so object D will still block light, casting a dark shadow.
- Q39c) The shadow cast for object B will be lighter than object D. It is because frosted glass blocked some light while object D blocked all light from reaching the screen.
- Q40a) Raja wants to find out if the number of sheets of material X will affect the amount of light detected by the light sensor.
- Q40b) He can conclude that increasing the number of material X will decrease the amount of light passing through.
- Q40c) Conduct the experiment using 8 sheets of material X.
- Q41a) Material B. The temperature of water in cup Y at the end of the experiment is higher than that of cup X.
- Q41b) The hot water loses heat to the tap water as the heat travels from a hotter region to a colder region.
- Q41c) When both water in the cups and hot water in the basin reach the same temperature.
- Q41d) Cup X. The temperature of water in cup X at the end of the experiment is lower than that of cup Y. Cup X is made of a material which is a poorer conductor of heat. Less heat would be transferred to the cold drink thus heat transfer from the surroundings to the cold drink is slower.
- Q42a) The alcohol lost heat to the ice and contracted.
- Q42b) Ali's hand lost more heat to the metal ruler as the metal ruler is a better conductor of heat.
- Q43) Heat the metal ball.
Put the metal ball through the ring
If the ball cannot go through the metal ring, it means it has expanded.



**NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 2 2013
PRIMARY FOUR
SCIENCE**

Name : _____ ()

Class : Primary 4 / _____

Date : 30 August 2013

Duration : 1 hr 30 min

Parent's Signature : _____

MARKS	
Sect A:	/ 40
Sect B:	/ 40
Total :	/ 80

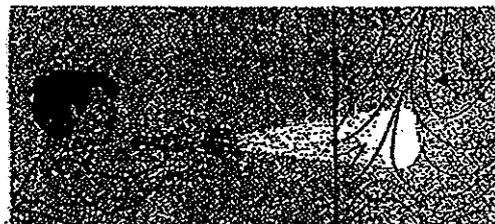
Section A: (20 x 2 marks = 40 marks)

For each question from 1 to 20, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which one of the following is not a source of light?

- (1) Battery
- (2) Fire
- (3) Lightning
- (4) Sun

2. Kevin shines a narrow beam of light from a torch onto a wooden block in a dark room.



Wooden block

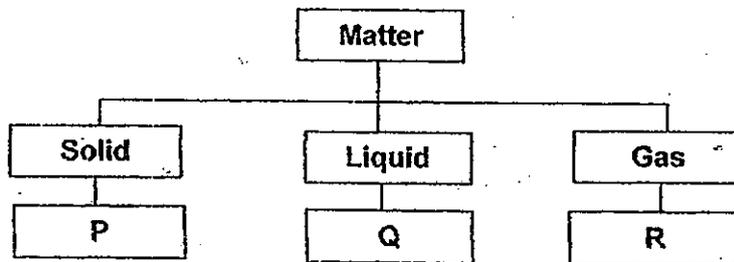
Kevin is able to see the wooden block because the _____.

- (1) torch is a light source
- (2) wooden block has a rough surface
- (3) torch reflects the light into his eyes
- (4) wooden block reflects the light into his eyes

3. Which one of the following is not a matter?

- (1) Dew
- (2) Noise
- (3) Steam
- (4) Wax

4. Study the classification chart below.



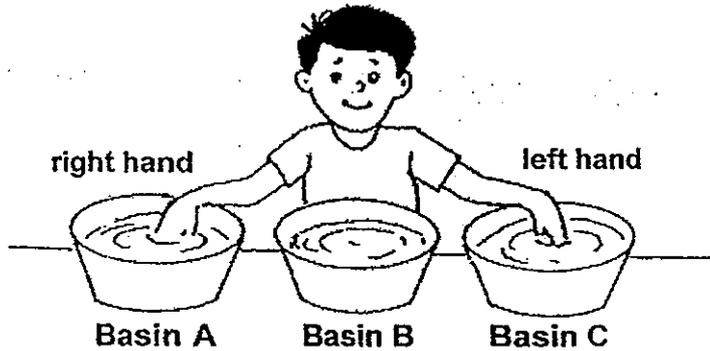
Which of the following correctly represents P, Q and R?

	P	Q	R
(1)	ice	salt	air
(2)	mist	ice	water vapour
(3)	salt	water droplets	oxygen
(4)	plasticine	water vapour	mist

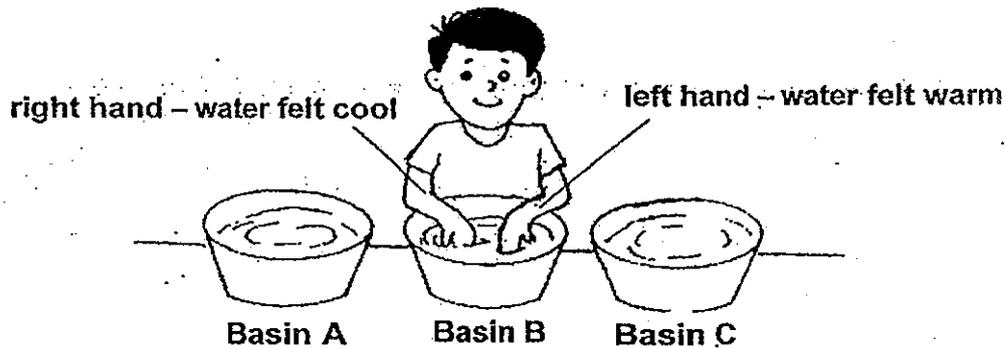
5. Siti took out a bottle of honey from the refrigerator. She could not open the bottle, so she poured some hot water over the metal cap of the bottle. This helped her to open the bottle as the heat caused the _____

- (1) bottle to expand
- (2) metal cap to expand
- (3) air in the bottle to expand
- (4) air and the bottle to expand

6. Ahmad had three basins of water, A, B and C of different temperatures. He dipped his left hand into Basin C and his right hand into Basin A as shown below.



After 3 minutes, he placed both his hands into Basin B.



He found that the water in Basin B felt cool to his right hand and felt warm to his left hand.

Based on Ahmad's observation, which of the following would most likely be the temperatures of the water in basins A, B and C?

	Basin A	Basin B	Basin C
(5)	50°C	25°C	10°C
(6)	10°C	25°C	50°C
(7)	25°C	10°C	50°C
(8)	50°C	10°C	25°C

7. Which of the following statements are true of ice, water and water vapour?

- A They take up space.
- B They have different freezing points.
- C They are in different states of matter.

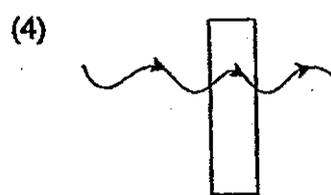
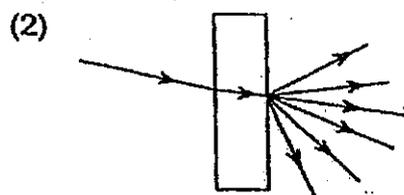
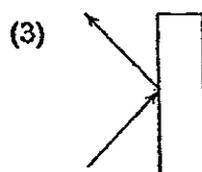
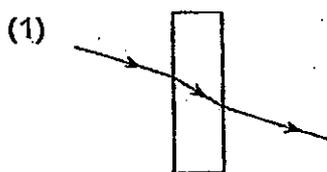
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) All of the above

8. We should conserve water so that we will not run out of water. Which of the following are good practices that help to conserve water?

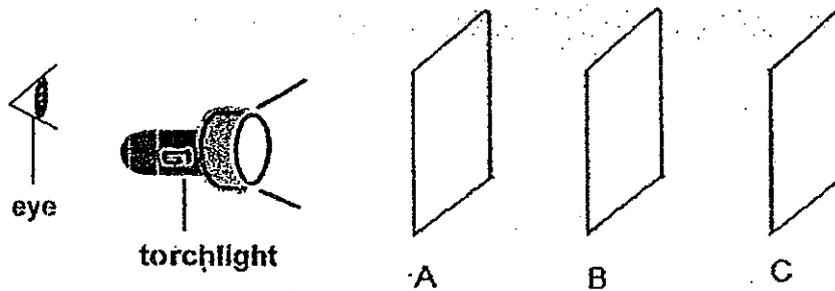
- A Grow more water plants.
- B Do not change water in vases.
- C Flush toilet with water from rinsing clothes.
- D Wash dishes in a basin of water instead of water from a running tap.

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

9. Which of the following diagrams correctly shows how light is being reflected?



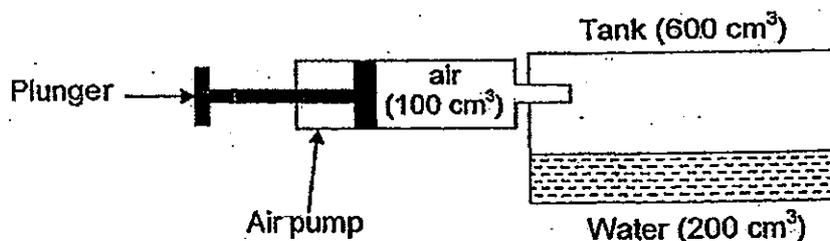
10. Bala set up the following experiment to study the ability of three objects, A, B and C, in allowing light to pass through.



Bala can see the light from the torch on Object B but not on Object C. Which of the following is the best combination of materials for objects A and B?

	A	B
(1)	clear glass	cardboard
(2)	cardboard	clear glass
(3)	tracing paper	frosted glass
(4)	clear plastic sheet	tracing paper

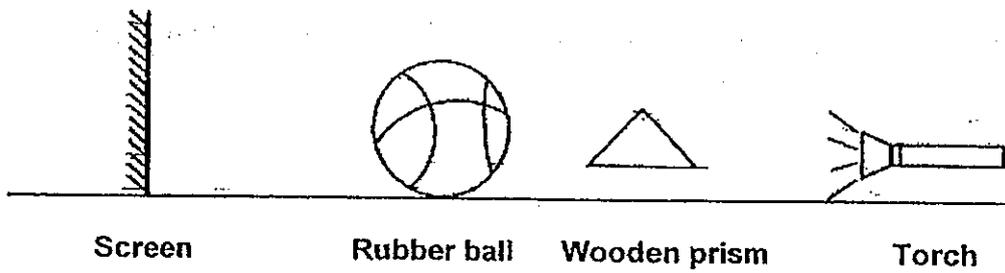
11. The diagram below shows an air pump connected to a glass tank. The volume of the empty tank is 600 cm^3 . The tank contains 200 cm^3 of water.



When the plunger of the pump is pushed in completely, 100 cm^3 of air is forced into the tank. What is the volume of air in the tank after the plunger is pushed in?

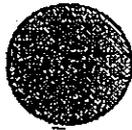
- (1) 100 cm^3
- (2) 300 cm^3
- (3) 400 cm^3
- (4) 500 cm^3

12. A torch is shone on a rubber ball and a wooden prism as shown below.

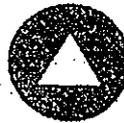


Which one of the following shows the shadow that is cast on the screen?

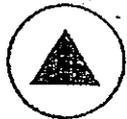
(1)



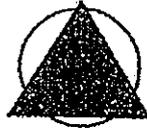
(2)



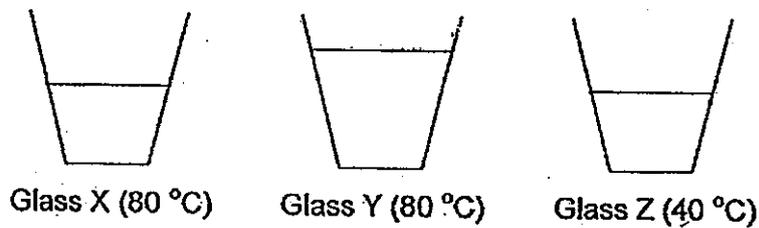
(3)



(4)



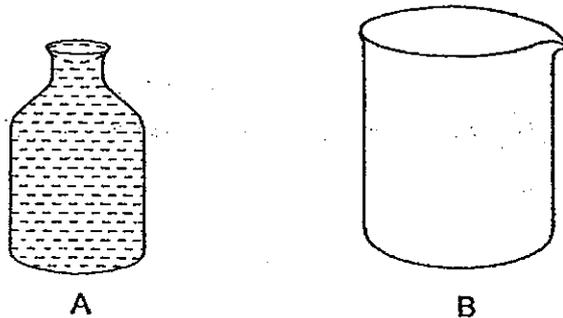
13. The glasses below are filled with different amount of water at different temperature.



Arrange the glasses in order, beginning with the one that has the most heat.

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

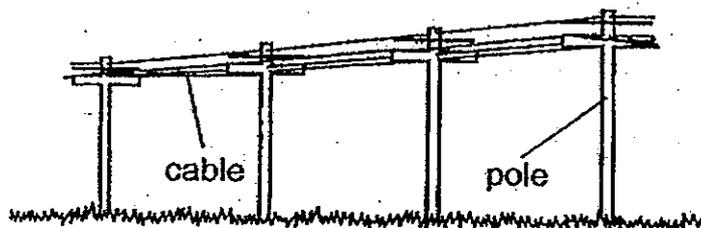
14. Mardiah has 2 containers, A and B, of the same mass. She fills container A to the brim with water as shown in the diagram below.



Which of the following will change when all the water is transferred from container A to container B?

- A water level
 - B mass of water
 - C shape of water
 - D volume of water
- (1) A and C only
(2) B and D only
(3) A, C and D only
(4) A, B, C and D

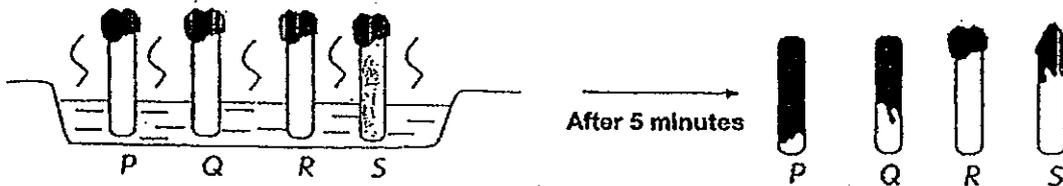
15. Some workmen fixed the electric cables as shown below. Their supervisor said that they had done the job incorrectly as the cables were joined too tightly.



Why did the supervisor say that?

- (1) The cables will expand and snap in hot weather.
- (2) The cables will expand and snap in cold weather.
- (3) The cables will contract and snap in hot weather.
- (4) The cables will contract and snap in cold weather.

16. The tips of four rods of different materials are coated with equal amounts of wax. The rods are placed in a container of hot water at 100°C for 5 minutes. The diagram below shows the results of the experiment.



Which one of the rods is likely to be the best material to make the handle of a kettle?

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

17. Which of the following processes are correctly matched to the change of state in water?

	Process	Change of state
A	Freezing	Solid to liquid
B	Evaporation	Liquid to gas
C	Condensation	Gas to liquid
D	Melting	Liquid to solid

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

18. Which of the following describes the effect of evaporation in the water cycle?

- (1) Rain falling from the sky
- (2) Snow changing to water
- (3) Water in a puddle drying up
- (4) Formation of clouds in the sky

19. Oil spills from ships can cause harm to the environment. Which of the following are the possible effects of oil spills?

- A Some aquatic organisms will die due to the lack of oxygen
- B The people in the town will experience breathing difficulties.
- C Some sea mammals can no longer swim or float as their fur clump together.

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

20. Jeremy wanted to find out the effect of temperature on the rate of evaporation of water. He had the following set-ups.

Set-up	Volume of water at the start of the experiment (ml)	Exposed surface area of container (cm ²)	Temperature (°C)
A	100	50	40
B	100	70	80
C	100	70	40
D	150	50	80

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

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



NAN HUA PRIMARY SCHOOL
CONTINUAL ASSESSMENT 2 2013
PRIMARY FOUR
SCIENCE

Name : _____ ()

Class : Primary 4 / _____

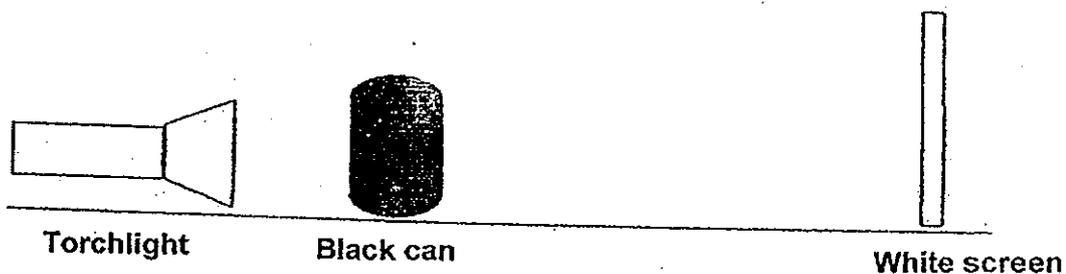
MARKS
40

Section B: (40marks)

Write your answers to questions 21 to 34.

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

21. Jonathan carried out an investigation to find out if the position of an object affects the height of its shadow. He placed a black can in between a torchlight and a white screen as shown in the diagram below. Then he measured the height of the shadow cast on the screen.

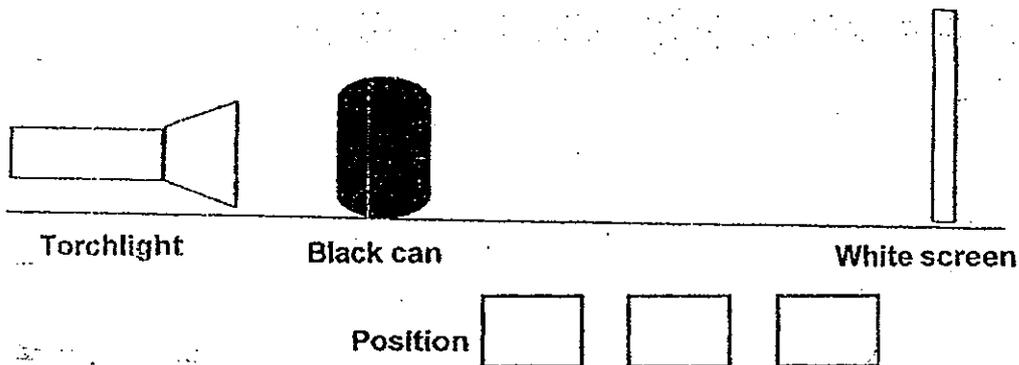


Next, he repeated the experiment in different positions by adjusting the distance between the screen and the black can only. The torchlight remained stationary throughout the experiment.

Jonathan recorded his results in the table below.

Position	Height of the shadow on the screen (cm)
A	19
B	24
C	13

- (a) Based on the results in the table provided on the previous page, label the different positions (A, B and C) of the black can in the diagram below. Write them in the boxes provided. [1]

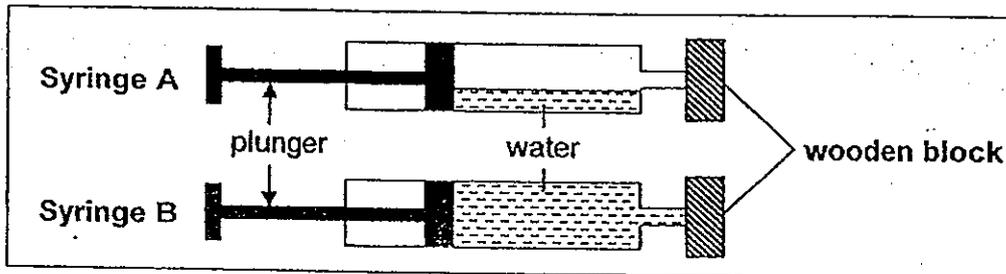


- (b) Based on the results in the table, what is the relationship between the distance of the black can from the screen and the height of the shadow cast? [1]

- (c) Based on the experiment conducted above, state one property of the black can that caused a dark shadow to be formed on the white screen at all three positions. [1]

Score	3
-------	---

22. Study the diagram below.



- (a) Which one of the above syringes (A or B) can the plunger be pushed in?
Write your answer in the blank below.

Syringe _____

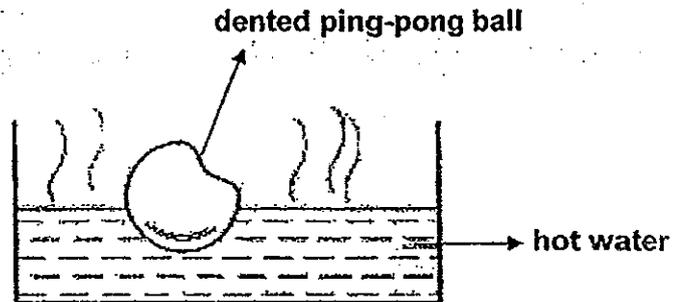
[1]

- (b) Explain your answer in (a).

[1]

Score	2
-------	---

23. Study the diagram below.

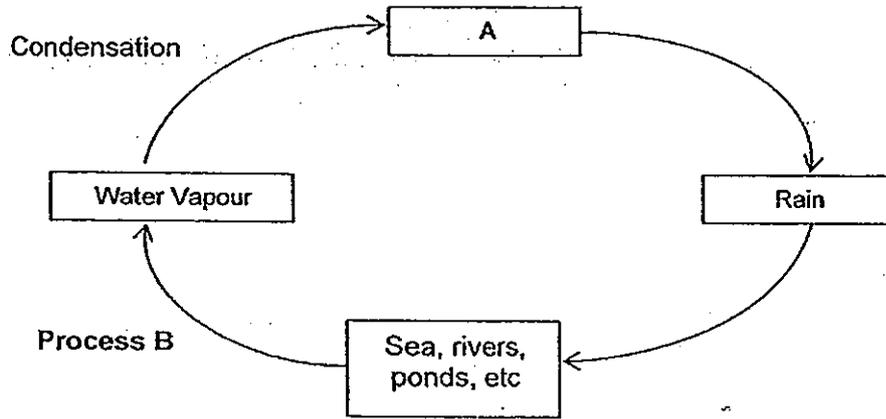


- (a) What happens to the shape of the dented ping-pong ball when it is placed into a beaker of hot water? [1]

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

Score	2
-------	---

24. Study the diagram of the water cycle below.



(a) What do the letters A and Process B represent? [1]

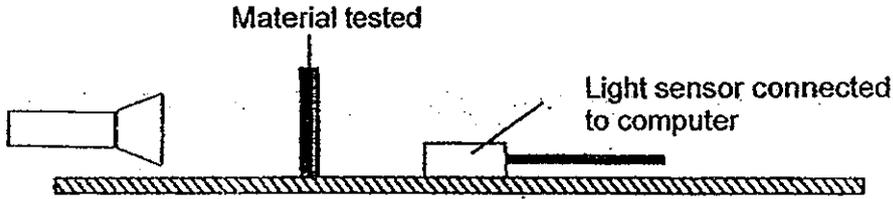
A: _____

Process B: _____

(b) Explain why the water cycle is important to Man. [1]

Score	2
-------	---

25. Jamie used a light sensor connected to a computer to measure the amount of light that was able to pass through different materials, A, B and C, as seen in the diagram below.



Jamie recorded the results in the table below.

Material	Amount of light (Lux)
A	95
B	0
C	230

- (a) Arrange the materials (A, B and C) according to the degree of transparency starting with the most transparent material in the boxes provided below. [1]

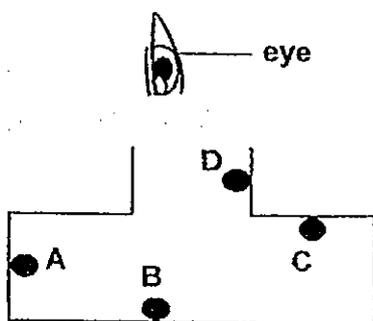
Materials		
Most		Least
Degree of transparency		

- (b) Which material will produce the darkest shadow when placed in between a light source and a screen? [1]

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

Score	3
-------	---

26. In the setup below, Jane stuck some blu-tac at different spots on the inner surface of a container.



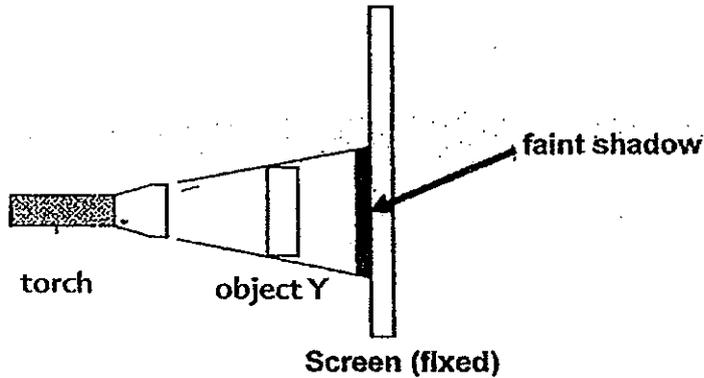
- (a) Which pieces of the blu-tac, A, B, C and D, can be seen and which cannot be seen by the eye in the set-up above?
Write the letters (A, B, C and D) correctly in the table below. [2]

Can be seen	Cannot be seen

- (b) Based on the set-up above, explain why some pieces of blu-tac can be seen by the eye while others cannot. [1]

Score	3
-------	---

27. Study the diagram below carefully.



When object Y is placed in front of a torch, a faint shadow is seen on the screen.

- (a) Which one of the following materials is object Y likely to be made of? Circle your answer in the box below. [1]

Aluminium	Clear plastic	Frosted glass
-----------	---------------	---------------

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

- (c) Which of the following variable(s) can you change to obtain a bigger shadow of object Y. Put a tick (✓) in the correct box(es). [1]

i) Size of the torch	
ii) Size of the screen	
iii) Distance between the torch and the screen	
iv) Distance between object Y and the screen	

Score	3
-------	---

28. Angela carried out an experiment on 4 different materials. She used 4 identical sized beakers and filled each one with the same amount of water. The temperature of water in all the beakers was 60 °C. She then wrapped each beaker with the 4 different materials respectively.

After 10 minutes, she took the water temperature in each beaker and recorded it in the table below.

Material used to wrap the beaker	Temperature of water (°C) after 10 minutes
W	45
X	40
Y	50
Z	55

- (a) Based on the table above, which (W, X, Y or Z) material used by Angela is the best for keeping the water warm for the longest possible period of time? [1]

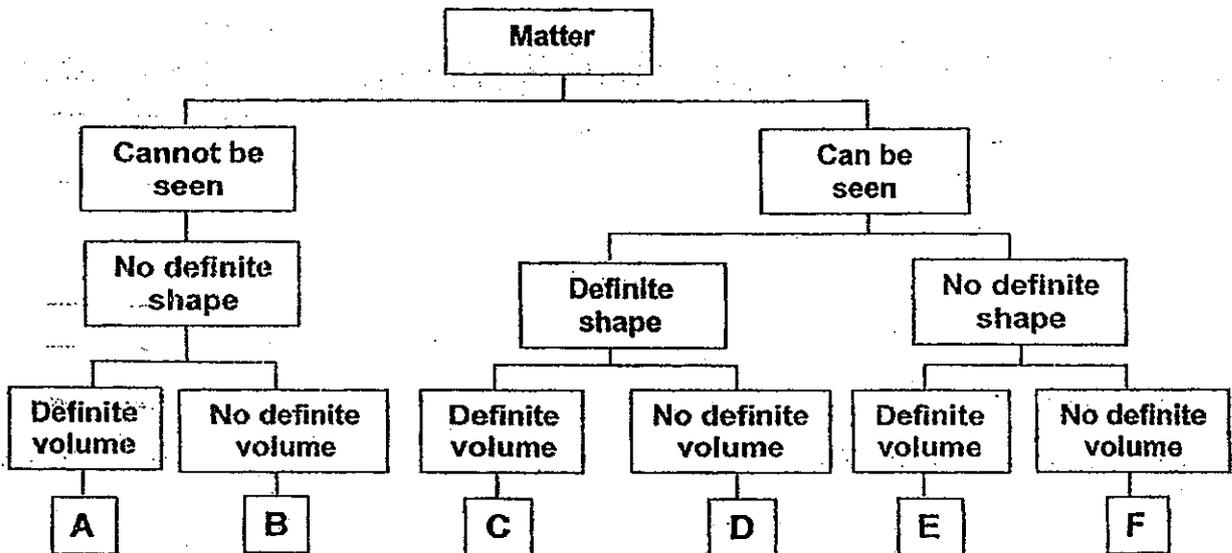
- (b) Explain your answer in (a)? [1]

- (c) Identify the independent and dependent variables in the experiment above. Put a tick (✓) in the correct columns. [2]

Variables	Independent	Dependent
Size of beakers		
Material used to wrap the beaker		
Amount of water in each beaker		
Temperature of water after 10 minutes		
Temperature of water at the start of the experiment		

Score	4
-------	---

29. Study the classification chart below.



(a) Based on the classification chart above, state two characteristics of matter D? [2]

(b) B and E are both matter. State another similar characteristic of B and E from the classification chart above. [1]

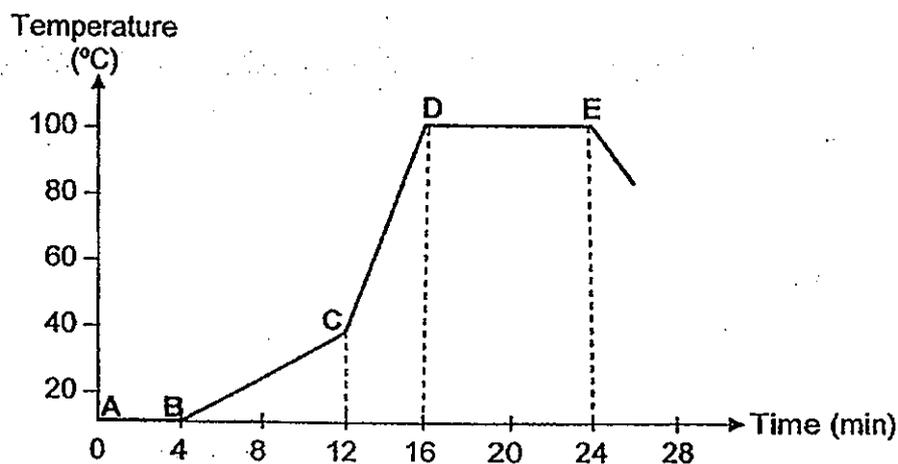
(c) Using the classification chart above, write the letter that represents each of the following: [1]

i) Air: _____

ii) Coffee: _____

Score	4
-------	---

30. The graph below shows some ice cubes being heated.



(a) Which point on the graph shows that all the ice cubes have melted completely?

Point _____

[1]

(b) Which part of the graph shows that the water is gaining heat very quickly?

[1]

Point _____ to Point _____

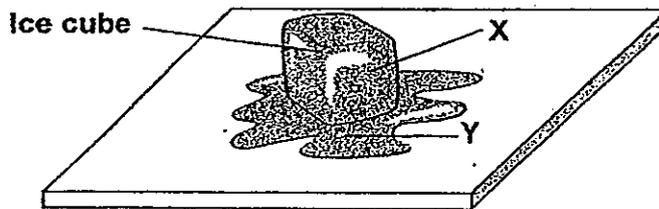
(c) For how long did the water boil?

_____ minutes

[1]

Score	3
-------	---

31. Jenny took out an ice cube from the freezer and left it on a table at room temperature of 30°C . She went out of the room for a few minutes and when she came back, she saw the following changes as shown in the diagram below.



- (a) Name the state of matter-labelled X and Y. [1]

X: _____

Y: _____

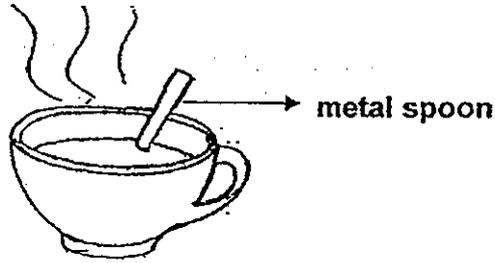
- (b) Based on your answer in (a), state a difference between the property of state X and state Y. [1]

- (c) Based on the diagram above, what process has taken place that resulted in the change of state from X to Y? [1]

- (d) Explain why the ice cube changed from state X to Y. [1]

Score	4
-------	---

32. A cold metal spoon is placed in a cup of hot Milo as shown in the diagram below.



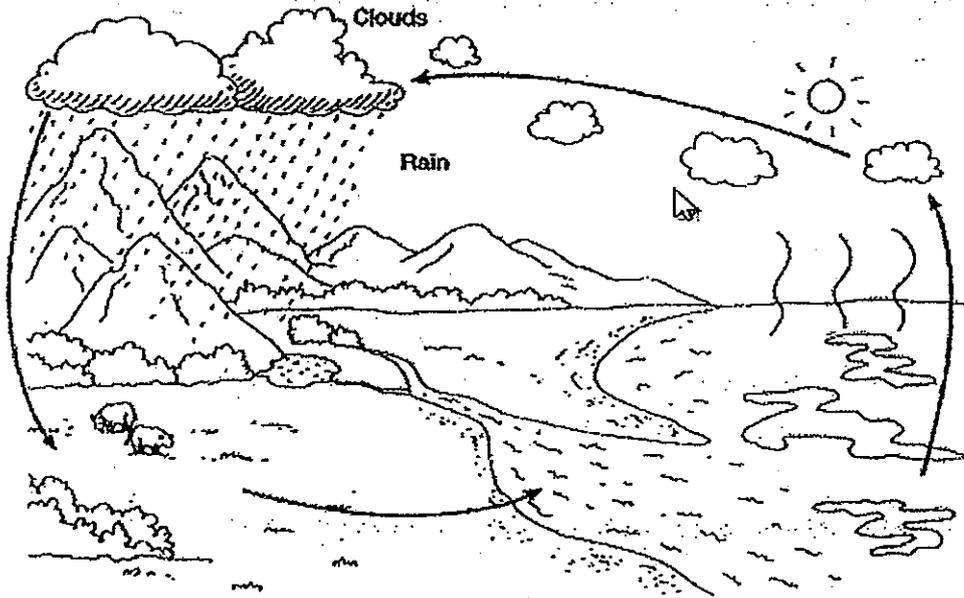
- (a) Describe how the handle of the spoon feels like when you touch it after five minutes. [1]

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

- (c) What can you infer about the property of heat from this activity? [1]

Score	3
-------	---

33. Water from the Earth is constantly on the move and changing its state. The diagram below shows the movement of water from Earth to the sky and back to Earth in the water cycle.



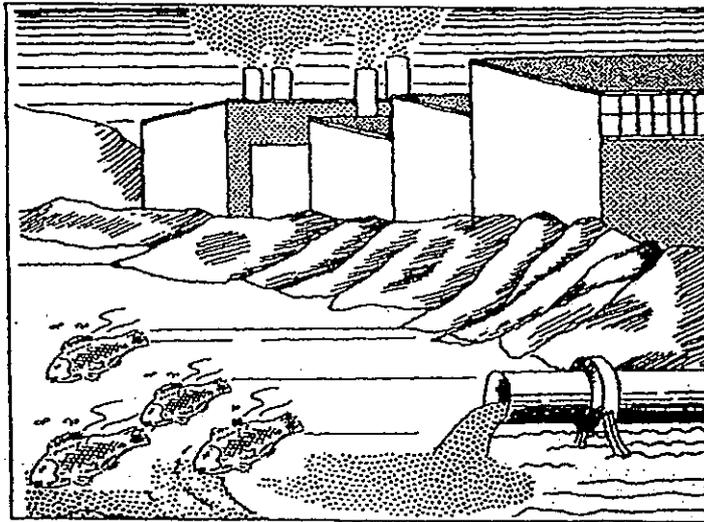
- (a) Why is the formation of clouds important in the water cycle? [1]

- (b) What energy enables this water cycle to take place?

Score	2
-------	---

34. The diagram below shows a scenario of untreated sewage waste and chemical discharge such as fertilisers from nearby farms and factories. These chemical discharges can be toxic and pollute the water.

In addition, the sewage waste and fertilisers can cause large amount of algae growth in the water which is harmful to the environment especially to the aquatic plants.



Listed below are the effects when the water is polluted with untreated sewage waste and chemical discharge such as fertilisers from nearby farms and factories. Arrange them in the correct order by numbering them 1 to 5. The first one has been done for you. [2]

Effects	Order of effects
These untreated sewage waste and fertilisers cause large amount of algae growth in these rivers and lakes.	
Factories and farms disposed untreated sewage waste and fertilisers into nearby rivers and lakes.	1
In turn, these algae growth will start to cover the surface of rivers and lakes.	
Without aquatic plants, the animal feeding on these plants will die too.	
When the surface of the rivers and lakes is covered with algae, sunlight will not be able to reach the aquatic plants growing in the water. In due time, these aquatic plants will die.	

Score	2
-------	---

ANSWER SHEET

EXAM PAPER 2013

SCHOOL : NAN HUA PRIMARY

SUBJECT : PRIMARY 4 Science

TERM : CA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	4	2	3	2	1	2	2	3	1	3	1	3	1	4	3	3

Q18	Q19	Q20
3	2	2

SECTION B

Q21

- a) B,A,C
- b) The nearer the black can to the torchlight, the longer the shadow would be
- c) The black can cannot reflect the light

Q22

- a) A
- b) There is air in syringe A and since air can be compressed, plunger A can be pushed in

Q23

- a) The dented ping-pong ball will turn back to its original shape
- b) The air in the ping-pong ball gains heat from the hot water and expands. The expanding air pushes the dent outwards

Q24

- a) A: Clouds, Process B: Evaporation
- b) We need a continuous supply of fresh water for our daily lives in order for survival.

Q25

- a) C, A, B
- b) Material B
- c) The amount of light deflected was zero. This shows it does not allow any light to pass through unlike materials A and C, which allows light to pass through.

Q26

- a) Can be seen: D, B
Cannot be seen: C, A
- b) Light travels in straight lines and only Blu-Tac B and D are able to reflect the light into the eye

Q27

- a) Frosted Glass
- b) Frosted glass is translucent and partially blocks the path of light.
- c) III and IV

Q28

- a) Material z
- b) As least heat is lost, Material Z is the poorest conductor of heat and conduct heat away the slowest among the materials
- c)

Variables	Independent	Dependent
Size of beakers		√
Material used to wrap the beaker	√	
Amount of water in each beaker		√
Temperature of water after 10 minutes		√
Temperature of water at the start of the experiment		√

Q29

- a) Matter D has a definite shape but no definite volume
- b) Both B and E have no definite shape
- c) i) B ii) E

Q30

- a) B
- b) Point C to Point D
- c) 8 minutes

Q31

- a) X: Solid, Y: Liquid
- b) X has a definite shape but Y does not have a definite shape
- c) Melting has taken place
- d) When the ice cube is left at room temperature, it will gain heat and melt thus changing from X to Y.

Q32

- a) It will be hot
- b) As the metal spoon is a good conductor of heat, it will gain heat very quickly from the milo, so it will be hot.
- c) Heat travels from a hotter to a cooler region

Q33

- a) the formation of clouds is important because it ensures that water changes back to liquid and falls back to Earth's surface
- b) Heat enables this water cycle to take place

Q34

Effects	Order of Effects:
These untreated sewage waste and fertilisers cause large amount of alagae growth in these rivers and lakes	2
Factories and farms disposed untreated sewage waste and fertilisers into the nearby rivers and lakes	1
In turn, these algae growth will start to cover the surface of rivers and lakes	3
Withour aquatic plants, the animal feeding on these plantswill die too	5
When the surface of the rivers and lakes is coveres with algae, sunlight will not be able to reach the aquatic plants growing in the water. In due time, these aquatic plants will die	4

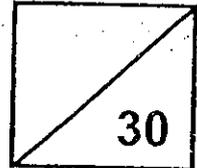




Rosyth School
Second Topical Test for 2013
SCIENCE
Primary 4

Name: _____

Total
Marks:



Class: Pr 4 _____

Register No. _____

Duration: 30 minutes

Date: 29 August 2013

Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 parts, Part I and Part II.
4. For questions 1 to 10, write the correct answer in the brackets provided.
5. For questions 11 and 12, give your answers in the spaces provided in Part II.

	Maximum	Marks Obtained
Part I	10 marks	
Part II	5 marks	
Total	15 marks	

* This booklet consists of 8 pages.

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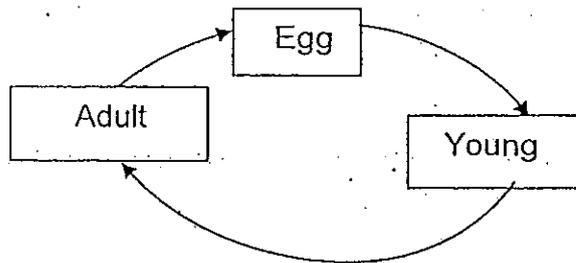
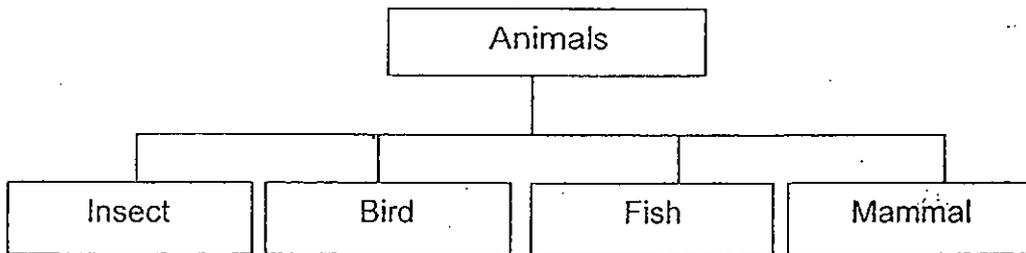
Practical Test

	Maximum	Marks Obtained
Total	15 marks	

Part I (10 MARKS)

For questions 1 to 10, four options are given. Make your choice (1, 2, 3 or 4) and write your answer in the bracket provided.

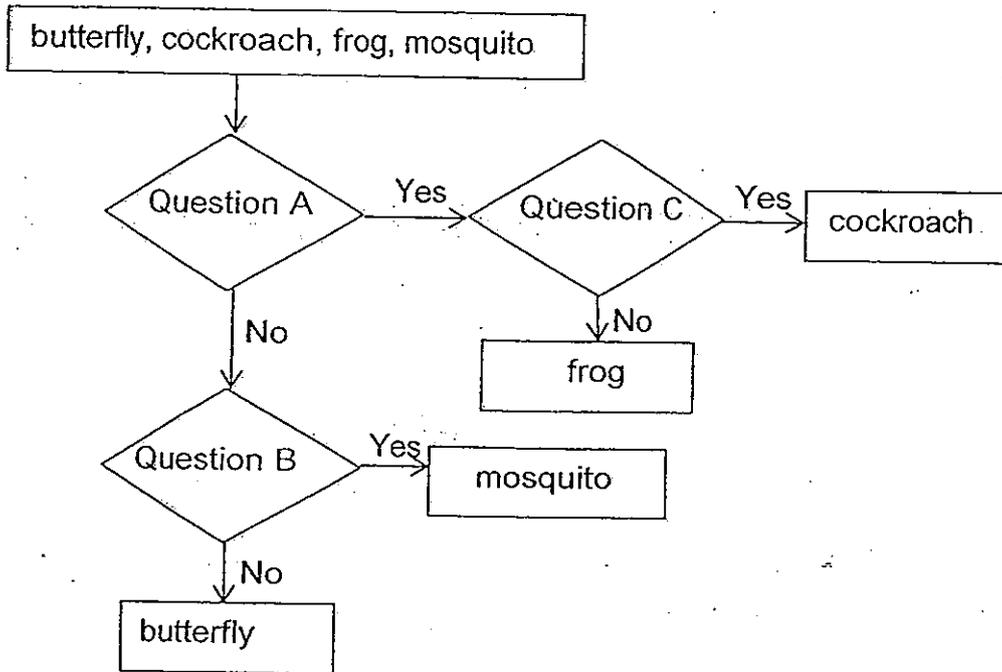
1 The table below shows the classification of animals.



Which group has some animals which may not have a similar life cycle as shown above?

- | | | |
|------------|------------|-----|
| (1) Bird | (2) Fish | |
| (3) Mammal | (4) Insect | () |

2 Ian classifies some organisms using the chart below.



What are the questions for A, B and C?

	Question A	Question B	Question C
(1)	Are there 3 stages in the life cycle?	Does the young look like the adult?	Is part of its life cycle spent in water?
(2)	Are there 3 stages in the life cycle?	Is part of its life cycle spent in water?	Does the young look like the adult?
(3)	Is part of its life cycle spent in water?	Does the young look like the adult?	Are there 3 stages in the life cycle?
(4)	Does the young look like the adult?	Are there 3 stages in the life cycle?	Is part of its life cycle spent in water?

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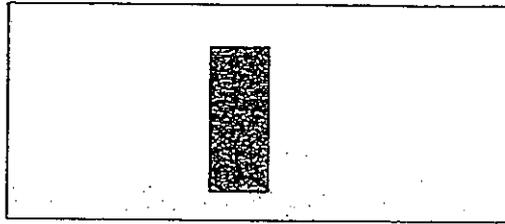
3 Tim wanted to find out if the type of soil affects the growth of a plant. Which of the following variables should be kept the same for the above experiment?

- A: Amount of water
- B: Amount of soil
- C: Amount of sunlight

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

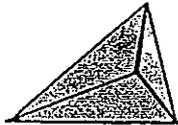
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- 4 The diagram below shows the shadow formed on a screen by an object when a lamp is shone on it.

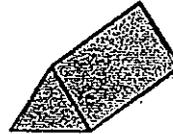


Which one of the following could not be the object?

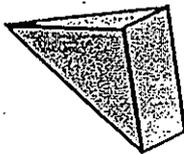
(1)



(2)



(3)

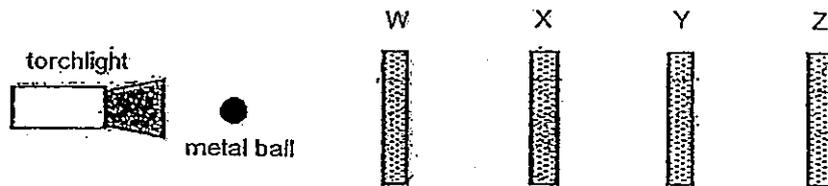


(4)



()

- 5 Leela conducted an experiment to investigate if light could pass through 4 sheets W, X, Y and Z which are made of different materials. When the torch was turned on, the shadow of the metal ball was cast on sheet Y.

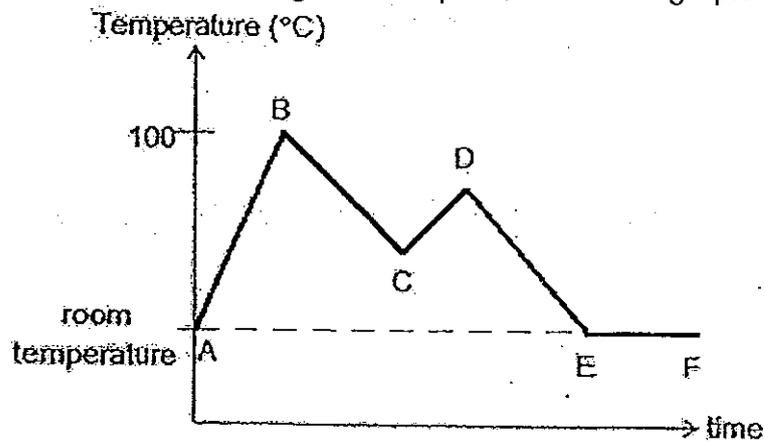


Which one of the following best describes the degree of transparency of sheets W, X, Y and Z?

	W	X	Y	Z
(1)	not possible to tell if opaque or not	transparent	opaque	opaque
(2)	transparent	opaque	not possible to tell if opaque or not	opaque
(3)	opaque	not possible to tell if opaque or not	transparent	transparent
(4)	transparent	transparent	opaque	not possible to tell if opaque or not

()

- 6 Lele conducted an experiment by repeatedly heating and cooling a beaker of tap water. She recorded the changes in temperature on the graph below.



Which parts of the graph show heat gain and loss during the experiment?

	Heat loss	Heat gain
(1)	BC, CD, EF	AB, DE
(2)	BC, DE	AB, CD
(3)	BC, DE,	AB, CD,EF
(4)	CD, EF	AB, DE

()

- 7 When a few ice cubes are added to a glass of hot coffee, which of the following will happen within 5 minutes?

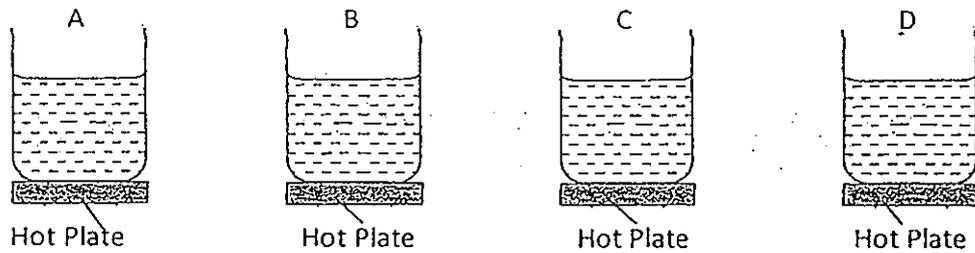
- A: The ice cubes gain heat.
- B: The hot coffee loses heat.
- C: The ice cubes melt in the hot coffee.
- D: The ice cube loses heat to the surrounding air.

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

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

()

- 8 Four containers, A, B, C and D, containing same amount of water at 30°C were placed on 4 identical hot plates each set at a temperature of 70°C as shown below.



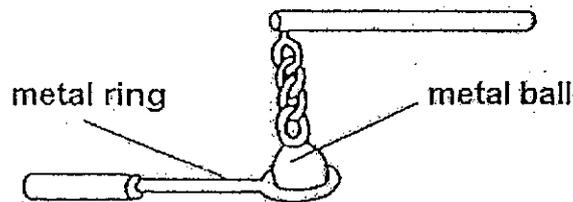
The temperature of water in each container was recorded after 5 minutes and the increase in temperature is shown in the table below.

Container	Temperature increase of water (°C)
A	10
B	12
C	14
D	16

Which container is the poorest conductor of heat?

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

- 9 Alex placed a metal ball on a metal ring as shown in the diagram below. The ball could not pass through the ring.

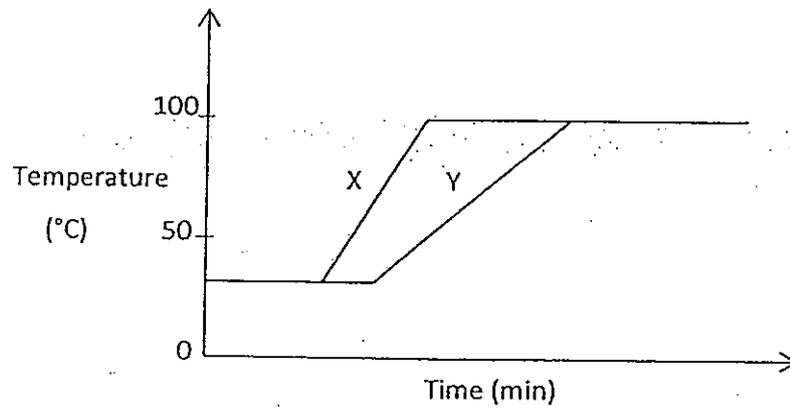


What could he do to make the metal ball pass through the ring?

- A: Cool the metal ball
 B: Cool the metal ring
 C: Heat up the metal ball
 D: Heat up the metal ring

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

- 10 The graph below shows how the temperature of two beakers of water, X and Y, changes over time. X and Y were heated over similar flames.



Study the graph above carefully. Which one of the following statements interpret the graph correctly?

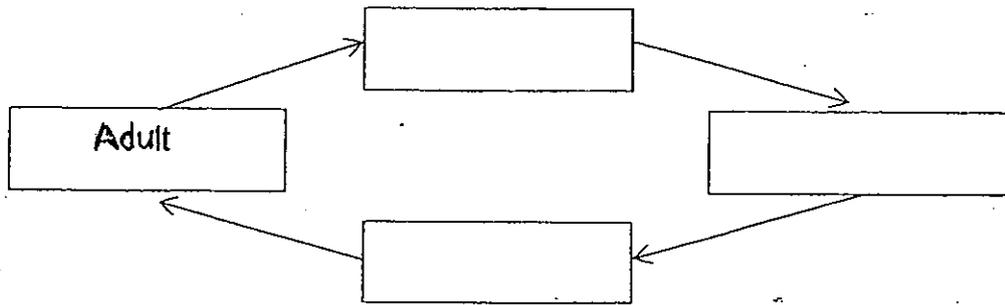
- (1) Both beakers of water boiled at the same time.
- (2) Beaker Y contained more water than Beaker X.
- (3) Beaker X is a poorer conductor of heat than Beaker Y.
- (4) The water in Beaker X was at a higher temperature than the water in Beaker Y before heating.

()

PART II (5 MARKS)

For questions 11 and 12, write your answers in the space provided.

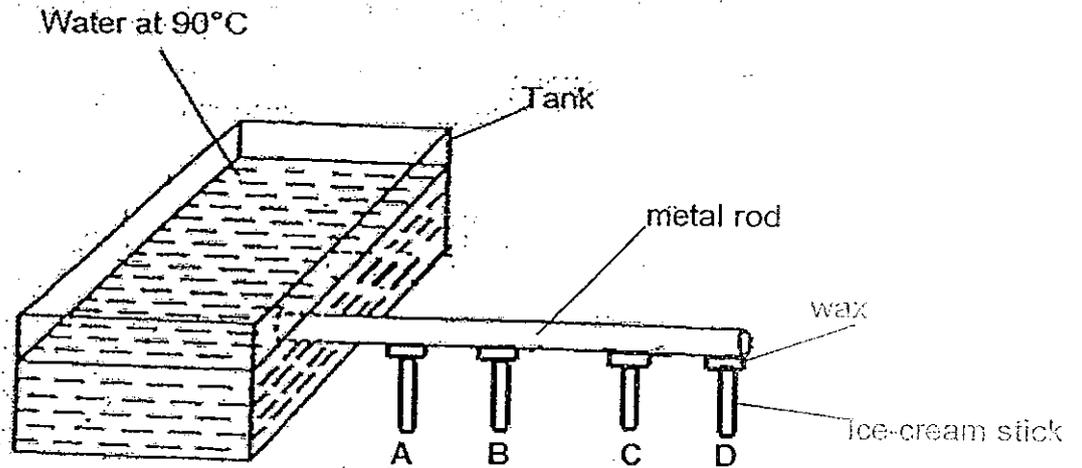
11 The diagram below shows the life cycle of Aedes Mosquito.



(a) Fill in the boxes with the correct stages of its life cycle. [1]

(b) What would you do to reduce the number of mosquitoes? Explain why. [2]

- 12 Zul set up an experiment as shown in the diagram below. One end of a metal rod passes through a tank of water heated to a temperature of 90°C . Four wooden ice-cream sticks, A, B, C, D were held in place on the rod by wax. He observed that the ice cream sticks dropped in the order of A,B,C then D.



- (a) State the property of heat shown in the above experimental set-up. [1]

- (b) Why did Zul use a rod made of metal in the set-up? [1]

End of Paper



ANSWER SHEET

EXAM PAPER 2013

SCHOOL : ROSYTH SCHOOL

SUBJECT : PRIMARY 4 SCIENCE

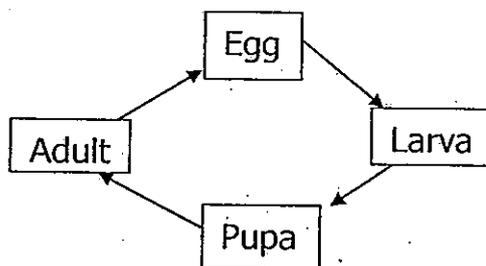
TERM : CA2

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

Part II

Q11

a)



b) During the larva or the pupa stage, I will pour a thin layer of oil. The pupa and the larva stage breathe through breathing tubes and the layer of oil will block their breathing tubes. The larva or pupa will die as they have no air.

Q12

a) Heat travels from hotter region to a cold region.

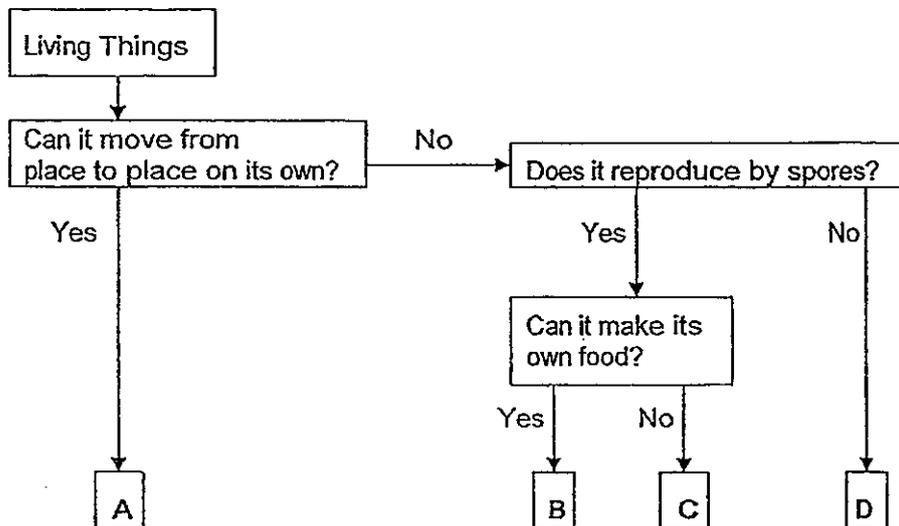
b) Metal is a good conductor of heat and the heat can travel easily from the water to the rod.



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.

(60 marks)

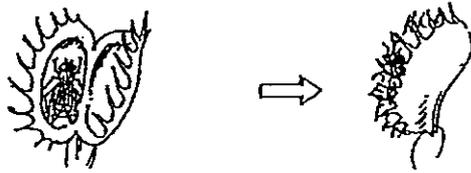
1 Study the flow chart below carefully.



Which one of the following best identifies organisms A, B, C and D?

	A	B	C	D
(1)	Snail	Bird's nest fern	Moss	Toadstool
(2)	Mealworms	Toadstool	Rose plant	Hibiscus plant
(3)	Bicycle	Rose plant	Hibiscus plant	Bird's nest fern
(4)	Snake	Moss	Mushroom	Rose plant

- 2 The Venus Flytrap is a plant that captures insects by snapping its two leaves shut like a shell when an insect lands on it. The diagram below shows how a Venus Flytrap captures a fly.



Which characteristics of living things are described by the action of the Venus Flytrap above?

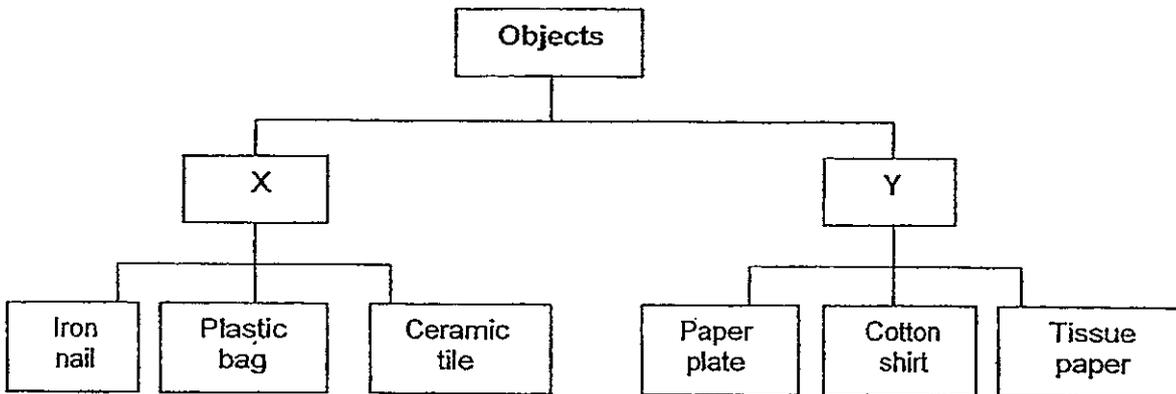
- A Living things need air.
- B Living things can respond to stimuli.
- C Living things can move by themselves.

- (1) A and B only
 - (2) A and C only
 - (3) B and C only
 - (4) A, B, and C
- 3 Larry wants to find out how the size of the bread affects the rate at which damp bread will turn mouldy. Which of the following variables must be kept constant?

- A Size of the bread
- B Type of the bread
- C Amount of water added to the bread
- D Number of days the bread were kept during the experiment

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

- 4 The classification chart below shows how some objects are classified.



Which headings are the most appropriate for X and Y?

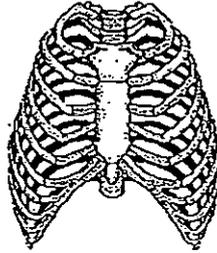
	X	Y
(1)	Waterproof	Not waterproof
(2)	Magnetic	Non-magnetic
(3)	Flexible	Not flexible
(4)	Good conductors of heat	Bad conductors of heat

- 5 Which of the following are matter?

- A Pebble
- B Shadow
- C Detergent
- D Heat

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

- 6 Which organs are protected by the part of the skeleton that is shown below?



- A Eyes
- B Brain
- C Heart
- D Lungs

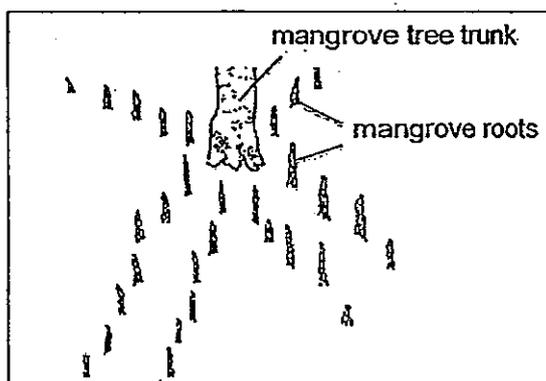
- (1) A and B only
- (2) B and C only
- (3) C and D only
- (4) B, C and D only

- 7 A celery plant with stems and leaves is placed in a beaker of red-coloured water. After a day, it was observed that the leaves had turned red. What does this show?

- A The leaves are making food.
- B The leaves carry water to the plant.
- C The stem carried water up to the leaves
- D The water-carrying tubes are in the stem and in the leaves.

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

- 8 During a visit to a mangrove swamp, Ali, Ben, Clarice and Dorothy saw the roots of the trees sticking above the surface of the ground and they made the following statements about those roots.



Ali: They help to take in air for the trees.

Ben: They help the tree to photosynthesize.

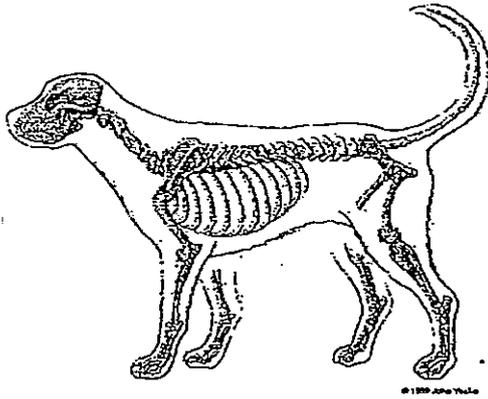
Clarice: They trap animals as food for the trees.

Dorothy: They prevent animals from eating the leaves.

Who is correct?

- (1) Ali
 - (2) Ben
 - (3) Clarice
 - (4) Dorothy
- 9 Rafidah carried out an experiment with a piece of plasticine. She molded the plasticine into a sphere and then placed the plasticine on an electronic weighing machine. She recorded the readings from the weighing machine.
- Rafidah then molded the same piece of plasticine into a cube and later she molded it to form a cylinder. She also weighed the plasticine on the electronic weighing machine when the plasticine was in different shapes. What was the aim of Rafidah's experiment?
- (1) To find out if changing the mass of a solid affects the weight of the matter.
 - (2) To find out if changing the mass of a solid affects the volume of the matter.
 - (3) To find out if changing the shape of a solid affects the volume of the matter.
 - (4) To find out if changing the shape of a solid affects the mass of the matter.

- 10 The following diagram shows a body system of a dog



Which one of the following body systems works directly together with the skeletal system of the dog to enable it to wag its tail?

- (1) Digestive system
 - (2) Muscular system
 - (3) Circulatory system
 - (4) Respiratory system
- 11 Which of the following statements are true about liquids?
- A All liquids have no definite shape.
 - B All liquids have no definite volume.
 - C All liquids have a definite mass.
 - D All liquids can be compressed.
- (1) A and B only
 - (2) A and C only
 - (3) B and D only
 - (4) C and D only

- 12 Keane owns a metal ball that has a mass of 45 kg and a volume of 30 cm³. He dropped the metal ball from a great height and the appearance of the ball changed as shown below. He also observed that the metal ball remained in one piece after the fall.



Keane measured the mass and volume of his metal ball after the drop. Which one of the following sets of measurements is correct?

	Mass	Volume
(1)	43 kg	30 cm ³
(2)	45 kg	30 cm ³
(3)	45 kg	28 cm ³
(4)	43 kg	28 cm ³

- 13 Study the classification table below.

Group A	Group B
Stone	Milk
Ice	Syrup
Clay	Ink

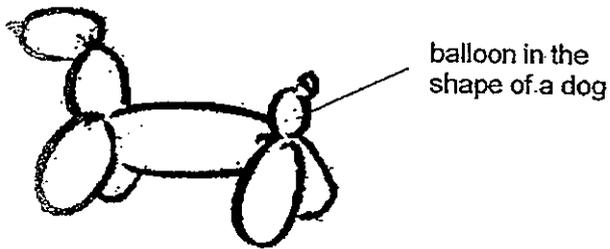
Which one of the following cannot be placed in Group A?

- (1) Rain
- (2) Table
- (3) Wood
- (4) Marble

- 14 The diagram below shows a deflated balloon.



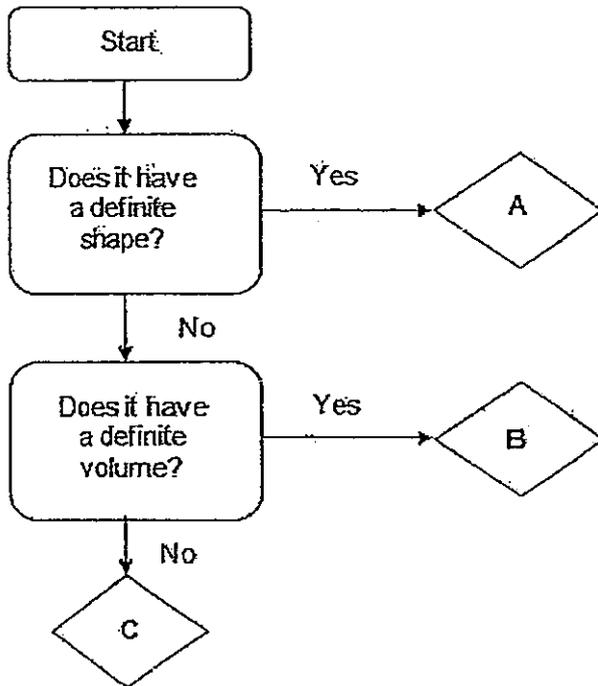
A balloon artist inflated the balloon and twisted it into the shape of a dog as shown below.



Based on the above observation, we can conclude that air _____.

- A occupies space.
 - B has no definite shape.
 - C has a definite mass.
- (1) A and B only
 - (2) B and C only
 - (3) A and C only
 - (4) A, B and C
- 15 Which one of the following apparatus can be used together with water for measuring the volume of an object that has an irregular shape?
- (1) Ruler
 - (2) Lever balance
 - (3) Weighing scale
 - (4) Measuring cylinder

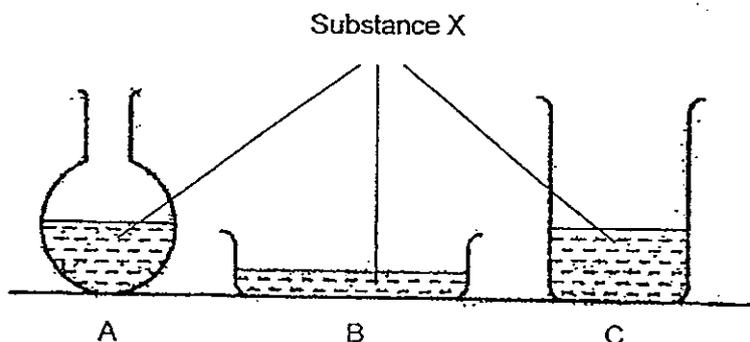
- 16 Study the flow chart below carefully.



Based on the flow chart above, which one of the following sets best represents A, B and C respectively?

	A	B	C
(1)	Water	Rock	Air
(2)	Feather	Water	Rock
(3)	Rock	Water	Air
(4)	Rock	Feather	Water

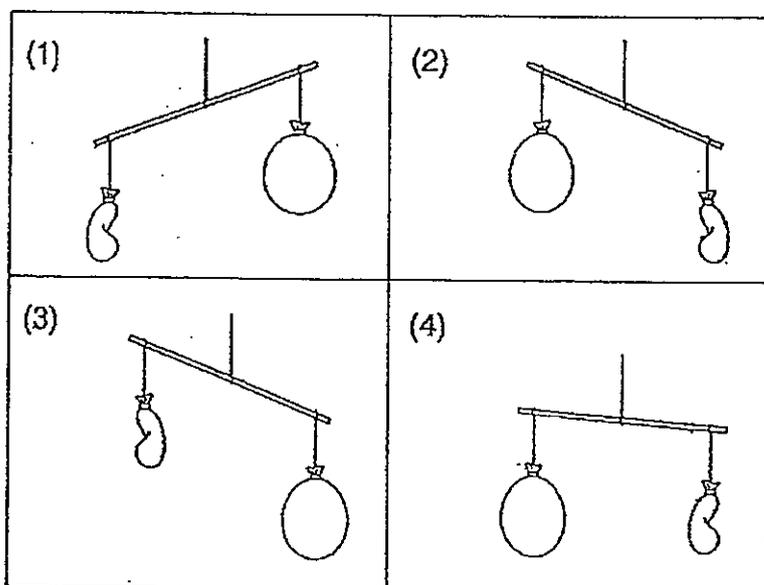
- 17 Study the diagrams below carefully. Isaac pours Substance X into 3 different containers, A, B and C.



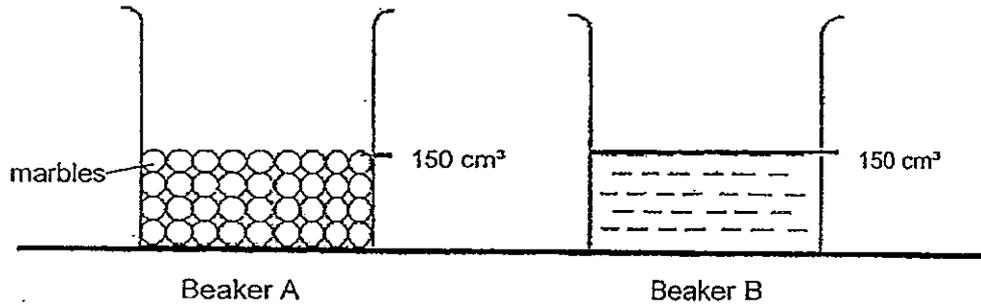
Based on the diagrams above, what can Isaac deduce about the properties of Substance X?

- (1) It has a definite mass.
 - (2) It has a definite shape.
 - (3) It has no definite shape.
 - (4) It has no definite volume.
- 18 Benjamin has two similar balloons. He inflated one of the balloons with air while the other remains deflated. He then tied the two balloons to the two ends of a lever balance.

Which one of the following diagrams shows the correct position of the lever balance in this experiment?



- 19 There are two beakers, A and B, as shown in the diagram below. Beaker A is filled with marbles to the 150 cm^3 mark while Beaker B is filled with water to the 150 cm^3 mark.



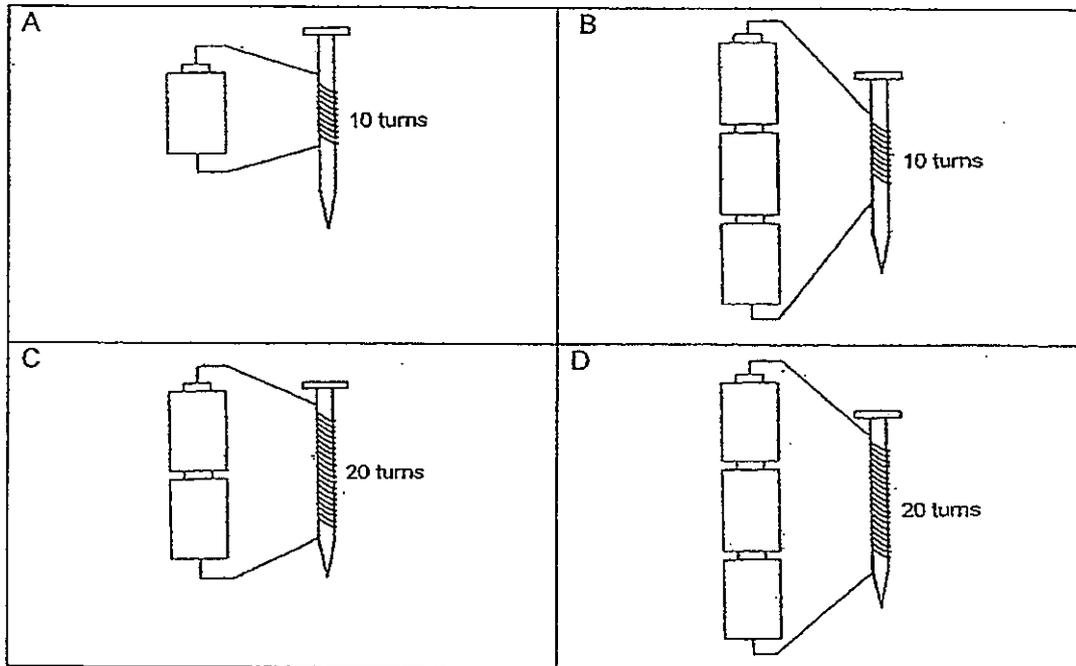
When the water in Beaker B is poured into Beaker A, what would be the most likely total volume of marbles and water in Beaker A?

- (1) 300 cm^3
 - (2) Less than 150 cm^3
 - (3) More than 300 cm^3
 - (4) More than 150 cm^3 but less than 300 cm^3
- 20 Which of the following statements are true?
- A All matter has mass.
 - B All matter occupies space.
 - C All matter can be compressed.
 - D All matter has a definite shape.
- (1) A and B only
 - (2) B and D only
 - (3) A, C and D only
 - (4) A, B, C and D.

- 21 An iron nail becomes a magnet when it is placed in a coil of wire joined to a battery or batteries.

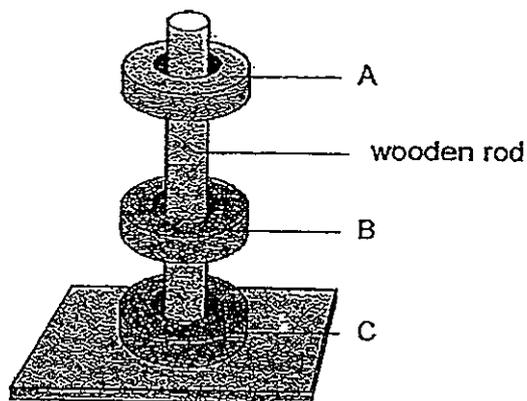
Noel wanted to find out whether the number of batteries of similar strength affects the strength of the magnet. He set up two arrangements. For each arrangement, he tests the strength of the magnet by counting the number of steel paper clips it can pick up.

Which two of the arrangements below should he set up in order to conduct a fair test?



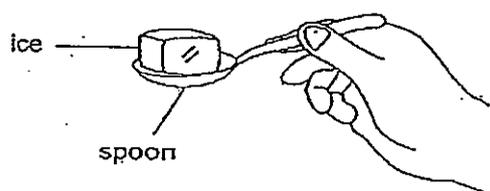
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) B and D only

- 22 The diagram below shows three rings, A, B and C, and how they behave when they are passed through a wooden rod. What can A, B and C be made of?



	A	B	C
(1)	magnet	rubber	iron
(2)	iron	magnet	rubber
(3)	magnet	magnet	iron
(4)	magnet	magnet	magnet

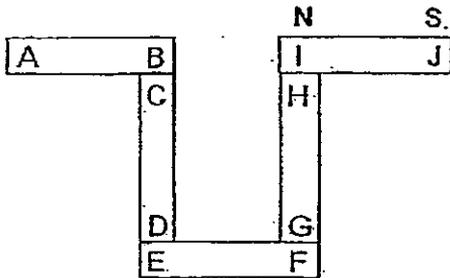
- 23 Suhailah was holding a metal spoon with a cube of ice as shown below. After some time, she felt that the spoon was cold.



Which one of the following correctly explains why Suhailah felt that the spoon was cold?

- (1) The spoon lost heat to the ice and to her fingers.
- (2) The spoon gained heat from the ice and from her fingers.
- (3) The spoon lost heat to the ice and gained heat from her fingers.
- (4) The spoon gained heat from the ice and lost heat to her fingers.

24. The diagram below shows how five magnets can be arranged such that they stick to one another as shown below. The magnetic poles at I and J are labeled.



Which one of the following combinations is possible?

<p>(1)</p>	<p>(2)</p>
<p>(3)</p>	<p>(4)</p>

25 A magnet was used to stroke nails made of four different materials. Which of the following will become a magnet through the stroking method?

- A iron nail
- B steel nail
- C copper nail
- D aluminium nail

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

26 Which of the following items are sources of heat energy?

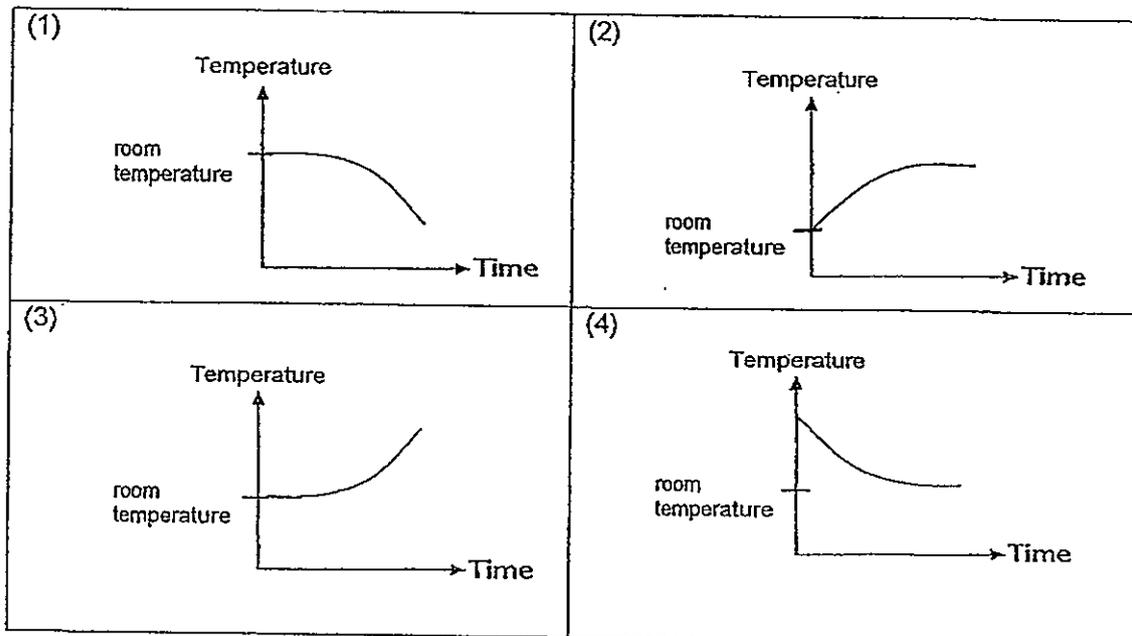
- A moon
- B sun
- C lit bulb
- D lit candle
- E wood

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

Questions 27 and 28 are related.

27 Jaden leaves a cup of hot coffee on a table for a period of time.

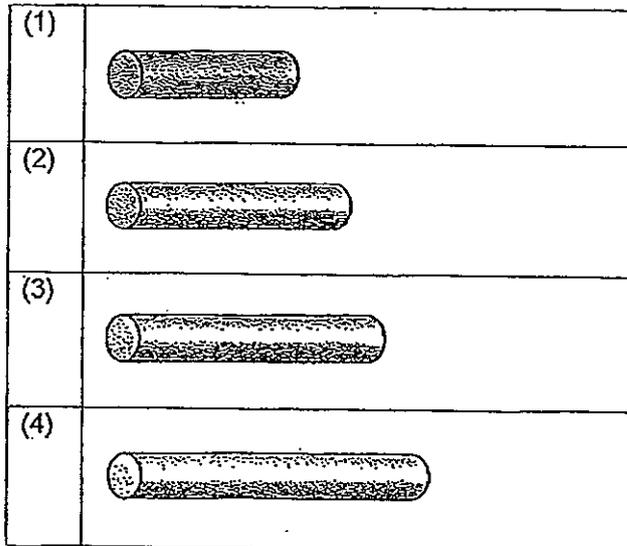
Which one of the graphs below best represents the change in temperature of the hot coffee over twenty minutes?



28 What can be concluded from the graph that you have chosen in Question 7?

- (1) The temperature of the hot coffee will increase gradually over time until it reaches its warmest temperature.
- (2) The temperature of the hot coffee will increase rapidly over time until it reaches its warmest temperature.
- (3) The temperature of the hot coffee will decrease gradually over time until it reaches room temperature.
- (4) The temperature of the hot coffee will decrease rapidly over time until it reaches room temperature.

- 29 A long piece of iron rod was cut into four parts of different lengths and they were heated to 100°C . Which one of the following rods has the least amount of heat?



- 30 Which of the following statements are true?
- A Heat is matter.
 - B Heat is a form of energy.
 - C Temperature is measured in degree Celsius.
 - D Heat loss causes an increase in temperature.

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



Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2013
SCIENCE
PRIMARY FOUR
BOOKLET B

Name: _____

Class: Primary 4

Date: 13 May 2013

Duration of paper: 1 h 45 min

Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

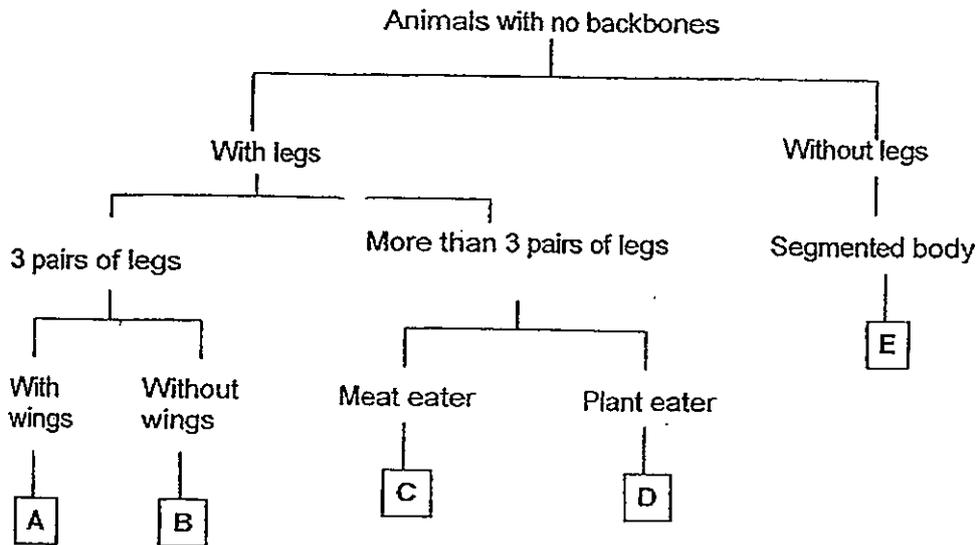
1. This question paper consists of 15 printed pages including this cover page.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

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

The number of marks available is shown in the brackets [] at the end of each question or part question. (40 marks)

31 Study the classification chart below carefully.



(a) Write down the three characteristics of Animal D based on the chart above.

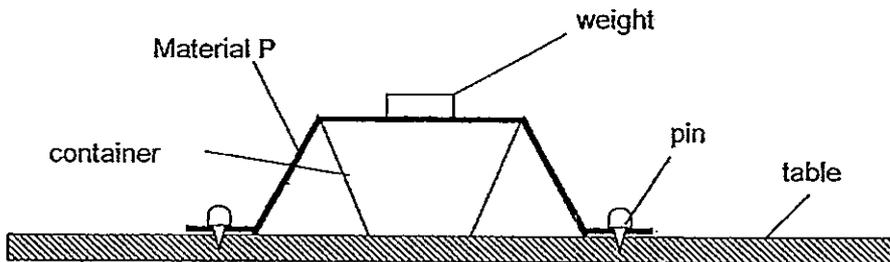
(b) Study the pictures below. Based on the above flow chart, classify the animals given using the correct letter (A, B, C, D or E). [2]

	Animal	Letter
(i)		
(ii)		

(Go on to the next page)

Score	3
-------	---

- 32 Norman carried out an experiment with four different materials, P, Q, R and S. He first stretched material P over a container as shown in the diagram below, and put a piece of weight onto it. After that, he carefully added another weight one at a time as shown in the diagram below until the material tore. All weights added are similar.



Then, he repeated the steps with materials Q, R and S, and recorded his findings in the table below.

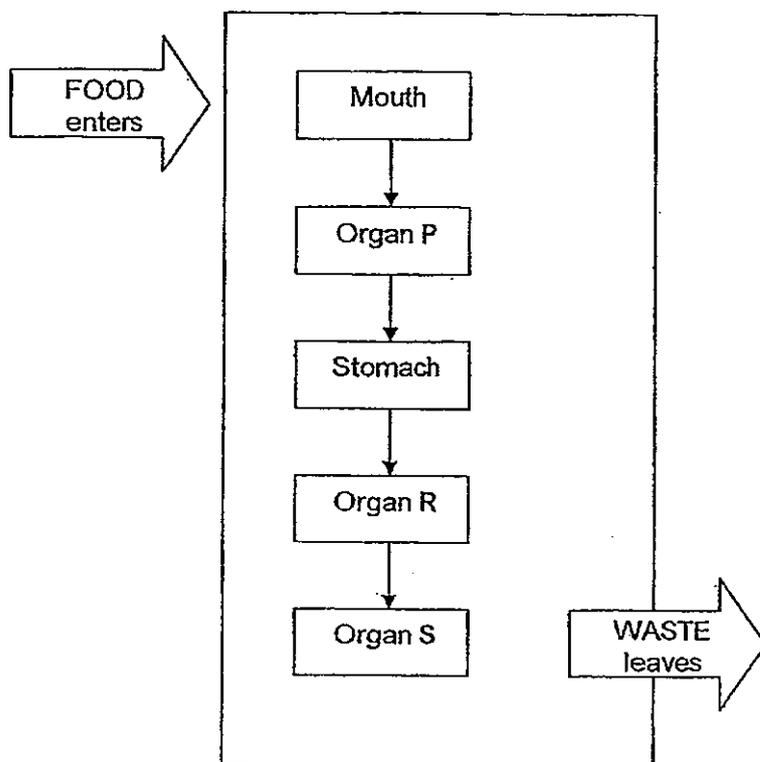
Material	Number of weights when material tore
P	5
Q	6
R	14
S	11

- (a) What is the aim of Norman's experiment? [1]
- (b) Which material, P, Q, R or S, is the most suitable to make a backpack? [1]
- (c) Explain your answer in (b) above? [1]

(Go on to the next page)

Score	3
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- 33 The flow chart below shows part of the digestive process that is carried out in the human digestive system.

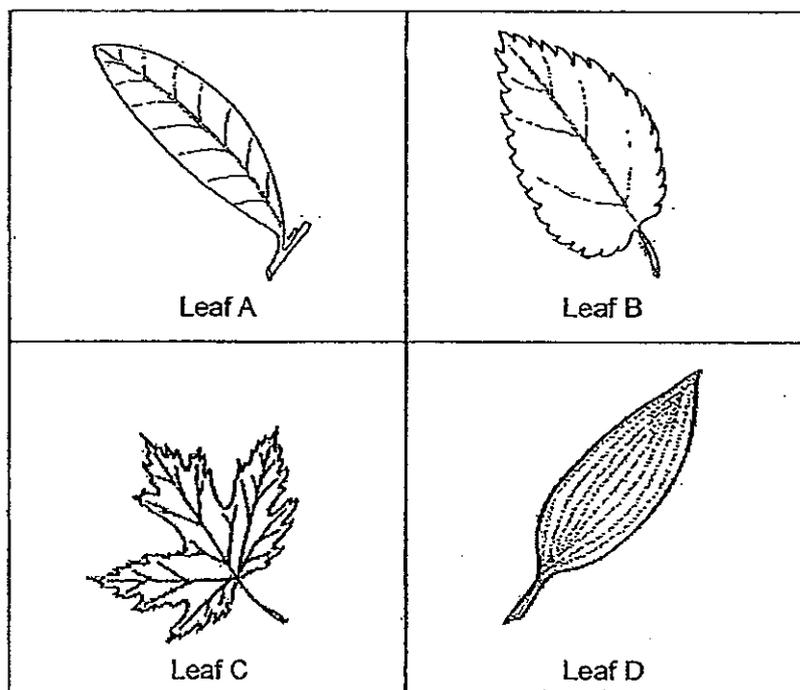


- (a) Name the organ P. [1]
-
- (b) What is the substance absorbed at organ S? [1]
-
- (c) Explain the function of organ R? [2]
-

(Go on to the next page)

Score	4
-------	---

34 Study the leaves A, B, C and D as shown below.



- (a) Classify the above leaves, A, B, C and D into two main groups, in the table below. Each group should have exactly two leaves as members of the group [2]

Group 1	Group 2

- (b) State one difference between the leaves in Group 1 and Group 2 in (a) above. [1]
-

(Go on to the next page)

Score	3
-------	---

- 35 Zachary prepared two identical syringes and filled each of them with a different type of matter, A and B.

One at a time, he then placed his index finger to cover the nozzle of each syringe and then pushed the plunger down using the other hand as shown below.



Zachary then recorded the distance the plunger moved for each syringe in the table below.

Syringe	Distance moved by plunger (cm)
A	0
B	0.4

If Zachary used oil and air in his experiment, answer the following questions.

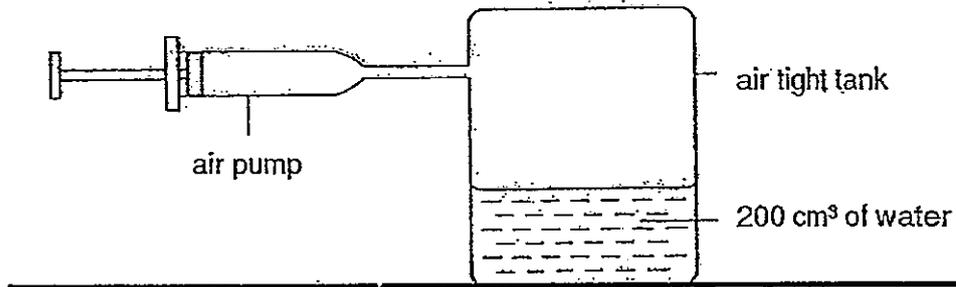
- (a) Which one of the syringes, A or B, contained oil? [1]

- (b) What state of matter is oil classified under? State the main property of oil which will help you explain your answer in (a). [2]

(Go on to the next page)

Score	3
-------	---

- 36 An air pump is attached to an airtight tank containing only 200 cm^3 of water. The maximum capacity of the airtight tank is 500 cm^3 . Each pump of the air pump can force 100 cm^3 of air into the tank.



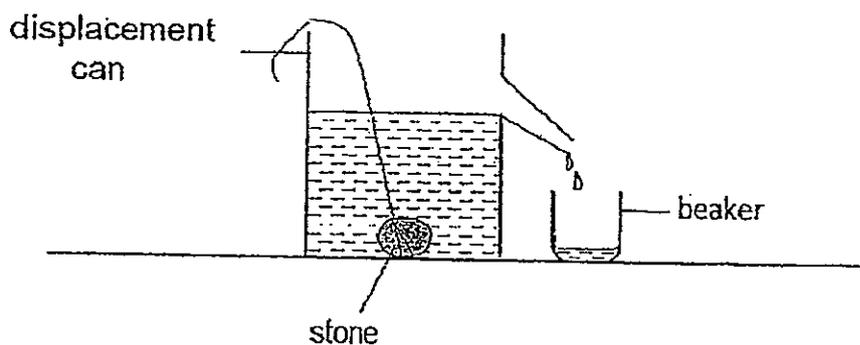
- (a) What will the volume of air in the tank be after four pumps of the air pump? [1]
-

- (b) What does your answer in (a) above tell you about one property of air? [1]
-

(Go on to the next page)

Score	2
-------	---

- 37 Hyder set up the experiment as shown below. He poured water into the displacement can and let the water overflow from the opening at the side. When no more water overflows out, he then lowered a stone slowly into the displacement can using a string. At the same time, the water that overflowed from the can was collected using a beaker.



Hyder then measured the amount of water collected in the beaker. He discovered that there was 5 ml of water in the beaker.

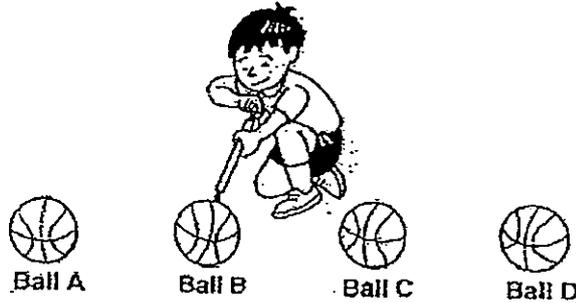
- (a) What does the 5 ml of water collected in the beaker represent? [1]

- (b) What does the above experiment tell us about the property of the stone? [1]

(Go on to the next page)

Score	2
-------	---

38 Joash wanted to find out if a ball could be heavier if he pumped more air into it.



He inflated 4 basketballs of original weight of 350 g with different amounts of air using a handheld air pump as shown in the diagram above. He recorded his results in the table below.

Ball	Number of times the ball has been pumped	Mass of the ball after inflated (g)
A	5	375
B	9	395
C	13	415
D	17	435

(a) Study the chart below carefully. Which of the variables should be kept constant or changed in order for the experiment to be a fair one? For each variable, place a tick in correct box. [2]

Variable	Constant	Change
Size of air pump	<input type="checkbox"/>	<input type="checkbox"/>
Size of each ball	<input type="checkbox"/>	<input type="checkbox"/>
Material of each ball	<input type="checkbox"/>	<input type="checkbox"/>
Amount of air pumped into each ball	<input type="checkbox"/>	<input type="checkbox"/>

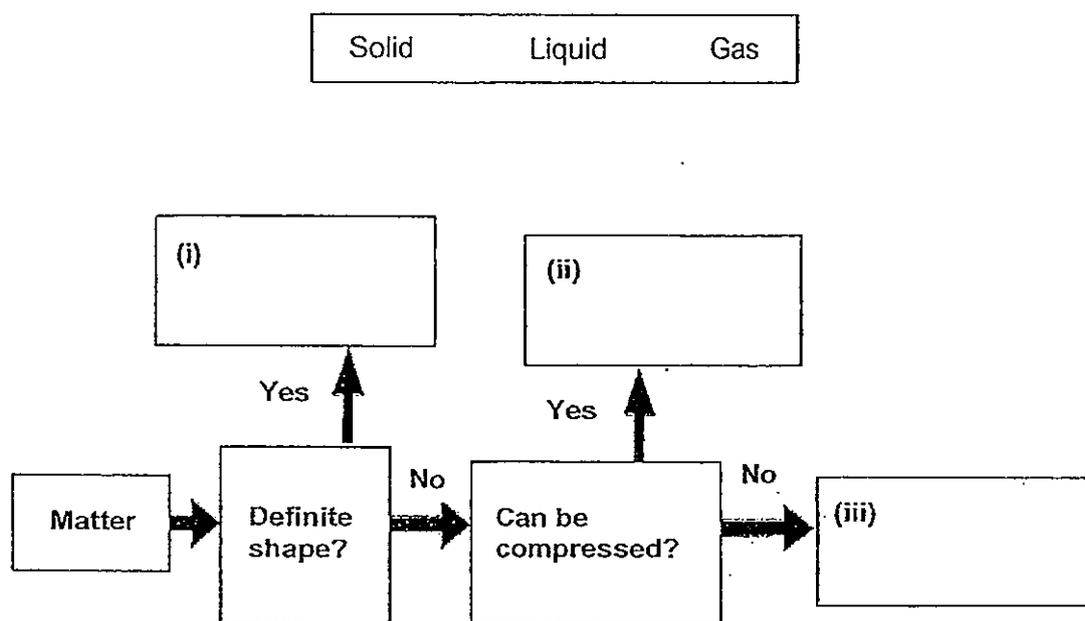
(b) What property of air can we conclude, based on the results in the table above? [1]

(Go on to the next page

Score	3
-------	---

39 Study the flow chart below.

(a) Complete the flowchart by filling in boxes (i), (ii) and (iii) with the following words. [3]

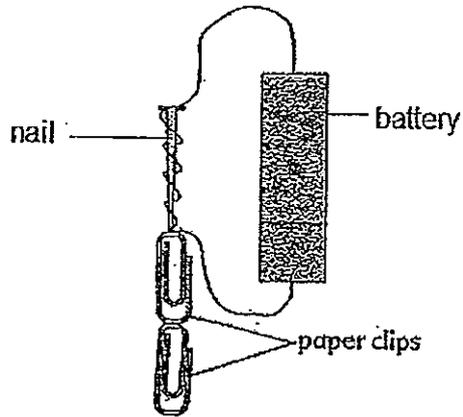


(b) Philip observed that a sponge can become smaller when it is squeezed. He said that sponge is an example of (ii) as in the flowchart above. Is Philip correct? [1]

(Go on to the next page)

Score	/
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- 40 An experiment was set up as shown in the diagram below.



When different numbers of batteries were used and connected by wires, the nail was able to attract different numbers of paper clips. The results are shown in the table below.

Number of batteries connected by wires	Number of paper clips attracted to the nail
1	3
2	6
3	9
4	12
5	15

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

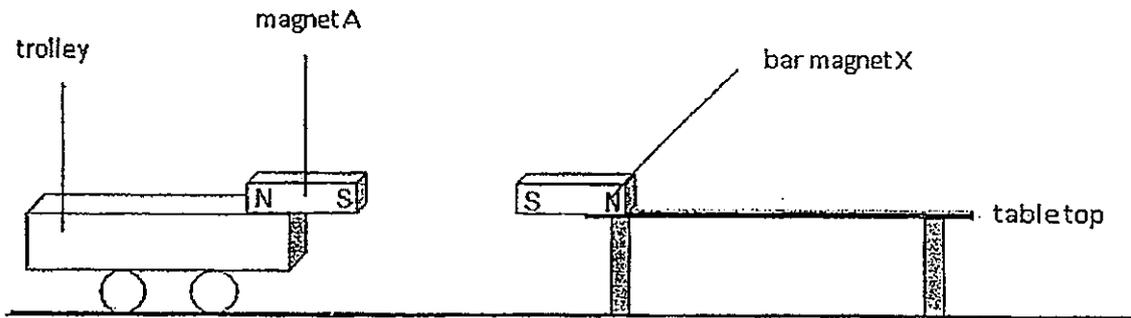
- (b) What can be concluded from the experiment above? [1]

(Go on to the next page)

Score	2
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For Question 41, please refer to pages 12 and 13.

- 41 An experiment was set up to test the strength of five magnets. Different magnets, A, B, C, D and E, were attached to a trolley with its South pole facing out. A bar magnet, X, was also attached securely to a tabletop, with its South pole facing out as shown below.



The different magnets were each brought close to the bar magnet X one at a time, till the South poles of the magnets touched each other. The magnets repelled. The trolley was then let go so that it would travel backwards a distance away from the bar magnet X. The distance that each magnet travelled backwards was measured and recorded in the table below.

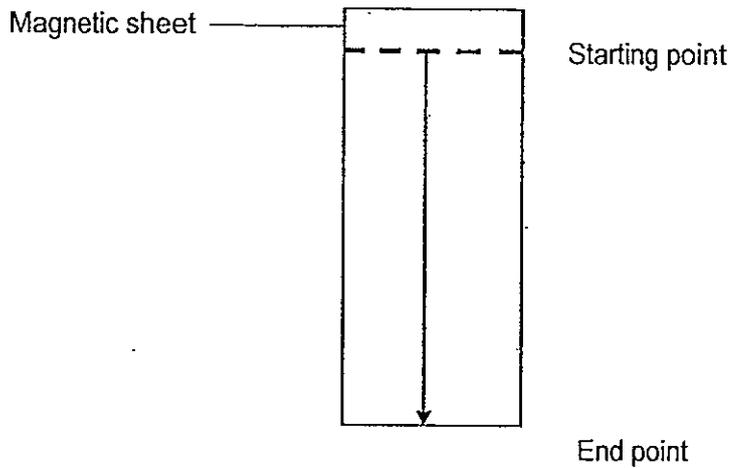
Magnets	Distance travelled backwards (cm)
A	5
B	3
C	7
D	6
E	2

- (a) Based on the results above, which magnet (A, B, C, D or E) is the strongest? [1]

(Go on to the next page)

Score	1
-------	---

Peter and Jane wanted to play a game with magnets. A magnetic sheet will be held vertically as shown below. A magnet will be placed at the starting point of the magnetic sheet and allowed to drop downwards. The magnet that reaches the end of the magnetic sheet the fastest will win the race.



- (b) Based on the magnets, A, B, C, D and E, listed in the same table on page 12, which magnet should Jane choose in order to win the game? [1]

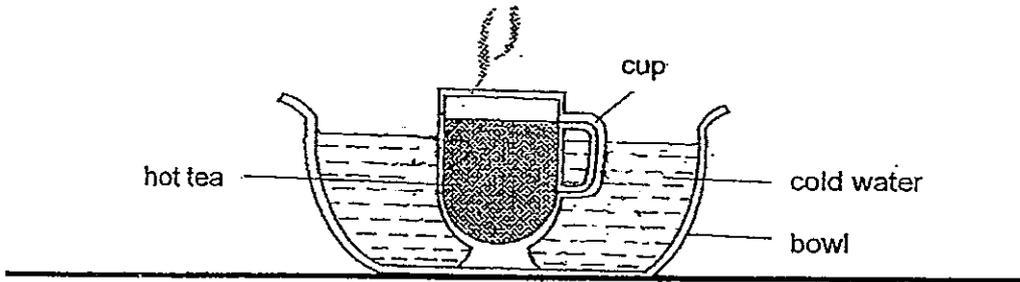
- (c) Explain your answer in (b) above. [2]

(Go on to the next page)

Score	3
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- 42 Cindy made a cup of tea. It was too hot so she placed the cup of tea in a bowl of cold water. After a while, the cup of tea cooled down.



- (a) Did the cup of tea gain or lose heat in the process of cooling down?

- (b) Draw arrows on the diagram above to show the direction of heat flow between the cup of tea and the cold water. [1]

- (c) When will heat transfer between the cup of tea and the cold water stop? [1]

- 43 Two beakers, each containing different amounts of water, 300 ml and 800 ml of water respectively, were placed on a wooden table. The water had the same temperature of 90°C. An egg was cracked and placed into each beaker at the same time. After five minutes, the eggs in the two beakers were observed.

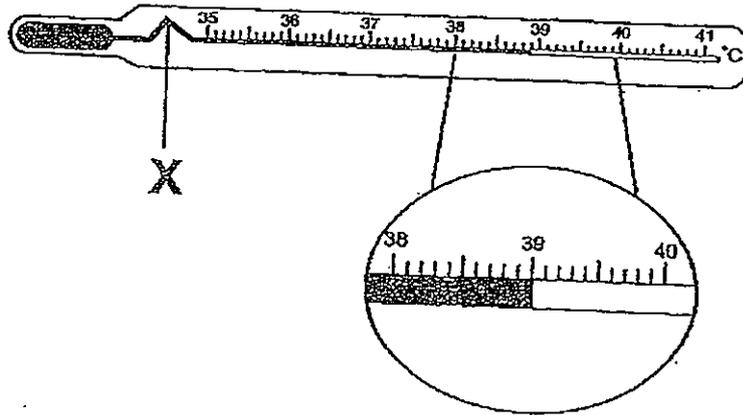
- (a) In which beaker was the egg more cooked than the other? [1]

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

(Go on to the next page)

Score	5
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- 44 The diagram below shows a temperature reading on a thermometer.



- (a) State the temperature on the thermometer as shown in the diagram above.
- (b) One day, Ali was not feeling well. He used his hands to touch his forehead to find out if he had a fever. However, his teacher told him to use a thermometer instead. State the best reason why the teacher told Ali to use a thermometer instead of using his hands to check if he has a fever. [1]

- End of Booklet B -

Score	2
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ANSWER SHEET

EXAM PAPER 2013

SCHOOL : ACS

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
4	3	3	1	2	3	4	1	4	2	2	2	1	1	4	3	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	4	1	1	4	3	2	1	2	4	3	1	2

31)a)It has more than 3 pairs of legs, it is a plant eater and it has no back bones.

b)i)E ii)B

32)a)To find out which material is the strongest.

b)Material R.

c)R can hold the most number of weight before it tore, therefore it is the strongest.

33)a)Gullet.

b)The water.

c)These digested food will be absorbed into the blood to be carried to other part of the body.

34)a)Group 1 : Leaf B , Leaf C

Group 2 : Leaf A , Leaf D

b)Leaf A and D have smooth edges but Leaf B and C have jiggered edges.

35)a)Syringe A.

b)The liquid state. The oil has a definite volume.

- 36)a)300cm³
b)Air can be compressed.

- 37)a)The 5ml collect in the beaker represents the volume of the stone.
b)The stone has a definite volume.

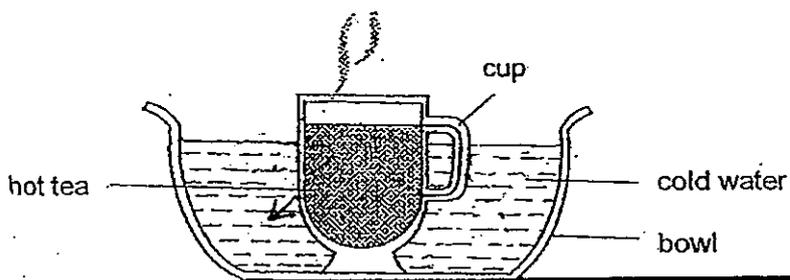
- 38)a)Constant
Constant
Constant
Change
b)Air has mass.

- 39)a)i)Solid ii)Gas iii)liquid
b)Philip is not correct.

- 40)a)The aim of the experiment was to find out if the number of batteries affect the strength of the nail acting as magnet temporary.
b)It can be concluded that the greater number of batteries used, the stronger will be the nail.

- 41)a)Magnet C.
b)Magnet E.
c)Magnet E is the weak least magnet, hence, if has the least attraction so it will reach the end point fastest.

- 42)a)It lost heat.
b)



- c)The heat transfer will stop when both the tea and the water reach the same temperature.

- 43)a)The beaker containing 800ml of water in it.
b)There was more heat in the beaker with 800ml of water.

- 44)a)39°C.
b)The thermometer is more accurate than his hand.



AI TONG SCHOOL

2013 SEMESTRAL ASSESSMENT (1)

PRIMARY FOUR SCIENCE

DURATION: 1hr 45 min

DATE: 17 May 2013

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	60
Section B	40
Total	100

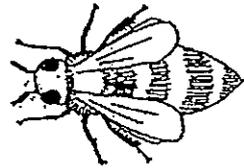
Section A (30 x 2 marks)

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

1. The diagrams below show two animals, X and Y.



Animal X



Animal Y

Based on the diagrams above, which of the following statements correctly describe both animals?

- A Animal Y has wings but Animal X does not have.
- B Both animals have a pair of feelers.
- C Animal X has 3 body parts but Animal Y has 2 body parts.
- D Both animals have legs.

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

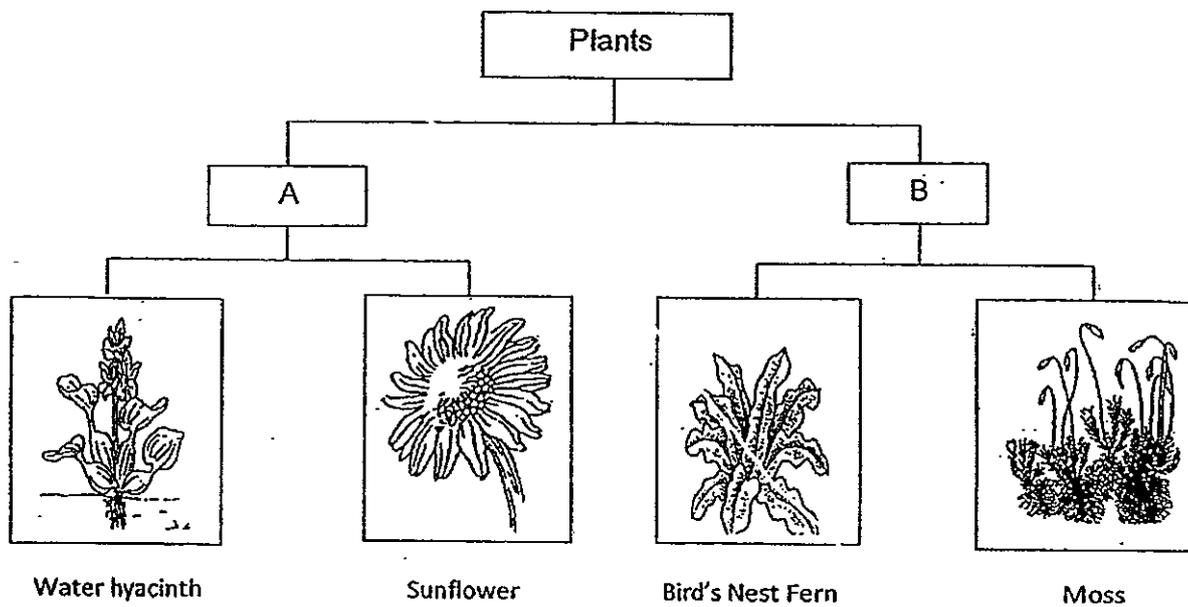
2. When Daniel tried to catch a bird, it flew away.

Which of the following characteristics of living things explain(s) this behaviour?

- A Living things reproduce.
- B Living things respond to changes around them.
- C Living things need air, water and food to stay alive.

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

3. Study the classification chart below.



Which of the following are suitable headings for A and B?

	A	B
(1)	Plants	Fungi
(2)	Non-poisonous	Poisonous
(3)	Live in water	Live on land
(4)	Flowering Plants	Non-Flowering Plants

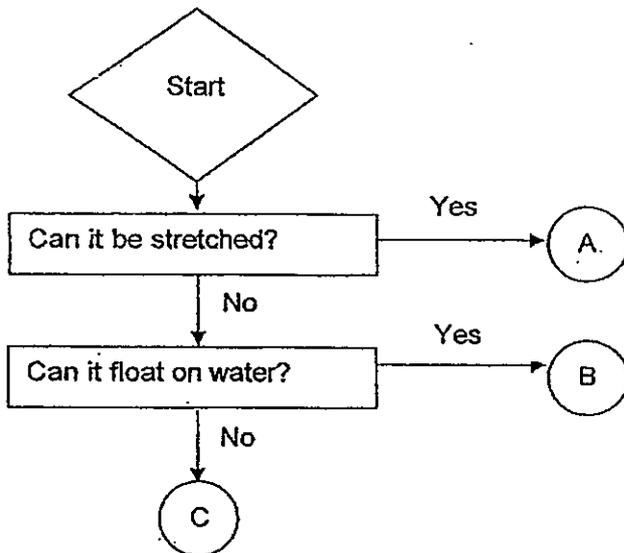
4. John wrote a few statements about fungi in his journal.

- A Fungi reproduce by spores.
- B Fungi need light to grow.
- C Fungi feed on decaying matter.
- D Fungi grow in dry places.

Which of the above statements are true?

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

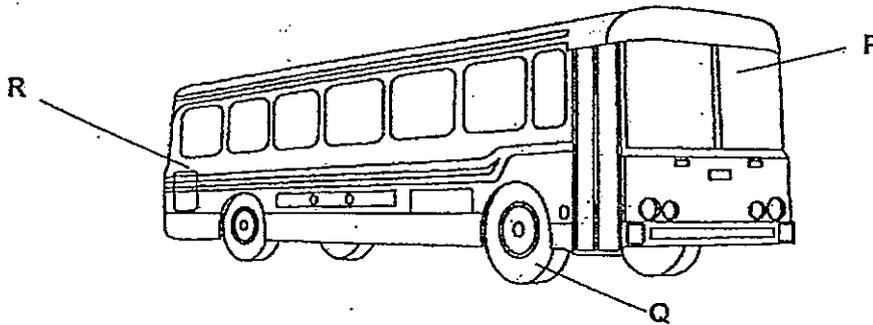
5. The flow chart below shows the characteristics of objects A, B and C.



Which of the following could objects A, B and C be?

	A	B	C
(1)	Rubber band	Styrofoam	Coin
(2)	Rubber band	Eraser	Styrofoam
(3)	Eraser	Styrofoam	Rubber band
(4)	Coin	Rubber band	Styrofoam

6. The diagram below shows a bus.



Which materials are most likely used to make the parts labelled P, Q and R?

	P	Q	R
(1)	Glass	Rubber	Wood
(2)	Metal	Wood	Plastic
(3)	Glass	Rubber	Metal
(4)	Plastic	Metal	Glass

7. Alice compared the hardness of four materials A, B, C and D, by scratching them with different rods. She recorded her observations in the table below, using a tick (✓) to indicate the presence of marks on the materials.

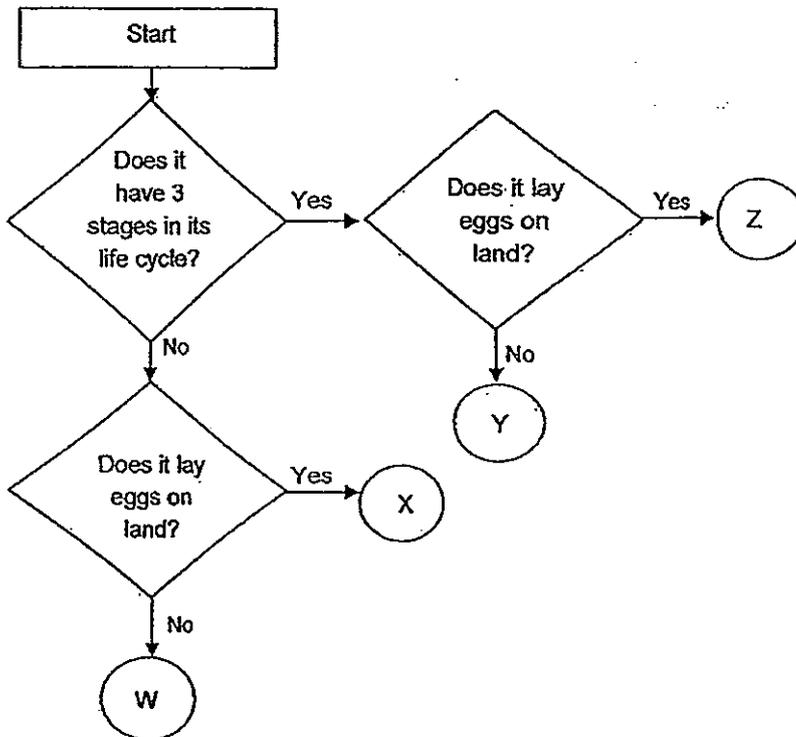
Material	Presence of scratch marks made by		
	iron rod	Plastic rod	Wooden rod
A	✓	✓	
B			
C	✓	✓	✓
D	✓		

Which of the following correctly shows the four materials arranged in increasing order of hardness?

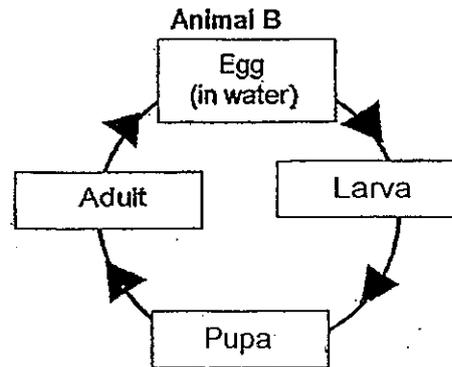
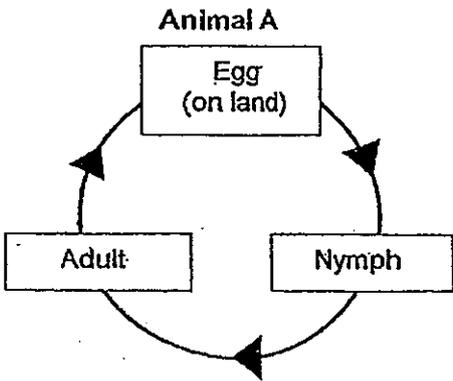
Softest \longrightarrow Hardest

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

8. Study the flow chart below.



The diagrams below show the life cycle of animals A and B.



Based on the flow chart, which of the following could animals A and B be?

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

9. Nancy studied animals, P and Q and made some observations. A tick (✓) means that the animal has the characteristic.

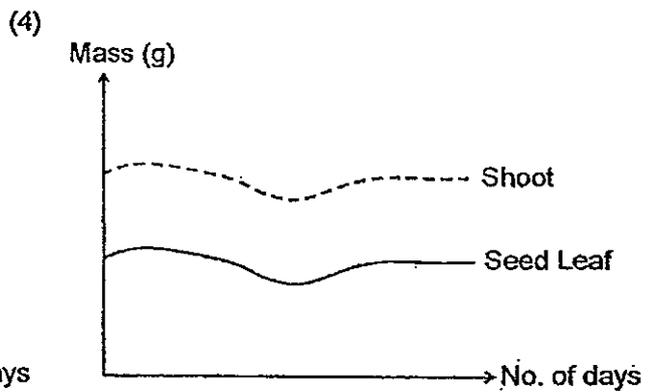
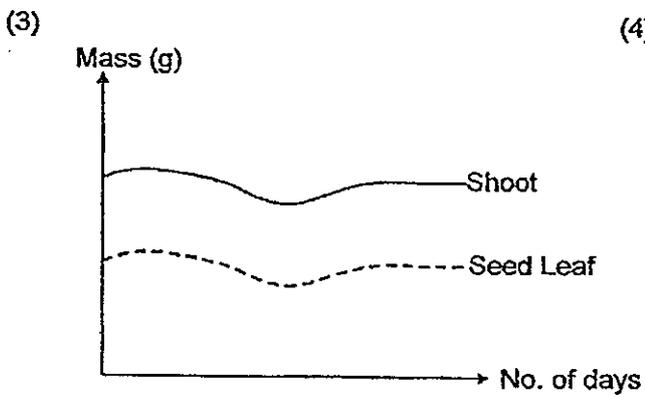
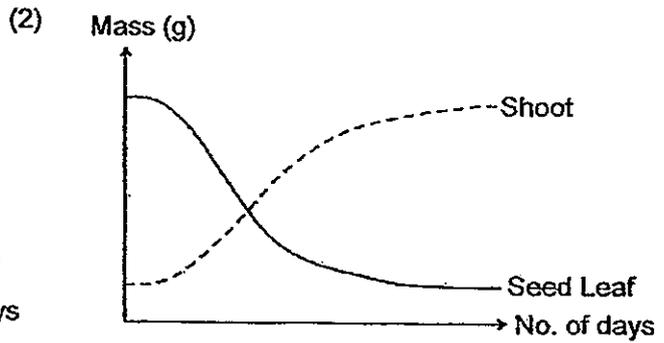
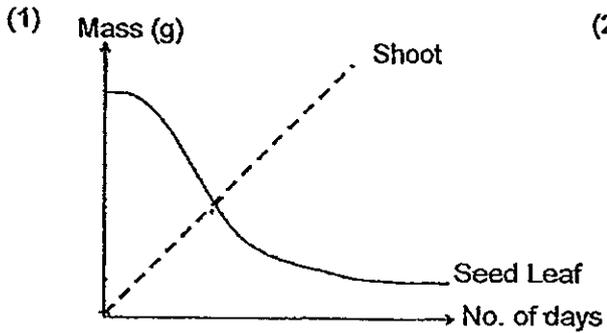
Observation	Animal P	Animal Q
It has wings.	✓	✓
Eggs are laid in water.	✓	
There are 3 stages in its life cycle.		✓

Which of the following represents animals P and Q?

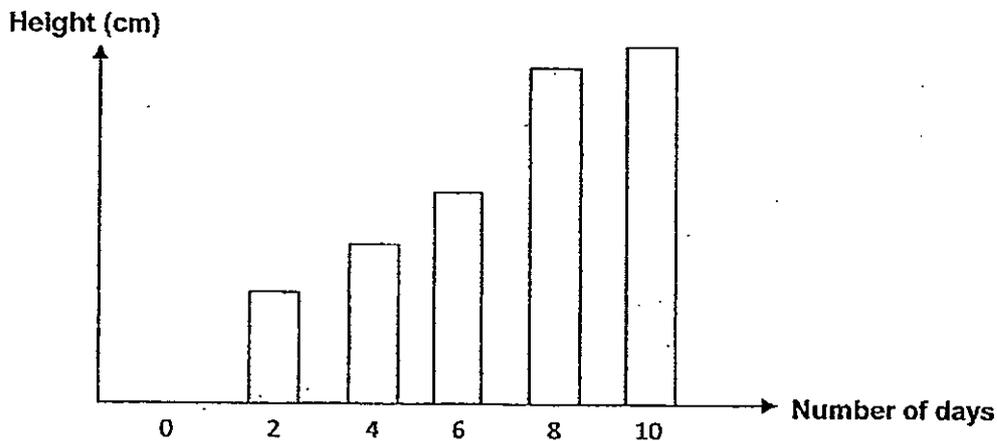
	Animal P	Animal Q
(1)	Frog	Cockroach
(2)	Mosquito	Frog
(3)	Butterfly	Mosquito
(4)	Mosquito	Cockroach

10. Ben carried out an experiment on a seed germinating into a seedling. He observed and recorded the mass of the seed leaf and the shoot of the seedling over several days.

Which of the following graphs shows the changes in the mass of the seed leaf and shoot of the seedling during the experiment?



11. Ali placed a green bean in a container with some wet cotton wool and watered the seedling daily. The graph below shows the growth of the seedling for the next 10 days when it was still in the container.



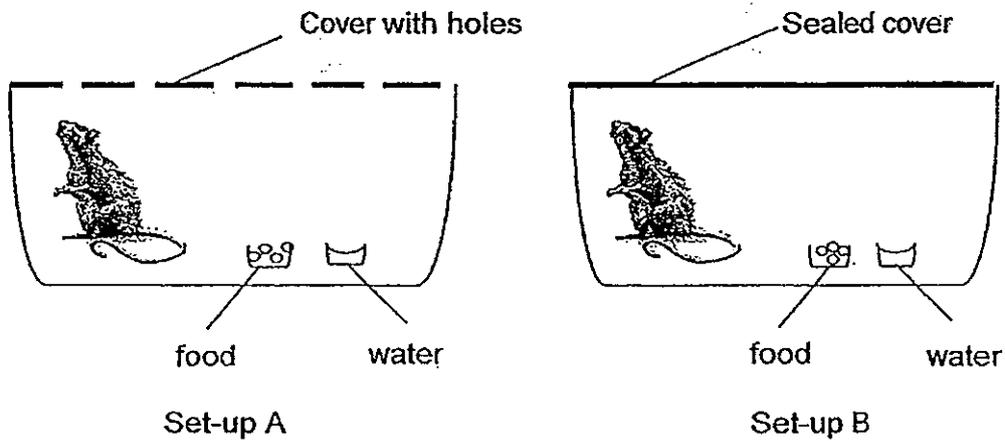
Based on the graph above, during which period did the seedling grow at the fastest rate?

- (1) From Day 2 to 4
 - (2) From Day 4 to 7
 - (3) From Day 6 to 8
 - (4) From Day 8 to 10
12. Which of the following is not a matter?

- A Light
- B Wind
- C Shadow
- D Rain

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

13. Kumar conducted an experiment as shown below.



After one week, he observed that the rat in Set-up B had died while the other in Set-up A was still alive.

What can Kumar conclude from this experiment?

- (1) Living things can reproduce.
- (2) Living things need air to survive.
- (3) Living things can move on its own.
- (4) Living things need food and water to survive.

14. Jean wanted to find out if the type of soil would affect the growth of balsam plants. She planted 3 balsam plants of similar size in three pots, X, Y and Z. The three plants were placed in the garden.
The table below provides some information on the three pots.

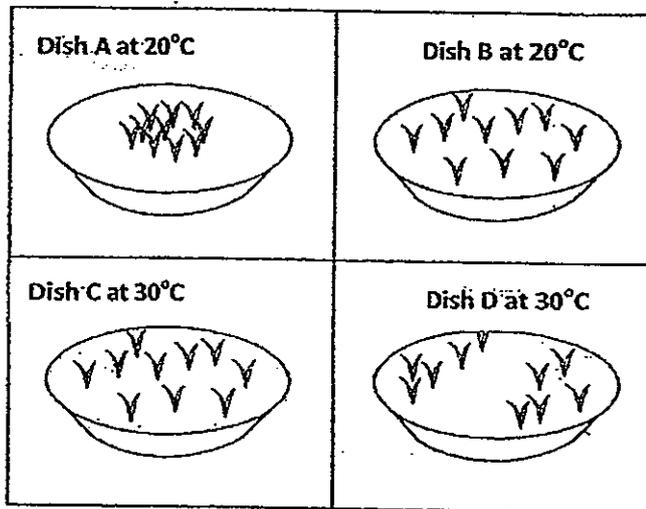
Pot	X	Y	Z
Material of pot	plastic	plastic	plastic
Type of soil	garden soil	clay	sand
Size of pot	big	small	medium
Amount of water given daily	200 ml	200 ml	200 ml

Jean's teacher told her that her experiment was not a fair test.
Why was the experiment not a fair test?

- A The size of the pot was different.
- B The material of the pot is the same.
- C The type of soil in each pot was different.
- D The three pots were given the same amount of water.

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

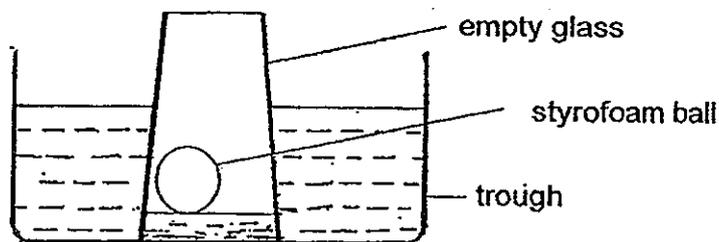
15. Gary wants to find out if temperature affects the growth of plants.



Which 2 dishes should Gary use to conduct a fair test?

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

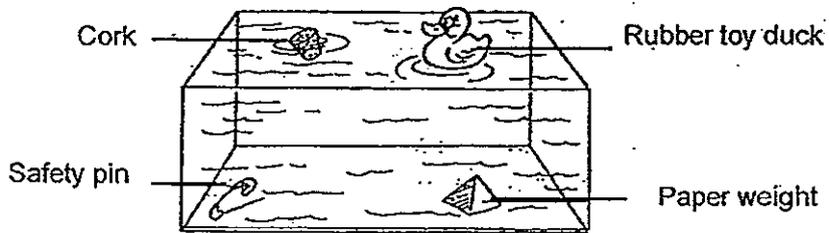
16. Kim lowered an empty glass with a small styrofoam ball into a container of water until it touched the bottom of the container. She observed that the water level inside the glass is lower than the water level outside. The styrofoam ball floated on the water as shown below.



Which of the following is the reason for the difference in the water level inside and outside the glass?

- (1) The air trapped in the glass occupied space.
- (2) The styrofoam ball occupied most of the space.
- (3) The styrofoam ball absorbed the water in the glass.
- (4) The weight of the styrofoam ball forced the water out from the glass.

17. Study the things in the diagram below.



Based on the diagram above, which of the following is the best way to classify the objects into group P and group Q?

	Group P	Group Q
(1)	Will sink	Will float
(2)	Easily broken	Not easily broken
(3)	Scratch easily	Does not scratch easily
(4)	Stretchable	Not stretchable

18. The table below shows the properties of four materials.

Material	Is it strong?	Is it hard?	Is it flexible?
A	Yes	No	Yes
B	Yes	Yes	No
C	No	Yes	No
D	Yes	No	Yes

Which of the following materials is suitable to make a steel key?

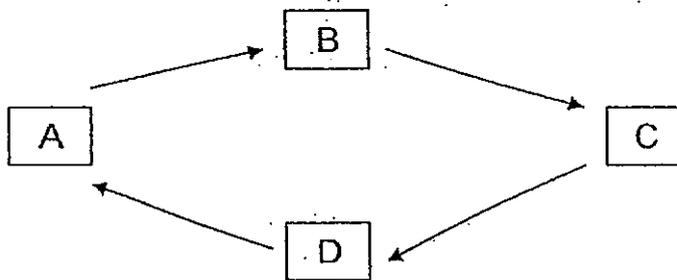
- (1) A
- (2) B
- (3) C
- (4) D

19. When food is in our mouth, the tongue is used to _____.

- A digest the food slowly
- B roll the food into a ball
- C mix the food with saliva to make it soft
- D move the food to both sides of the mouth for grinding

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

20. Four children are having a discussion on a diagram of the life cycle of a butterfly. The children were told that B represents the adult stage of the butterfly.



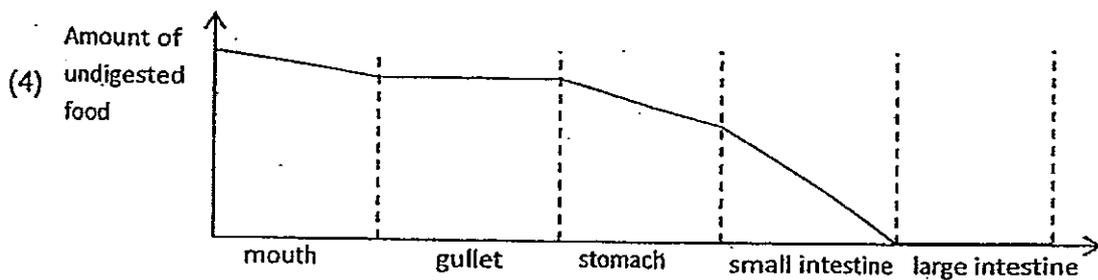
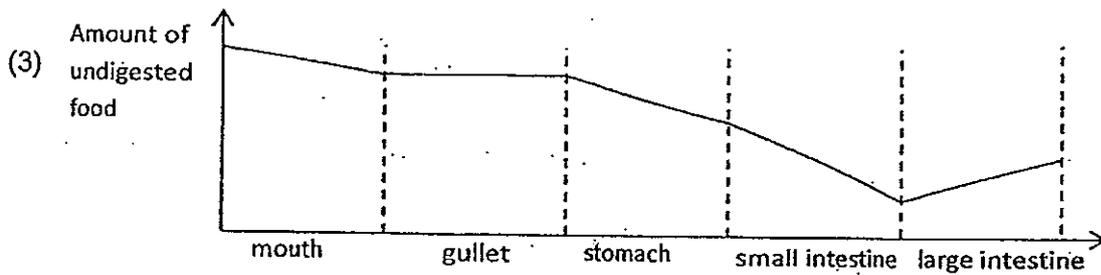
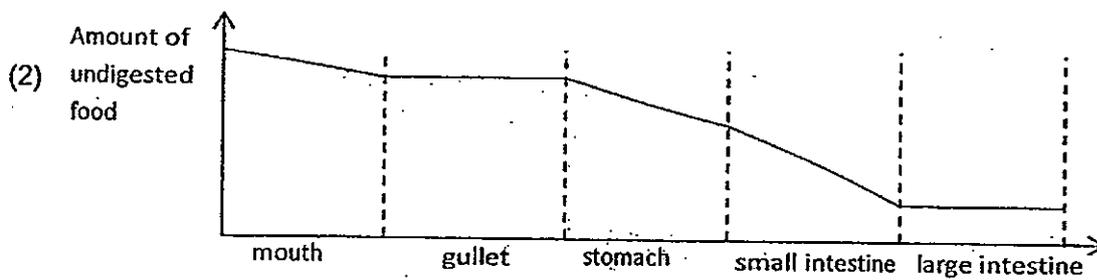
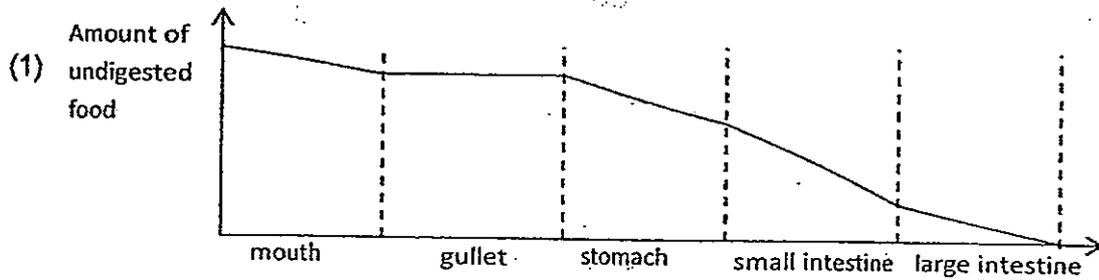
They then made a statement each about the butterfly at the various stages.

- Adam : At stage A, it does not eat and does not move around.
- Ben : At stage B, it does not move around at all.
- Cathy : At stage C, it moults several times as it grows.
- David : At stage D, it spends most of its time eating.

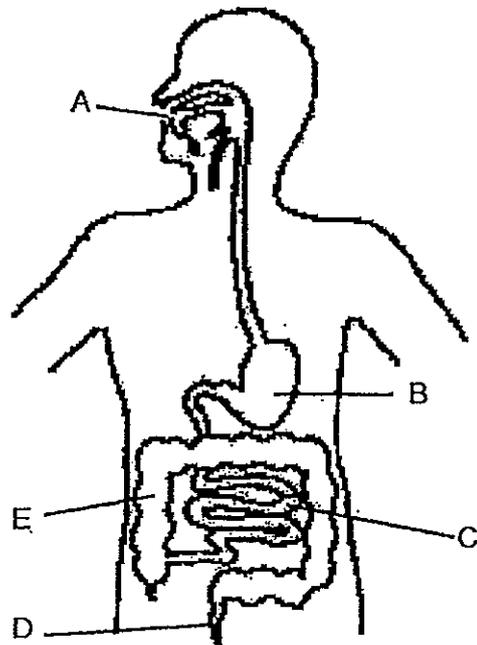
Which of the children made the correct statements?

- 1) Adam and David only
- 2) Ben and Cathy only
- 3) Cathy and David only
- 4) Adam and Cathy only

21. Which of the following graphs correctly shows the amount of undigested food in the digestive system as food travelled from the mouth to the large intestine?



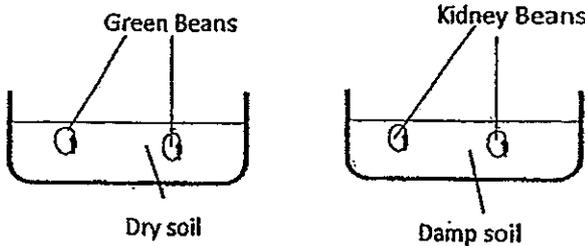
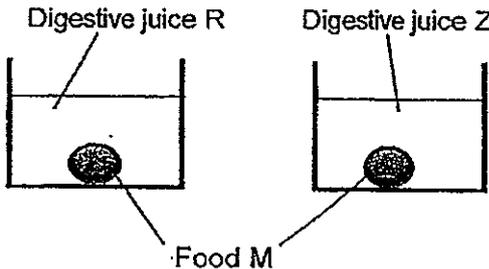
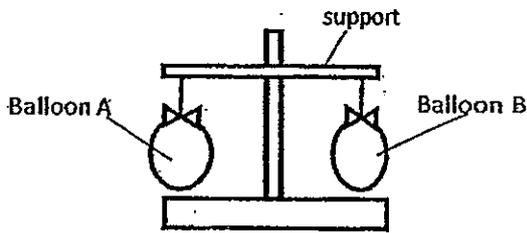
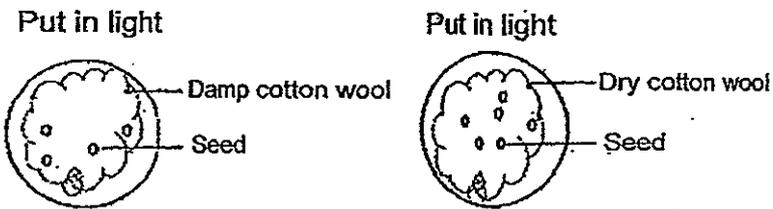
22. The diagram below shows the digestive system of a human body.



Which parts (A, B, C, D or E) of the system does not contain digestive juice?

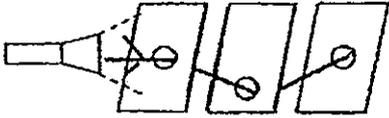
- (1) A and D only
- (2) D and E only
- (3) A, B and C only
- (4) C, D and E only

23. The following table gives the aim of four different experiments and diagrams to show the set-ups for each experiment. Which of the experiments have been correctly carried out?

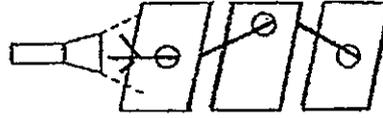
	Aim of Experiment
(1)	<p>To find out if water is needed for germination</p> 
(2)	<p>To find out if types of digestive juices affect the rate of digestion</p> 
(3)	<p>To find out if air occupies space</p> 
(4)	<p>To find out if light is needed for germination</p> 

24. Study the diagrams below. Which of the following diagrams shows the correct path of light?

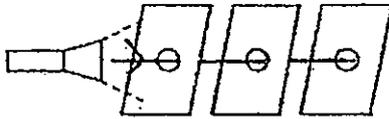
(1)



(2)



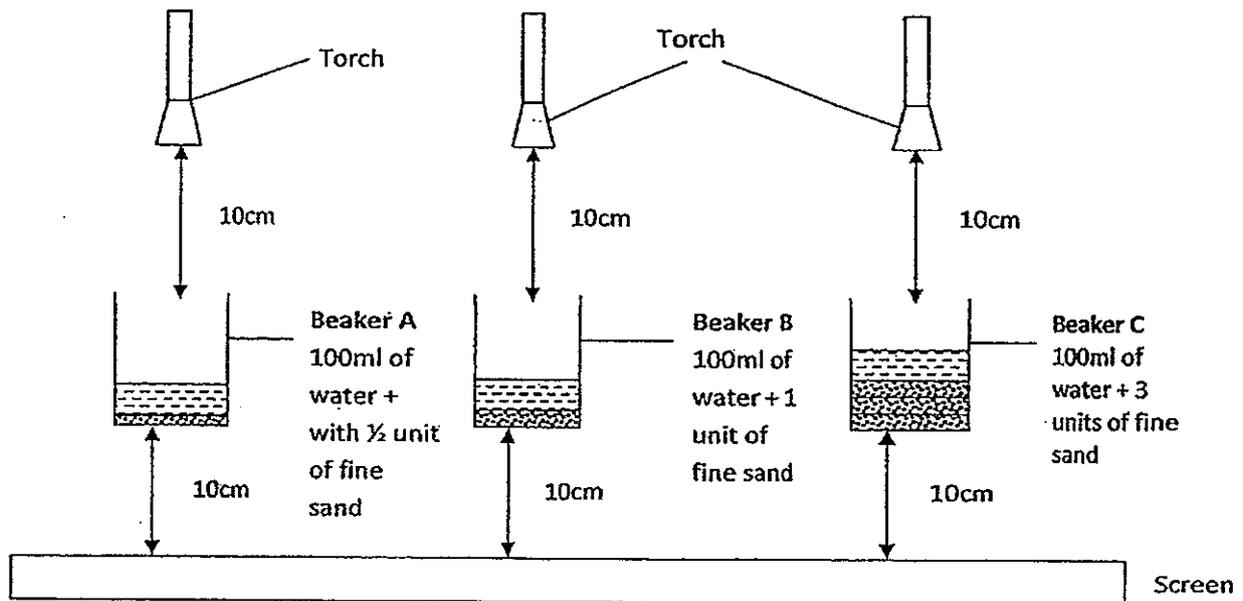
(3)



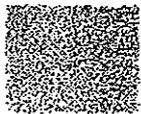
(4)



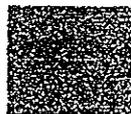
25. Kevin added different amounts of sand into three beakers A, B and C, each containing 100ml of water. He then shone a torch through the water as shown in the diagram below.



When he switched on the torch, shadows of different darkness were formed as shown below.



Beaker A



Beaker B

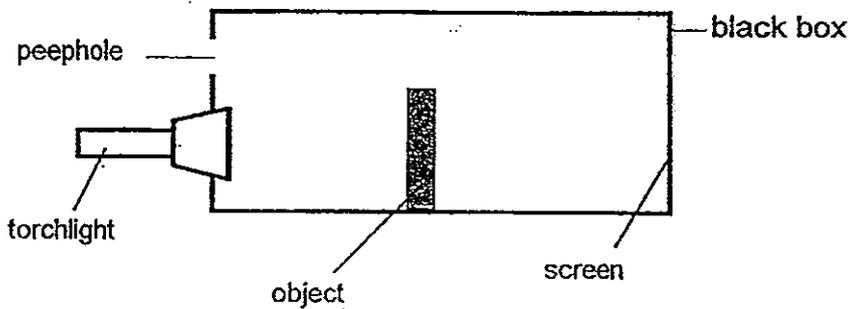


Beaker C

Based on the shadows obtained above, what can Kevin conclude about the relationship between the amount of sand and the darkness of the shadow cast?

- (1) The greater the amount of sand added, the darker the shadow cast.
- (2) The greater the amount of sand added, the lighter the shadow cast.
- (3) The lesser the amount of sand added, the darker the shadow cast.
- (4) The amount of sand added has no effect on the darkness of the shadow cast.

26 The diagram below shows a black box with an opaque object placed inside.

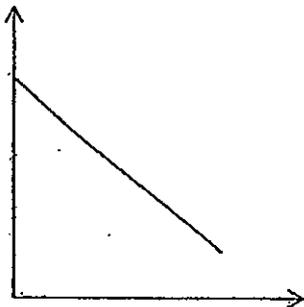


Peter turned the torchlight on and looked through the peephole. He saw that the shadow of the object was cast on the screen.

He then repeated the experiment with torches of higher light intensity.

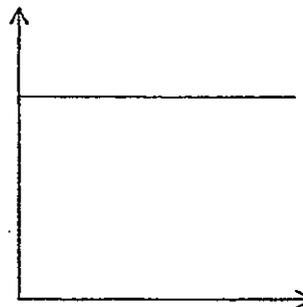
Which of the following graphs below shows the correct relationship between the intensity of light of the torch and the darkness of the shadow of the object cast on the screen?

(1) Darkness of shadow



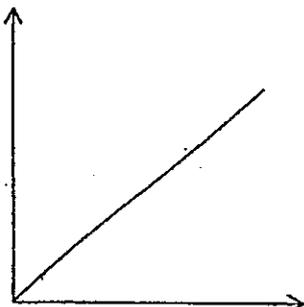
Intensity of light

(2) Darkness of shadow



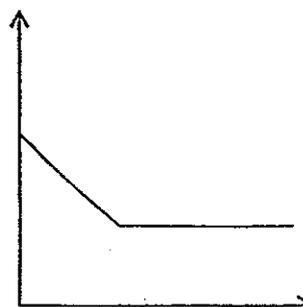
Intensity of light

(3) Darkness of shadow



Intensity of light

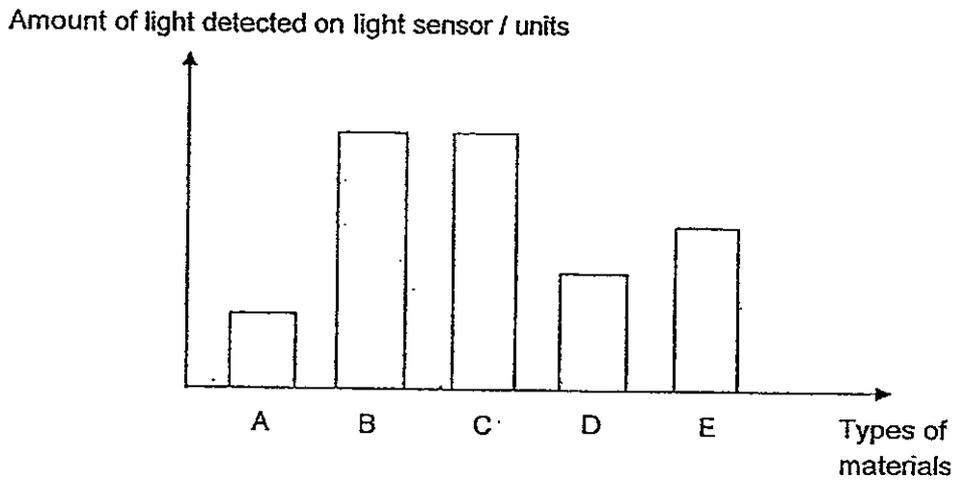
(4) Darkness of shadow



Intensity of light

For Questions 27 and 28, refer to the graph below.

Pauline used a torchlight and a light sensor to measure the amount of light that passed through 5 different materials. She recorded and plotted the results in the graph below.



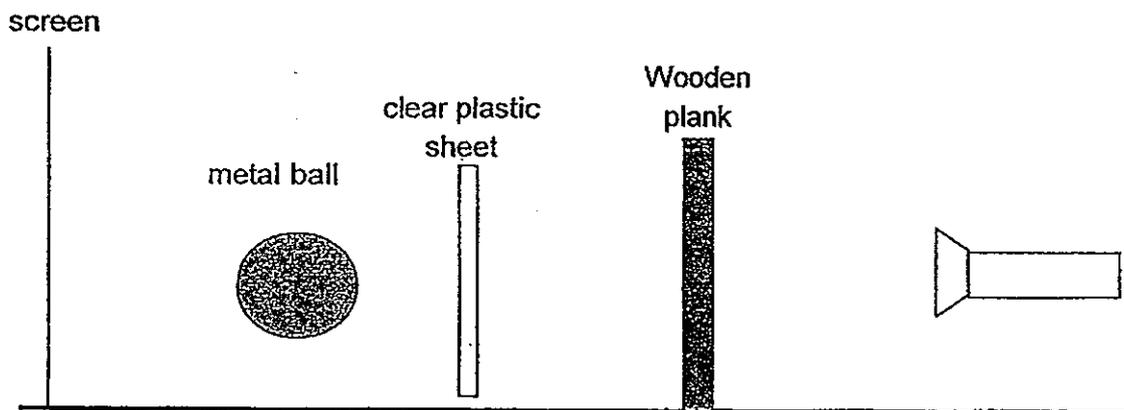
27. Based on the graph above, which of the following is a correct conclusion?

- (1) Material D forms a darker shadow than material A.
- (2) Material B forms a darker shadow than material D.
- (3) Material B forms a lighter shadow than material E.
- (4) Material D forms a lighter shadow than material E.

28. Based on the graph, which object blocks the most amount of light?

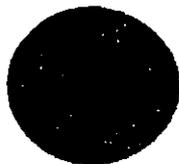
- (1) A
- (2) B
- (3) C
- (4) D

29. Peter shines a torch at a metal ball, a piece of clear plastic sheet and a wooden plank as shown below.



Which one of the following shows the shadow that will be cast on the screen?

(1)



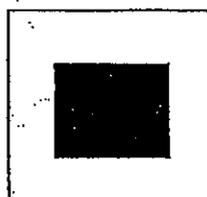
(3)



(2)

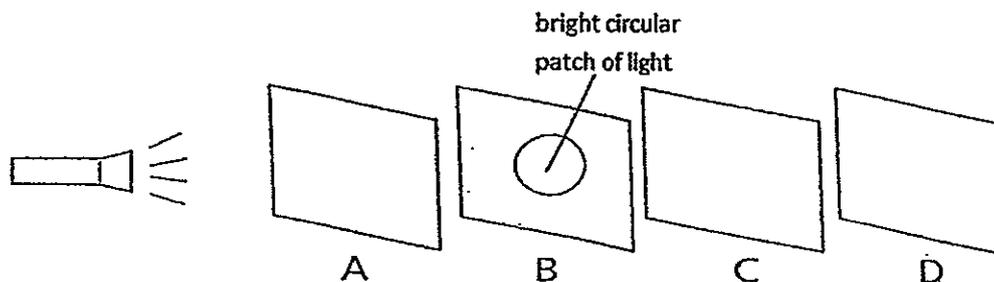


(4)



30. Henry conducted an experiment using four pieces of different materials; A, B, C and D to find out which sheet would allow light to pass through. He arranged the four sheets in a straight line as shown below.

When he switched on the torch, a bright circular patch of light was seen on sheet B only.



Which of the following best describes the properties of materials A; B, C and D?

	Allows light to pass through	Does not allow light to pass through	Not possible to tell
(1)	A	B	C and D
(2)	B	C and D	A
(3)	A and D	B	C
(4)	B and D	C	A

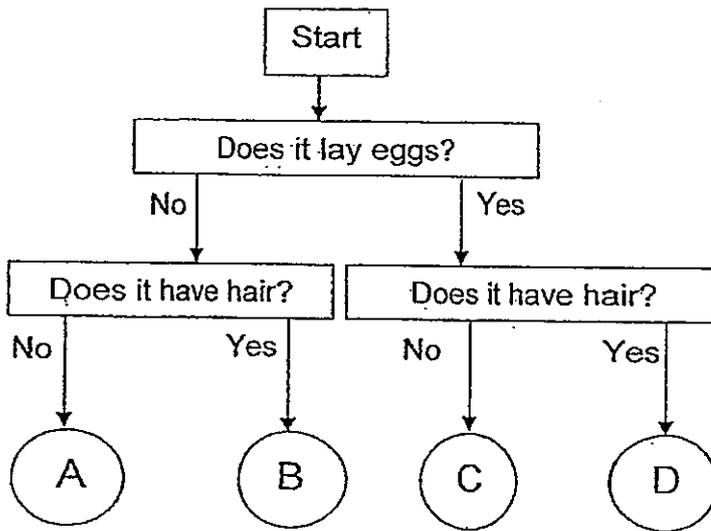
Name: _____ ()

Class P4 ()

Section B: 40 marks

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

31. The flow chart below shows the characteristics of 4 animals A, B, C and D.

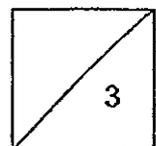


(a) Which letters A, B, C or D best represents the following animals? [1]

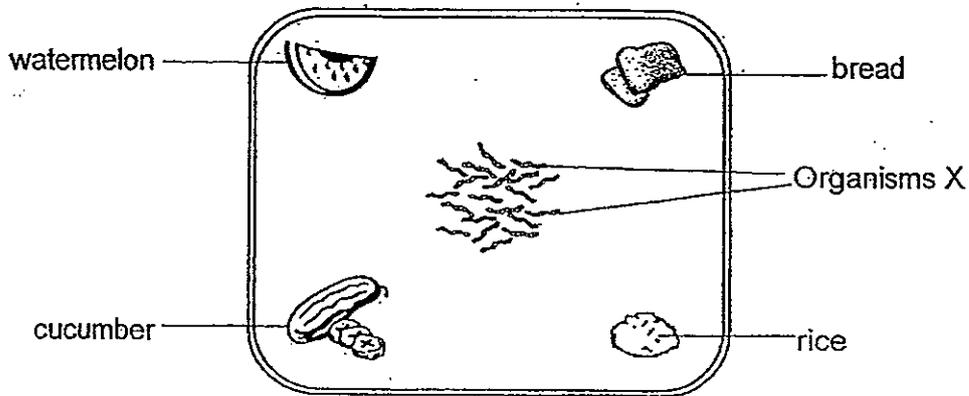
i) Tiger: _____ ii) Goldfish: _____

(b) State one difference between animals B and C. [1]

(c) Based on the flow chart, state all the characteristics of animal D. [1]



32. Siva conducted an experiment with 20 Organism X. The organisms were placed in the centre of a tray as shown in the diagram below. A different type of food was placed at each corner of the tray.

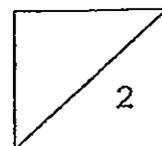


After a while, the number of organisms at each corner was counted. The results were recorded in the table below.

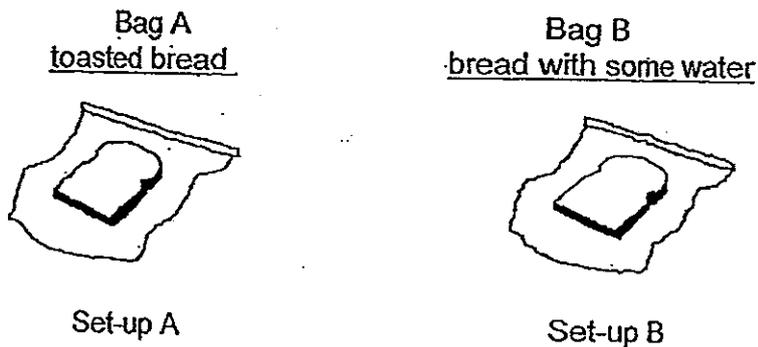
Type of food	Watermelon	Bread	Rice	Cucumber
Number of Organism X	5	13	0	2

- (a) Based on the above experiment, what can Siva conclude? [1]

- (b) How does placing the organisms at the centre of the tray at the start of the experiment make this a fair test? [1]



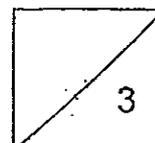
33. Michael wanted to conduct a test. He used two pieces of bread. He toasted one of them. Next, he put each of the bread in sealed bags, A and B, as shown in set-ups A and B below.



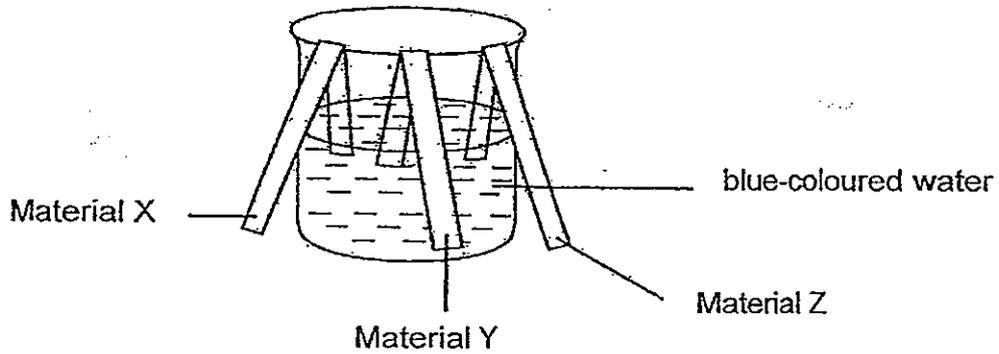
- (a) Write down Michael's observation of the bread in bags A and B after a week. [2]

	Bread in Bag A	Bread in Bag B
Observation after a week		

- (b) Explain the observation for the bread in Bag B. [1]



34. Three equal strips made of different materials, X, Y and Z, were cut and dipped into a beaker containing blue-coloured water as shown below.

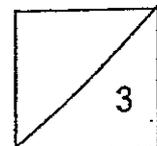


After 15 minutes, the length of the strip stained blue was measured for all the materials and recorded below.

Material	X	Y	Z
Length of strip stained blue colour	10 cm	8 cm	0 cm

- (a) Based on the table above, which material, X, Y or Z, is the most absorbent? Explain your answer. [1]

- (b) If a fourth strip of material taken from a raincoat was dipped into the beaker of blue coloured water, predict the length of the strip that would be stained blue colour after 15 minutes. Explain your answer. [2]

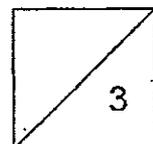


35. The table below shows information on animals P, Q, R and S.

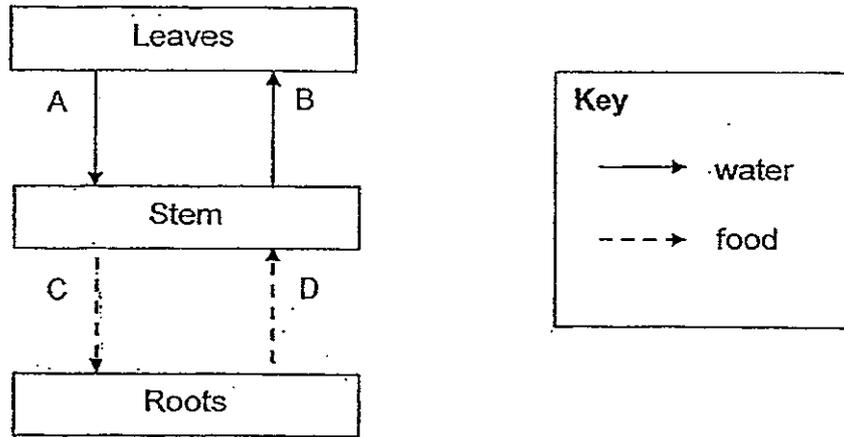
Animal	P	Q	R	S
What is the number of eggs laid at a time?	6 million	50 – 200	3 – 6	1-2
Where are the eggs likely to be found?	Water	Land	Land	Land
Do the parents take care of the eggs?	No	No	Yes	Yes
Are there animals feeding on the eggs?	Yes	Yes	Yes	Yes

(a) Based on the table, what is the relationship between the number of eggs laid by an animal and the amount of care given to the eggs? [1]

(b) The table shows that the animals lay different number of eggs at a time. How does laying many eggs at a time help animal P in their survival? [2]



36. The diagram below shows the movement of food and water in a plant.



Which two arrows A, B, C or D, have been wrongly drawn?
Explain your answer.

[2]

37. Jamie carried out an experiment using similar Plant X as shown in set-ups A and B. Plant X in set-up B has its roots wrapped in a plastic bag before placing it into the beaker of water. Both beakers contain same amount of water. The water levels in beakers A and B were measured 2 days later.

Diagram 1: Start of experiment

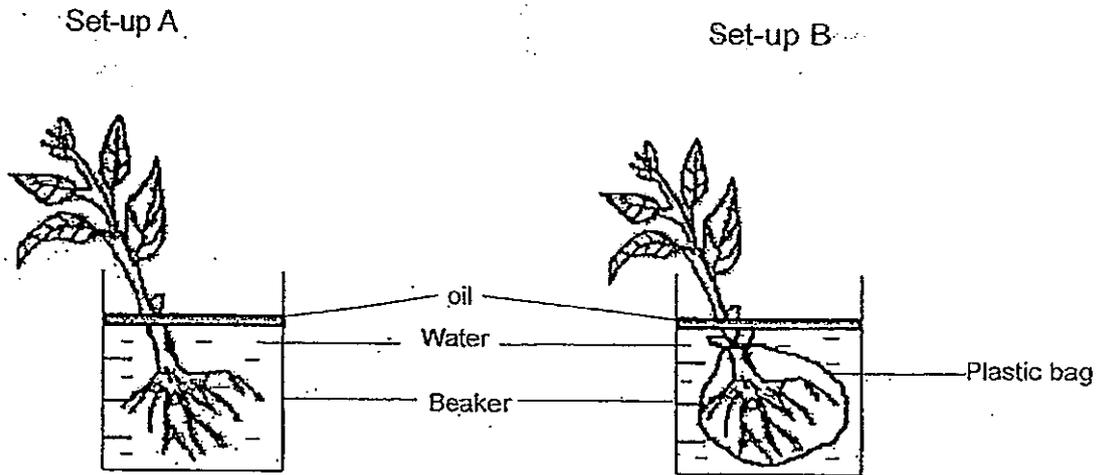
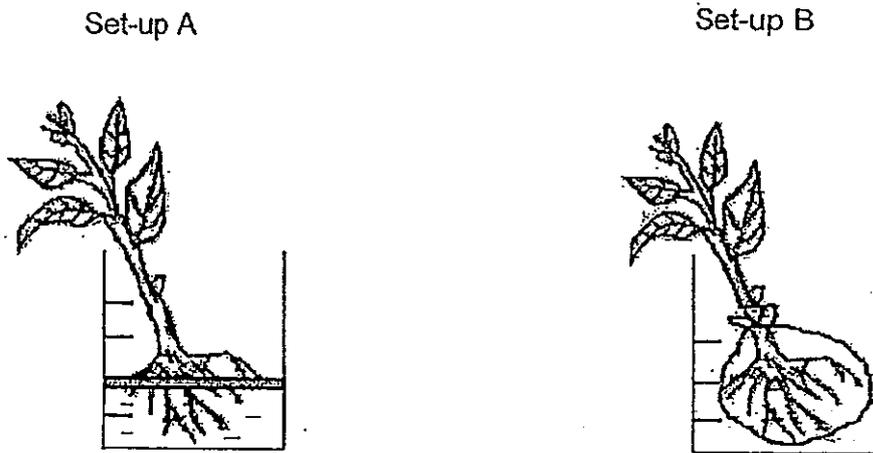


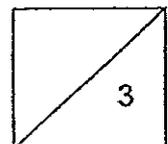
Diagram 2: 2 days later



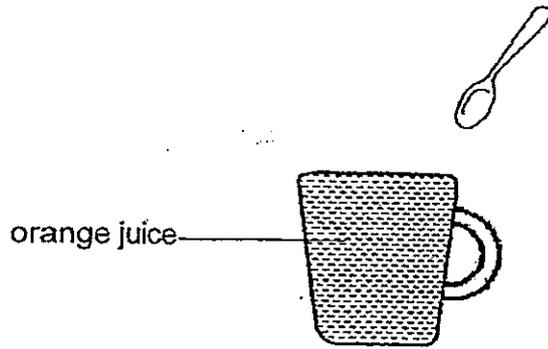
- (a) On diagram 2 above, draw what the water level in set-up B would look like 2 days later. [1]

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

- (c) What do you think was the aim of Jamie's experiment? [1]



38. Russell had a cup that was filled to the brim with orange juice as shown.

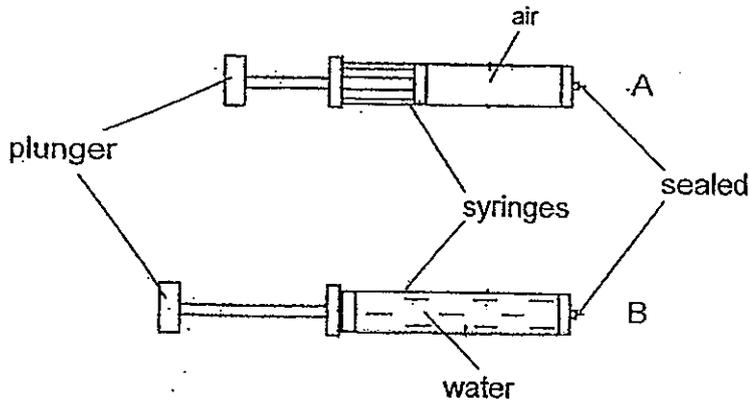


He wanted to place a spoon into the cup to stir the juice. However, his mother told him not to as the juice would overflow.

Explain why the juice would overflow if Russell put the spoon in.

[2]

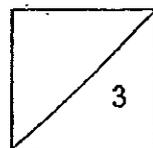
39. The diagrams below show 2 syringes, A and B. Syringe A is filled with air and syringe B is filled with water.



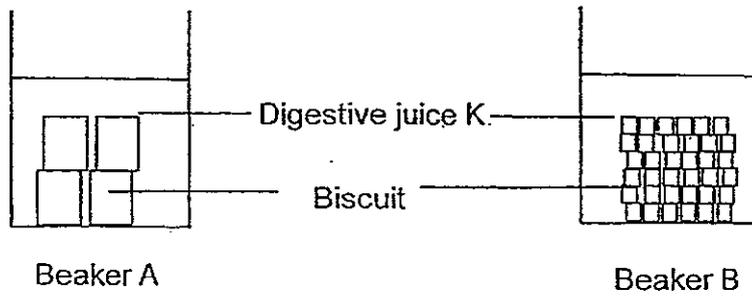
Peter pushed the plunger of syringe A and found that it could be pushed in but plunger of syringe B could not be pushed in at all.

What does the experiment show about the properties of air and water?

[1]

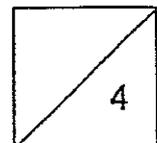
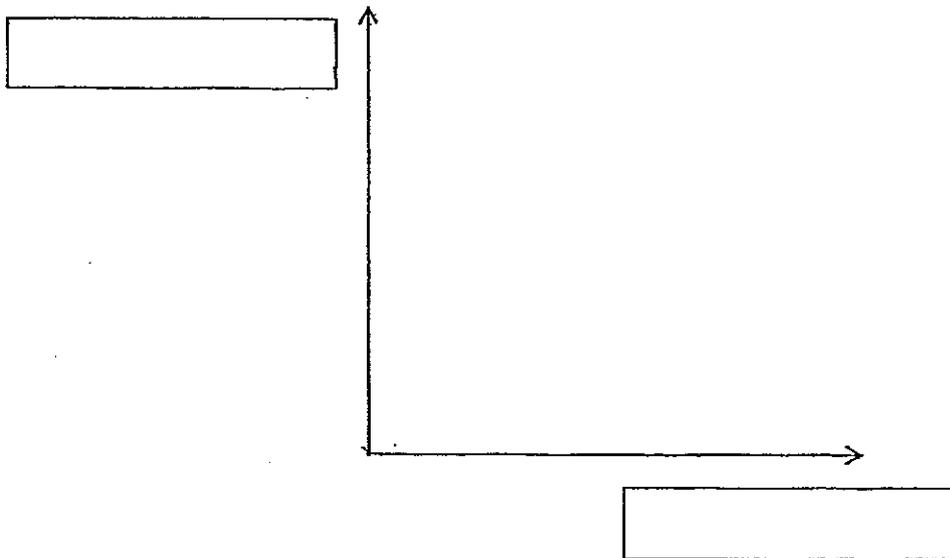


40. Tom conducted an investigation to find out if the size of food particles affects the rate of digestion. He set up 2 beakers, A and B, containing the same amount of biscuit but each biscuit was cut into pieces of different sizes. He then poured the same amount of digestive juice K into each beaker.

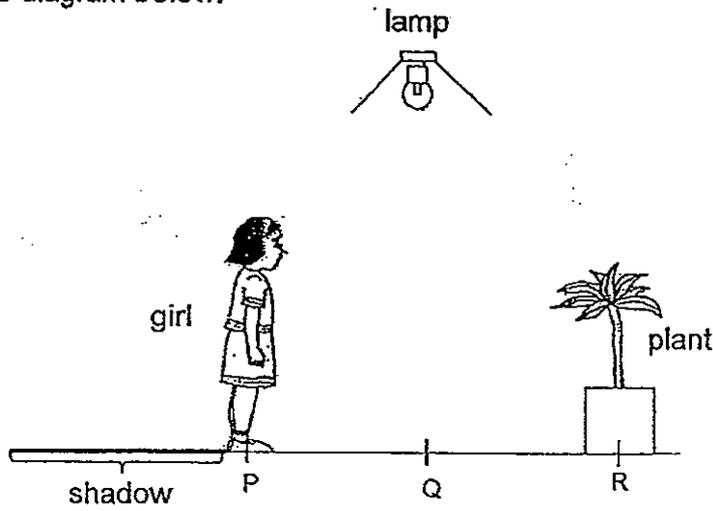


- (a) In which beaker, A or B, would the biscuit be digested first? Explain your answer. [2]

- (b) In the space below, draw a line graph to show the relationship between the size of biscuit pieces and the rate of digestion. Label the axes. [2]



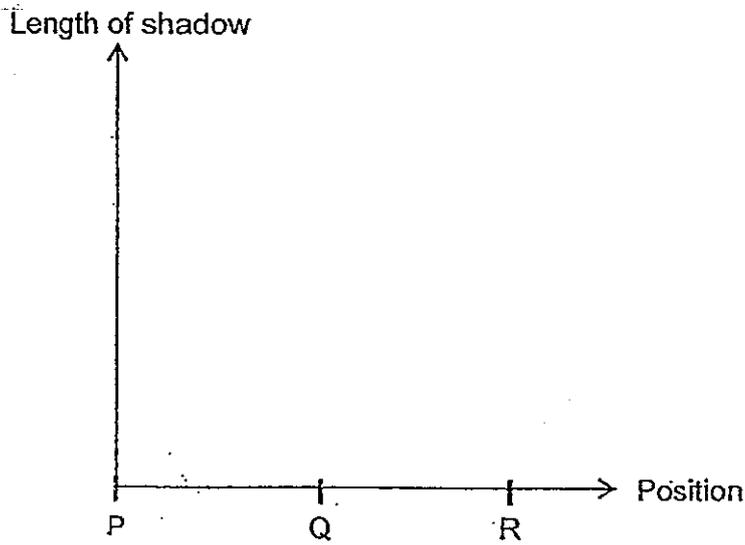
41. Study the diagram below.



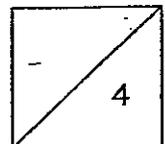
(a) Draw the path of light that makes it possible for the girl to see the plant. [1]

(b) The girl casts a shadow behind her as she stands at point P. [1]

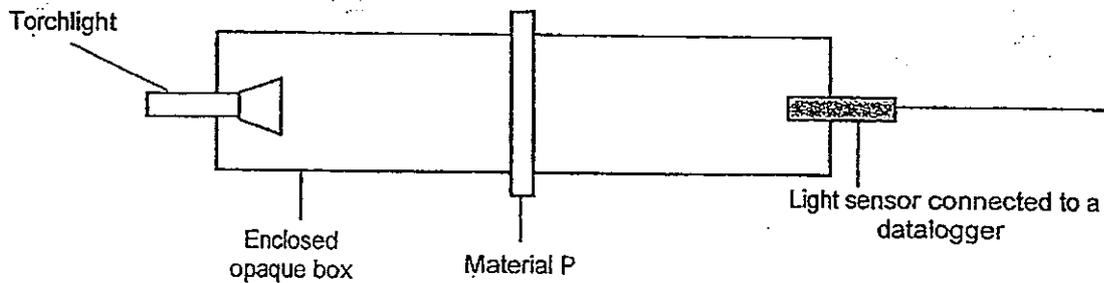
On the graph below, draw the length of her shadow as she walks from point P to R.



(c) What are the two properties of light that enable shadows to form? [2]



42. Joseph wanted to find out the degree of transparency to light of three materials, P, Q, and R. He had each material cut into a rectangular shape and made sure each piece was of equal thickness and size. He set up an experiment as shown in the diagram below. Material P was placed between the torch and light sensor which was connected to a datalogger that will record the amount of light passing through material P.

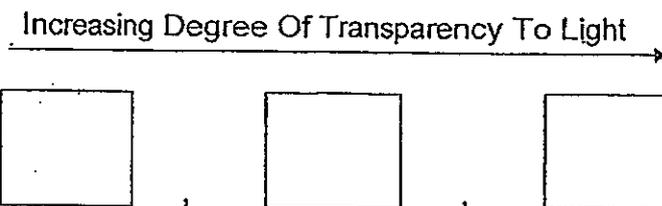


The experiment was repeated with materials Q and R. The amount of light that passed through each material was recorded in the table below.

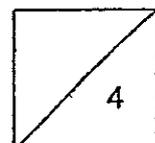
Materials Tested	Datalogger Reading (lux)
P	1000
Q	600
R	0

- (a) What is the purpose of the enclosed opaque box? [1]

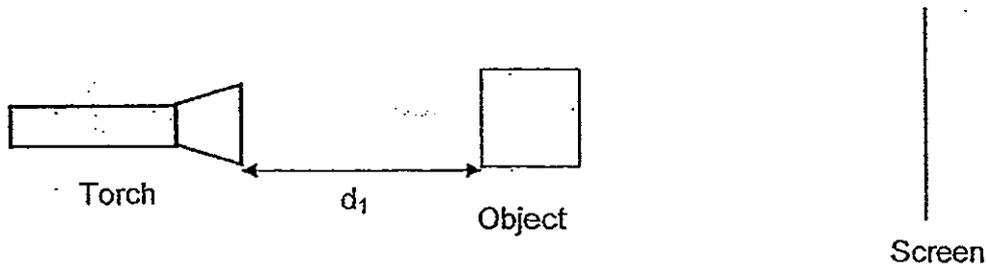
- (b) Arrange the degree of transparency to light of materials, P, Q and R, starting with the least transparent. Write your answers in the boxes below. [1]



- (c) Joseph wants to choose a material to make a door for his bathroom. Which material, P, Q or R, should Joseph choose to make the door for his bathroom? Explain your choice. [2]



43. Fiona prepared the set up below and conducted an experiment in a dark room. She placed the object at various distances, d_1 . d_1 is the distance between the torch and object.



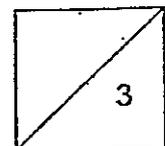
The height of shadow cast on the screen was measured when the torch was switched on. She recorded her results in the table below.

Distance between torch and object, d_1 , (cm)	50	140	160
Height of shadow cast (cm)	85	50	35

- (a) List down 1 important variable that must be kept constant in this experiment. [1]

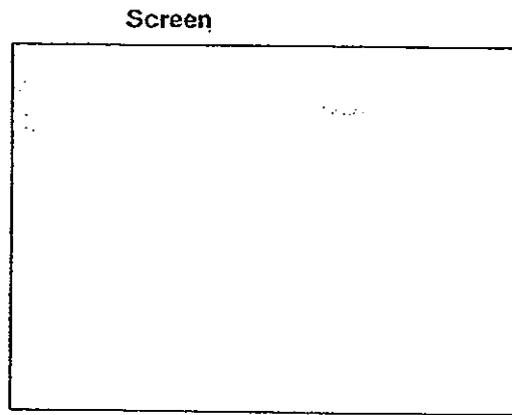
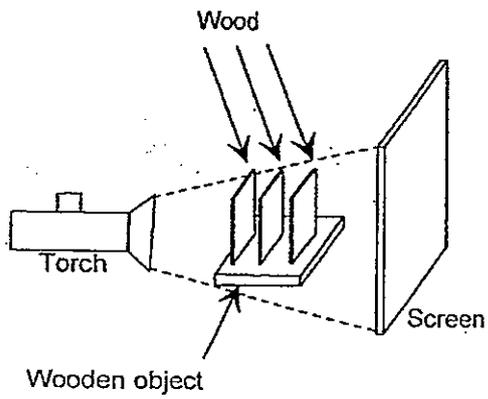
- (b) What is the effect of moving the torch closer to the object on the height of the shadow cast? [1]

- (c) Besides moving the torch away from the object, what else can Fiona do to make the height of the shadow cast on the screen smaller? Suggest 1 more method. [1]

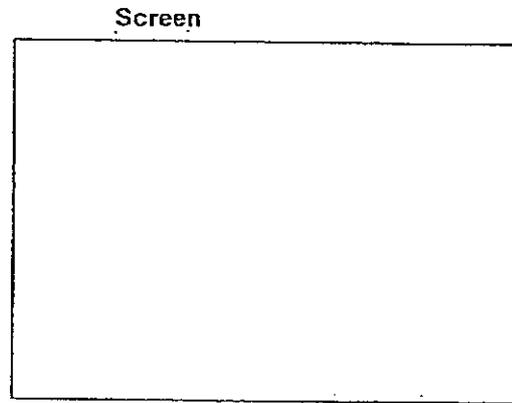
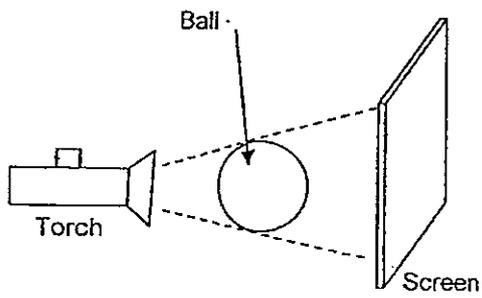


44. Look at the diagrams below. Draw and shade the shadow cast on the screen in the boxes provided. [3]

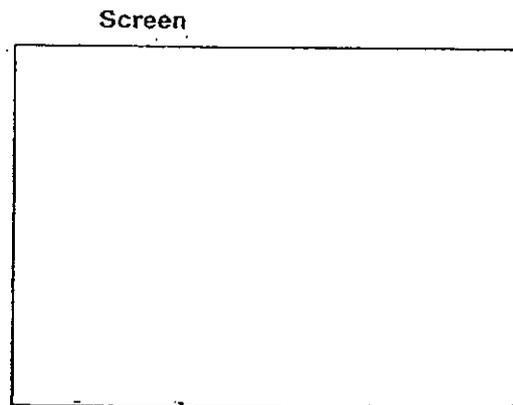
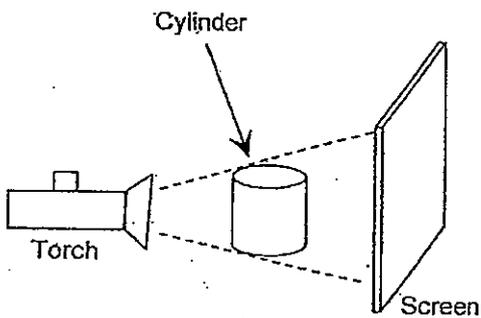
(a)



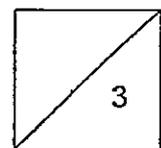
(b)



(c)



End of Paper



ANSWER SHEET

EXAM PAPER 2013

SCHOOL : AI TONG

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	2	4	1	1	3	1	4	4	2	3	2	2	13	1	1	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	1	2	2	2	3	1	2	3	1	2	1

Section B

Q31

- ai) B ii) C
b) B does not lay eggs while C lays eggs
c) It lays eggs and has hair

Q32

- a) Organism prefers bread to most other food
b) All the food will be at the same distance away from the Organism X

Q33

a)

	Bread in Bag A	Bread in Bag B
Observation after a week	No Mould	Mouldy

- b) Bread in Bag B has moisture in it. This allows bread mould to grow on it as bread mould needs moisture to grow.

Q34

- a) The length of the strip stained blue is the longest
b) 0cm. Raincoats do not absorb water.

Q35

- a) The higher number of eggs laid the lesser care was given
- b) To increase their chances of survival so that when animals eat their eggs there will still be eggs left behind.

Q36

A and D. Roots do not make food hence no food will be transported to the stem. The leaves do not absorb water hence no water will be transported into the stem.

Q37

a)



- b) The roots cannot absorb any water as it was tied up with a plastic bag.
- c) To find out if roots absorb water

Q38

The spoon will occupy space so some juice will be discharged to provide space for the spoon

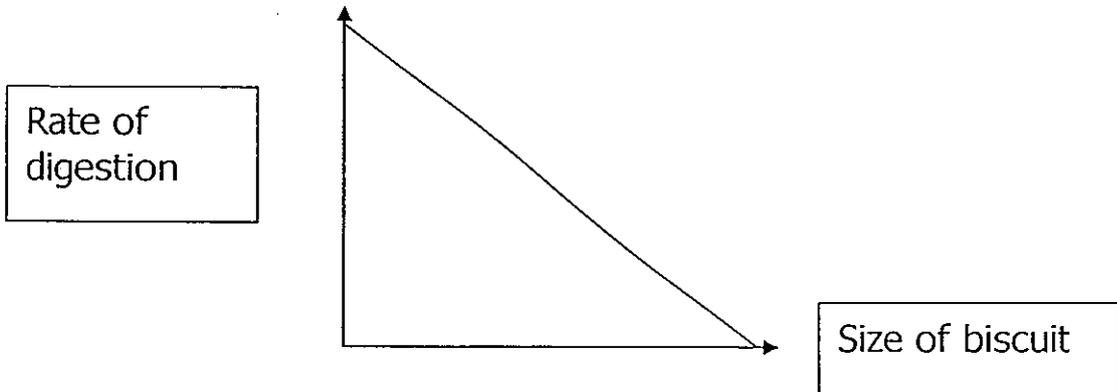
Q39

Air can be compressed but not water.

Q40

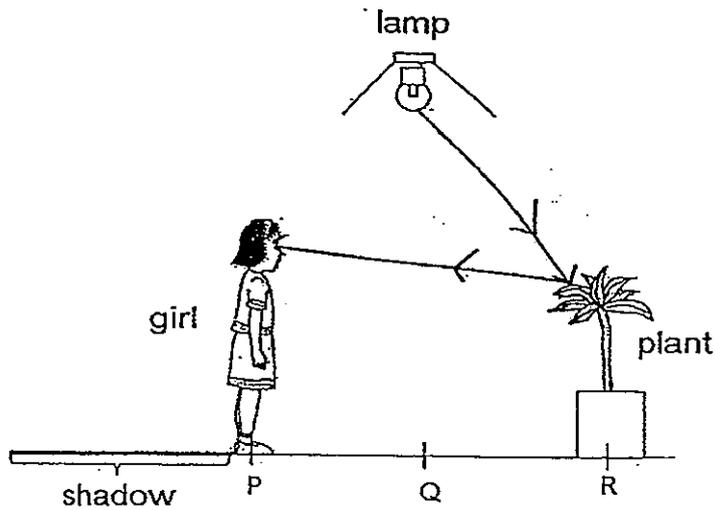
a) Beaker B. The biscuit are cut into smaller pieces so there is more exposed surface area for more digestive juices to act on.

b)

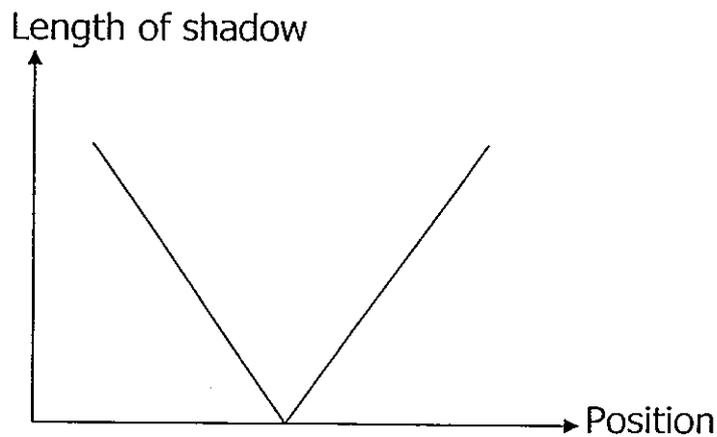


Q41

a)



b)



c) Light travels in a straight line. A shadow is formed when light is blocked by an object.

Q42

a) To make sure no other light except from the torchlight is detected by the light sensor

b) R, Q, P

c) R: The door has to be opaque so that other people will not be able to see through the door.

Q43

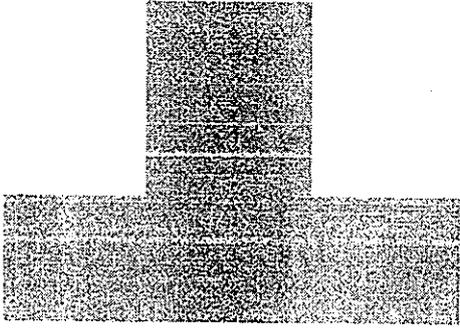
a) Distance between the torch and the screen remains the same

b) The further the object is moved its shadow becomes taller.

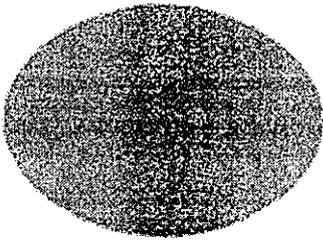
c) Move the object closer to the screen

Q44

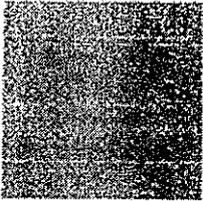
a)



b)



c)





**CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 1
2013
PRIMARY FOUR**

SCIENCE

BOOKLET A

Name: _____ ()

Class: Primary 4 - _____

Date: 22 May 2013

30 questions

60 marks

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.

This booklet consists of 17 printed pages, excluding cover page.

Booklet A (30 × 2 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. **(60 marks)**

1. Tony wrote some characteristics of a goldfish, a cockroach and a sparrow. The characteristics are as follows:

- A Has two legs
- B Has two wings
- C Lays eggs
- D Covered with scales

Which of the characteristics above is/are common to most fish, insects and birds?

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

2. The picture below shows two organisms.



Bird's Nest Fern

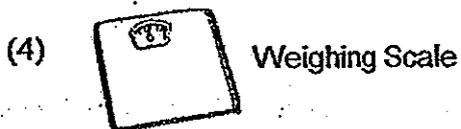
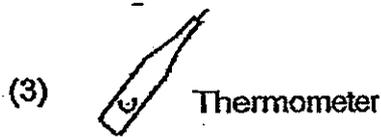


Mushroom

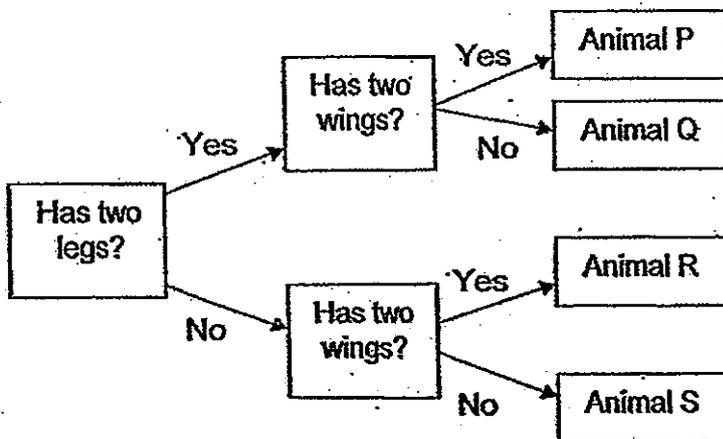
How is the Bird's Nest Fern different from the mushroom?

	Bird's Nest Fern	Mushroom
(1)	It has flowers.	It has no flowers.
(2)	It feeds on animals.	It feeds on plants.
(3)	It reproduces from seeds.	It reproduces from spores.
(4)	It needs sunlight to grow.	It does not need sunlight to grow.

3. An experiment was carried out to find out if plants grow taller under sunlight. One potted plant was placed in a cupboard and a similar potted plant was placed in the garden. Which instrument is best used to measure how tall the plant is growing?



4. Study the diagram below.



Which one of the animals, P, Q, R or S, represents a caterpillar?

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

5. Four pupils made some statements about micro-organisms.

- Amanda They are living things.
Betty All micro-organisms are bacteria.
Chris Some fungi are micro-organisms.
David They cannot be seen with the naked eye.

Who has made a wrong statement?

- (1) Amanda
- (2) Betty
- (3) Chris
- (4) David

6. Which of the following functions of the ribcage are true?

- A It gives our chest its shape.
- B It helps us to move our arms.
- C It protects our heart and lungs.
- D It protects our stomach and small intestine.

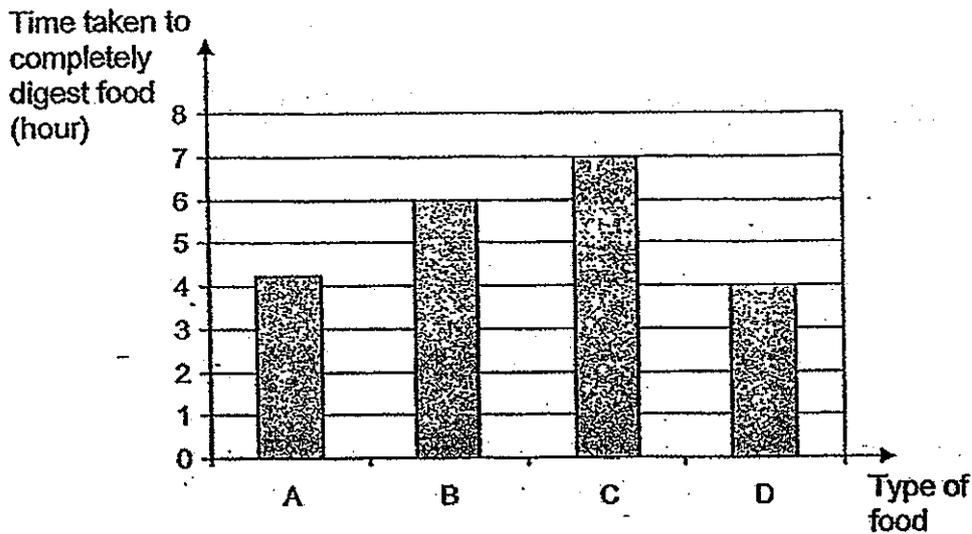
- (1) A and B only
- (2) A and C only
- (3) A, B and C only
- (4) B, C and D only

7. Ahmad was climbing up the stairs. Which systems work together to ensure that he could perform this activity?

- A Muscular system
- B Circulatory system
- C Respiratory system

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

8. Sheila ate the same amount of 4 different types of food A, B, C and D. The graph below shows the time taken to completely digest the food.



Based on the graph above, which type of food does/do not get completely digested five hours after they are eaten?

- (1) D only
 - (2) A and D only
 - (3) B and C only
 - (4) B and D only
9. The diagram below shows the life cycles of Insects X and Y.

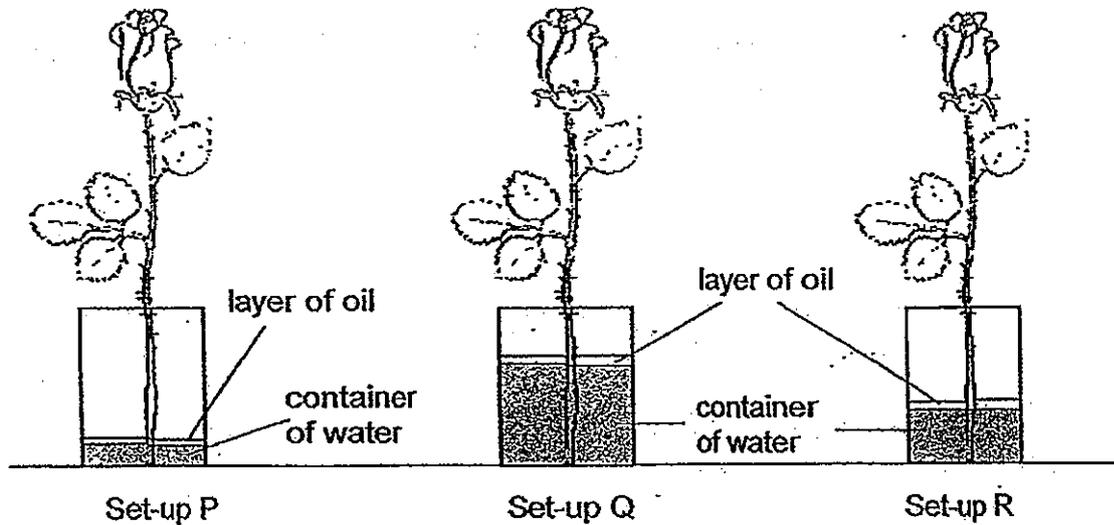


Which of the following statements are definitely true of Insects X and Y?

- A Insect X lives longer than Insect Y.
- B Both Insects X and Y reproduce by laying eggs.
- C The life cycle of Insect X has more stages than Insect Y.

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

10. Charlie wants to find out whether plants take in different amounts of water when placed at different locations in his school. He sets up the following experiment.

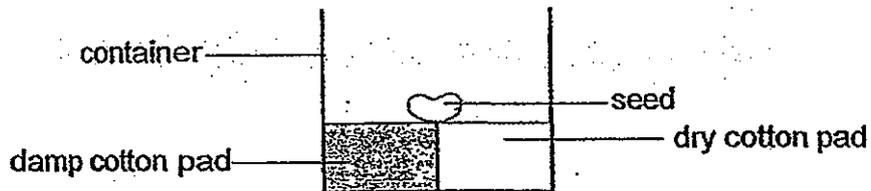


Set-up	Location	Amount of water given (ml)
P	In the classroom	50
Q	Under a tree in the eco-garden	200
R	Open area of the eco-garden	100

His teacher says that Charlie's experiment is not fair. What change should Charlie do to make his experiment a fair test?

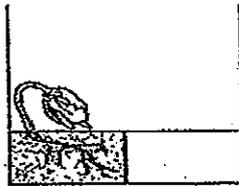
- (1) Change the number of plants.
- (2) Change the type of plants used.
- (3) Change the amount of water given.
- (4) Change the places where he should put the plants.

11. A seed is placed between a damp cotton pad and a dry cotton pad in a container as shown below.

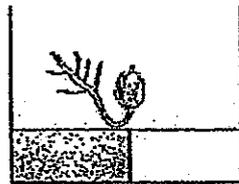


The container is placed near a window. Which one of the following diagrams shows the growth of the seed after three days?

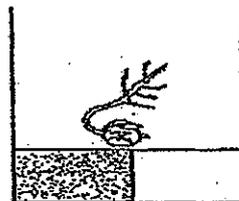
(1)



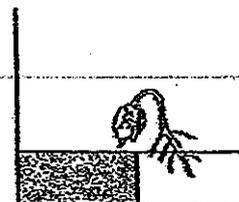
(2)



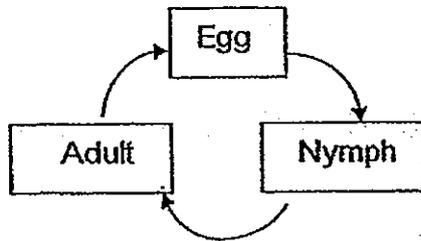
(3)



(4)



12. The diagram below shows the life cycle of an animal.

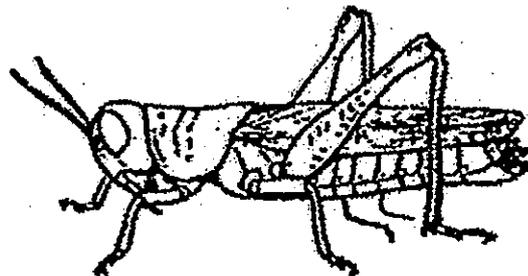
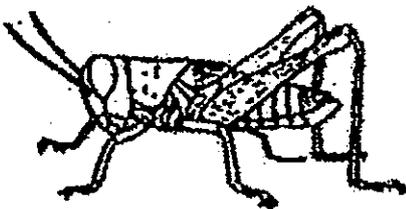


Which of the following animals goes/go through the life cycle as shown above?

- A Cockroach
- B Dragonfly
- C Mealworm Beetle

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

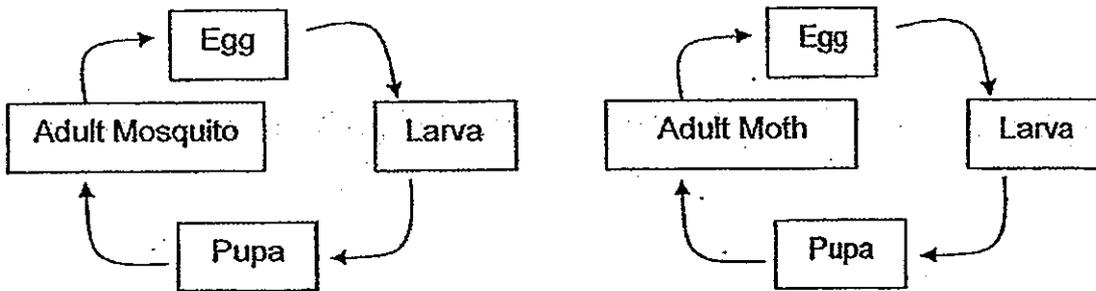
13. The diagram below shows a grasshopper and its young.



Based on your observations, which one of the following is true?

- (1) The young moults to grow bigger.
- (2) The young cannot fly but the adult can fly.
- (3) The young and the adult both have six legs.
- (4) The young eats the same type of food as the adult.

14. The following diagrams show the life cycles of 2 animals.



Based on the diagrams above, in what ways are the life cycles of the animals similar?

- A Both give birth to their young alive.
- B Both their young do not resemble the adults.
- C Both need to live in water before the adult stage.
- D Both have to go through the pupal stage before they become adults.

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

15. Gina conducted an experiment. She planted five seedlings of the same type into two identical pots, P and Q.

Seedlings	Pot P	Pot Q
Amount of fertiliser given (g)	0	2
Amount of water given (ml)	40	40

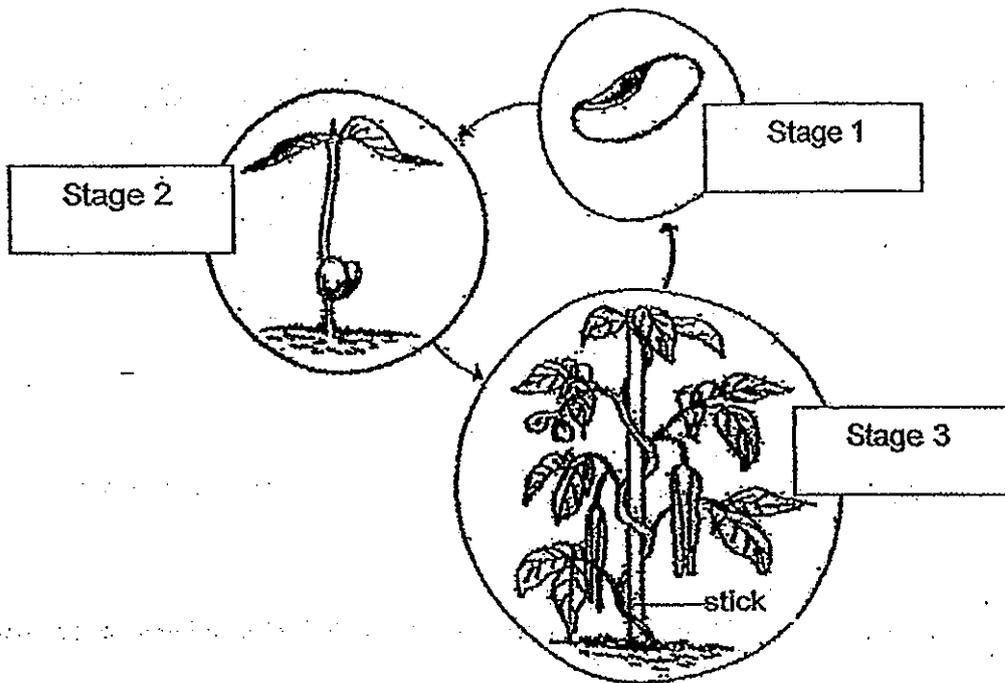
She took care of them for three weeks and measured the height of the seedlings for seven days as shown below.

Seedlings	Pot P	Pot Q
Average height of the seedlings (cm)	25	30

Based on the information above, what was the likely aim of the experiment?

- (1) To find out if the time affects the growth of the seedlings.
- (2) To find out if the size of pot affects the growth of the seedlings.
- (3) To find out if the amount of water affects the growth of the seedlings.
- (4) To find out if the amount of fertiliser affects the growth of the seedlings.

16. The diagram below shows the life cycle of a string bean plant.



Which of the following statements is/are true?

- A Sunlight is required for all the stages of growth.
- B The growth of the string bean plant is called its life cycle because in stage 3, the string bean plant grows round and round the stick.
- C The string bean plant goes through a life cycle so that there will be new string bean plants on Earth after the old string bean plants die.

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

17. The table below shows the comparison between the transport systems in animals and plants.

	Animals	Plants
A	Made up of blood vessels.	Made up of food-carrying tubes.
B	Transport food, oxygen, carbon dioxide and waste materials only.	Transport food and waste materials only.
C	Carry food produced in the stomach.	Carry food produced by the leaves.
D	Heart is needed to circulate materials around the system.	No organ is used to pump materials around the system.

Which of the statements is/are true?

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

18. Study the table below.

Properties	Material A	Material B	Material C	Material D
Is it waterproof?	No	Yes	Yes	Yes
Is it light in weight?	No	No	Yes	Yes
Can it be attracted by a magnet?	No	No	Yes	No
Does it break when hit with a hammer?	No	Yes	No	Yes

Which one of the above materials is most suitable for making a door key?

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

19. Lakshmi was given 4 materials, P, Q, R and S, of different hardness. She used some of the materials to scratch each other. The observations are as shown in the table below.

Observations
Q can scratch P
P can scratch R
S can scratch Q

Arrange the materials from the least hard to the hardest.

	Least hard	—————→		Hardest
(1)	R	P	Q	S
(2)	S	P	Q	R
(3)	S	Q	P	R
(4)	R	Q	P	S

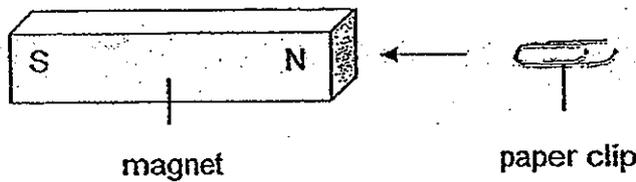
20. Judy made some statements about a bar magnet:

- A A bar magnet is strongest at the poles.
- B Like poles of the bar magnets attract each other.
- C Every bar magnet has a North Pole and a South Pole.

Which statements are correct?

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

21. A magnet was brought close to a paper clip. The paper clip was attracted to the magnet as shown below.

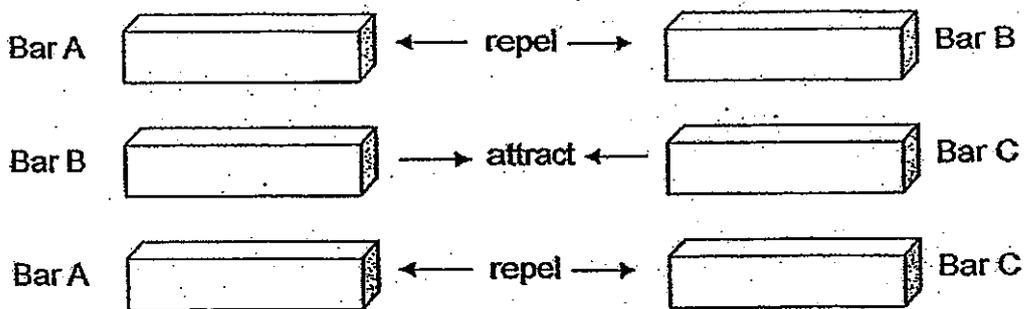


What conclusion(s) can be made based on the observation above?

- A The paper clip is made of magnetic material.
- B The South Pole of the magnet cannot attract the paper clip.
- C Only the North Pole of the magnet can attract the paper clip from a distance.

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

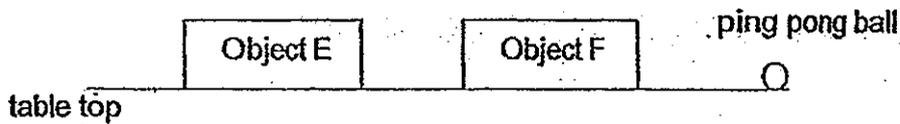
22. The following diagram shows how three bars, A, B and C, interact with one another.



Based on the above observations, which of the above bars are magnets?

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

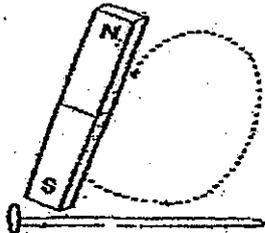
23. Nasir placed a ping pong ball on the edge of the table. When he placed object E close to object F as shown below, the ping pong ball was pushed off the table by object F.



Which one of the following statements best describes object E and object F?

- (1) Object F is a magnet and object E is made of magnetic material.
- (2) Object E is a magnet and object F is made of magnetic material.
- (3) Both objects E and F are magnets and their like poles are facing each other.
- (4) Both objects E and F are magnets and their unlike poles are facing each other.

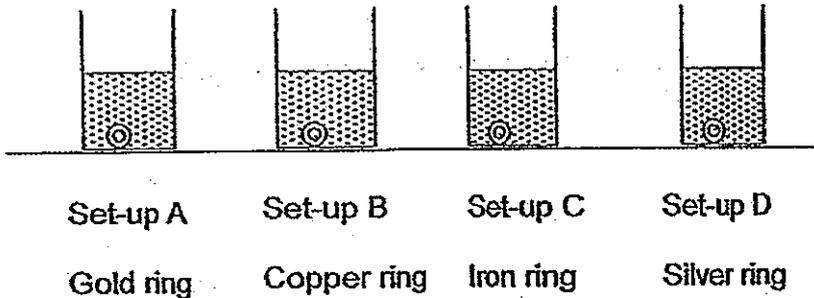
24. Sally used the 'stroke' method to turn an iron nail into a magnet as shown below.



She then placed the iron nail over some iron filings. She observed that not all the filings were attracted to the nail. Which of the following explains why the nail did not attract all the filings?

- (1) The iron nail was not magnetised.
- (2) The iron filing was not magnetised.
- (3) The iron nail was not stroked long enough.
- (4) The iron nail was not stroked with the same pole of the magnet.

25. Sarah dropped a ring each made of a different material into a plastic container of water each. Next, she glided a bar magnet along the side of the plastic container to try to move the ring from the base of the container to the top.



In which containers would the ring(s) not move?

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

26. The table below shows different forms of energy and the examples of its sources of energy. Which one of the following is incorrect?

	Form(s) of energy	Examples of source of energy
(1)	Heat	Rubbing hands
(2)	Light	Moon
(3)	Solar	Sun
(4)	Heat and light	Lighted candle

27. Which of the following is the best method to measure the temperature of a human body?

- (1) Place the palm around the neck.
- (2) Place the palm over the forehead.
- (3) Place the clinical thermometer under the tongue.
- (4) Place the laboratory thermometer under the tongue.

28. A datalogger was placed on a table facing the window. The table below shows how the intensity of light changes with time.

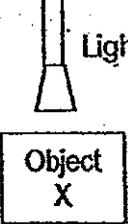
Time (minutes)	Intensity of light (units)
0	250
1	252
2	255
3	674
4	689

Which of the following statements is/are possible explanation(s) for the sudden change in light intensity after 2 minutes?

- A A light was turned on.
- B A light was turned off.
- C Sunlight came into the room.
- D The curtains were fully closed.

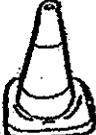
- (1) A only
- (2) A and C only
- (3) C and D only
- (4) A, C and D only

29. The diagram below shows how an object is able to cast 2 different shadows when an identical light source is shone on it from different positions.

Position of light source	Shadow produced
 <p>Light source</p> <p>Object X</p>	
 <p>Light source</p> <p>Object X</p>	

What could Object X be?

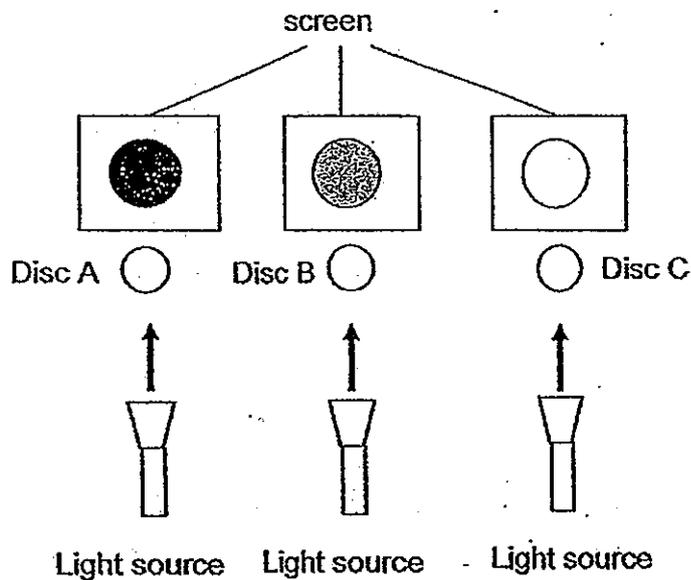
(1)  soccer ball

(2)  traffic cone

(3)  vase

(4)  soft drink can

30. 3 similar light sources with similar light intensity were shone at 3 different discs. The shadows of the discs can be seen on the screen as shown below.



What material can these 3 discs be made of?

	Disc A	Disc B	Disc C
(1)	wood	plastic	mirror
(2)	plastic	frosted glass	tracing paper
(3)	mirror	frosted glass	clear glass
(4)	clear glass	tracing paper	mirror

End of Booklet A



**CATHOLIC HIGH SCHOOL
SEMESTRAL ASSESSMENT 1
2013
PRIMARY FOUR**

SCIENCE

BOOKLET B

Name: _____ ()

Class: Primary 4 - _____

Date: 22 May 2013

Booklet A	60
Booklet B	40
Total	100

14 questions

Booklet B (40 marks)

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. Ali classified some things into two main groups as shown below.

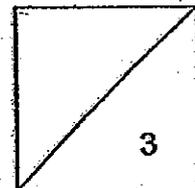
Group A	Group B
rubber band	tree
iron nail	mushroom

(a) Give a heading for Group A and Group B. [2]

Group A: _____

Group B: _____

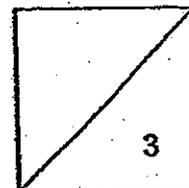
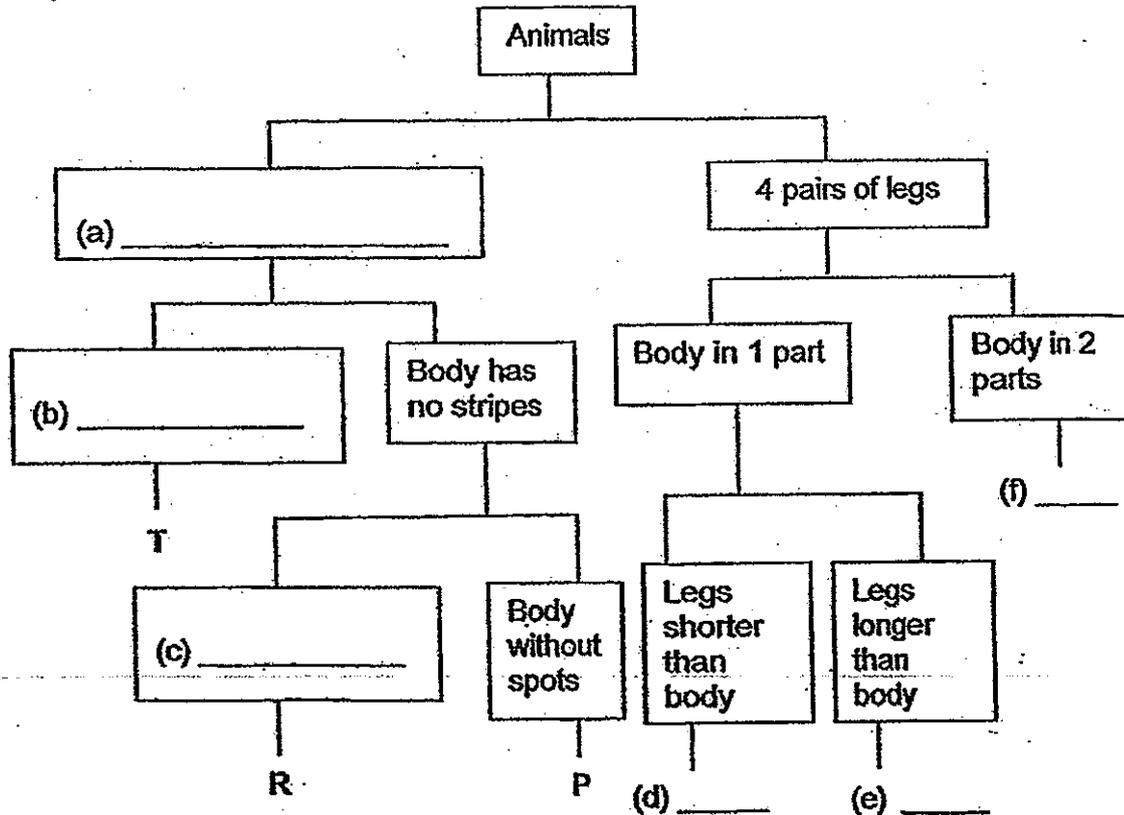
(b) Write down one main difference between the tree and the mushroom. [1]



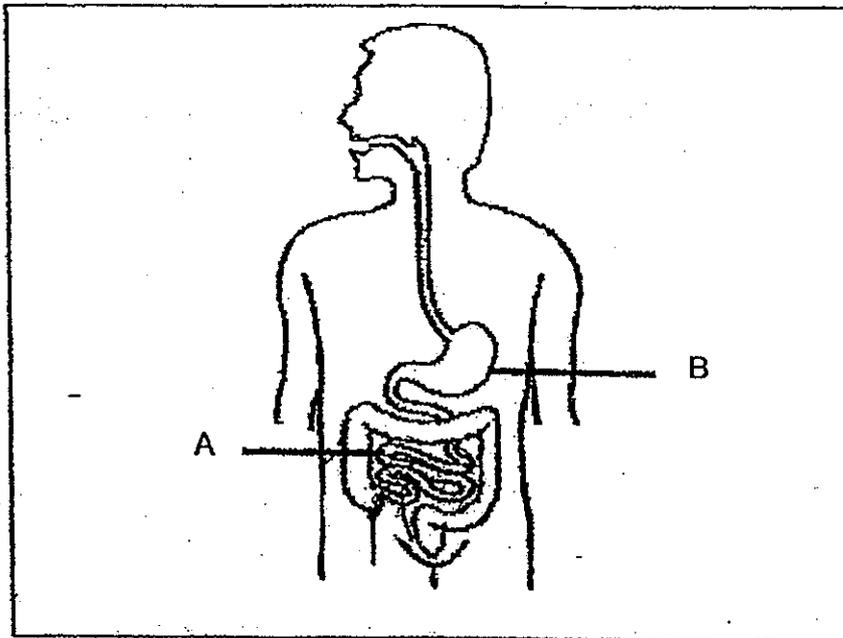
32. The table below shows the characteristics of some organisms.

Organisms	Observations	Organisms	Observations
 Organism P	- 3 pairs of legs - Body has no stripes - Body with no spots	 Organism S	- 4 pairs of legs - 1 body part - Legs are longer than the body
 Organism Q	- 4 pairs of legs - 2 body parts	 Organism T	- 3 pairs of legs - Body with stripes
 Organism R	- 3 pairs of legs - Body has no stripes - Body with spots	 Organism U	- 4 pairs of legs - 1 body part - Legs are shorter than the body

Study the table above and complete (a) to (f) in the classification chart below. [3]



33. The diagram below shows parts of the human digestive system.



(a) Name the parts labelled A and B.

[1]

A: _____

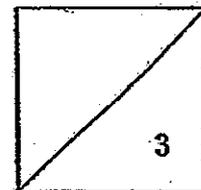
B: _____

(b) Mark clearly on the diagram the part(s) of the system where each of the following processes take place:

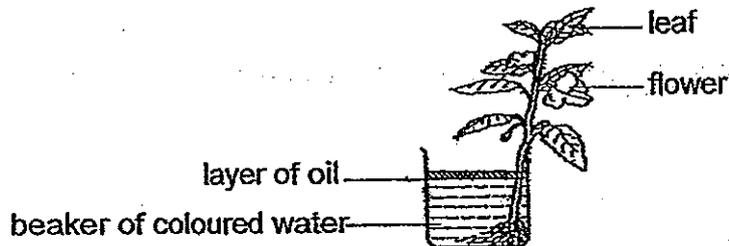
[2]

(i) X, where digestion starts

(ii) Y, where digestion ends



34. Calvin placed a healthy plant in a beaker of blue-coloured water as shown in the diagram below. He poured a layer of oil into the beaker of water.

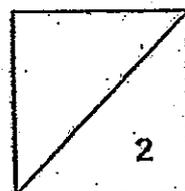


(a) What changes would he observe after a few days?

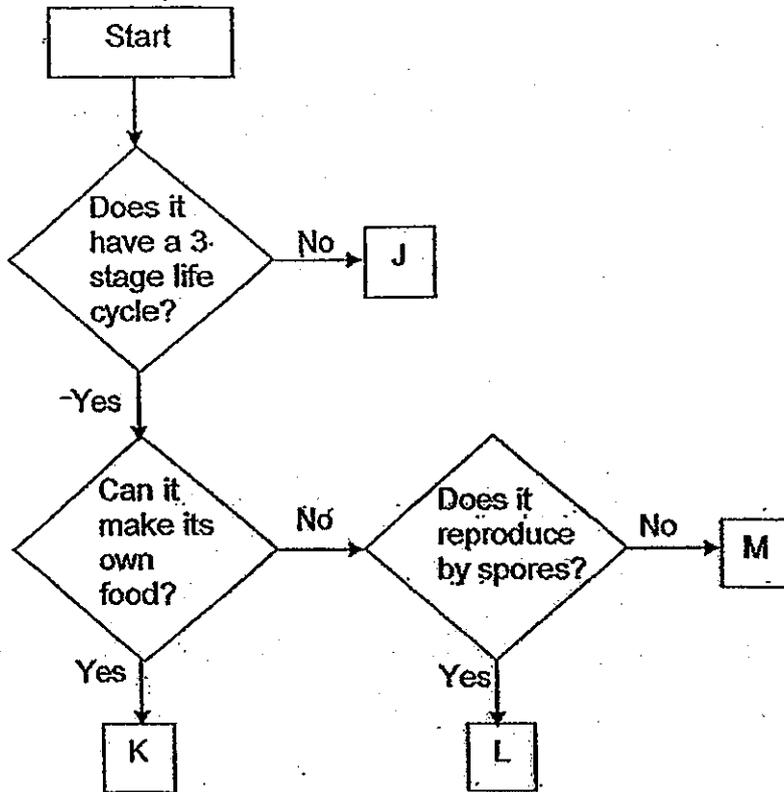
[1]

(b) What was the aim of Calvin's experiment?

[1]



35. Study the flowchart below carefully.



(a) State the characteristics of organism 'M'.

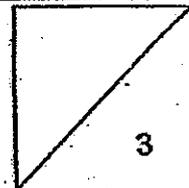
[1]

(b) Based on the characteristics shown above in the flowchart, state one similarity and one difference between organisms 'K' and 'L'.

[2]

Similarity:

Difference:



36. Ali planted some beans and observed the growth of the beans. He recorded the mass of the seed leaves in the tables shown below.

Table A

Day	2	4	6	8
Average mass of the seed leaves (g)	5	7	10	11

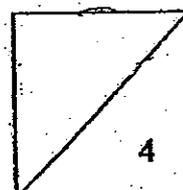
Table B

Day	2	4	6	8
Average mass of the seed leaves (g)	4	3	2	1

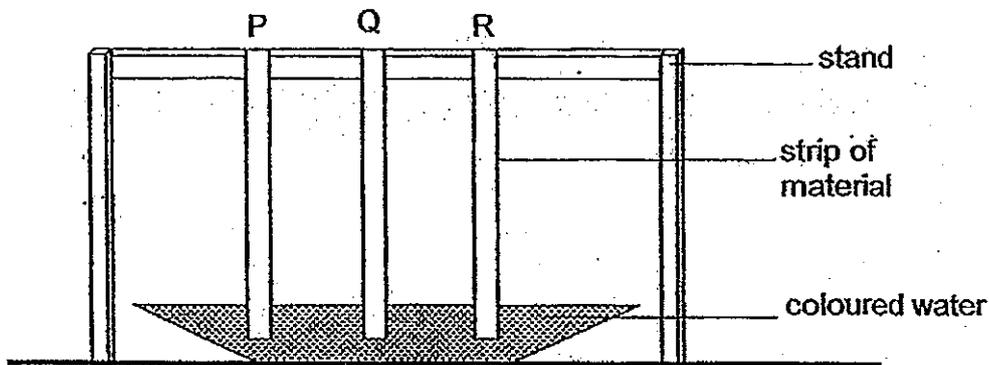
(a) State the 3 necessary conditions for the beans to germinate. [1]

(b) Based on the two tables above, which Table, A or B, correctly shows the changes in the mass of the seed leaves? Give a reason for your answer. [2]

(c) How did the seedling get its food for growth after Day 8? [1]

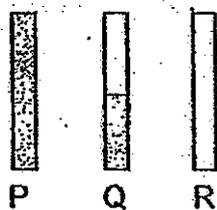


37. Judy sets up an experiment as shown. She wants to find out which material can soak up the most amount of water.



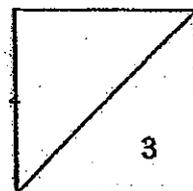
She hangs 3 different strips of material from a stand so that the tip of each material dips into a container of coloured water.

The diagram below shows the results of the experiment after 10 minutes.



- (a) Based on the above results, what conclusion can Judy make? [1]

- (b) Judy wants to buy a towel which can soak up a lot of sweat for her brother so that he could use it for his Sports Day. Based on the results of the experiment, which material should she use? Explain. [2]



38. Viknesh brought a magnet near object P which was tied to a string as shown in Diagram 1. It was observed that object P moved away from the magnet and a distance was maintained between them.

A flame was then placed at one end of the magnet as shown in Diagram 2. After some time, object P started to move toward the magnet and the distance between them decreased.

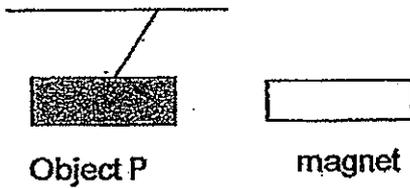


Diagram 1

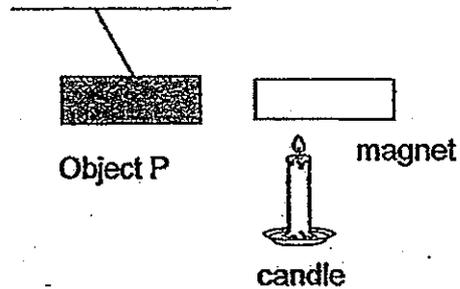
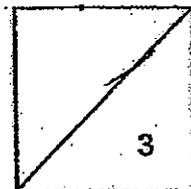


Diagram 2

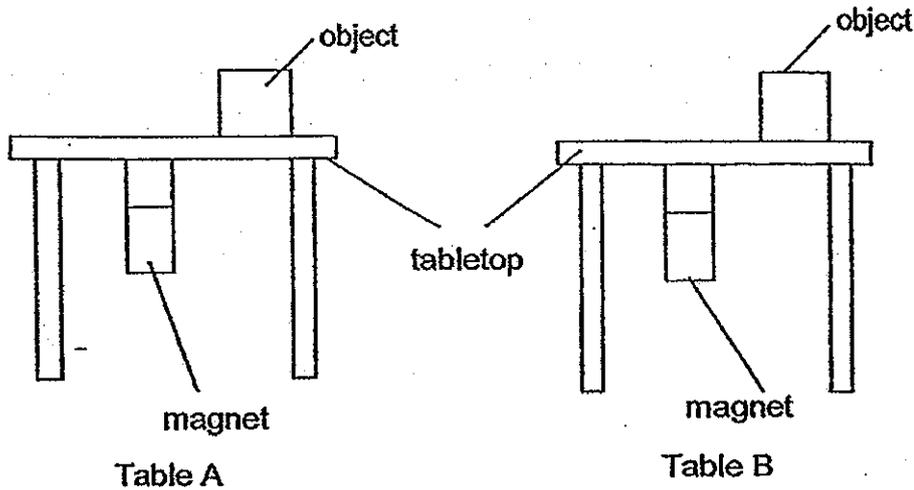
(a) Based on the above observation, what is object P likely to be? [1]

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

(c) In Diagram 2, explain why the distance between object P and the magnet decreased. [1]



39. Julie placed two identical objects on two tables. The two tabletops are of equal thickness and made of different materials. Then, she held a magnet under each table as shown in the diagram below.

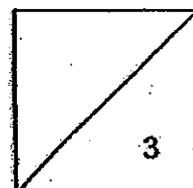


When Julie moved the magnet under Table A, the object moved. However, when she moved the magnet under Table B, there was no change in the position of the object.

(a) Indicate what materials the tabletops of A and B could possibly be made of by putting ticks (✓) in the table below. [2]

	Material of Tabletop	Table A	Table B
(i)	Iron		✓
(ii)	Glass		
(iii)	Wood		
(iv)	Plastic		

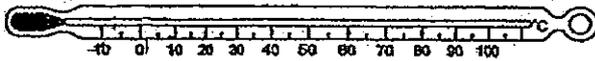
(b) What can be concluded from the experiment above? [1]



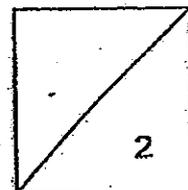
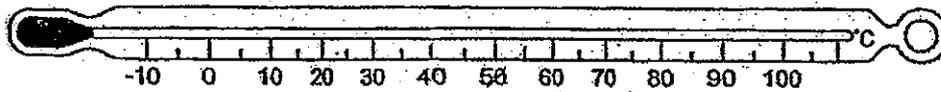
40. Farooq wants to measure the temperature of some water in the glass shown below.



(a) To get an accurate measurement, which part of the thermometer must be dipped in the glass of water? Circle it on the diagram below. [1]



(b) Use a pencil to shade on the thermometer below to show a temperature of 40°C. [1]



41. Peter wanted to set up an electromagnet with the following materials.

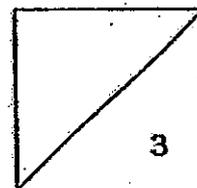
1 battery 1 iron nail

(a) His teacher said that there was something missing. What was missing? [1]

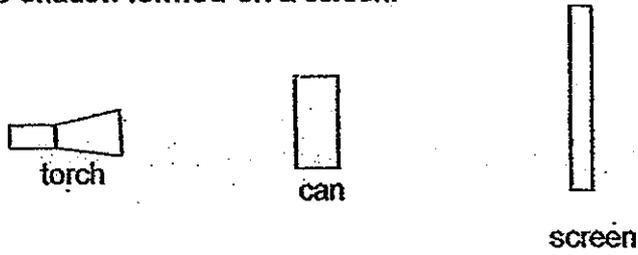
(b) Give two factors that may affect the strength of an electromagnet. [2]

(i) _____

(ii) _____



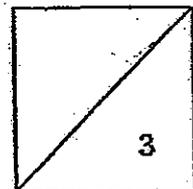
42. John wanted to test if the distance between the torch and the can would affect the size of the shadow formed on a screen.



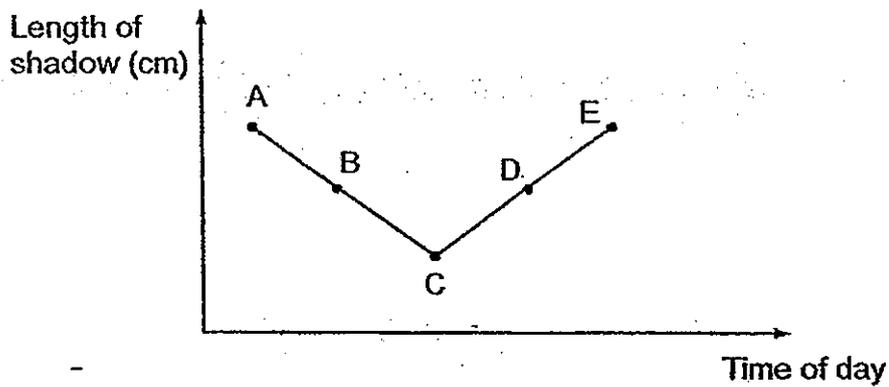
(a) Besides using the same torch and can, state one main variable John must keep the same if he wants to conduct a fair test. [1]

(b) State how the distance between the torch and the can would affect the size of the shadow. [1]

(c) How is the shadow of the can formed? [1]

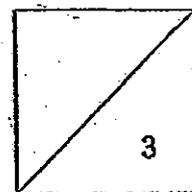


43. Susan measured the length of the shadow cast by a flag pole on the ground from 8 a.m. to 5 p.m. She recorded her results in the line graph below.

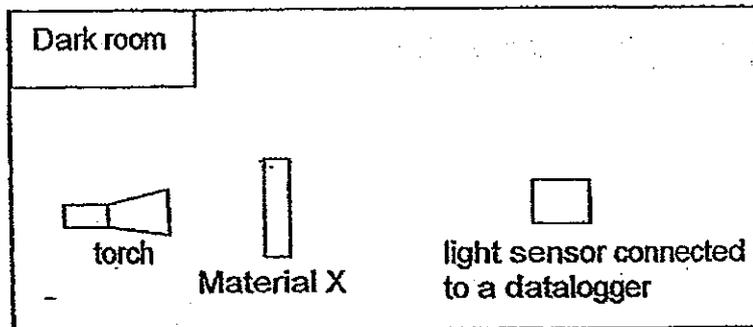


- (a) Which point on the graph, A, B, C, D or E, best represents 12 noon? [1]

- (b) Describe the change in length of the shadow from 8 a.m. to 5 p.m. [2]



44. Jamal wants to find out which materials, X, Y and Z, allows light to pass through. In a dark room, material X was first placed in between a torch and a light sensor connected to a datalogger as shown in the diagram below. The experiment was repeated using materials Y and Z.

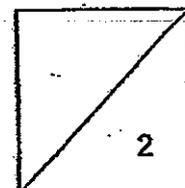


The results of the experiment are as shown below.

Materials	Amount of light (units)
X	0
Y	50
Z	200

- (a) Based on the table above, what can you conclude about Material X? [1]

- (b) Give a reason why Jamal was wrong when he suggested that Material Z was a piece of tracing paper. [1]



End of Booklet B



ANSWER SHEET

EXAM PAPER 2013

SCHOOL : CATHOLIC HIGH SCHOOL

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	4	1	4	2	2	4	3	3	3	1	3	3	4	4	2	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	1	2	1	4	3	3	4	2	3	2	4	3

BOOKLET B

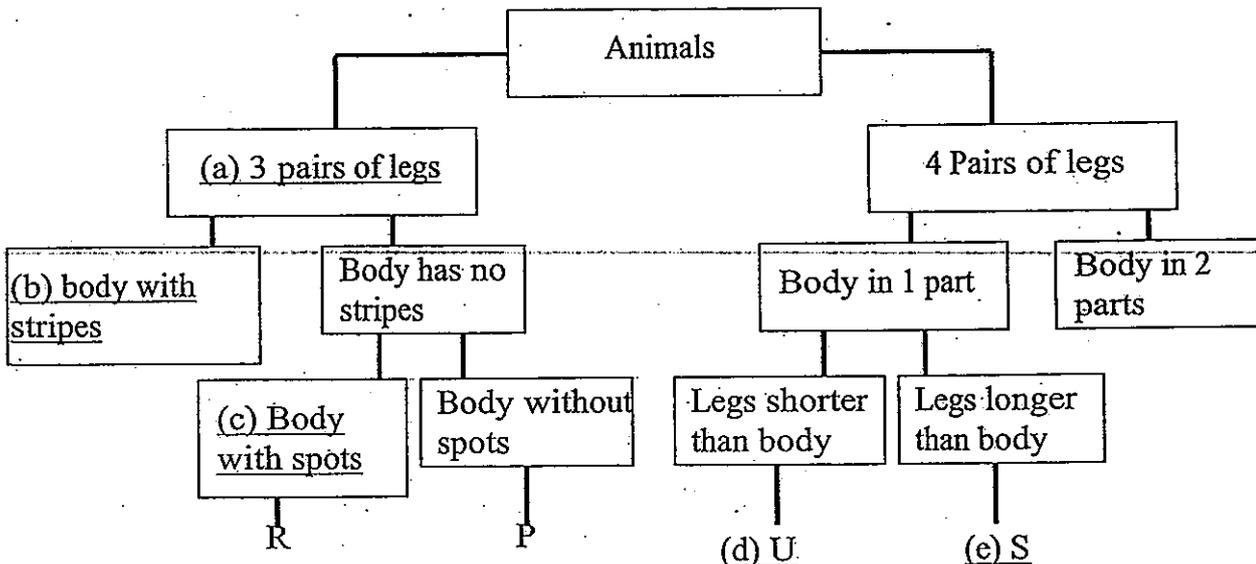
Q31

(a) Group A: Non-living things

Group B: Living things

(b) The tree can make its own food while the mushroom cannot make its own food.

Q32



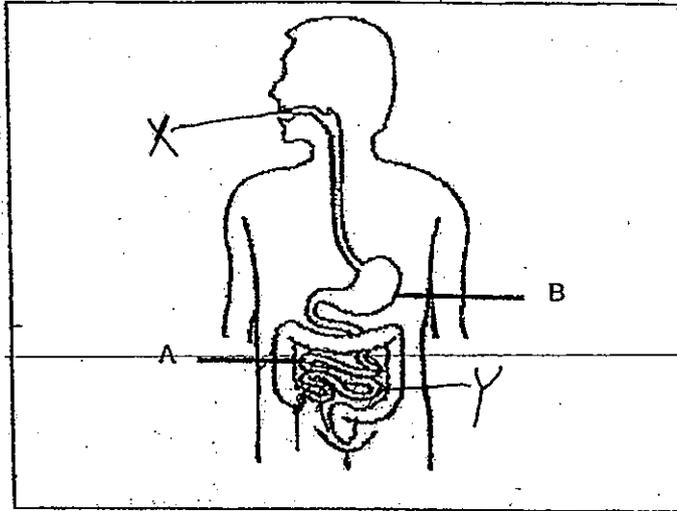
Q33

(a)

A: Small intestine

B: Stomach

(b)



Q34

(a) The leaves or flower turned blue and the water level in the beaker decreased.

(b) To find out if the roots of the plant take in water.

Q35

(a) M has a 3-stage life cycle. It cannot make its own food and it does not reproduce by spores.

(b) Similarity: Both have a 3-stage life cycle.

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

Q36

(a) Air, water and suitable temperature.

(b) Table B. The seedling obtained food stored in the seed leaves, so the mass decreased.

(c) The seedling has leaves to make its own food.

Q37

(a) Judy can conclude that material P is the most absorbent, Q is the less absorbent than P and R is waterproof.

(b) she should use material P as it is the most absorbent material of the three since a towel is suppose to absorb water from our body.

Q38

(a) Object P is likely a magnet.

- (b) Magnets repel when their like poles face each other. As in diagram 1, when the magnet is placed near object P, it headed in the opposite direction.
 (c) The magnet lost its magnetism when heated.

Q39

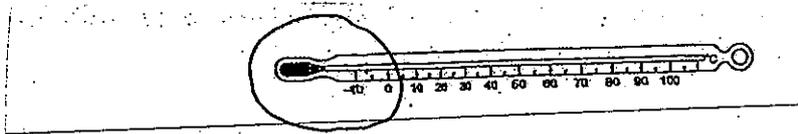
(a)

	Material of Tabletop	Table A	Table B
(i)	Iron		✓
(ii)	Glass	✓	
(iii)	Wood	✓	
(iv)	Plastic	✓	

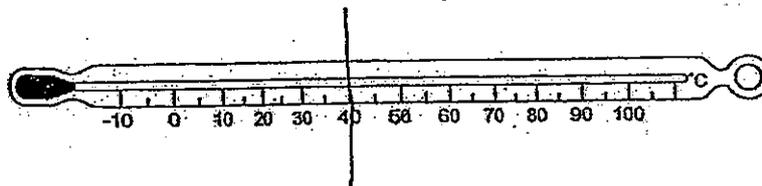
(b) Magnetism cannot pass through non-magnetic object such as glass, wood and plastic.

Q40

(a)



(b)



Q41

- (a) The wire
 (b) (i) The number of batteries
 (ii) The number of coils of wire around the iron nail.

Q42

- (a) The distance between the can and the screen
 (b) if the torch moves nearer to the can, the shadow of the of the can would be bigger.
 If the torch moves further away from the can, the shadow of the can would be smaller.

(c) Light travels in a straight line. As the can is opaque, it blocks the light from the torch. Thus a shadow is formed.

Q43

(a) Point C

(b) At 8am and 5pm, the length of the shadow is the longest. From 8am to 12noon, the length of the shadow is decreasing. At 12 noon, the shadow is the shortest. From 12 noon to 5pm, the length of the shadow is increasing.

Q44

(a) X is opaque.

(b) Z allows the-most amount of light to pass through, so Z could not be a tracing paper as tracing paper allows some light to pass through.

Name : _____ ()

Class : Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4

Semestral Assessment 1 – 2013

SCIENCE

BOOKLET A

15 May 2013

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

30 questions

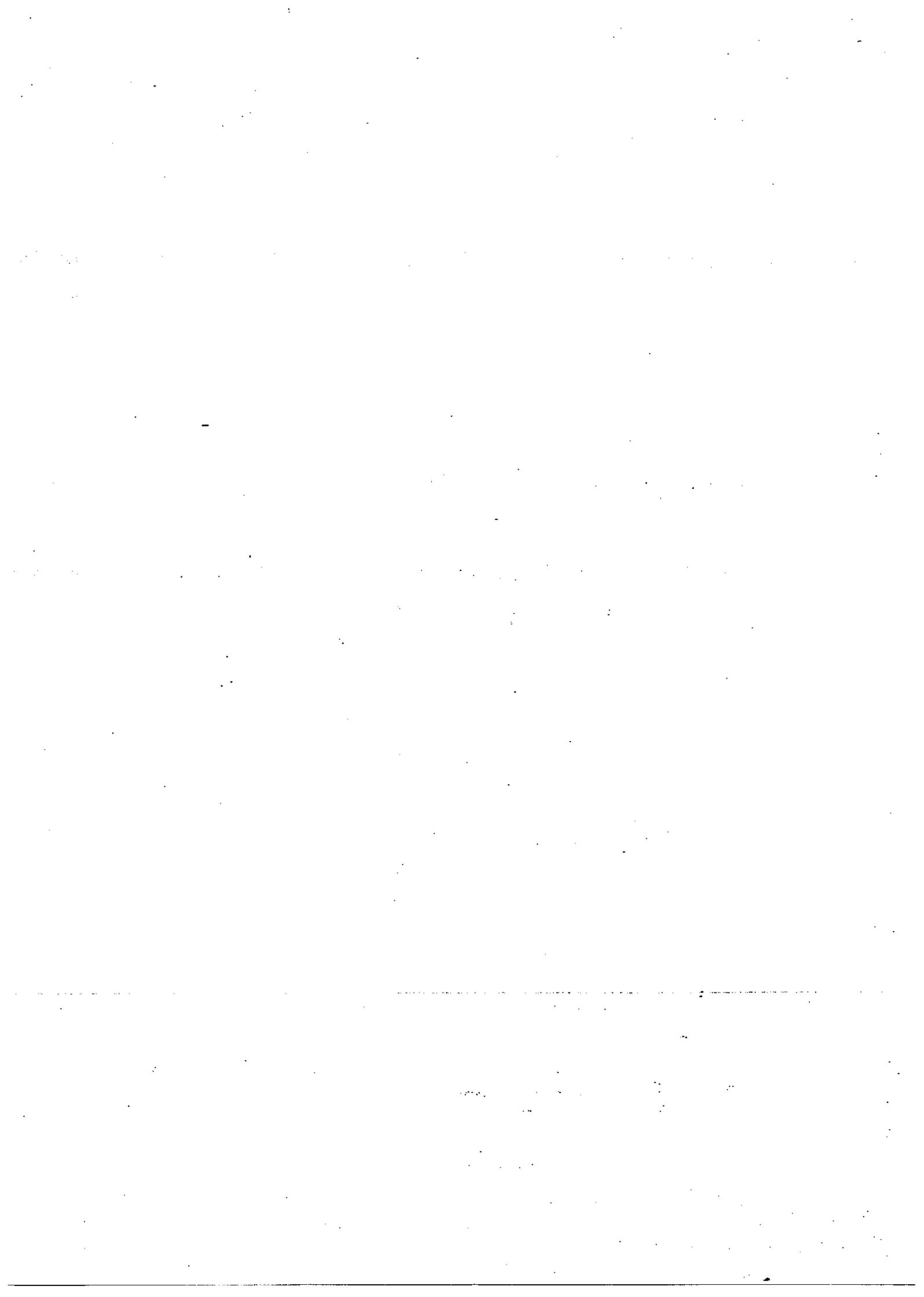
60 marks

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

Follow all instructions carefully.

Answer all questions.

This booklet consists of 22 printed pages.



Section A : (30 x 2 marks)

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

Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

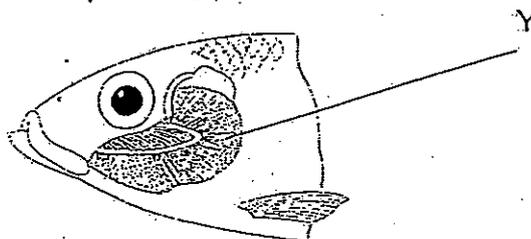
1. May was told to compare the life cycles of a cockroach and a guppy. She listed the similarities between the two life cycles. Which one of her following statements is correct?

- (1) They both lay eggs.
- (2) The young resemble the adult.
- (3) The young and the adult move differently.
- (4) Their young develop into adults after the larval stage.

2. The table below shows how some items were classified. Which one of the following sets is **not** correct?

	Living things	Non-living things
(1)	mould, deer, seed	pen, rubber band, key
(2)	rose plant, water, bee	plastic bottle, chalk, lantern
(3)	water lily plant, yeast, lice	paper box, pencil, wind
(4)	water lotus plant, orange tree, cat	ruler, notebook, eraser

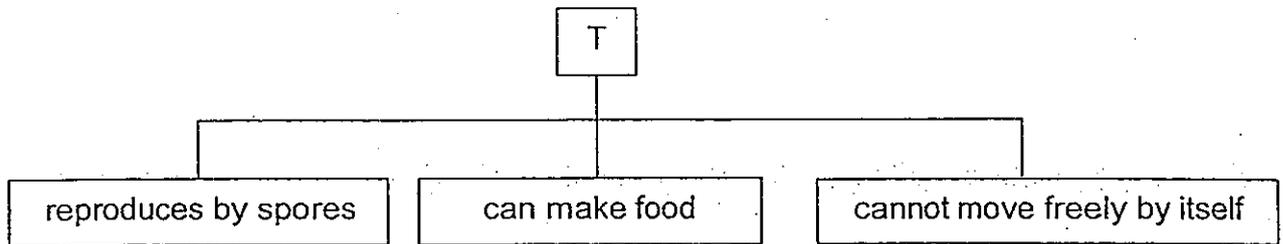
3. The diagram below shows part of a fish.



What is the function of Y?

- (1) To help the fish to reproduce
- (2) To help the fish to take in air
- (3) To help the fish to swim in water
- (4) To help the fish to maintain balance

4. Joshua recorded the characteristics of a living thing T.

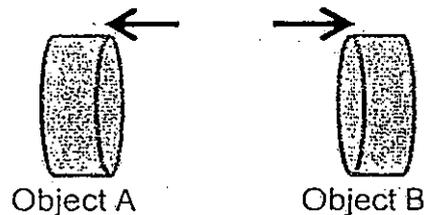


Which of the following could living thing T be?

- A banana tree
- B bird's nest fern
- C bracket fungus
- D dragon's scale fern

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

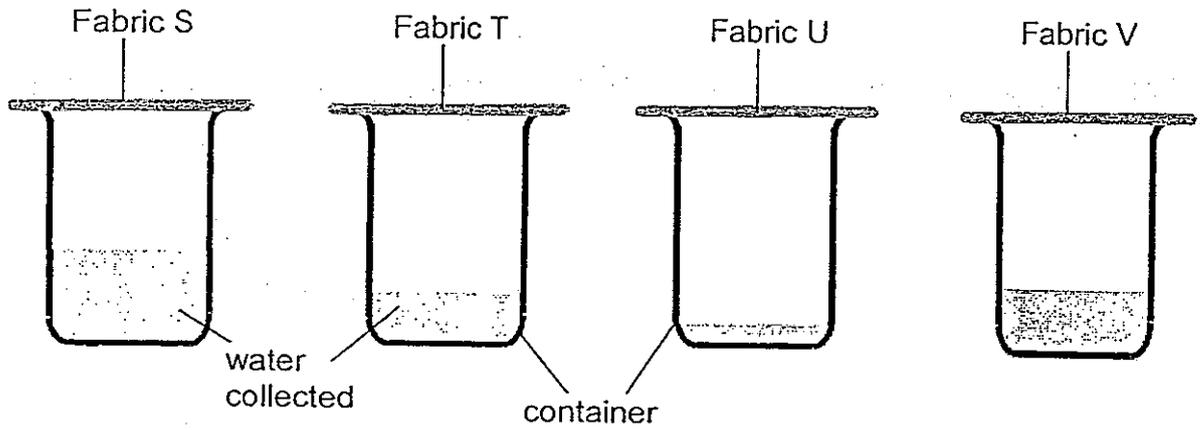
5. When two objects A and B are brought near to each other, they move in the direction as shown by the arrows.



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.

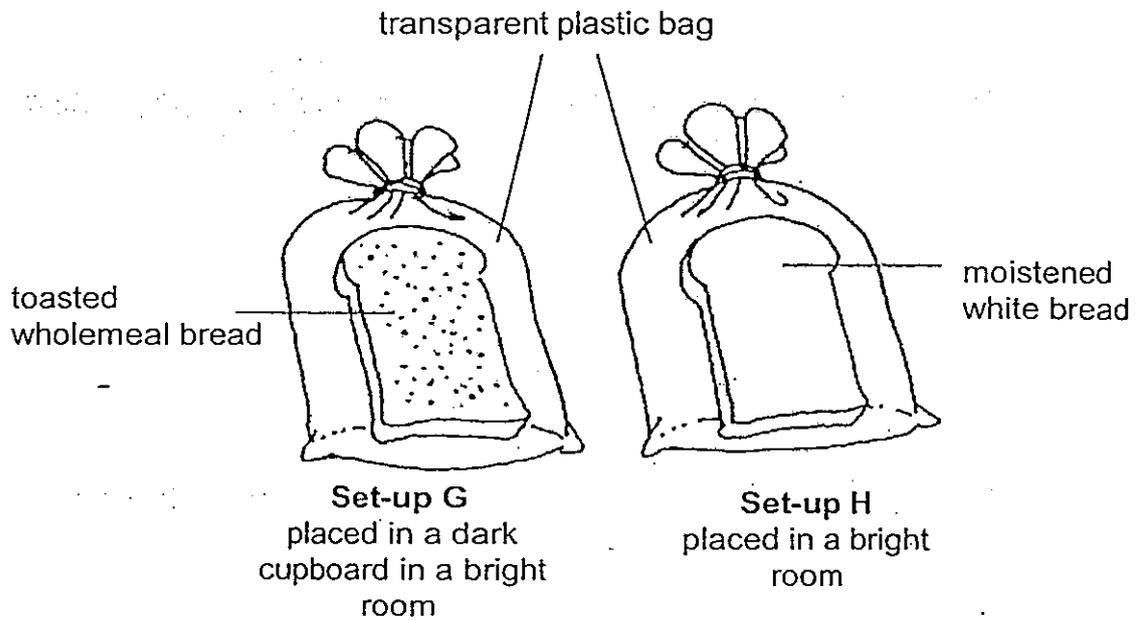
6. Four types of fabric S, T, U and V of the same size were each placed over a container as shown below. 100ml of water was then poured onto each type of fabric without spilling. The diagrams below show the amount of water collected in the containers after all the water had been poured.



Based on the above observation, which fabric is most suitable for making a towel?

- (1) S
- (2) T
- (3) U
- (4) V

7. Sandy carried out an experiment. She wanted to find out if mould needs light to grow. She placed 2 pieces of bread, G and H, each into a plastic bag as shown below.

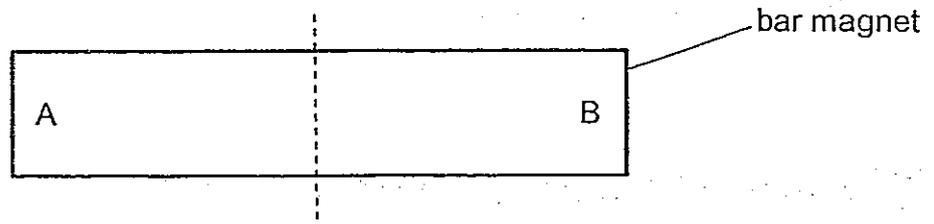


Sandy's dad told her that the experiment was not a fair one. To make the experiment a fair one, she should _____

- A use the same type of bread
- B use only opaque plastic bags
- C place both set-ups in the cupboard
- D not moisten or toast the pieces of bread

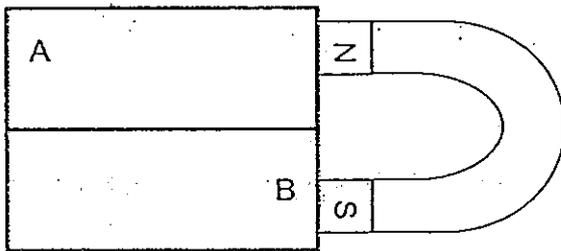
- (1) A and B only
- (2) C and D only
- (3) A and D only
- (4) A, C and D only

9. A bar magnet has been cut into two pieces along the dotted line as shown below. A and B are the two poles of the magnet.

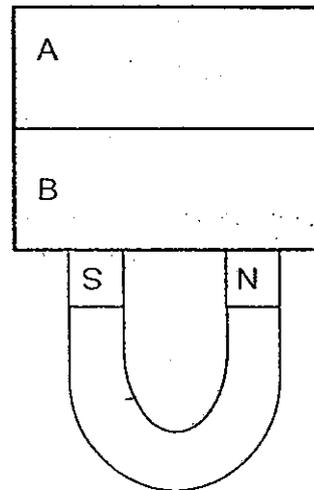


The two pieces of the bar magnet together with a U-shaped magnet are then arranged such that they attract one another. Which one of the following arrangements is possible if A is a north-seeking pole?

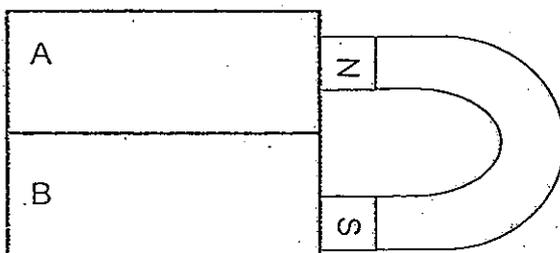
(1)



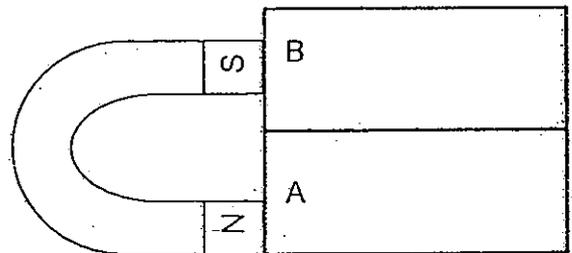
(2)



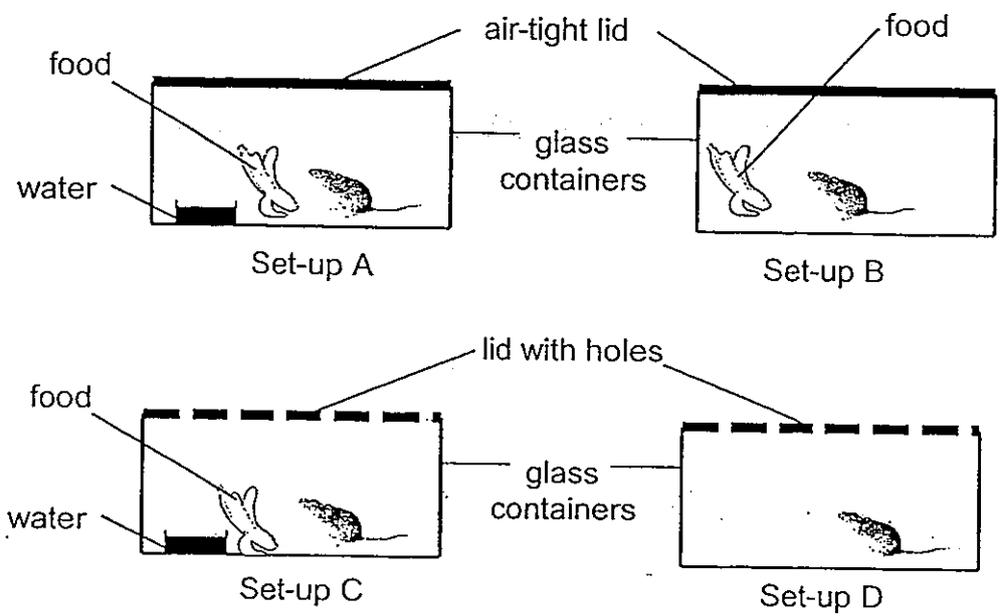
(3)



(4)



8. Louis wanted to carry out an experiment to show that living things need air to survive.



Which two set-ups should he use so that the experiment is fair?

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

10. Which one of the following shows the correct order of the germination process of a kidney bean?

(1) The leaves appear → The seed coat splits → The shoot grows upwards → The root grows downwards

(2) The root grows downwards → The seed coat splits → The shoot grows upwards → The leaves appear

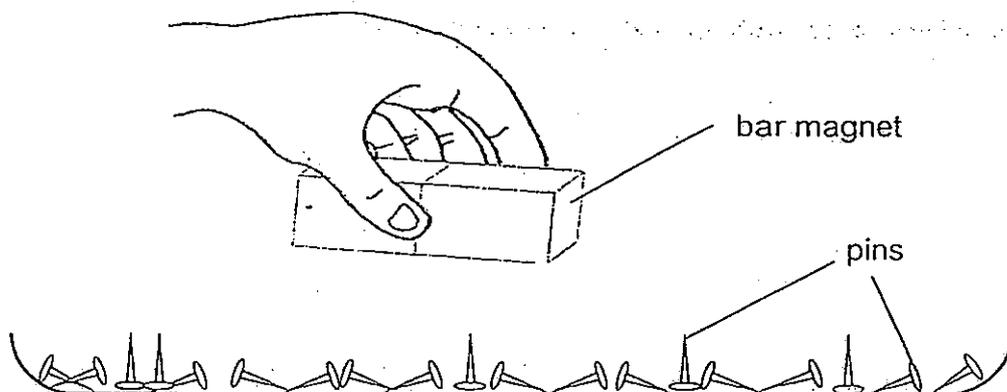
(3) The seed coat splits → The leaves appear → The shoot grows upwards → The root grows downwards

(4) The seed coat splits → The root grows downwards → The shoot grows upwards → The leaves appear

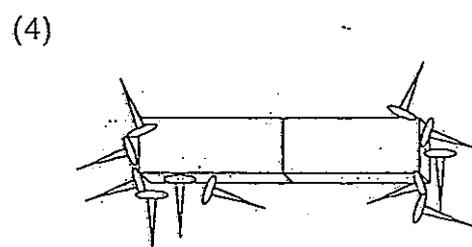
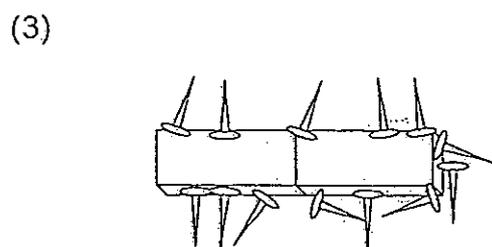
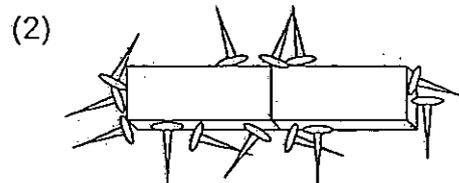
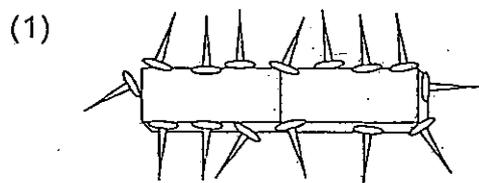
11. The table below classifies our organs according to the body systems they belong to. Which one of the following classifications is incorrect?

	System	Organs
(1)	Skeletal	ribs, skull and brain
(2)	Respiratory	windpipe, lungs and nose
(3)	Circulatory	blood vessel, veins and heart
(4)	Digestive	gullet, anus and stomach rectum

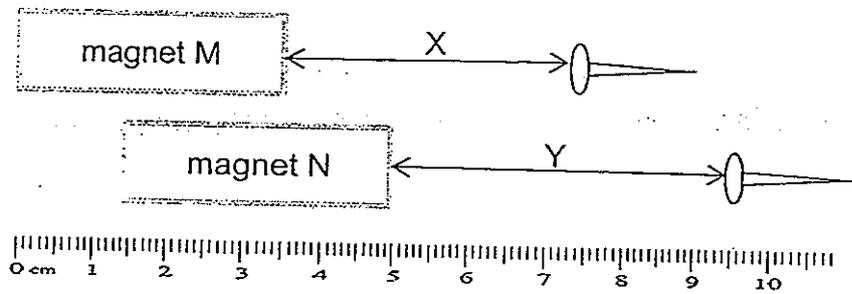
12. Ben did an experiment to find out which part of the bar magnet can attract the most number of pins. He placed a bar magnet near some pins as shown below. He was told to sketch his observation.



Which one of the following best represents Ben's observation?

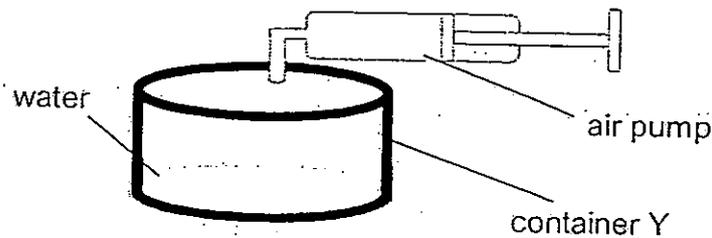


13. Joe conducted an experiment using two different magnets, M and N, and a pin. X and Y mark the distance at which each magnet attracted the pin. The diagrams below show his observations.



What conclusion can Joe draw from his observation?

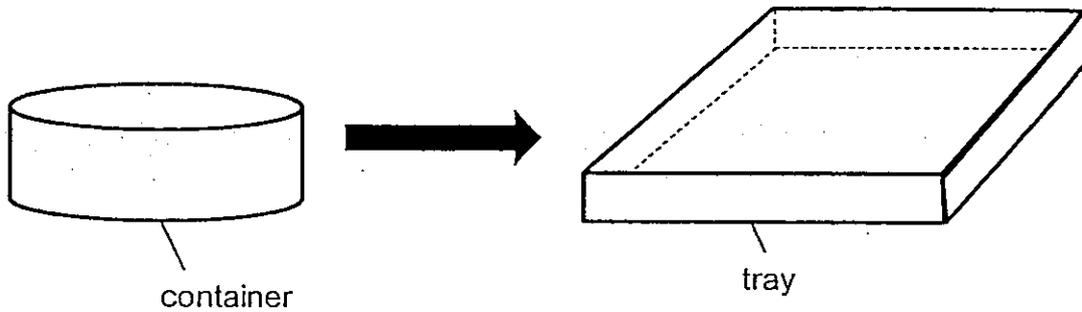
- A The pin is a magnetic object.
 - B Magnetic force can act from a distance.
 - C Magnet M has a stronger magnetic force than Magnet N.
 - D The poles of the magnet have the greatest magnetic strength.
- (1) A and B only
 (2) C and D only
 (3) A, B and D only
 (4) A, B, C and D
14. Container Y has a capacity of 4000cm^3 . A quarter of it is filled with water. An air pump is attached to container Y as shown in the diagram below.



Each time the plunger is pushed in, 500cm^3 of air is pumped into the container. What will be the volume of air present in container Y if the air pump is pumped thrice?

- (1) 1500cm^3
- (2) 3000cm^3
- (3) 3500cm^3
- (4) 4000cm^3

15. Leo emptied a container of paint into a tray.

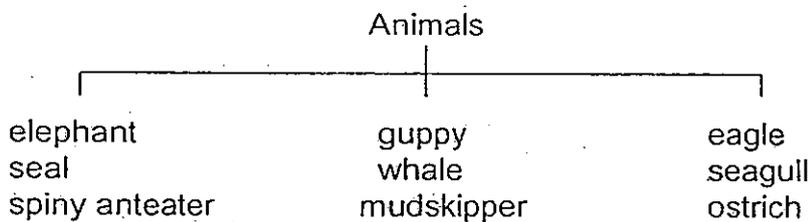


What properties of the paint will remain the same?

- A Volume
- B Shape
- C Amount of matter in it

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

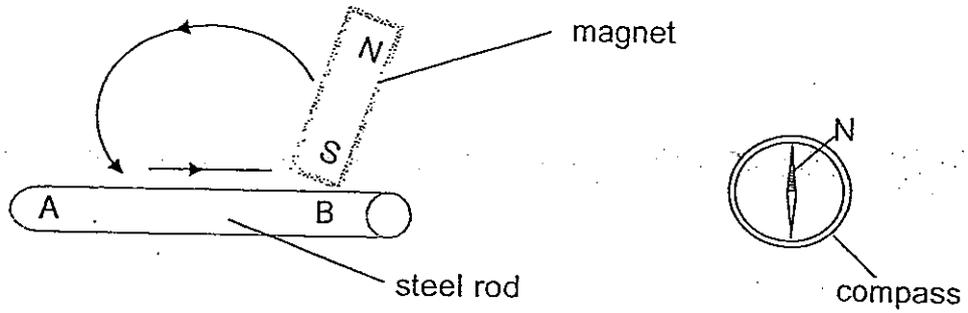
16. The following animals have been classified according to their body coverings.



Which animal has been placed in the wrong group?

- (1) seal
- (2) whale
- (3) seagull
- (4) spiny anteater

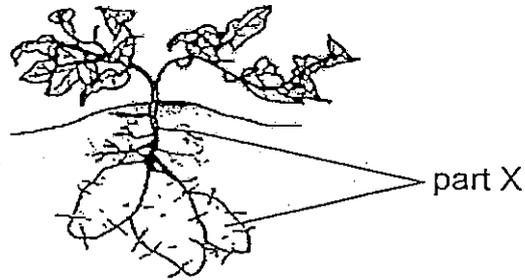
17. A steel rod is magnetized by using the stroking method as shown in the diagram below.



When the magnetized rod is placed near the compass, which one of the following diagrams correctly shows the position of the compass needle?

<p>(1)</p>	<p>(2)</p>	<p>(3)</p>	<p>(4)</p>
------------	------------	------------	------------

18. Look at the diagram of the plant shown below.



Which of the following statements describe the function of part X of the plant?

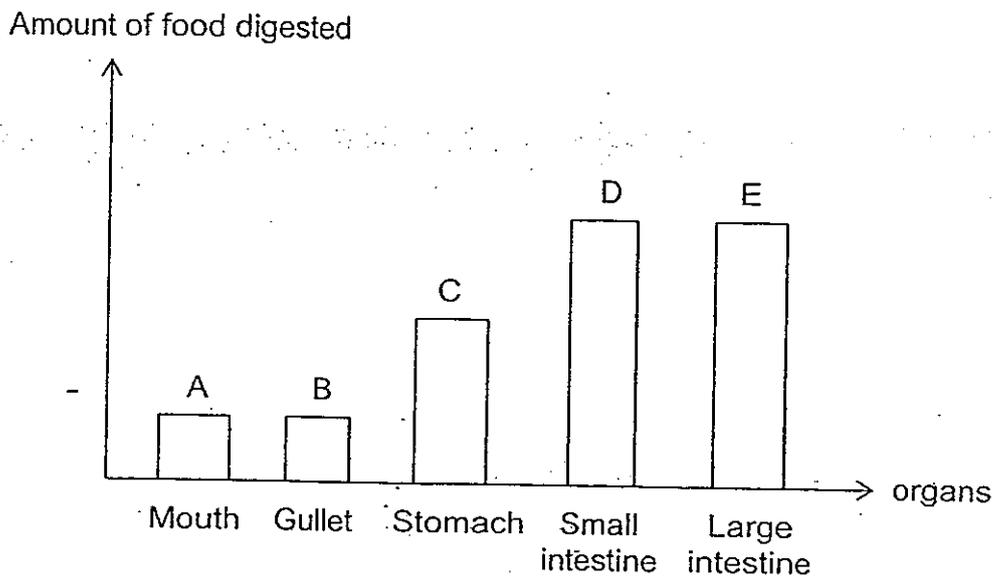
- A To take in water
- B To hold the plant upright
- C To store food for the plant
- D To take in air for the plant

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

19. Which one of the following is not a matter?

- (1) Air
- (2) Magnet
- (3) Powder
- (4) Thunder

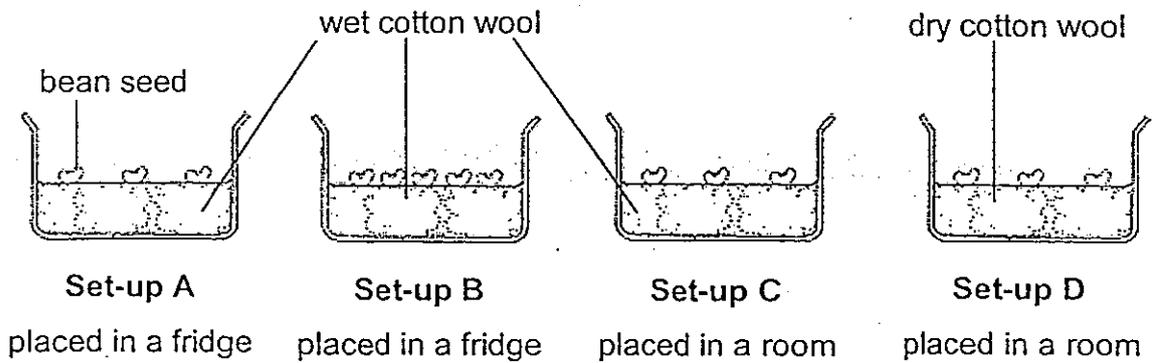
20. Belle ate a burger during recess. She plotted a bar graph to show the amount of digestion occurring in the different organs as the food passed through the digestive system.



Which part(s) of the graph, A, B, C, D or E, is/are incorrectly drawn?

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

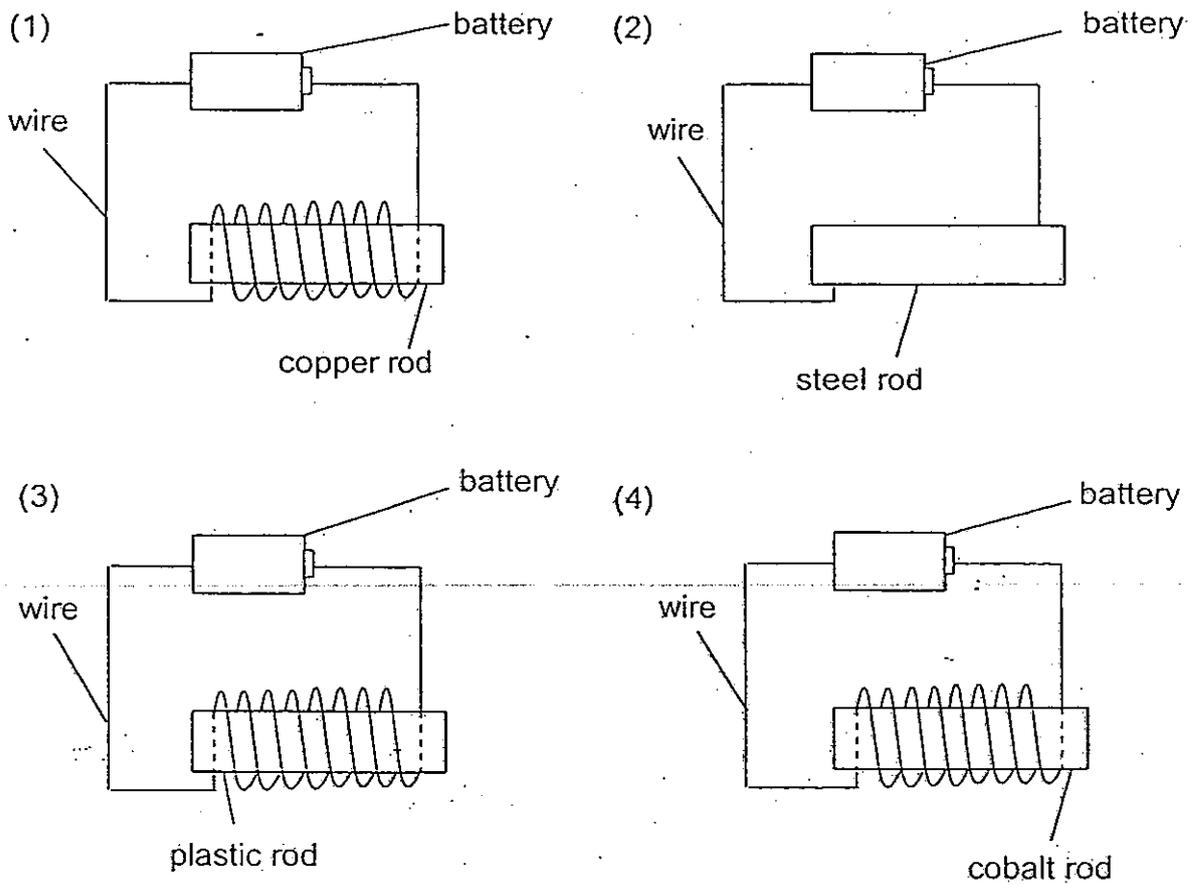
21. Leanne wanted to find out if temperature has an effect on the germination of seeds.



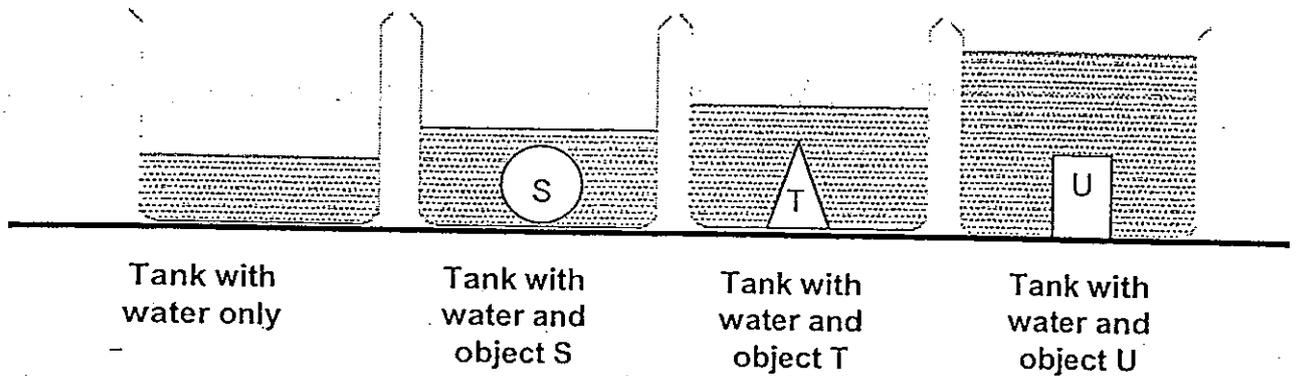
Which two set-ups should she compare in order to conduct a fair experiment?

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

22. Which one of the following rods will be able to attract iron nails?



23. Dave dropped three objects S, T and U, one at a time, into a tank of water as shown in the diagram below.



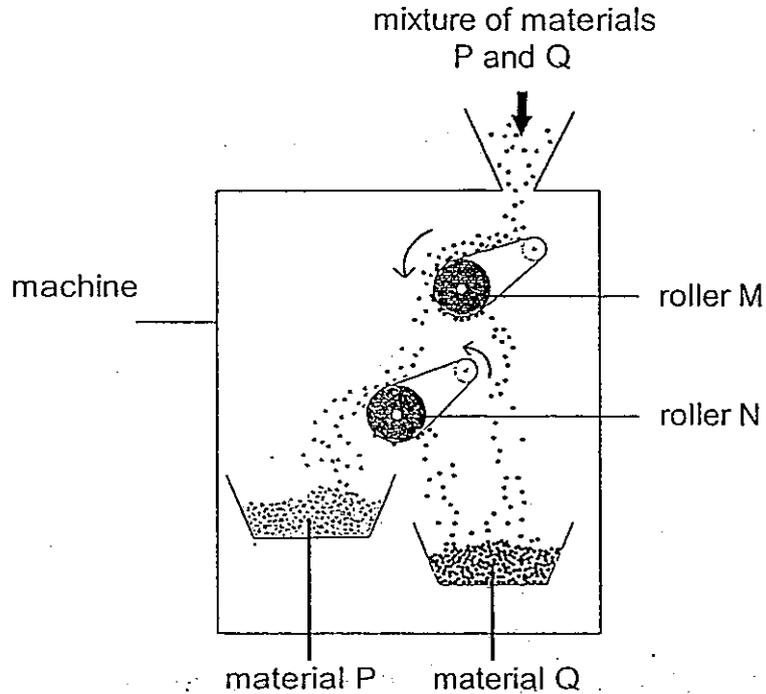
Based on his observations, he made the following conclusions.

- A The 3 objects can sink in water.
- B Object S has the smallest volume.
- C The 3 objects have the same volume.
- D Objects S and T have a smaller mass than object U.

Which of his conclusions are true?

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

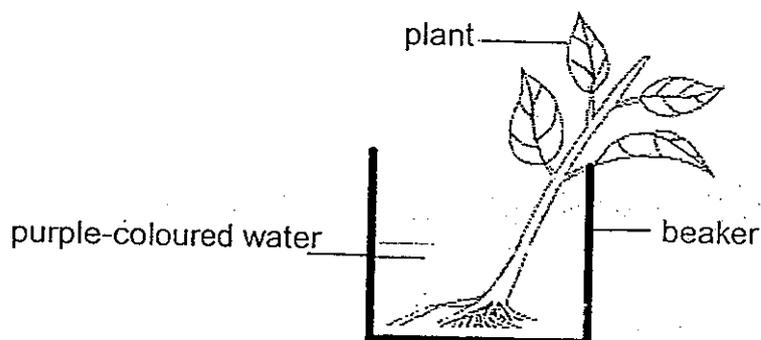
24. A mixture of materials P and Q is poured into a machine that can separate materials based on their magnetic properties.



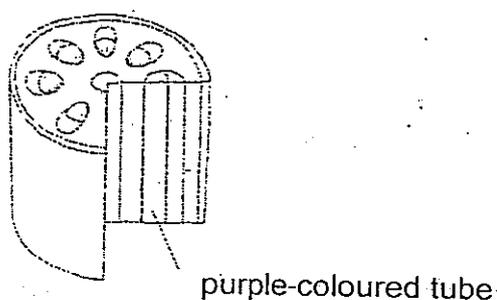
Based on the diagram above, which of the following conclusions are true?

- A Only roller M is a magnet.
 - B Roller M is a stronger magnet.
 - C Material P is a magnetic material.
 - D Material Q is a magnetic material.
 - E Both rollers M and N are magnets.
-
- (1) A and C only
 - (2) B and D only
 - (3) C and E only
 - (4) D and E only

25. Ethan placed a plant in a beaker of purple-coloured water.



After 5 hours, Ethan removed part of the stem from the plant. The diagram below shows the cross-section of the stem that was removed.



Ethan wrote down the explanation for his observation on a piece of paper. However, some ink was spilled accidentally on the paper. What could the missing words be?

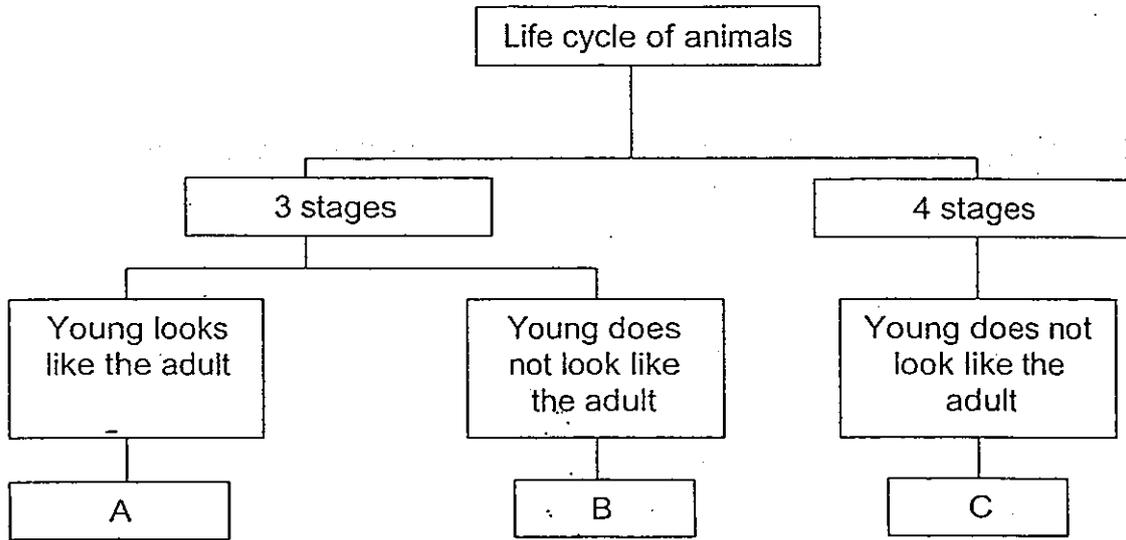
The purple-coloured tubes are ~~carrying~~ carrying tubes.
~~is~~ is absorbed by ~~to~~ to be transported to the leaves
to ~~to~~

The purple-coloured tubes are _____ (A) - carrying tubes. _____ (A)
is absorbed by the (B) _____ to be transported to the leaves to _____ (B)

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

	(A)	(B)	(C)
(1)	food	stem	store food
(2)	water	stem	make food
(3)	food	roots	store food
(4)	water	roots	make food

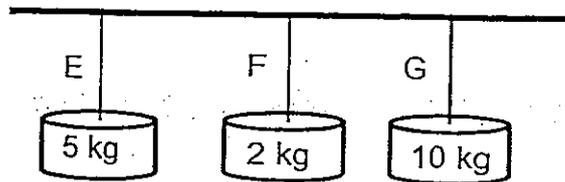
26. Study the classification chart below.



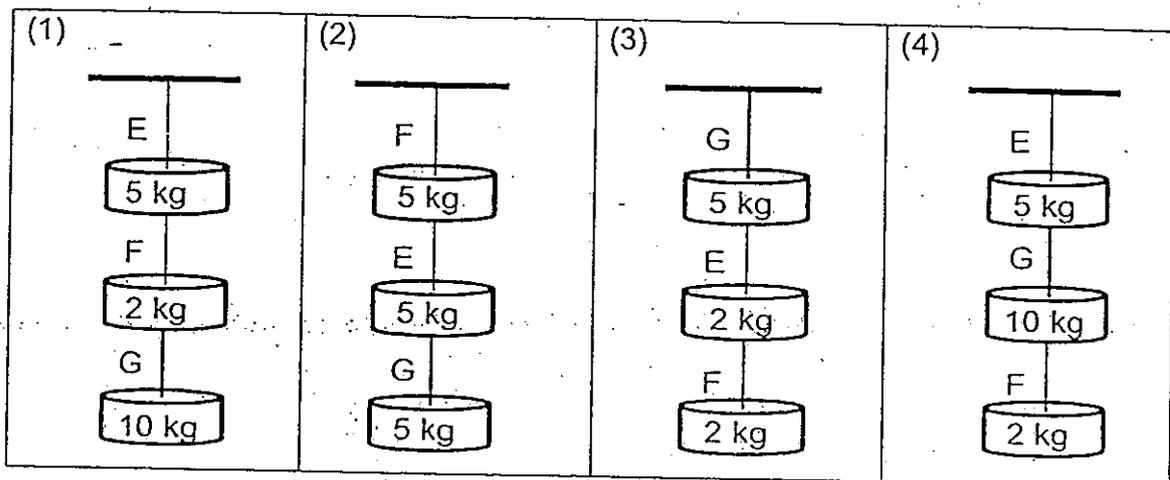
Which one of the following best represents A, B and C?

	(A)	(B)	(C)
(1)	human	butterfly	beetle
(2)	grasshopper	frog	mosquito
(3)	chicken	butterfly	mosquito
(4)	human	grasshopper	beetle

27. Kenneth had three types of string E, F and G. He tested the strength of the string by hanging weights on the string. He increased the weights until the string broke. The maximum mass that each string can hold before breaking is shown in the diagram below.



He then tried using the strings to hang different weights as shown below. Based on the test results, which one of the following arrangements would be possible?



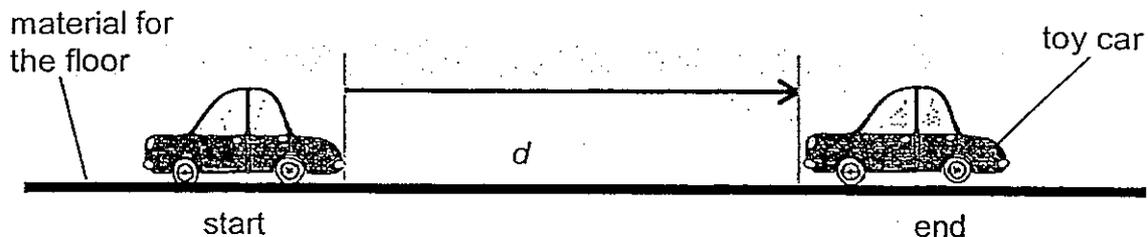
28. Johnny was told to record his observation of the life cycle of two animals U and V, in the table below. A tick (\checkmark) indicates the presence of the characteristic while a cross (\times) indicates the absence of the characteristic.

Characteristics	Animal U	Animal V
The adult has 3 pairs of legs.	\times	\checkmark
It lays eggs.	\checkmark	\checkmark
It has feathers.	\checkmark	\times

Which one of the following best represents animal U and V?

	U	V
(1)	goldfish	sparrow
(2)	bat	moth
(3)	penguin	housefly
(4)	owl	spider

29. Fred wanted to choose a material for the flooring of his bathroom. He tested 4 different types of material P, Q, R and S. He put a toy car on a piece of material P and gave it a push. The toy car came to a stop at a distance. He recorded the distance that the toy car moved and repeated the process for each material.



The results of his experiment are shown below.

Material	Distance d (cm)
P	8
Q	5
R	10
S	12

Fred needed the flooring of his bathroom to be non-slippery. Based on the results, which material should he choose (from worst choice to best choice)?

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

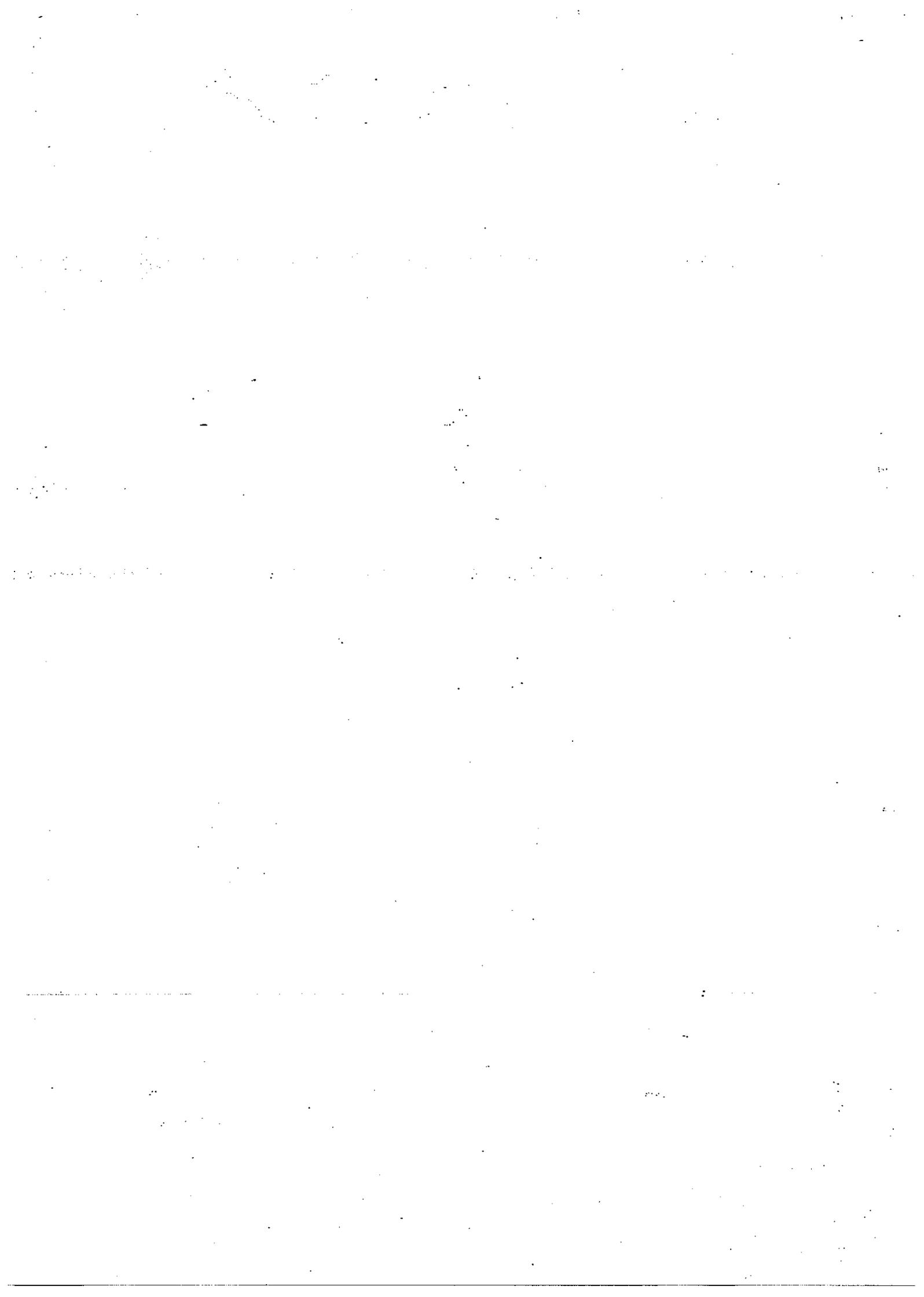
30. The table below records the properties of P, Q and R. A tick (✓) indicates the presence of the property while a cross (×) indicates the absence of the property.

Properties	P	Q	R
It has mass.	✓	✓	×
It occupies space.	✓	✓	×
It has definite shape.	×	×	×
It has definite volume.	✓	×	×
It is visible.	✓	×	✓

Which one of the following best represents P, Q and R?

	P	Q	R
(1)	rain	wind	light
(2)	air	oxygen	electricity
(3)	baby powder	carbon dioxide	dust
(4)	coke	shadow	lightning

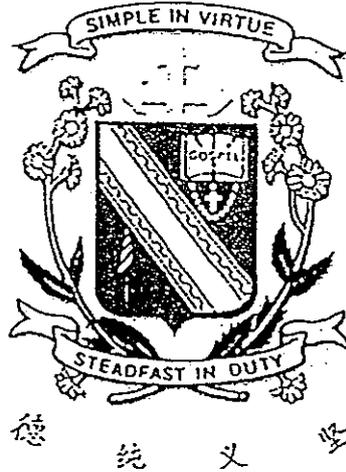
End of Booklet A



Name : _____ ()

Class : Primary 4 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 4

Semestral Assessment 1 – 2013

SCIENCE

BOOKLET B

15 May 2013

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

14 questions
40 marks

Booklet A	60
Booklet B	40
Total	100

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.

Parent's Signature/Date



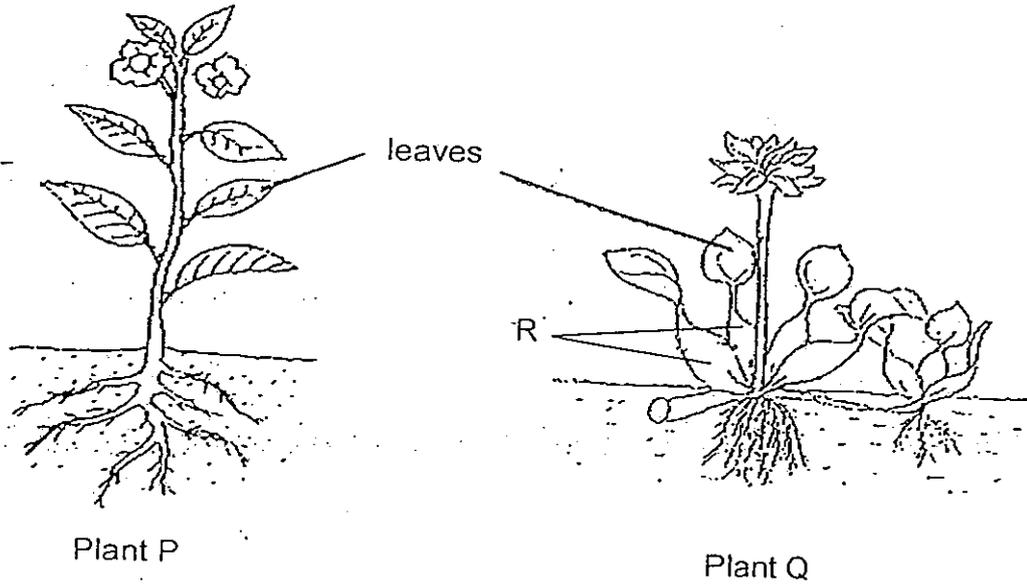
Section B: 40 marks

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

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

31. The diagram below shows two plants P and Q.

Plant P grows on land and plant Q grows in water.

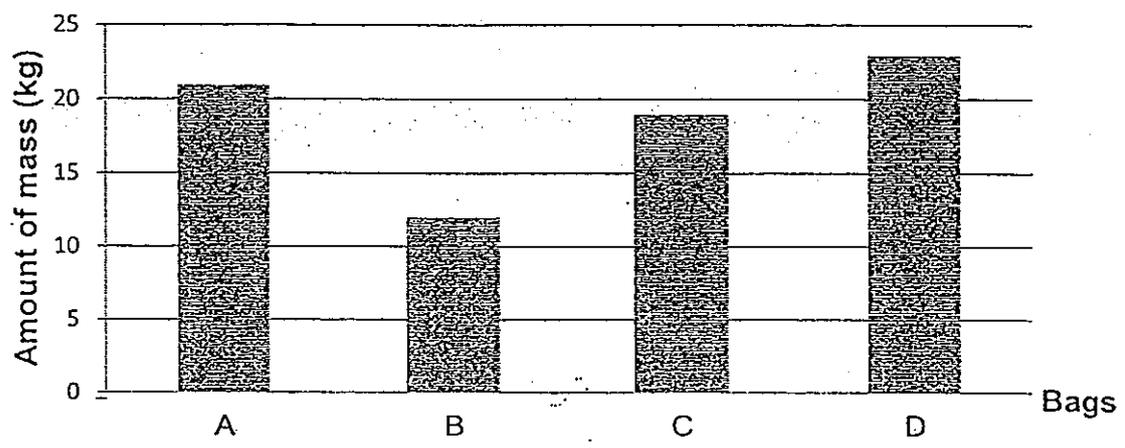


(a) State a function of the roots of plant P which is not carried out by the roots of plant Q. [1]

(b) Part R contains air sacs which help plant Q to stay afloat on water. How does this help plant Q to survive? [1]

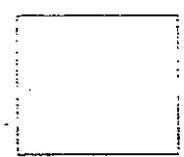


32. Louis made 4 bags A, B, C and D of the same size from different materials. When put to a test, the amount of load each bag could hold before tearing is shown in the graph below.

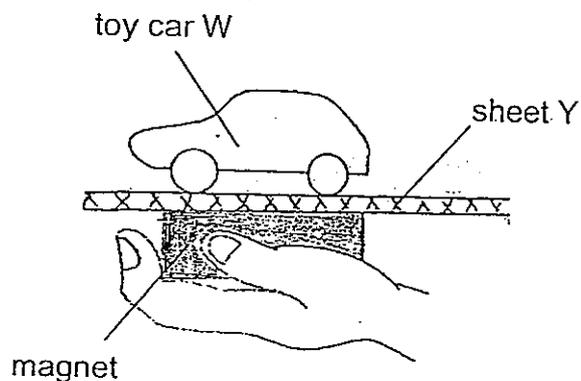


(a) If Louis needed a bag to hold 17kg of load for his hiking trip, which bag(s) A, B, C, D should Louis use? [1]

(b) Taking into consideration the weather during the hike, name another property that Louis should also consider when choosing the bag. [1]



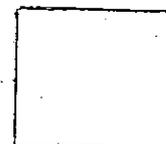
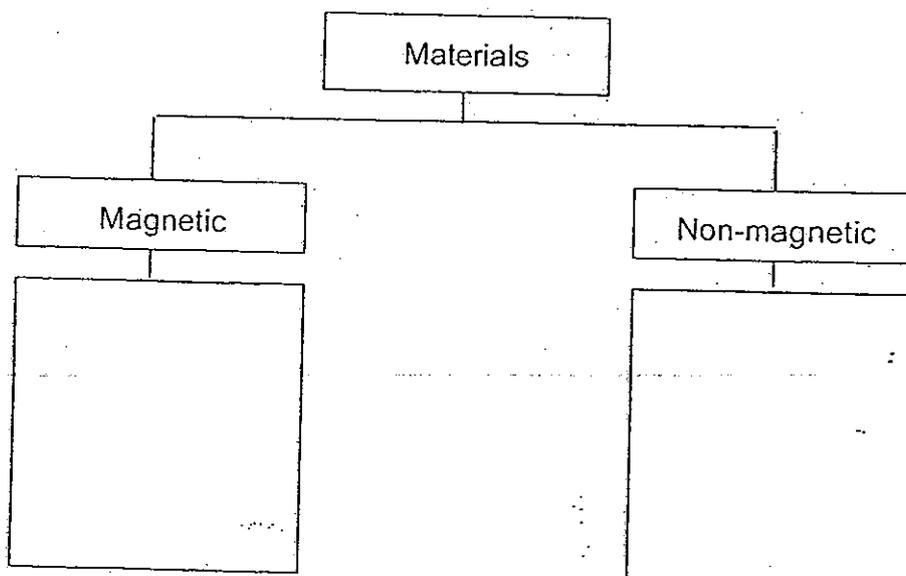
33. Norman had 2 toy cars, W and X, made of different materials. He placed car W over a sheet of material Y and positioned a magnet below it as shown in the diagram below.



When he moved the magnet, he observed that car W also moved in the same direction. He then repeated the process using a different sheet of material Z. Finally, he carried out the experiment again using toy car X. The table below records Norman's observations.

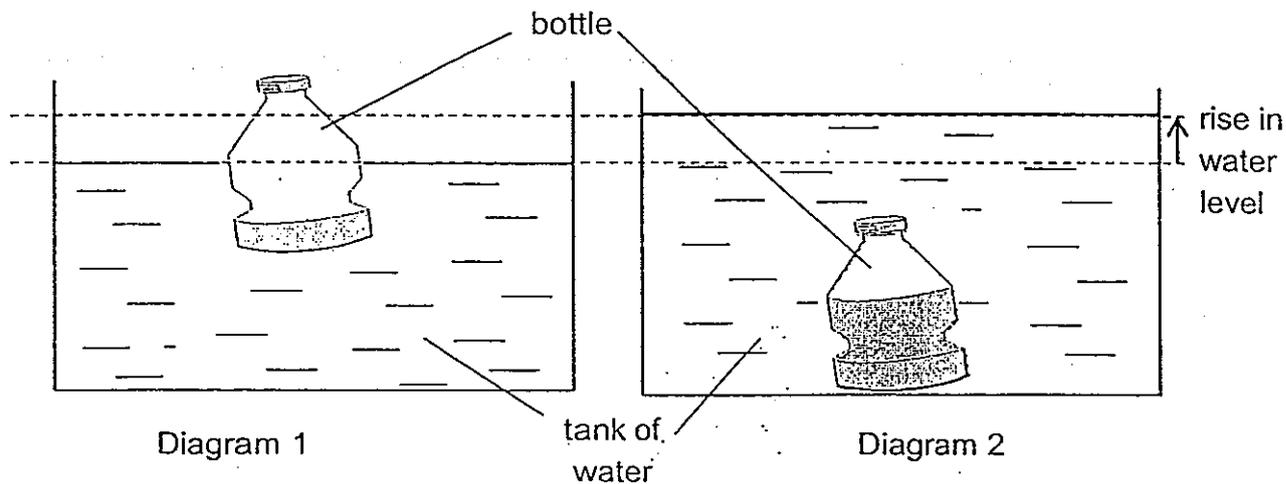
	toy car W	toy car X
sheet Y	moved	moved
sheet Z	stationary	stationary

Based on the results in the table above, classify the materials W, X, Y and Z by writing the letters in the classification chart below. [2]



34. Alvin filled a bottle with some water and placed it in a tank of water. The bottle floated as shown below in the diagram 1.

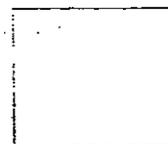
When he filled the bottle with more water and placed it back into the tank of water, the bottle sank as shown in diagram 2.



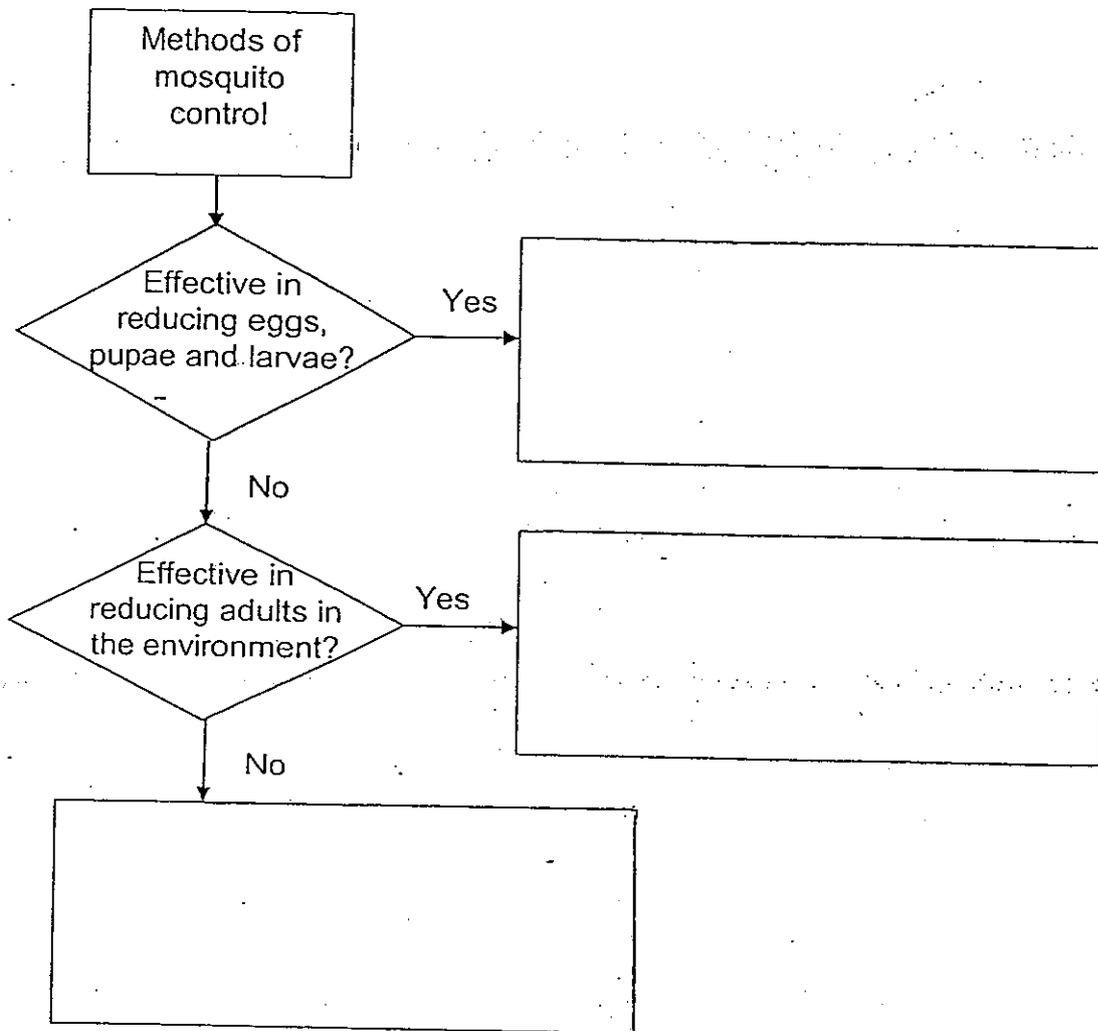
(a) Explain why the bottle sank when it was filled with more water? [1]

(b) When the bottle was placed in the tank as shown in diagram 2, the water level in the tank rose. Explain why. [1]

(c) If Alvin wants the bottle to sink in the water as shown in diagram 2 without the water level in the tank rising so much, what should he do? [1]



35. Kelly did a research on the different methods of mosquito control. The flowchart below records her findings.

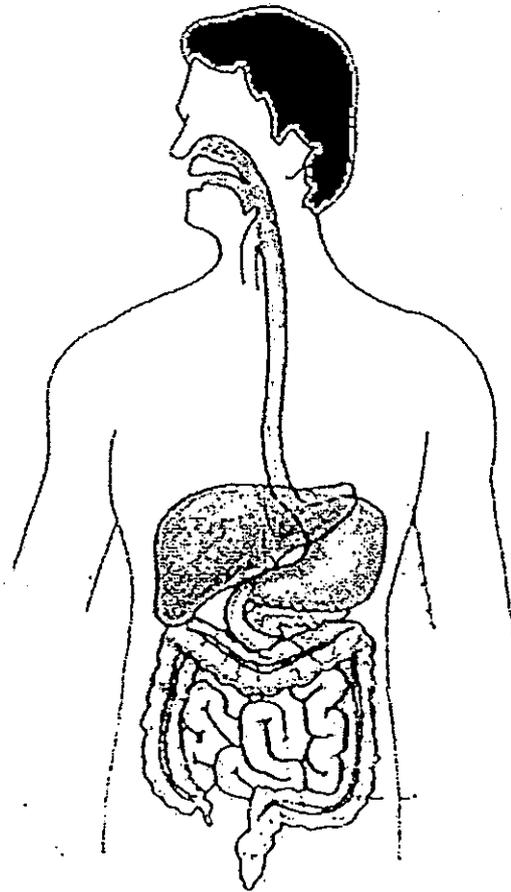


Using the list of different methods given below, complete the above flowchart. [2]

- ✓ Mosquito repellent.
- ✓ Spray oil on water surface
- ✓ Introduce organism in water to feed on it
- ✓ Spray insecticide in the air



36. The diagram below shows the human digestive system.



(a) On the above diagram,

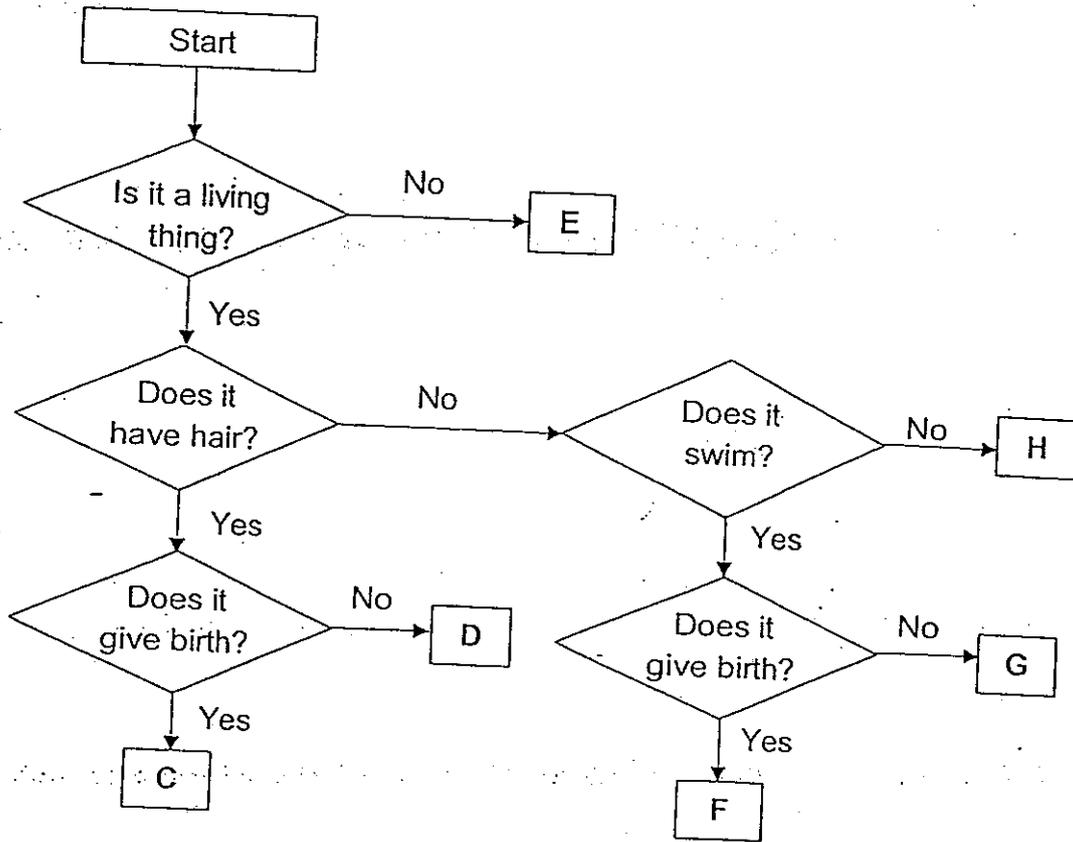
(i) Draw a line (—————) to identify the organ where the digested food is absorbed into the bloodstream. Label the organ clearly. [1]

(ii) Draw a line (- - - - -) to identify the organ where water is removed from the undigested food. Label the organ clearly. [1]

(b) Does the mouth help in the digestion of food? Explain. [2]



37. Study the flowchart below.

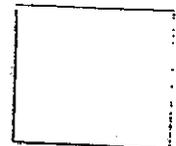


(a) Based on the flowchart above, identify the letter that represents each of the following animals. [1]

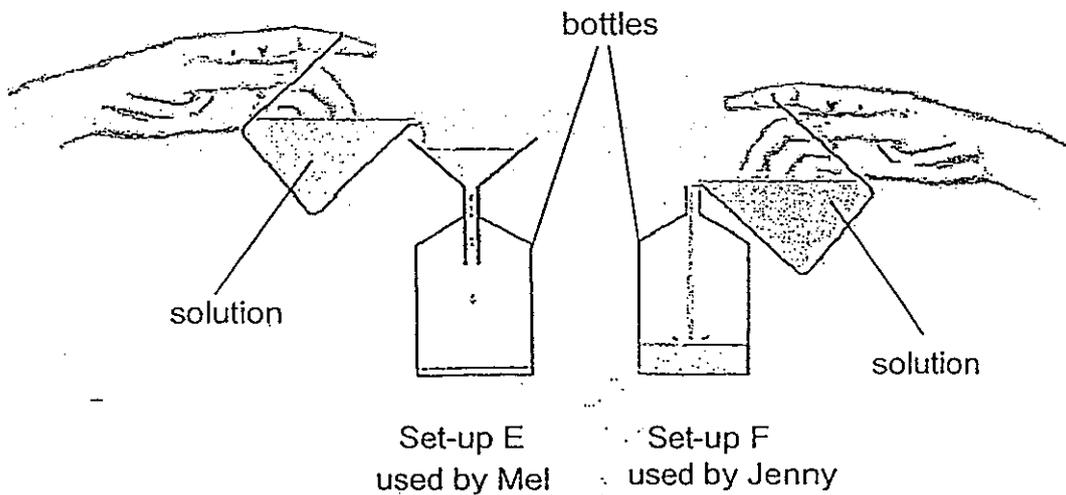
- (i) Eagle : _____
- (ii) Platypus : _____

(b) Based on the flowchart above, state the characteristics of C. [1]

(c) How is organism C different from G? [1]



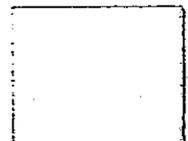
38. Mel and Jenny poured some solution into two similar glass bottles using set-ups E and F as shown in the diagram below.



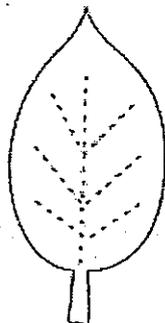
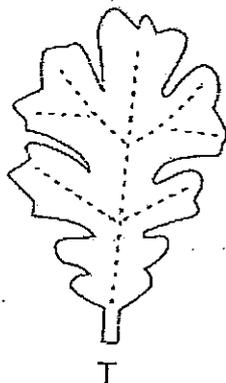
It was noticed that the bottle in set-up E filled up slower than that in set-up F. They repeated the process a few times and the observation was still the same.

(a) Explain why the bottle in set-up E always filled up slower. [2]

(b) Based on your answer in (a) above, and using the same apparatus, explain clearly how Mel could improve the process in set-up E so that she could fill up the bottle faster? [2]



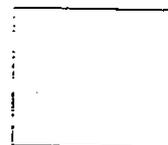
39. Study the two leaves, T and U, below.



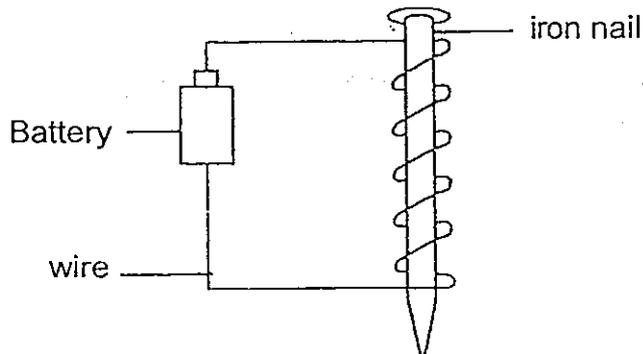
Based on the pictures above, state one difference and one similarity between the two leaves. [2]

(a) Difference: _____

(b) Similarity : _____



40. Emil set up an experiment as shown below.



He recorded the number of pins attracted by the electromagnet when he changed the number of coils. His observations are recorded in the table below.

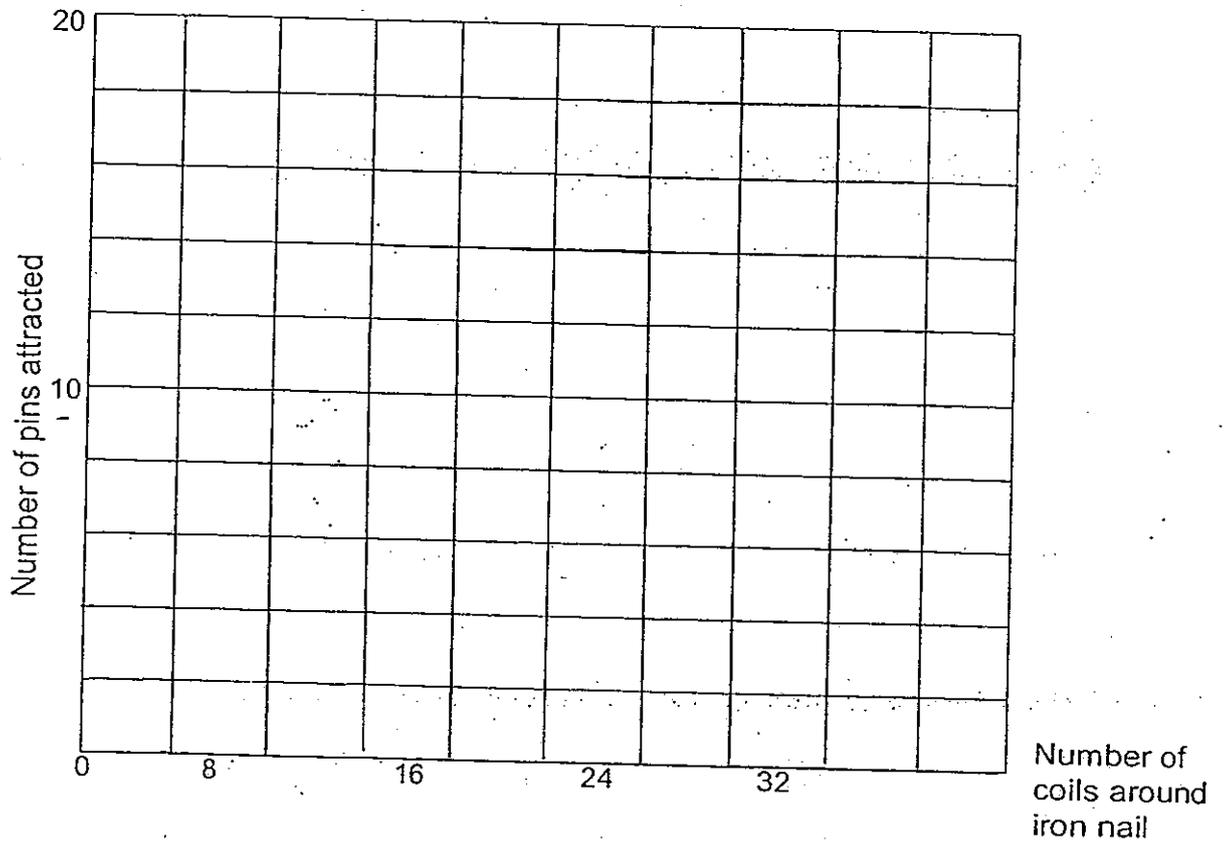
Number of coils around iron nail	Number of pins collected
8	4
16	8
24	12
32	16

(a) Identify the variable changed in this experiment. [1]

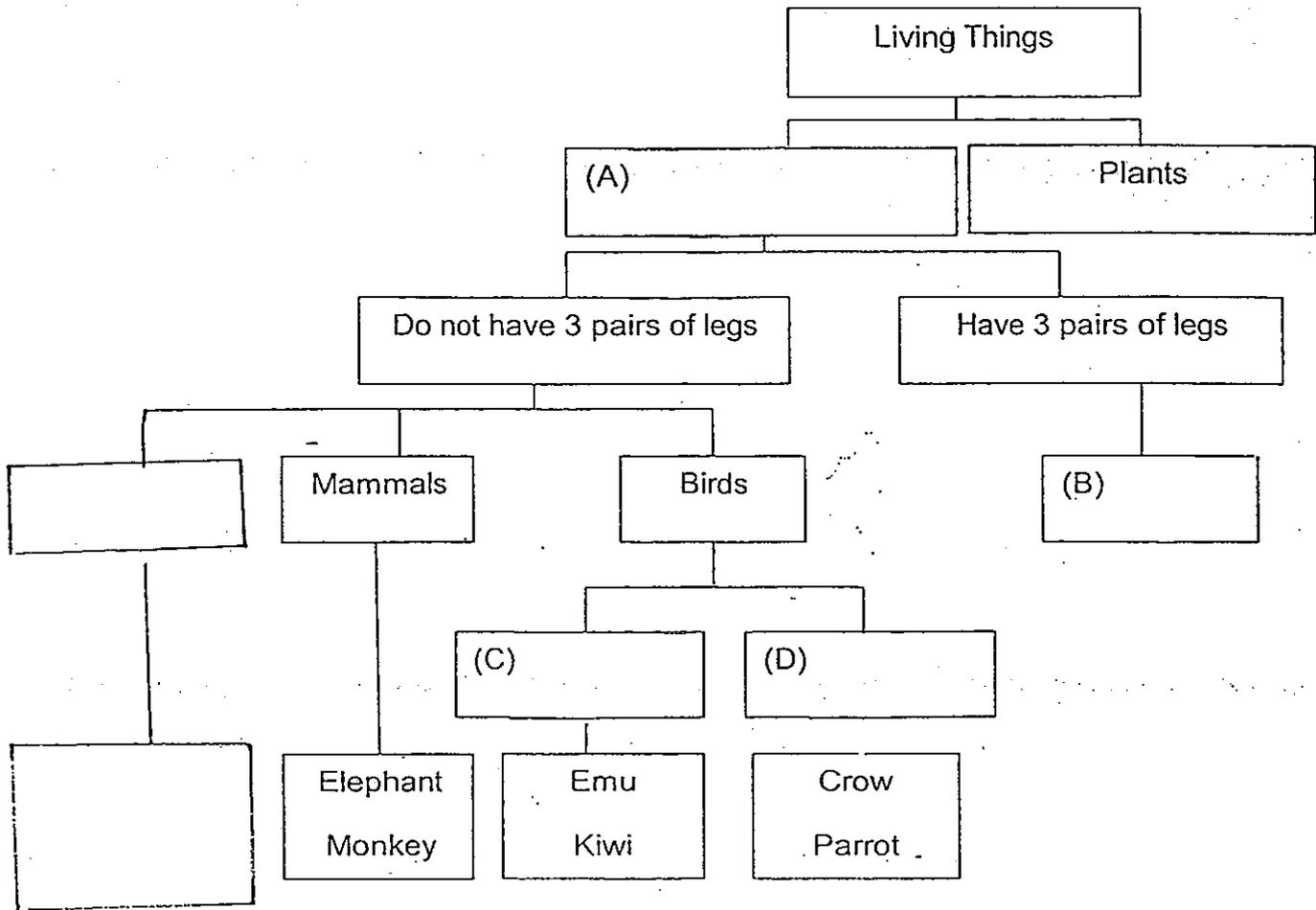
(b) What was the aim of Emil's experiment? [1]



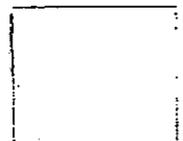
- (c) Based on the data collected, complete the bar graph below by using the shaded portion to start your bars. [2]



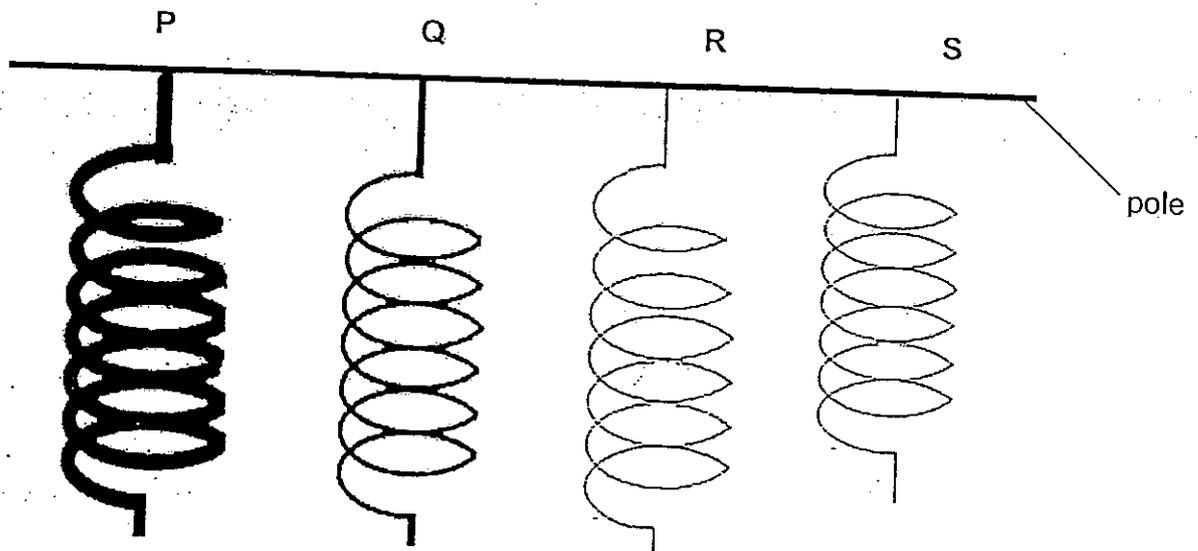
41. Study the classification chart below.



- (a) Complete the classification chart above by filling in the boxes A, B, C and D with suitable headings. [2]
- (b) Complete the chart above by adding in the group of organisms called "Fish". (Note: You will need to draw a box and lines to join this group to the rest) [1]

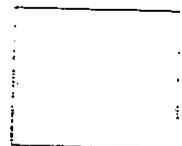


42. Tina had 4 springs P, Q, R and S made from the same material. She attached the springs onto a pole as shown below. She then hung a weight of 50g at the end of each spring and the extension was recorded. She then repeated the experiment by hanging weights of different masses on the springs and recorded the extensions.

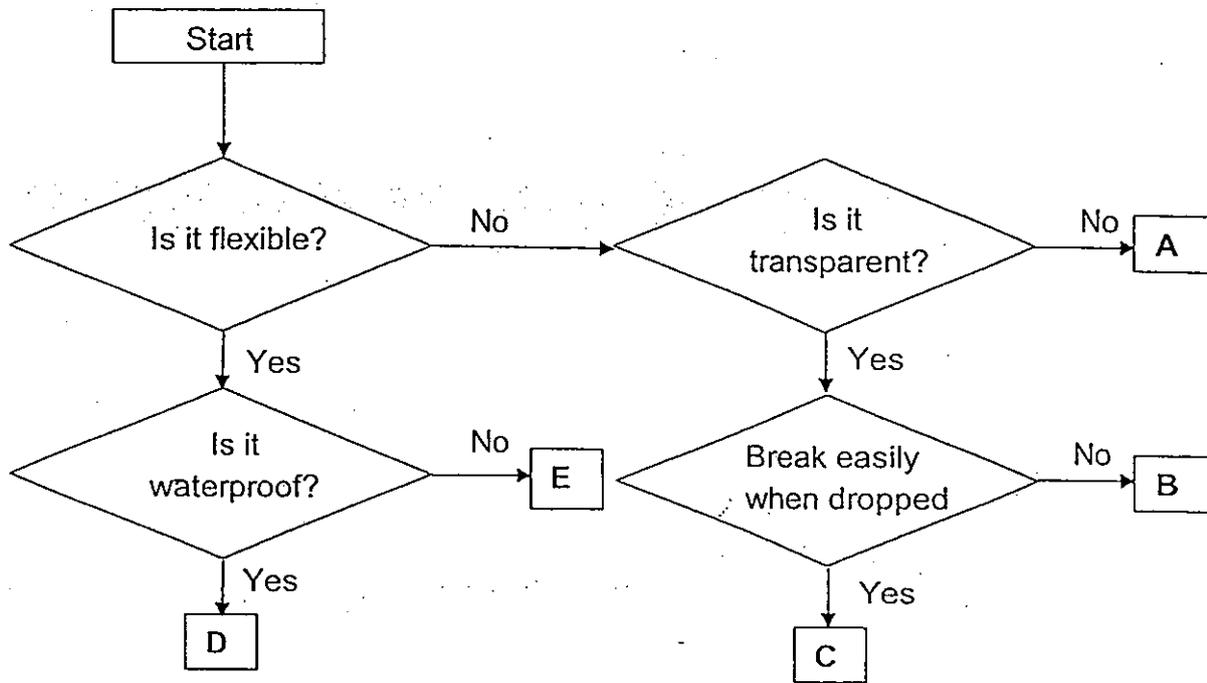


- (a) If springs R and S are compared, what is the aim of the experiment? [1]

- (b) If springs P, Q and R are compared, what is the aim of the experiment? [1]



43. The flowchart below shows how 5 different objects A, B, C, D and E are classified.

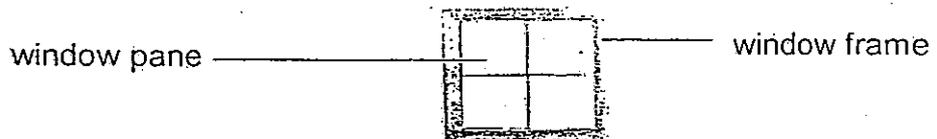


(a) Based on the flowchart above, which of the letters best represent the following items. [1]

(i) School uniform : _____

(ii) Mirror : _____

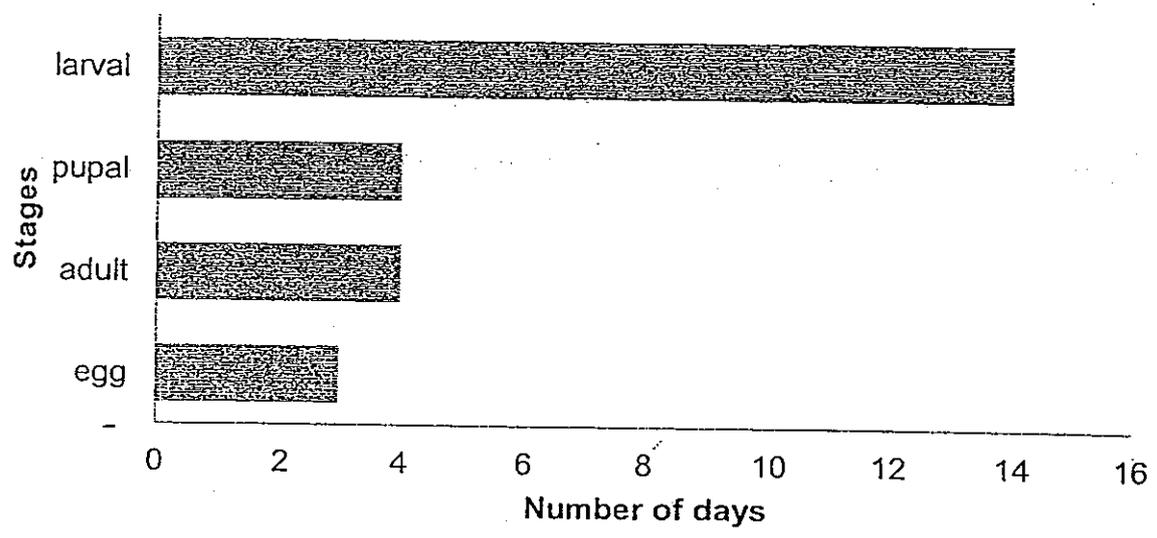
(b) Based on the flowchart above, which object(s) is/are made of a material that is most suitable for making the shower cap? Explain why. [2]



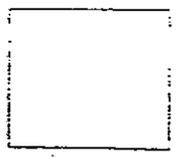
(c) Based on the flowchart above, what does a window pane and object B have in common? [1]



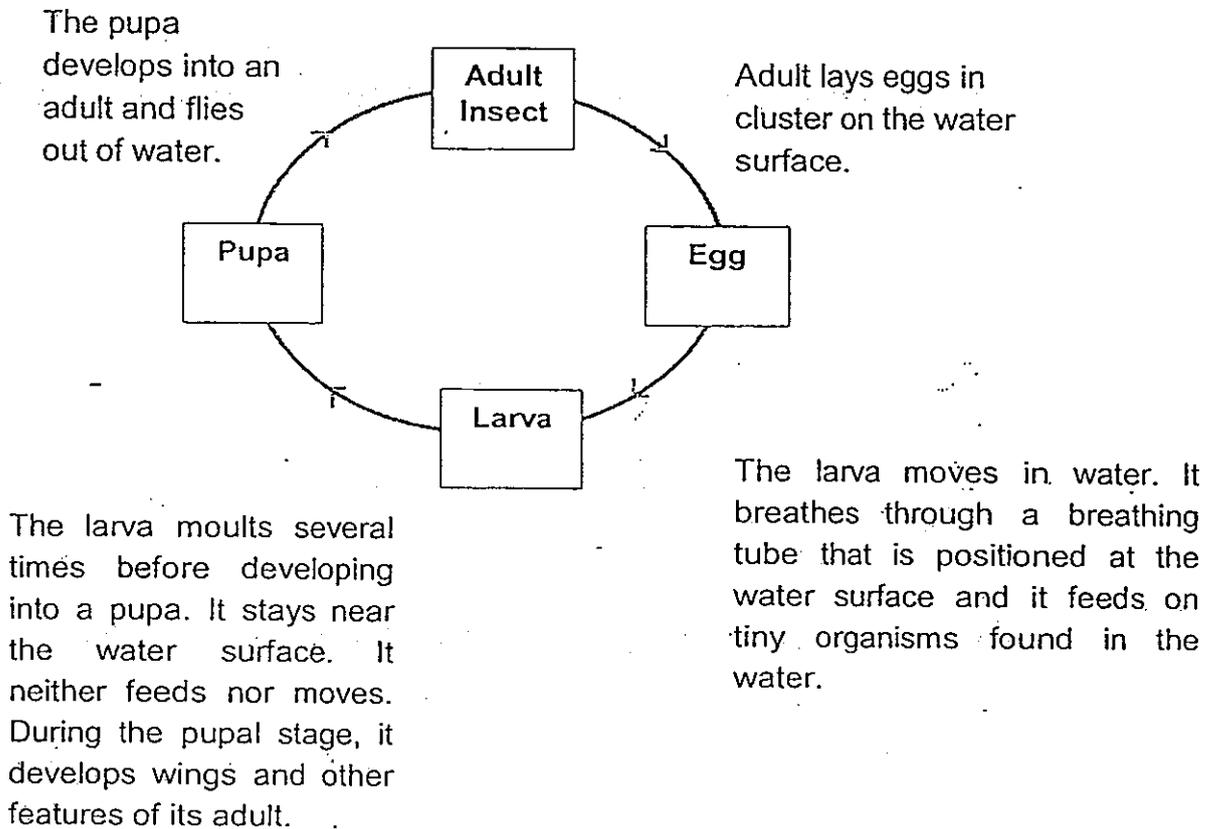
44. Betty studied the life cycle of insect W. She recorded the number of days for each stage of its life cycle in a bar graph as shown below.



(a) Based on the bar graph above, how many days does the insect take to become an adult after it has hatched from the egg? [1]



(b) The diagram below shows the life cycle of an unknown insect X.



Using the information given above, put a tick (✓) in the correct column for each of the statements given below. [2]

	Statements	True	False	Not Possible to Tell
(i)	The adult lays only one egg.			
(ii)	The larva moults several times before developing into a pupa.			
(iii)	The adult spends most stages of its life cycle in water.			
(iv)	The larva consumes more food than the adult.			

End of Paper



ANSWER SHEET

EXAM PAPER 2013

SCHOOL : CHIJ ST NICHOLAS GIRLS SCHOOL

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	2	2	2	1	3	3	2	3	4	1	4	1	2	4	2	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	2	2	4	1	4	4	2	3	3	4	1

Section B

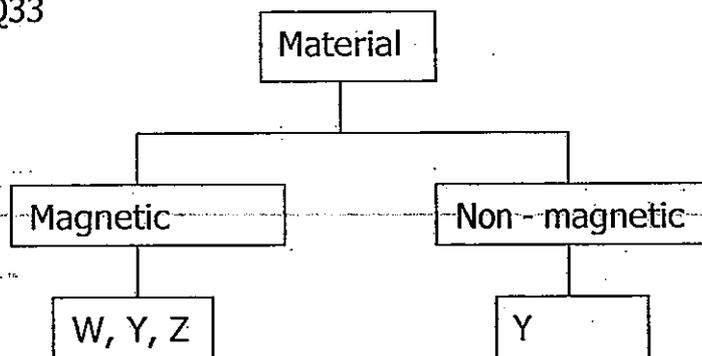
Q31

- a) The roots of plant P holds the plant firmly
- b) Plant Q would be able to receive sunlight to make its own food

Q32

- a) Bags A, C and D
- b) Waterproof

Q33



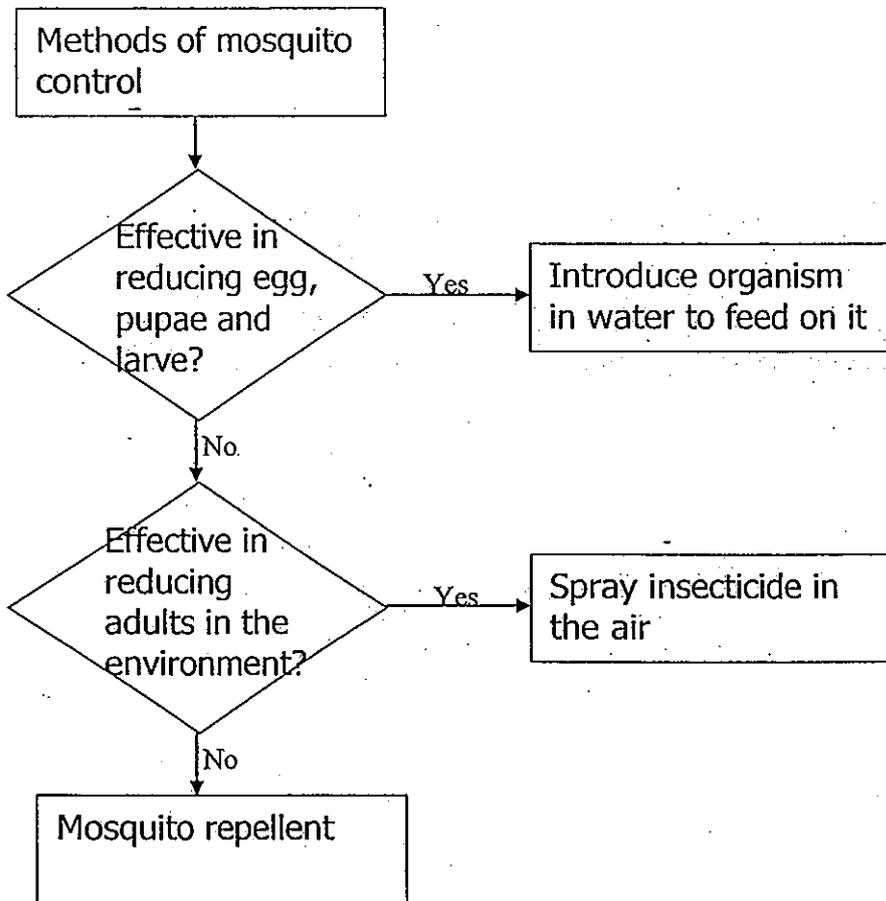
Q34

a) When water is added to the bottle, the mass of the bottle and the content increased, thus the bottle sank

b) The bottle occupies more space in the tank of water when it fully submerged in the tank, thus causing the water level to rise

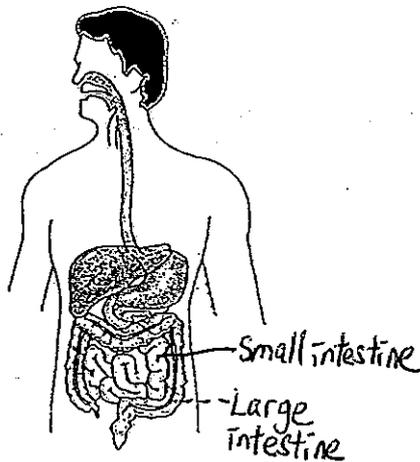
c) He should open the bottle's cap

Q35



36

a)



b) Yes. The teeth cut and chew the food into smaller pieces. Saliva will break down some of the food into simpler substances

Q37

a) i) H

ii) D

b) C is a living thing that has hair and gives birth

c) C has hair and gives birth but G does not have hair and does not give birth

Q38

a) Air in set-up E cannot easily as the opening is being blocked but air in set-up F can escape easily as the opening is unblocked

b) Lift the funnel up so that air trapped in the bottle can escape and the solution can enter to take the air's space

Q39

a) Difference: Leaf T has a lobed-edge but leaf U is smooth edged

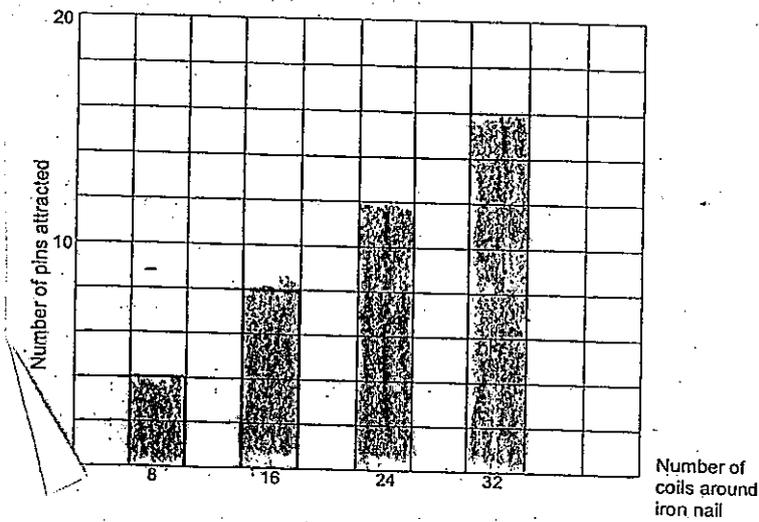
b) Similarity: Both have network veins

Q40

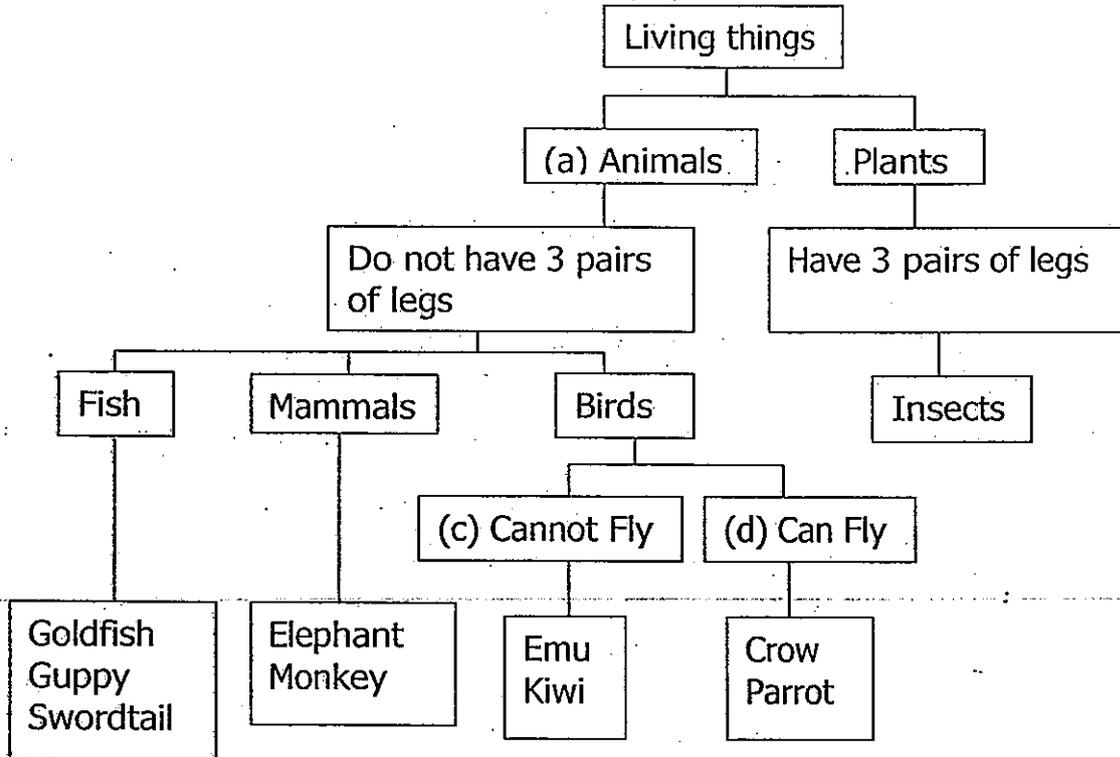
a) The number of coils around the iron nail

b) To find out if the number of coils around the iron nail will affect the magnetic force of the electromagnet

c)



41



Q42

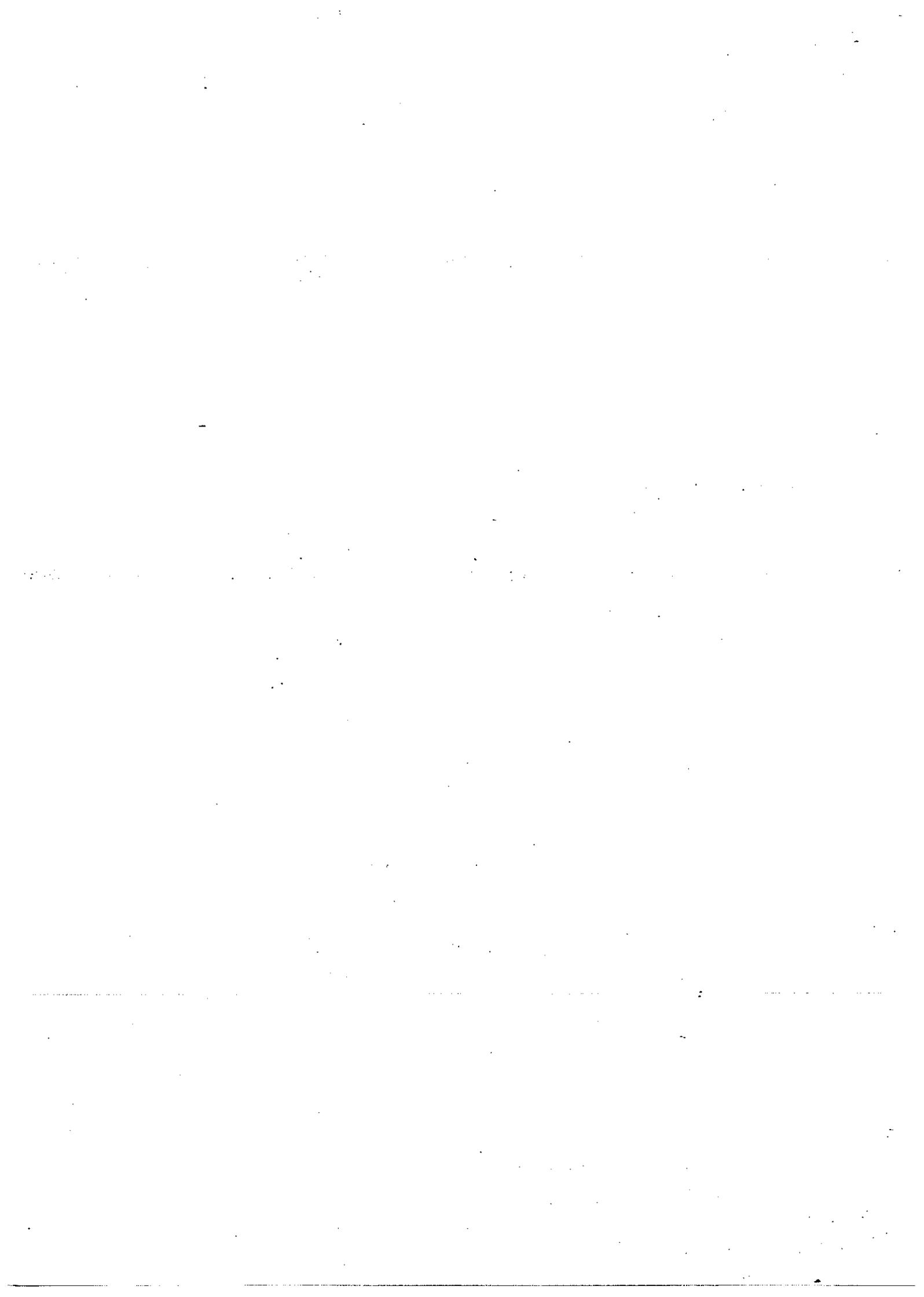
- a) To find out how the length of springs affects the extension
- b) To find out how the thickness of springs affect the extension

Q43

- a) i) E
ii) A
- b) Object O. The shower cap must be flexible and waterproof which is only fulfilled by object O
- c) Both window panes and object B are not flexible and are transparent

Q44

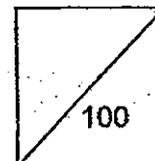
- a) 18 days
- b) i) False
ii) True
iii) True
iv) Not possible to tell





**HENRY PARK PRIMARY SCHOOL
2013 SEMESTRAL EXAMINATION 1
PRIMARY 4 SCIENCE**

Duration of Paper: 1 h 45 min



Parent's Signature _____

Name: _____ ()

Class: Pr 4 _____

Booklet A (60 marks)

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

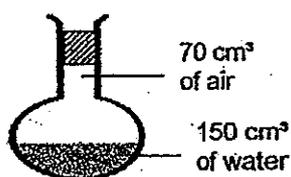
1. Which of the following statements about matter are true?

- (A) All matter can be seen.
- (B) All matter has mass.
- (C) All matter occupies space.
- (D) All matter can be compressed.

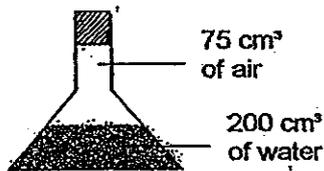
- (1) A and D only
- (2) B and C only
- (3) A, B and C only
- (4) B, C and D only

()

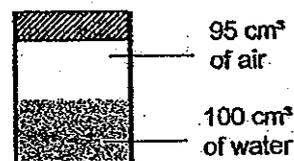
2. The diagram below shows 3 different containers A, B and C. All of them contain different amounts of water.



Container A



Container B

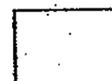


Container C

Which of the above containers can contain 80 cm³ of air?

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

()



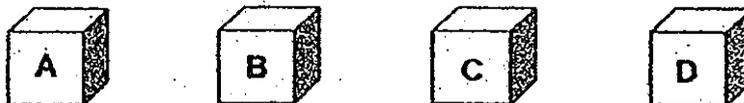
3. The table below shows the properties of W, X, Y and Z.

Property	W	X	Y	Z
Has mass	No	Yes	Yes	Yes
Has definite volume	No	No	Yes	Yes
Has definite shape	No	No	No	Yes
Can be compressed	No	Yes	No	No

Which of the following matches the correct objects to their properties mentioned above?

	W	X	Y	Z
(1)	Light	Air	Stone	Water
(2)	Heat	Light	Bottle	Air
(3)	Shadow	Oxygen	Water	Ice cube
(4)	Oxygen	Air	Ice cube	Bottle

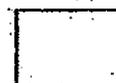
4. The mass of 4 cubes of the same volume made of different materials are shown in the table below.



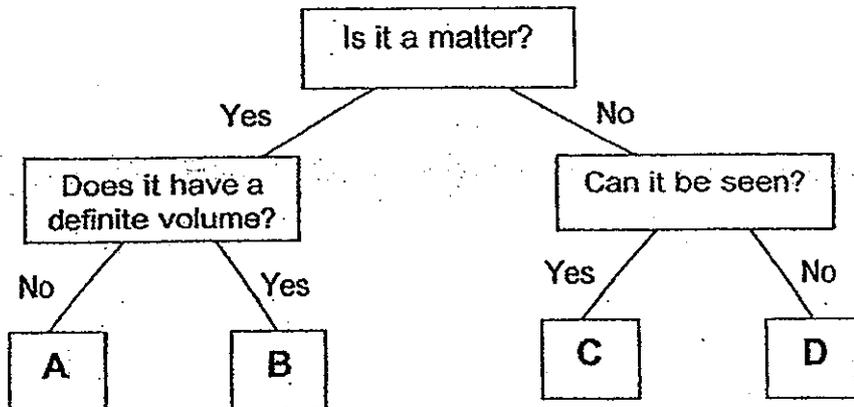
A	B	C	D
650g	345g	490g	700g

Based on the volume and the mass of the 4 cubes, which of the following statements is correct?

- (1) The bigger the mass of the object, the bigger its volume.
- (2) The smaller the mass of the object, the smaller its volume.
- (3) Objects with different mass can have the same volume.
- (4) Objects with the same mass can have different volume.



5. The flowchart below shows how some substances are put into groups A, B, C and D.



John wanted to classify heat in group C. However, his teacher said it was wrong.

Which of the following statements correctly shows his teacher's explanation?

- (1) It is a matter with a definite shape.
- (2) It is a matter with no definite shape.
- (3) It is not a matter and it can be seen.
- (4) It is not a matter and it cannot be seen.

()

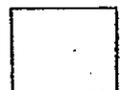
6. Different amounts of substance X was placed inside 5 identical 10m^3 containers. The table below shows the mass and volume of substance X in each container.

Container	A	B	C	D	E
Mass of X (kg)	12	14	16	18	20
Volume of X (m^3)	10	10	10	10	10

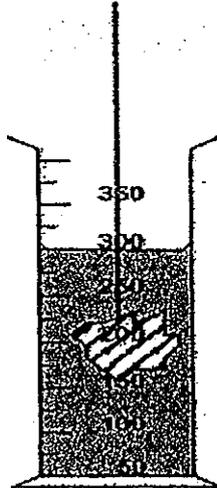
What is substance X most likely to be?

- (1) Air
- (2) Tea
- (3) Water
- (4) Marbles

()



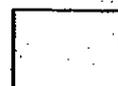
7. Grace lowered a piece of string attached to a stone into a measuring cylinder containing some water.



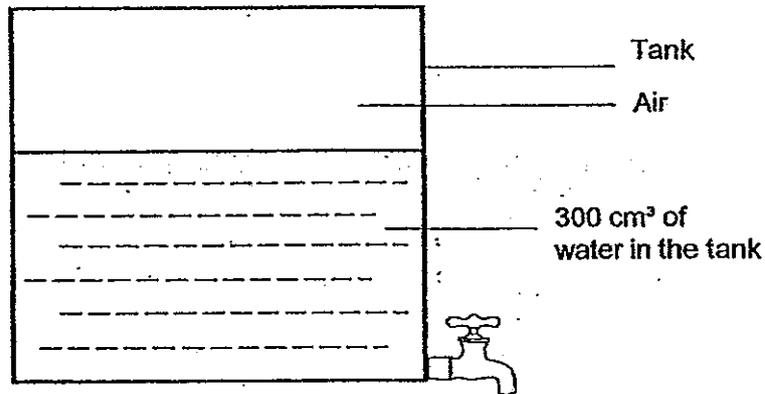
What could the possible volume of the stone and water be?

	Stone (cm ³)	Water (cm ³)
(1)	300	300
(2)	50	300
(3)	300	250
(4)	50	250

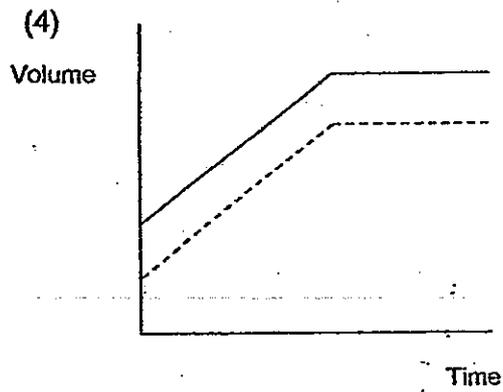
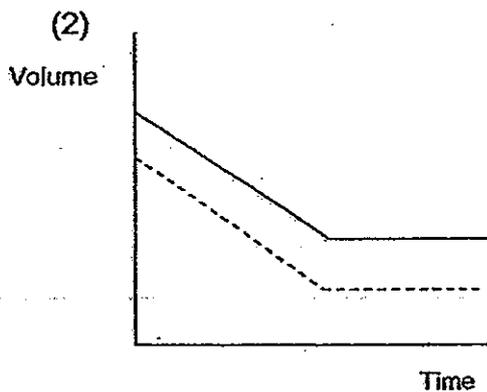
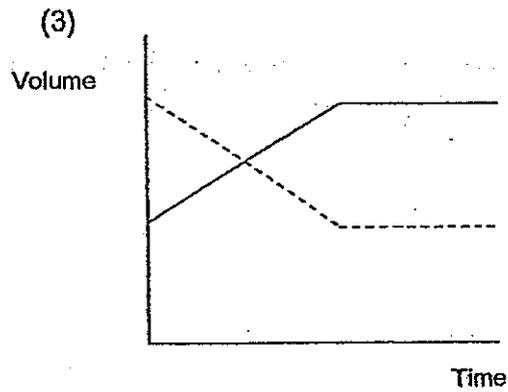
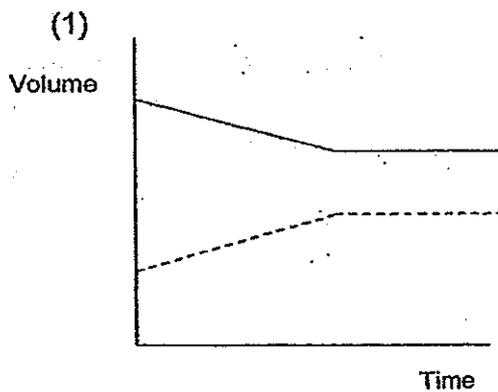
()



8. The diagram below shows a tank with a tap containing some water in it.



The volume of the container is 400cm³.
 When the tap was turned on, 50cm³ of water flowed out before the tap was turned off.
 Which one of the following graph shows how the volume of water and air changed after the tap was turned off?



————— Volume of Water
 - - - - - Volume of Air



9. Which of the following statements is true about heat?

- A: It occupies space.
- B: It is a form of energy.
- C: It has a definite shape.
- D: It can only be obtained from the Sun.

- (1) B only
- (2) B and D only

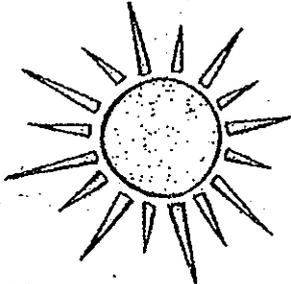
- (3) A, B and C only
- (4) A, B and D only

()

10. Which of the following is NOT a source of heat?

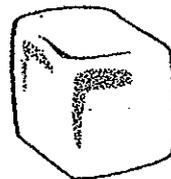
(1) The Sun

(3) Flame from a lighted matchstick



(2) Bunsen burner flame

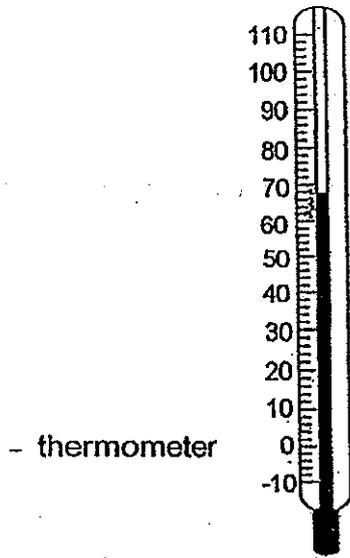
(4) An ice cube



()



11. What is the temperature shown in the thermometer below?

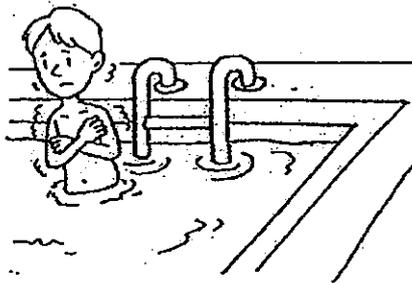


- (1) 64°C
- (2) 68°C

- (3) 70°C
- (4) 71°C

()

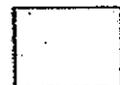
12. Ki Tan went to the swimming pool. When he got into the pool, he felt very cold and started shivering.



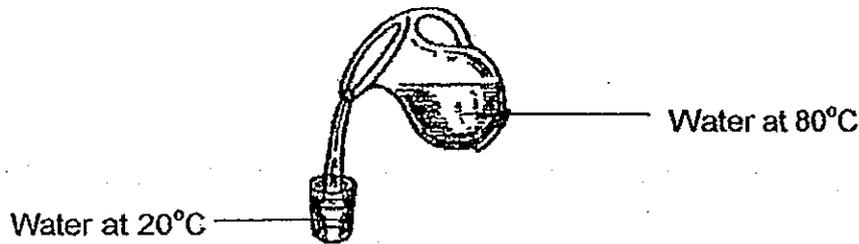
Which of the following explains why Ki Tan felt very cold?

	Ki Tan's body temperature	Temperature of the water in the pool	Ki Tan's body
(1)	Higher	Lower	Gains heat
(2)	Higher	Lower	Loses heat
(3)	Lower	Higher	Loses heat
(4)	Lower	Higher	Gains heat

()



13. The diagram below shows some hot water in a jug being poured into a glass that contained some cold water.



Which of the following statements is true after water from the jug is poured into the glass?

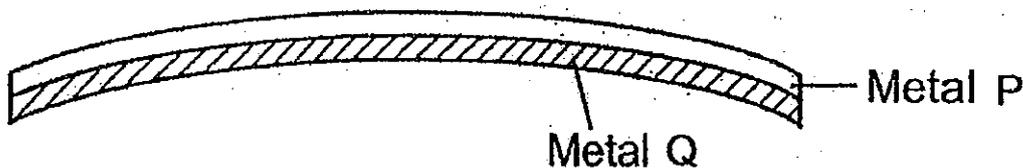
- A: The water in the glass will have a temperature of 80°C.
- B: The temperature of the water in the glass will increase.
- C: The temperature of the water in the glass will decrease.
- D: The water poured from the jug will lose heat to the water in the glass.

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

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

()

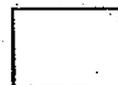
14. A straight bar was made up of 2 different metals, Metal P and Metal Q, joined together. When the bar was heated, it curled downwards as shown below.



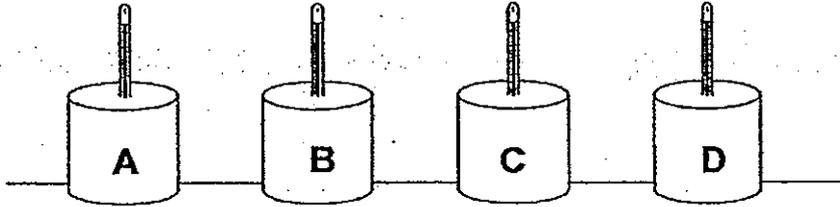
Which of the following correctly explains what happened to the bar?

- (1) Metal P expanded more than Metal Q.
- (2) Metal Q expanded more than Metal P.
- (3) Metal P expanded and Metal Q contracted.
- (4) Metal Q expanded and Metal P contracted.

()



15. Sonya placed 4 containers, A, B, C and D of different materials at the same location under direct sunlight for 5 hours.



The table below shows the temperature inside each container at 10-minute intervals.

Time (min)	Temperature (°C)			
	Container A	Container B	Container C	Container D
0	30	30	30	30
10	33	34	35	32
20	39	40	42	35
30	42	42	49	39
40	46	50	56	40

Which of the following containers, A, B, C or D, will keep drinks cold for the longest period of time?

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

()



Siti wanted to find out how temperature of coffee affects the amount of time taken for it to reach room temperature. She set up her experiment as follows.

20°C room temperature



Cup 1
100ml of coffee
5°C



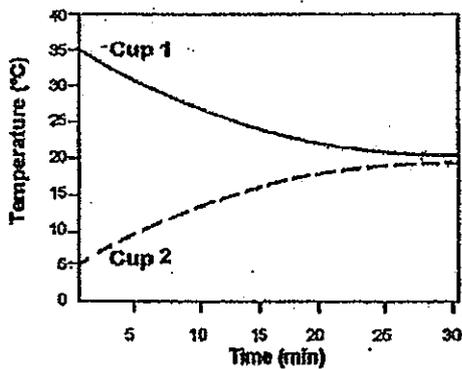
Cup 2
100ml of coffee
35°C

She left the 2 cups of coffee in the room for 30 minutes and recorded the temperature of the coffee in both cups at regular intervals. She then presented the data in a graph.

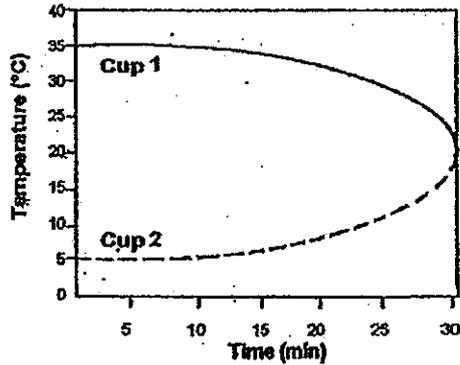
Answer questions 16 and 17 using the experiment above.

16. Which of the following graphs shows how the temperatures of the 2 cups of coffee most likely changed over 30 minutes?

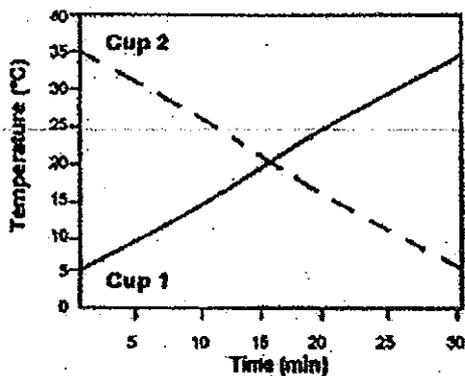
(1)



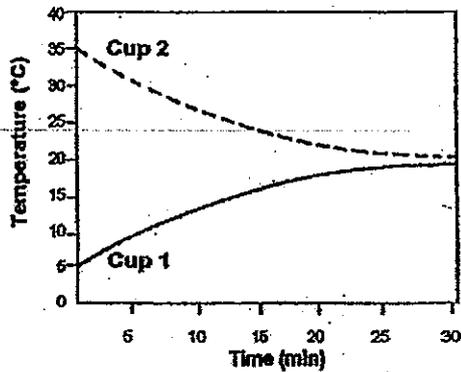
(3)



(2)



(4)



()



17. Which of the following variables must she keep the same to conduct a fair experiment?

A: Material of the cup

B: Amount of coffee in each cup

C: Temperature of coffee at end of experiment

D: Temperature of the coffee at start of experiment

(1) C only

(2) A and B only

(3) C and D only

(4) A, B and D only

()

18. Which of the following is NOT a system?

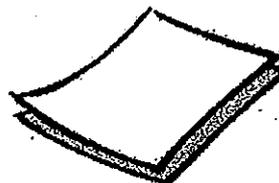
(1) A plant

(3) A car

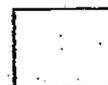


(2) An insect

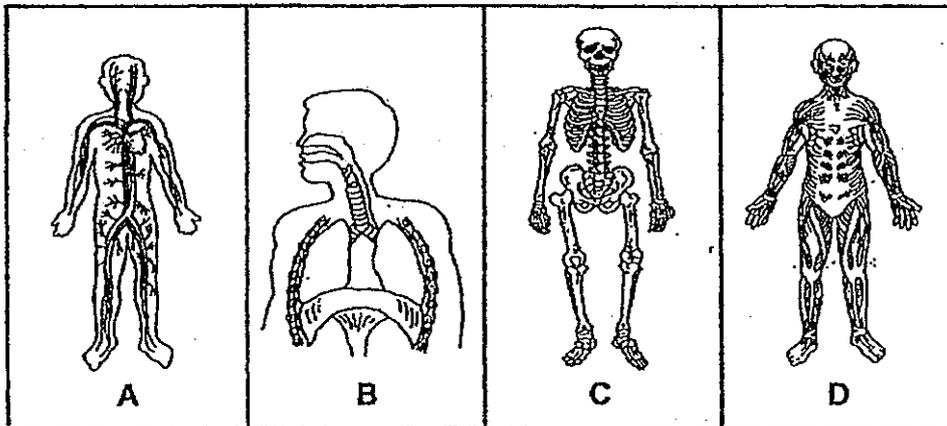
(4) A sheet of paper



()



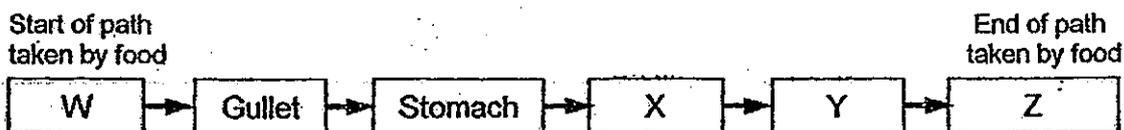
19. The diagram below shows the different systems in the human body.



Which of the following matches the system to its functions correctly?

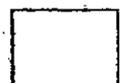
	A	B	C	D
(1)	Provides the shape for our body	Helps us move	Transports digested food to all parts of the body	Helps us breathe
(2)	Helps us move	Transports digested food to all parts of the body	Helps us breathe	Provides the shape for our body
(3)	Transports digested food to all parts of the body	Helps us breathe	Provides the shape for our body	Helps us move
(4)	Helps us breathe	Helps us move	Transports digested food to all parts of the body	Provides the shape for our body

20. The flowchart below shows the path taken by food in the human digestive system.



Which one of the following represents the small intestine?

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



21. The table below compares the functions of the small intestine and the large intestine in the human digestive system.

	Small intestine	Large Intestine
A:	Digestion of food is carried out.	No digestion of food takes place.
B:	Digested food is absorbed into the bloodstream.	Undigested food is absorbed into the bloodstream.
C:	Digestive juices are present here to digest food.	Digestive juices are present here to absorb water from the undigested food.

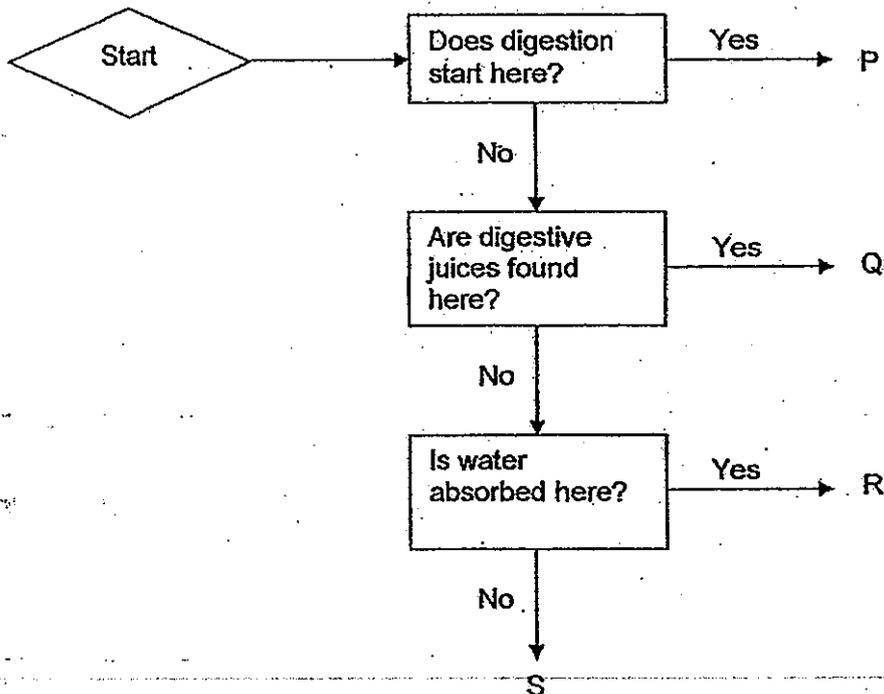
Which of the following comparison(s) is/are correct?

- (1) A only
(2) A and B only

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

()

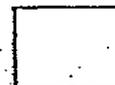
22. The flowchart below describes the characteristics of Organs P, Q, R and S in the human digestive system.



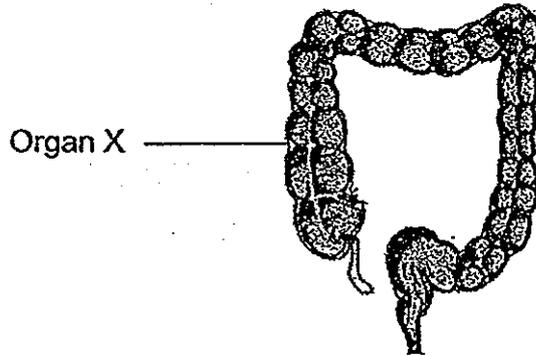
Which organ; P, Q, R or S, represents the mouth?

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

()



23. The diagram below shows organ X of the human digestive system.



Which of the following correctly describes the function of organ X?

- (1) There is digestion of food.
- (2) Digested food is absorbed here.
- (3) Water is removed from undigested food.
- (4) Partially digested food is pushed into the stomach.

()

24. The table below shows how some animals are classified according to their characteristics.

Lives on land			
Eats insects		Does not eat insects	
Can fly	Cannot fly	Can fly	Cannot fly
Animal S			Animal T

Based only on the classification table above, which of the following statements correctly describe the differences between Animals S and T?

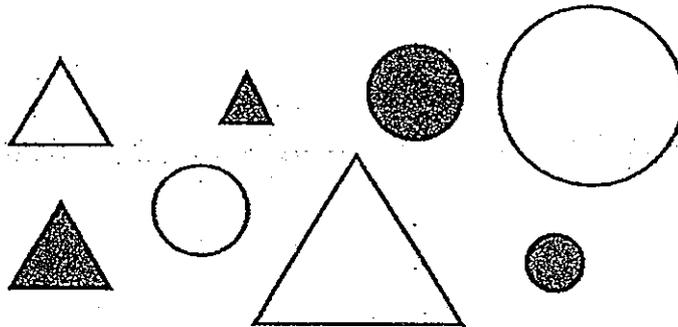
- A: Animal S can fly while Animal T cannot fly.
- B: Animal T has wings while Animal S does not.
- C: Animal S eats insects while Animal T does not.
- D: Animal T lives on land while Animal S does not.

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

()



25. The diagram below shows some objects.



How can the objects in the diagram above be classified?

- (1) By size only
- (2) By colour only
- (3) By shape and size only
- (4) By shape, colour and size

()

26. The table below shows the characteristics of 4 animals, S, T, U and V.

Which animal, S, T, U or V, is a bird?

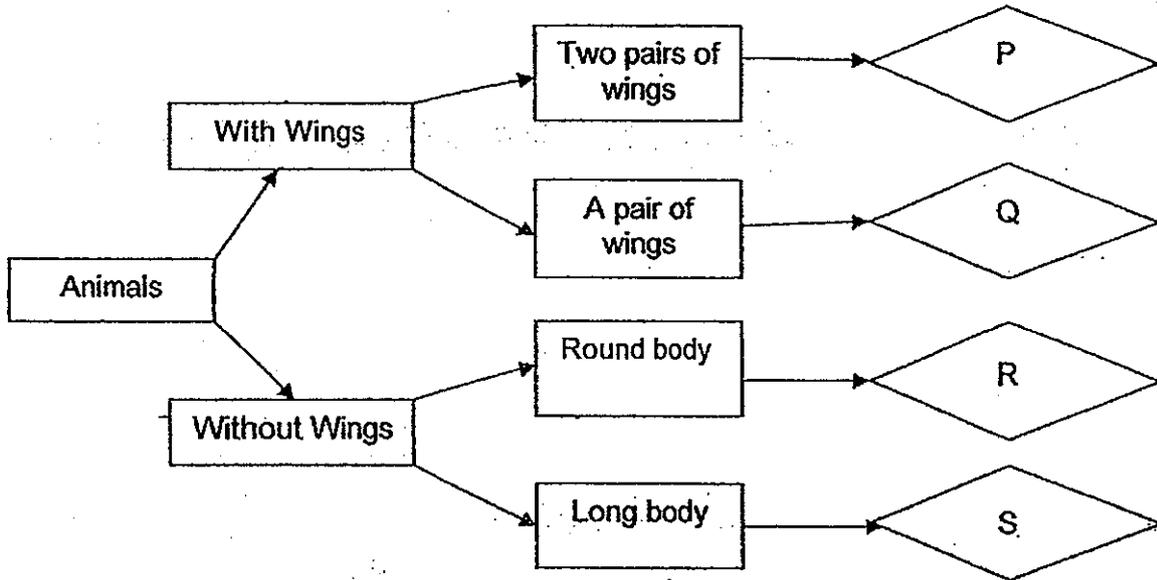
	Animals	Lay eggs	Has feathers	Live in water	Has wings
(1)	S	X	X	✓	X
(2)	T	✓	X	X	✓
(3)	U	✓	✓	X	✓
(4)	V	✓	X	✓	X

()

A (✓) means it has the characteristics and a (X) means it does not.



27. The flow chart below shows classification of animals into 4 groups, P, Q, R and S.



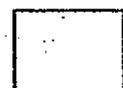
Using the information of the flow chart above, which of the following group is Animal A likely to be in?



Animal A

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

()



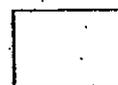
28. Zahar conducted an experiment using 4 similar slices of bread to find out how quickly bread mould will grow in different conditions.

	Condition of place where bread is placed	Amount of moisture on bread
A	Cold	Low
B	Warm	High
C	Warm	Very Low
D	Very Cold	Very Low

On which bread will he see the most amount of bread mould after 6 days?

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

()

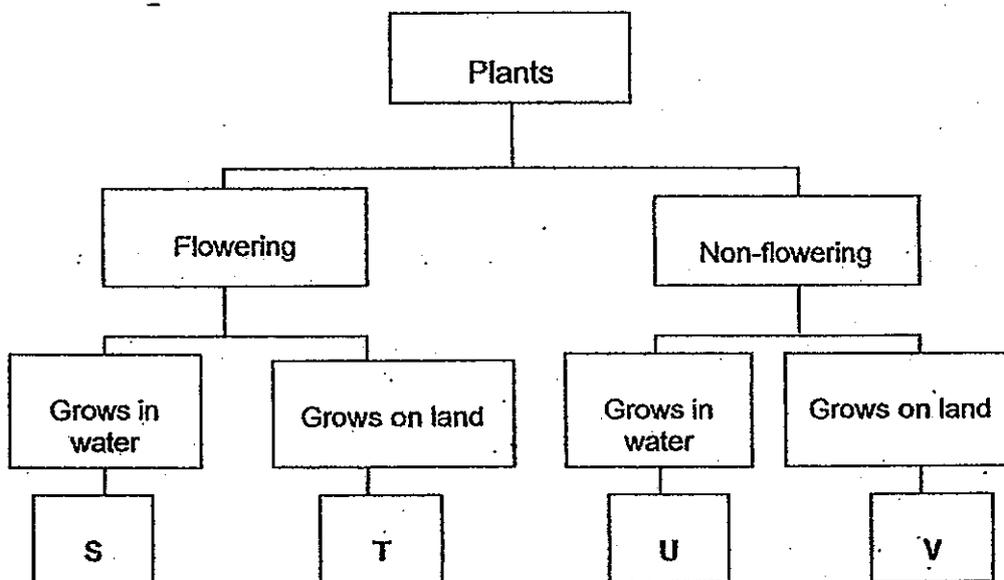


29. Nelson studied 4 plants, A, B, C and D, and recorded his observations in the table below.

A (✓) means it has the characteristics and a (X) means it does not.

Plants	Characteristics	
	Bears fruit	Grows on land
A	✓	✓
B	✓	X
C	X	✓
D	✓	✓

The classification chart below shows how some plants are classified into 4 groups, S, T, U and V.



In which group, S, T, U or V, can Plant D be placed in?

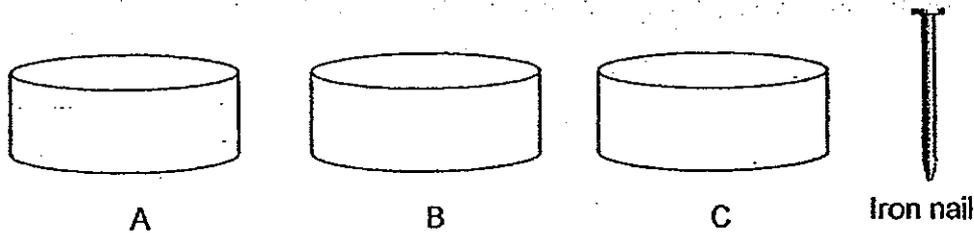
- (1) S
- (2) T
- (3) U
- (4) V

()



30. Jenny compared the hardness of 3 containers, A, B and C shown below by scratching them with an iron nail.

She then recorded her observations in the table below, using a tick (✓) to show that there are scratch marks on the containers.



Appearance of containers	Scratch marks found on each container		
	A	B	C
Deeply scratched	X	✓	X
Lightly scratched	X	X	✓
No scratches	✓	X	X

A (✓) means it has scratches and a (X) means it does not have scratches.

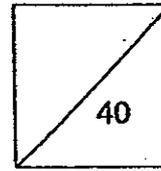
Based on the results above, arrange the containers from the softest to the hardest.

	Softest	→	Hardest
(1)	A		C
(2)	B		A
(3)	C		A
(4)	B		C

End of Booklet A



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2013 SEMESTRAL EXAMINATION I
SCIENCE
PRIMARY 4



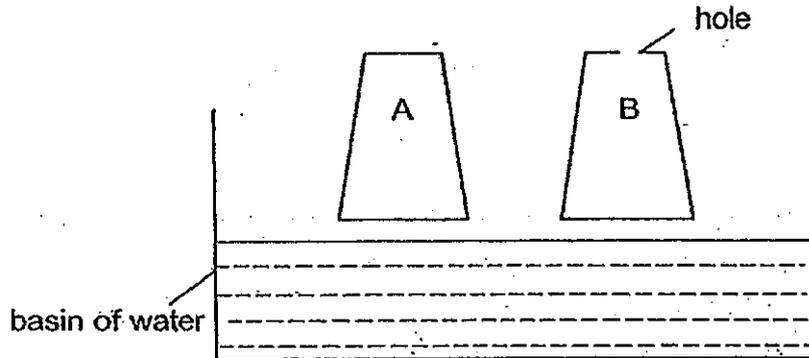
Name: _____ ()

Class: Pr 4 _____

Booklet B (40 marks)

Write your answers to questions 31 to 44 in the spaces given.

31. 2 identical cups A and B were inverted into a basin of water in the diagram shown below. Cup B has a hole at its base.



- a) In which cup, A or B, will more water enter?

_____ (1m)

- b) Explain your answer in (a).

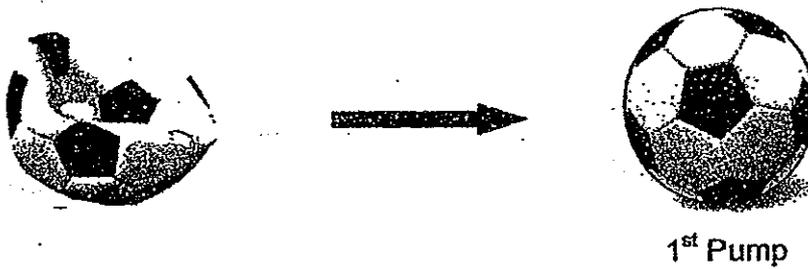
_____ (2m)



32. Peter was given a deflated soccer ball as shown below. He pumped in air and realised that the ball became inflated.

He measured the mass of the ball and recorded it down in the table.

Then he pumped in more air into the ball another 2 times and recorded the mass in the table below.

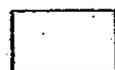


				
	Deflated ball	1 st Pump	2 nd Pump	3 rd Pump
Mass of ball	500g	600g	690g	750g

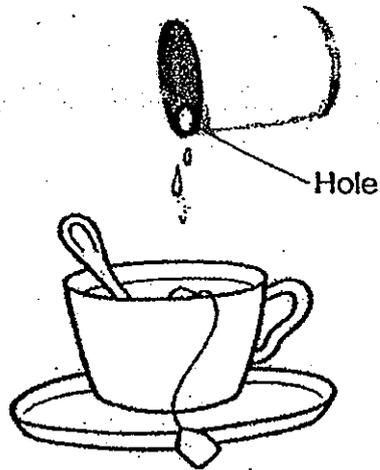
Study the table above carefully.

a) As more air was pumped into the ball, the size of the ball remained the same. Explain why. (1m)

b) Explain why the mass of the ball increased from 500g to 750g. (1m)



33. Jamie wants to make a cup of tea. She used a can opener and punctured a hole in a can of milk. While pouring the milk into a cup, she realised that the milk was flowing out very slowly.

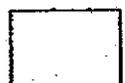


a) Why is the milk flowing out so slowly?

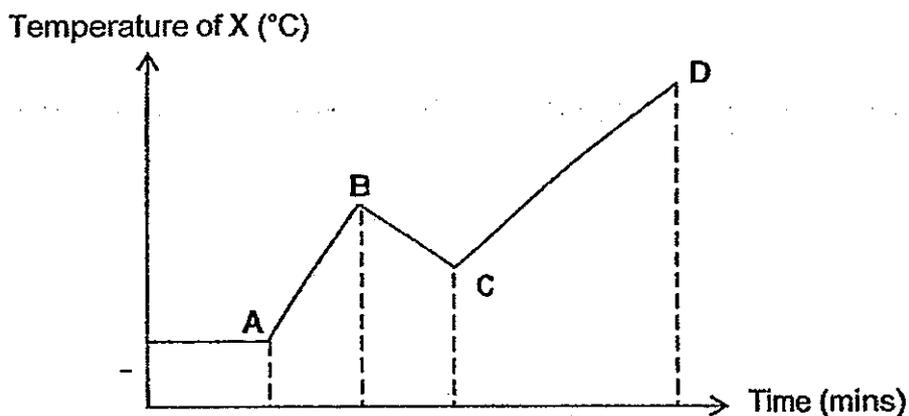
(2m)

b) What can Jamie do to let the milk flow out more quickly into the cup?
Give a reason for your answer.

(2m)



34. The graph below shows the changes in the temperature of substance X as it was heated.

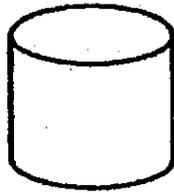


- a) At which point(s), A, B, C or D, was substance X heated? (1m)

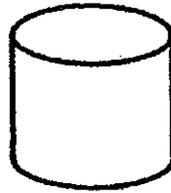
- b) At which parts of the graph, AB, BC or CD, was substance X gaining heat? (1m)

- c) At which part of the graph, AB, BC or CD, was the temperature of substance X decreasing? Give a reason for this change. (2m)

35. The diagram below shows 2 similar containers A and B. One is made of steel and the other plastic. 300ml of water at 80°C was poured into each container.



Container A



Container B

The temperature of water in each container was measured and recorded at 10-minute intervals as shown in the table below. The room temperature was 28°C.

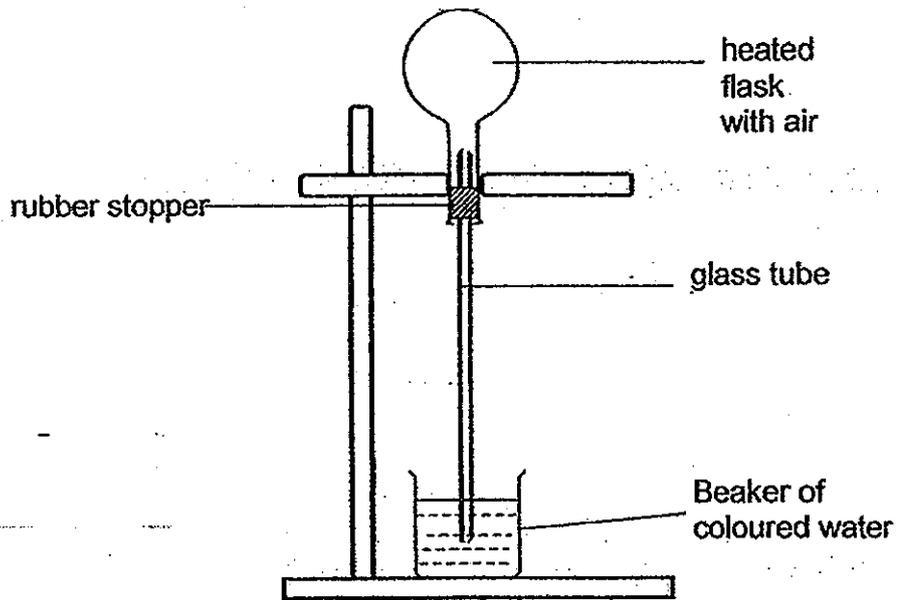
Temperature of water in the containers					
Time taken	0 min	10 min	20 min	30 min	40 min
A	80°C	58°C	44°C	28°C	28°C
B	80°C	71°C	65°C	54°C	46°C

- a) State which container, A or B, is made of steel. (1m)

- b) Using information from the table, explain your answer in (a). (2m)



36. Alice carried out an experiment using the set-up below.



She heated the flask gently with a flame. After some time, she observed some bubbles in the coloured water of the beaker.

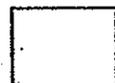
a) Explain how the bubbles were formed.

(2m)

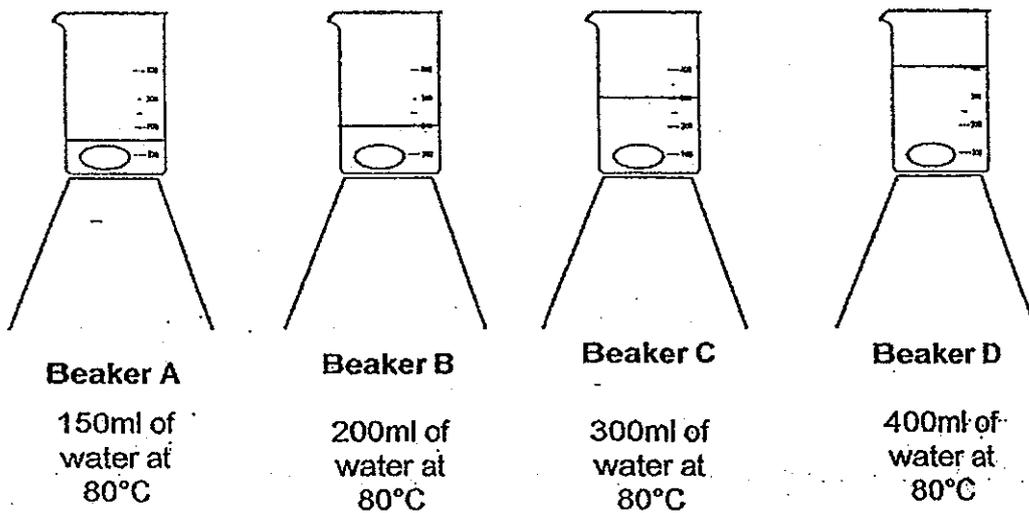
b) Alice used another set-up similar to the one above. She used ice to cool the flask instead of heating it.

Then she observed some coloured water in the glass tube. Explain why.

(2m)



37. Jane conducted an experiment using 4 similar raw eggs. She placed each egg into 4 identical beakers. Then she poured different amounts of water of the same temperature into each beaker as shown below.

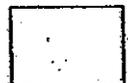


After 10 minutes, she recorded the result in the table below.

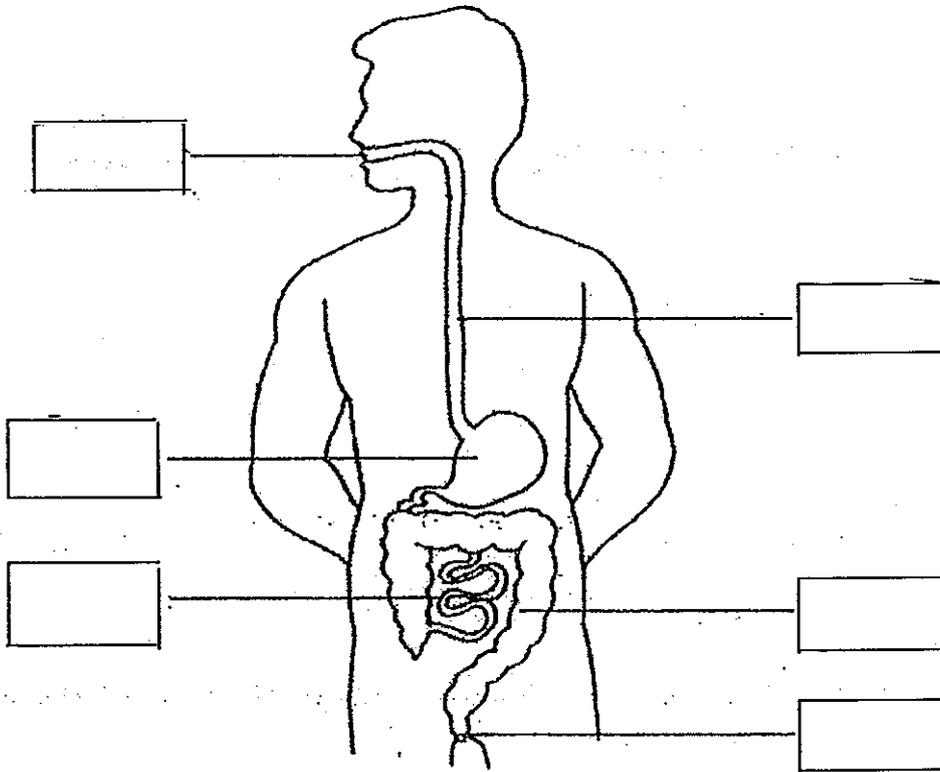
Condition of eggs			
Beaker A	Beaker B	Beaker C	Beaker D
Not cooked at all	slightly cooked	Three-quarter cooked	Fully cooked

- a) Name the variable that is changed in this experiment. (1m)

- b) In which ^{beaker} container, A, B, C or D, does water have the least amount of heat? Using information from the table, give a reason for your answer. (2m)



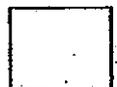
38. The diagram below shows the human digestive system.



a) Tick (✓) in the boxes provided above the parts of the digestive system where food is digested. (2m)

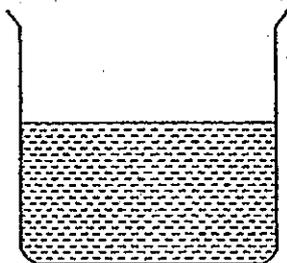
b) Name the organ in which food absorbed into the bloodstream. (1m)

c) Name the organ in which digestion is completed. (1m)

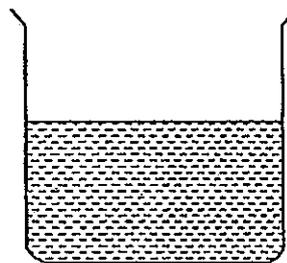


39. Gupta carried out an experiment to find out if human saliva breaks down starch in the food we eat.

He prepared 2 beakers, A and B, each with 10ml of starch solution. He added 5ml of saliva to Beaker B only.



Beaker A
10ml starch solution
No saliva added



Beaker B
10ml starch solution
5ml saliva added

After some time, Gupta added some iodine solution into each beaker to check for the presence of starch.

Iodine solution will turn dark-blue if starch is present, and will remain brown if starch is absent.

a) What must Gupta keep the same when using the iodine solution during the experiment? (1m)

b) Gupta recorded his results in the table below.

Beaker	A	B
Colour of Iodine	Dark blue	Brown

Based on his results, what can Gupta conclude from this experiment? (1m)



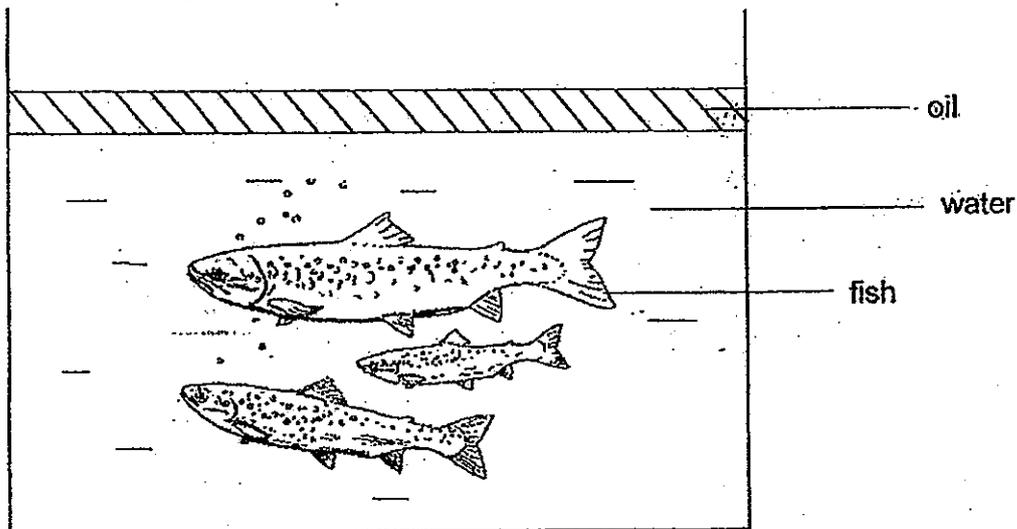
40. Mr Tan carried out an experiment using some uncooked meat. The table below shows the steps and results of the experiments.

	Set-up A	Set-up B
Type of uncooked meat	One large piece With a mass of 100 grams	15 smaller pieces With a total mass of 100 grams
Amount of digestive juice added	40 ml	40 ml
Time taken to be fully digested	6 hours	3 hours

Explain why the meat in set-up B took a shorter time to be fully digested.

(2m)

41. Study the diagram of the fish tank below.



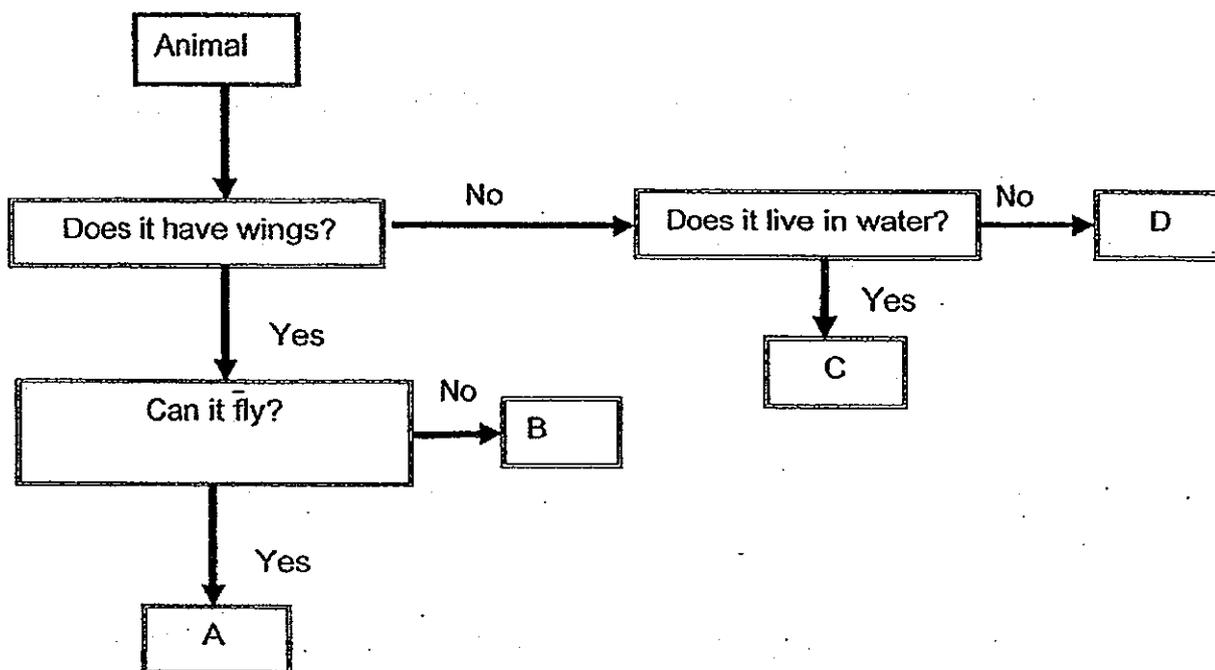
Complete the statements below based on the diagram above.

(2m)

- (a) The fishes died after some time as they did not get enough _____
- (b) The fishes also need _____ to survive.



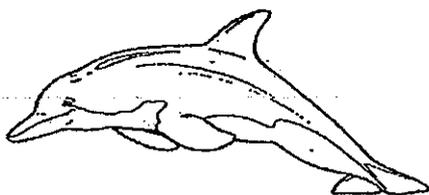
42. The flowchart below shows the characteristics of Animals A, B, C and D. (2m)



Based on the flow chart above, write the letters, A, B, C and D in the correct boxes below to represent the following 4 animals.

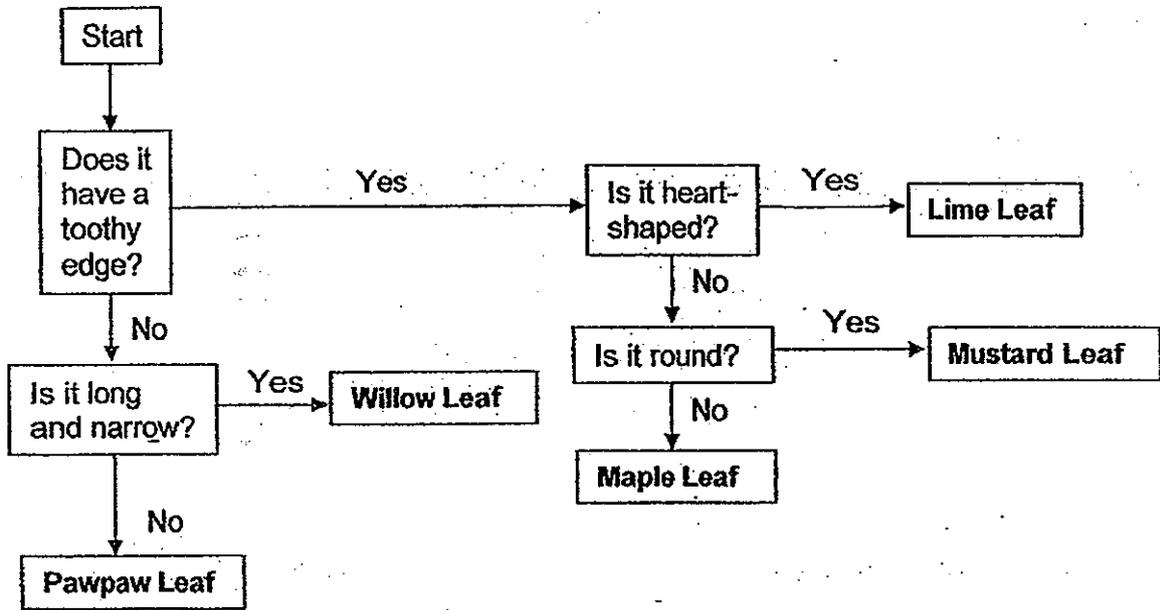






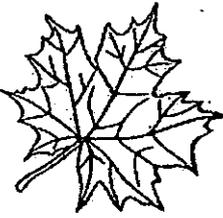
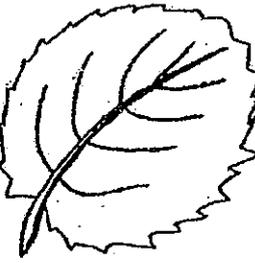
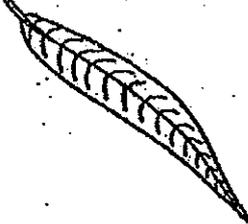


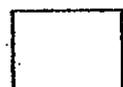
43. The flow chart below shows the characteristics of 5 different kinds of leaves.



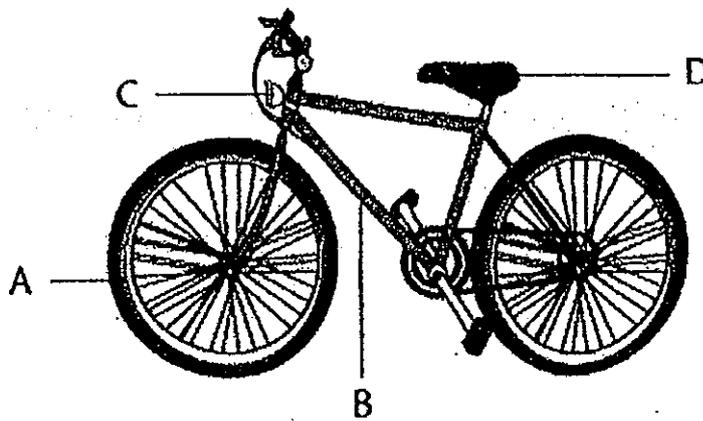
(3m)

Use the flow chart to identify and write the names of the 3 leaves A, B and C shown below.

Leaf A	Leaf B	Leaf C
		



44. The diagram below shows a bicycle.



From the picture above, choose the correct parts that are made of the following materials and write the letters, A, B, C or D, in the boxes below.

(2m)

Material	Part of bicycle
Metal	
Rubber	

End of Booklet B

Setters: Mrs Liu YH & Mdm Doris Heng



ANSWER SHEET

EXAM PAPER 2013

SCHOOL : HENRY PARK

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	4	3	3	4	1	4	1	1	4	2	2	2	1	4	4	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	3	2	1	1	3	2	4	3	4	2	2	2

Q31a) Cup B

Q31b) The hole allows air to escape so that more water enters the space previously occupied by the air.

Q32a) Air can be compressed.

Q32b) Air pumped in is matter and air has mass.

Q33a) There is no opening for the air to enter the can.

Q33b) Make another opening in the can.

Q34a) Points A and C

Q34b) Parts CD and AB

Q34c) BC. Substance X lost heat to the surrounding air.

Q35a) Container A

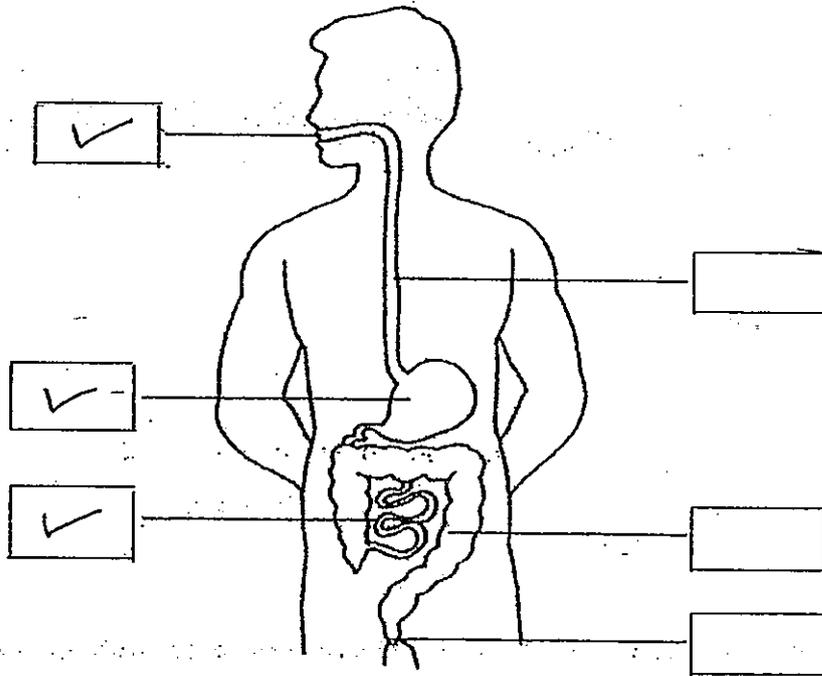
Q35b) The temperature of the water in container A reached 28°C in a shorter time and this shows that A is a better conductor of heat.

Q36a) Air gained heat and expanded and escaped from the glass tube as air bubbles.

Q36b) The air contracted when it lost heat so the coloured water went up the tube to occupy the space previously occupied by the air.

Q37a) The amount of water poured into the beakers.

Q37b) Beaker A. It contains the egg that is least cooked in 10 minutes.
 Q38a)



Q38b) Small intestine

Q38c) Small intestine

Q39a) The amount of iodine used.

Q39b) Gupta can conclude that human saliva breaks down starch in food we eat.

Q40) The meat in set-up B has been cut into smaller pieces with bigger total exposed surface area and it was easier to digest.

Q41a) air

Q41b) food

Q42)

D	B
C	A

Q43) Leaf A: Maple Leaf

Leaf B: Mustard Leaf

Leaf C: Willow Leaf

Q44) Metal: B, C

Rubber: A, D

METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887



MID-YEAR EXAMINATION 2013 PRIMARY 4 SCIENCE

BOOKLET A

Total Time for Booklets A and B: 1 hour 45 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. _____

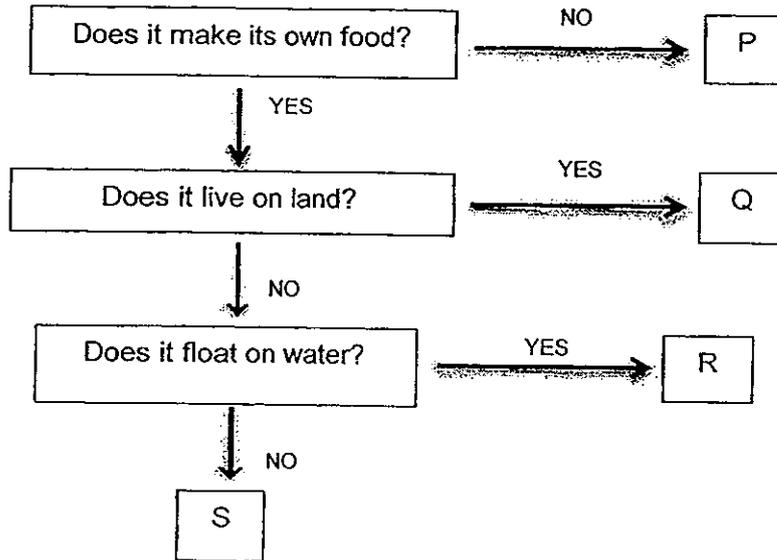
Date: 16 May 2013

This booklet consists of 15 printed pages excluding this page.

For each question 1 – 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the optical answer sheet.

[50 marks]

1 Study the classification table below.



Which of the following correctly shows what P, Q, R and S most likely represent?

	P	Q	R	S
(1)	earthworm	bird nest fern	duckweed	hydrilla
(2)	rabbit	mushroom	hydrilla	duckweed
(3)	toadstool	moss	grass	duckweed
(4)	earthworm	rabbit	duckweed	hydrilla

2 Which of the following sentences best explains the importance of the dead log to mushrooms?

- (1) The log provides mushrooms with food.
- (2) The log helps mushrooms make food.
- (3) Parts of the log are used to grow mushrooms.
- (4) Mushrooms obtain its oxygen from the log.

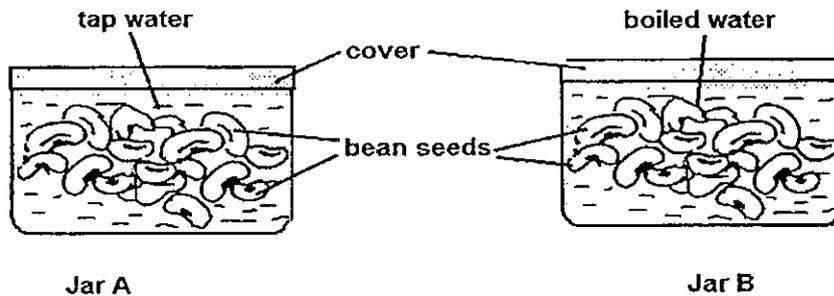
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- 3 The animals below are grouped according to the way they reproduce.

Type of reproduction	
Group A	Group B
sea lion	seagull
rabbit	platypus
whale	goldfish
seal	molly

Which of the animals is wrongly grouped?

- (1) Molly
 - (2) Seagull
 - (3) Sea lion
 - (4) Platypus
- 4 The diagram below shows two jars, Jar A and Jar B, containing some beans and water. They are placed in the classroom.

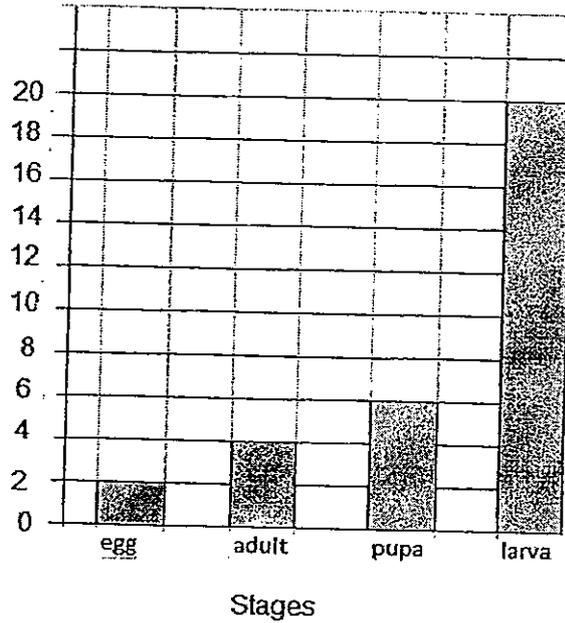


After two days, some green beans in Jar A germinated but none of the beans in Jar B did. What does this experiment show?

- (1) Beans need air to germinate.
- (2) Beans need light to germinate.
- (3) Beans need food to germinate.
- (4) Beans need water to germinate.

- 5 Alice studied the life cycle of an insect X. She recorded the number of days for each stage of its life cycle. Her results are shown in the graph below. However, the stages are not arranged in the correct order.

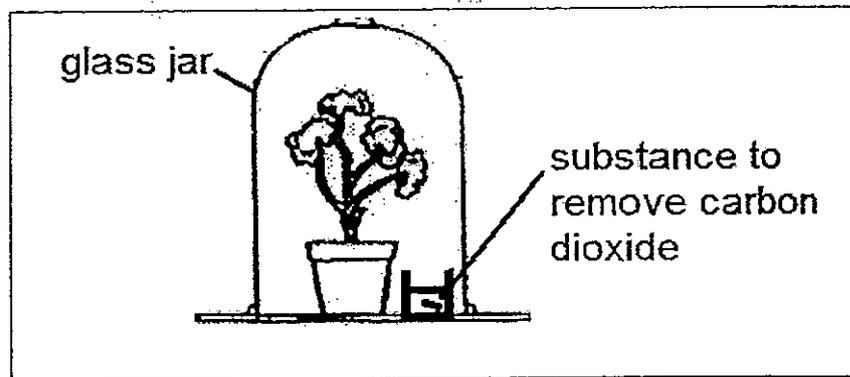
Number of days



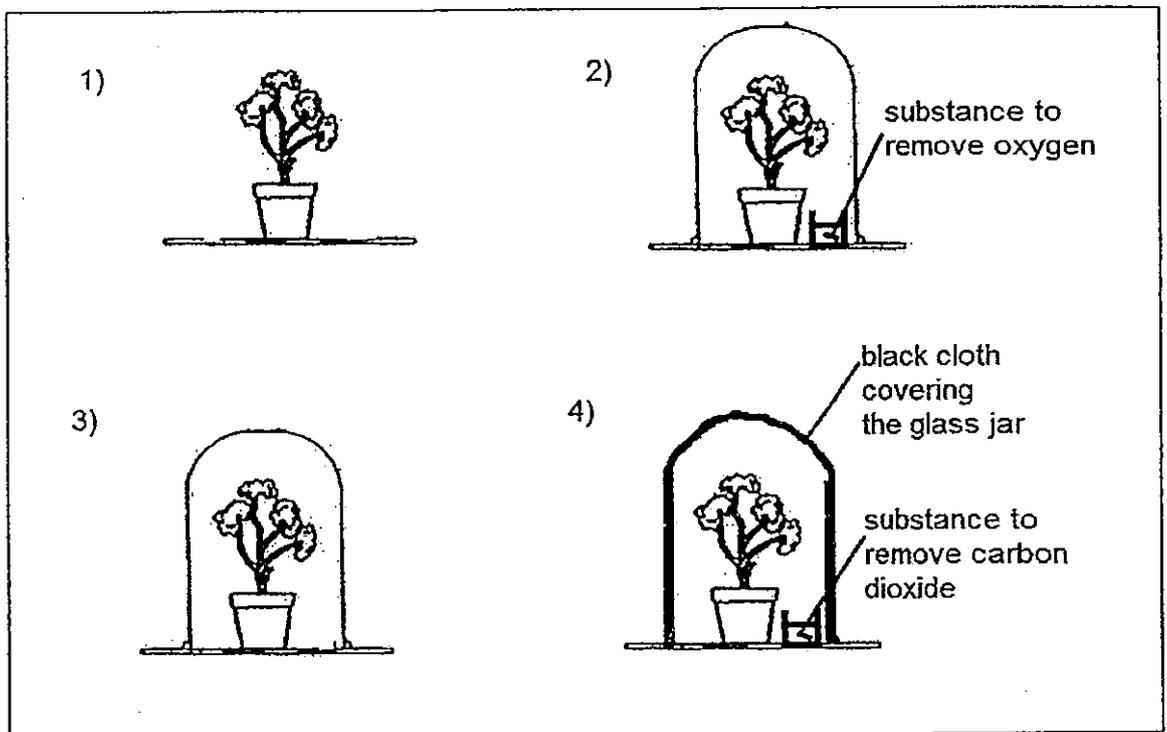
Based on her results, how many days does the insect take to become an adult after the egg has hatched?

- (1) 6 days
- (2) 16 days
- (3) 24 days
- (4) 26 days

- 6 Sam conducted an experiment to find out whether carbon dioxide is needed for photosynthesis. She used the set-up shown below.

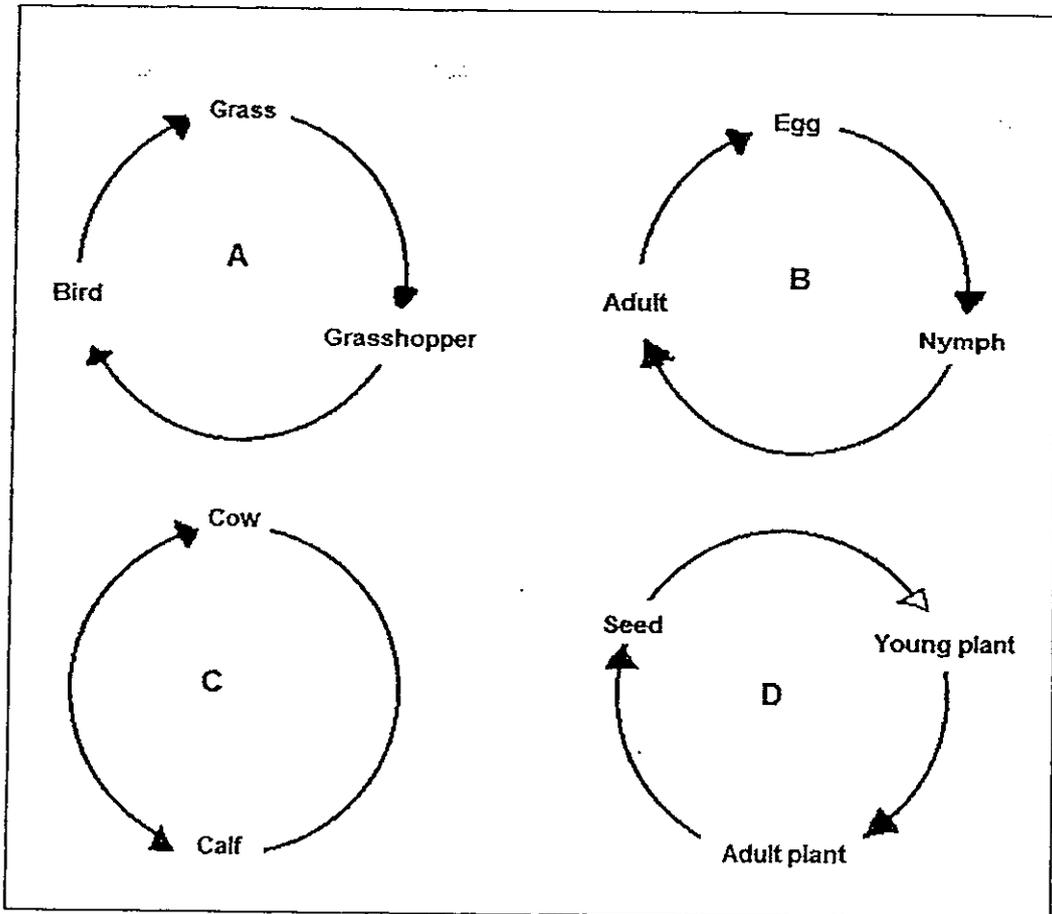


Which one of the following should Sam use as a control for his experiment?



Go on to the next page

7 Which of the following is/are not a life cycle?

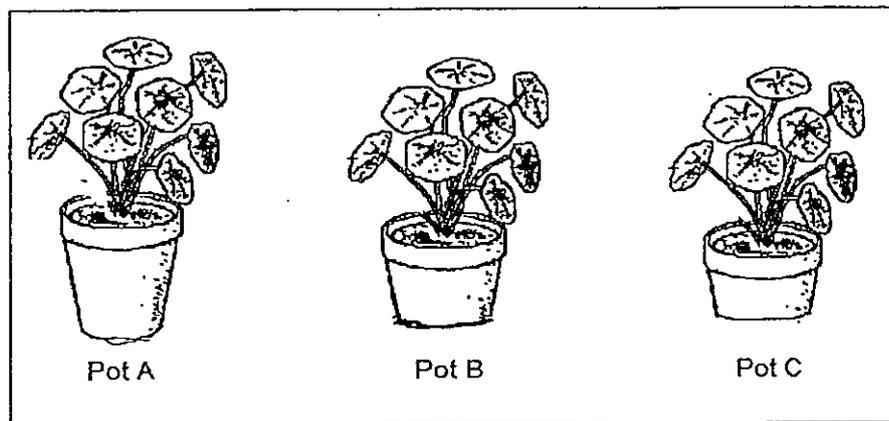


- (1) A only
- (2) A and C only
- (3) A, B and C only
- (4) B, C and D only

- 8 Jenny wanted to find what type of soil was suitable for growing plants. She planted 3 plants of similar size in three pots, A, B and C.

	A	B	C
Material of pot	Porcelain	Porcelain	Porcelain
Type of soil	Garden soil	Sand	Clay
Size of pot	1000cm ³	500cm ³	200 cm ³
Amount of water used every day	200 cm ³	200cm ³	200cm ³

The three plants were placed in the garden.

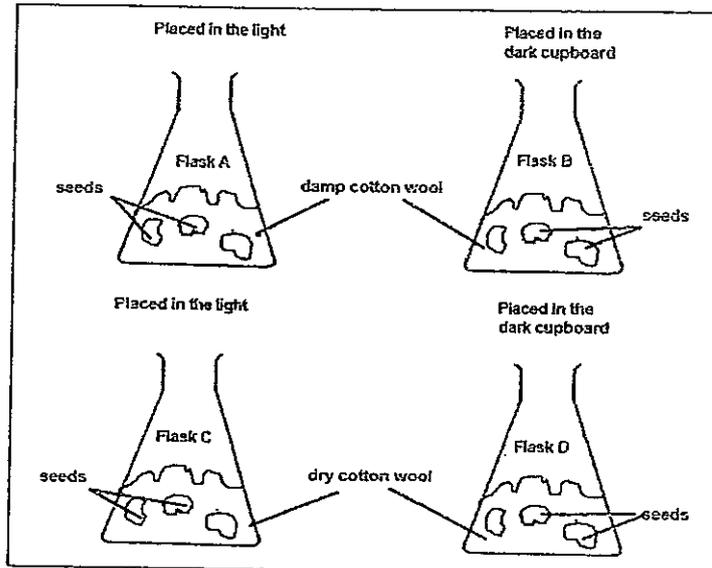


Her teacher told her that her experiment was not a fair test. Why was it not fair?

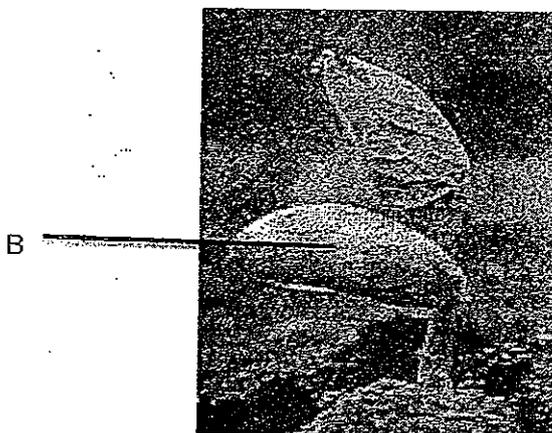
- (1) The amount of soil in each pot was different.
- (2) The type of soil used in each pot was different.
- (3) The three pots were given the same amount of water.
- (4) The balsam plant in Pot A was placed in the shade in the garden.

- 9 Sally carried out an experiment as shown in the diagram below. At the end of the experiment, she observed that the seeds grew into seedlings in Flasks A and B but not in the other two.

What was Sally trying to find out from her experiment?

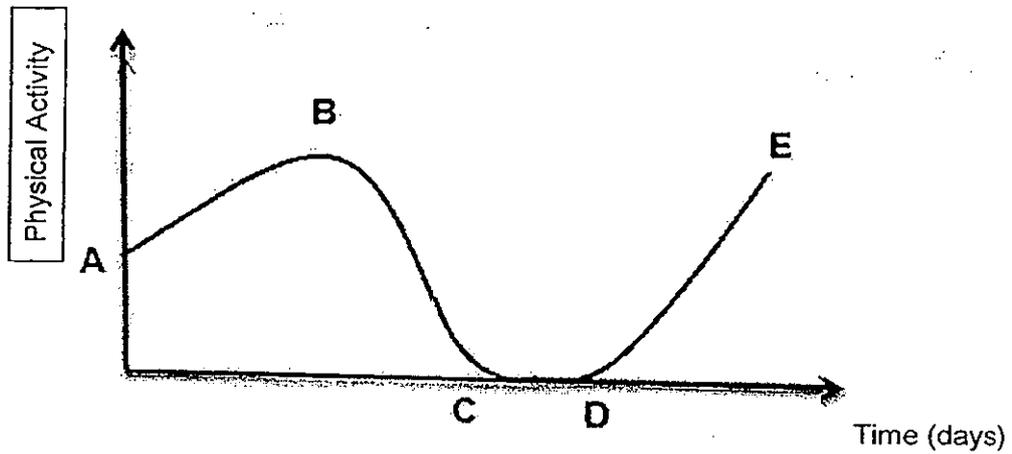


- (1) Seeds need water to germinate.
 - (2) Seedlings need light to photosynthesize.
 - (3) Seeds need water and light to germinate.
 - (4) Seedlings need air, water and light to germinate.
- 10 The picture below shows a seed growing. What is the function of part B?



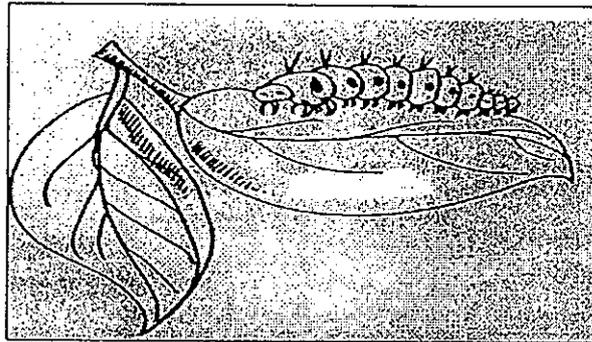
- (1) To protect the seedling.
- (2) To make food for the seedling.
- (3) To store water for the seedling.
- (4) To provide food for the seedling.

- 11 The rate of physical activity of a butterfly over its life cycle is shown in the graph below.



Which one of the following stages is represented by line C to D in the graph?

- (1) Egg
 - (2) Pupa
 - (3) Larva
 - (4) Adult
- 12 The diagram below shows a caterpillar.



Based only on what you can see in the diagram, which of the following statements about the caterpillar is/ are true?

- A : It is green in colour.
- B : It can be found on plants.
- C : It reproduces by laying eggs.
- D : Its body is made up of many segments.

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

Go on to the next page

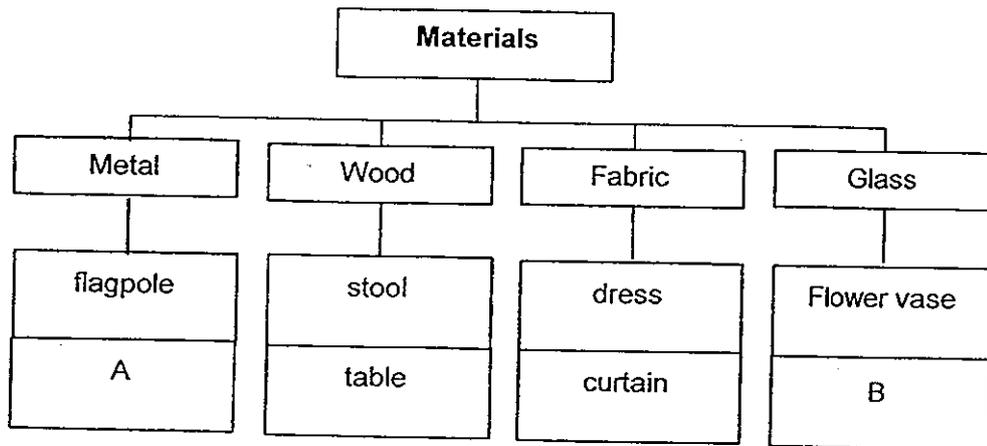
13 The table below shows the characteristics of three objects A, B and C.

Characteristics / Object	A	B	C
Bends easily	✓	✓	✓
Stretched easily	✓	✓	x

Which one of the following sets of objects best fits the description in the table above?

	A	B	C
(1)	rubber boots	cardboard	rubber band
(2)	paper	sponge	rubber band
(3)	rubber band	swimsuit	paper
(4)	cardboard	rubber band	swimsuit

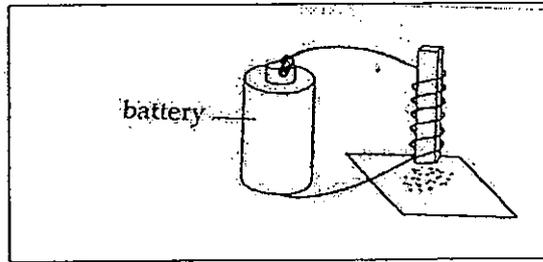
14 Study the classification diagram below. It shows how some objects have been classified according to the material they are made of.



What are objects A and B most likely to be?

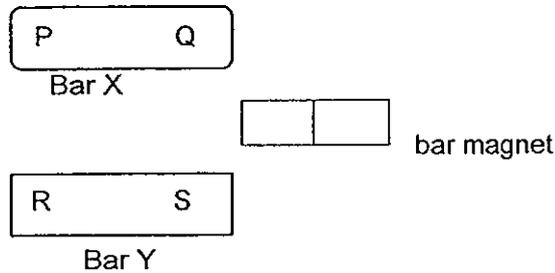
	A	B
(1)	magnet	windowpane
(2)	stapler	drink can
(3)	ring file	mirror
(4)	screw	earrings

- 15 Sandy wants to make an electromagnet. She sets up the experiment as shown below. There is no attraction when she places the metal bar near some iron filings.



What is a possible reason why the iron filings are not attracted to the metal bar?

- (1) The metal bar is made of aluminium.
 - (2) The iron filings have lost their magnetism.
 - (3) The electrical wires should be connected to the electrical mains.
 - (4) The electrical wire must be coiled many times around the metal bar.
- 16 An experiment was carried out using a magnet and two bars, X and Y.



The magnet was brought close to Bar X and observations made were recorded. The same procedure was carried out between the magnet and Bar Y. Observations were also recorded. Which of the following would indicate that Bar X is a magnet and Bar Y is not?

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

- 17 Sally had messed up the cards which showed the steps to find the volume of a pebble.

A. Find the difference between the old and new volumes.

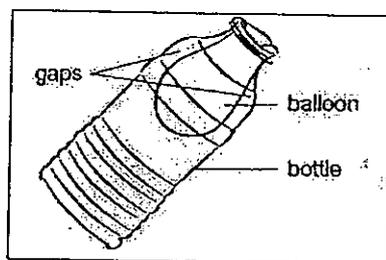
B. Fill the measuring cylinder with 20 ml of water.

C. Take the total volume of the water and the pebble.

D. Place the pebble into the water carefully.

Arrange the cards to show the correct order to finding the volume of the pebble.

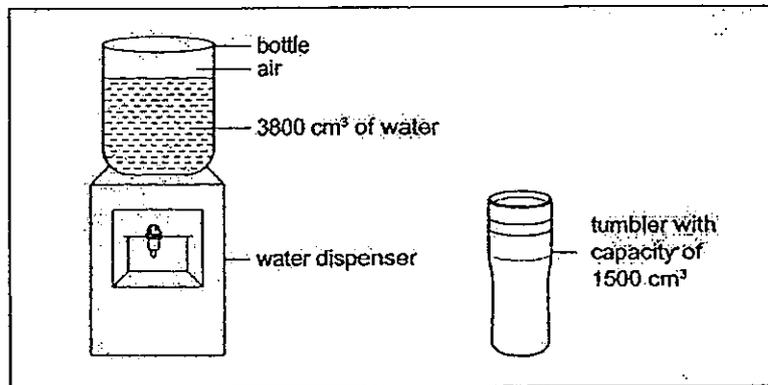
- (1) A,D,C,B
 - (2) B,D,C,A
 - (3) B,D,A,C
 - (4) D,B,C,A
- 18 Tammy secures a deflated balloon over the mouth of a bottle. She then pumps air into the balloon as she wants it to fill up the whole bottle. However, she realizes that it is almost impossible to blow the balloon up.



Why is it not possible for the balloon to inflate inside the bottle?

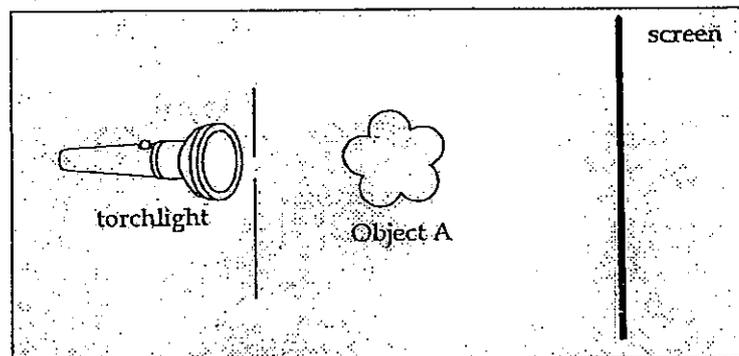
- (1) The container has a fixed shape
- (2) The balloon is not elastic enough.
- (3) The air inside the container occupies space.
- (4) The air in the balloon cannot be compressed.

- 19 The bottle of a water dispenser had a capacity of 5000 cm^3 . John filled his tumbler which had a capacity of 1500 cm^3 with water from the dispenser.



After John had completely filled the tumbler with water from the dispenser, what was the volume of air left in the water dispenser?

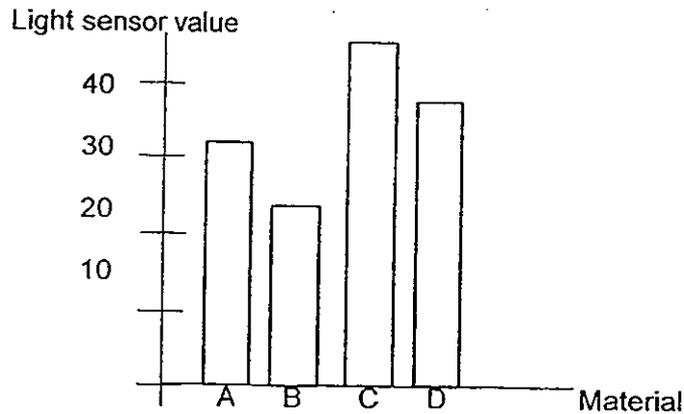
- (1) 1200 cm^3
 - (2) 2300 cm^3
 - (3) 2700 cm^3
 - (4) 3800 cm^3
- 20 What should Ali do to make the shadow of Object A larger?



- A. Without changing the position of the torchlight, he should put Object A nearer to the screen.
- B. Without changing the position of the torchlight, he should put Object A further away from the screen.
- C. Without changing the position of the screen, he should put Object A nearer to the light source.
- D. Without changing the position of the screen, he should put Object A further away from the light source.

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

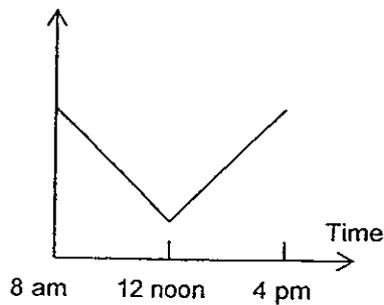
- 21 Benny connected a light sensor to a data logger. With the help of his computer, he tested four different materials to see which would allow the most light to pass through. He plotted the graph of the readings as shown below.



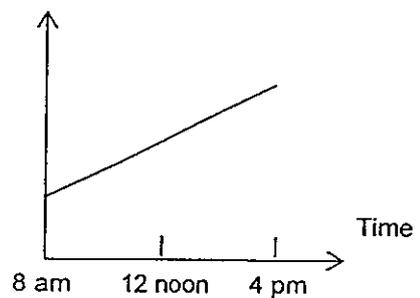
Which of the following is the best choice to make a curtain for the bedroom?

- (1) A
 (2) B
 (3) C
 (4) D
22. Which of the following shows the correct changes in the lengths of the shadow of a tree throughout the day?

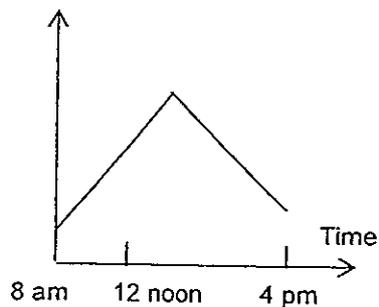
(1) Length of shadow



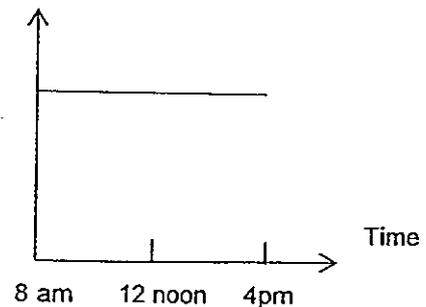
(3) Length of shadow



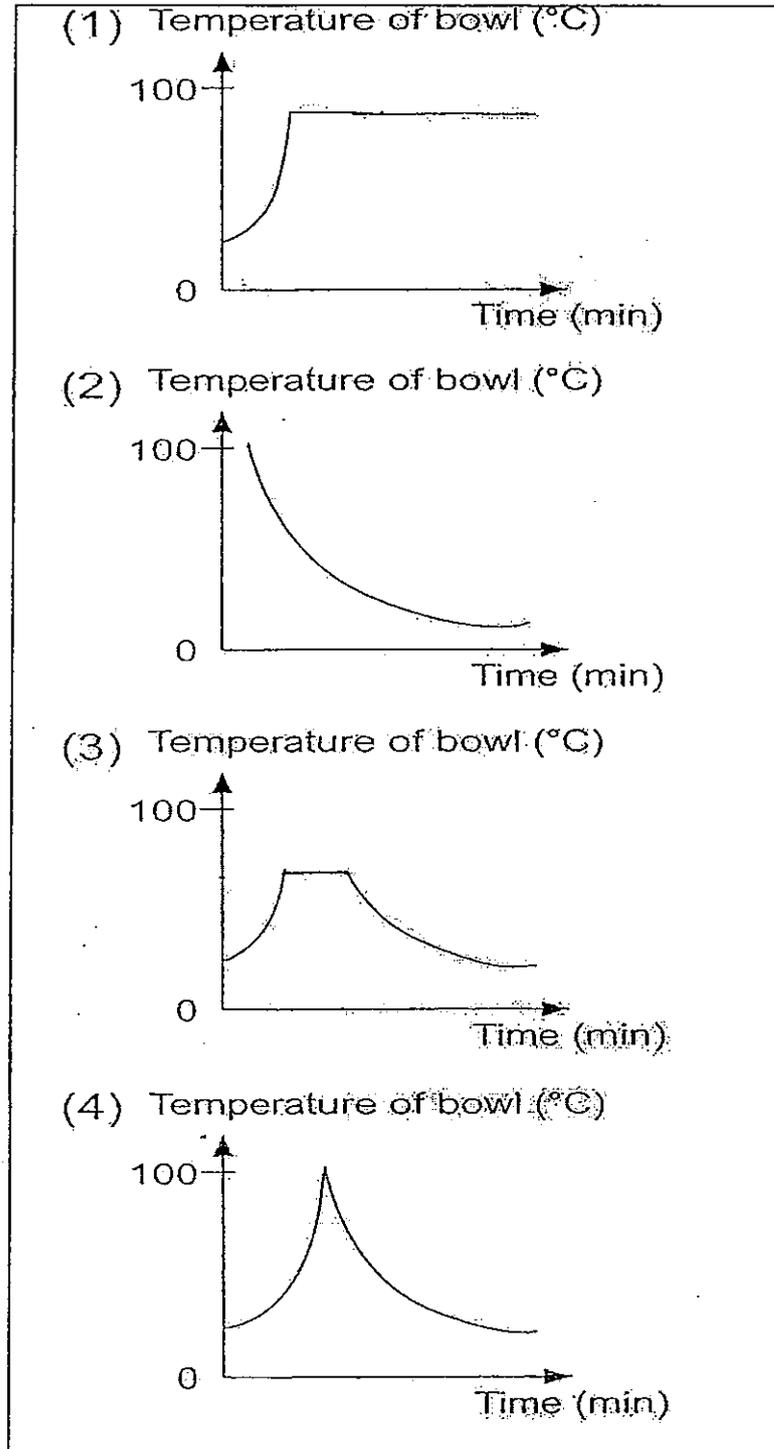
(2) Length of shadow



(4) Length of shadow



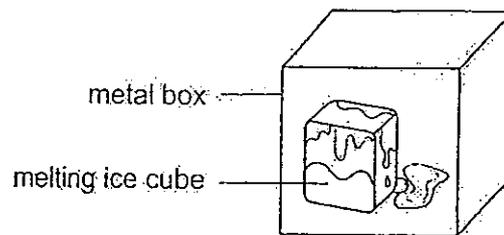
- 23 Annie was preparing to boil some soup for dinner. After the soup had boiled for a few minutes, she poured it out from the pot into a big bowl. Next, she left the big bowl of hot soup on the kitchen table for half an hour. Which graph will best represent the changes in temperature of the bowl?



- 24 Which of the following shows the likely match between a thermometer's temperature range and its use?

	To measure	Range of temperature
(1)	Ice shavings	0°C to 10°C
(2)	man	34°C to 42°C
(3)	states of water	-15°C to 100°C
(4)	an airy room	-20°C to 200°C

- 25 Nathan placed an ice cube into a small metal box as shown below.



Which of the following correctly shows the changes in the temperatures of the ice cube, the metal box and the surrounding air in the metal box during the process of melting?

	Ice cube	Metal box	Surrounding air
(1)	Remains	Increases	Decreases
(2)	Remains	Decreases	Decreases
(3)	Increases	Decreases	Decreases
(4)	Increases	Increases	Remains



METHODIST GIRLS' SCHOOL (PRIMARY)

Founded in 1887



MID-YEAR EXAMINATION 2013 PRIMARY 4 SCIENCE

BOOKLET B

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

INSTRUCTIONS TO CANDIDATES

Answer all questions.

Write your answers in this booklet.

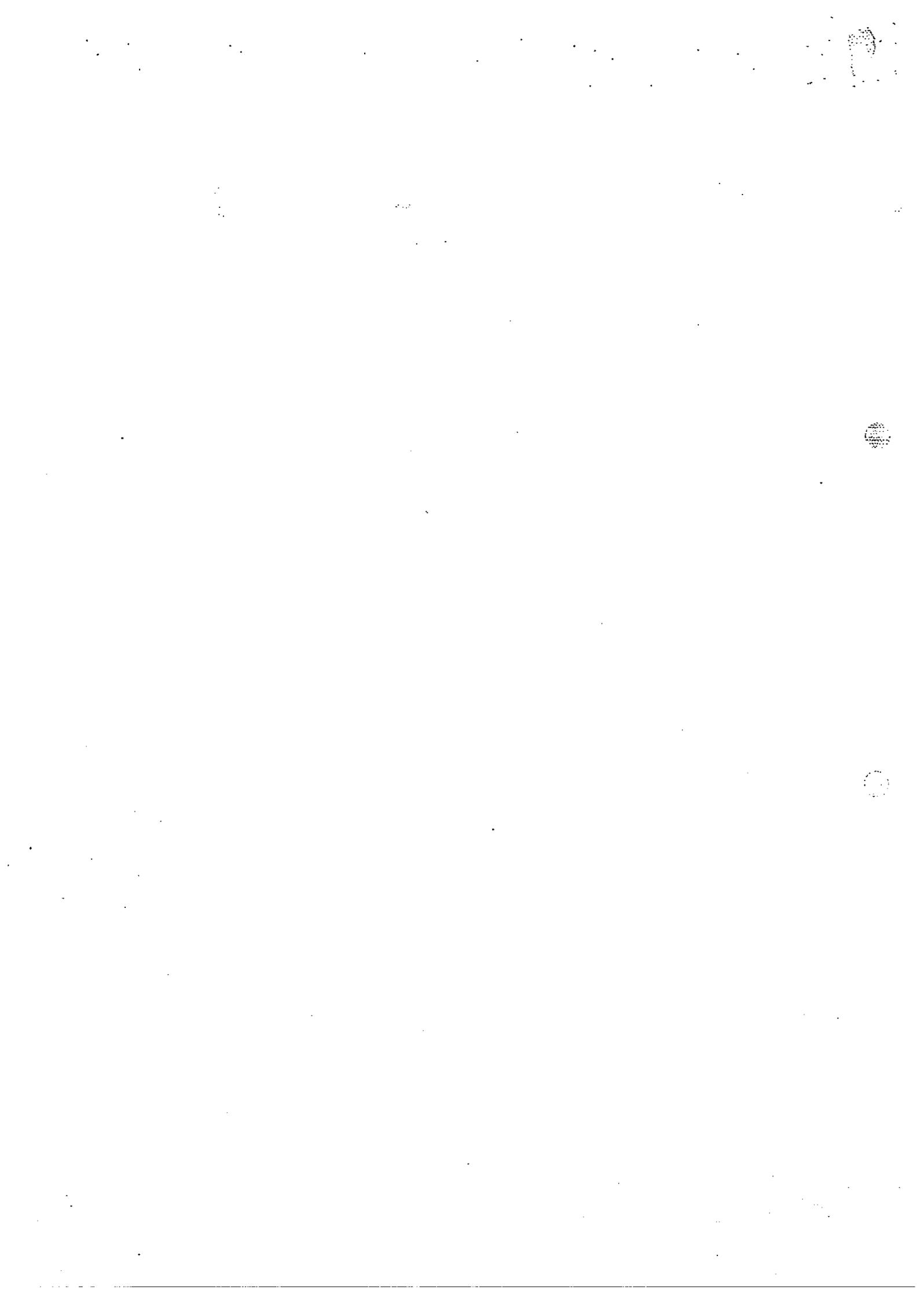
Name: _____ ()

Class: Primary 4. _____

Date: 16 May 2013

Booklet A	/ 50
Booklet B	/ 40
TOTAL	/ 90

This booklet consists of 15 printed pages excluding this page.



For questions 26 –40, write your answers in the spaces provided.

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

26. The characteristics of four animals are given in the table below.

Animal A	Animal B	Animal C	Animal D
Has two wings	Has two wings	Has two wings	Has no wings
Has two legs	Has two legs	Has two legs	Has four legs
Has feathers	Has hair	Has feathers	Has hair
Can fly	Can fly	Cannot fly	Cannot fly

- (a) Name the two groups of animals that are represented in the table. [1m]

- (b) How is Animal D different from the rest of the other animals in the table? [1m]

27. Match the following characteristics of living things to the observations made in the table. Write A, B, C and D in the correct boxes. [2m]

Characteristics of living things	
A	They grow
B	They reproduce
C	They respond to changes.
D	They move by themselves

	Observations made	Characteristics of living things
i.	A tortoise lays eggs.	
ii.	The birds fly in the sky.	
iii.	The dog chased the thief for 3 km and came back panting.	
iv.	Ramsy is now in Primary 4. He cannot fit into his Primary 1 uniform.	

28. Paul wanted to test how fast fungi grew on different types of bread. He added a few drops of water to each type of bread. After a few days, he observed different coloured patches of fungi on the bread. He recorded his observations in the table below.

Types of bread	A	B	C
Colour of fungal patches	White and yellow	White, black and yellow	White
Amount of fungal patches	++	+++	+

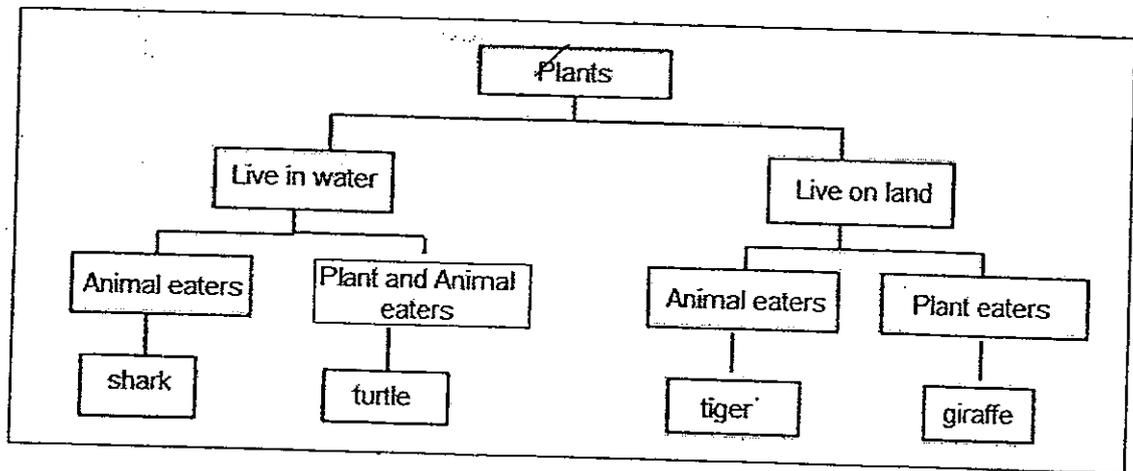
- (a) Which type of bread did the fungi grow the fastest? [½m]

- (b) Where did the fungi come from? [½m]

- (c) What could be the result if no water was added to the bread? [1m]

- (d) What could Paul do to make the result more reliable? [1m]

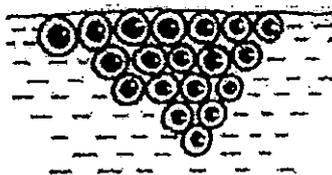
29. A classification chart for animals is shown below.



(a) Based on the chart above, name 2 characteristics of the shark. [1m]

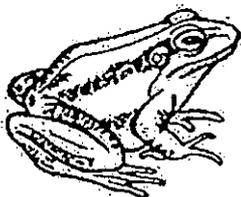
(b) With which organism should the elephant be placed in the chart above? [1m]

30. The diagram below shows the eggs of an animal.



- (a) Which animal shown below lays these? Put a tick (✓) in the box.

[½m]





- (b) In what way is the egg above different from a chicken's egg below? (Do not compare size, colour and quantity)

[1m]



chicken's egg

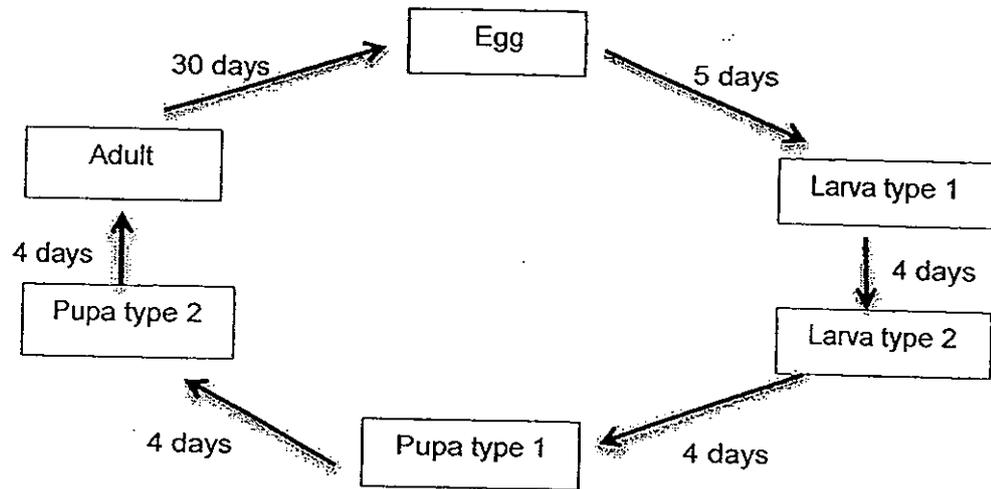
- (c) How many stages does the animal in (a) undergo in its life cycle?

[½m]

- (d) Name two animals whose life cycle does not have the same number of stages as the above animal.

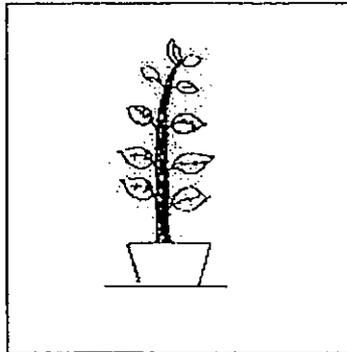
[1m]

31. The diagram below shows the life cycle of an imaginary animal P.



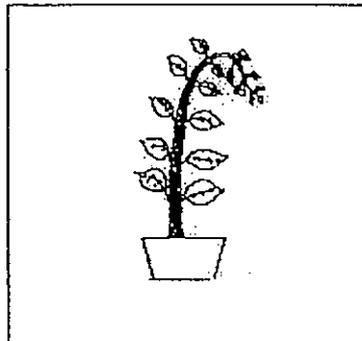
- (a) How many stages are there in the life cycle of Animal P? [1m]
-
- (b) State a similarity between the larval stage and the pupal stages? [1m]
-
- (c) How long does the animal take to become an adult? [1m]
-

32. Terry carried out an experiment to find out how light would affect the growth of a plant. He watered the plant and sealed it up in a cardboard box as shown below.



- (a) Terry pierced a hole in the box and after a few days, he observed that the plant grew towards one side.

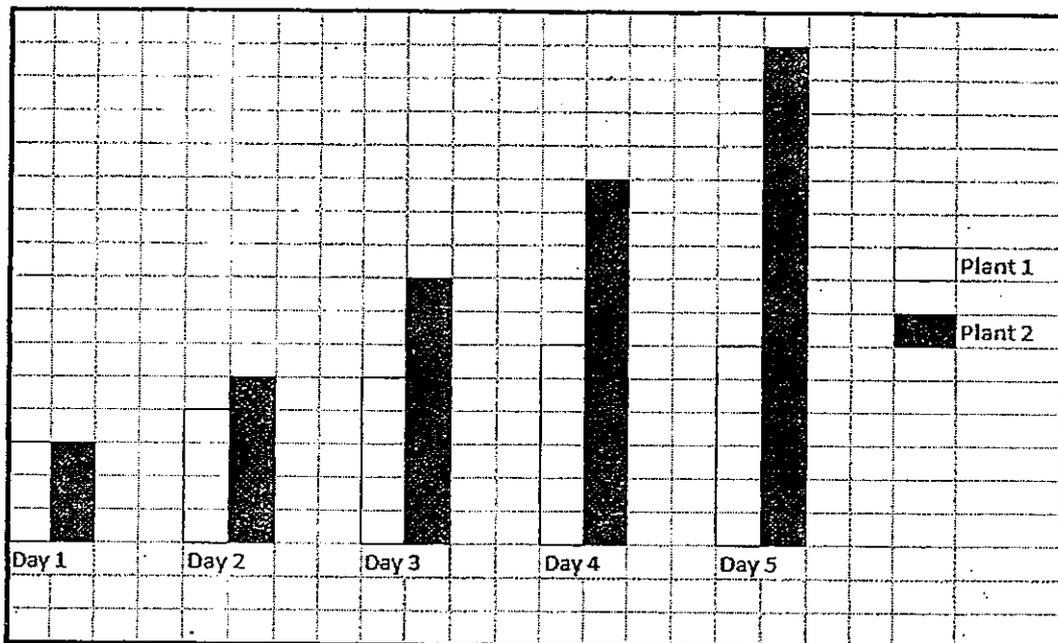
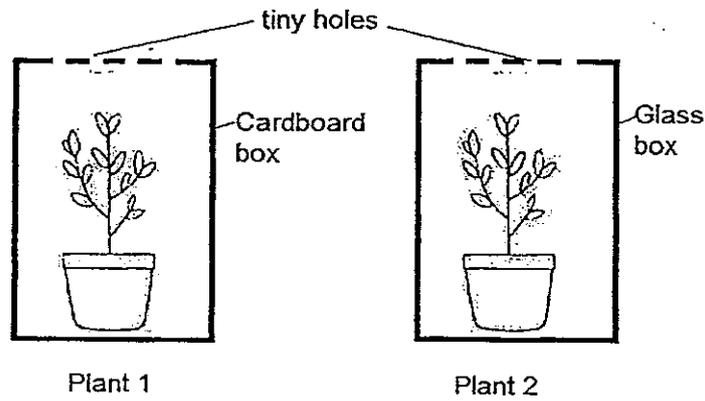
On the diagram below, draw an X to show a possible position of the hole made by Terry. [1m]



- (b) He conducted another experiment using a similar set-up, but this time, he covered the hole with a piece of tracing paper.

Would his observation be the same? Give a reason for your answer. [2m]

33. Billy put two similar plants in two similar pots filled with equal amounts of garden soil. He put them inside two different boxes of the same size with tiny holes at the top. He placed the boxes in the sun and watered them daily. He recorded the result over a week and plotted the graph as shown below.



- (a) From the graph, which plant is the taller one? [1m]

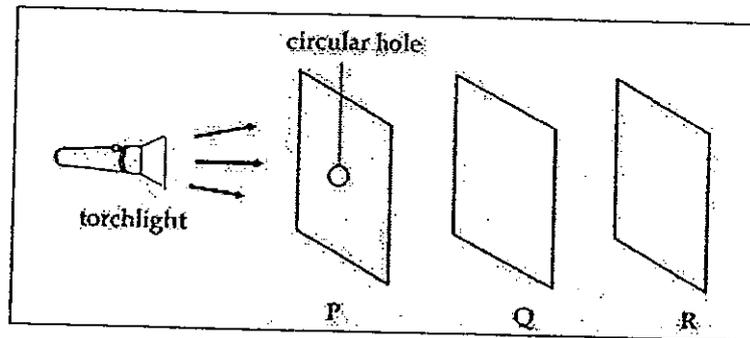
- (b) Give a reason for your answer in (a). [1m]

34 Bernard went trekking in the jungle. He did not bring a compass but had only a magnet, a map and a ball of string in his pocket. He soon realized that he was lost.

(a) He wanted to head towards the North, which according to his map would bring him out of the jungle. Using only the magnet and ball of string, what can he do to find his way out of the jungle? [1m]

(b) Why is the method suggested in (a) able to work? [1m]

- 35 Mary arranged three sheets of materials, P, Q and R, in a row in front of a torchlight as shown below. When she switched on the torchlight, she observed that a bright circular spot appeared only on Material R.



- (a) Based on the experiment done by Mary, state the property of P. [1m]

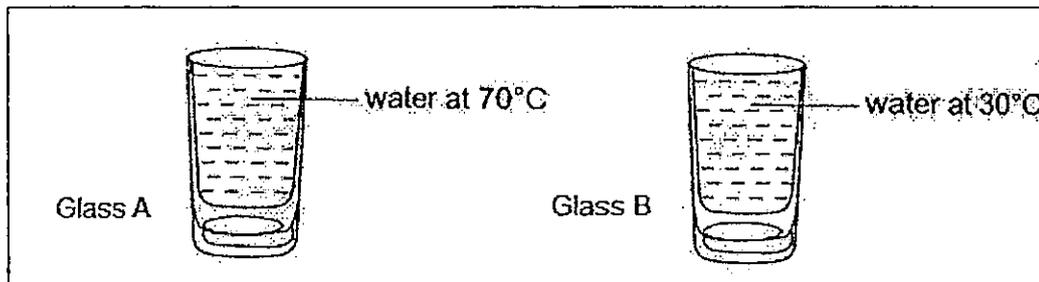
- (b) Give an example of the type of material used in P, Q and R. (No two same materials should be used in your answers.) [2m]

P: _____

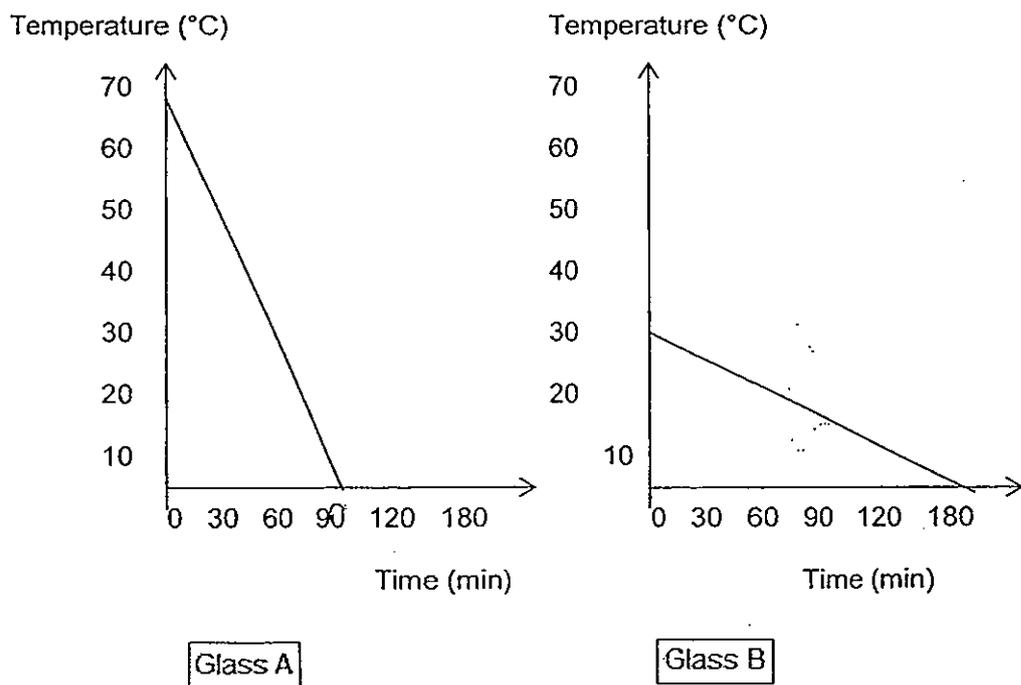
Q: _____

R: _____

- 36 Tommy wanted to try out an experiment that his Science teacher described in class. He filled two glasses with the same amount of water. In glass A, the temperature of the water was 70°C while the temperature of water in glass B was 30°C . He then placed both glasses in the same freezer and measured the time and the temperature of water at regular intervals till the water in both cups reached 0°C .



The graph below shows the results of his experiment.

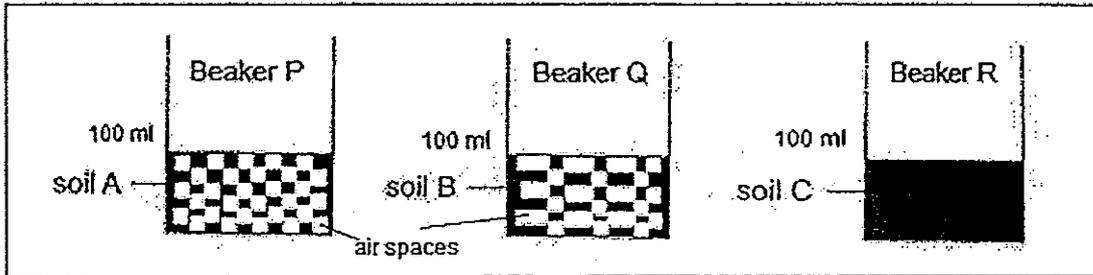


- (a) Based on the results of this experiment, in which glass, A or B, did water freeze first? [1m]

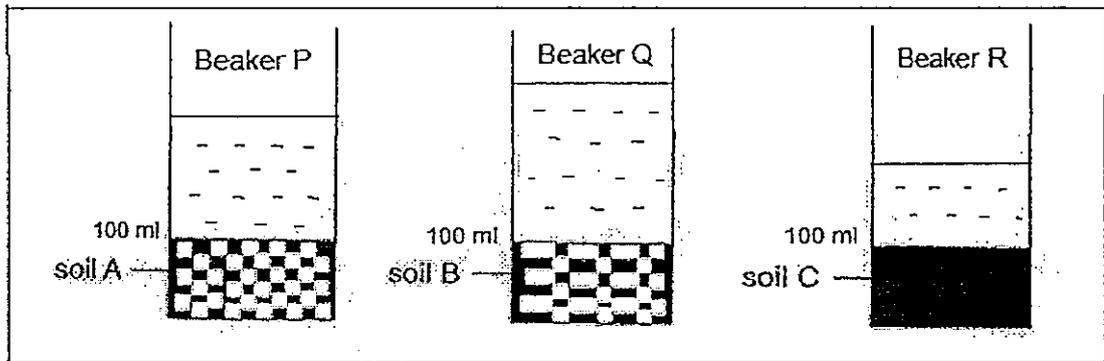
- (b) What is the relationship between the temperature of the water and the time taken for it to freeze? [1m]

- (c) Tommy wanted to make some homemade ice cream using liquid milk and flavourings. Based on your answer in (b), what do you suggest Tommy do to his ice cream mixture so that it freezes in the fastest time? [1m]

37 Suzy conducted an experiment to find out how air occupies space in 3 types of soil. She put each type of soil up to the 100ml mark in each of the 3 beakers, P, Q and R, as shown below.



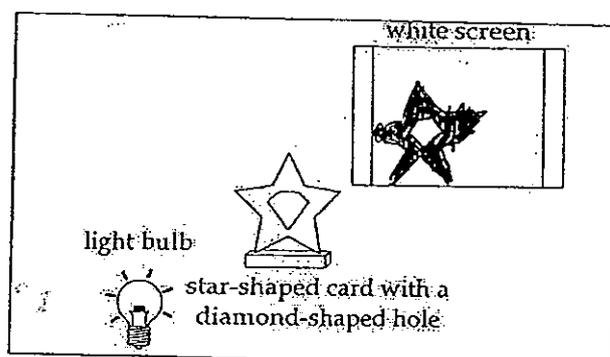
She added 200 ml of water into each container. After 15 minutes, Suzy recorded the results as shown below.



(a) Her teacher noted that she had recorded her observations wrongly. What were wrongly recorded? [1m]

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

- 38 Cindy set up an experiment as shown below.

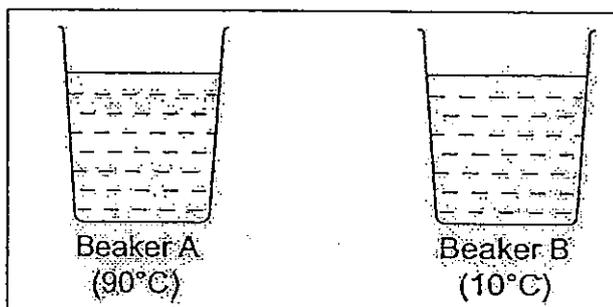


- (a) A shadow was cast on the white screen when the light bulb was turned on. Shade in the diagram below to show how the shadow would look like. [1m]

- (b) Cindy put a piece of tracing paper in front of the star-shaped card. What would happen to the shadow on the screen? [1m]

- (c) Cindy wanted the shadow of the star-shaped card to be sharper than what it was in (b). Without adding or removing any items, what would you suggest that she do? [1m]

- 39 Jimmy conducted an experiment with two beakers of water. He poured some water from one beaker to the other beaker and left it there for one hour. He recorded his readings in a table as shown below.



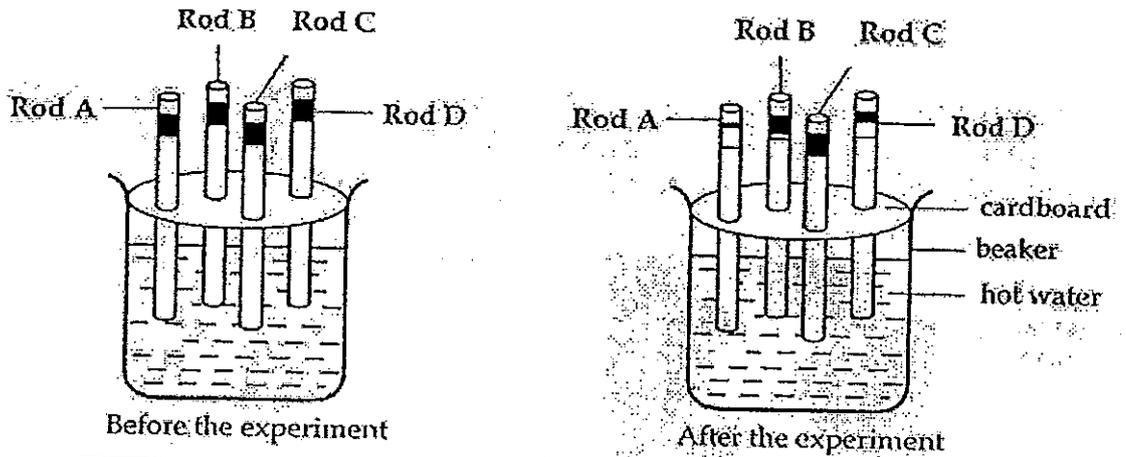
Time (min)	Beaker A	Beaker B
0	90°C	10°C
5	75°C	12°C
10	70°C	14°C
15	66°C	16°C
20	62°C	19°C
25	58°C	21°C
30	54°C	24°C
35	48°C	27°C
90	44°C	27°C

- (a) From which beaker did he pour the water from? [1m]

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

- (c) State 2 variables that were kept constant to ensure that the experiment was a fair test. [2m]

- 40 Steven wanted to test the conductivity of heat of four different rods. At one end of each rod, he added a strip of colour-changing paint which is sensitive to heat. The orange paint would change to white when it was hot. He inserted the four rods through holes of a piece of cardboard. He then placed the cardboard with the rods over a beaker of hot water.



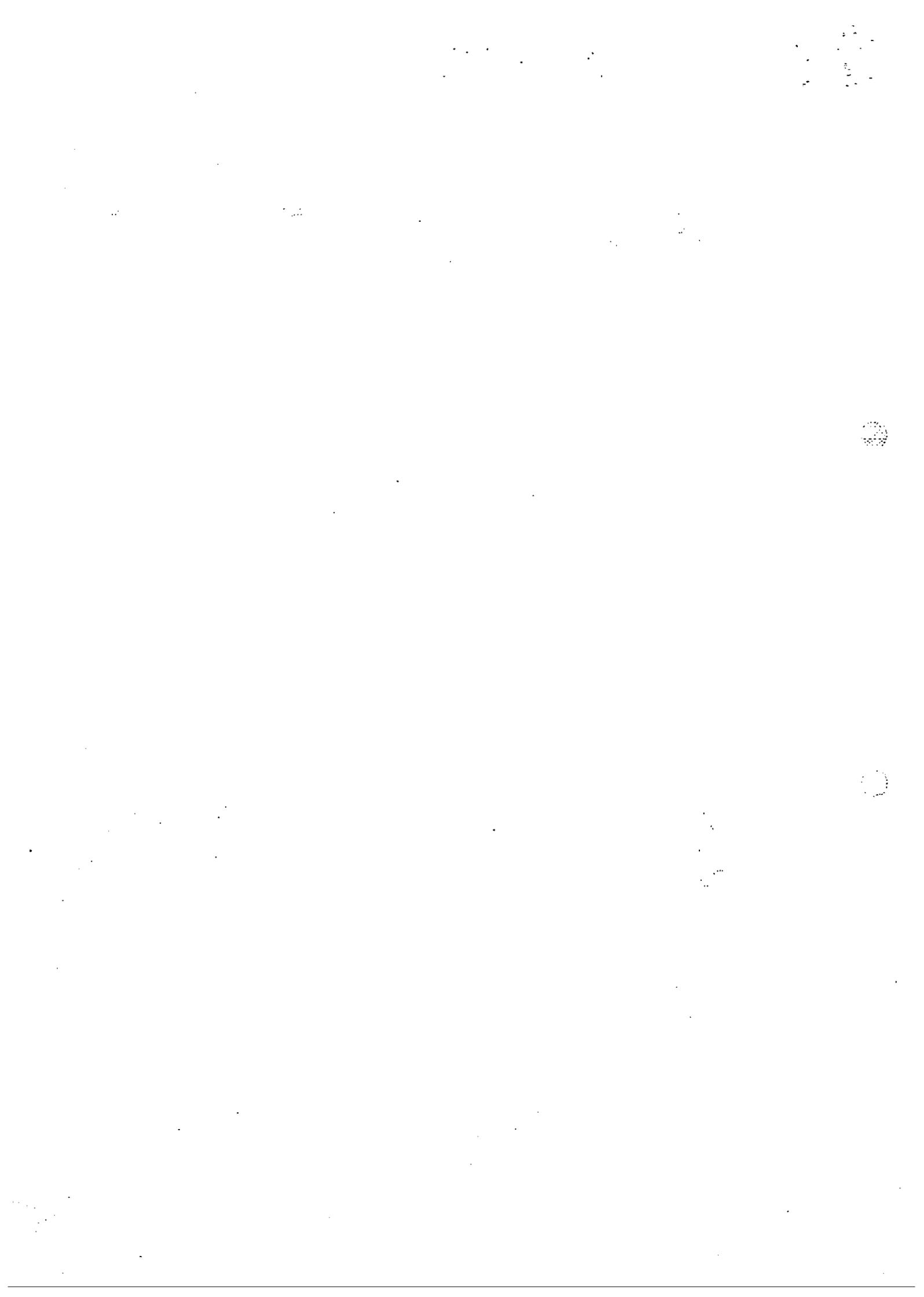
Key:

orange colour		strip of heat-sensitive paint before the experiment
orange colour		strip of heat-sensitive paint after the experiment
white colour		

- (a) (i) Arrange the rods from the best to the poorest conductors of heat. [1m]

- (ii) Explain your answer in.(i). [1m]

- (b) In Steven's experiment, why did he insert the four rods through the cardboard piece? [1m]



ANSWER SHEET

EXAM PAPER 2013

SCHOOL : MGS

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	1	1	1	4	3	2	1	1	4	2	2	3	1	1	4	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25
3	3	3	2	1	3	2	2

26)a) Birds and mammals.

b) Animal D has no wings and four legs but the other animals has two wings and two legs.

27)i)B ii)D iii)C iv)A

28)a) Bread B.

b) The spores came from the air which landed on the bread.

c) The fungi will take a longer time to grow.

d) Paul could repeat the experiment three more times.

29)a) The shark lives in water and eats animals.

b) The giraffe.

30)a)

b) The egg above has a soft shell but the chicken's egg has a hard shell.

c) Three stages.

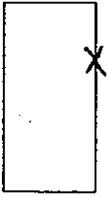
d) The butterfly and housefly.

31)a)4 stages.

b)They both take eight days to go to the next stage.

c)21 days.

32)a)



b)Yes. Tracing paper is translucent so some light can still pass through the tracing paper, the plant will grow towards the hole for sunlight.

33)a)Plant 2.

b)Plant 1 is placed in a cardboard box, cardboard is opaque, so light only can pass through the tiny holes at the top of the box but plant 2 is placed in a glass box and glass is transparent and so sunlight can pass through the glass and the plant can make food.

34)a)Bernard could take the string and tie it on a tree, then take the piece of string to tie on the magnet and wait for it to come to a rest when suspended.

b)The poles of the magnet will always point to the North-South direction.

35)a)P is opaque.

b)P: Steel Q: Clear Glass R: Cardboard

36)a)Glass A.

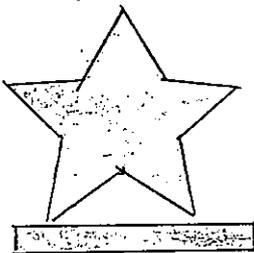
b)The higher the temperature, the faster the time taken for the water to freeze.

c)Heat up his ice cream mixture before putting it in the freezer.

37)a)Water levels in beakers Q and R should interchange.

b)Drew 100ml of water not 200ml soil B has largest air volume, so water can take up the most space the soil in.

38)a)



38)b)The shadow will remain the same.

c)Put the screen nearer to the star-shaped object.

39)a)Beaker B.

b)The decrease in water temperature in Beaker A was much greater than in Beaker B from 0 to 5 minutes. So colder water must be added from Beaker A.

c)The amount of water and the material of the beaker.

40)a)i)Rod A, Rod D, Rod B, Rod C.

ii)The colour-changing paint had turned mostly white in A, followed by D, then B, and no change in C.

b)It provides a support for the rods so that they do not touch each other.





NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2013
PRIMARY 4

SCIENCE

BOOKLET A

30 Multiple Choice Questions (60 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

Marks Obtained

Booklet A		/ 60
Booklet B		/ 40
Total		/100

Name: _____ () Class: P 4 _____

Date : 14 May 2013

Parent's Signature: _____

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

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

1. Which of the following is/are source(s) of light?
A: Stars
B: The Moon
C: A lit matchstick

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

2. Which of the following sentences is/are true?
A: Rough surfaces do not reflect light.
B: White surfaces reflect more light than black surfaces.
C: If we cannot see an object, the object does not reflect light.

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

3. A building contractor wants the shopping mall he is building to have natural lighting. He also does not want passers-by to be able to see clearly what his shop owners are doing. Which one of the following materials can he use to make the walls of the mall?

(1) Brick
(2) Steel
(3) Clear glass
(4) Frosted glass

4. Which one of the following groups is made up of matter only?

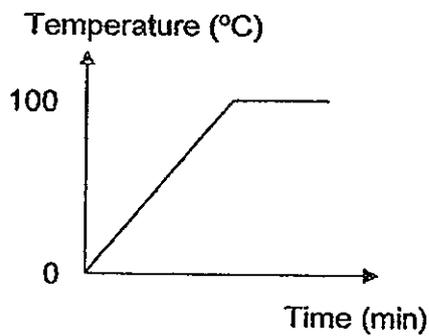
(1) Water, air, lightning
(2) Wind, honey plasticine
(3) Sponge, sound, magnet
(4) Carbon dioxide, fire, shadow

5. What is the similarity between cooking oil and stone?

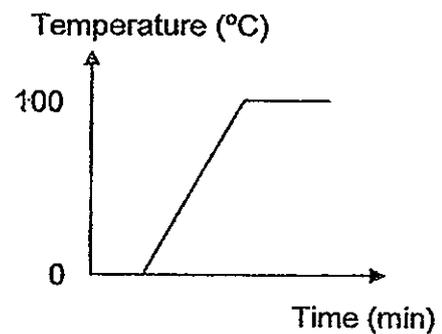
- (1) Both have definite shape.
- (2) Both are in the same state.
- (3) Both have the same mass.
- (4) Both have definite volume.

6. Which one of the following graphs shows the temperature change of heating tap water till it boils at 100°C?

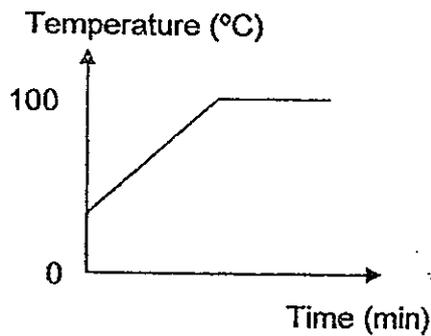
(1)



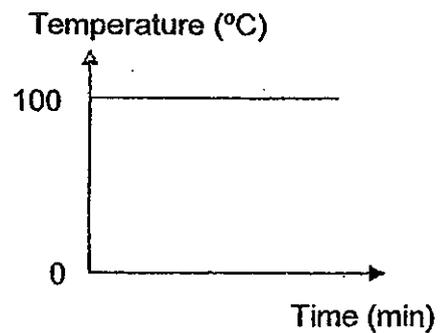
(2)



(3)



(4)



7. Which one of the following statements about heat is correct?

- (1) Heat is matter
- (2) Heat can be seen but not felt.
- (3) Heat travels from a warmer place to a cooler place.
- (4) Heat travels from a cooler place to a warmer place.

8. Some ice cubes are added to a cup of hot coffee. Which one of the following statements is correct?

- (1) The ice cubes lose heat to the cup.
- (2) The surroundings lose heat to the cup.
- (3) The cup gains heat from the hot coffee.
- (4) The hot coffee gains heat from the surroundings.

9. How do blankets, jackets and sweaters keep us warm?

- (1) The fabrics used are not conductors of heat.
- (2) The fabrics used are good conductors of heat.
- (3) The air trapped in the fabric is a poor conductor of heat.
- (4) The air trapped in the fabric is a good conductor of heat.

10. Which one of the following groups of things is obtained from living things?

- (1) wooden pencil, cotton, stone
- (2) glass window iron rod, paper
- (3) woollen shirt, plastic cup, paper box
- (4) paper, cotton shirt, wooden chopstick

11. Myra grouped some animals into 2 groups as shown below.

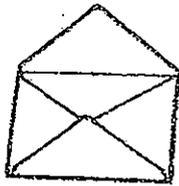
Group A	Group B
Goat	Eagle
Monkey	Mynah
Spiny Anteater	Penguin

What is/are the characteristic(s) that she used to group the animals?

- A: The animal's body coverings.
- B: The way the animals reproduce.
- C: The way the animals move around.

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

12. Which of the following objects are made from the same material?



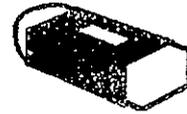
Envelope
A



Tyre
B



Brick
C



Eraser
D

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

13. Clarissa went window shopping with her mother. She was looking at some nice dresses through a display window. Which one of the following statements is true?

- (1) Light is not required for her to see the dresses.
- (2) Light from the window travels to her eyes and the dresses.
- (3) Light from her eyes passes through the window to the dresses.
- (4) Light is reflected from the dresses through the window into her eyes

14. Object Q does not allow light to pass through it. Which one of the descriptions about Object Q is definitely true?

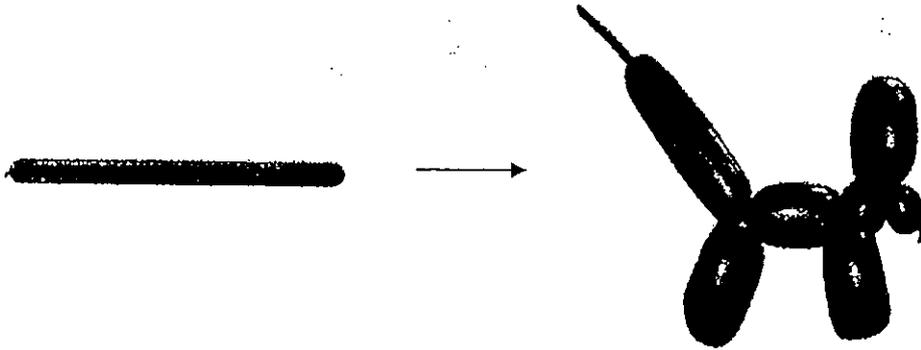
- (1) It appears black.
- (2) It cannot be seen.
- (3) It can block sunlight.
- (4) it does not reflect light.

15. Which of the following conditions is/are necessary for a solid object to cast a shadow?

- A: Object is opaque.
- B: Presence of a light source.
- C: Object is resting on the ground.

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

16. An inflated long balloon was twisted to make a dog as shown below.

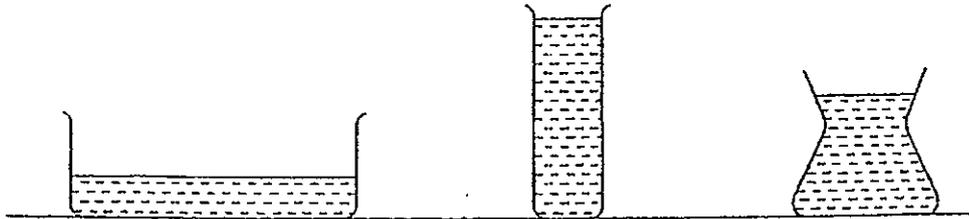


Which of the following properties of air is/are changed as a result?

- A: Mass
- B: Shape
- C: Colour

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

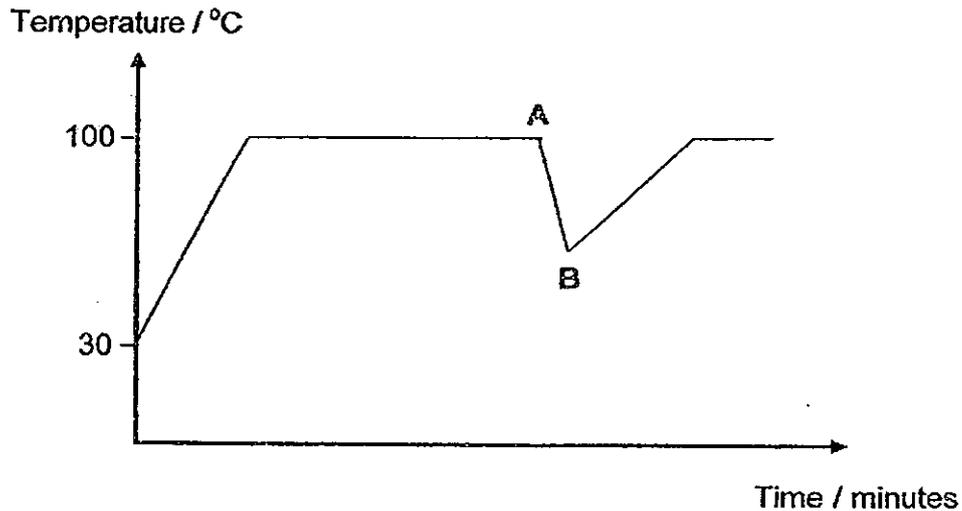
17. 100ml of water was poured into each of the containers shown below.



What does this experiment show?

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

18. A beaker of water was heated continuously over a burner. A temperature probe connected to a computer measures and plots the temperature of the water continuously. The results are shown in the graph below. (Note: Water boils at 100°C .)



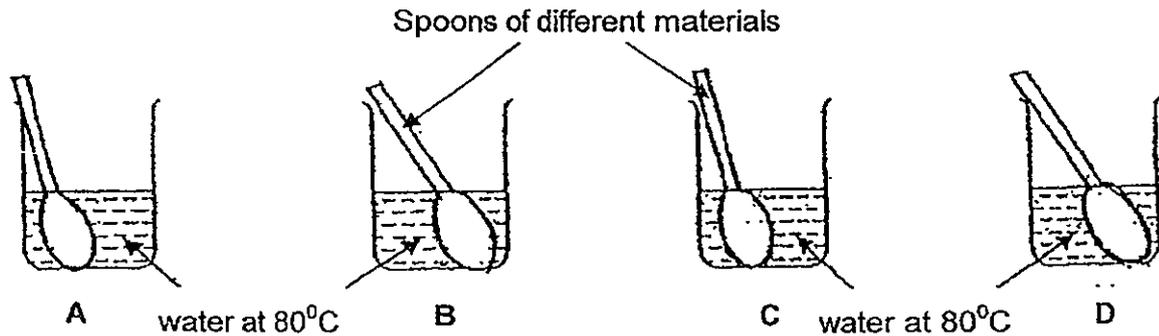
Which one of the following best explains what happened between points A and B on the graph?

- (1) The water in the beaker was stirred.
 - (2) There is no more water left in the beaker.
 - (3) Some iced water was poured into the beaker.
 - (4) Some boiling water was poured into the beaker.
19. What happens when a piece of metal is heated?
- A: It becomes bigger.
B: It becomes heavier.
C: It becomes warmer
- (1) C only
 - (2) A and B only
 - (3) A and C only
 - (4) A, B and C

20. Mrs Tay took a bottle of pickles out from the refrigerator and found that she could not open it. After she poured some hot water over the metal cap of the bottle, she was able to open it. Which one of the following explains her experience?

- (1) The heat from the hot water caused the bottle to crack.
- (2) The heat from the hot water caused the bottle to expand.
- (3) The heat from the hot water caused the metal cap to expand.
- (4) The heat from the hot water caused the air in the bottle to expand.

21. Nelson prepared four beakers, A, B, C and D, with water at 80°C . Then he placed a spoon in each beaker. The spoons were of different materials. He measured the temperature of the water at four equal intervals over a period of 20 minutes.



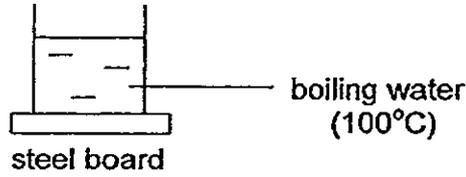
The temperature of the water was recorded in the table below.

Beakers	Temperature ($^{\circ}\text{C}$)			
	A	80	70	60
B	80	60	40	30
C	80	70	55	45
D	80	75	65	55

Which spoon is the best conductor of heat?

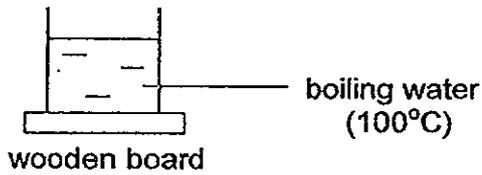
- (1) The spoon in beaker A.
- (2) The spoon in beaker B.
- (3) The spoon in beaker C.
- (4) The spoon in beaker D.

22. A pot of boiling water was placed on a steel board as shown.

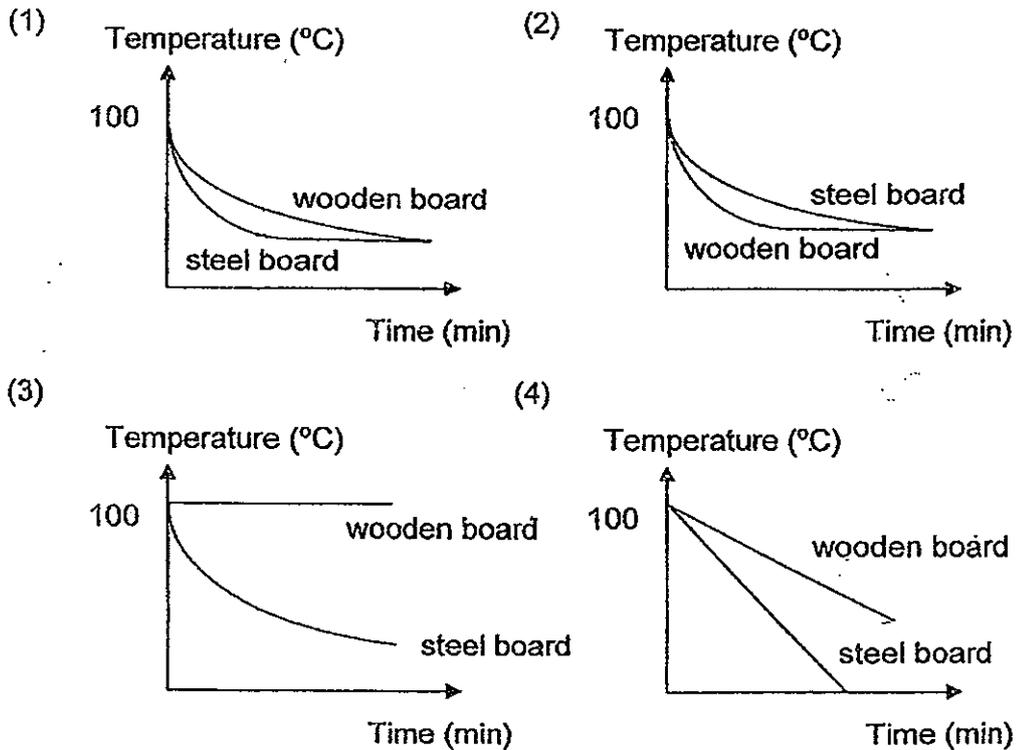


As the water cooled, its temperature was recorded using a temperature probe connected to a computer

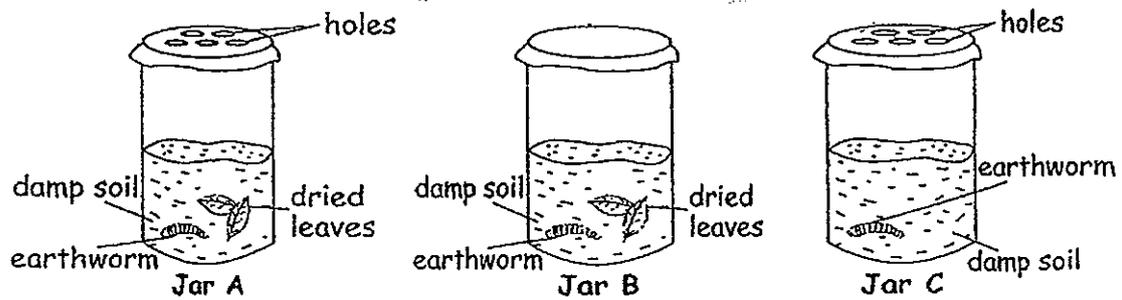
The experiment is repeated using a wooden board of the same thickness instead of a steel board.



Which one of the following shows the cooling curves for the boiling water in both experiments?



23. Luke carried out an experiment by putting three similar earthworms separately in three identical containers, under different conditions as shown below.



What is most likely to happen after one week?

- (1) The earthworms in Jars B and C will die.
- (2) The earthworms in all three Jars will die.
- (3) The earthworms in Jars A and C will remain alive.
- (4) The earthworms in all three Jars will remain alive.

24. Study the table below carefully.

Thing	Move from place to place	Reproduce	Produce own food
P	No	Yes	No
Q	Yes	No	No
R	No	Yes	Yes
S	Yes	Yes	No
T	No	No	No

How many of the above things are living things?

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

25. Vivian placed some goldfish, tubifex worms, pebbles and plastic plants into an aquarium. She recorded the number of fish, worms, pebbles and plants in the next 20 days as shown in the table below.

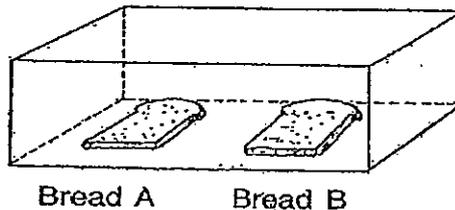
Things	Day 0	Day 5	Day 10	Day 15	Day 20
Goldfish	10	9	11	13	15
Tubifex worms	50	40	30	20	10
Pebbles	10	10	10	10	10
Plastic plants	10	10	10	10	10

What can you conclude from the information given?

- A: Living things can die.
B: Living things can grow.
C: Living things can reproduce.

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

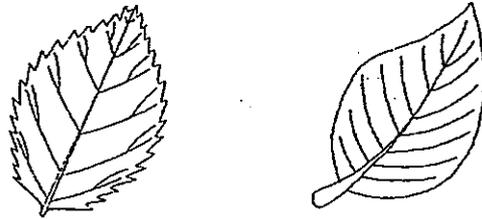
26. Bobby conducted an experiment. He toasted Bread A and added water to Bread B. Then he put both pieces of bread in a box.



After a few days, Bobby saw that Bread B had mould while Bread A remained the same. He concluded from the experiment that fungi cannot grow without _____.

- (1) light
(2) food
(3) water
(4) warmth

27. The diagrams below show two leaves from two different plants.

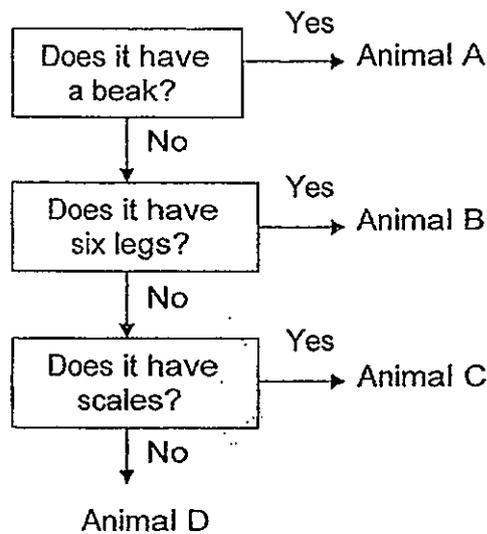


Based only on what you can observe from the pictures, which of the following statements is/are correct?

- A: Both are green.
- B: Both have smooth edges.
- C: Both have network veins.

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

28. Study the diagram below.



Which of the following is the correct match for Animals A, B, C and D?

	A	B	C	D
(1)	Chicken	Grasshopper	Goldfish	Cow
(2)	Penguin	Spider	Frog	Dog
(3)	Eagle	Earthworm	Snake	Cockroach
(4)	Turtle	Ant	Whale	Cow

29. The diagram below shows a drill bit used to make holes in walls.



What properties must the material used to make the drill bit have?

- A: hard
 B: strong
 C: flexible

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

30. Jerry noted down the properties of two objects, A and B. He put a tick (✓) for the property that each object has in the table below.

Property	A	B
It is flexible.		✓
It breaks easily.	✓	
It sinks in water.	✓	✓
It is hard.	✓	

Which of the following correctly identifies objects A and B?

	A	B
(1)	Metal ruler	Plastic ruler
(2)	Newspaper	Key
(3)	Wooden pencil	Eraser
(4)	Ceramic bowl	Rubber band



NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2013
PRIMARY 4

SCIENCE

BOOKLET B

14 Open-ended questions (40 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

Marks Obtained

Section B

	140
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Name: _____ () Class: P 4 _____

Date : 14 May 2013

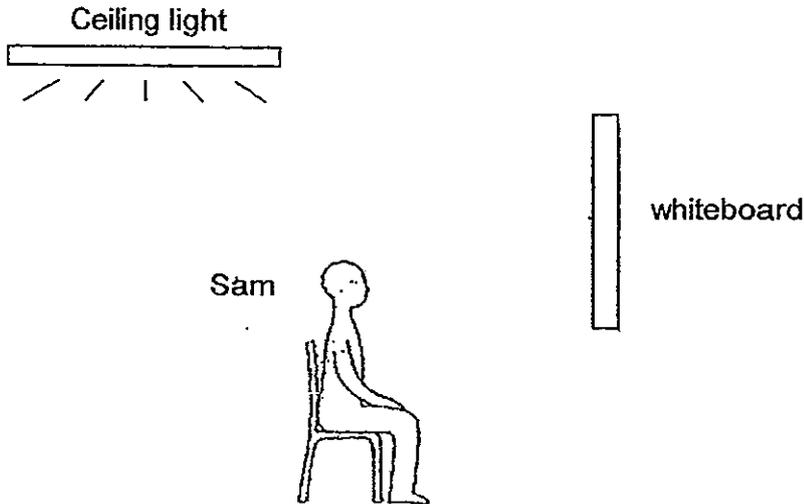
Parent's Signature: _____

Section B: (40marks)

Write your answers to questions 31 to 44.

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

31. In a classroom, Sam was able to see what was written on the white board.



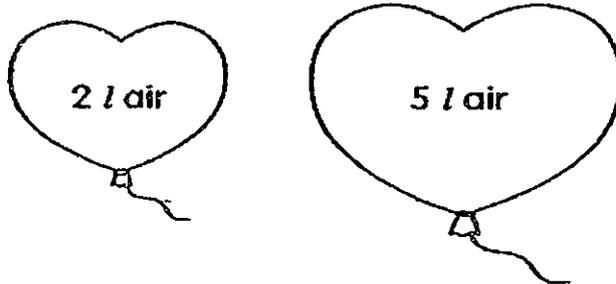
- (a) Draw the path of light in the above diagram to show how Sam is able to see the words on the whiteboard. [1]

- (b) Describe how Sam is able to see the words on the whiteboard. [1]

- (c) During a thunderstorm, the electrical supply tripped and the ceiling light went off. Sam, however, can still see the words on the whiteboard. Explain how this is possible. [1]

Score	3
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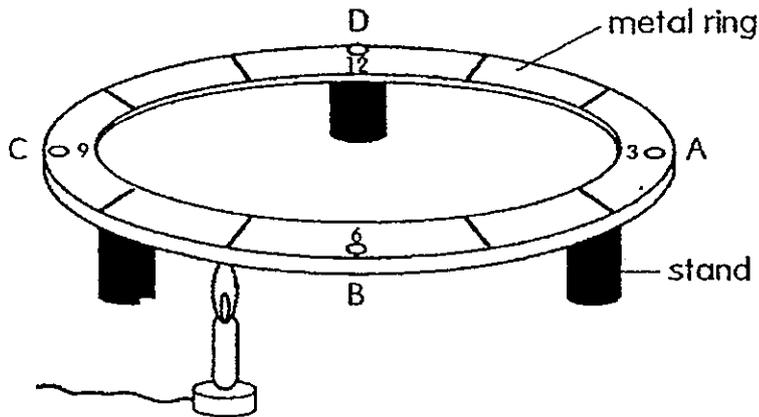
32. Rick had two similar heart-shaped balloons. He blew one up with 2 litres of air and the other with 5 litres of air as shown below.



- (a) From his observation, he concluded that air has a definite shape. Do you agree with his conclusion? Explain. [2]

Score	2
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33. The diagram below shows a circular metal ring with markings following a clock face. Four pieces of wax A, B, C and D are placed at the 3, 6, 9 and 12 o'clock positions of the ring respectively. The ring is raised above the ground on stands that are made of a material that is a poor conductor of heat.



- (a) A flame is set as shown at the 7 o'clock position of the ring. State the order in which the wax will melt, starting with the first. [1]

- (b) What property of heat does this experiment show? [1]

- (c) State one variable that must be kept the same for the experiment to be a fair test. [1]

Score	3
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34. Mathias carried out an experiment to find out what Animal Q needs to stay alive. He placed 5 Animal Q in each of the four identical containers.

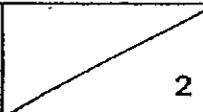
The conditions of each container are shown in the table below.

Container	Holes on lid	Food	Water
A	X	✓	✓
B	✓	X	✓
C	✓	✓	X
D	✓	✓	✓

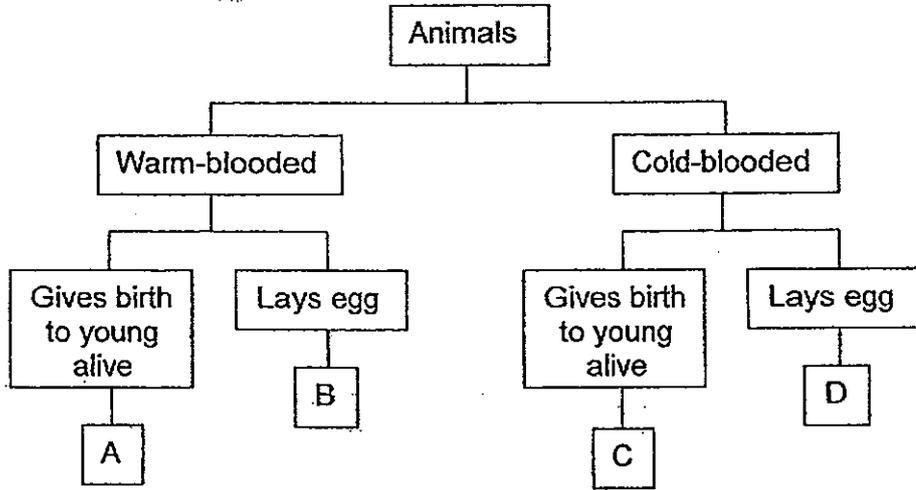
One week later, he observed that only Animal Q in Container D survived.

- (a) What can he conclude from this investigation? [1]

- (b) Without changing any of the conditions, he observed that the number of Animal Q has increased in Container D after two months. Explain his observation. [1]

Score	
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35. Study the classification chart below.



(a) Based on the chart above, state the characteristics of Animals A and D. [2]

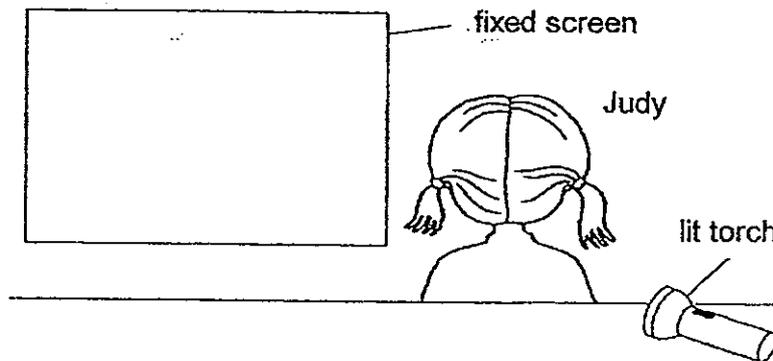
A: _____

D: _____

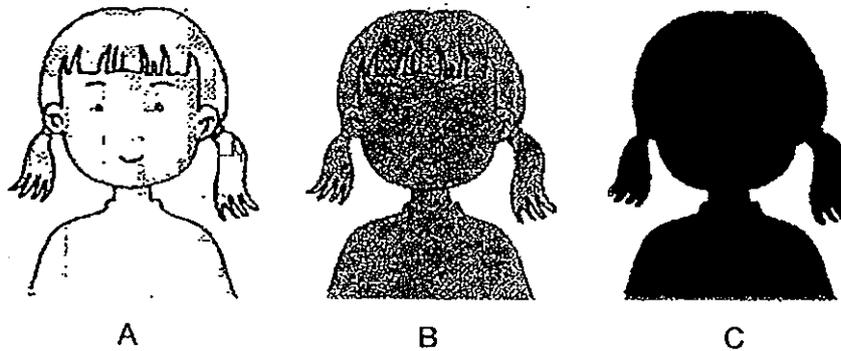
(b) Based in the chart above, can a dog be classified in Group B? State your reason. [1]

Score	3
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37. Study the diagram below.



3 students (A, B and C) drew Judy's shadow as shown in the diagram below.



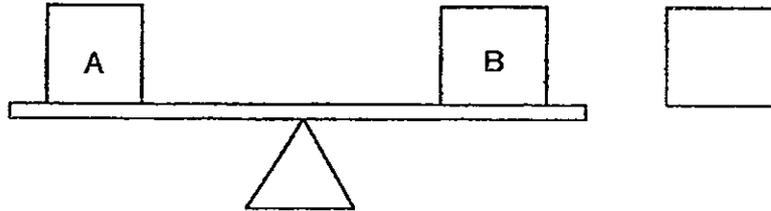
(a) Which student (A, B or C) has drawn the shadow correctly? Why? [1]

(b) State two things that Judy can do if she wants to cast a smaller shadow of herself on the screen. [2]

(c) What will happen to her shadow if the screen is turned upside down? [1]

Score	4
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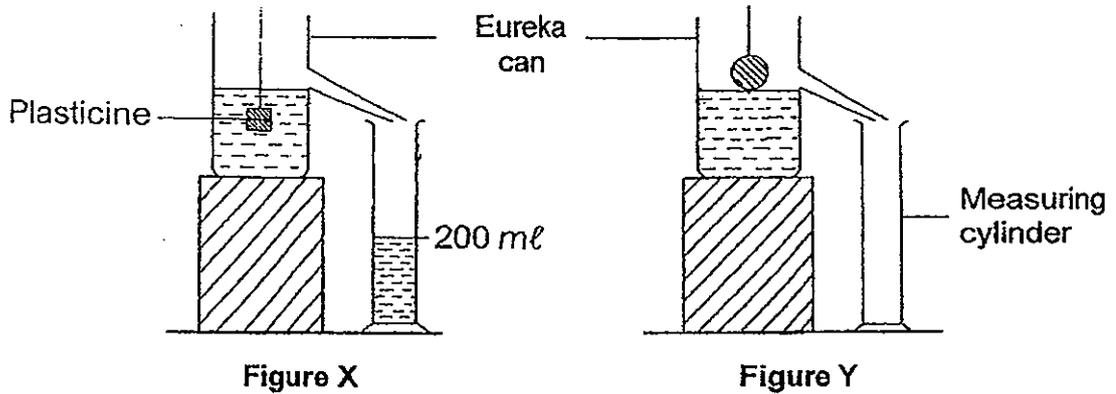
38. Two glass containers, A and B, have the same mass and contain 7 litres of air each. The containers are stuck to either end of a plank and balanced as shown in the diagram below.



- (a) Draw an arrow in the box to indicate the direction of movement of the plank at B if another 2 litres of air were pumped into Container A. [1]
- (b) State two properties of air that are shown in this experiment. [2]

Score	3
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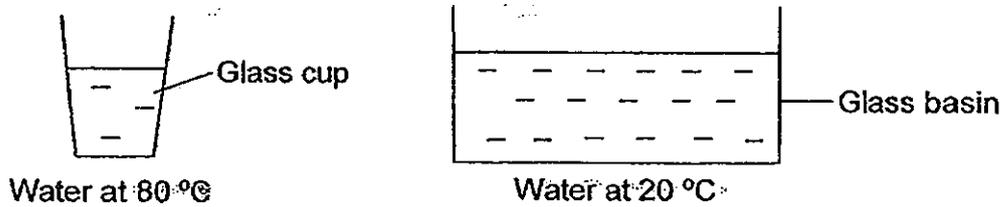
39. Ting Ting filled up a Eureka can with water and lowered a cube of plasticine into the can. She collected the water that flowed out from the Eureka can into a measuring cylinder as shown in Figure X. She then removed the plasticine and filled up the Eureka can till water just reached the opening of the spout again. She reshaped all the plasticine into a ball and lowered it into the Eureka can again as shown in Figure Y.



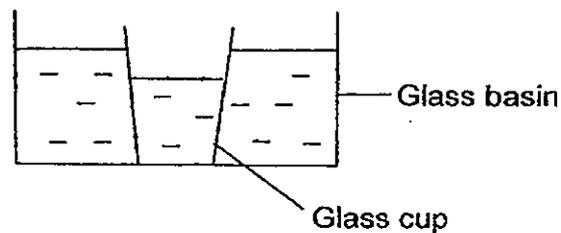
- (a) What will be the volume of water collected in the measuring cylinder in Figure Y? [1]
-
- (b) Explain your answer in (a). [1]
-
- (c) State one difference between the properties of the plasticine and the water. [1]
-

Score	3
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40. Lisa filled a glass cup with water at $80\text{ }^{\circ}\text{C}$ and a glass basin with water at $20\text{ }^{\circ}\text{C}$ as shown in the diagram below.



She then placed the glass cup into the glass basin as shown in the diagram below.

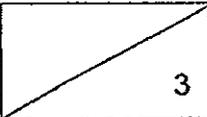


Noting the room temperature as $30\text{ }^{\circ}\text{C}$, she left the containers as shown for some time until the water in both containers reached the same temperature.

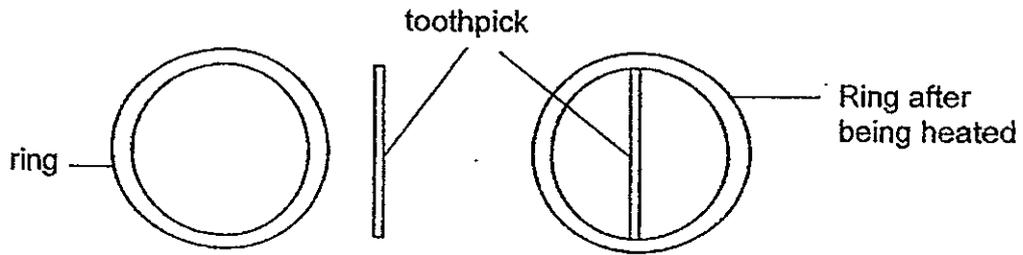
- (a) What is the final temperature of the water in the basin after one day? [1]

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

- (c) if Lisa started with water at $80\text{ }^{\circ}\text{C}$ in the glass basin and water at $20\text{ }^{\circ}\text{C}$ in the glass cup, would the final temperature of the water in the basin after one day be different from your answer in (a)? Explain your answer. [1]

Score	
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41. The diagram below shows an iron ring just after being heated for a long time. A piece of toothpick that just fits the inside of the hot ring is cut to size and placed as shown

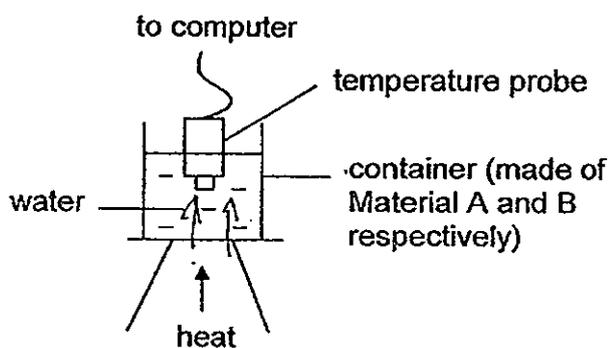


- (a) What will happen to the toothpick after some time? [1]

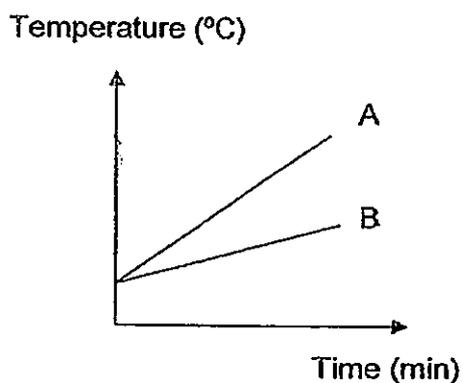
- (b) Explain your answer to (a) above. [1]

Score	2
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42. 2 identical containers made of Materials A and B are used to contain the same amount of water. The containers are then heated using a Bunsen flame and the temperature of the water is recorded using a temperature probe connected to a computer.



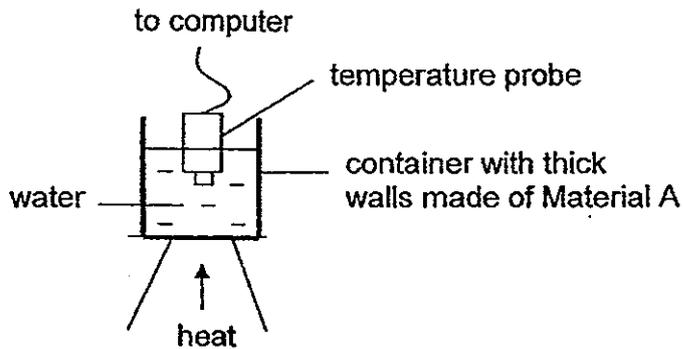
The computer then plots the change in temperature of the water versus time. The following graph is obtained for the two materials A and B.



- (a) Which material is the better conductor of heat? Explain. [1]

Score	1
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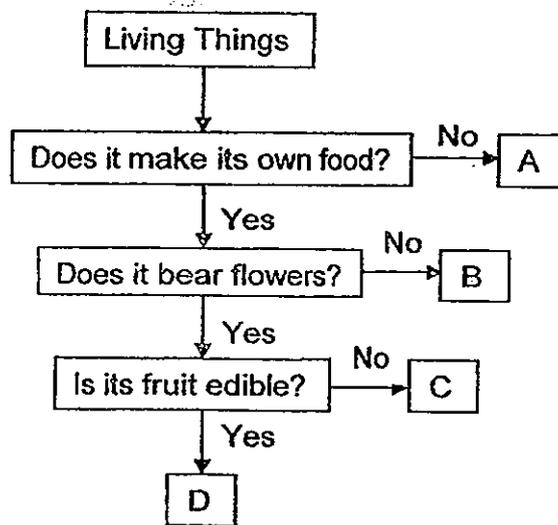
Debbie repeated the experiment using a container of thicker walls made of Material A as shown below.



- (b) If she kept the amount of heat supplied and the duration of experiment constant, would the temperature of the water at the end of the experiment be lower, higher, or the same as the previous experiment using the container with thin walls made of material A? Give a reason for your answer. [1]

Score	1
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43. Study the flow chart below carefully.



(a) Given that A is not an animal, which group of living things could A be? [1]

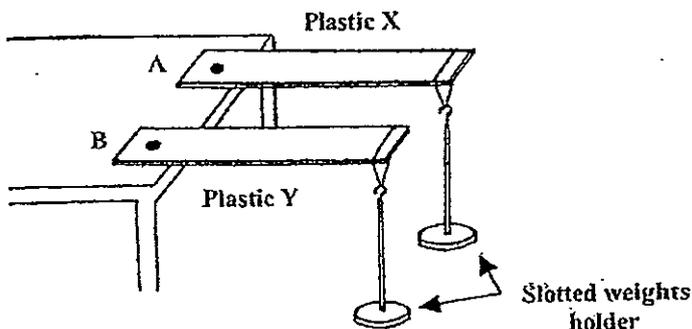
(b) State how B reproduces. [1]

(c) Based on the chart above, state a similarity between Living Things B and D. [1]

Score	3
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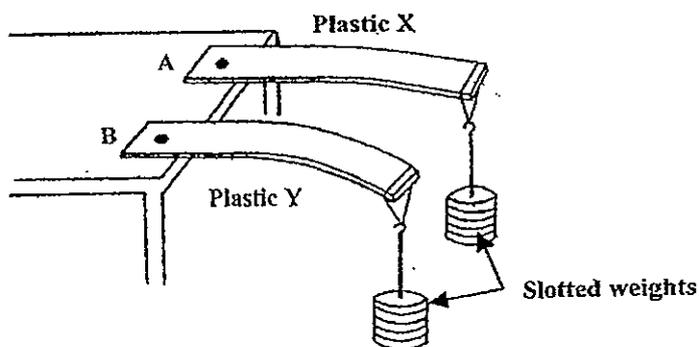
44. Paul secured two thin rulers, A and B, of the same length to a table using a nail each. Ruler A was made of Plastic X and Ruler B was made of Plastic Y as shown in Diagram 1 below.

Diagram 1



He then added slotted weights, one at a time, to one end of each plastic ruler and recorded the number of slotted weights the rulers could hold before they broke as shown in Diagram 2 below.

Diagram 2



The table below shows the results of Paul's experiment.

Material of Ruler	Result
Plastic X	Ruler broke when 7 th slotted weight was added.
Plastic Y	Ruler did not break when 7 th slotted weight was added.

Answer the questions that follow based on the diagrams and results given.

- (a) What happened to the rulers when the slotted weights were hung on them as shown in Diagram 1? [1]

Score	1
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- (b) Paul wrote down a few conclusions based on his results in the table. Indicate with a tick (✓) whether his conclusions are true, false, or not possible to tell. [2]

Conclusion	True	False	Not possible to tell
Plastic Y is lighter than Plastic X.			
Plastic Y is harder than Plastic X.			
Plastic X is stronger than Plastic Y.			
Plastic X is more flexible than Plastic Y.			

End of paper

Score	2
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ANSWER SHEET

EXAM PAPER 2013

SCHOOL : NAN HUA PRIMARY SCHOOL

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

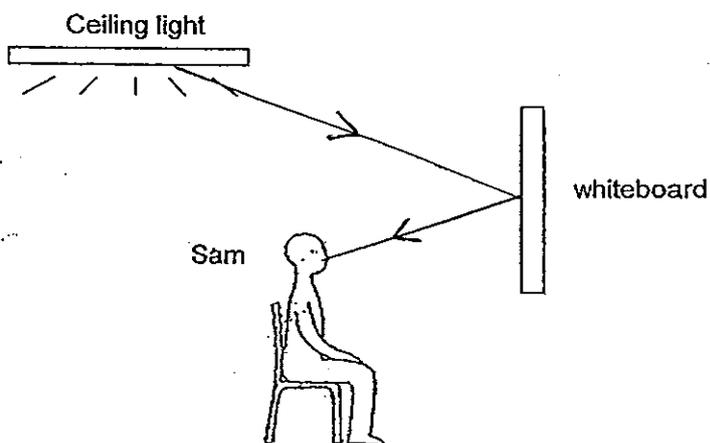
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	1	4	2	4	3	3	3	3	4	1	4	4	3	2	2	4

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	3	3	2	1	1	3	3	3	2	1	1	4

Section B

Q31

(a)



(b) The whiteboard reflects the light from the ceiling light into his eyes.

(c) Light from the surrounding falls on the words on the whiteboard and is reflected into Sam's eyes.

Q32

(a) No air does not have a fixed shape so it takes the shape of the balloon.

Q33

- (a) First wax to melt is B followed by C, A and D
- (b) Heat flows from a hotter place to a cooler place.
- (c) The amount of wax should be the same

Q34

- (a) Living things needs air, food and water.
- (b) The animal Q in container D had reproduced.

Q35

- (a) A: It is warm-blooded and gives birth to young alive
B: It is cold- blooded and lay eggs
- (b) No, because a dog gives birth to young alive, not by laying eggs.

Q36

- (a) The distance between torch and material, the thickness of material and the intensity of light from the torch.
- (b)

Variables	Independent Variables	Constant Variables
Distance between the torch and the material		✓
Type of material	✓	
Thickness of material		✓
Intensity of the light from the torch (lux)		✓

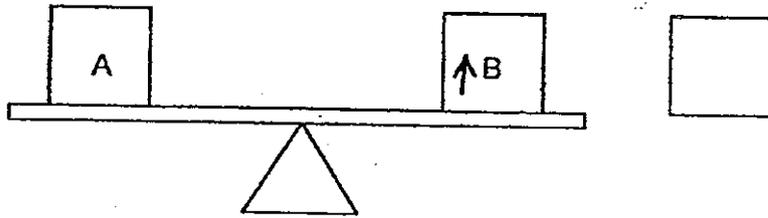
- (c) B. Because no light should pass through the front door.

Q37

- (a) Student C has drawn correctly because when an object is opaque, it will block all the light. A shadow does not have features such as eyes, nose and mouth.
- (b) She can either move herself closer to the screen or move the torch further from her.
- (c) Her shadow will remain the same.

Q38

(a)



(b) Air has mass and can be compressed.

Q39

(a) 200 ml

(b) The plasticine is a solid and its volume remained even when the shape has changed.

(c) Solid has a definite shape but liquid has no definite shape.

Q40

(a) It will be 30°C.

(b) The water in the glass basin gains heat from the water in the glass cup and the surrounding air until the water in both containers reach room temperature.

(c) No, the water in the glass basin loses heat to the water in the glass cup and the surrounding until the water in both container reach room temperature.

Q41

(a) It will break.

(b) because when the iron ring cools down, it will contract and the toothpick will drop out.

Q42

(a) Material A. The temperature of the water rises faster than that of B.

(b) Lower, the water in the container with the thicker wall will require more time to heat up to the same temperature as before as heat travels through a thicker wall slowly.

Q43

(a) It could be a fungi

(b) It reproduces by spores

(c) Both B and D make it own food.

Q44

(a) They bent

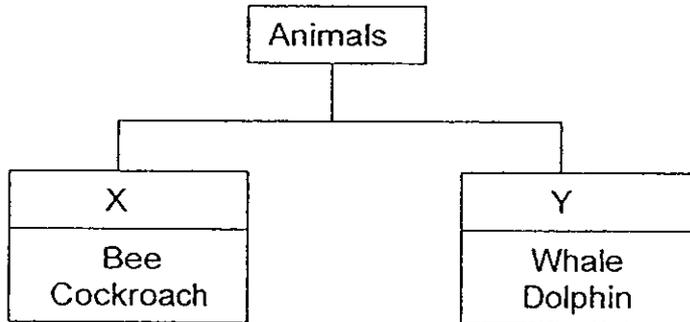
(b)

Conclusion	True	False	Not possible to tell
Plastic Y is lighter than plastic X			✓
Plastic Y is harder than Plastic X			✓
Plastic X is stronger than Plastic Y		✓	
Plastic X is more flexible than Plastic Y		✓	

Section A (30 x 2 marks = 60 marks)

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

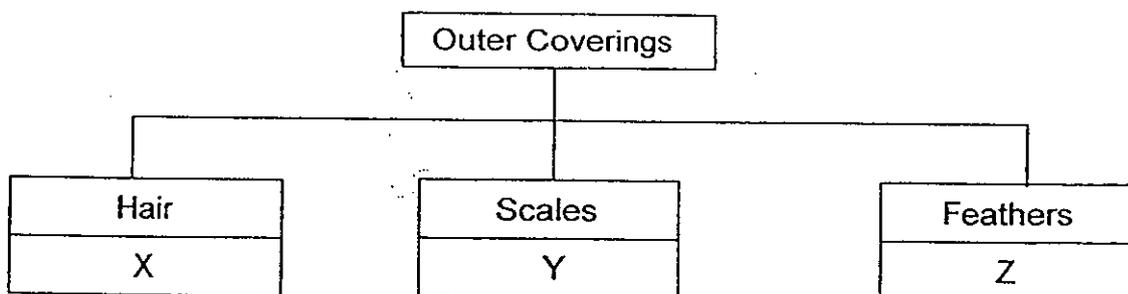
1. Study the classification chart below.



Which of the following best represents the characteristics of animals in groups X and Y?

	X	Y
(1)	Have feathers	Have scales
(2)	Lay eggs	Gives birth to young alive
(3)	Breathe through lungs	Breathe through gills
(4)	Hard outer covering	Have scales

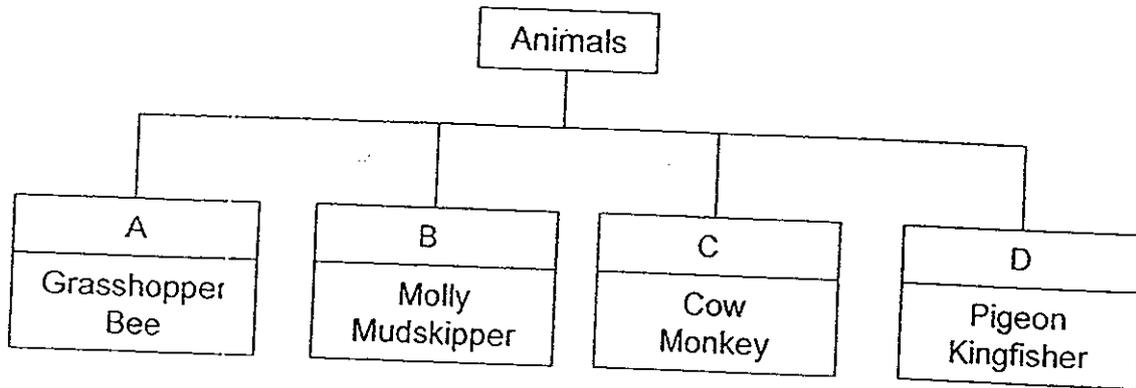
2. Some aquatic animals are grouped according to their outer coverings.



Which animals could X, Y and Z represent?

	X	Y	Z
(1)	Seal	Prawn	Butterfly
(2)	Spiders	Angelfish	Ostrich
(3)	Crab	Snake	Mynah
(4)	Bat	Swordtail	Owl

For questions 3 and 4, refer to the classification chart below.



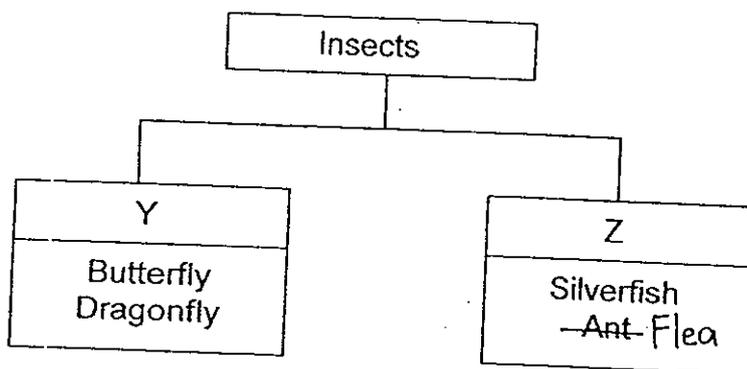
3. Which of the following best represents A, B, C and D?

	A	B	C	D
(1)	Birds	Fish	Mammals	Insects
(2)	Insects	Mammals	Birds	Fish
(3)	Mammals	Insects	Birds	Fish
(4)	Insects	Fish	Mammals	Birds

4. Which of the following animals are correctly classified based on the chart above?

	A	B	C	D
(1)	Silverfish	Guppy	Platypus	Hawk
(2)	Guppy	Hawk	Silverfish	Platypus
(3)	Platypus	Silverfish	Hawk	Guppy
(4)	Hawk	Platypus	Guppy	Silverfish

5. Study the classification chart on insects below.



Which one of the following best describes how the animals above have been classified?

- (1) The number of legs.
- (2) The presence of wings.
- (3) The way the insect ~~move~~ reproduce
- (4) The number of body parts.

6. Study the classification table below.

X	Y
duckweed water hyacinth	lotus water lily

Which one of the following could best represent headings X and Y?

	X	Y
(1)	floating plants	fully submerged plants
(2)	partially submerged plants	floating plants
(3)	floating plants	partially submerged plants
(4)	fully submerged plants	partially submerged plants

7. Which of the following statements about plants are **true**?

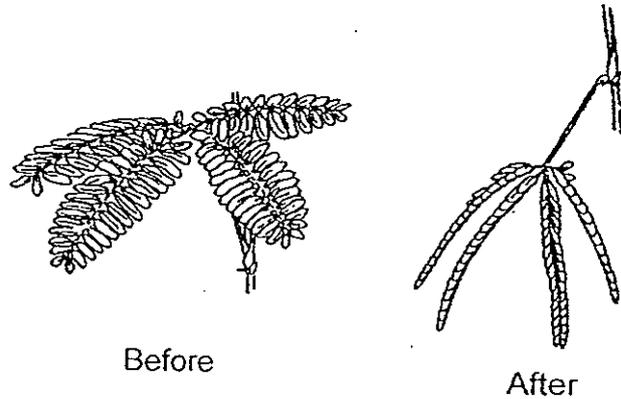
- A All plants have stem.
- B All plants have flowers.
- C All plants have leaves and roots.

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

8. Which one of the following statements about pine trees and pong pong trees is **incorrect**?

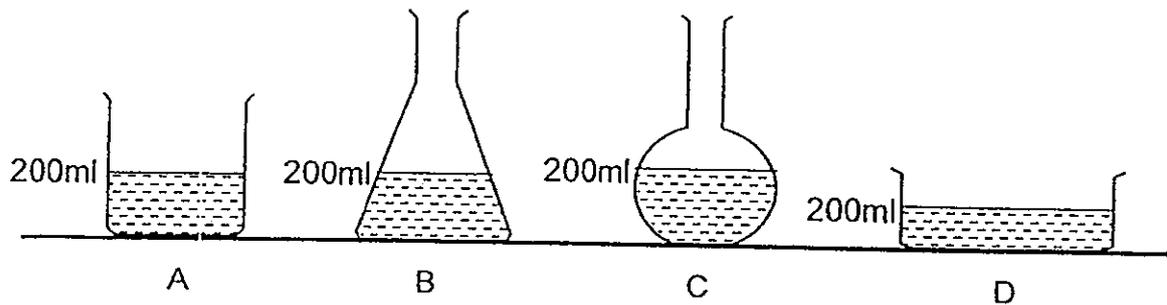
- (1) Both organisms live on land.
- (2) Both organisms are flowering plants.
- (3) Both organisms are able to make their own food.
- (4) Both organisms cannot move freely on their own.

9. Jack noticed that a mimosa plant folded its leaves when touched.



Which one of the following characteristics of living things does this observation show?

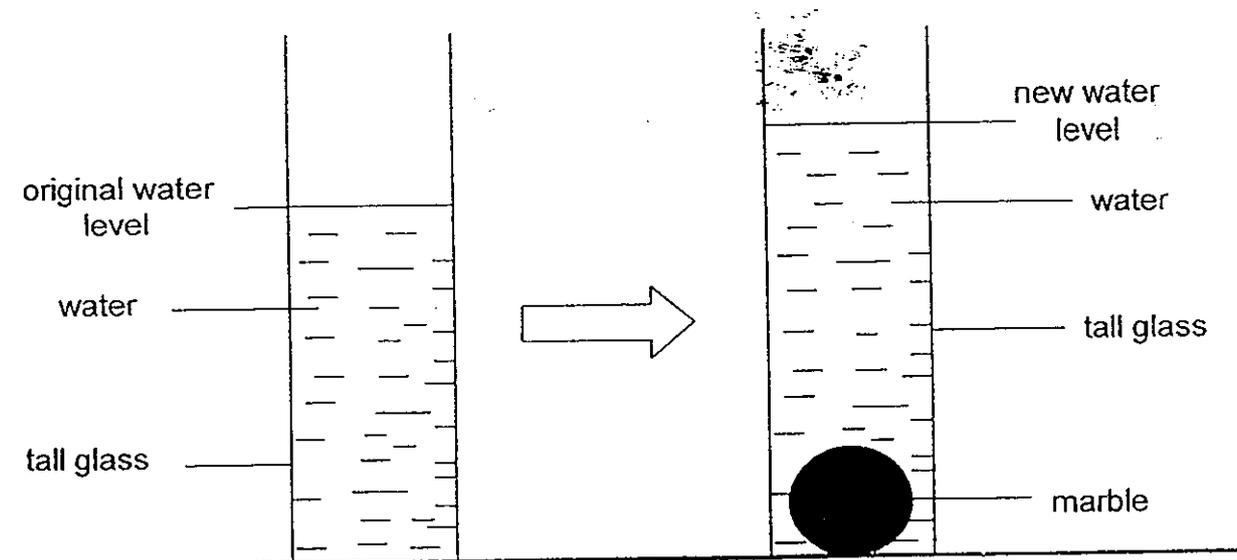
- (1) Living things can grow.
 - (2) Living things can reproduce.
 - (3) Living things need air, food and water.
 - (4) Living things can respond to changes in its surrounding.
10. During a science experiment, Annette poured 200ml of water into each of the containers, A, B, C and D, as shown below.



What does the experiment above show about the property of water?

- (1) Water has definite shape and volume.
- (2) Water has no definite shape and volume.
- (3) Water has definite shape but has no definite volume.
- (4) Water has no definite shape but has definite volume.

11. Narita filled a tall glass with water before placing a marble into it. He observed that the water level in the tall glass rose.



Which one of the following best explains Narita's observation?

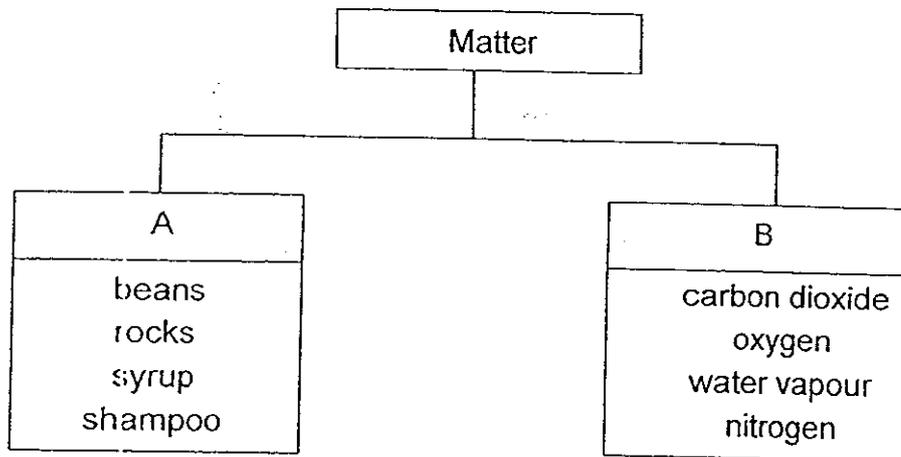
- (1) The marble took up space in the tall glass.
 - (2) The water increased in mass when the marble was put in.
 - (3) The water increased in volume when the marble was put in.
 - (4) The marble increased in volume when it was placed into the tall glass.
12. Two new substances Y and Z were discovered by some scientists. They conducted some tests on these two substances and recorded the results in the table below.

Substance	Does it have a definite volume?	Does it have a definite shape?
Y	Yes	Yes
Z	Yes	No

Which of the following matter have properties that are similar to substances Y and Z respectively?

	Matter with properties similar to substance Y	Matter with properties similar to substance Z
(1)	steam	shadow
(2)	stone	tomato juice
(3)	water	oxygen
(4)	wooden chair	paper

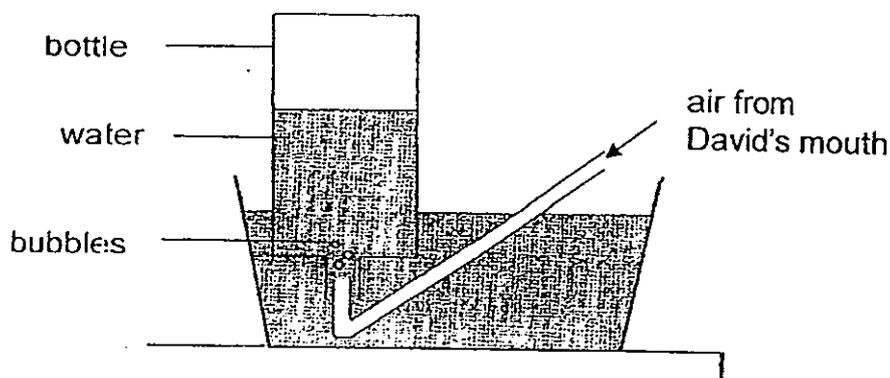
13. The diagram below shows a way of classifying some matter.



Which one of the following headings could best represent A and B?

	A	B
(1)	Takes the shape of the container	Does not take the shape of the container
(2)	Has definite shape	Has no definite shape
(3)	Has definite volume	Has no definite volume
(4)	Occupies space	Does not occupy space

14. David blew air into an inverted bottle of water through a tube as shown in the diagram below.

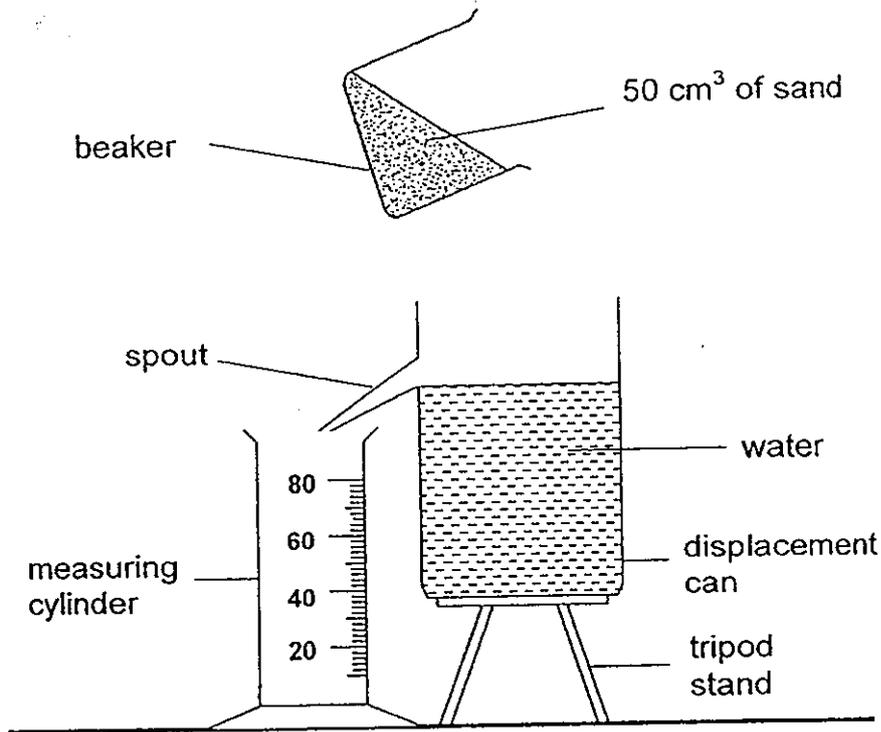


What will happen to the water level in the bottle?

- (1) The water level in the bottle will rise.
- (2) The water level in the bottle will drop.
- (3) The water level in the bottle will rise then drop.
- (4) The water level in the bottle remains unchanged.

15. Judith filled a displacement can with water as shown in the diagram below. Then, she filled a beaker with 50 cm^3 of sand.

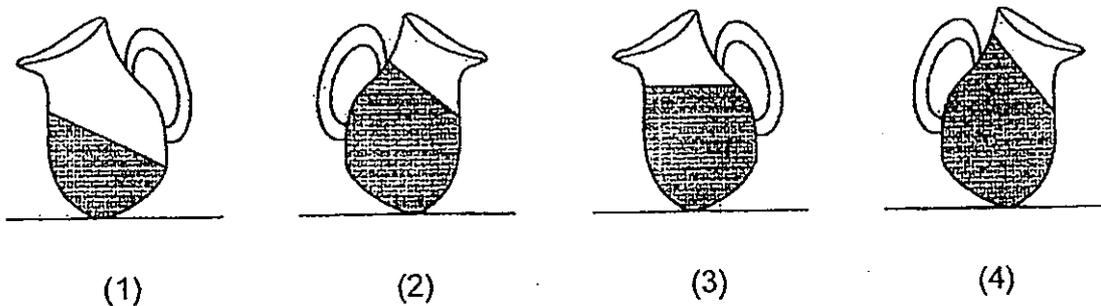
When she poured all the sand into the displacement can, water flowed out through the spout of the displacement can into the measuring cylinder.



What was the volume of water collected in the measuring cylinder?

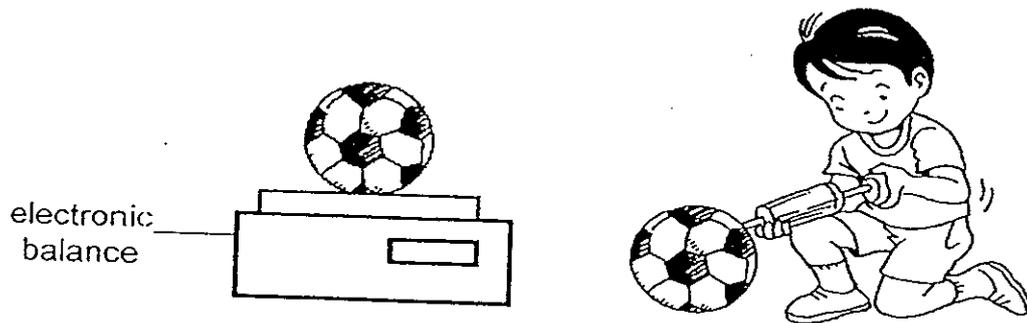
- (1) 45 cm^3
 - (2) 50 cm^3
 - (3) 55 cm^3
 - (4) 60 cm^3
16. Geraldine poured 250ml of water into 4 similar jugs and she tilted the jugs in various positions on the table.

Which one of the following diagrams correctly shows the water level in the jug after 1 minute?



17. Shaun did an experiment as shown in the diagram below.

First, he weighed a ball using an electronic balance and recorded its mass. Next, he pumped more air into the ball using a hand pump. Then, he weighed the ball again and recorded its mass.



Which one of the following results is mostly likely to be the set of readings he recorded and the conclusion he could draw from his experiment?

	Mass of ball at first (g)	Mass of ball after more air was pumped in (g)	Conclusion
(1)	480	520	Air has mass and can be compressed
(2)	480	580	Air has no definite volume
(3)	480	480	Air has mass
(4)	480	450	Air has no definite volume

18. Light is one form of energy from the sun. Which of the following activities require light?

- A Plants making food in the day.
- B Burning wood used to cook food.
- C Boiling water using an electric heater.
- D A scientist using binoculars to observe animals in a forest.

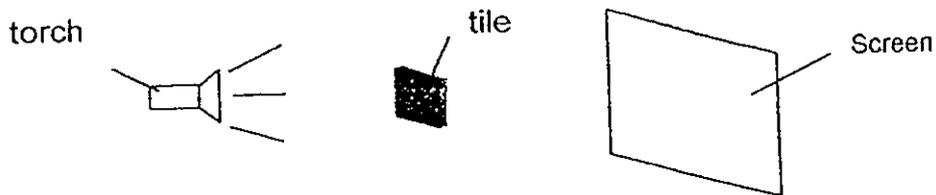
- (1) A and D only
- (2) B and C only
- (3) A, B and D only
- (4) A, B, C and D

19. Which of the examples below are natural light sources?

- A star
- B moon
- C firefly
- D lamp post

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

20. Susan conducted an experiment by placing a tile in between a torch and a screen as shown below.

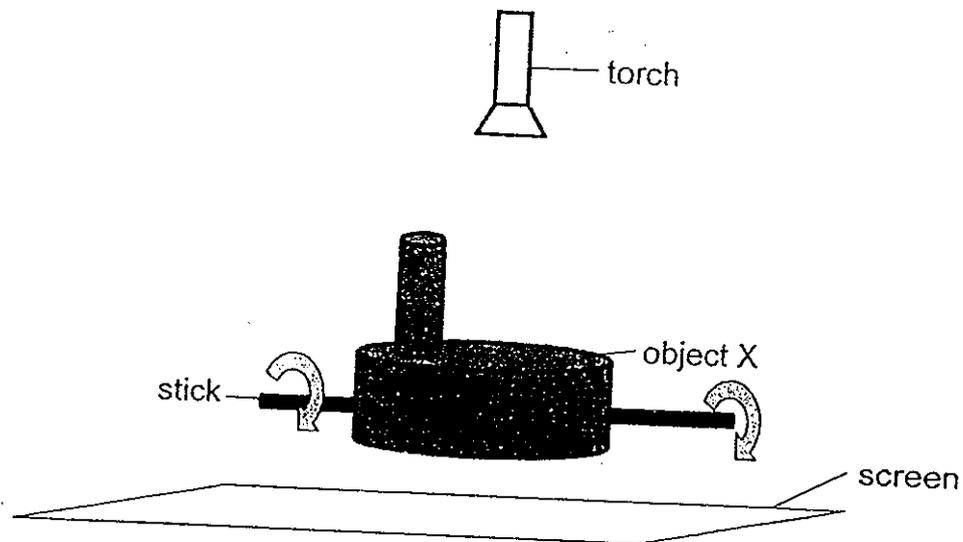


Which of the following actions will enlarge the shadow of the tile on the screen?

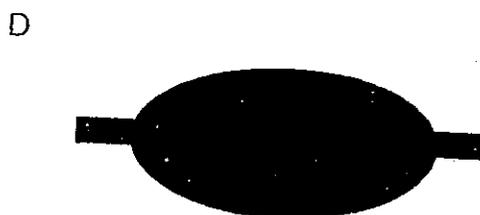
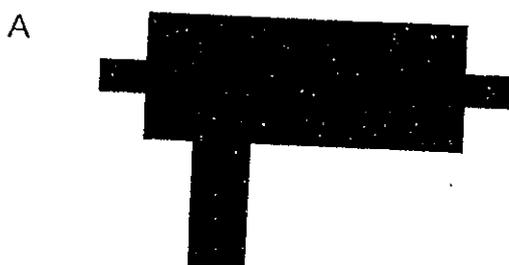
- A Moving the tile closer to the torch.
- B Moving the tile closer to the screen.
- C Moving the torch away from the tile.
- D Moving the screen away from the tile.

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

21. Study the diagram below. A stick was inserted into object X to allow the object to be rotated. A torch was then placed above it and switched on as object X rotated about the stick as shown in the diagram. A shadow of the object was then cast on a screen placed below the object.

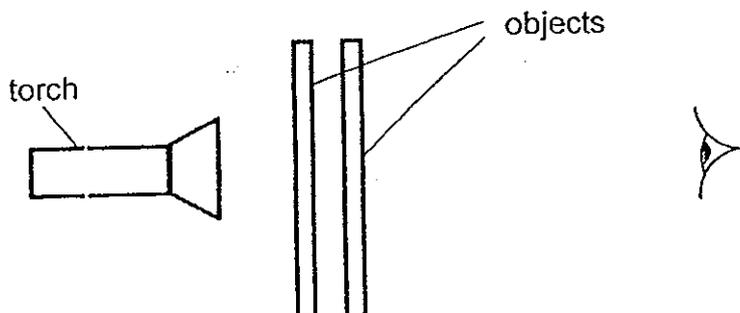


Which of the following are possible shadows of object X when it is rotated as indicated?



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

22. Ali conducted an experiment using objects A, B and C and a torch. He placed 2 objects at a time in front of the torch as shown below.



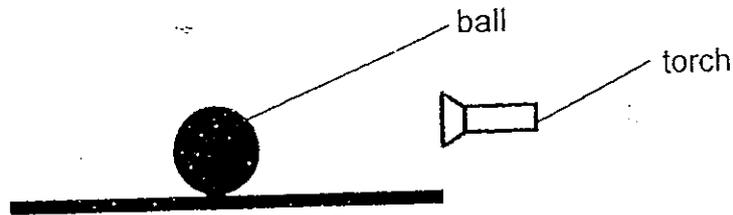
He switched on the torch and recorded if he could see light passing through. His results are shown in the table below. A tick (✓) shows that the object was placed in front of the light source.

Objects			Observation
A	B	C	
	✓	✓	No light was observed.
✓		✓	Some light was observed.
✓	✓		No light was observed.

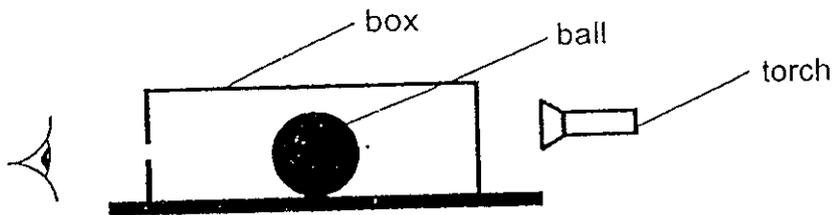
Which one of the following options best describes the property of objects A, B and C?

	A	B	C
(1)	translucent	transparent	opaque
(2)	transparent	opaque	translucent
(3)	translucent	transparent	translucent
(4)	opaque	opaque	transparent

25. Sally placed a ball on a table in a dark room. When a torch was switched on, she was able to see the ball.



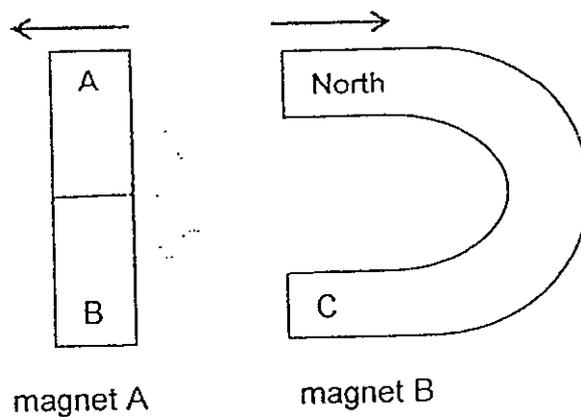
She then placed a box with a hole on its side over the ball and looked through the hole as shown in the diagram below. However, when the torch was switched on, she was unable to see the ball.



Which of the following best explains why she could not see the ball?

- (1) The light passed through the box.
- (2) The ball cast a shadow on the box.
- (3) The ball could not reflect light into her eyes.
- (4) The box occupied more space than the ball.

26. Study the magnets given below.

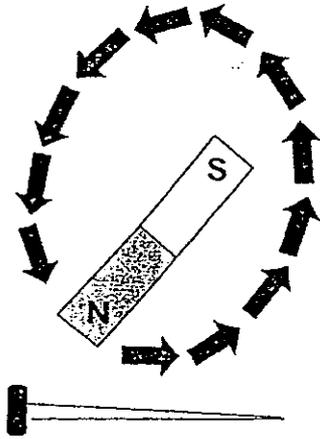


The two magnets repelled each other when they were brought towards each other. What are the poles of A, B and C?

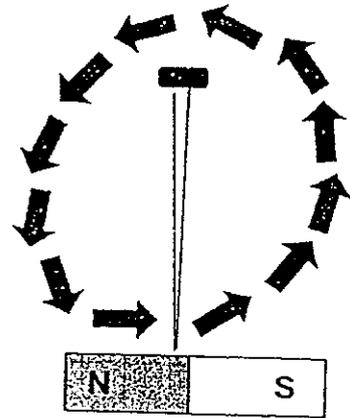
	A	B	C
(1)	North	South	North
(2)	North	South	South
(3)	South	North	South
(4)	South	North	North

27. Which one of the following diagrams shows the proper way to make a magnet by using the "stroke" method?

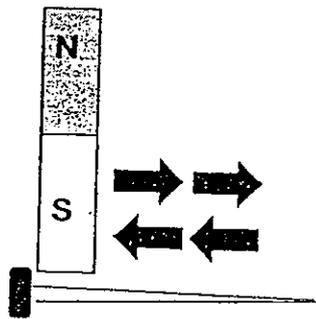
(1)



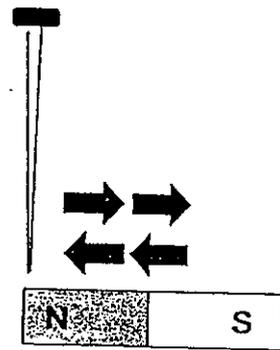
(2)



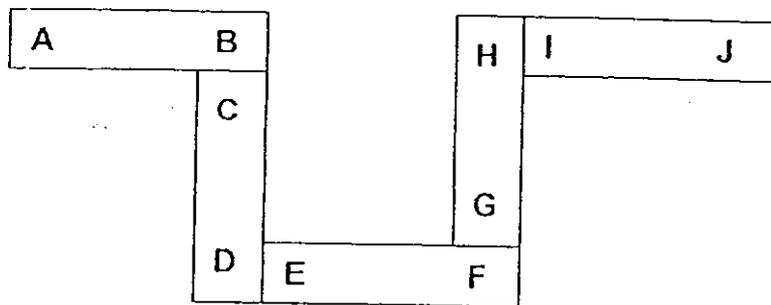
(3)



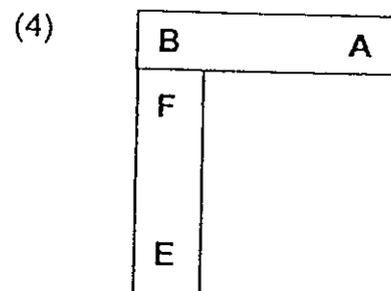
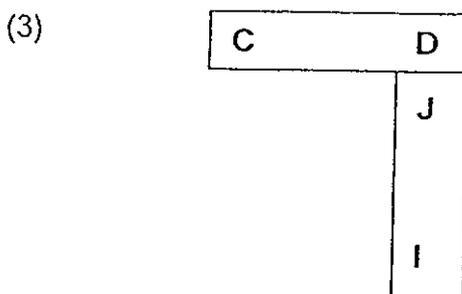
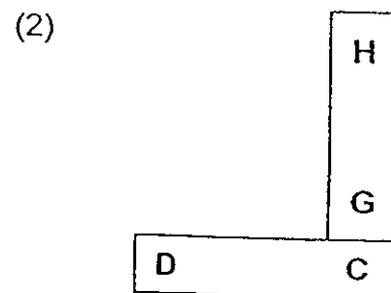
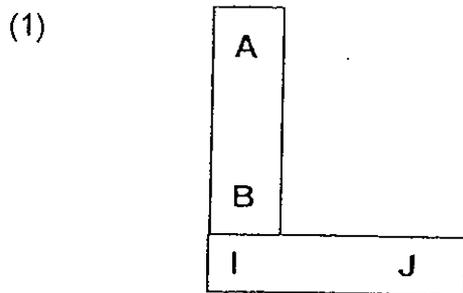
(4)



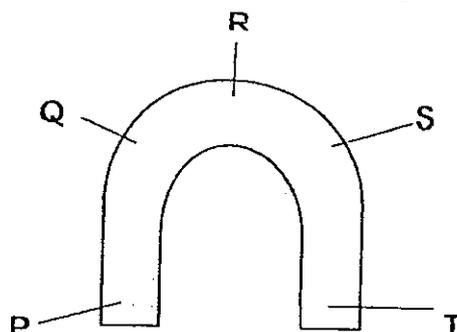
28. Five bar magnets with their ends marked A to J can be arranged as shown below.



Which one of the following diagrams shows a possible arrangement of two of the magnets?



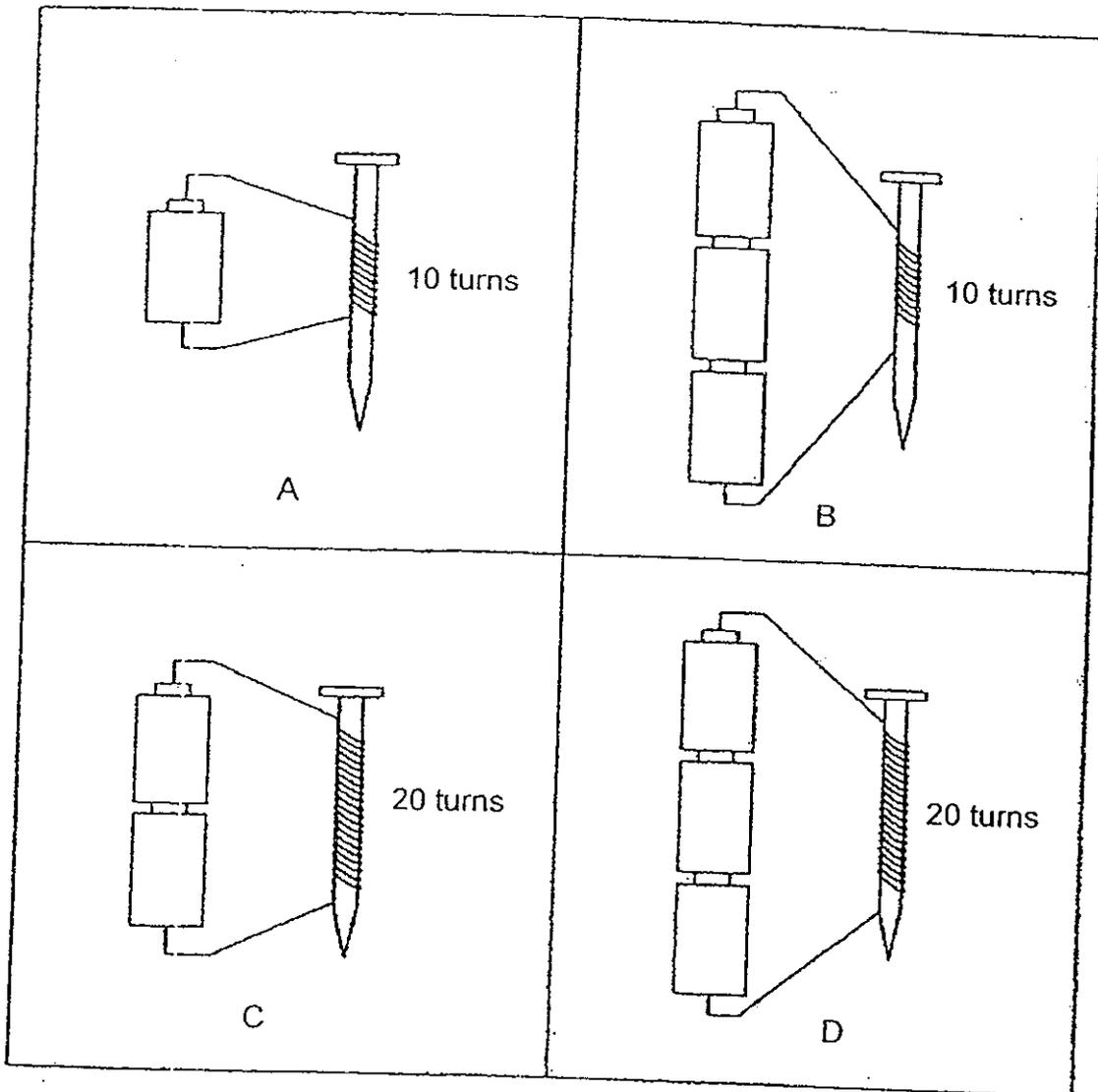
29. Study the diagram of a horseshoe magnet below.



Which part(s) of the horseshoe magnet below can attract the most number of paper clips?

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

30. Harry wants to find out if the number of turns of the coil of wire affects the strength of an electromagnet. He was given the following set-ups.



Which two set-ups should he use in order to conduct a fair test?

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



NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

SEMESTRAL ASSESSMENT 1
2013

BOOKLET B

Date : 14th May 2013

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 4 ()

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Any query on marks awarded should be raised by 22nd May 2013. 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 (40 marks)

Write your answers to questions 31 to 44 in the spaces provided.
Marks will be deducted for misspelt key words.

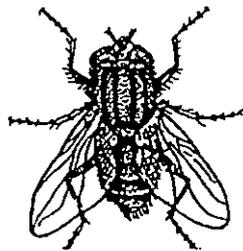
31. Cammy described an animal that she had seen at the zoo as follows:

- It has four legs
- It lives on land
- It has hair all over its body
- It produces milk to feed its young.

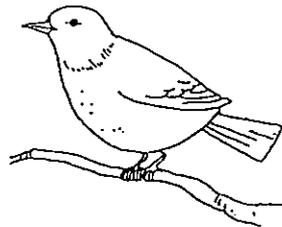
(a) Based on the descriptions above, name any one animal that Cammy might have seen at the zoo. [1]

(b) Give another characteristic of the animal that Cammy had seen. [1]

32. Compare the following two organisms.



organism A



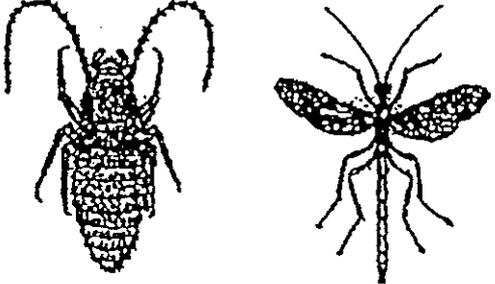
organism B

Based only on the diagrams above, write down one similarity and one difference between the two animals. [2]

Similarity:

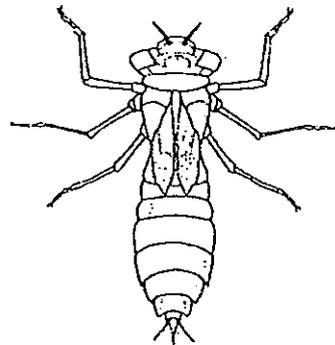
Difference:

33. Lily classified some animals she found in her garden into two groups, X and Y.

X	Y
	

- (a) State the method that Lily had used to classify the animals. [1]

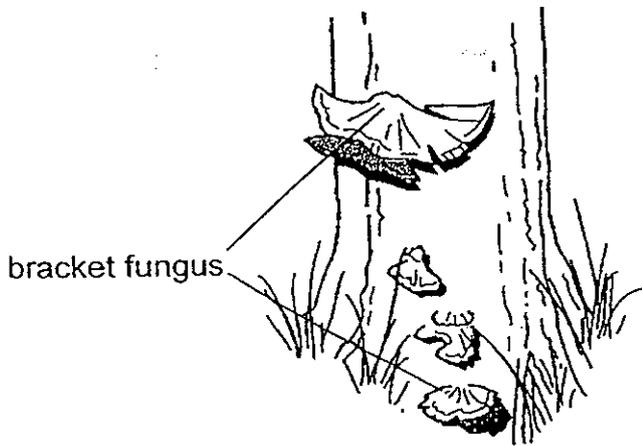
- (b) Lily then discovered animal P in her garden.



Animal P

- Where should Lily place Animal P in her classification table?
Explain your answer using animal P's characteristics. [1]

34. Study the two living things below carefully.



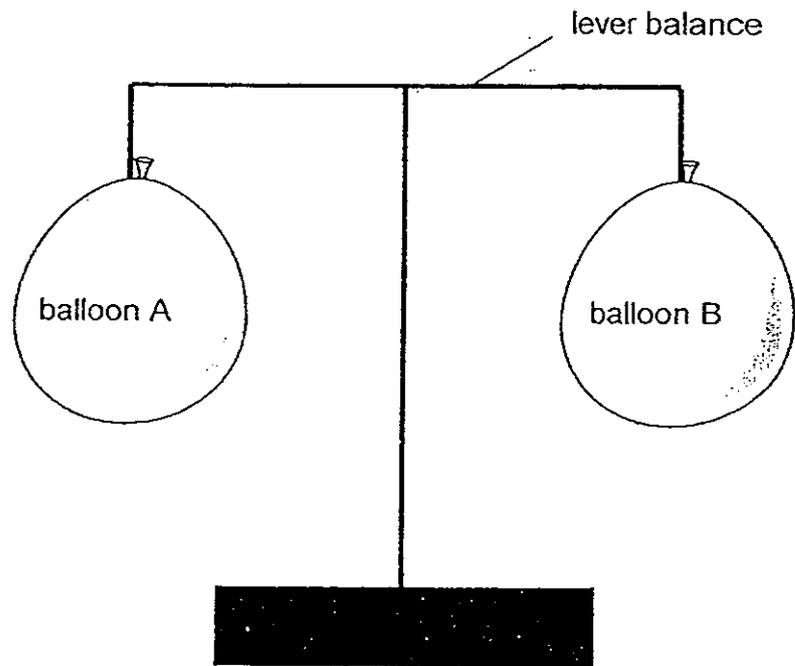
ladder fern

(a) How do the two living things above reproduce? [1]

(b) State a difference between the bracket fungus and ladder fern in terms of how they obtain food. [2]

(c) Give another example of a non-flowering plant. [1]

35. Janice tied 2 identical balloons, A and B, to each end of a lever balance. She then filled both balloons with air using an air pump such that the two balloons are balanced on the lever balance.

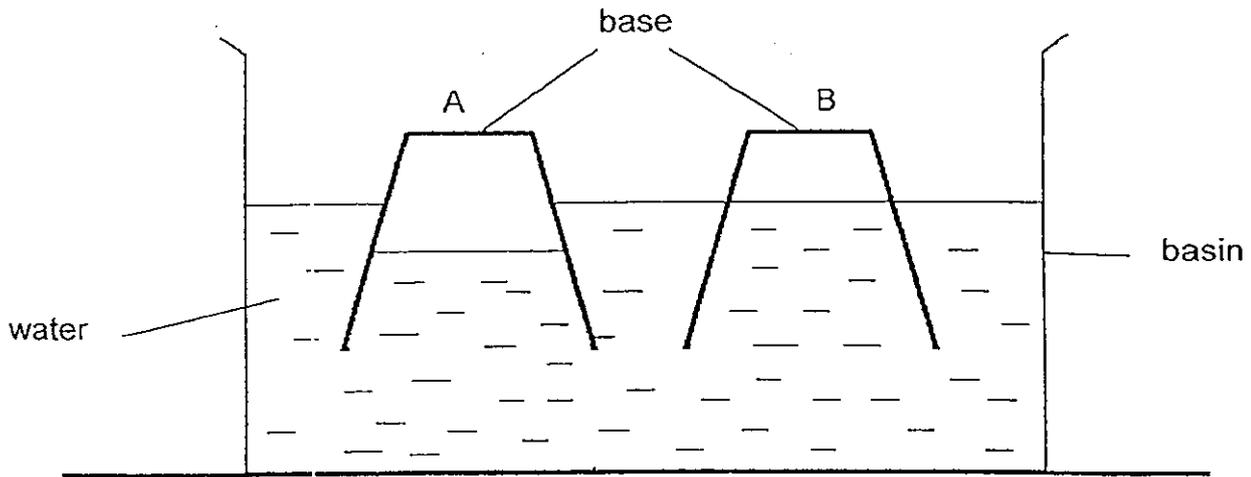


(a) i) If Janice released the air from balloon A, what will she observe happening to the lever balance? [1]

(a) (ii) Explain your answer in (i). [1]

(b) What property of air can be concluded from Janice's experiment? [1]

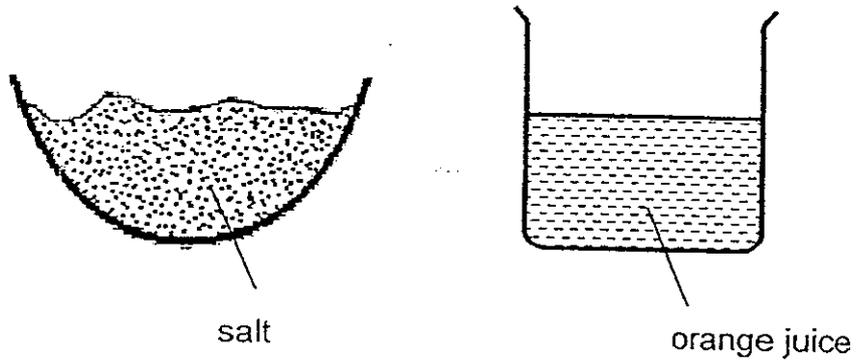
36. Jerry inverted two identical plastic cups, A and B, into a basin of water as shown in the diagram below. One of the cups had a small hole at the base.



- (i) Based on the result shown above, which cup most likely had a hole at its base? [1]

- (ii) Explain your answer in (i). [2]

37. Observe the diagrams below.



(a) i) What states of matter are the salt and the orange juice in? [1]

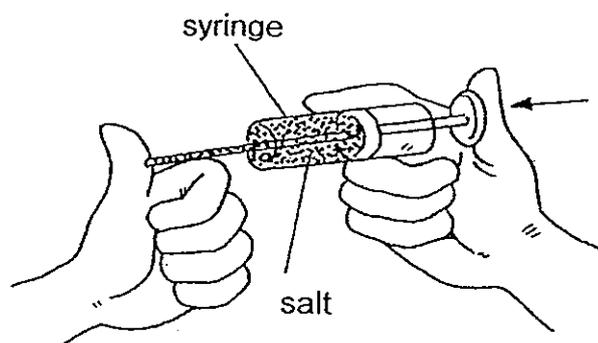
Salt: _____

Orange juice: _____

(a) ii) State a similar property of the two matters that are demonstrated in the diagram above. [1]

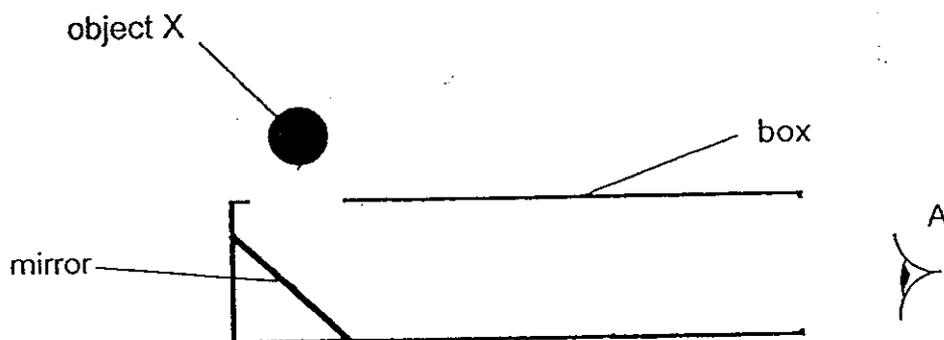
(b) Tasha then filled a syringe with salt and tried to push the plunger in as shown in the diagram below.

She managed to push the plunger in slightly for a few millimetres.



Explain why Tasha was able to push the plunger in slightly. [2]

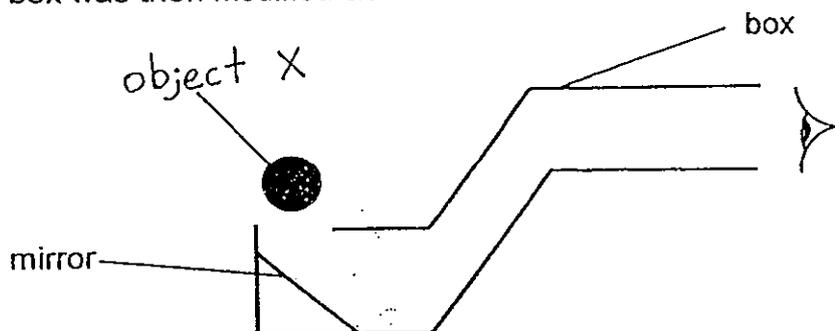
38. Julius cut a hole on two sides of a box. He then placed object X near one of the holes and a mirror below it, as shown below.



- (a) Draw light rays from the object onto the mirror such that it can be seen from point A. [1]

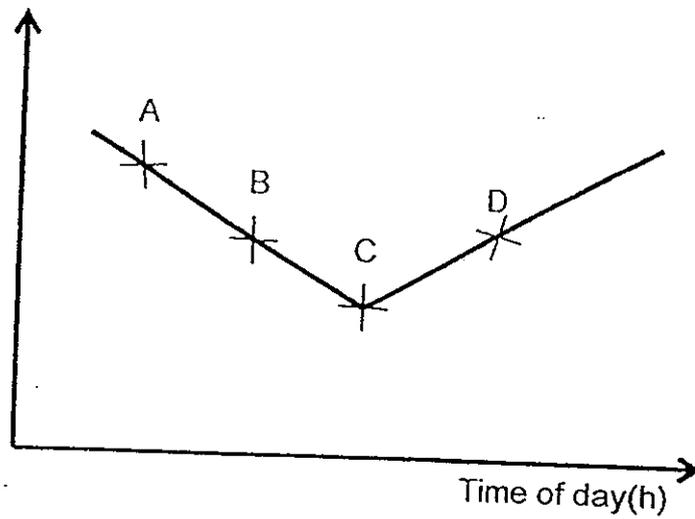
- (b) Explain how the mirror helps the person to see the object. [1]

The box was then modified as shown below.



- (c) Would the person be able to see object X? Explain your answer. [2]

39. Siming measured the length of the shadow of a stick cast on the ground from 6.00 a.m. to 6.00 p.m. She then plotted a graph as shown below.

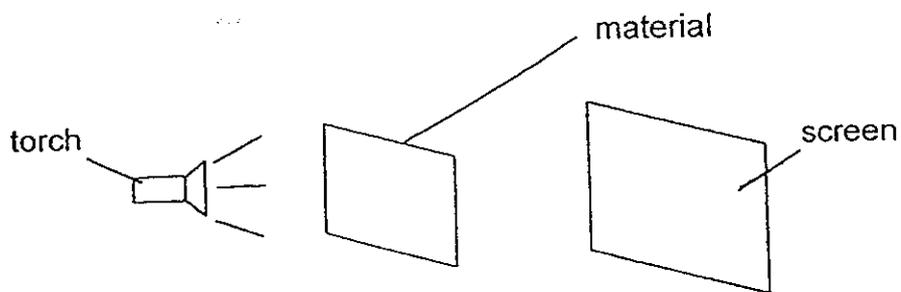


- (a) i) Which point of the graph, A, B, C or D, best represents 12 noon. [1]

- (a) ii) Explain your answer for part (i). [1]

- (b) Explain how the shadow of the stick is formed on the ground. [1]

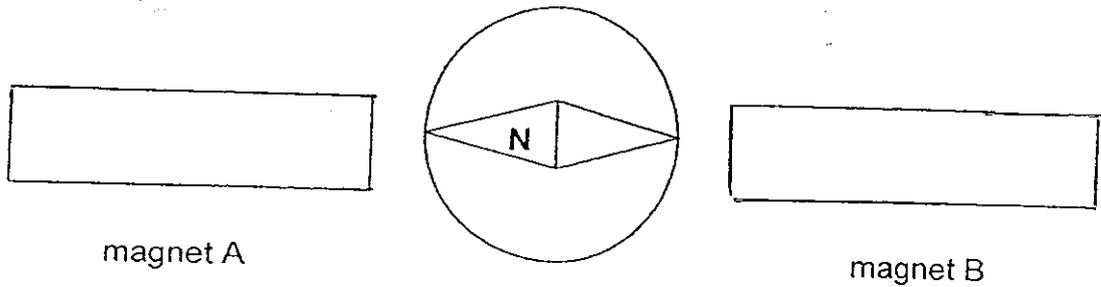
40. Rosy set up an experiment to test the ability of light to pass through different materials. She placed the materials one at a time between a torch and a screen as shown below.



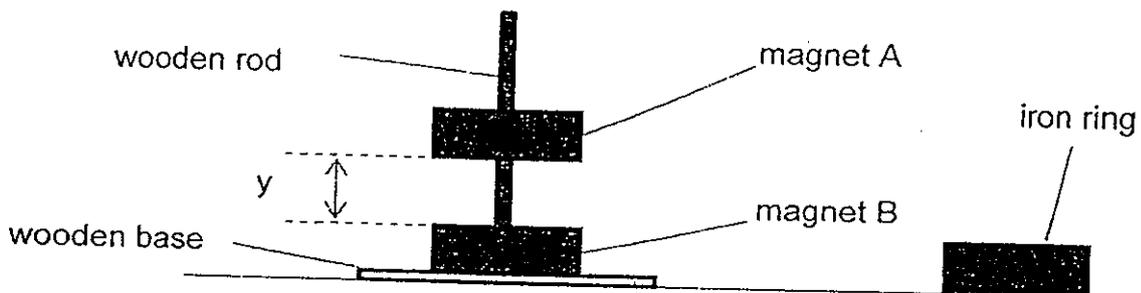
In the table below, put a tick (✓) next to the variables that must remain the same in order for Rosy to conduct a fair test. [3]

The type of torch used.	
The material used for the experiment.	
The location where the experiment is conducted.	
The distance between the material and the screen.	
The thickness of the material used for the experiment.	
The distance between the material and the light source.	

41. The diagram below shows a compass placed between two strong bar magnets, A and B. Label the poles of the two bar magnets [2]



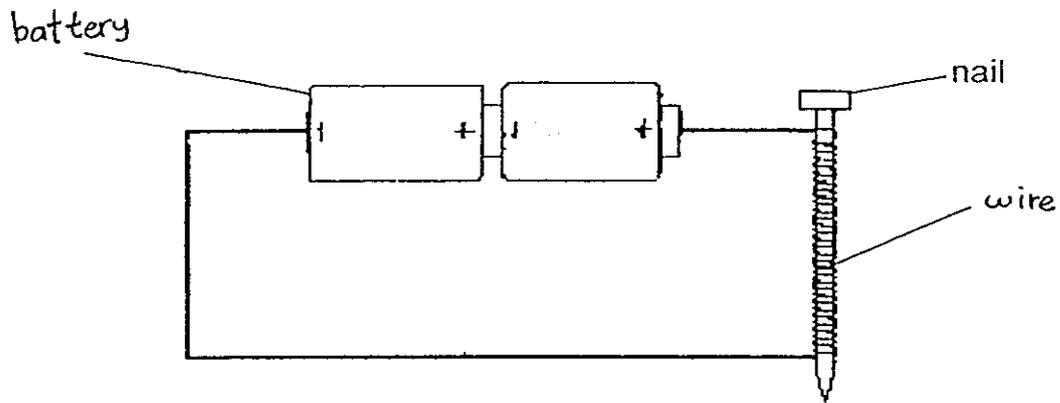
42. Sam placed two identical ring magnets, A and B, through a wooden rod as shown in the diagram below. He observed that magnets A and B were at a distance, y , from each other.



- (a) Explain why there is a distance y , between magnets A and B? [1]

- (b) What will happen to distance y , when an iron ring, as shown above, is placed on top of magnet A? [1]

43. Sammy made an electromagnet as shown below.



Based on the arrangement above, the electromagnet could pick up 10 paper clips.

(a) State 2 changes that Sammy could do to the electromagnet so that it could pick up more paper clips. [2]

(i) _____

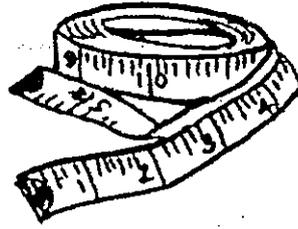
(ii) _____

(b) State the materials that ^{the nail} object X should be made of in order for it to be an electromagnet. [1]

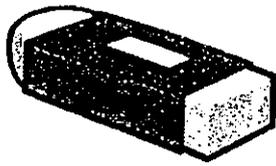
44. The objects shown below are made of different materials.



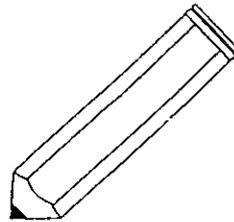
paper clip



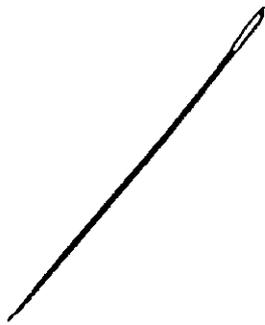
plastic measuring tape



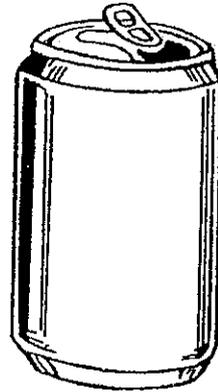
eraser



pencil



iron needle



aluminium drink can

Classify the objects shown above in the table below.

[3]

Magnetic material	Non-magnetic material

~End of Paper~

ANSWER SHEET

EXAM PAPER 2013

SCHOOL : NANYANG

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	4	4	1	2	3	2	2	4	4	1	2	3	2	2	3	1

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	2	2	3	2	2	3	3	2	1	1	2	3

31)a)Tiger.

b)It gives birth to its young alive.

32)Similarity : Both organisms have wings.

Difference : Organism A has six legs whereas organism B has two legs.

33)a)She classified them according to how many legs they have.

b)She should place Animal P in Group Y. This animal has six legs, like the animals in Group Y.

34)a)They reproduce by spores.

b)The bracket fungus obtains food from its surroundings, whereas the ladder fern conducts photosynthesis to make its own food.

c)Bird's nest fern.

35)a)i)The side of the lever balance with Balloon B tied to it would tilt downwards.

ii)If Balloon A has no air left inside it, Balloon B would be heavier, so the side of the lever balance with Balloon B tied to it would tilt downwards.

b)Air has mass.

36)i)Cup B.

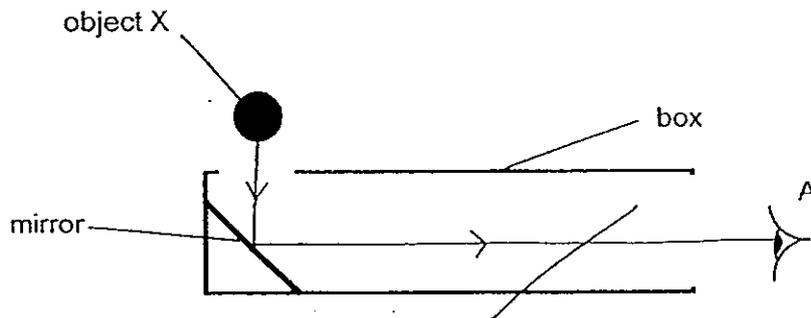
ii)The air is able to escape through the hole, hence water can flow in to occupy its space.

37)a)i)Salt : Solid Orange juice : Liquid

ii)Both occupy space.

b)There is air between the salt, so air can be compressed.

38)a)



b)The mirror reflects the light from the object into the person's eye, allowing the person to see the object.

c)No. The light reflected from the mirror could not reach his eyes because light travels in straight lines.

39)a)i)C.

ii)At noon, the sun will be directly above, so the shadow of the stick will be shortest at that time.

b)The stick is an opaque object, so the light from the sun cannot pass through, creating a dark space behind it.

40) ✓

✓
✓
✓
✓

41)N S N S

42)a)The like pole of the two magnets are facing each other, so the magnets are repelling each other.

b)It will become shorter.

- 43) a) i) He could increase the number of coils around the nail.
ii) He could increase the number of batteries used.
b) It should be made iron, steel, cobalt or nickel.

44) Magnetic material

Paper clip
Iron needle

Non-magnetic material

plastic measuring tape
eraser
pencil
aluminium drink can





NANYANG PRIMARY SCHOOL

PRIMARY FOUR SCIENCE

SEMESTRAL ASSESSMENT 2

2013

BOOKLET A

Date : 28 October 2013

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 17 printed pages including this cover page.



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1)

2013

Name : _____ Index No: _____ Class: P4 _____

7 May 2013

SCIENCE

Att: 1 h 45 min

Section A	60
Section B	40
Your score out of 100 marks	
Parent's signature	

SECTION A (30 x 2 marks)

For each question from 1 to 30, four options are given.

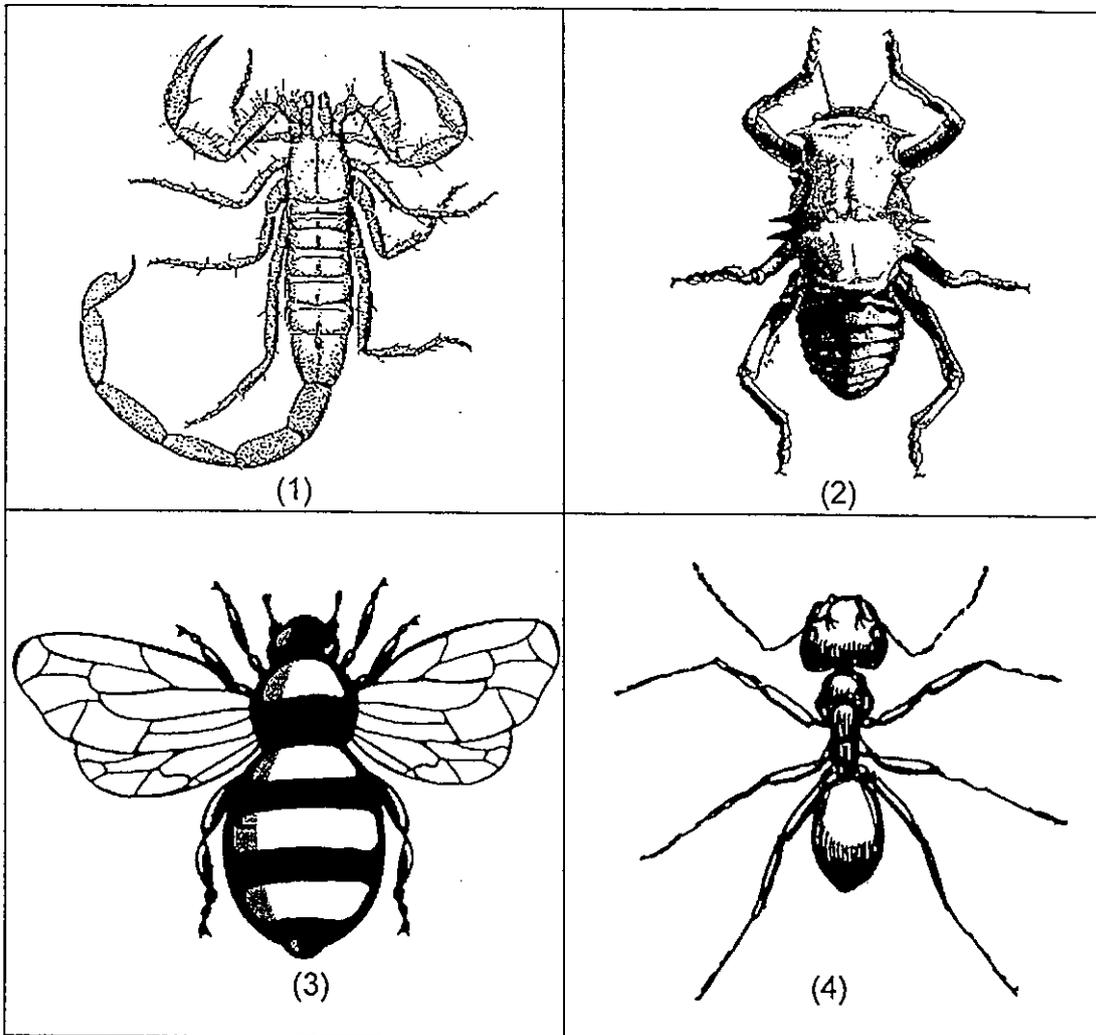
One of them is the correct answer. Make your choice (1, 2, 3 or 4).

Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

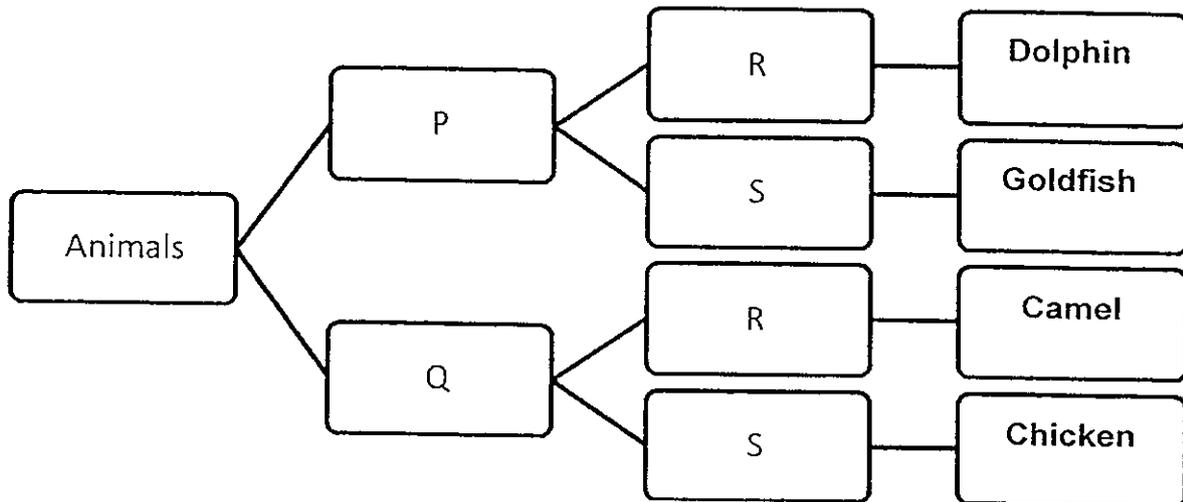
1. Which one of the following actions does not show a characteristic of a living thing?

- (1) A caterpillar eating a leaf.
- (2) A flame put out by the wind
- (3) A snail crawling on the ground
- (4) A mimosa folding its leaves when touched

2. Based on the pictures below, which one of the following is not an insect?



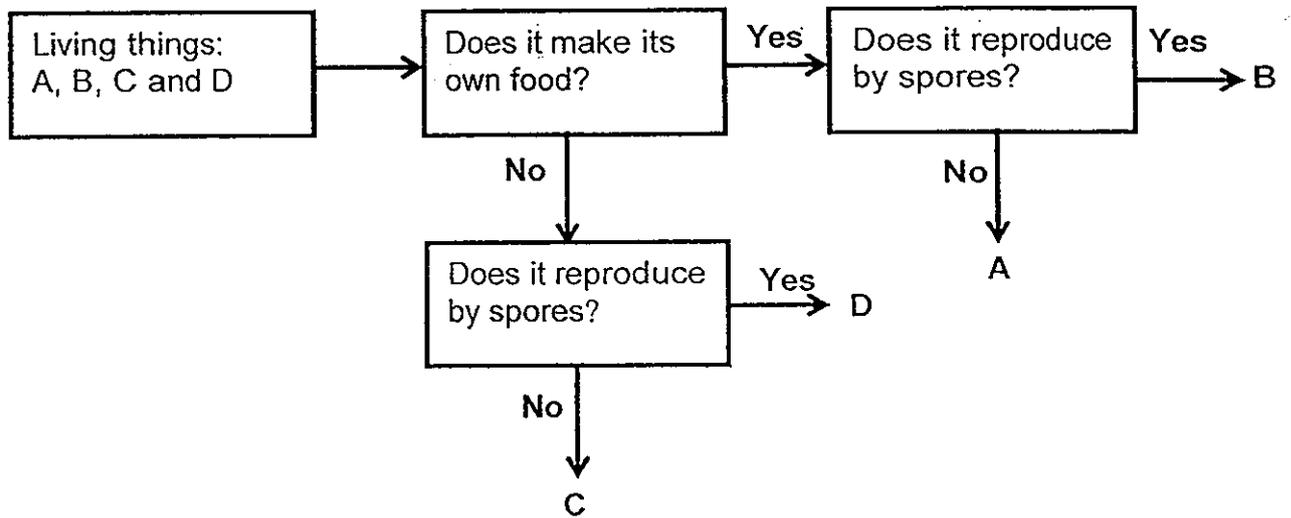
3. Some animals are grouped according to their similarities in the classification table below.



Which one of the following gives the correct sub-heading of P, Q, R and S?

	P	Q	R	S
(1)	Lives in water	Lives on land	Animals with hair or fur	Animals with scales
(2)	Animals with hair or fur	Animals with scales	Lives in water	Lives on land
(3)	Lives in water	Lives on land	Animals which give birth to their young alive	Animals which lay eggs
(4)	Animals with scales	Animals with hair or fur	Animals which lay eggs	Animals which give birth to their young alive

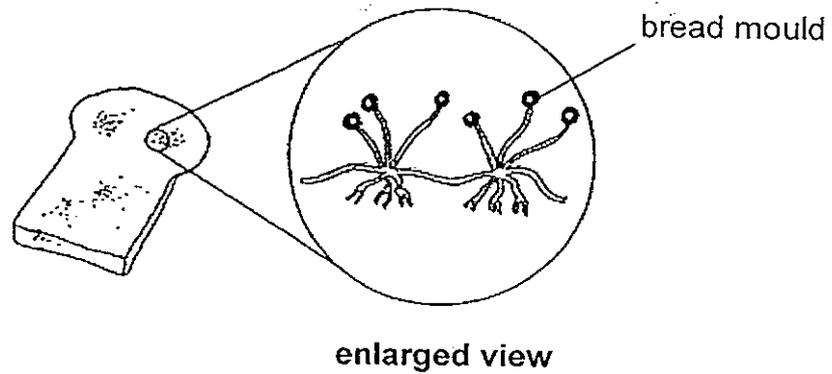
4. Four living things, A, B, C and D, are grouped using the flow chart below.



Based on the information above, which one of the following is a fern?

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

5. Ali left a slice of bread on a table for a week and found some bread mould on the bread as shown below.

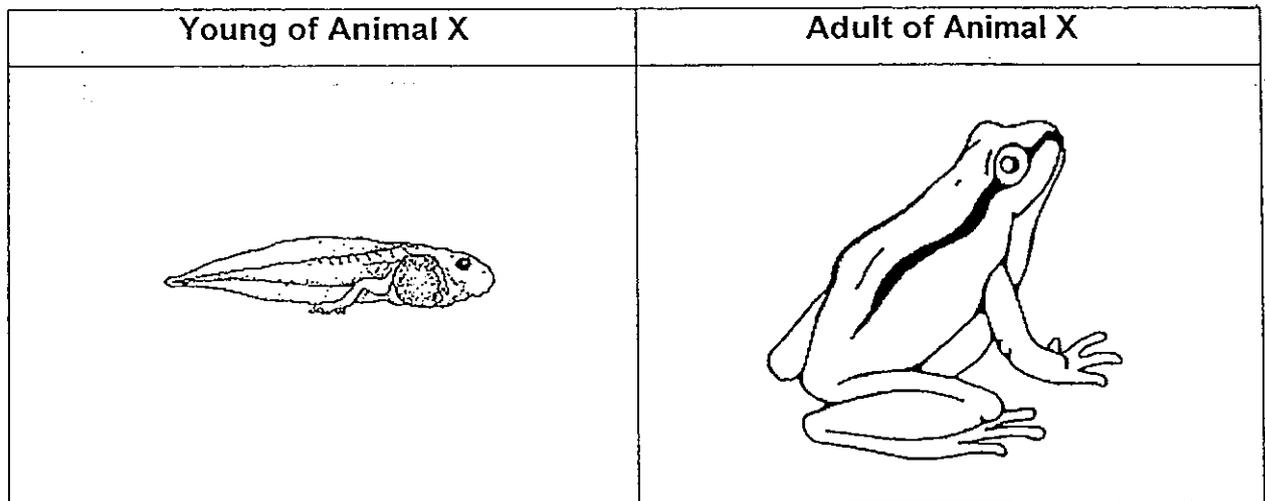


Which of the following statement(s) below is/are true about the bread mould?

- A: They need light to make food.
- B: They reproduce by seeds.
- C: They feed on dead plants and animals.

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

6. The pictures below show the young of Animal X and the adult Animal X.



The following statements are made about the young and the adult of Animal X.

- A: The young of Animal X resembles the adult of Animal X.
- B: Both the young and adult of Animal X breathe through their gills.
- C: The young of Animal X has a tail but the adult Animal X does not.

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

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

7. The table below shows the number of days Animals P and Q, spend in each stage of its life cycle before developing into an adult.

Days spent in each stage of its life cycle	Animal P	Animal Q
Egg	4	6
Larva	7	4
Pupa	6	8

Both animals eat plants in their larval stage.

Based on the information given above, some students come up with the following conclusions about Animals P and Q.

Ali : Animal Q lives longer than Animal P.

Bala : Animal P will eat more plants than Animal Q.

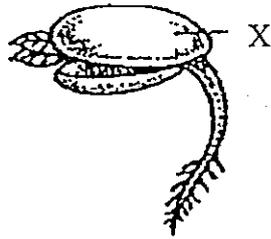
Cathy : Animal P and Q have 3 stages in their life cycles.

Devi : Animal P spends more days as a larva than Animal Q.

Whose statement(s) is/are definitely correct?

- (1) Ali only
- (2) Devi only
- (3) Ali, Cathy and Devi only
- (4) Ali, Bala, Cathy and Devi

8. The picture below shows a seedling. What is the function of the part marked X?



- (1) Grows into a new plant
- (2) Makes food for the seedling
- (3) Takes in water for the seedling
- (4) Provides food for the baby plant

9. The following statements show the different stages of a seed germinating into a seedling.

A: The shoot grows upwards.

B: The young plant uses sunlight to make food. ⁴

C: The root grows downwards.

D: The seedling develops its first leaves.

Which one of the following options shows the correct stages of growth?

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

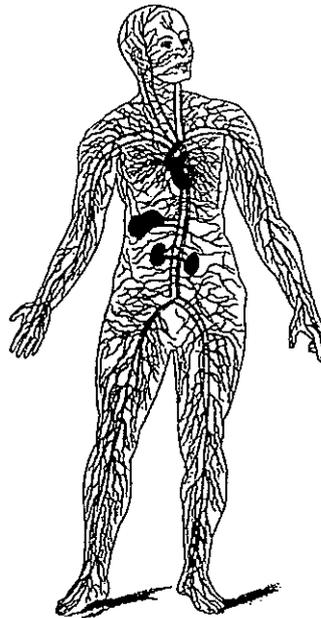
10. The following statements describe an organ in the human body system.

- It is the last stage of digestion
- It works with the circulatory system
- It contains juices to help break down food

Which organ best fits all the description above?

- (1) Anus
- (2) Stomach
- (3) Small intestine
- (4) Large intestine

11. The diagram below shows a human body system.



Which one of the following is not a function of the human body system shown above?

- (1) Carries blood to the different body parts
- (2) Transport nutrients to the different body parts
- (3) Stores waste products before it is removed through the anus
- (4) Carries wastes away from all parts of the body for removal

12. Which group of organs best represents the function for the exchange of gases in a human body?

- (1) heart, nose and gullet
- (2) lungs, nose and windpipe
- (3) skull, ribcage and backbones
- (4) blood vessels, gullet and lungs

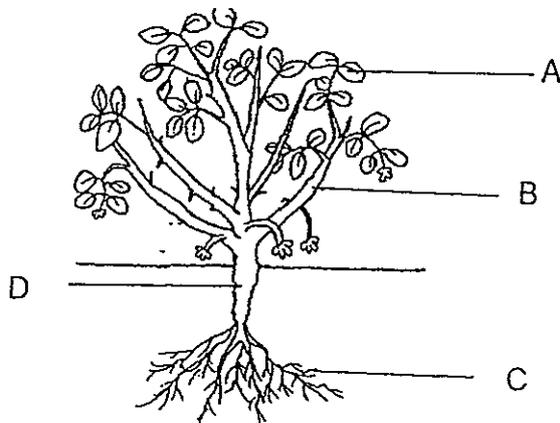
13. The following statements describe some processes in digesting a piece of bread in different parts of the digestive system.

- A: The bread travels down a muscular tube. No digestion happens here.
- B: The bread is broken into smaller pieces through chewing motion.
- C: The undigested parts of the bread are stored here to be removed from the body.
- D: Here, the digested food is passed into the blood stream.

Which of the followings has arranged the processes in the correct order of sequence?

	Order of sequence			
	→			
(1)	A	D	A B	C
(2)	B	A	D	C
(3)	B	C	D	A
(4)	A	B	C	D

14. The diagram below shows a plant.



Which part of the plant makes food for the plant?

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

15. Germain took 4 similar balsam plants, W, X, Y and Z and placed them in the conditions as stated below

Balsam Plant	Location	Temperature	Water	Fertilizer
W	Inside dark cabinet	22°C	Yes	No
X	Inside dark cabinet	22°C	No	Yes
Y	Garden	29°C	Yes	No
Z	Garden	29°C	No	Yes

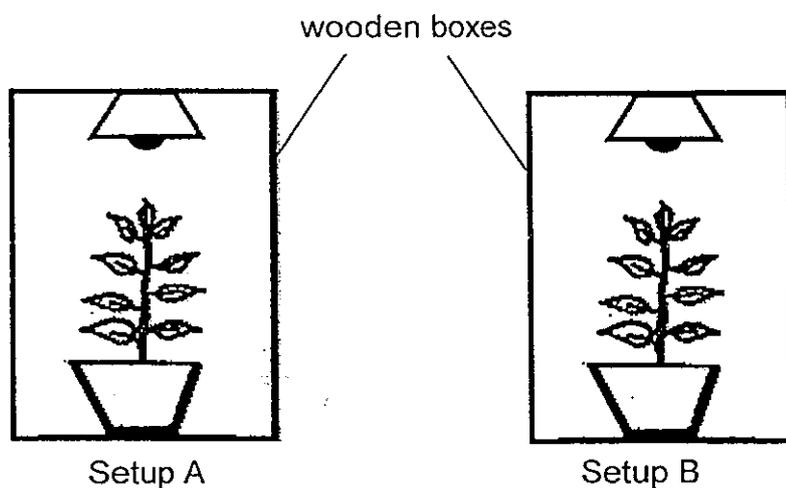
Which one of the balsam plants, W, X, Y or Z, would most likely survive after 3 months?

- W
- X
- Y
- Z

16. Which one of the followings statements below is correct about water-carrying and food-carrying tubes of a balsam plant?

	Water-carrying tubes	Food-carrying tubes
(1)	Transport water from the roots to the other parts of the plant	Transport food from the roots to the other parts of the plant
(2)	Transport food from the leaves to the other parts of the plant	Transports water from the roots to the other parts of the plant
(3)	Transports water from the roots to the other parts of the plant	Transport food from the leaves to the other parts of the plant
(4)	Transport food from the roots to the other parts of the plant	Transport food from the leaves to the other parts of the plant

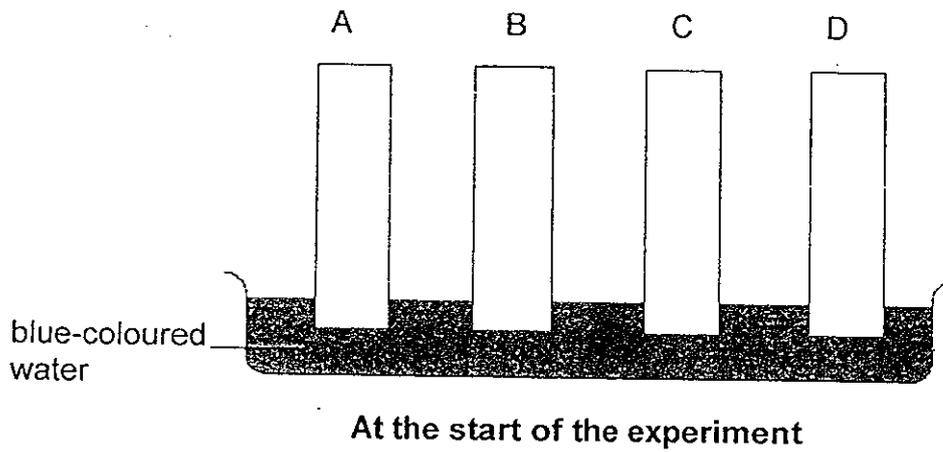
17. Jade had two identical potted plants. In setup A, she turned on the lamp for 12 hours each day. For setup B, she did not turn on the lamp throughout the experiment. The plants had sufficient water throughout the duration of the experiment. At the end of the experiment, Jade observed and recorded the number of dead leaves found in each setup.



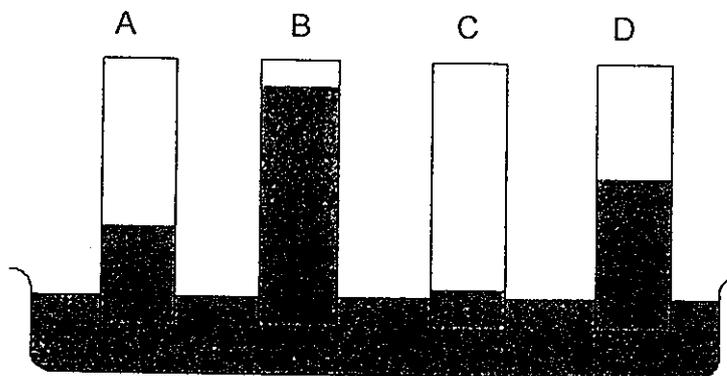
Which one of the following statements best suit the aim of Jade's experiment?

- (1) To find out if plants grow towards light.
- (2) To find out if plants need light to survive.
- (3) To find out if plants need water to survive
- (4) To find out if sunlight is needed for plant to stay alive.

18. Yi Ling set up an experiment to find out which material could absorb the most amount of water. Four strips made of different materials, A, B, C and D, were dipped into a basin of blue -coloured water for an hour.



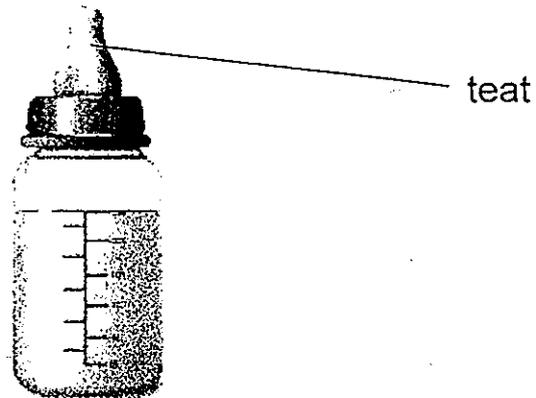
An hour later, the result of Yi Ling's experiment was as shown below.



Based on her results, which material is most suitable to be made into a mop?

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

19. Raju wanted to choose a suitable material to make the teat of a milk bottle.



The material must have the following characteristics:

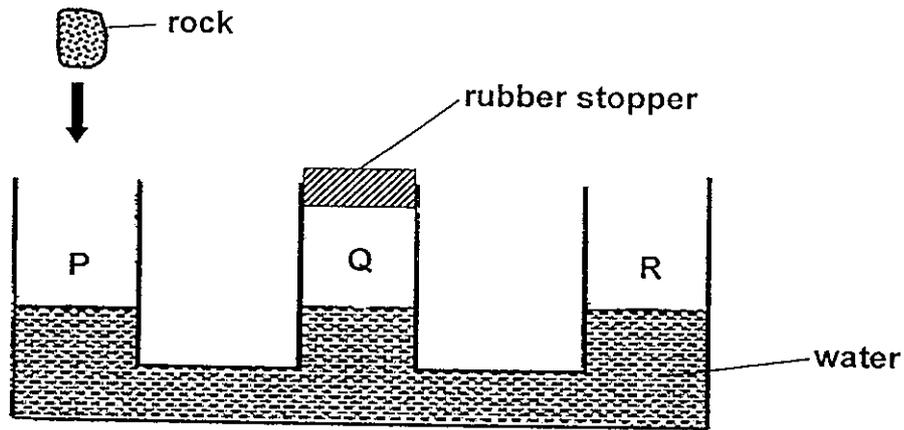
- Waterproof
- Flexible
- Strong

Which of the following materials should he choose to make the teat?

- (1) Metal
- (3) Wood

- (2) Glass
- (4) Rubber

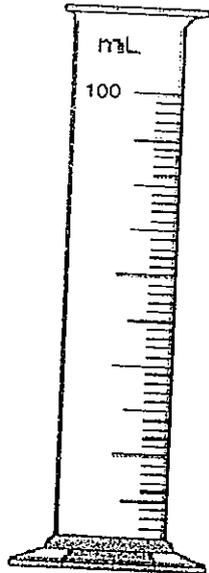
- 20 The diagram below shows a container with some water in it. Part Q of the container is sealed with a rubber stopper.



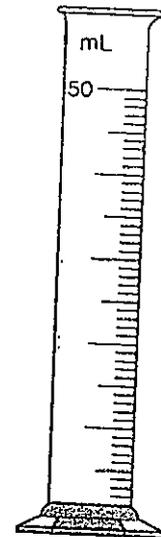
A piece of rock is then slowly dropped into the container at Part P as shown above. What will happen to the water levels at P and R?

	P	R
(1)	decrease	increase
(2)	increase	decrease
(3)	increase	increase
(4)	increase	remains the same

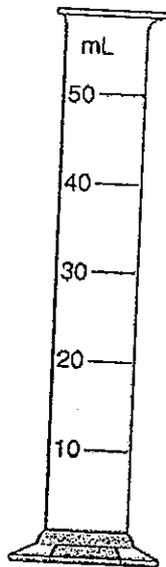
21 Which one of the following is most suitable to measure 15 ml of water accurately?



(1)



(2)

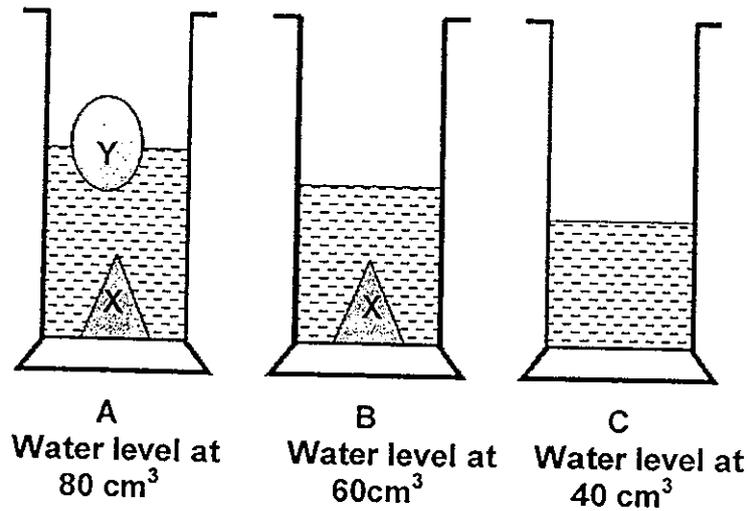


(3)



(4)

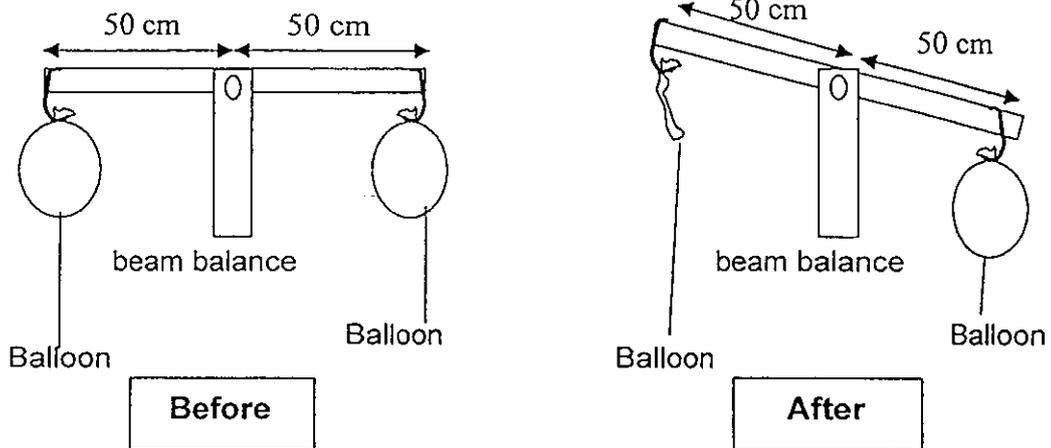
22. Jean poured the same amount of water into each of the 3 identical measuring cylinders, A, B and C.
Next, she placed object X and object Y into A, and object X into B as shown in the diagram below.



Based on the information above, which one of the statements is not correct?

- (1) Volume of object X is 20 cm^3
- (2) Volume of water and object X is 60 cm^3
- (3) Volume of object Y is the same as object X
- (4) Volume of water, object X and object Y is more than 80 cm^3 altogether.

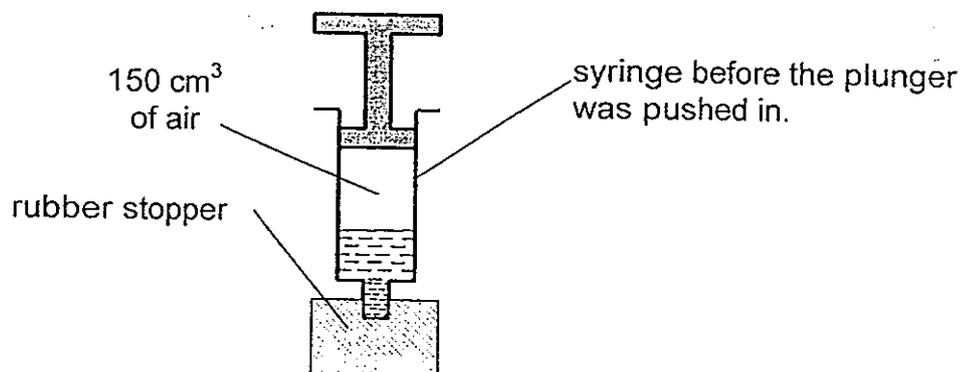
23. Cleo conducted her experiment with the set-up below. She pumped an equal amount of air into two identical balloons. Next, she deflated one of balloons.



What was the aim of her experiment?

- (1) To find out if air has mass.
- (2) To find out if air occupies space.
- (3) To find out if air has definite shape.
- (4) To find out if air can be compressed

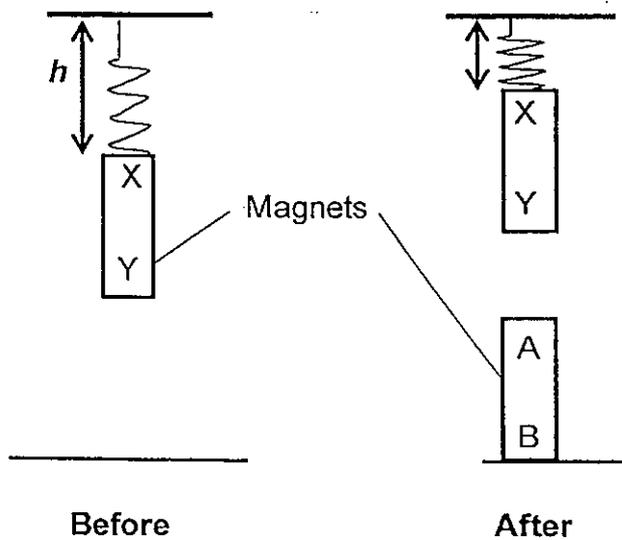
24. The diagram below, not drawn to scale, shows a syringe with a capacity of 200cm^3 .



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)
<input type="radio"/>	150	50
<input type="radio"/>	80	40
<input type="radio"/>	60	50
<input type="radio"/>	50	25

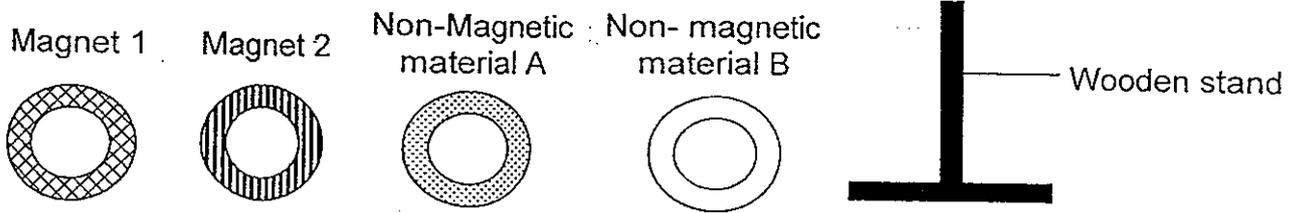
25. The diagram below shows a magnet which is attached to a spring. When another magnet is introduced, distance h is reduced.



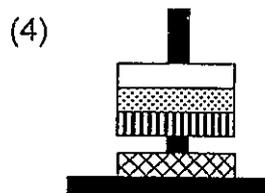
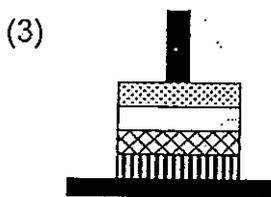
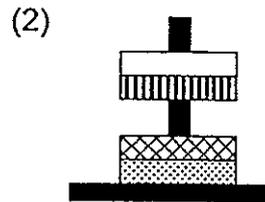
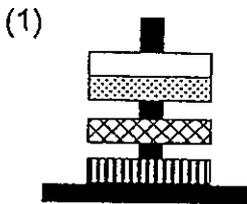
Based on the diagram above, which one of the following statements is correct?

- (1) "X" and "A" are both South-poles of the magnets.
- (2) "Y" is North-pole while "A" is South-pole of the magnets.
- (3) "Y" is North-pole while "B" is South-pole of the magnets.
- (4) "Y" is South-pole while "B" is South-pole of the magnets.

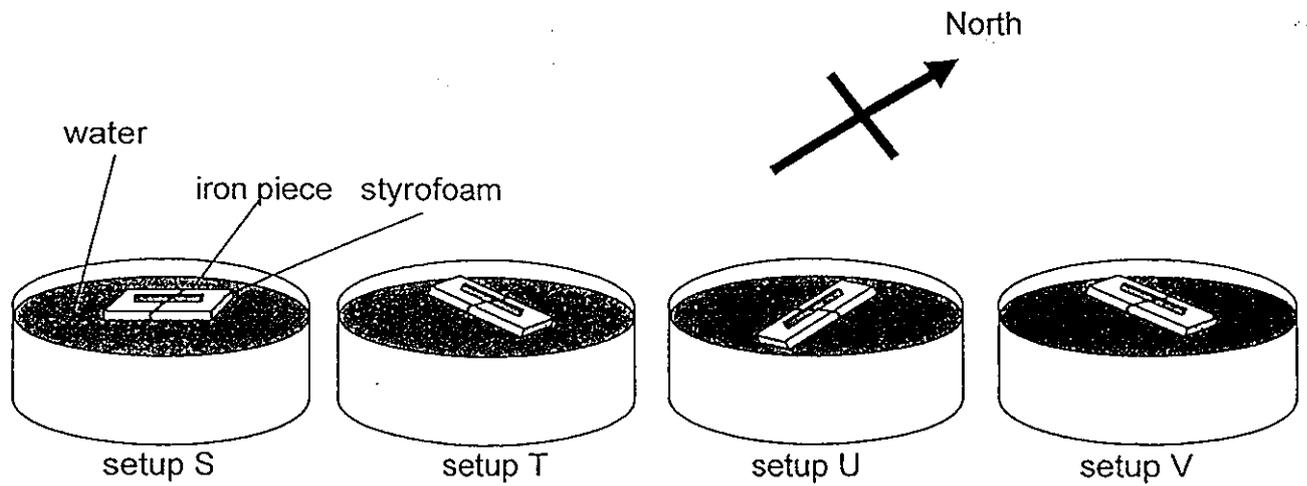
26. Megan used the five items given below to learn more about magnets.



Which one of the following is **not** a possible observation for Megan when all 4 rings are placed one on top of the other through the wooden stand?



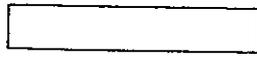
27. Ruth had 4 identical iron pieces. Each piece of iron was taped to a piece of styrofoam and allowed to float in a basin of water. The diagrams below show their positions when they stopped turning.



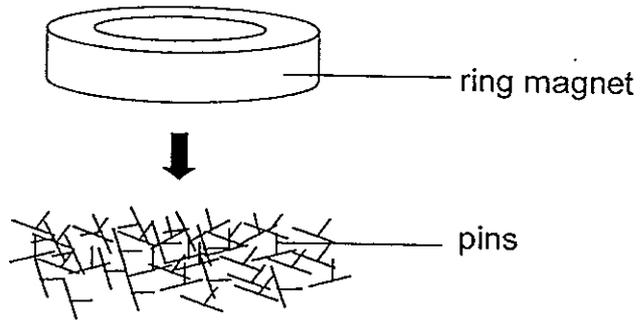
Based on Ruth's experiment above, in which setup(s), S, T, U, and/or V was/were the iron piece magnetised?

- (1) ~~Setup S only~~
- (2) Setup T only
- (3) Setup U only
- (4) Setup T and V only

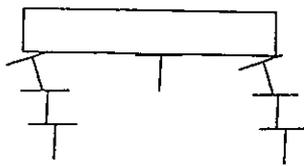
29. The diagram below show the **side view** of a ring magnet



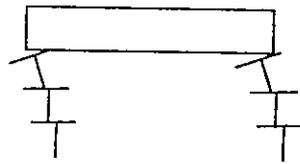
Rinnah lowered a ring magnet into a pile of pins and lifted it upwards.



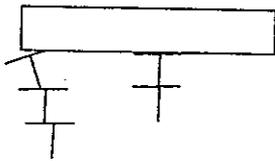
If the ring magnet is working properly, which one of the following diagrams will illustrate Rinnah's observation correctly?



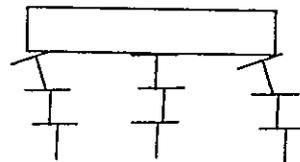
(1)



(2)

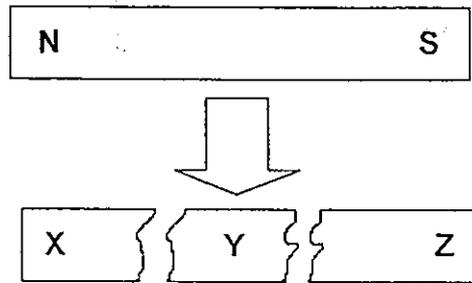


(3)



(4)

28. Megan dropped a bar magnet and it broke into 3 small pieces, X, Y and Z, as shown below.



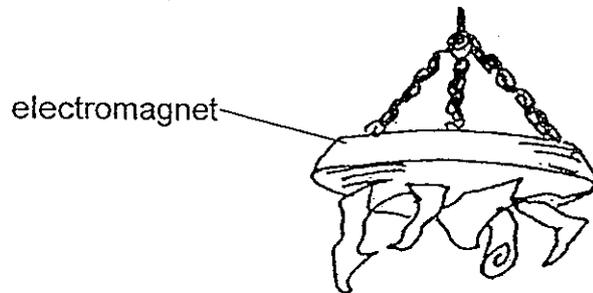
Megan's friends made some statements below.

- Ashley : "X does not have a south-seeking pole."
Beatrice : "Z does not have a north-seeking pole"
Claire : "Y has both a north-seeking pole and a south seeking pole"

Who made a correct statement?

- (1) Ashley only
- (2) Beatrice only
- (3) Claire only
- (4) Ashley, Beatrice and Claire

30. The diagram below shows an electromagnet which is used to separate items for recycling.

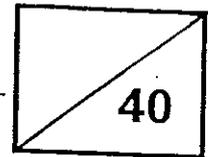


Which one of the following groups of items will be attracted by the electromagnet?

- (1) steel spoon, copper coin and iron nail
- (2) iron nail and steel spoon
- (3) aluminum can and copper coin
- (4) steel teapot and gold ring



Name : _____ Index No: _____ Class: P4 _____

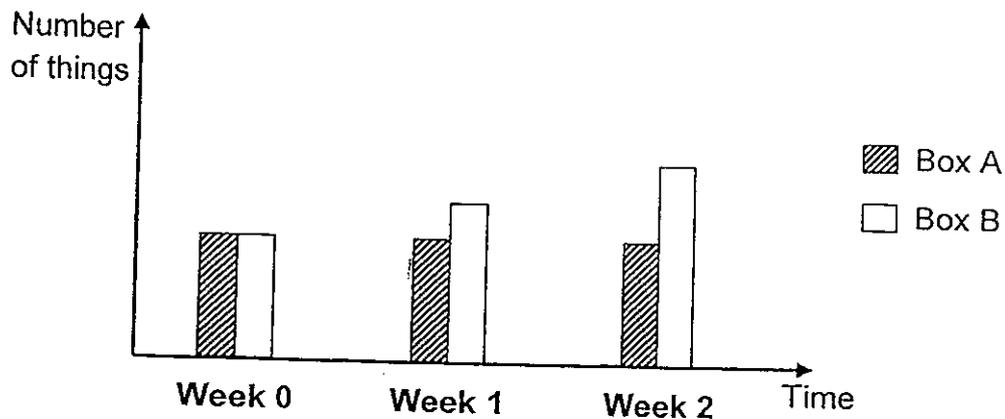


SECTION B (40 marks)

For questions 31 to 44, write your answers clearly in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part question.

31. Bala 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 air, water and food.

Every week Bala counted the number of things in both boxes and drew the graph as shown below.

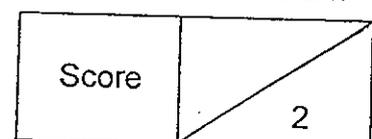


- (a) Based on the graph above, which box contained the living things and which box contained the non-living things? [1]

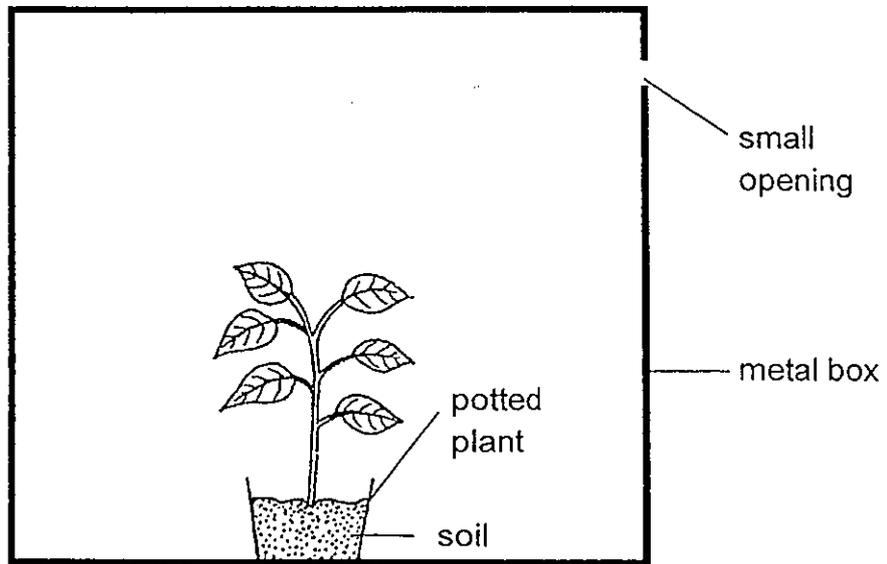
Living things : Box _____

Non-living things : Box _____

- (b) State the characteristic of living things that you use to arrive at your answer in (a). [1]



- (c) Siti placed a potted plant in a metal box with a small opening at the side as shown in the diagram below.



After a few days, she noticed the plant growing towards the direction of the opening.

Based on Siti's observation, state the characteristic of living things the plant has shown. [1]

Score	1
-------	---

32. Mei Ling classified some plants as shown in the table below.

Plants	
A	Reproduce by spores
Balsam	Moss
Coconut Palms	Bird's Nest Fern
Sunflower	Mosquito Fern

- (a) What could be the possible heading for A?

[1]

A:	
----	--

- (b) Mei Ling later found some mushrooms. She classified the mushrooms together with moss and mosquito fern in the table above. Do you agree? Give a reason for your answer.

[1]

Score	2
-------	---

33. The table below gives information on two different types of animals, X and Y. A tick (✓) in each box indicates the characteristic which the animal possesses.

Characteristic	Animal	
	X	Y
Both the young and adult live on land	✓	✓
Has a 4-stage life cycle		✓
Young resembles its parents	✓	
Young of animal feeds on plants		✓

Based on the information given above, answer the following questions:

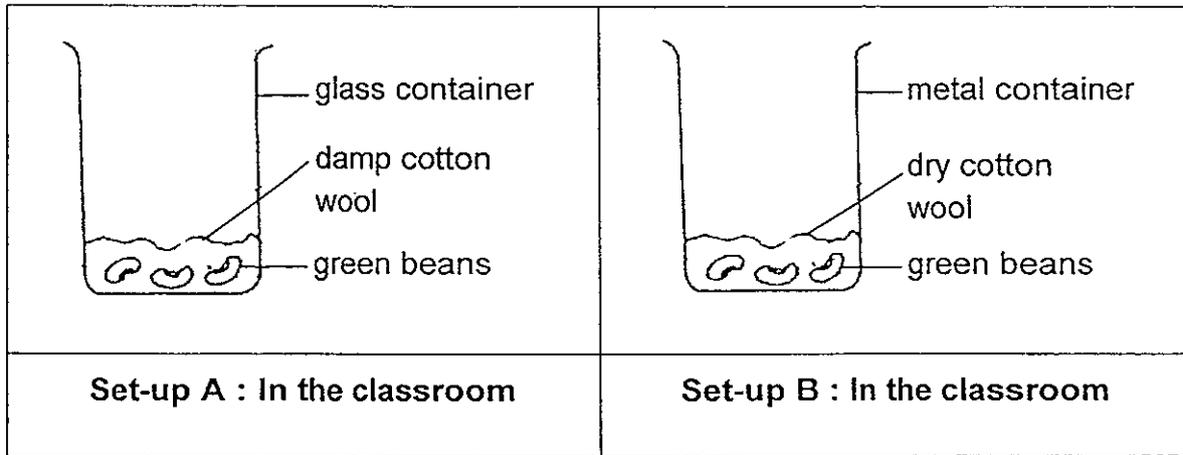
- (a) State one similarity between Animals X and Y. [1]

- (b) State one difference between Animals X and Y. [1]

- (c) Name an animal that could represent Animal Y. [1]

Score	3
-------	---

34. Raju set up an experiment to find out whether green beans need water to germinate. He set up his experiments as shown in the diagrams below.

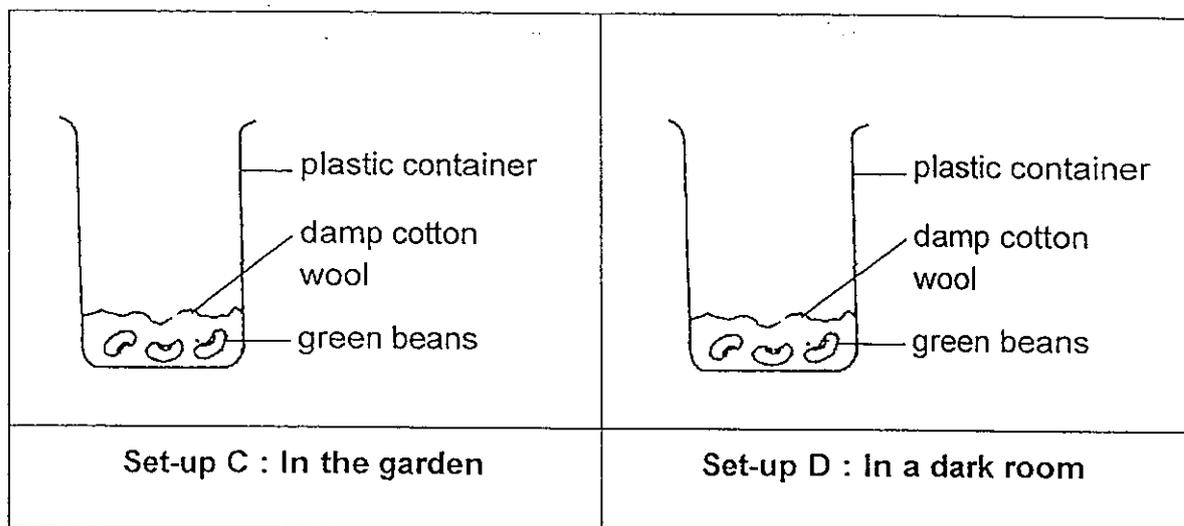


- (a) Raju's teacher said that he has not conducted a fair test.
Explain why this is so. [1]

(Continue Q34 on the next page)

Score	1
-------	---

Raju's friend, Ali, set up another experiment as shown in the diagram below.

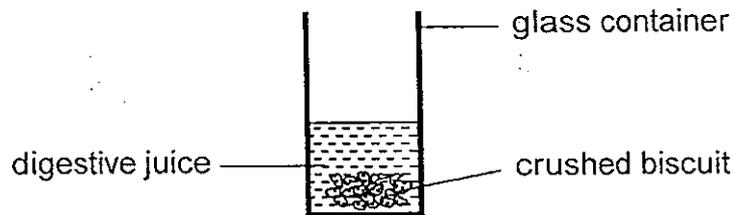


(b) Based on set-up C and D, what is Ali trying to find out? [1]

(c) In which of the set-up(s), C or/and D, will the green beans germinate?
Give a reason for your answer. [1]

Score	2
-------	---

35. Peter crushed a piece of biscuit 5 times and placed it into a container containing some digestive juice as shown in the diagram below.



Peter then repeated the same process for another 3 pieces of biscuits, each crushed for a different number of times. He recorded the time taken for the biscuits to be completely broken down into simpler substances.

The results were shown in the table below.

Mass of the biscuit (gram)	15	15	15	15
Number of times the biscuit was crushed	5	8	14	20
Time taken for the biscuit to be completely broken down into simpler substances (minutes)	46	42	35	29

- (a) Name a part in the human digestive system that produces digestive juice. [1]

- (b) Based on the information in the table above, what is the relationship between the number of time a piece of biscuit is crushed and the time taken for it to be completely broken down into simpler substances? [1]

- (c) Besides the type of biscuit and container used, what must Peter do to ensure the experiment above is a fair test? [1]

Score	3
-------	---

36. The table below shows the amount of undigested food that enters some parts of the digestive system.

Part of digestive system	Amount of undigested food as it enters the part of the digestive system (g)
W	50
X	70
Y	80
Z	70

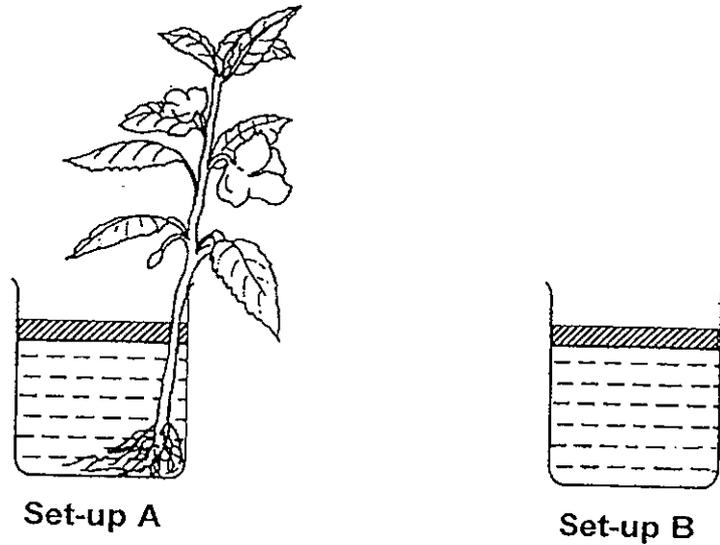
(a) Based on the information in the table above, which part, W, X, Y or Z, best represent the mouth? Give a reason for your answer. [2]

(b) Which two parts, W, X, Y and Z, best represent the gullet and the stomach? [1]

(c) Give a reason for your answer in (b) [1]

Score	4
-------	---

37. Natalie wanted to find the amount of water a particular plant took in within the duration of 2 hours. She conducted an experiment in a room with the set-ups as shown in the diagram below and recorded the results in the table.



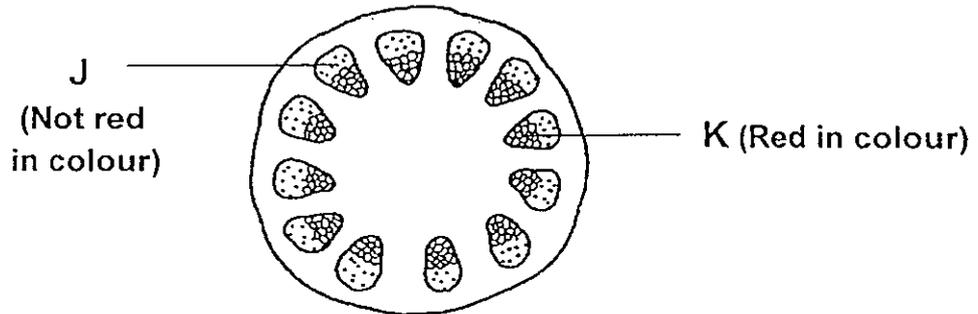
	Set-up A	Set-up B
Amount of water at the start of the experiment	250 ml	250 ml
Amount of water at the end of the experiment	220 ml	250 ml

- (a) Based on the information given in table above, what was the amount of water taken in by the plant? [1]

(Continue Q37 on the next page)

Score	1
-------	---

Natalie next put some red colour dye into the water in set-up A.
After 1 hour, she cut the stem of the plant and drew the cross-section of the stem as shown in the diagram below.



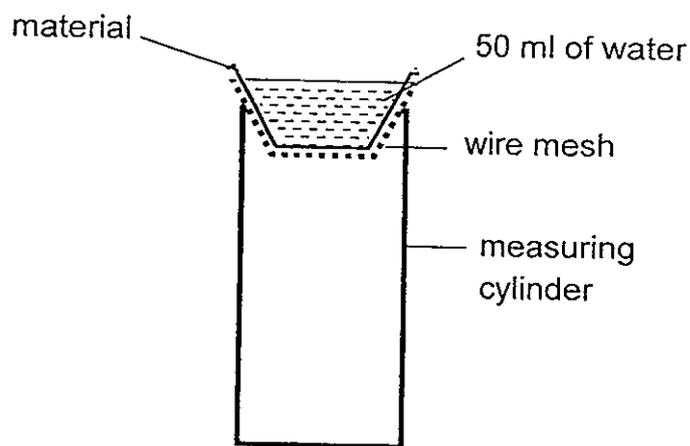
(b) Based on the diagram above, what do Part J and Part K represent? [2]

(i) Part J : _____

(ii) Part K : _____

Score	2
-------	---

38. Ali had 4 different pieces of materials, A, B, C and D of similar size and thickness. He wanted to find out which material is most suitable to be made into a raincoat. He set up his experiment using the apparatus as shown in the diagram below and poured 50 ml of water on each material.



After 5 minutes, he recorded his readings in the table below.

Material	Amount of water in the measuring cylinder (ml)	Amount of water left on the material (ml)
A	0	50
B	0	0
C	17	11
D	50	0

- (a) Which material, A, B, C or D is most suitable to be made into a raincoat?
Give a reason for your answer. [1]

(Continue Q38 on the next page)

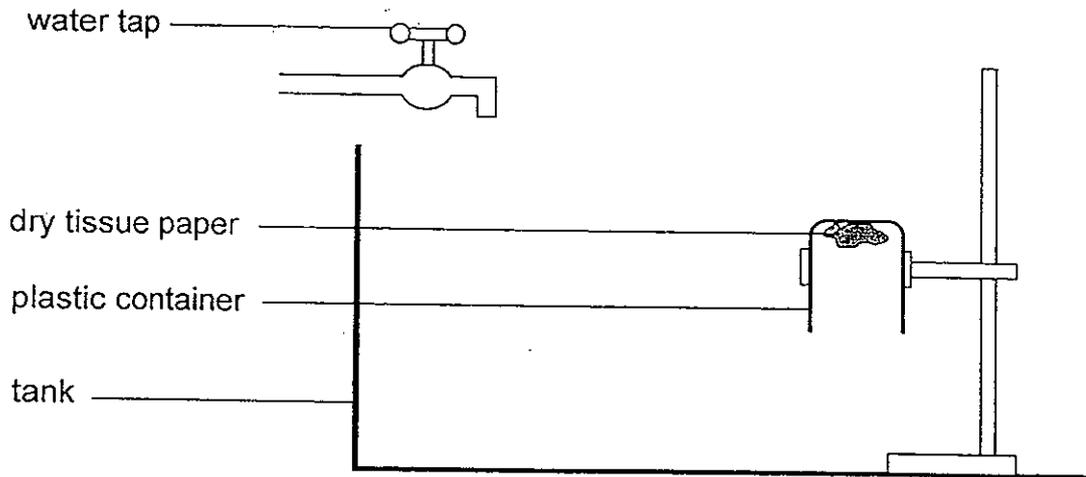
Score	1
-------	---

- (b) Other than the property that Ali has tested in the experiment, state **ONE OTHER** property of the material that is important in making raincoats. [1]

- (c) Based on the result Ali had obtained, which material, A, B, C or D, is most suitable to be made into a bath towel? [1]

Score	2
-------	---

39. Richard used the following setup in an experiment.
A piece of dry tissue paper was glued to the inside of the plastic container.



At first, the tank was empty. Richard turned on the tap to allow water to flow slowly into the tank until the tank was fully filled with water.

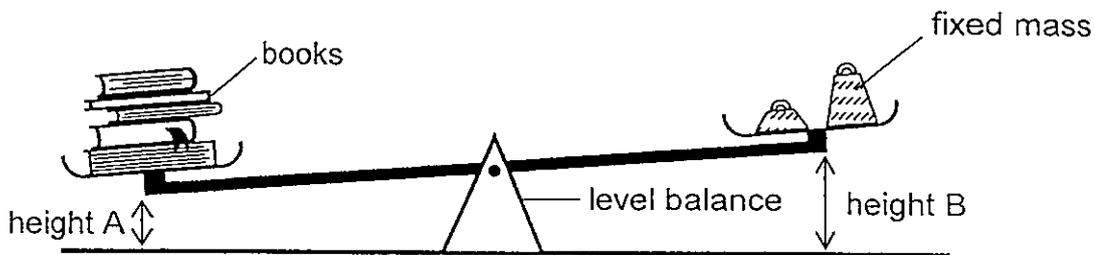
- (a) What would be the condition of the piece of dry tissue paper in the plastic container when the tank was fully filled with water? Put a tick in the box below to indicate your answer [1]

Condition of the tissue paper in the plastic container	My answer (✓)
The tissue paper will remain dry.	
The tissue paper will become wet.	

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

Score	2
-------	---

40. Siti used a level balance to find out the mass of some books as shown in the diagram below.



Siti recorded the change in height A and height B when a fixed mass is added to the level balance each time.

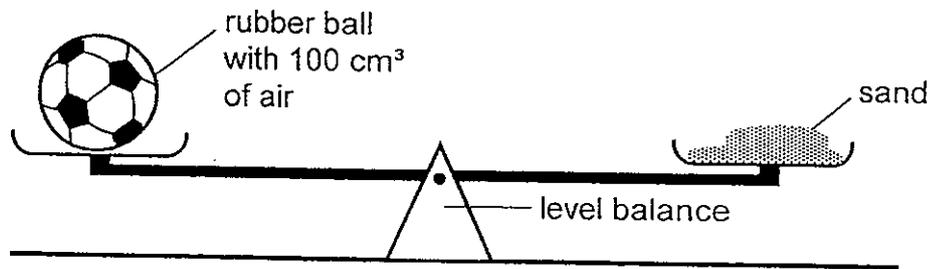
Fixed mass (g)	Height A (cm)	Height B (cm)
50	3	17
100	5	15
200	8	12
300	11	9
420	15	5

- (a) Based on the table above, what is the mass of the books likely to be? [1]

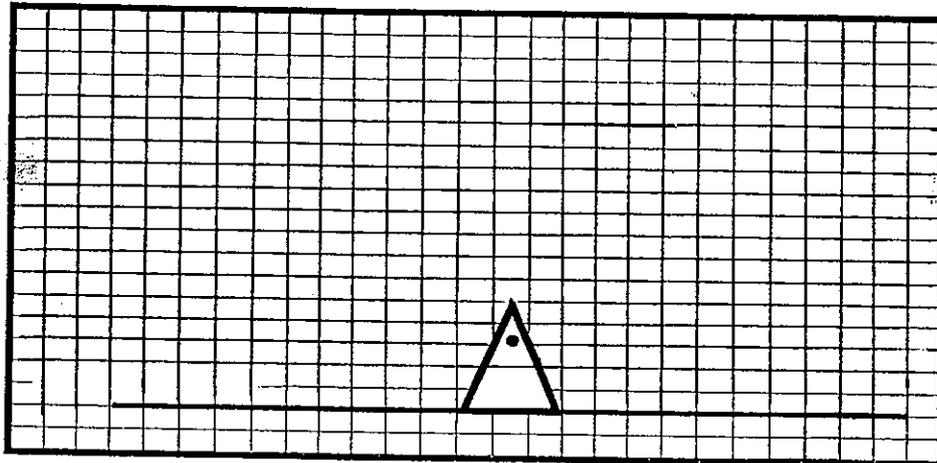
(Continue Q40 on the next page)

Score	1
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Siti next placed a rubber ball one end of the level balance. She added some sand at the other end until the level balance was balanced as shown in the diagram below.



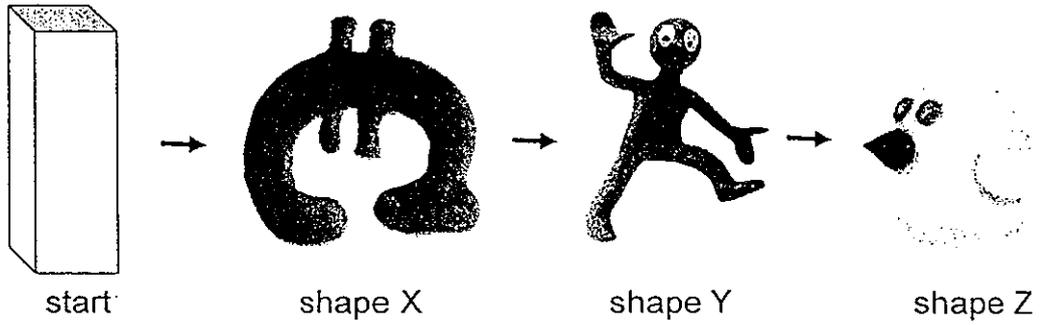
- (b) Draw what she would observe of the level balance after 200 cm³ of air was pumped into the rubber ball in the box below. Label your diagram clearly. [1]



- (c) What is the volume of air in the rubber ball now? [1]

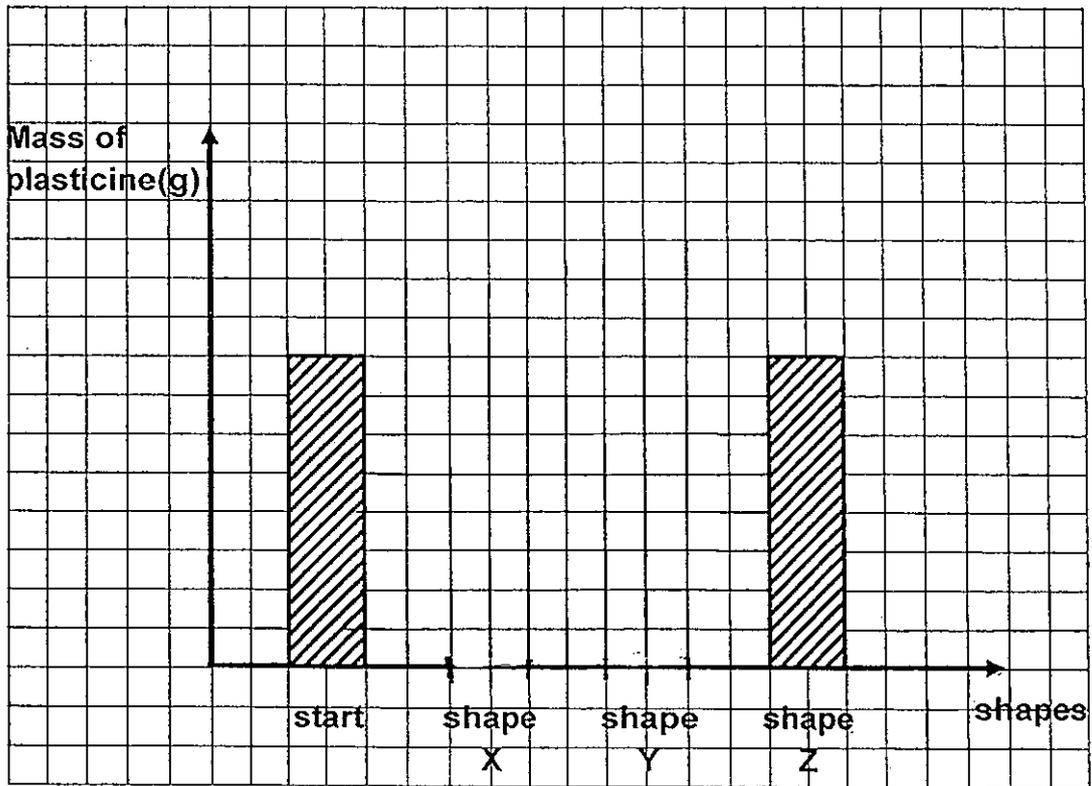
Score	2
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41. (a) Fatimah took a piece of plasticine and moulded the entire piece into shape X, then into shape Y, and finally into shape Z as shown in the diagrams below.



She measured the mass of each shape every time she has moulded it and drew the bar graph below.

Complete the bar graph for shape X and shape Y below. [2]



(Continue Q41 on the next page)

Score	2
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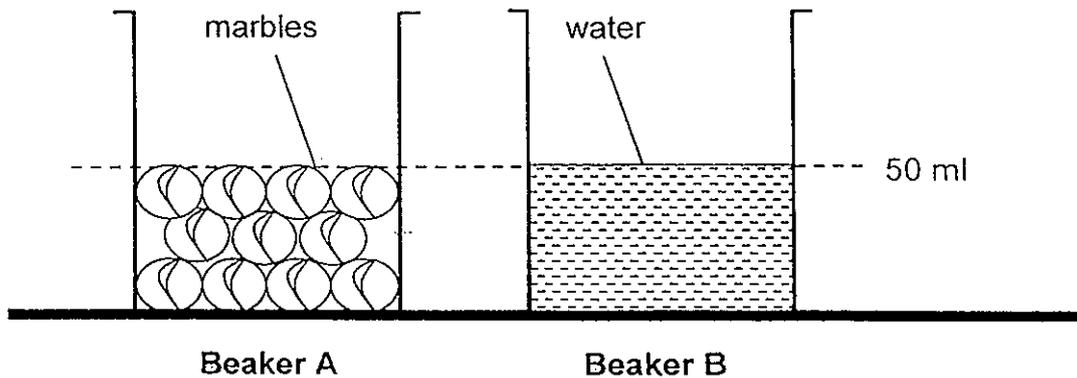
(b) Fatimah next took substance K and measured its volume. She then tried to press substance K and measured its volume again. She recorded her findings in the table below

	Volume of substance K (cm ³)
When not pressed	150
After it was pressed	150

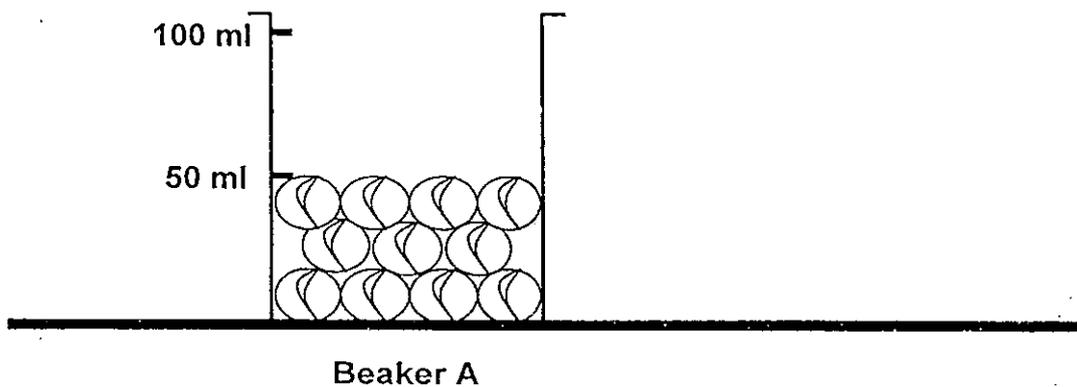
From the table above, what can Fatimah infer about the state of the matter that substance K is in? Explain your answer. [1]

Score	1
-------	---

42. The diagrams below show 2 similar beakers, A and B, each containing marbles and water respectively.



- (a) Draw a straight line in the diagram below to indicate the water level in the beaker after all the water in beaker B is poured into the beaker A. [1]



- (b) Explain your answer in part (a) [2]

Score	3
-------	---

43. A iron bar was magnetised using the "stroke" method as shown in Diagram 1 below.

Diagram 2 shows the magnetic poles of the iron bar after it was magnetised.

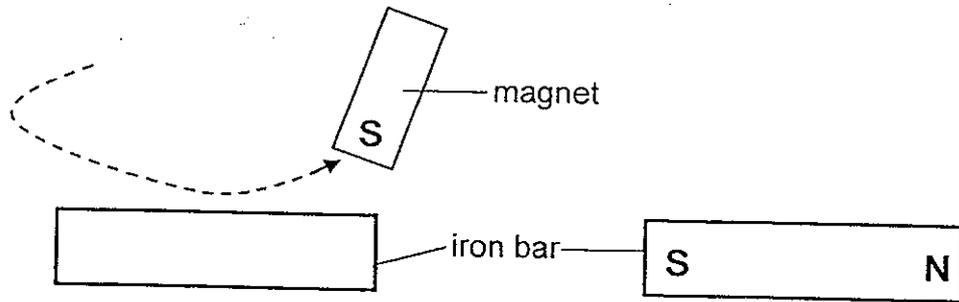


Diagram 1

Diagram 2

Two magnets were used to stroke another iron bar as shown in Diagram 3 below.

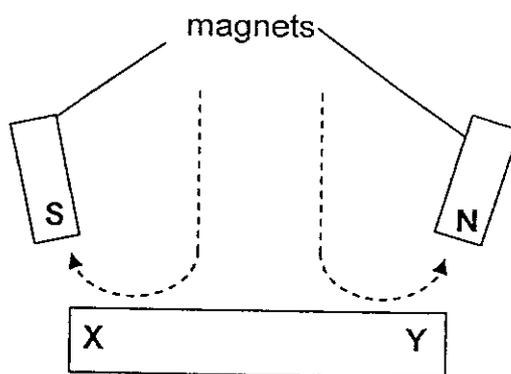


Diagram 3

(a) Identify the poles of the magnetised iron bar at X and Y respectively. [1]

At X: _____

At Y: _____

(Continue Q43 on the next page)

Score	1
-------	---

Darren used the "stroke" method to magnetise 4 identical iron rods, P, Q, R and S. After magnetizing the iron rod P, Q, R and S, Darren used the setup as shown below to find out the magnetic strength of the magnetized iron rods.



Darren placed the paper clip and magnetized iron rod beside the ruler as shown above. Next, he pushed the iron rod slowly towards the paper clip until the paper clip is attracted to it and recorded the distance. He repeated the above steps with the other 3 magnetised iron rods.

(Continue Q43 on the next page)

	Distance the paper clip is attracted to the magnetised iron rod (cm)		
Iron rods	1 st try	2 nd try	3 rd try
P	6	7	7
Q	10	10	11
R	14	14	14
S	9	9	10

- (b) Based on the information in the table above, which one of the 4 iron rods, P, Q, R or S, did Darren stroke the most number of times with a magnet? Explain your answer. [1]

- (c) Why did Darren carry out 3 tries when measuring the distance the paper clip was attracted to each of the magnetised iron rod? [1]

Score	2
-------	---

44. Sarah has a magnet that can attract 20 iron nails. She heats the magnet over a candle flame and records the number of iron nails it can attract after every 5 minutes. The table below shows her results.

Amount of time taken magnet is heated over a candle flame (minutes)	Number of iron nails attracted
0	20
5	14
10	7
15	0
20	0

(a) How many iron nails does the magnet attract after 15 minutes of heating? [1]

(b) From the above information, what can Sarah conclude about the effect of heat on a magnet? [1]

End-of-paper

~ Check your work carefully ~

Setters: Mr Tan Siew Whatt, Mdm Roziyana

Score	2
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ANSWER SHEET

EXAM PAPER 2013

SCHOOL : RAFFLES GIRLS'

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	1	3	2	2	1	2	4	3	3	3	2	2	1	3	3	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	4	3	2	3	1	3	3	1	3	3	4	2

31)a) Living things : Box : B

Non-living things : Box : A

b) Living things reproduce.

c) Living things respond to changes.

32)a) Reproduce by seeds.

b) No. Mushrooms are not plants. It does not have a stem, roots, nor can it make food for itself as a plant should.

33)a) Both the adult and young live on land.

b) Animal Y has a 4-stage life-cycle, Animal X does not.

c) Butterfly.

34)a) There are 2 changed variables in the set-ups. Raju should use the same type of containers for Set-up A and B.

b) Ali is trying to find out if the green beans need sunlight to germinate.

c) Set-up C and D. All conditions are present for the green beans to germinate.

35)a)The stomach.

b)The more number of times the biscuit is crushed, the shorter the time for the biscuit to be completely broken down into simpler substances.

c)He can use the same amount of digestive juice in the container.

36)a)Part Y. The mouth is the first part of the digestive system. Therefore, the amount of undigested food is the most.

b)Part X represents the stomach and part X represents the gullet.

c)The amount of undigested food exit that outlet that is the same when it enters the stomach.

37)a)The amount of water taken in by the plant is 30ml.

b)i)Food-carrying tubes.

ii)Water-carrying tubes.

38)a)Material A. No water fell down into the measuring cylinder, so it is waterproof, thus it is suitable to be made in a rain coat.

b)It must be light-weight.

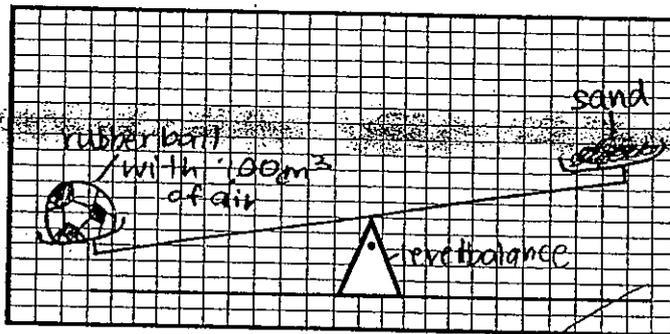
c)Material B.

39)a)The tissue paper will remain dry.

b)As air and water occupy space, the cup would have no opening to let the air escape for the water to come in. Thus, air would be trapped in it and the tissue paper would not become wet.

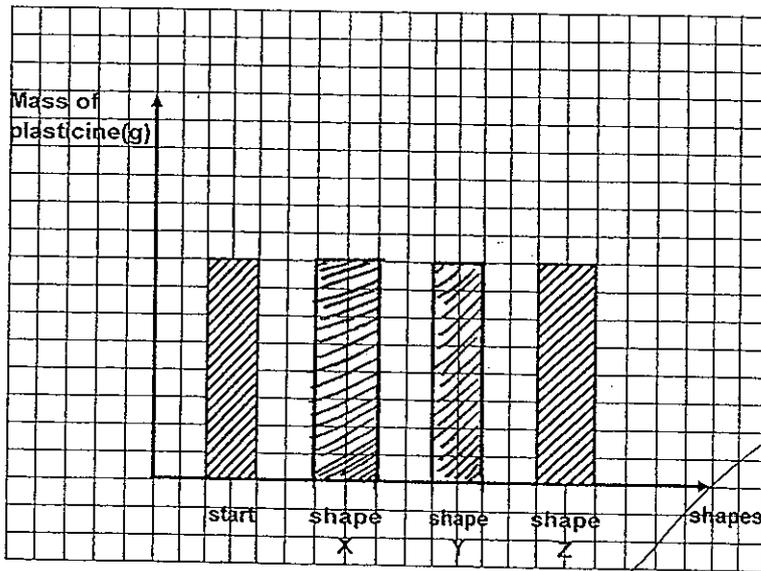
40)a)It is 250 grams.

b)



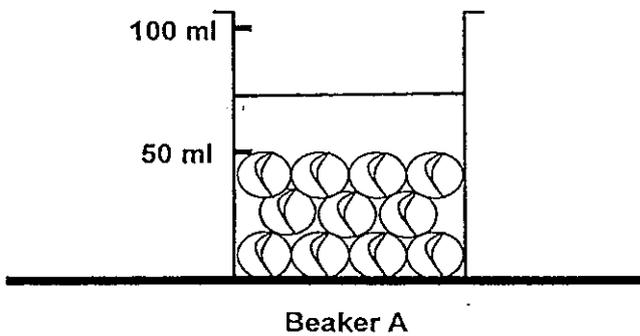
c)It is still 100cm³

41)a)



b) It is in the liquid state. Liquid cannot be compressed. Therefore, the volume is still the same.

42)a)



b) In between the marbles are air spaces. Water would easily flow in and the amount of water would look like it had decreased.

43)a) At X : North pole

At Y : South pole

b) Rod R. It is able to attract the paper clip from the furthest distance.

c) To ensure the reliability of the data.

44)a) It does not pick up anything any more.

b) A magnet loses its magnetism when heated.

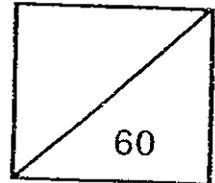




Rosyth School
First Semestral Examination for 2013
SCIENCE
Primary 4

Name: _____

Total
Marks:



Class: Pr 4 _____ Register No. _____

Duration: 1 h 30 min

Date: 15 May 2013

Parent's Signature: _____

Booklet A

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 44, give your answers in the spaces given in Booklet B.

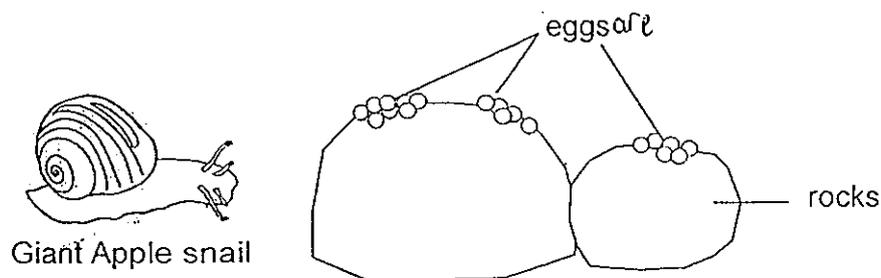
* This booklet consists of 18 pages.

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Part I (60 marks)

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

1. Sam saw many pink clusters on top of the rocks during a trip to Bishan Park recently. His father said that these were actually eggs from the Giant Apple snail.



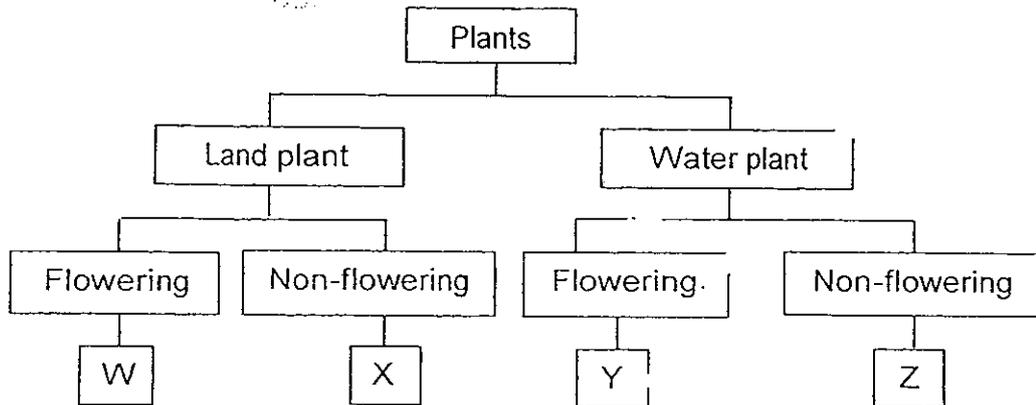
Which characteristic of living things was observed by Sam?

- (1) Living things die.
 - (2) Living things grow.
 - (3) Living things respond.
 - (4) Living things reproduce.
2. The Giant Apple snail lays many soft eggs at the same time. After a few hours, the eggs start to harden and a shell forms around the eggs.

What is the function of the shell?

- (1) It protects the eggs from injury.
- (2) It helps the developing young to breathe.
- (3) It can change colour to match the surroundings.
- (4) It helps to provide food for the developing young.

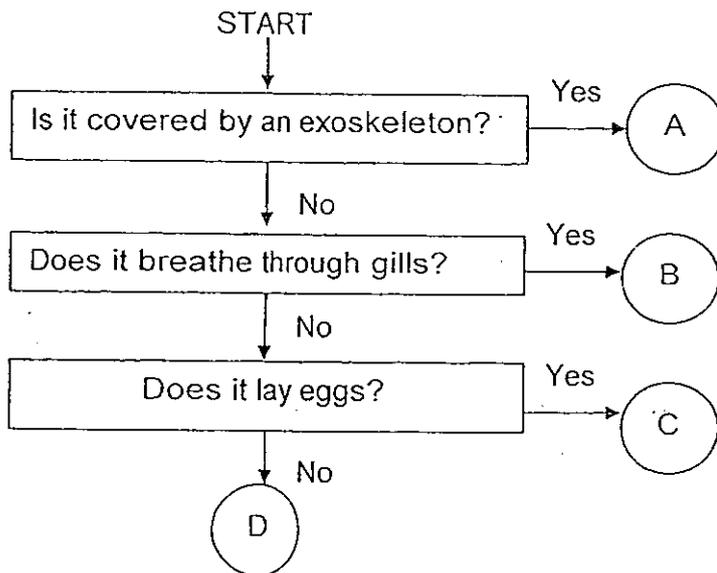
3. Study the classification chart carefully.



Xinyi saw a plant in the pond. It has a cluster of white flowers. Based on the classification chart above, which group is this plant most likely to be in?

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

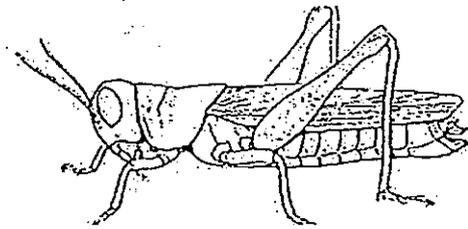
4. Study the flowchart carefully.



Based on the flowchart, where will a bird be placed?

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

5. Casey wrote some information about grasshoppers as shown below.

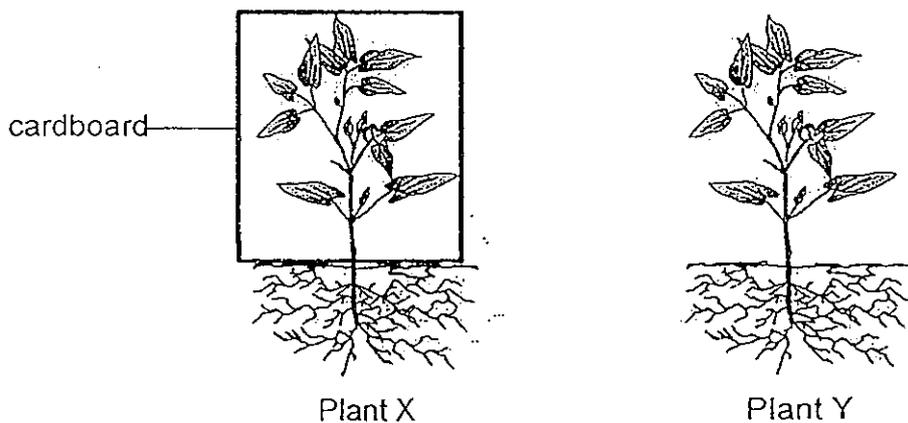


grasshopper

- A: All grasshoppers cannot fly.
- B: All grasshoppers have feelers.
- C: All grasshoppers have a life cycle.
- D: All grasshoppers have 2 body parts.

Which of the above information are correct?

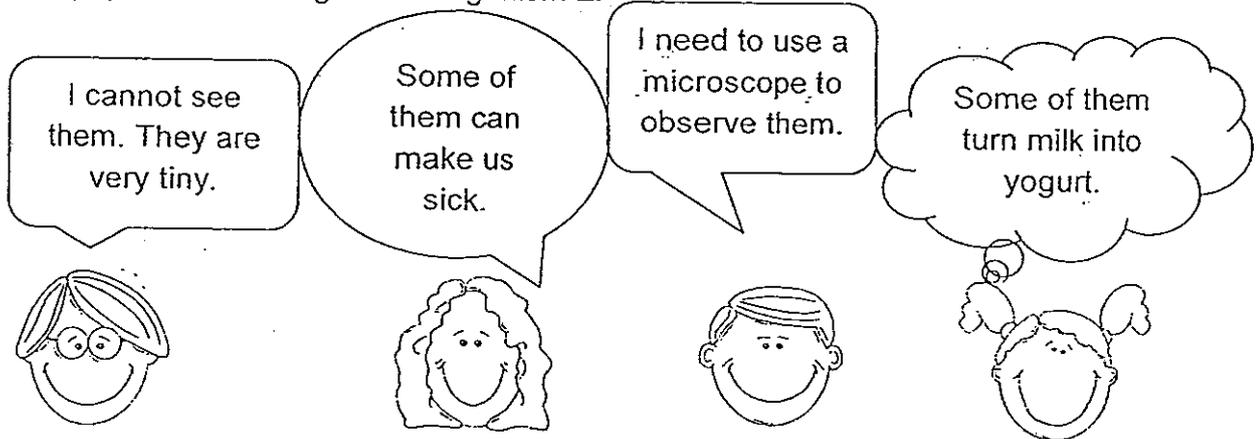
- (1) A and B only
 - (2) B and C only
 - (3) A, B and C only
 - (4) B, C and D only
6. The diagram below shows two identical plants, X and Y, in the garden.



What will happen to both plants after a week?

- (1) Both plants will die.
- (2) Both plants will continue to grow.
- (3) Plant X will die but Plant Y will continue to grow.
- (4) Plant X will continue to grow but Plant Y will die.

7. Four pupils were talking about Organism Z.



Based on their statements, which organism could Z be?

- (1) Fern
 - (2) Mould
 - (3) Mushroom
 - (4) Bacteria
8. Wei Liang covered one half of a box with black paper. He placed some mealworms in the other half without any black paper as shown below.



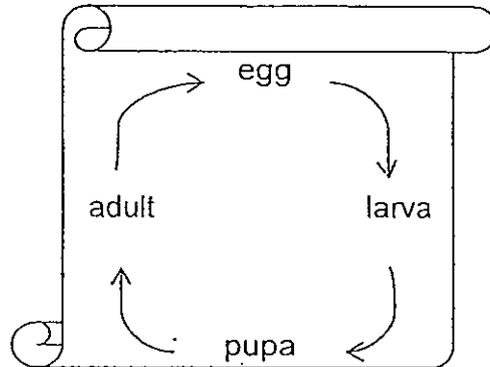
He left the box in the garden during the day. After a while, Wei Liang found the mealworms had crawled to the covered part of the box.

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

- W: Mealworms like shady places.
- X: Mealworms like sunny places.
- Y: Mealworms respond to changes.
- Z: Mealworms can move by themselves.

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

9. Henry made a poster on life cycle as shown below. However, he forgot to put a title for his poster.



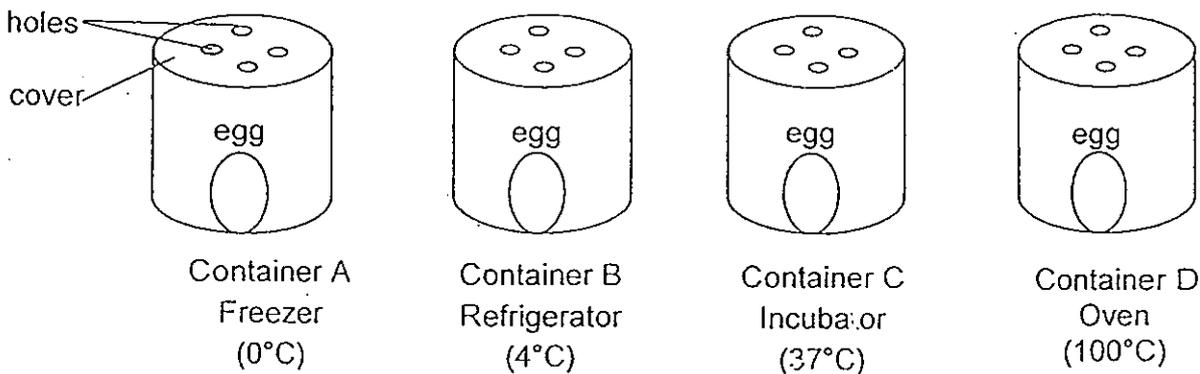
Which is the most likely title that he should use?

- (1) Life cycle of a frog
- (2) Life cycle of a chicken
- (3) Life cycle of a cockroach
- (4) Life cycle of a mealworm beetle

For Questions 10 and 11, please refer to the experimental set-up as shown below.

Rani wanted to find out how temperature affects the development of eggs.

An egg was placed into four containers each with a cover. The covers had holes on them. The containers were then placed in different locations as shown below.



10. In which container will the egg be able to hatch into a chick?

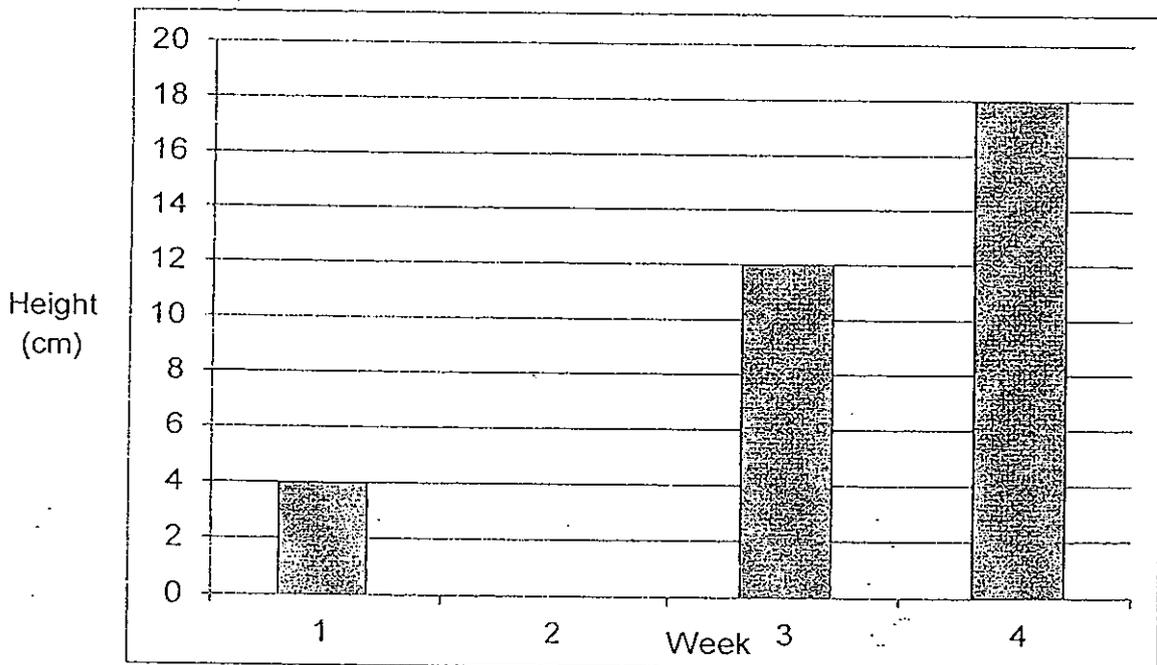
- (1) Container A
- (2) Container B
- (3) Container C
- (4) Container D

11. Which of the following variables should Rani keep the same?

- A: Temperature
- B: Type of egg
- C: Number of eggs.
- D: Time taken for the egg to hatch

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

12. The height of a young plant was measured and observed over a period of four weeks as shown in the graph below.



What was the most likely height of the plant in Week 2?

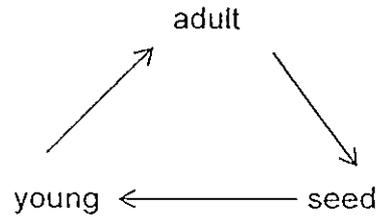
- (1) 2 cm
- (2) 14 cm
- (3) 9 cm
- (4) 20 cm

13. Zack observed the growth of a green bean seed and drew the life cycle. Which one of the following correctly represents the life cycle of a green bean plant?

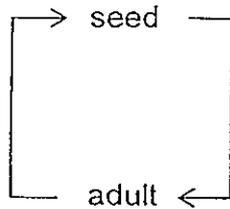
(1)

egg → young → adult

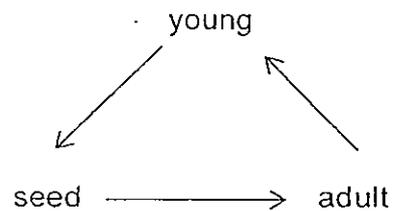
(2)



(3)



(4)



14. The table below shows the presence of plant parts of four plants. A tick (✓) means the plant part is present.

Plant	Leaves	Flowers	Fruits
A	✓		
B	✓	✓	
C	✓		✓
D	✓	✓	✓

Which one of the above is/are an adult plant?

(1) A only

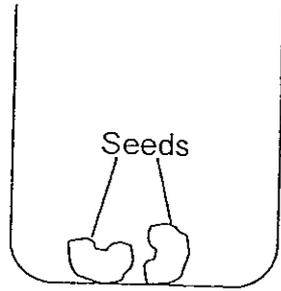
(2) B and D only

(3) B, C and D only

(4) A, B, C and D

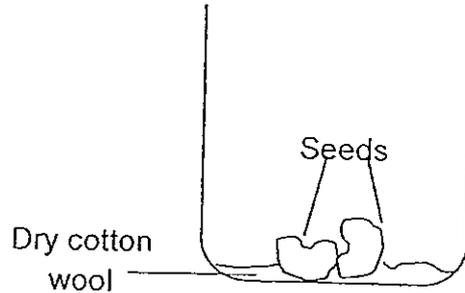
15. In which of the following set-up will the seed germinate?

(1)



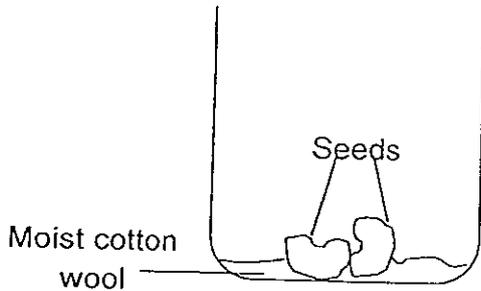
Beaker W
Placed in cupboard

(2)



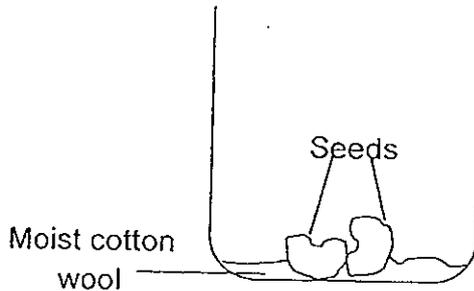
Beaker X
Placed in dark box

(3)



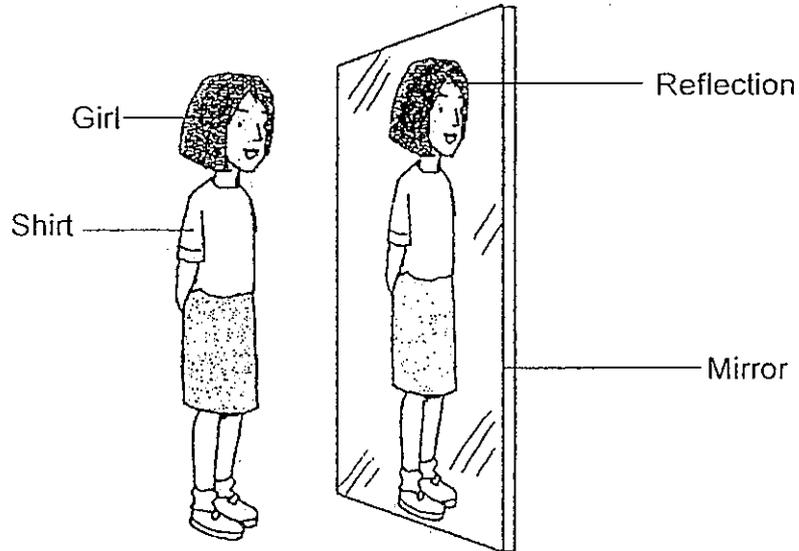
Beaker Y
Placed in cupboard

(4)



Beaker Z
Placed in freezer

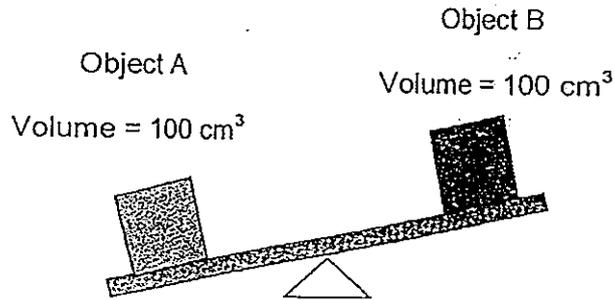
16. Look at the diagram below.



Which of the following is not a matter?

- (1) Girl
- (2) Shirt
- (3) Mirror
- (4) Reflection

17. Study the diagram below.

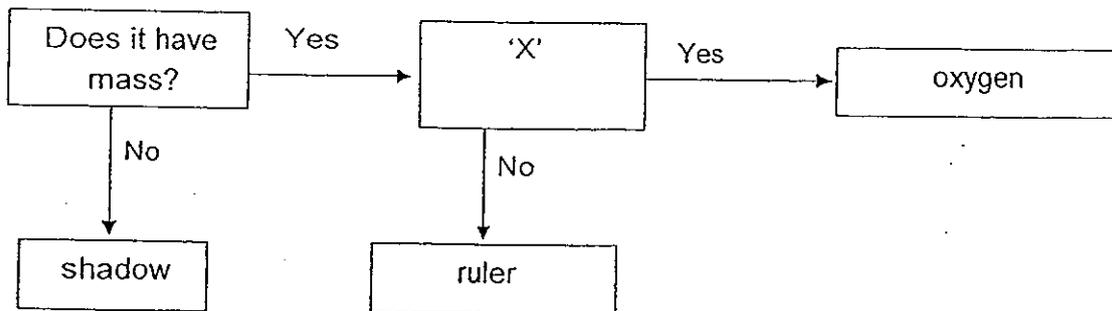


Which of the following statements are true?

- A: Object A takes up more space than Object B.
- B: Objects A and B may be made of different materials.
- C: Objects A and B are made up of the same amount of matter.
- D: Objects A and B take up the same amount of space but have different masses.

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

18. Study the flow chart below.



What would be a suitable question to ask in 'X'?

- (1) Is it matter?
- (2) Can it be compressed?
- (3) Does it have a definite shape?
- (4) Does it have a definite volume?

19. The table below shows the properties of three types of matter.

Matter	Does it have a definite volume?	Does it have a definite shape?
P	Yes	Yes
Q	Yes	No
R	No	No

Based on the information given in the table above, which one of the following statements is most likely to be true?

- (1) R does not have mass.
- (2) Q and P can be compressed.
- (3) When given the same volume, P will be heavier than R.
- (4) When poured into a container, only R will take the shape of the container.

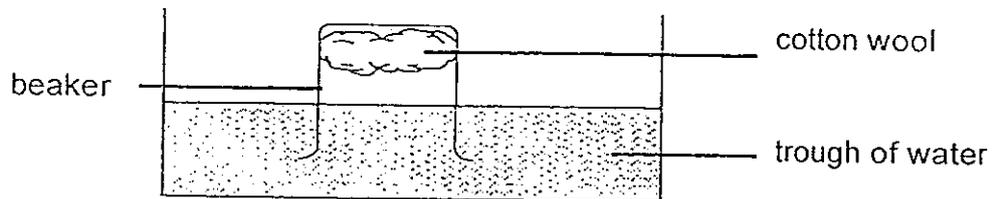
20. Study the table below.

Property	A	B	C	D
Can be seen?	X	√	X	√
Has definite volume?	X	√	√	X
Has mass?	√	√	√	X

Which of the following represents gas?

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

21. Jane pasted some cotton wool at the base of a beaker. She inverted the beaker and slowly pushed it into a trough of water until it touched the bottom of the trough. Jane made sure that she did not fill the beaker.



She noticed that the cotton wool did not become wet. What does this show?

- (1) Air has mass.
 - (2) Air takes up space.
 - (3) Cotton wool is waterproof.
 - (4) Cotton wool takes up space.
22. Sarah made 4 different shapes below, each with 40 g of plasticine.



She placed the shapes each into a measuring cylinder, containing 100 ml of water. She took note of the increase in the water level in the four measuring cylinders.

What was Sarah trying to find out?

- (1) To find out if the mass of matter would affect its volume.
- (2) To find out if the shape of matter would affect its mass.
- (3) To find out if the shape of matter would affect its volume.
- (4) To find out if the volume of matter would affect its mass.

23. Some substances are classified in the table below.

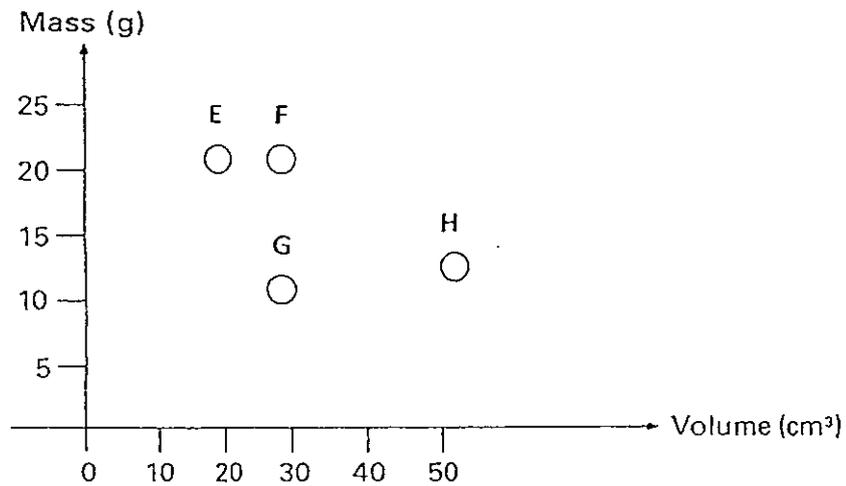
A	B
Tea	Cotton Wool
Milk	Sponge
Water	Plasticine

Which of the following are suitable headings for A and B?

	A	B
(1)	Liquid	Solid
(2)	Definite volume	No definite volume
(3)	Definite shape	No definite shape
(4)	Cannot be compressed	Can be compressed

24. The mass and the volume of four objects E, F, G and H were measured.

Their masses and volumes were represented in the graph below.



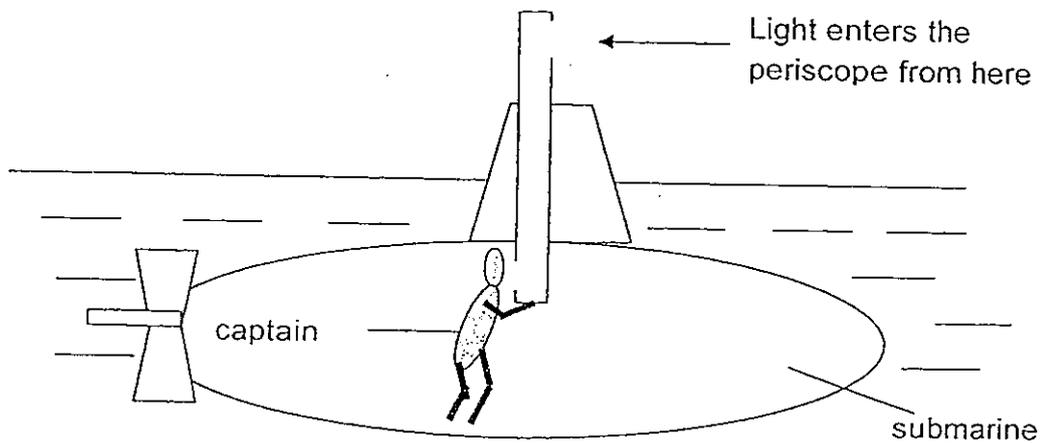
Based on the graph, Tom made four statements about the four objects. Which statement is correct?

- (1) H is heavier than E.
- (2) E occupies less space than G.
- (3) E and F have the same volume.
- (4) The greater the mass, the greater the volume.

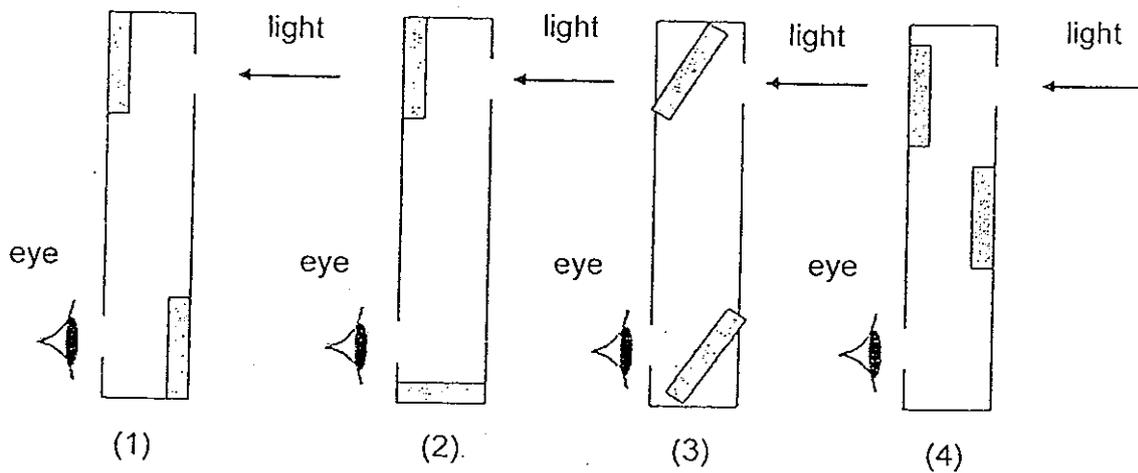
27. Which of the following is a source of light?

- (1) Moon
- (2) Fire
- (3) Mirror
- (4) Sparkling diamond

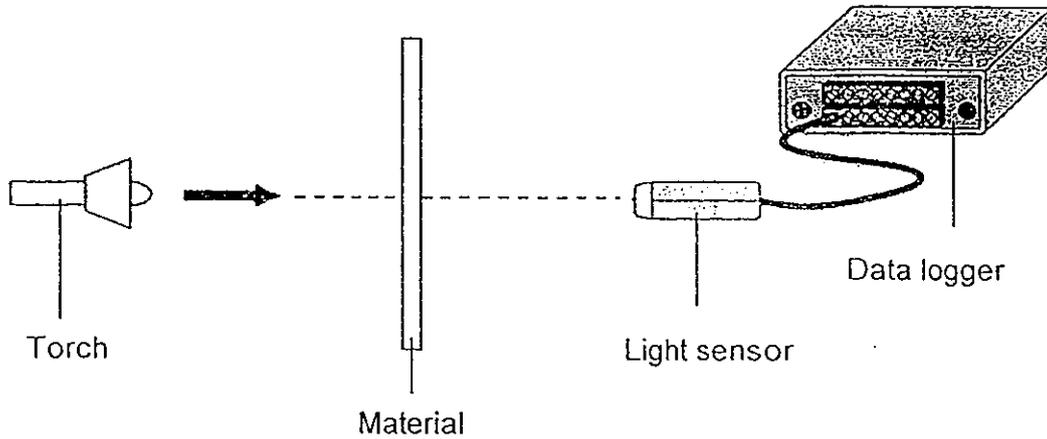
28. The sea captain in a submarine is using a periscope to observe what is above the water. The periscope allows him to see what is above the water.



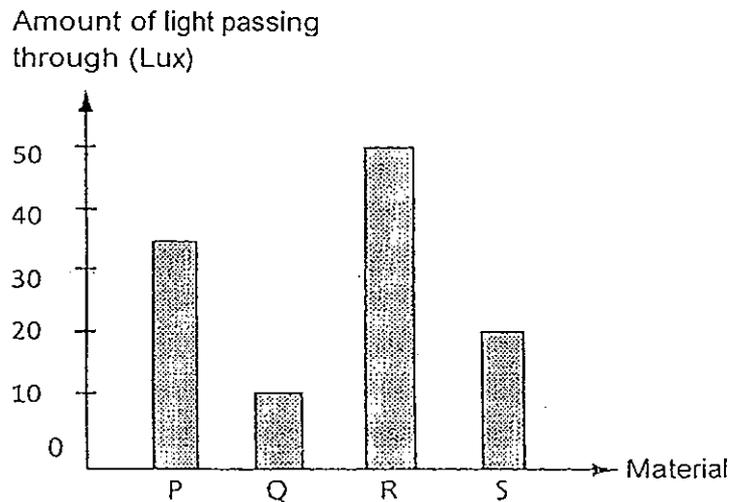
Which of these correctly shows how the mirrors in the periscope are placed?



29. Meiling conducted an experiment to investigate the degree of transparency of 4 different materials, P, Q, R and S by using the set-up shown below.



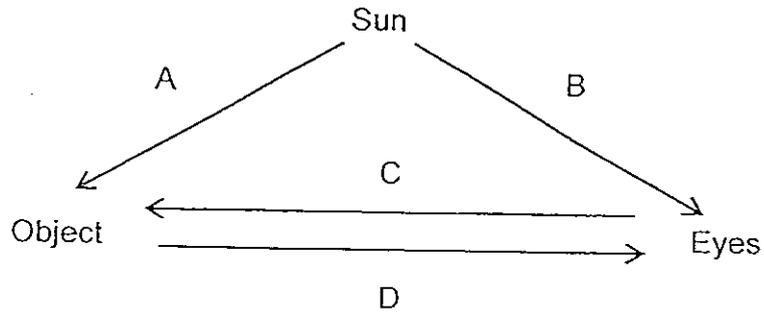
After conducting the experiment, she plotted the graph below to show her findings.



Based on Meiling's finding, which material is the most suitable for making the curtains of a room so that the room will be dark?

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

30. Study the diagram below.

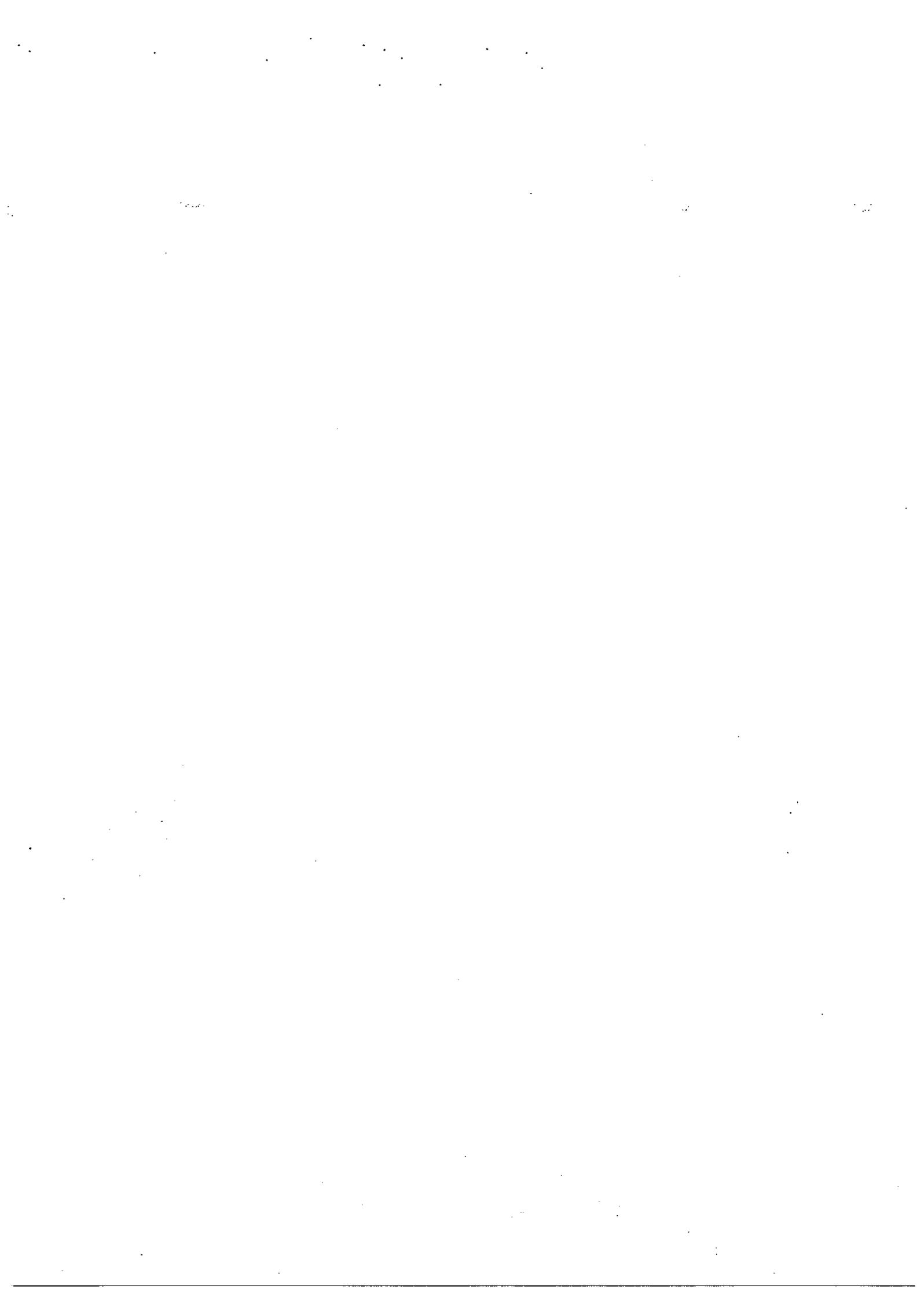


Which arrows show the direction of light to enable the eyes to see the object?

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

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

- End of Part I -

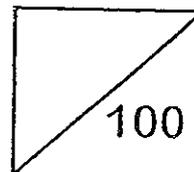




Rosyth School
First Semestral Examination for 2013
SCIENCE
Primary 4

Name: _____

Total
Marks:



Class: Pr 4- _____ Register No. _____ Duration: 1 h 30 min.

Date: 15 May 2013

Parent's Signature: _____

Booklet B

Instructions to Pupils:

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

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

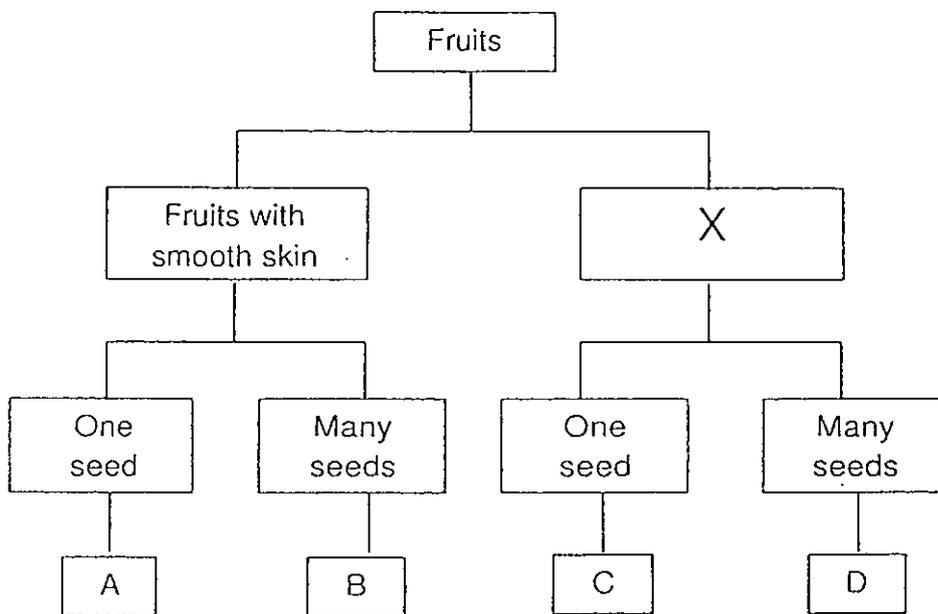
* This booklet consists of 14 pages.

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Part II (40 marks)

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

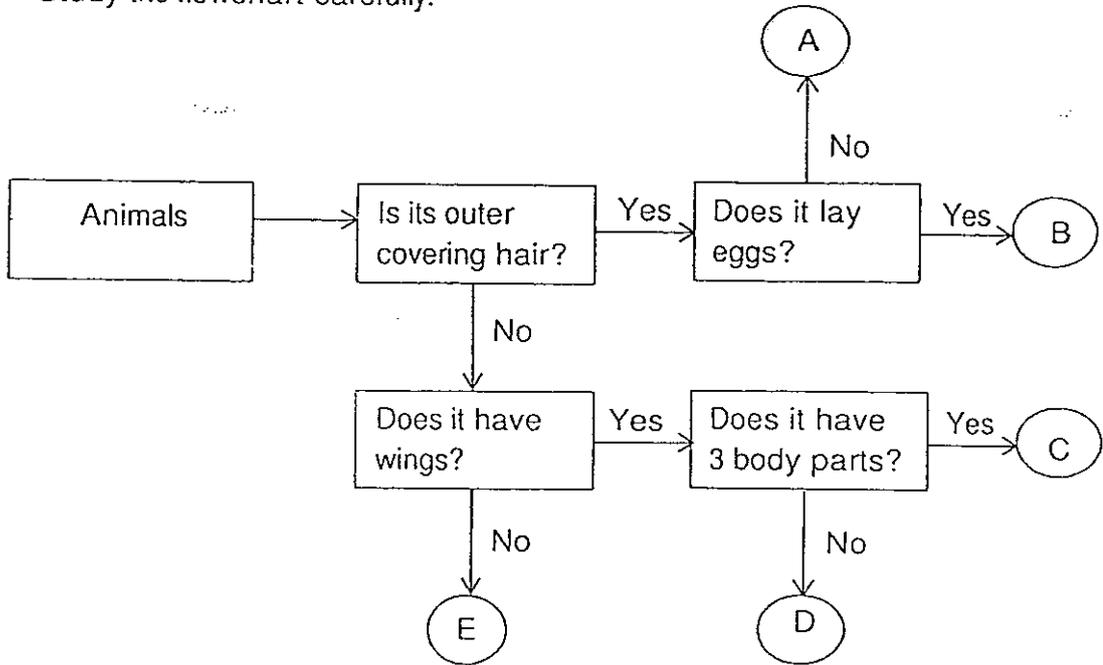
31. The classification chart below shows how some fruits have been classified.



(a) Give a suitable heading for X. (1m)

(b) State one similarity between Fruit B and Fruit D. (1m)

32. Study the flowchart carefully.

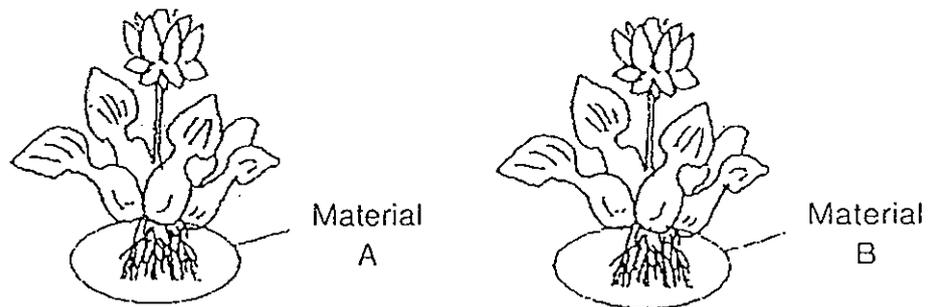


(a) Observe Animal R and S carefully and classify them into the correct group (A, B, C, D or E). (1m)

(i) Group : _____	(ii) Group : _____
Animal R	Animal S

(b) Using the chart above, state one difference between Animal R and Animal S. (1m)

33. Ben wrapped the roots of two water plants using two bags made of different materials, A and B as shown below. Then he placed the two plants into basins A and B respectively.



The water level in each basin was measured and recorded over a period of five days as shown in the table below.

Number of days	Water level in basin A (ml)	Water level in basin B (ml)
0	100	100
1	97	100
2	95	100
3	92	100
4	89	100
5	85	100

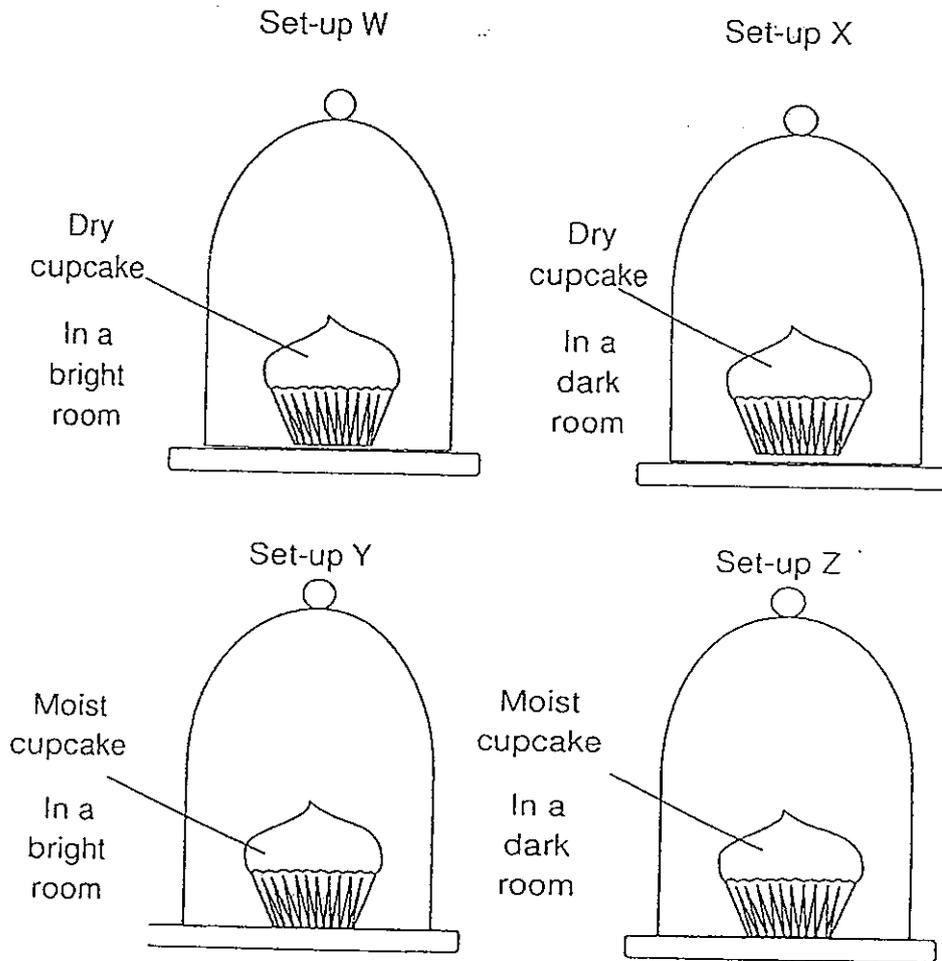
- (a) Explain why the water level in basin B remained the same. (1m)

- (b) What would happen to both plants after a week? (2m)

(i) Plant with material A : _____

(ii) Plant with material B : _____

34. Aini wanted to find out the factors affecting the growth of mould. She placed four cupcakes in different set-ups as shown below.



- (a) If Aini wanted to find out if water affects the growth of mould, which two set-ups should she use? (1m)

- (b) Which set-up would be most suitable for the growth of mould? Support your choice.

(1m)

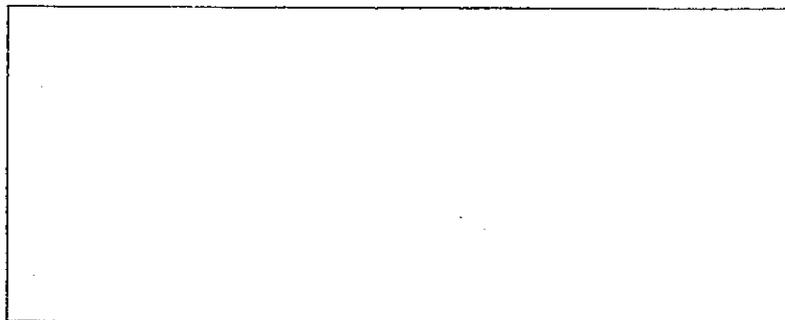
35. Shaun visited the Giant Panda Forest enclosure to look at the pandas, Jia Jia and Kai Kai. He saw a sign with some information about the pandas.

Life Cycle of Giant Pandas

A female giant panda remains pregnant for 95 to 160 days and gives birth to one or two cubs. Baby pandas are very small when they are born, weighing about 120g. Since birth, the cubs feed on their mother's milk. They start crawling when they are about 3 – 4 months old. At 7 months old, a young panda weighs about 9kg, runs and climbs trees and has started eating bamboos. They resemble the adult, which can weigh up to 90kg.

- (a) Which group of animals does the panda belong to? Support your choice with an evidence from the information above. (1m)

- (b) Based on the information above, draw the life cycle of the giant panda in the space provided below. (1m)



- (c) Based on the information above, state two characteristics of living things. (1m)

36. Study the table below which shows the growth of a plant from a seed to an adult.

Time (weeks)	0	1	2	3	4	5	6	7	8
Average height (cm)	0	5	15	32	50	75	100	?	100

(a) Predict the average height of plant at Week 7. (1m)

(b) Describe the height of the plant from Week 1 to Week 8. (2m)

(c) Why was the average height of the plant 0 cm at Week 0? (1m)

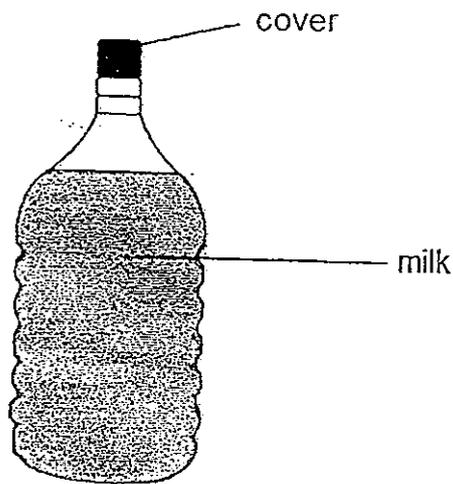
37. Zul received a pamphlet informing him about the rise in dengue cases caused by the Aedes mosquito in his neighbourhood.

Descriptions on the different stages in the life cycle of the Aedes mosquito were included in the pamphlet as shown in the table below.

- (a) Based on the descriptions, identify the stages of the mosquito's life cycle. (2m)
- (b) Number the sequence of the life cycle of the mosquito. The first one is already done for you. (1m)

	Descriptions	(a) Stage in the life cycle	(b) Sequence
(i)	<ul style="list-style-type: none"> • Wiggles and lives in pond or still water • Breathes in air using breathing tubes 		
(ii)	<ul style="list-style-type: none"> • Laid in pond or still water • Found in a large number 		
(iii)	<ul style="list-style-type: none"> • Lives on land • Can fly 		
(iv)	<ul style="list-style-type: none"> • Lives in pond or still water • Breathes in air using breathing tubes • Does not move or eat 		

38. The diagram below shows a bottle of milk.



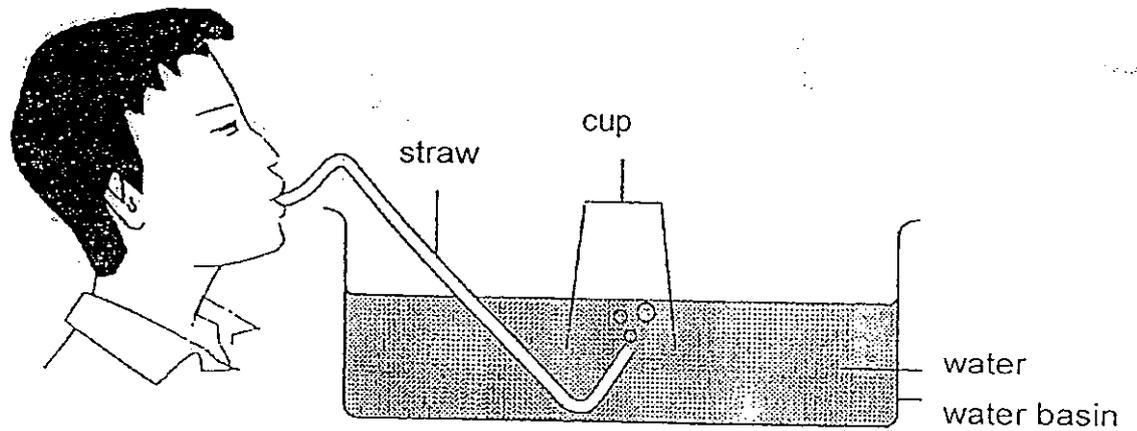
Identify the states of matter for the following: (1m)

(a) Cover: _____

Milk : _____

(b) Write down one difference between the 2 states of matter in (a). (1m)

39. Peter conducted an experiment as shown below. He started blowing into the straw.



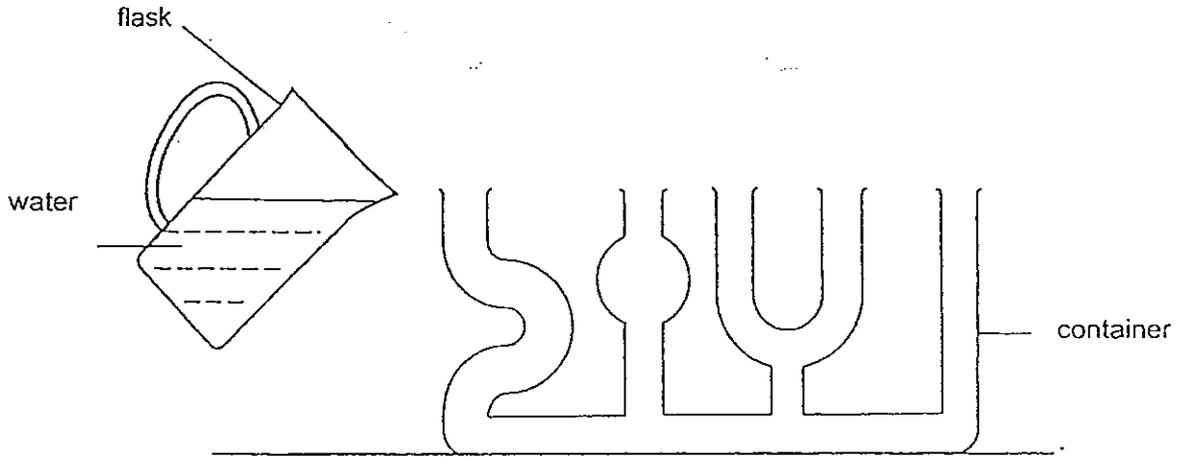
- (a) What will happen to the water level in the cup? (1m)

- (b) Explain how the observation in (a) takes place. (2m)

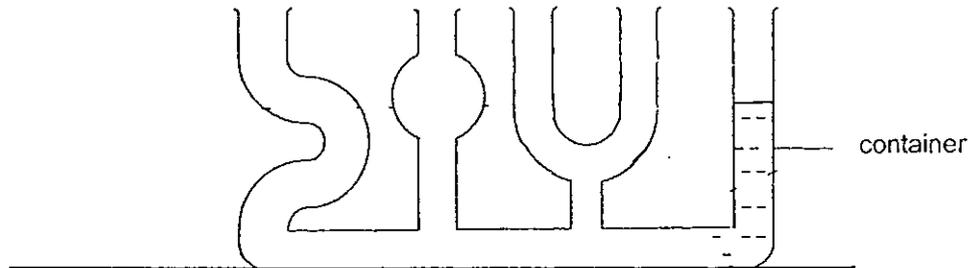
- (c) Peter removed the straw from the set-up above. Now he pushed the cup all the way to the bottom of the water basin. He noticed that the water did not fill up the cup.

What can he do to get the water to completely fill the cup in the water basin in this situation? (1m)

40. A flask of water is poured into a container as shown below.

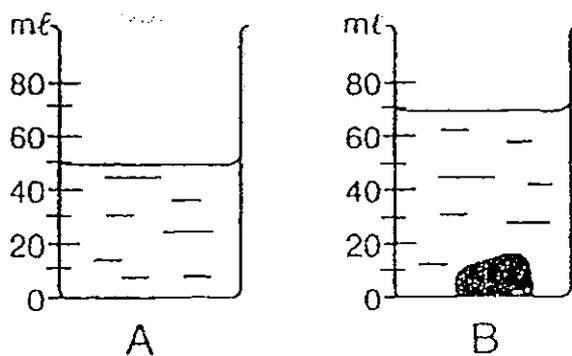


(a) The level of water in one part of the container has been drawn for you. Draw the estimated water level in the rest of the container below when all the water in the flask is emptied inside it. (1m)

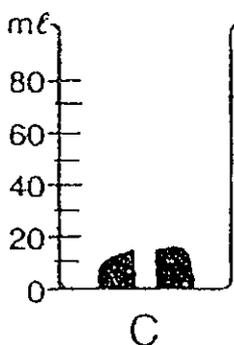


(b) What does this experiment show about the property of liquid? (1m)

41. In diagram A, a beaker is filled with water. A piece of plasticine is put into it and the water level rises as shown in diagram B.

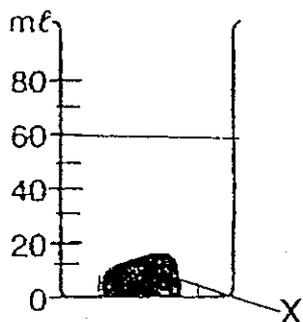


- (a) Draw the new water level in diagram C below if the same piece of plasticine is cut into 2 parts. (1m)

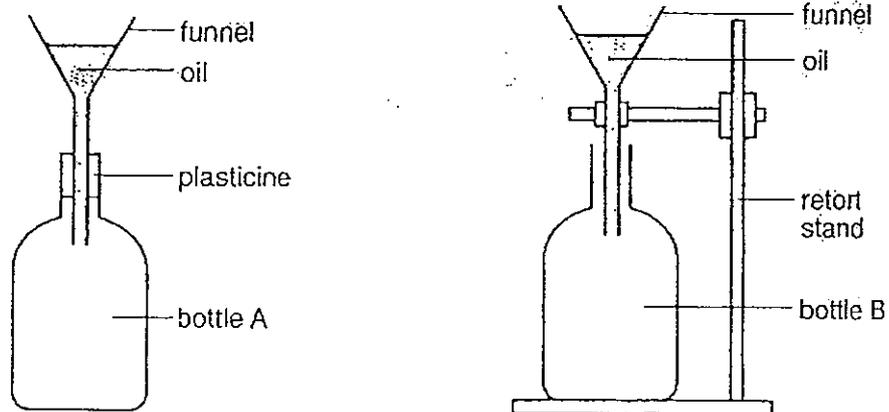


- (b) What property of the plasticine can we conclude from this experiment? (1m)

- (c) An object X similar in size to the plasticine but half as heavy is put into the beaker. Draw the water level. (1m)



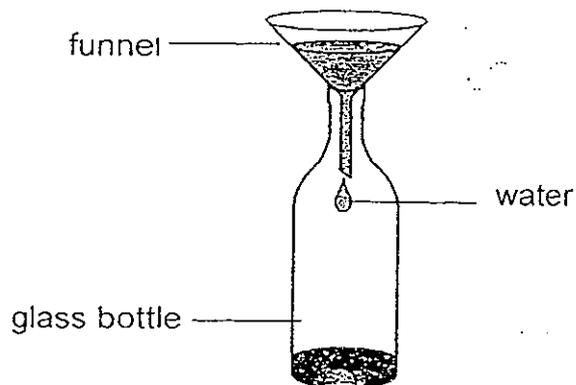
42. Dave wanted to fill up two identical bottles with oil. He had the following set-ups.



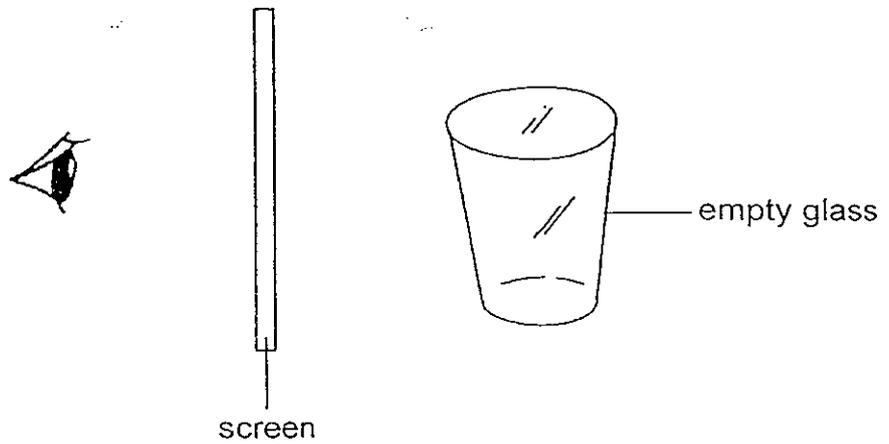
- (a) What would Dave observe when he pours oil into both bottles? (1m)

- (b) Explain the observation for Bottle A. (2m)

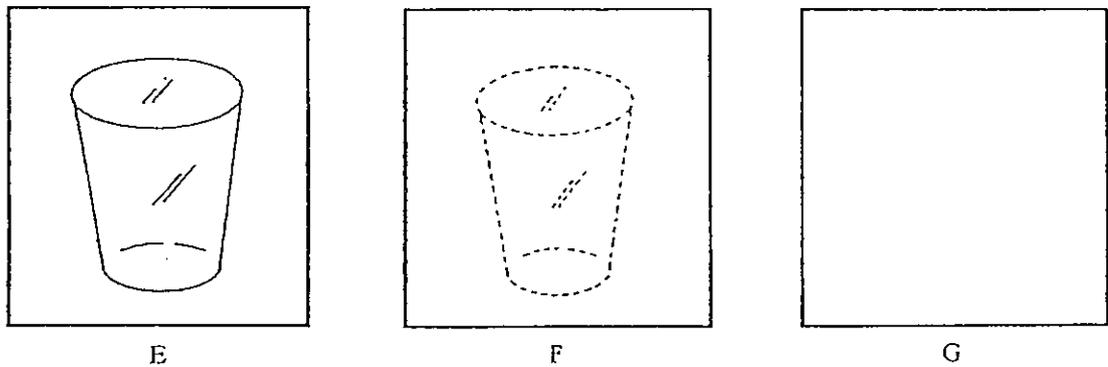
- (c) Based on the above experiment, what can Dave do to fill up the below glass bottle with water quickly? (1m)



43. Jane was given an empty glass. She looked at the glass through three different types of screens, E, F and G, each made of a different material.



She drew what she saw and recorded her observations as shown below.



- (a) Based on her observations, Jane concluded that Screen E allowed the most light to pass through. Do you agree? Explain your answer. (1m)

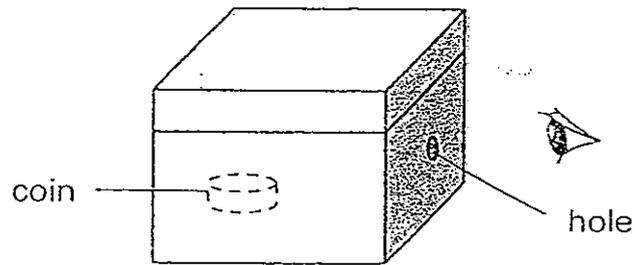
- (b) Using the given materials, select one that each of the following screen could be made of. (2m)

Clear glass	Tracing paper	Wood
-------------	---------------	------

Screen F: _____

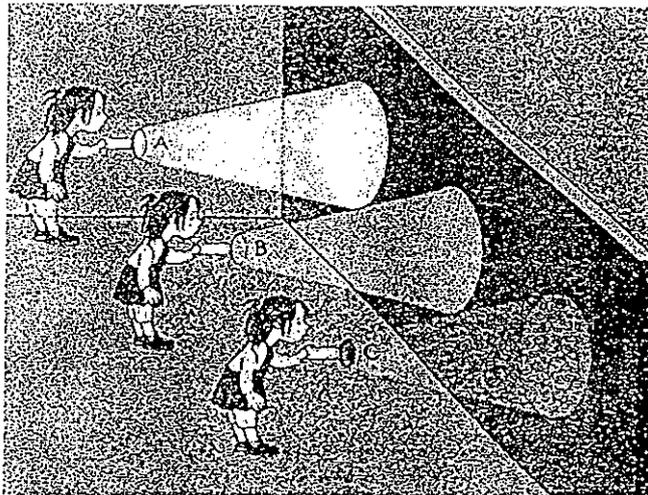
Screen G: _____

44. A coin was placed in a sealed box with a small hole at the side. The box was then placed in a dark room.



- (a) Nicole placed her eye at the small hole. She was not able to see the coin in the box. Describe a way for Nicole to see the coin without removing the coin from the box and the cover of the box. (1m)
-
-

Nicole did another experiment to find out the degree of transparency of three types of paper A, B and C. She covered the front part of each torchlight with three different types of paper. She shone the torchlight on a wall as shown below.



- (b) State one variable that Nicole must keep the same to ensure that the experiment is a fair test. (1m)
-
-
- (c) State the apparatus that Nicole should use for a more accurate result. (1m)
-

-End of Paper-



ANSWER SHEET

EXAM PAPER 2013

SCHOOL : ROSYTH SCHOOL

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
4	1	3	3	2	3	4	3	4	3	2	3	2	3	3	4	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	3	1	2	3	1	2	3	2	2	3	2	2

BOOKLET B

Q31

- a) Fruits with rough skin
- b) Both fruit B and D have many seeds

Q32

- a) i) D ii) C
- b) Animal R does not have 3 body parts but Animal S has 3 body parts

Q33

- a) As material B is waterproof, it does not allow plants to absorb water
- b) i) Survive ii) Die

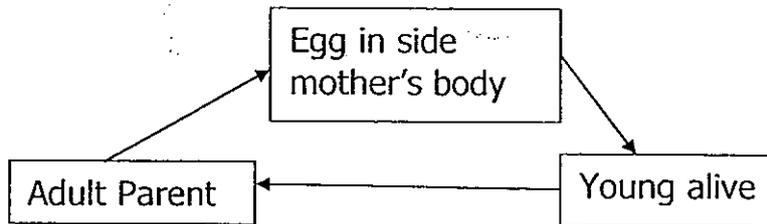
Q34

- a) Set up Z and X
- b) Set up Z. As it has a moist cupcake in a dark room so the mould will grow best in dark and damp places

Q35

a) Mammal. The female giant panda gives birth to her babies.

b)



c) Living things reproduce and can grow

Q36

a) 100cm

b) The weight of the plants increased from week 1 to week 6 and remain the same from week 6 to week 8.

Q37

Description	Stage in life cycle (a)	Sequence (b)
- Wriggles and lives in the pond or still water - Breathes in air using breathing tubes	Larva	4
- Laid in pond or still water - Found in large number	Egg	3
- Lives on land - Can fly	Adult	2
- Lives in pond or still water - Breathes in air using breathing tubes - Does not move or eat	Pupa	1

Q38

a) Cover: Solid

Milk: Liquid

b) Solid has definite shape but liquid does not have a definite shape

Q39

a) It will decrease.

b) Air takes up space in the cup and pushes the water out.

c) He can poke a hole at the top of the cup for air to escape.

Q40

a)

b) Liquid takes the shape of its container

Q41

a)

b) Plasticine has a definite volume

c)

Q42

a) He would observe that the oil in the bottle B flows smoothly but A will drip out oil slowly

b) There is no opening for air to escape so oil is not entering the bottle to take up the space

c) Use a glass tube in the funnel to allow air to escape

Q43

a) Yes, as she can see the empty very clearly.

b) Screen F: Tracing paper

Screen G: Wood

Q44

a) She can make a hole on the cover above the coin and shine the light through a hole.

b) Thickness of the material.

c) Datalogger and light sensor



SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2013
PRIMARY 4 SCIENCE

Name: _____ ()

Date: _____

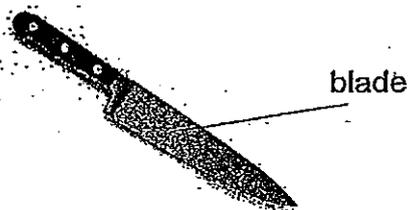
Class: 4 SY / C / G / SE / P

Duration: 1 hr 25 min

Part I (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) on the Optical Answer Sheet provided.

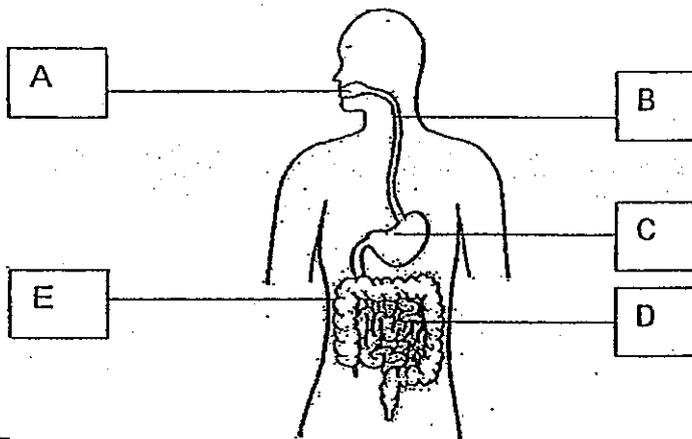
1. The blade of the knife below is made of steel.



Which of the following is the most likely reason to explain why steel is chosen to make the blade of the knife?

- | | |
|------------------|-----------------------|
| 1) It is soft. | 3) It is flexible. |
| 2) It is strong. | 4) It is transparent. |
2. Which of the following statements about the digestive system are correct?
- A) Digestion of food begins in the stomach.
B) Our teeth help us to break up food into smaller pieces.
C) Food passes from the mouth to the stomach through the gullet.
D) Digested food passes through the wall of the large intestine and goes into the bloodstream.
- | | |
|-----------------|-----------------|
| 1) A and B only | 3) B and C only |
| 2) A and D only | 4) B and D only |

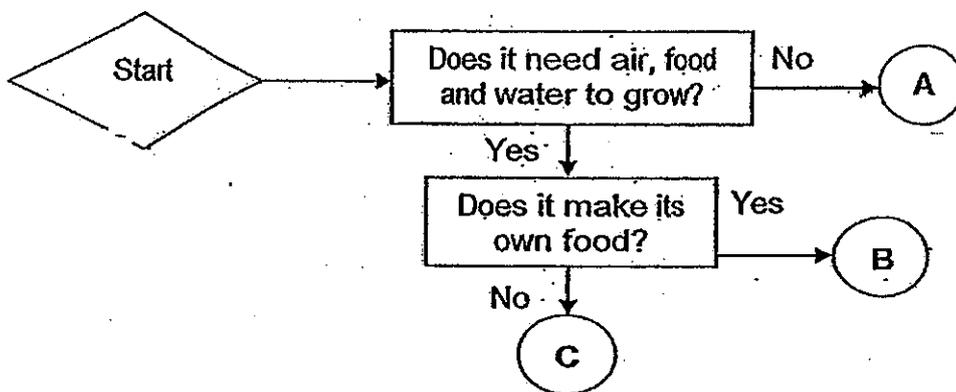
3. Study the diagram of the digestive system below.



Identify parts A, B, C, D and E of the digestive system.

	A	B	C	D	E
(1)	Gullet	Mouth	Small intestine	Stomach	Large intestine
(2)	Mouth	Gullet	Stomach	Large intestine	Small intestine
(3)	Gullet	Mouth	Large intestine	Stomach	Small intestine
(4)	Mouth	Gullet	Stomach	Small intestine	Large intestine

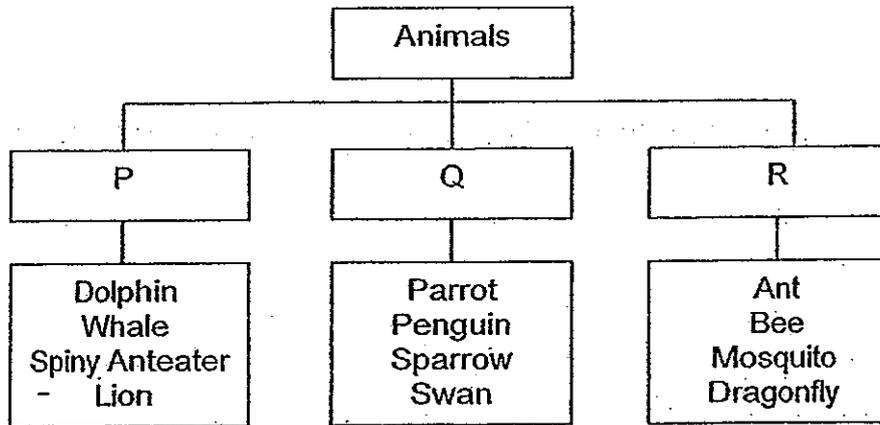
4. Study the flowchart below.



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

	A	B	C
(1)	Cockroach	Whale	Cow
(2)	Book	Bird's Nest Fern	Toadstool
(3)	Yeast	Rose Plant	Shark
(4)	Magnet	Mushroom	Cat

Study the classification table below and answer Questions 5 & 6.



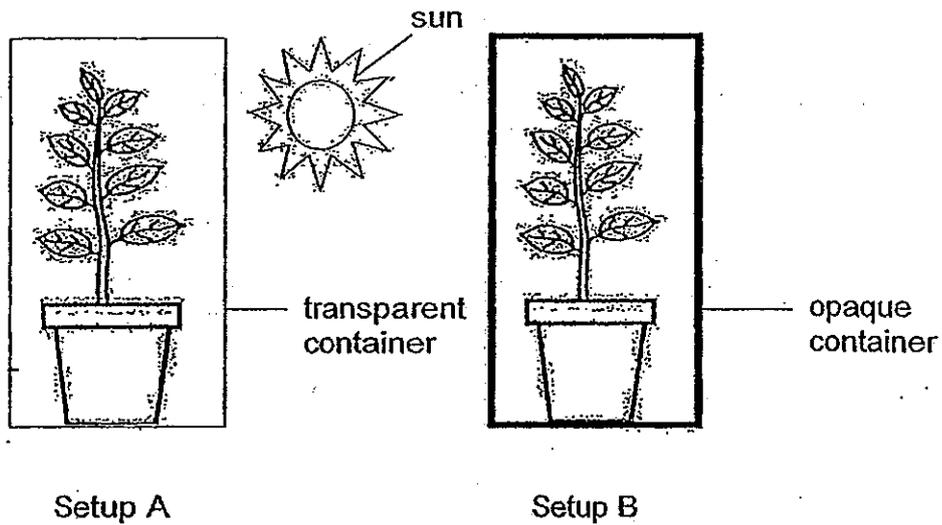
5. Which of the following are the correct headings for P, Q and R?

	P	Q	R
(1)	Insects	Fish	Mammals
(2)	Fish	Birds	Insects
(3)	Birds	Insects	Fish
(4)	Mammals	Birds	Insects

6. The living things in Group P can be grouped equally into Group A and Group B. They can be classified according to _____.

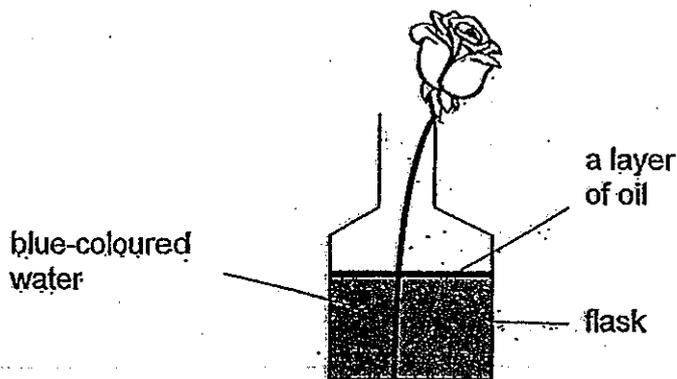
	Group A	Group B
(1)	Plant-eating	Meat-eating
(2)	Scales	Hair
(3)	Lays eggs	Give birth to live young
(4)	Land	Aquatic

7. Andy carried out an experiment as shown in the diagram below. He watered the plants daily.



What was the aim of his experiment? He wanted to find out whether plants needed _____.

- 1) air to survive
 - 2) water to grow
 - 3) sunlight to survive
 - 4) a container to protect them from the sun
8. James carried out an experiment as shown below. He placed a stalk of flower into a flask with blue-coloured water and added a layer of oil above it.



What would happen to the flower after one day?

- 1) The flower will dry up.
- 2) The flower will turn blue.
- 3) The flower will remain the same.
- 4) The petals of the flower will turn oily

9. What is the function of the stem of a plant?

- 1) It helps the plant to reproduce.
- 2) It absorbs water from the ground.
- 3) It helps to transport food and water.
- 4) It helps to take in carbon dioxide and oxygen.

10. David took out his leather belt from the wardrobe and found some mould on it. Which of the following are the most likely conditions of the wardrobe to enable mould to grow?

	Brightness	Moisture Level	Temperature
(1)	Dark	Dry	15°C
(2)	Dark	Moist	30°C
(3)	Bright	Dry	0°C
(4)	Bright	Moist	10°C

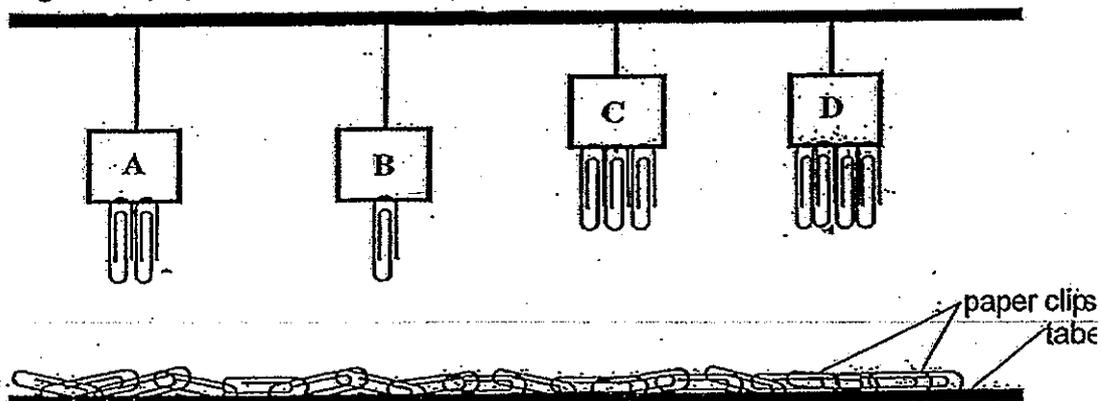
11. Which of the following statements about bacteria are correct?

- A. Bacteria are micro-organisms.
- B. All bacteria are harmful to the body.
- C. Bacteria cannot be found in the water.
- D. Bacteria can be used to produce food like cheese.

- 1) A and B only
- 2) A and D only

- 3) A, B and C only
- 4) A, B, C and D

12. Angela conducted an experiment to find out which magnet is the weakest. The following diagram shows the maximum number of paper clips that Magnets A, B, C and D can attract from the table.

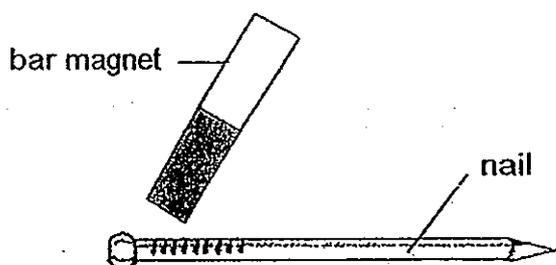


Based on the diagram above, arrange the magnets from the strongest to the weakest.

- 1) A, B, C, D
- 2) B, A, C, D

- 3) C, A, B, D
- 4) D, C, A, B

13. Winnie tried to create a temporary magnet using the stroke method. However, her attempt was not successful.



Which of the following are the possible reasons to explain why she could not create a temporary magnet successfully?

- A: She used a gold nail.
- B: She did not stroke the nail in the same direction.
- C: She dropped the magnet on the floor several times.
- D: She did not use both the N and S poles of the magnet to stroke the nail.

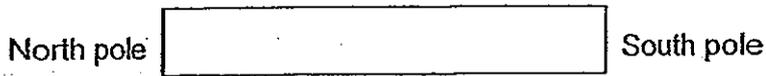
- 1) A and D only
- 2) A, B and C only
- 3) B and C only
- 4) B, C and D only

14. Mark carried out an experiment to find out how the number of times a nail is stroked affects the strength of the temporary magnet. He recorded the results in the table below. Based on his results, what do you think he will be able to conclude from his experiment?

Number of strokes	Number of paper clips
10	5
20	9
30	13

- 1) The number of strokes has no effect on the temporary magnet.
- 2) The fewer the number of strokes, the weaker the temporary magnet will be.
- 3) The fewer the number of strokes, the stronger the temporary magnet will be.
- 4) The greater the number of strokes, the weaker the temporary magnet will be.

15. Jayla accidentally dropped a new bar magnet on the floor and it broke into 3 pieces as shown in the diagram below. Which of the following statements is true about the broken pieces X, Y and Z?



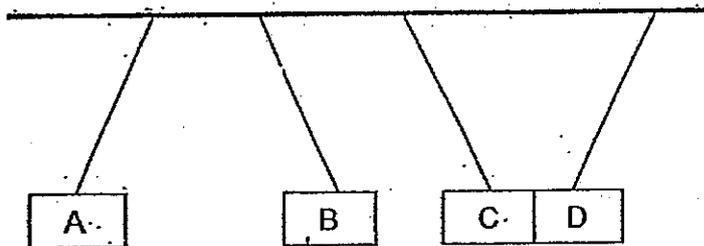
X Y Z

- 1) Y will not be magnetic.
- 2) Only X will have North and South poles.
- 3) All pieces will have both the North and South poles.
- 4) X will only have a North pole and Z will only have a South pole.

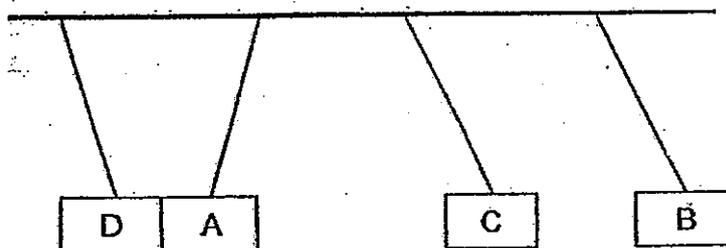
objects

16. Ali had 4 ~~magnets~~ objects. He used strings to hang them in 2 different arrangements as shown below.

1st Arrangement



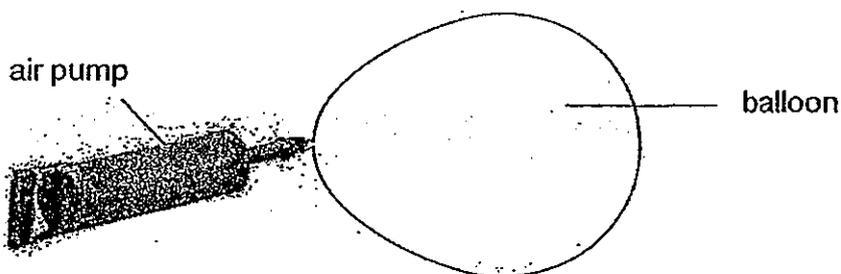
2nd Arrangement



Which of the objects above are definitely magnets?

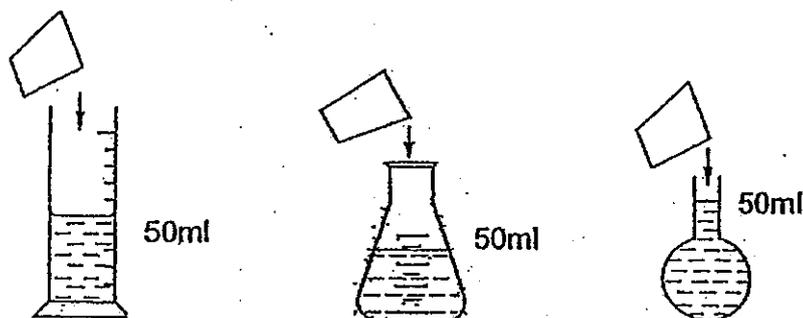
- 1) A and B only
- 2) A, B and C only
- 3) B and C only
- 4) B, C and D only

17. John pumped some air into a balloon as shown in the picture below.



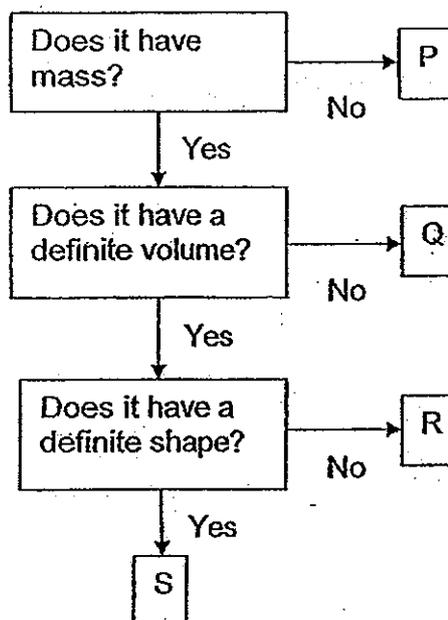
What does this tell you about air?

- 1) Air occupies space.
 - 2) Air has a definite shape.
 - 3) Air has a definite volume.
 - 4) Air cannot be compressed.
18. Roger poured 50ml of water into each of the 3 different containers as shown in the picture below. What does this experiment tell you about water?



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

Study the classification chart below and answer Questions 19 and 20.



19. Which of the above substances, P, Q, R and S, cannot be classified as matter?

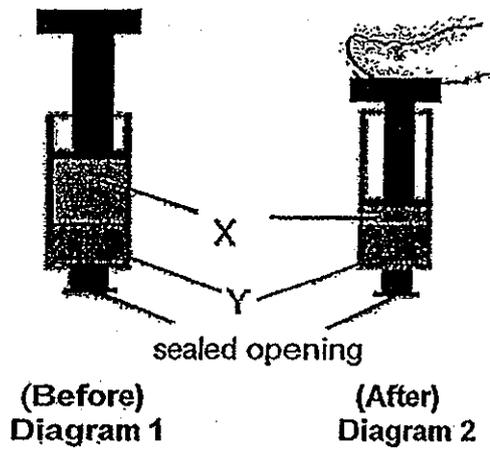
- 1) P
- 2) Q
- 3) R
- 4) S

20. What is substance R likely to be?

- 1) Oil
- 2) Carbon dioxide
- 3) Lightning
- 4) Eraser

Study the diagrams below and answer Questions 21 and 22.

21. Jason conducted an experiment with two substances, X and Y, as shown in the diagrams below. He pushed the syringe down slightly in Diagram 2.



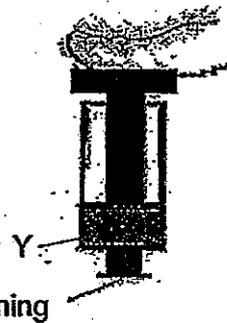
Which of the following statements correctly describe substance X?

- A. It can be compressed.
- B. It has a definite shape.
- C. It does not occupy space.
- D. It does not have a definite volume.

- 1) A and B
- 2) A and D

- 3) B and C
- 4) C and D

22. Jason tried to push the plunger down completely but it stopped slightly above substance Y as shown in the diagram below.



Which of the following substances could Y be?

- A. Clay
- B. Oxygen
- C. Green Tea
- D. Orange Juice

- 1) A and B
- 2) C and D

- 3) A, C and D
- 4) All of the above

Use the information in the table below to answer Questions 23 and 24.

Animal	Lays Eggs	3 stages in its life cycle	Has wings in its adult stage
A			
B	√	√	√
C	√	√	
D	√		√

23. Which of the following can be Animal C?

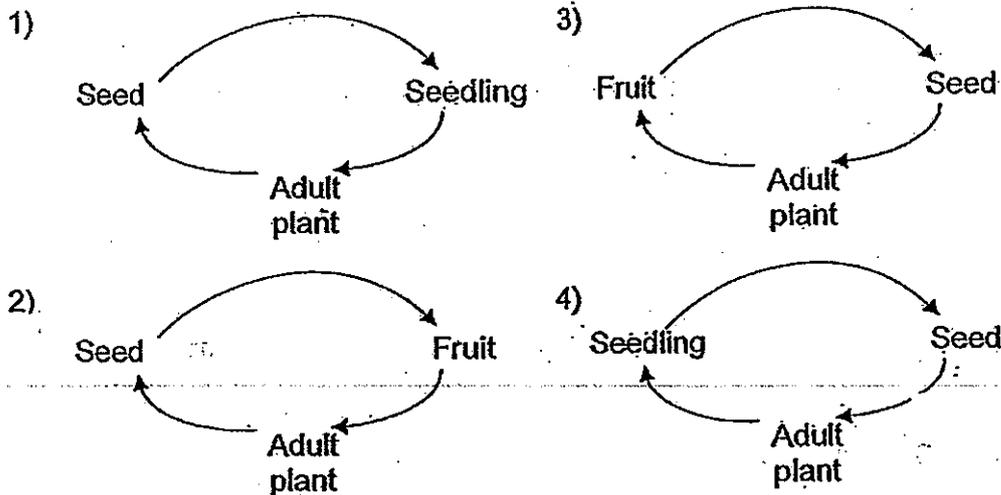
- 1) Frog
- 2) Grasshopper
- 3) Bee
- 4) Dragonfly

24. B and D are both insects. Based on the table above, which of the following statements are correct?

- A) B lays eggs in water.
- B) B has a nymph stage but D does not.
- C) The young of D resembles its adult.
- D) The young of D has wings but the young of B does not.

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

25. Which of the following shows the correct life cycle of a flowering plant?



**SINGAPORE CHINESE GIRLS' SCHOOL
FIRST SEMESTRAL ASSESSMENT 2013
PRIMARY 4 SCIENCE**

Name: _____ ()
Class: 4 SY / C / G / SE / P

Date: _____
Duration: 1 hr 25 min

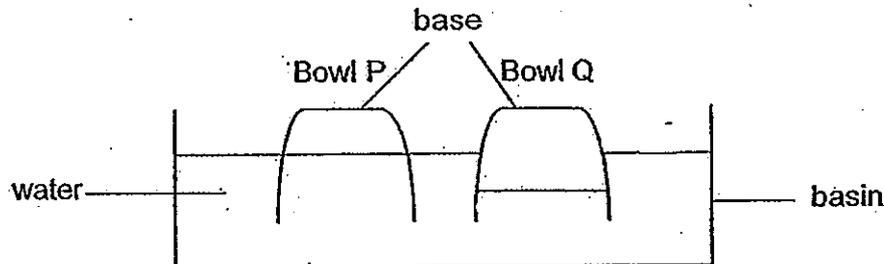
Written Paper (Part I)		50
Written Paper (Part II)		30
Total		80
Percentage		%

Parent's Signature

Part II (30 marks)

Read and answer Questions 26 to 35.

26. Lucy carried out an experiment. She placed two inverted metal bowls into a basin of water. Both are similar except that there are 4 holes at the base of one bowl.

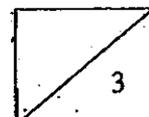


- a) Identify the bowl which has 4 holes at the base (1m)

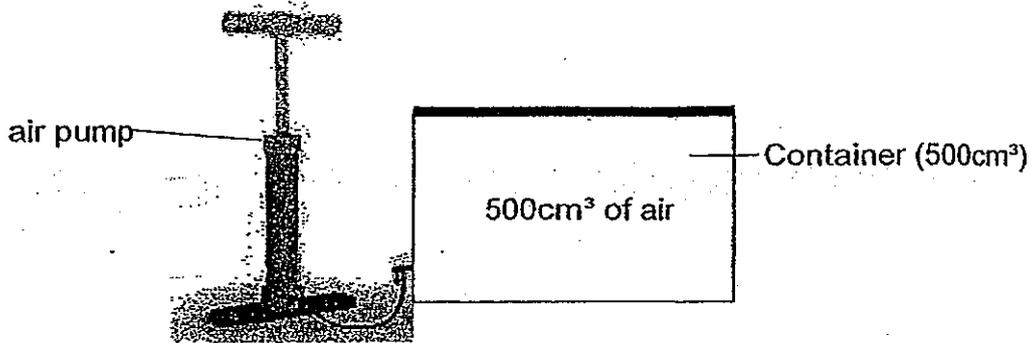
Bowl with 4 holes : _____

- b) Why was the water level in Bowl Q lower than the water level in the basin ? (1m)

- c) Why did some water enter Bowl Q? (1m)



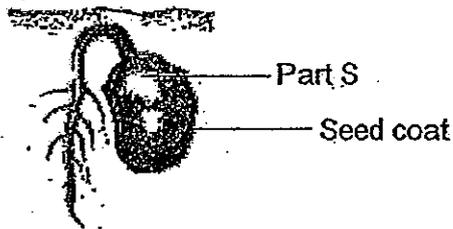
27. The diagram below shows a container which has a capacity of 500cm^3 .



Tammi pumped 200cm^3 of air into the container. What is the volume of the air and the mass of the box after 200cm^3 of air has been pumped into the box? Circle the correct answers in the table below. (2m)

	Original	After pumping
Volume	500cm^3	300cm^3 / 500cm^3 / 700cm^3
Mass	205g	198g / 205g / 207g

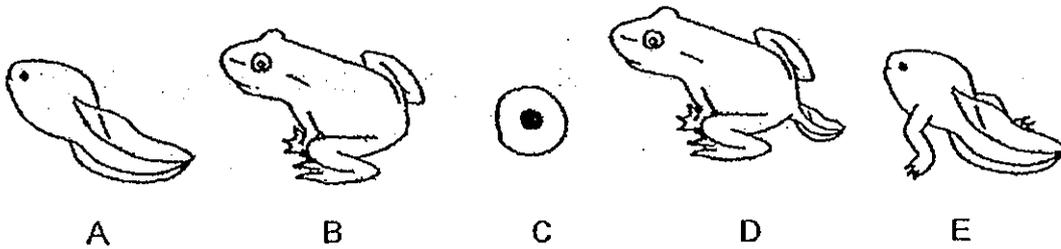
28. Wendy observed the growth of a plant as shown in the diagram below.



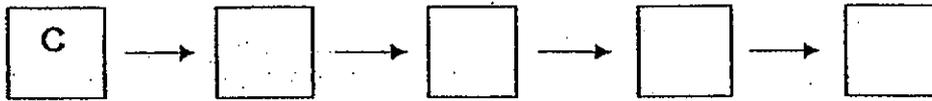
a) Green leaves have not emerged from the seedling yet. What will she observe if Part S is removed from the seedling? (1m)

b) Explain why Part S becomes smaller as the plant grows bigger. (1m)

29. The pictures below show the growth of a frog.



a) Fill in the boxes with the letters A, B, D and E to show the correct order of the growth of a frog. The first box has been filled in for you. (1m)

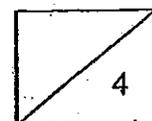


b) Both the frog and the chicken have a 3-stage life cycle. Besides this, state another similarity between the life cycle of a frog and a chicken. (1m)

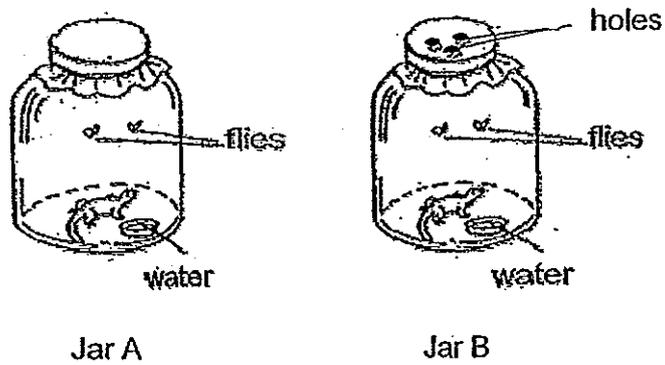
c) State 2 differences between the life cycle of a frog and a chicken. (2m)

i)

ii)



30. Emma placed a lizard into each of the two jars, A and B, as shown in the picture below.

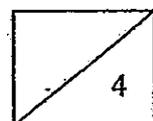


a) Which lizard will die first? Explain your answer.

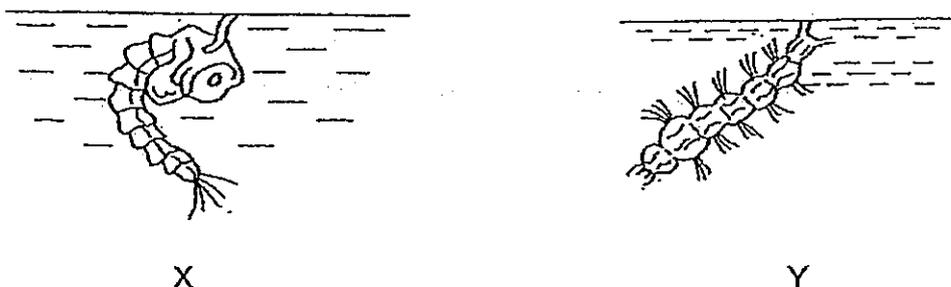
b) Will there be a change in the time taken for the lizards in each jar to die if 10 lizards were added into each jar instead? Indicate your answer by circling 'a change' or 'no change' and explain your answer. (2m)

Jar A: There will be a change / no change because

Jar B: There will be a change / no change because



31. The diagram below shows 2 stages of the life cycle of a mosquito.

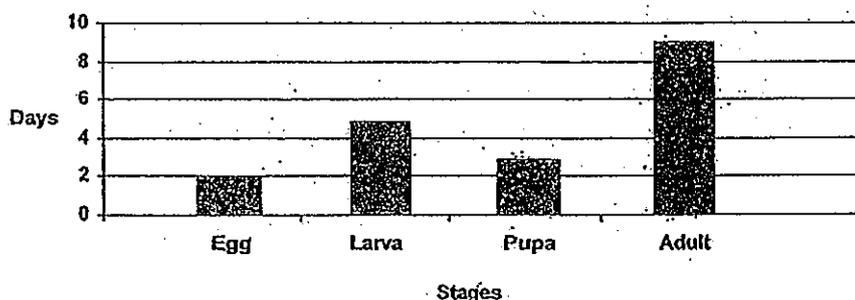


a) Identify Stage X and Stage Y. (1m)

i) X: _____

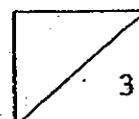
ii) Y: _____

The graph below shows the number of days in each stage of the life cycle of Mosquito K.

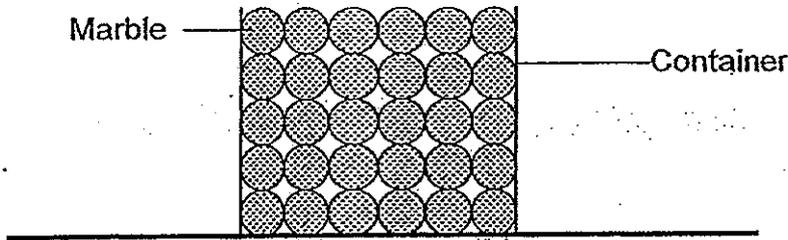


b) How many days did Mosquito K take to become an adult after hatching from the egg? (1m)

c) Explain why the mosquito is the most difficult to kill at the adult stage: (1m)



32. Joseph filled the container with marbles as shown in the diagram below. There were gaps between each marble and he wanted to fill them up.



He tried using the following substances to fill up all the space in the container:

- Sand
- Water

Which of the substances, sand or water, could he use to fill up all the space in the container? Explain your answer. (2m)

33. Mary took part in a shoe-making competition. She created 2 shoes that are almost identical. The only difference is that both shoes were made of different materials.



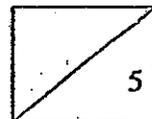
Frosted-glass shoe



Fabric shoe

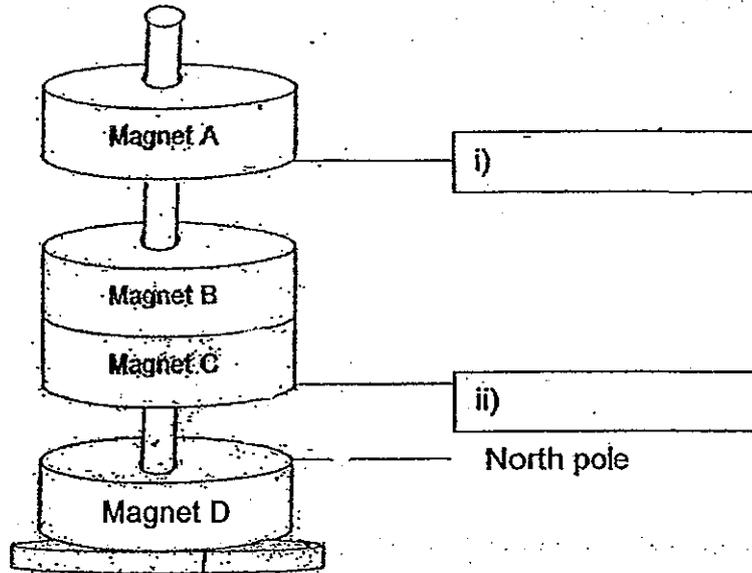
- a) Which of the shoes above is more comfortable to wear? (1m)

- b) Based on the properties of materials, compare the frosted-glass and fabric and give 2 reasons for your answer in part (a). (2m)



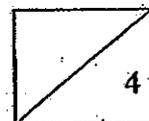
34. The picture below shows 4 ring magnets A, B, C and D.

a) Identify the poles of the magnets. (2m)



b) Will Magnet C and A still float when D is flipped upside down? Put a tick in the appropriate box in the table below. (2m)

	Will float	Will not float
i) A		
ii) C		



35. Ali put some green beans into a container laid with moist cotton pads. He watered each container with different amounts of water every day. He left them in a dark cupboard. He recorded the number of days taken for the green leaves to germinate in each bowl.

beans



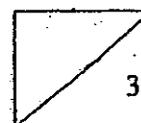
3ml of water 8ml of water 13ml of water 18ml of water

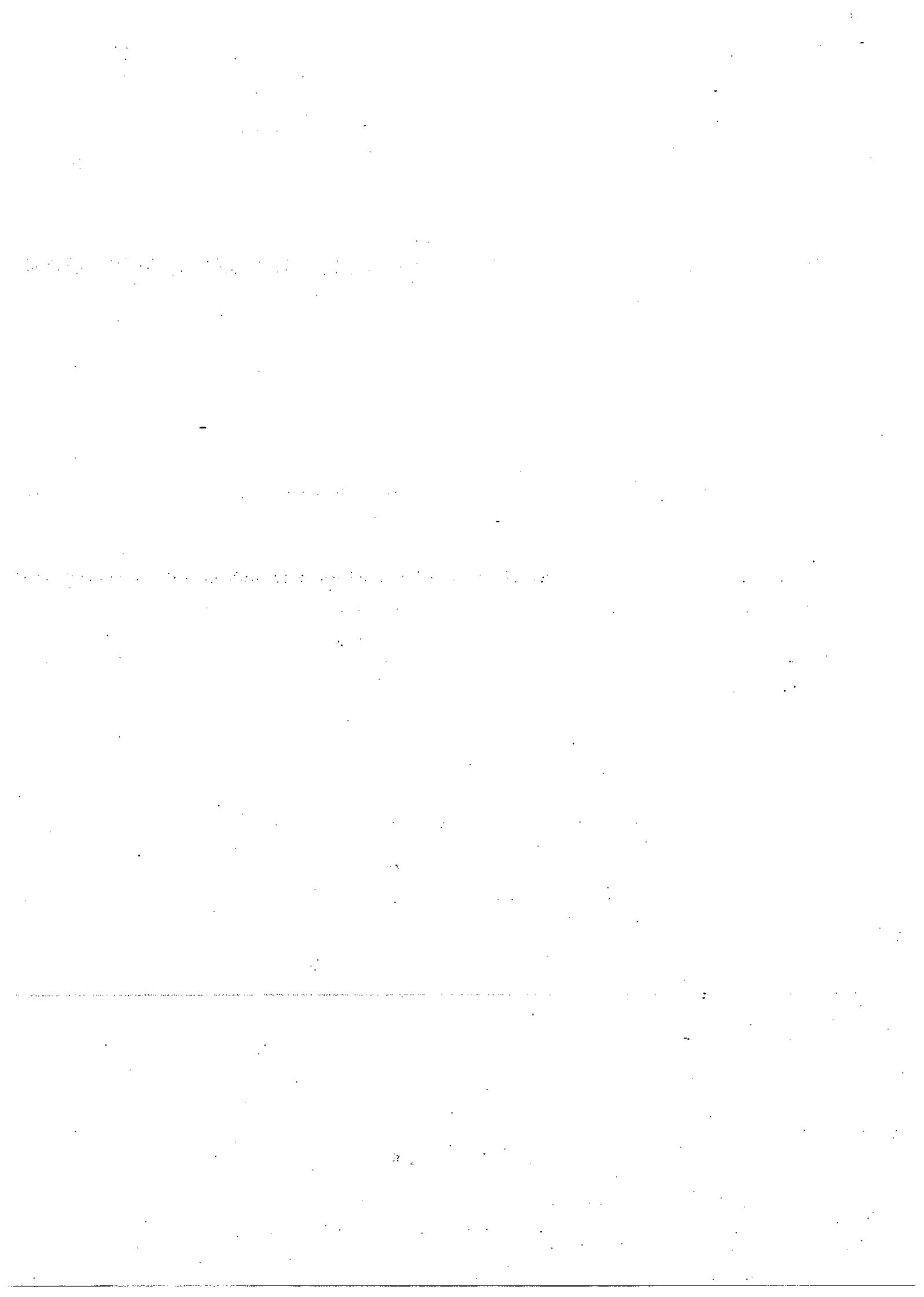
- a) What was the aim of Ali's experiment? (1m)

- b) Study the variables in the table below. Put a tick in the appropriate boxes to indicate whether they are independent (changed), dependent (measured) or controlled (constant), in the experiment above. (2m)

	Independent	Dependent	Controlled
a) Type of beans			
b) Amount of water given			
c) Number of days for the green beans to germinate			
d) Size of container			

END OF PAPER





ANSWER SHEET

EXAM PAPER 2013

SCHOOL : SINGAPORE CHINESE GIRLS' SCHOOL

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	3	4	2	4	4	3	3	3	2	2	4	1	2	3	2	1

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25
3	1	1	2	3	1	1	1

Part II

Q26

- a) Bowl P
- b) The air inside Bowl Q occupies space
- c) The air in Bowl Q was compressed hence some water could enter it

Q27

	Original	After pumping
Volume	500cm ²	300cm ³ / 500cm³ / 700cm ³
Mass	205g	198g / 205g / 205g / 207g

Q28

- a) The seedling will die
- b) As the plant grows, the food from the seed leaves will eventually be used up it will grow smaller until the seed leaves shrivel up.

Q29

a) C → A → E → D → B

b) Both animals lay eggs

c) i) The young of the frog does not resemble its adult but the young of the chicken resembles its adult

ii) The frog lay eggs in water but the chicken lay eggs on land

Q30

a) The lizard in Jar A. It does not have enough air

b) Jar A: There will be a change because more lizards will use up the fixed amount of air faster

Jar B: There will be a change as more lizards will be using up the food and water faster

Q31

a) i) X: Pupa

ii) Y: Larva

b) 8 days

c) At the adult stage, the mosquito has developed wings and can fly away, thus making it most difficult to kill the mosquito at the adult stage.

Q32) He could use water, as it has no definite shape

Q33

a) The shoe made of fabric

b) Frosted glass is hard while fabric is soft.

Frosted glass is inflexible but fabric is flexible

Q34

a) i) South pole

ii) North pole

b)

		Will float	Will not float
i)	A	√	
ii)	C		√

Q35

a) To find out if the amount of water will affect the number of days taken for the green beans to germinate

b)

	Independent	Dependent	Controlled
a) Type of beans			√
b) Amount of water given	√		
c) Number of days given for the green leaves to germinate		√	
d) Size of container			√





PRIMARY 4 MID-YEAR EXAMINATION 2013

Name : _____ () Date: 20 MAY 2013

Class : Primary 4 ()

Time: 8.00 a.m. – 9.30 a.m.

Duration: 1 hour 30 minutes

Parent's Signature : _____

Marks: _____ / 60

**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.

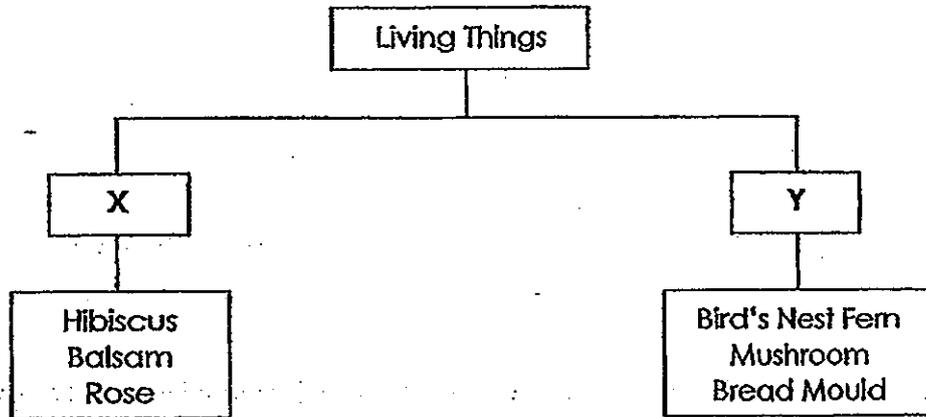
Follow all instructions carefully.

Answer all questions.

Section A (30 x 2 marks)

For each question, choose the most suitable answer and shade its corresponding oval (1,2,3 or 4) in the optical answer sheet.

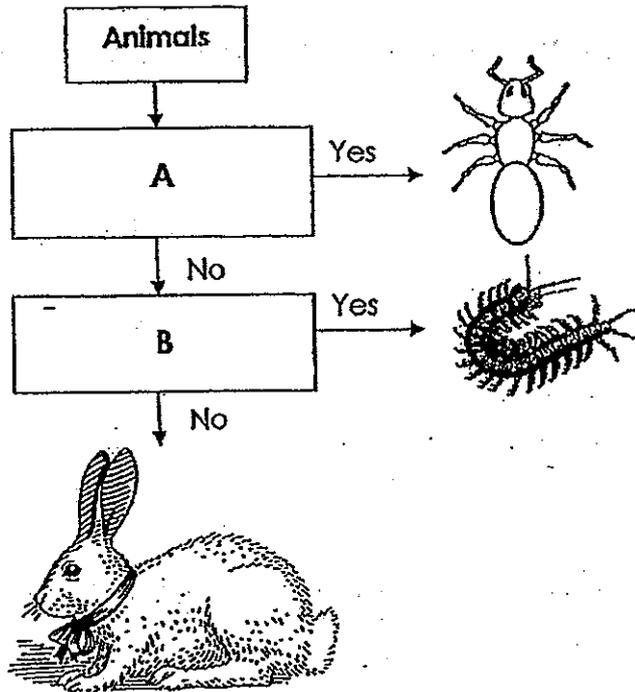
1. Study the classification chart below. Two characteristics, X and Y, are used to classify the living things.



Based on the classification chart above, what are the two characteristics, X and Y?

	X	Y
(1)	Has stems	Does not have stems
(2)	Has chlorophyll	Does not have chlorophyll
(3)	Grow on Land	Grow in water
(4)	Reproduce by seeds	Reproduce by spores

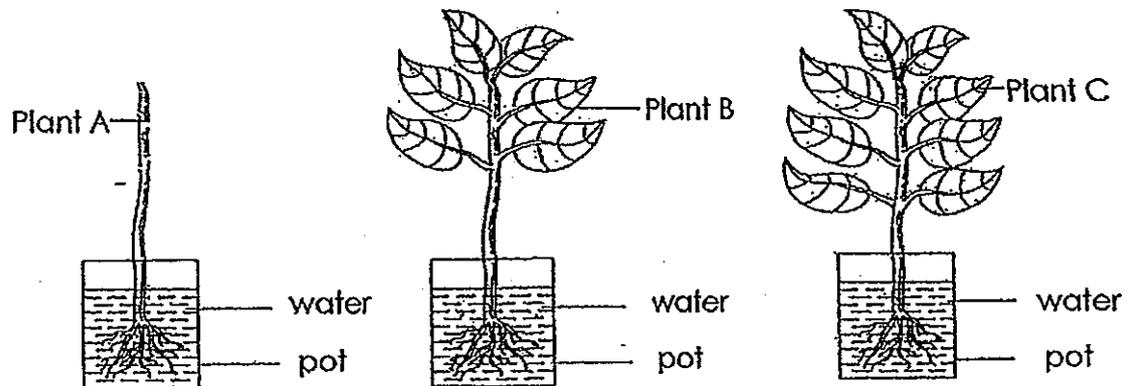
2. Study the flow chart below.



Based on the flow chart, what can A and B represent?

	A	B
(1)	Does it have two body parts?	Does it have legs?
(2)	Does it have feelers?	Does it have two body parts?
(3)	Does it have three body parts?	Does it have feelers?
(4)	Does it have six legs?	Does it have fur?

3. Isaac selected three similar looking plants, Plant A, Plant B and Plant C, for his experiment. He trimmed off all the leaves from plant A, and some leaves from plant B. No leaves were trimmed from plant C. Then he placed each plant in a pot with equal volumes of water.



After ten hours, he recorded the volume of water in each pot of water.

	Volume of water in the pot (ml)
Plant A	500
Plant B	300
Plant C	200

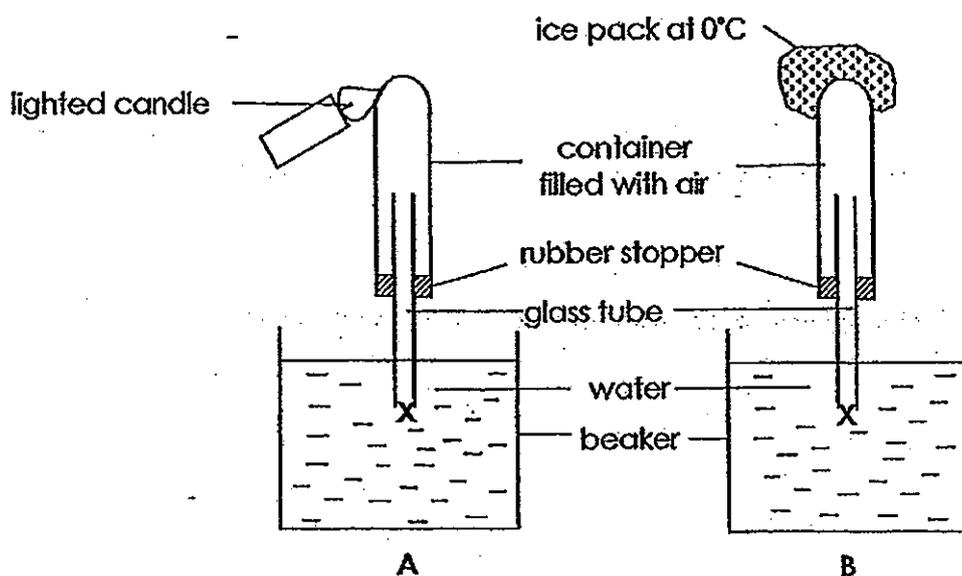
What is the aim of the experiment?

- (1) To investigate if the roots of a plant absorb water.
- (2) To investigate if the stem of a plant transports water.
- (3) To investigate if the leaves of a plant need water to make food.
- (4) To investigate if the number of leaves affect the volume of water taken in.

4. Which of the following substances are absorbed into the bloodstream after digestion?

- (1) Water and digested food only
- (2) Carbon dioxide and water only
- (3) Water and undigested food only
- (4) Oxygen and carbon dioxide only

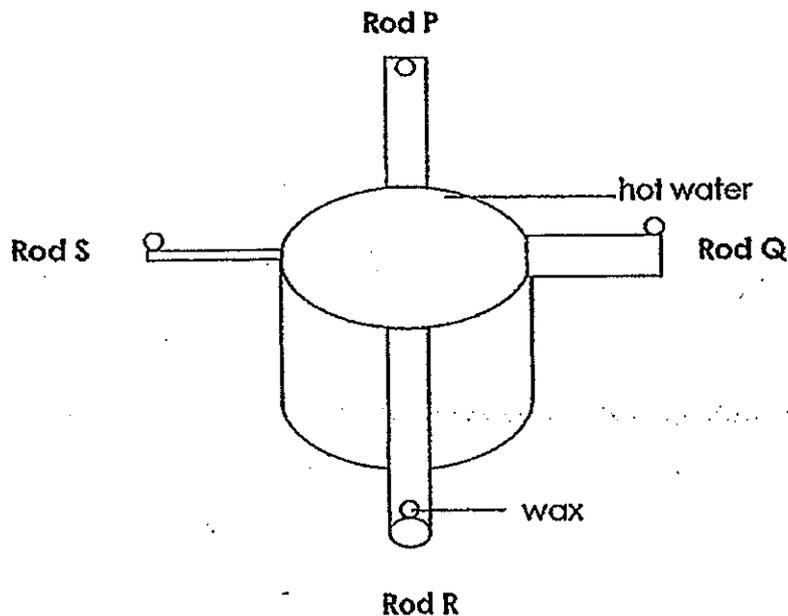
5. Study the set-ups, A and B, below.



Which of the following could be observed after two minutes in the set-ups, A and B, as shown above?

	Observation for A	Observation for B
(1)	Water rising up the glass tube.	Water rising up the glass tube.
(2)	Water rising up the glass tube.	Bubbles escaping from the glass tube at X.
(3)	Bubbles escaping from the glass tube at X.	Water rising up the glass tube.
(4)	Bubbles escaping from the glass tube at X.	Bubbles escaping from the glass tube at X.

6. Aileen wanted to investigate if the material of a rod affects the rate heat is conducted through it. She had a container of water with different rods, Rod P, Rod Q, Rod R and Rod S attached to it. Each rod had a piece of wax placed at its end furthest from the water as shown in the diagram below. The water was heated continuously till all the pieces of wax had melted completely.



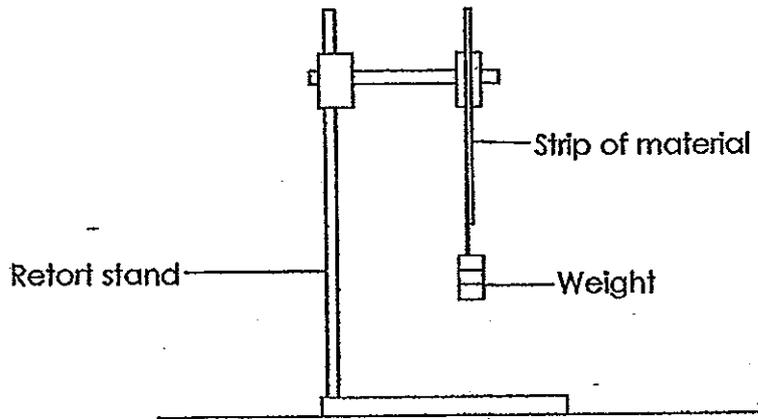
The table below shows some information about the rods.

	Material	Length (cm)	Thickness (cm)
Rod P	Copper	5	0.7
Rod Q	Iron	5	0.7
Rod R	Glass	7	0.7
Rod S	Copper	5	0.2

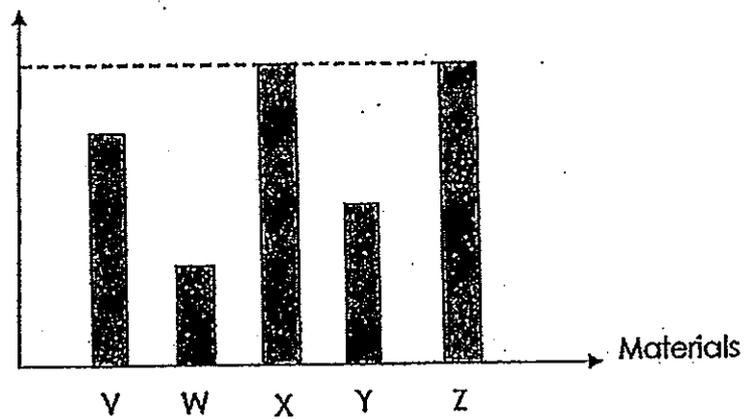
Which of the following rods should be used to ensure a fair test?

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

7. Five strips of different materials of similar sizes were tied to a retort stand one at a time as shown in the diagram below. Weights were hung on them until they broke. The number of weights that was needed to break each strip was recorded and represented in the graph below.



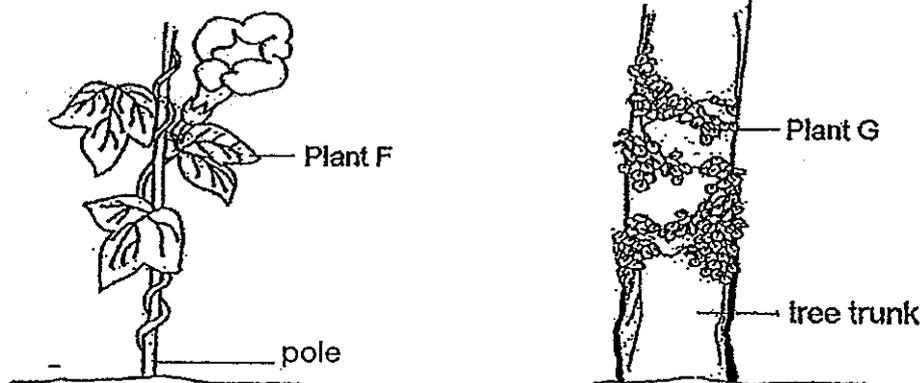
Number of weights



Based on the graph above, which of the following conclusions is correct?

- (1) Y is stronger than Z.
- (2) V is stronger than W.
- (3) W is the softest material.
- (4) X and Z are the hardest materials.

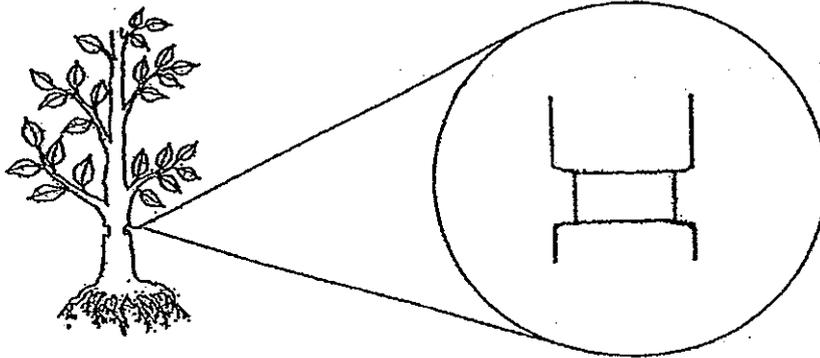
8. Two plants, Plant F and Plant G, grown in a garden are shown below.



Based on the above, which of the following is true?

- (1) They have roots.
- (2) They reproduce by spores.
- (3) They need sunlight to grow.
- (4) They climb up a support to stay upright.

9. The picture shows a plant with a small ring-like layer with food-carrying tubes carefully removed from the outer part of the stem at part P, leaving the water-carrying tubes behind.

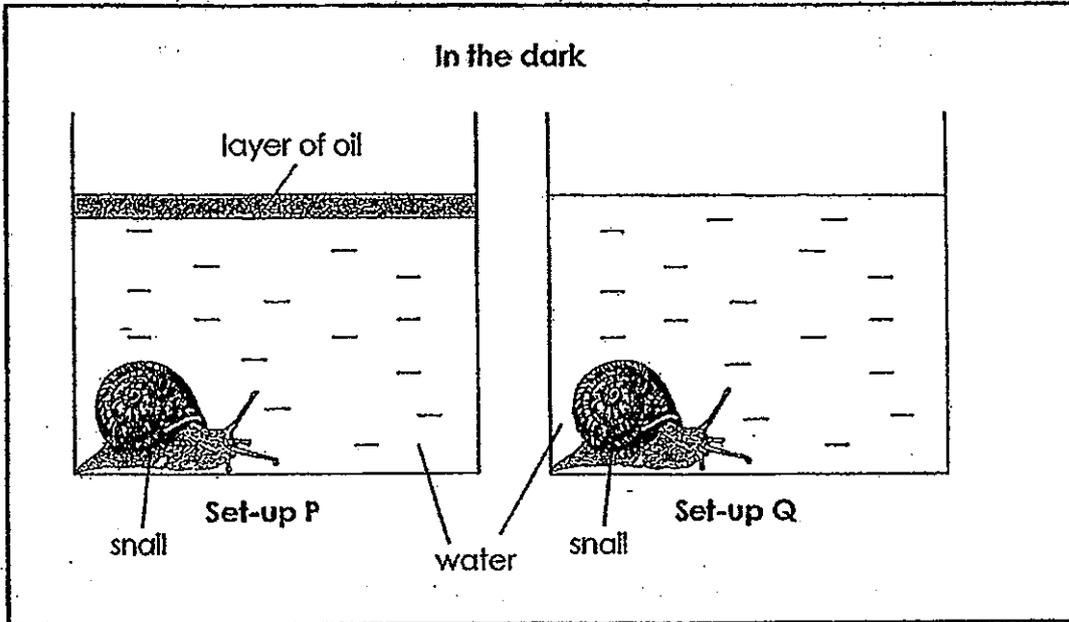


enlarged view of part P

Which diagram shows the likely change of the stem at part P after a period of time?

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

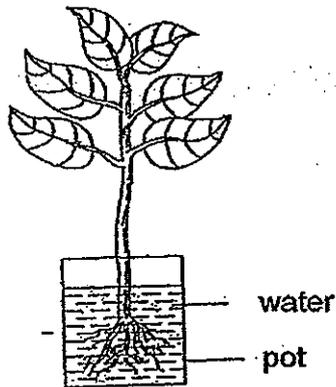
10. Sifi carried out an experiment as shown below.



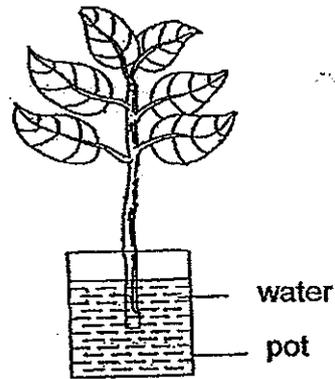
At the end of three hours, only the snail in Set-up Q was alive. What does the result of this experiment show?

- (1) Living things need light to survive.
- (2) Living things need food to survive.
- (3) Living things need water to survive.
- (4) Living things need oxygen to survive.

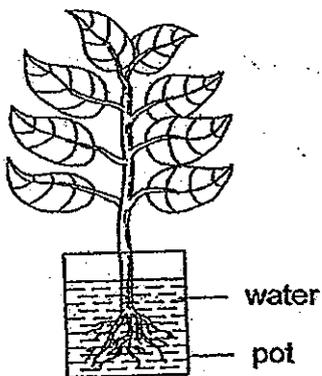
11. Ali was given four set-ups as shown below. His teacher asked him to conduct an experiment to show that the roots of a plant take in water.



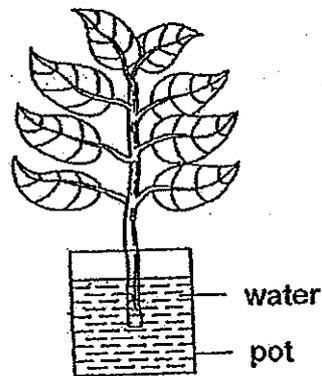
Set-up A



Set-up C



Set-up B

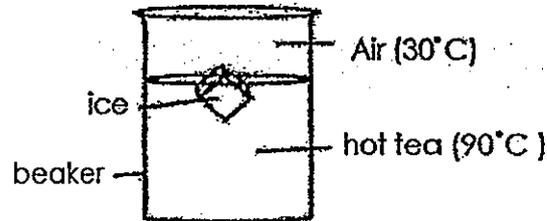


Set-up D

Which two of the four set-ups, Set-up A, Set-up B, Set-up C and Set-up D, should he use in his experiment to ensure a fair test?

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

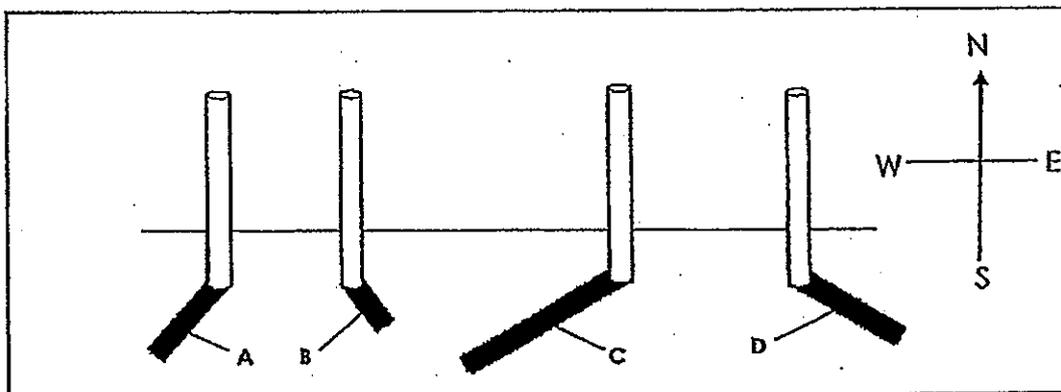
12. Study the diagram below.



Which of the following explains why the ice melted completely after some time?

- (1) The hot tea loses heat to the air.
- (2) The air gains heat from the hot tea.
- (3) The ice loses coldness to the hot tea and the air
- (4) The ice gains heat from the hot tea and the air.

13. The diagram below shows the shadows of a pole at different times of the day.



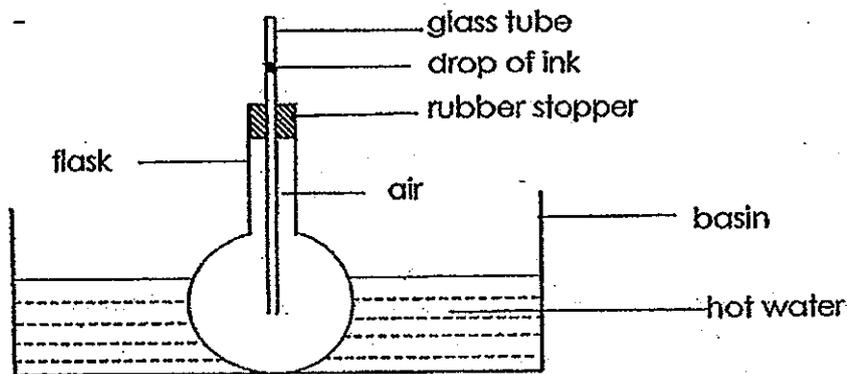
Match the shadows with the different times of the day.

	8 a.m.	10 a.m.	2 p.m.	4 p.m.
(1)	A	C	D	B
(2)	B	D	C	A
(3)	C	A	B	D
(4)	D	B	A	C

14. Which of the following is correct?

- (1) All sources of heat are also sources of light.
- (2) The Sun is our only source of heat and light.
- (3) Heat is a measurement of hotness of an object.
- (4) Heat always flows from a hotter place to a colder place.

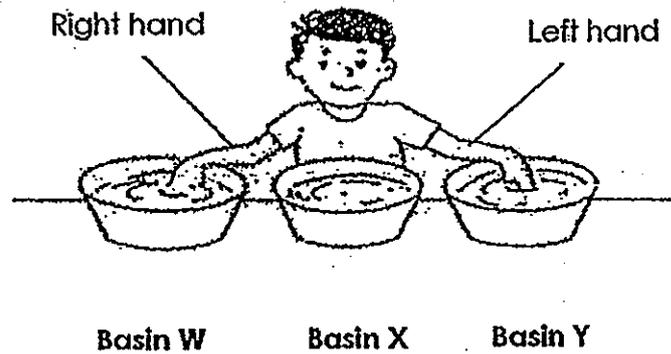
15. In the experimental set-up below, when the flask was immersed in the basin of hot water, the drop of ink dropped slightly first before it rose.



What could have caused the drop of ink to drop first before rising again?

- (1) The flask expanded first followed by the air in the flask.
- (2) The air in the flask expanded first followed by the flask.
- (3) The glass tube expanded first followed by the air in the flask.
- (4) The air in the flask expanded first followed by the glass tube.

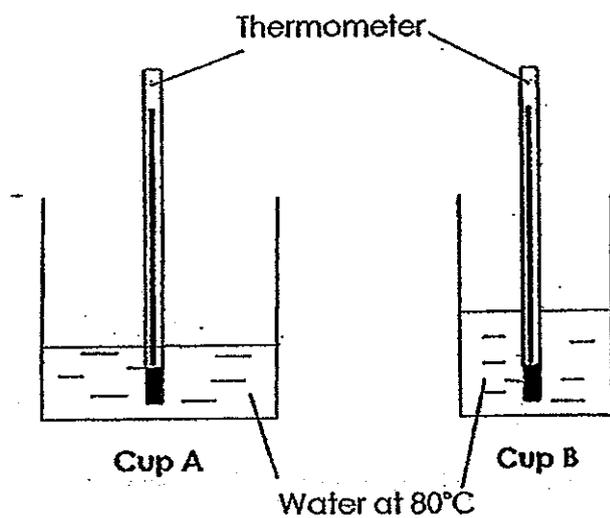
16. Max put his left hand in Basin Y and right hand in Basin W. Then he put both his hands in Basin X. His right hand feels warm while his left hand feels cold in Basin X.



Which one of the following are the likely temperatures of water in Basin W, Basin X and Basin Y?

	Basin W	Basin X	Basin Y
(1)	10°C	30°C	50°C
(2)	30°C	10°C	10°C
(3)	50°C	30°C	10°C
(4)	50°C	50°C	30°C

17. Paul wanted to find out which cup made of different materials is a better conductor of heat. He poured the same volume of water at 80°C into the cups, Cup A and Cup B, and measured the temperature of the water in the cups every minute.

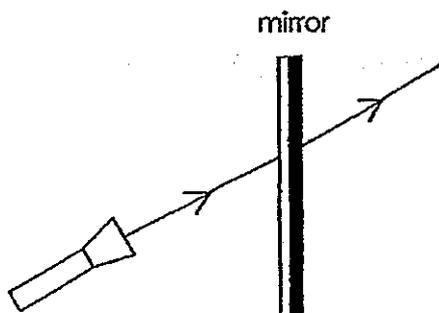


Paul's teacher said that his experiment was not a fair one. Explain why.

- (1) Cup A was bigger than Cup B.
- (2) The volume of water is the same.
- (3) The temperature of the water is the same.
- (4) Cup A was a better conductor of heat than Cup B.

18. Which of the following shows the path of light when a torch is shone on a mirror?

(1)

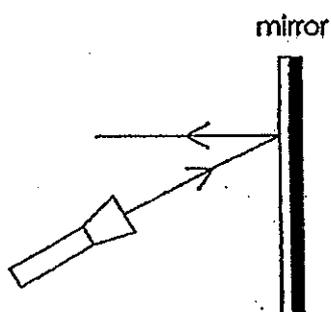


Legend

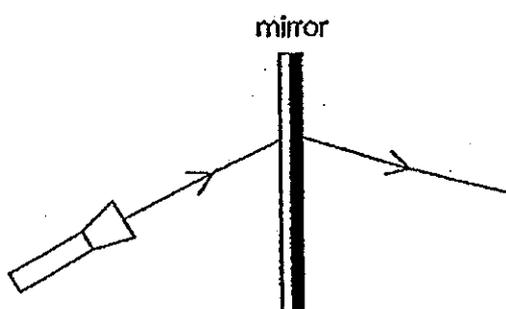


Reflective side
of the mirror

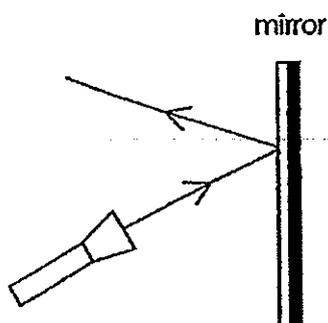
(2)



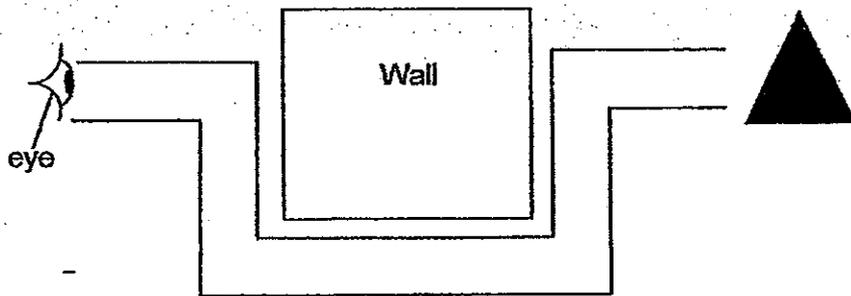
(3)



(4)



19. When Tommy looked through a tube, he could not see the triangular-shaped card which was on the other side of the tube as shown below.



To see the triangular-shaped card, Tommy was asked to place four mirrors in the tube. Which of the following shows the correct positions of the mirrors?

(1) (1)

(2) (2)

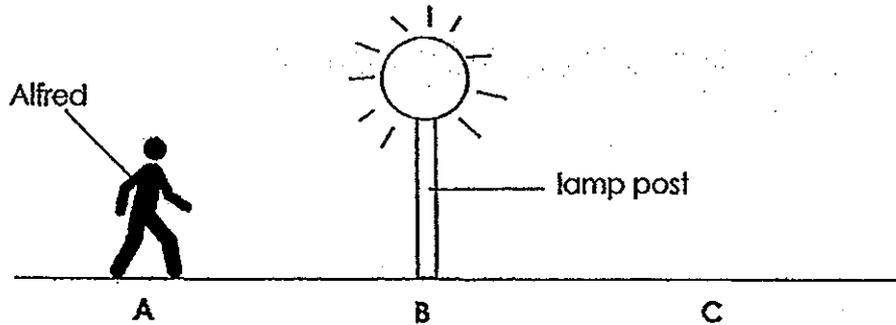
(3) (3)

(4) (4)

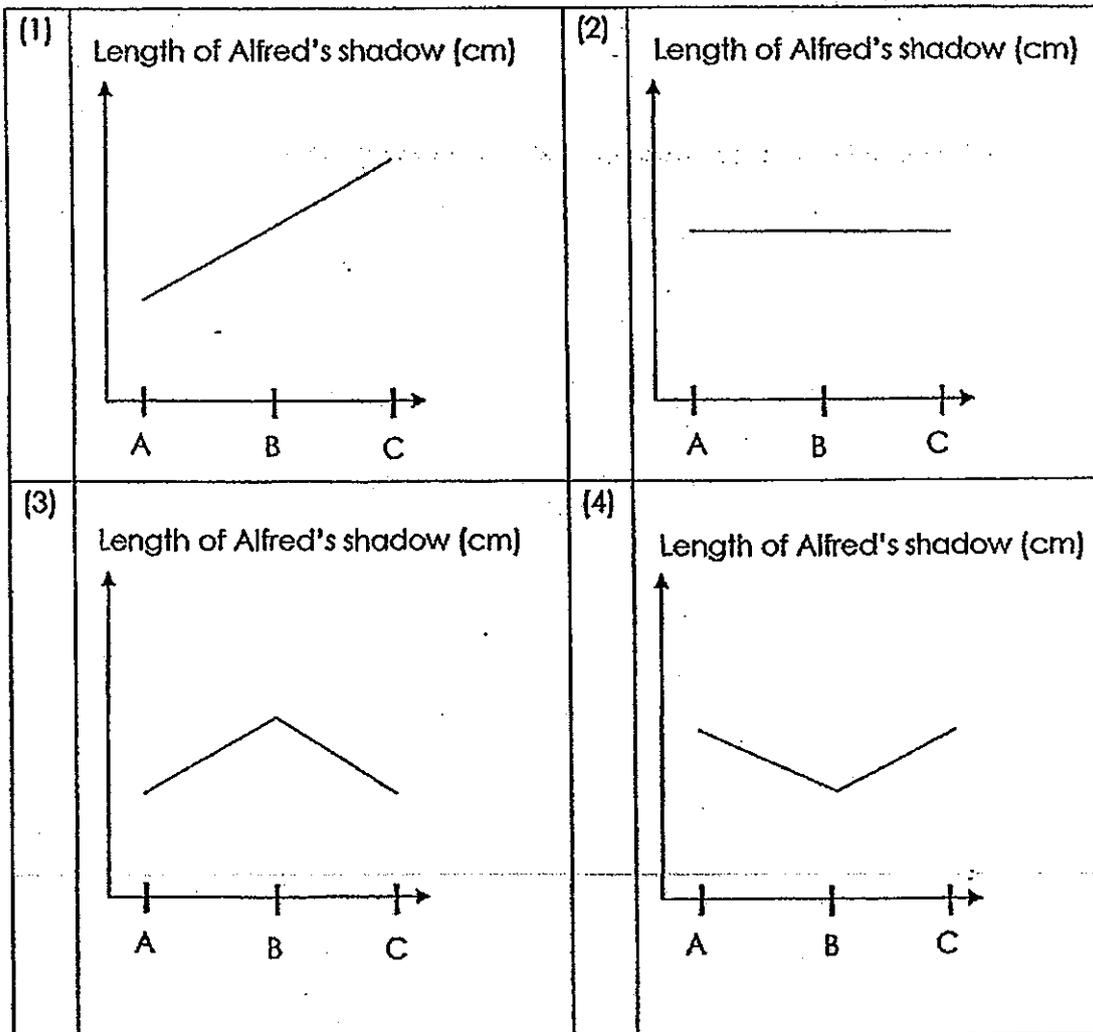
Legend

Reflective side of the mirror

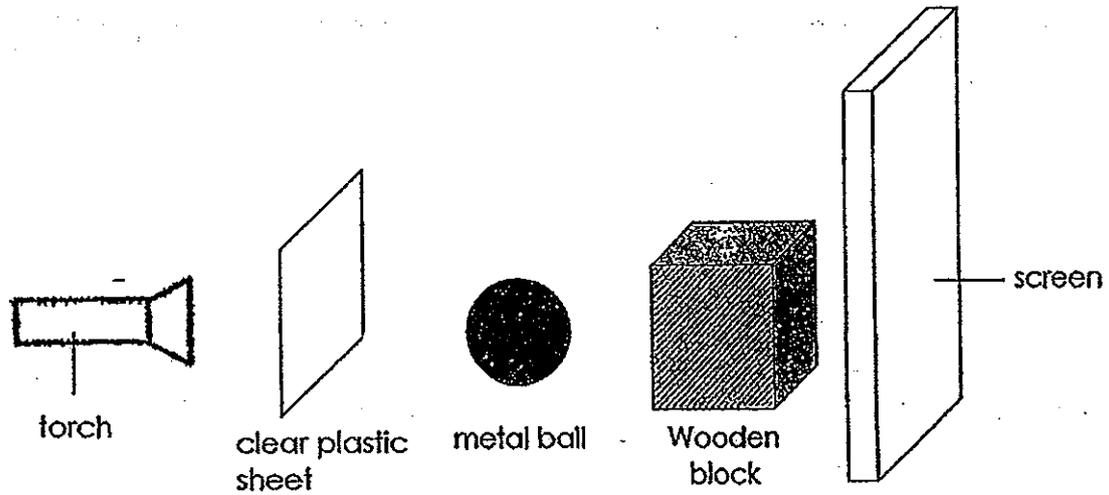
20. One dark night, Alfred walked from point A to point C, passing a lamp post at point B as shown in the diagram below.



Which of the following graphs below represents the length of Alfred's shadow from point A to point C?



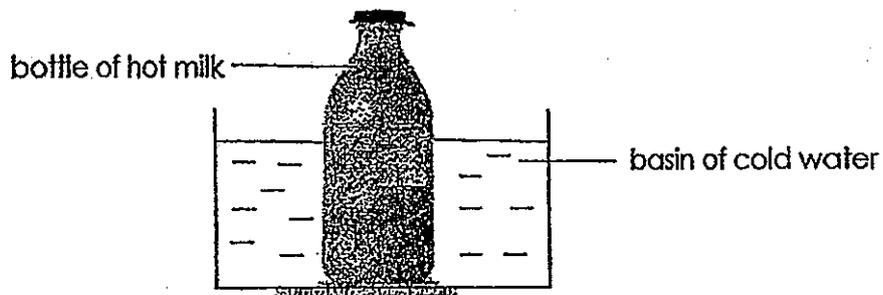
21. Sharifah set up an experiment as shown below. She observed the shadow formed on the screen when the torch was shone on the clear plastic sheet, metal ball and wooden block.



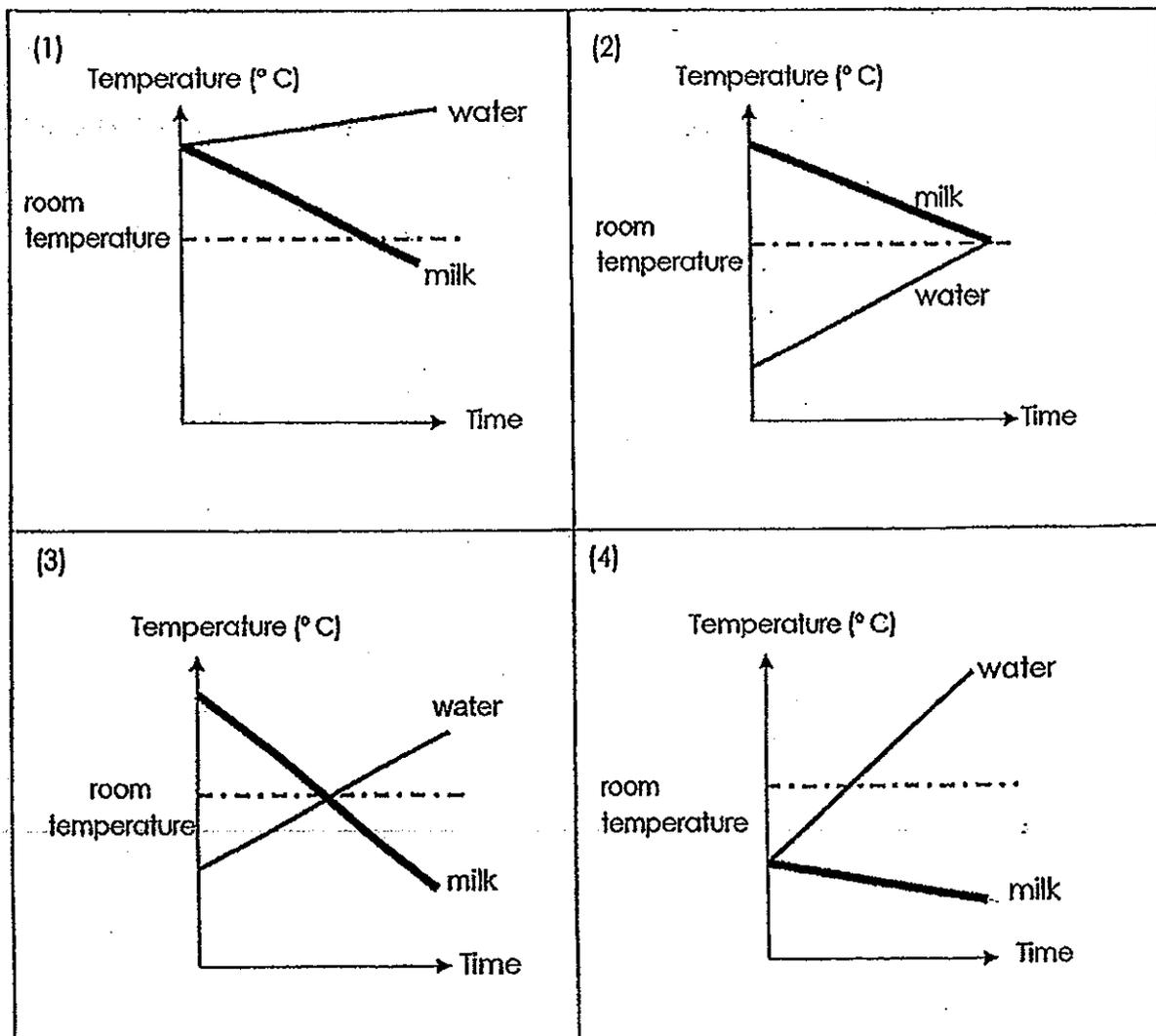
Which of the following best represents the shadow cast on the screen?

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

22. A bottle of hot milk is placed in a basin of cold water.



Which of the following graphs shows the temperature of the milk and the temperature of the water after some time?



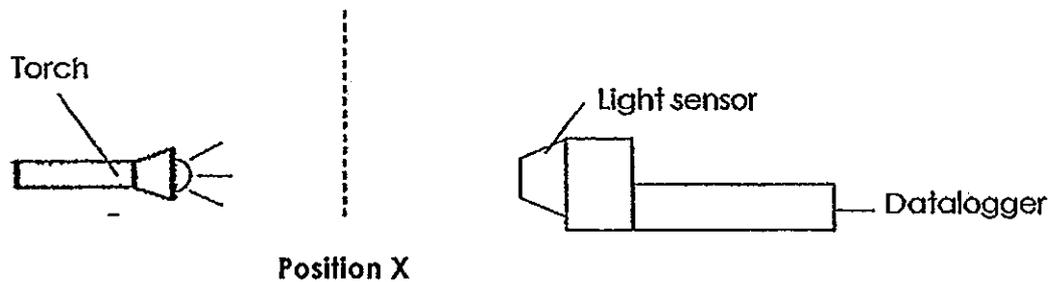
23. The table below shows the volume and temperature of water in 4 cups, Cup A, Cup B, Cup C and Cup D.

	Volume of water	Temperature of water
Cup A	100 ml	40°C
Cup B	100 ml	60°C
Cup C	800 ml	40°C
Cup D	800 ml	60°C

Which cup has the greatest amount of heat?

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

24. Ryan set up an experiment to investigate if the number of sheets of paper between a torch and a light sensor affects the amount of light that can pass through. The papers are placed at Position X.



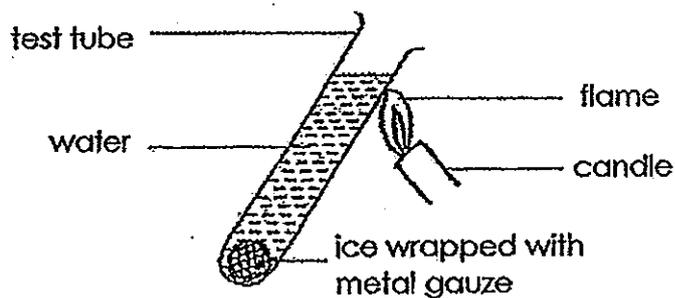
He increased the number of sheets of paper of the same type and recorded his readings in the table below:-

Readings on the datalogger for the different number of sheets of paper	
Number of sheets of paper	Amount of light (lux)
0	80
1	40
2	20
3	10
4	0
5	0

What changes should Ryan make to the experiment if he wants light to pass through four sheets of the same type of paper?

- (1) Move the torch nearer to the papers.
- (2) Move the torch further from the papers.
- (3) Move the papers nearer to the light sensor and datalogger.
- (4) Move the light sensor and datalogger further from the papers.

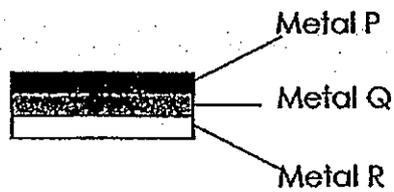
25. An experiment was set up as shown below. After a few minutes, the water at the top of the test tube became warm while the ice at the bottom of the test tube did not melt.



What can you conclude from this experiment?

- (1) Ice is a good conductor of heat.
- (2) Metal is a poor conductor of heat.
- (3) Glass is a good conductor of heat.
- (4) Water is a poor conductor of heat.

26. The metal strip below is made up of three metals.



When the metal strip is heated, it curved as shown below.



Which of the following is true?

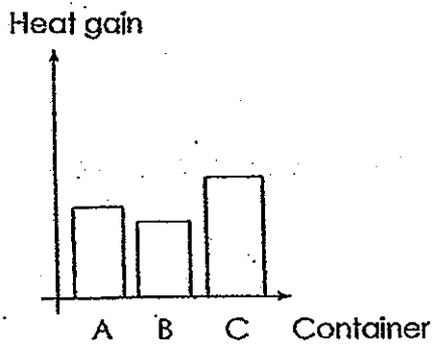
- (1) Metal P expands the most.
- (2) Metal R contracts the most.
- (3) Metal Q expands more than Metal P.
- (4) Metal Q contracts more than Metal R.

27. Jessica heated three containers of water together for five minutes. She recorded the volume of water and the temperature of the water before and after it was heated.

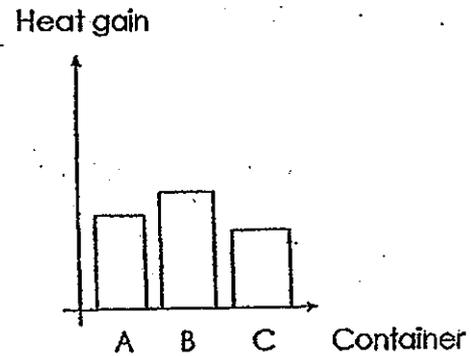
Container	Volume of water (ml)	Temperature of water at the start (°C)	Temperature of water after 5 minutes (°C)
A	300	30	60
B	200	30	60
C	400	30	60

Which of the following shows the heat gain after five minutes?

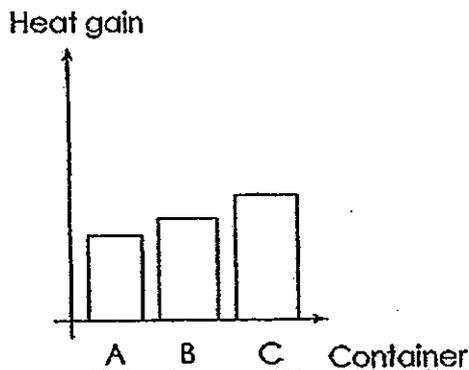
(1)



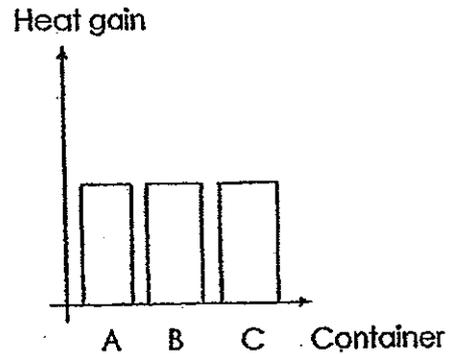
(2)



(3)



(4)



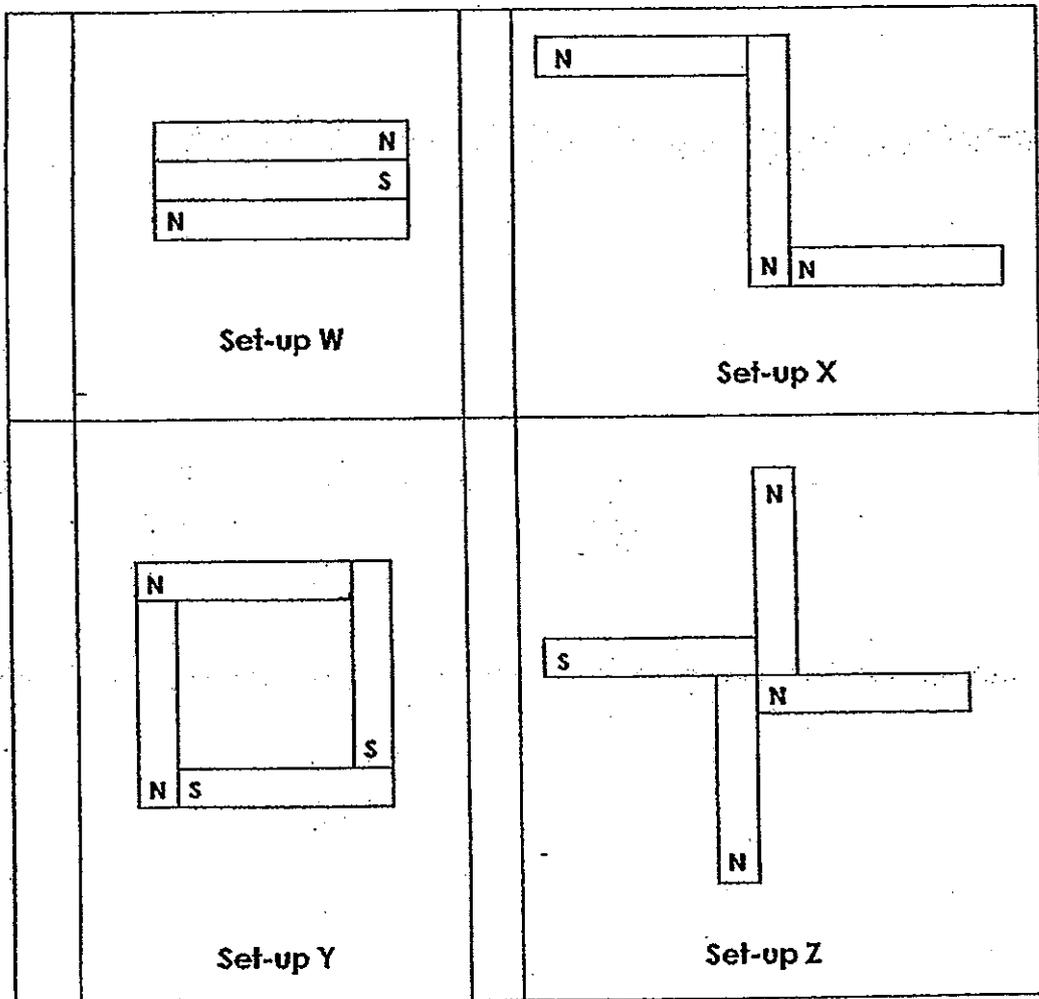
28. Look at the kettle below.



Which of the following explains whether metal or plastic is better for making the part labelled X?

- (1) Metal is better because it is a poorer conductor of heat.
- (2) Plastic is better because it is a poorer conductor of heat.
- (3) Metal is better because it is a better conductor of heat.
- (4) Plastic is better because it is a better conductor of heat.

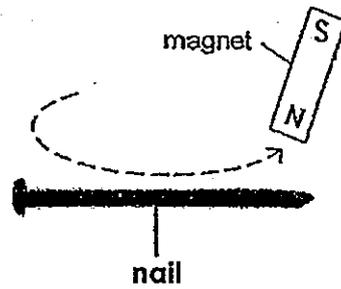
29. The diagrams below show the arrangement of some magnets.



Which 2 of the arrangements are possible?

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

30. A nail is made into a temporary magnet by the stroking method as shown below.



The nail is then placed near a compass. Which of the following correctly shows the direction the compass needle will point to?

(1)	<p>compass</p>	(2)	<p>compass</p>
(3)	<p>compass</p>	(4)	<p>compass</p>

End of Booklet A



PRIMARY 4 MID-YEAR EXAMINATION 2013

Name : _____ () Date: 20 MAY 2013

Class : Primary 4 ()

Time : 8.00 a.m. – 9.30 a.m.

Duration: 1 hour 30 minutes

Parent's Signature : _____

Marks: _____ / 40

**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.

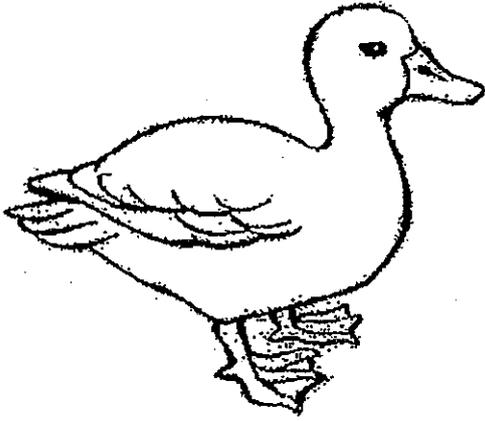
Follow all instructions carefully.

Answer all questions.

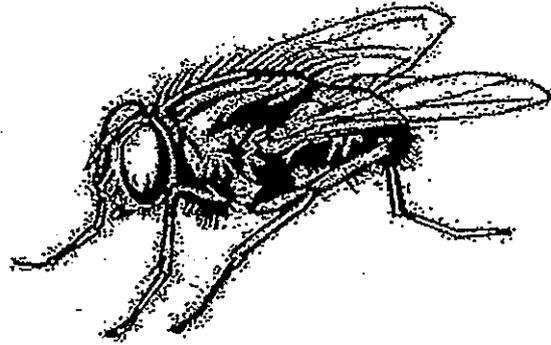
Section B (40 marks)

Write your answers in the spaces provided.

31. Study the pictures below.



Duck

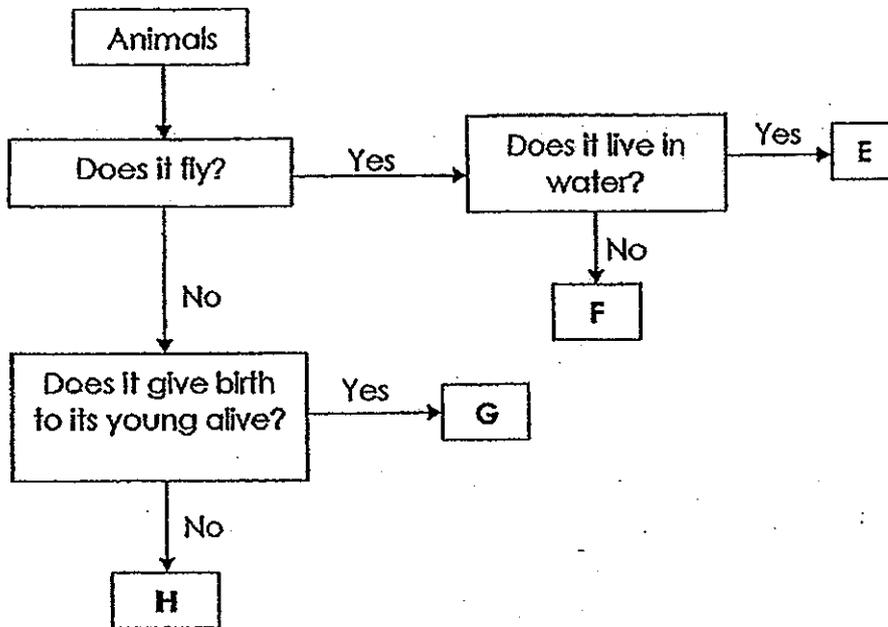


Housefly

(a) Based on the pictures above, state a similarity between the duck and the housefly. (Do not mention their colour and size.) (1m)

(b) Based on the pictures above, state a difference between the duck and the housefly. (Do not mention their colour and size.) (1m)

32. Study the flow chart below.

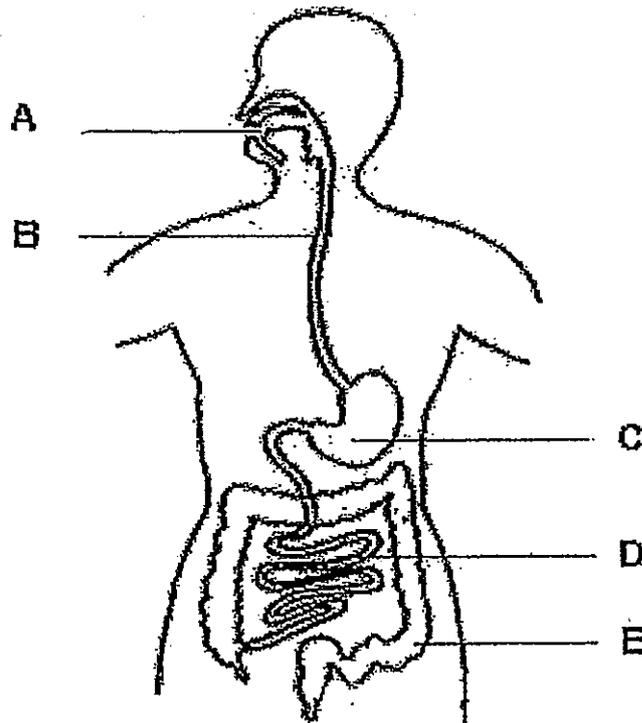


(a) State the difference between E and F. (1m)

(b) State the similarity between G and H. (1m)

(c) Describe E. (2m)

33. Study the diagram below.



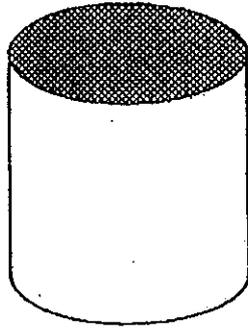
(a) State the part (A, B, C, D or E) where digestion begins. (1m)

(b) Identify C and D. (2m)

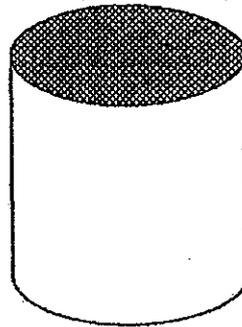
C: _____

D: _____

34. An equal volume of boiling water was poured into two containers, Container P and Container Q, of similar shape, size and colour as shown below. The containers were then tightly sealed and left in an empty room for an hour.



Container P



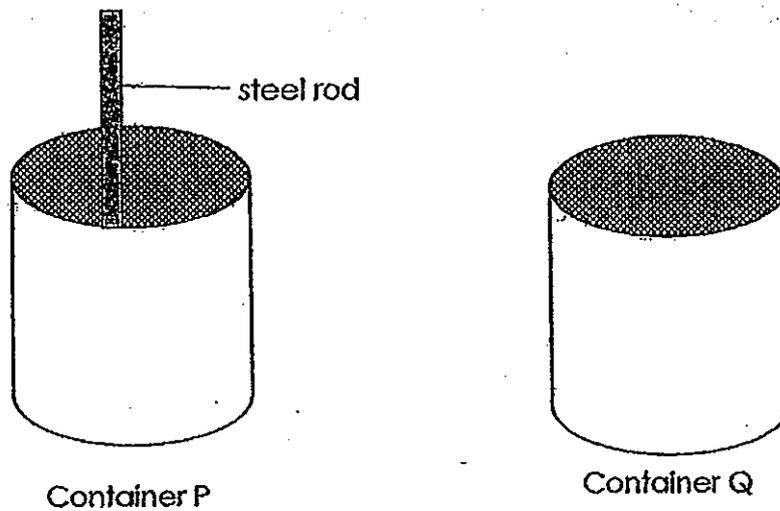
Container Q

The table below shows the time the water in each container took to cool to room temperature.

	Time the water took to cool to room temperature (minutes)
Container P	36
Container Q	24

(a) Explain why the water in Container P took a longer time to cool to room temperature. (1m)

The experiment was repeated with a steel rod placed in Container P as shown below.

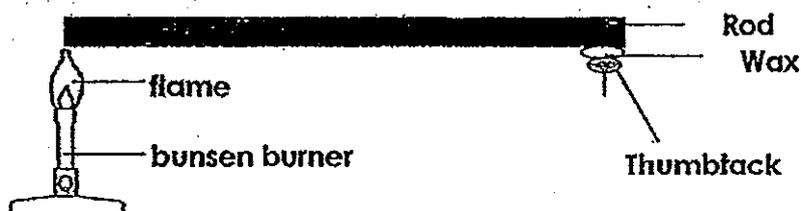


The table below shows the time the water in each container took to cool to room temperature.

	Time the water took to cool to room temperature (minutes)
Container P	18
Container Q	24

(b) Explain why the water in Container P took a shorter time to cool to room temperature than before. (1m)

35. John set up an experiment to find out how fast heat travelled through different materials. He used 3 rods of the same thickness and length but made of different materials.



The results of his experiment are in the table shown below.

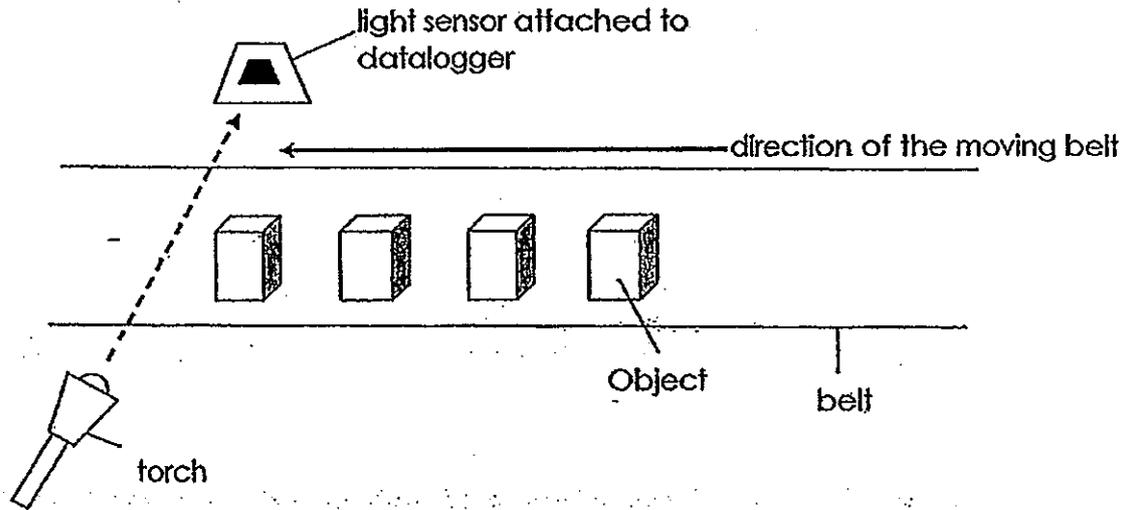
Rod	Time taken for thumbtack to drop (seconds)
A	25
B	360
C	40

- (a) Explain why the wax melted and the thumbtacks dropped. (1m)

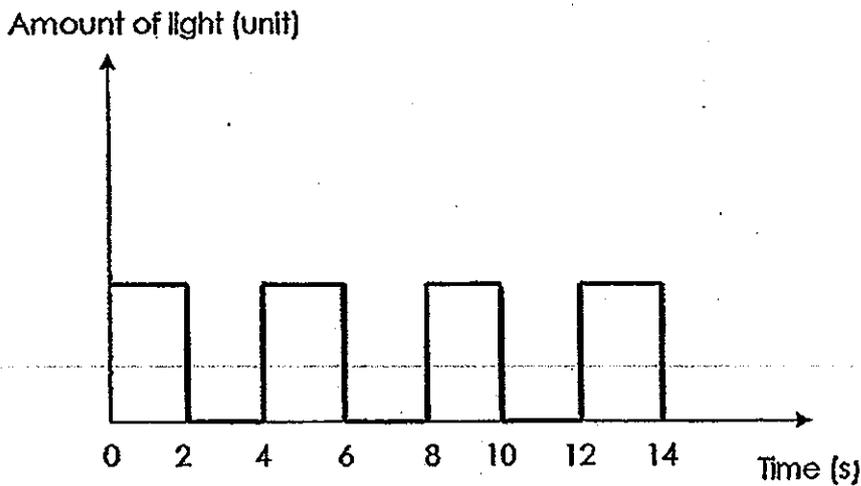
- (b) Explain why the thumbtack attached to Rod C took a longer time to drop as compared to the thumbtack attached to Rod A. (1m)

- (c) State a change to the set-up so that the thumbtack attached to Rod B takes a shorter time to drop. (Do not change the rod or the position of its wax and thumbtack.) (1m)

36. The set-up below uses a light sensor to count the number of identical objects on a moving belt.



The belt moves at a constant speed. When the object of 1 cm is between the torch and the light sensor, it blocks the light from reaching the light sensor. The data recorded is shown in the graph below.

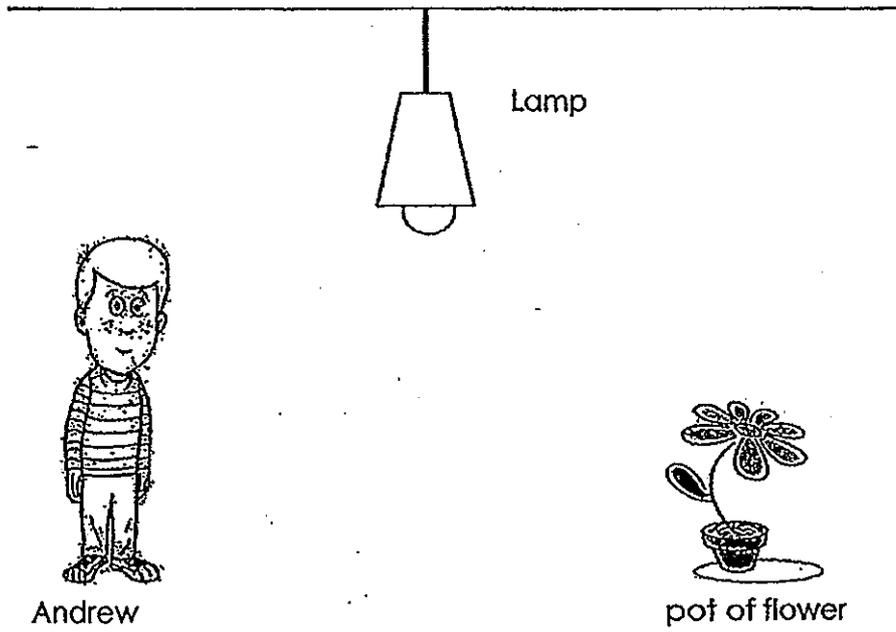


(a) Based on the graph, how many objects passed the light sensor in 14 seconds? (1m)

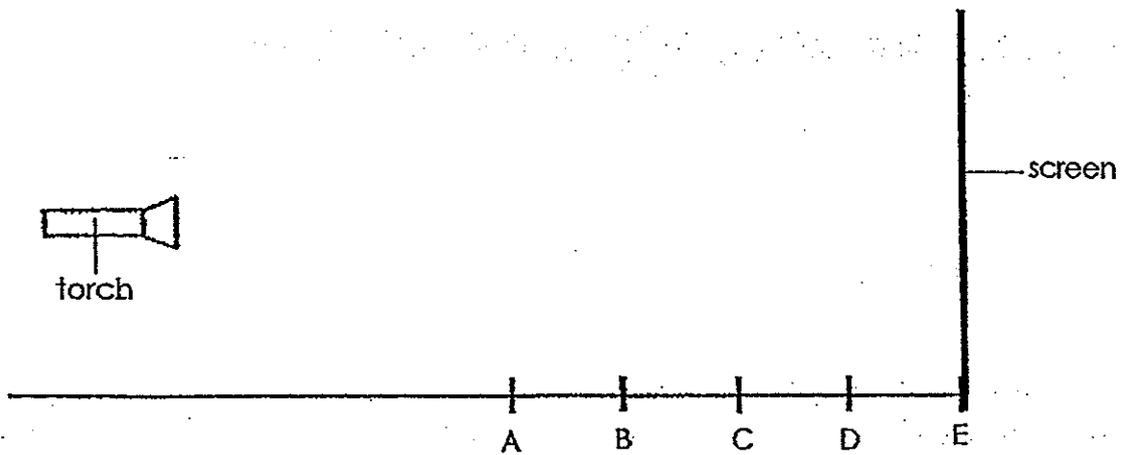
(b) The set-up can count 20 objects in a minute when the belt is moving at its maximum speed. Describe one way to count more than 20 objects in a minute without changing the speed of the belt. (1m)

(c) Object made of glass cannot be detected by the set-up. Explain why. (1m)

37. Andrew could see the pot of flower as shown below. Draw light rays to show how the lamp acted as a source of light that allowed him to see the pot of flower. (2m)



38. Mrs Lee switched on a torch and shone it on a white screen.



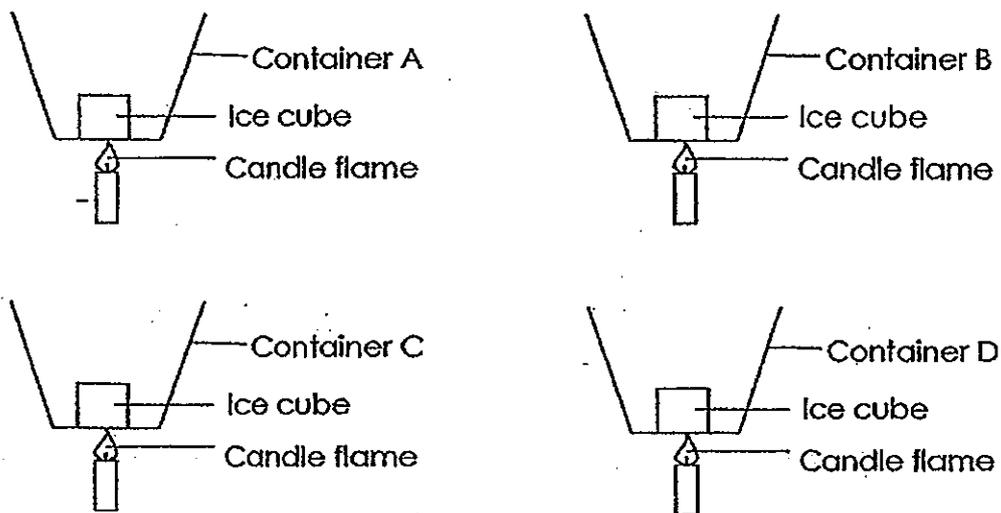
(a) At which positions, A, B, C, D or E should the object be placed so that the shadow cast on the screen will be the same size as the object? (1m)

(b) Mrs Lee wants to increase the size of the shadow formed on the screen by the object. Without changing the object, state two ways she can increase the size of its shadow. (2m)

(1) _____

(2) _____

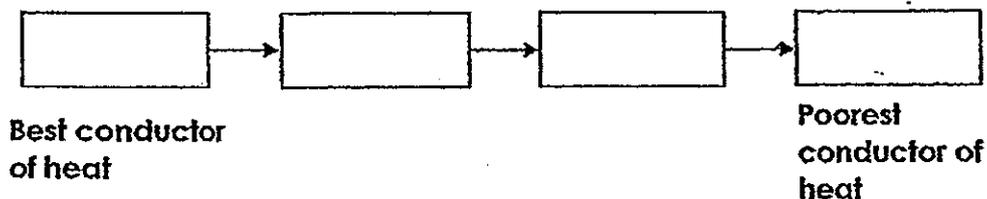
39. Matthew placed a 50-gram ice cube in each of the four containers made of different materials. He heated the containers over a flame for one minute, as shown below.



The water from the melted ice cube was poured away and the remaining ice cube was removed and weighed. The weight of the ice cube in each container was then recorded in the table below.

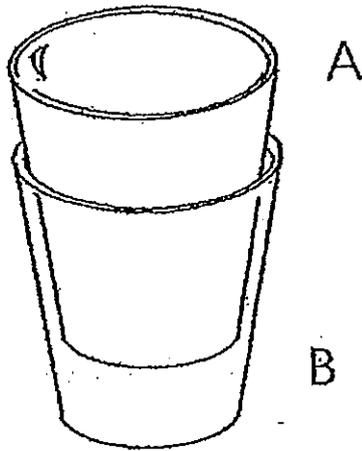
	Weight of remaining ice cube (g)
Container A	12
Container B	7
Container C	21
Container D	18

(a) Arrange the four containers from the best conductor of heat to the poorest conductor of heat. (2m)



(b) Which container is most suitable to be used for keeping his drink hot for the longest time? Explain why. (2m)

40. James had two cups, A and B, stacked together which cannot be separated.

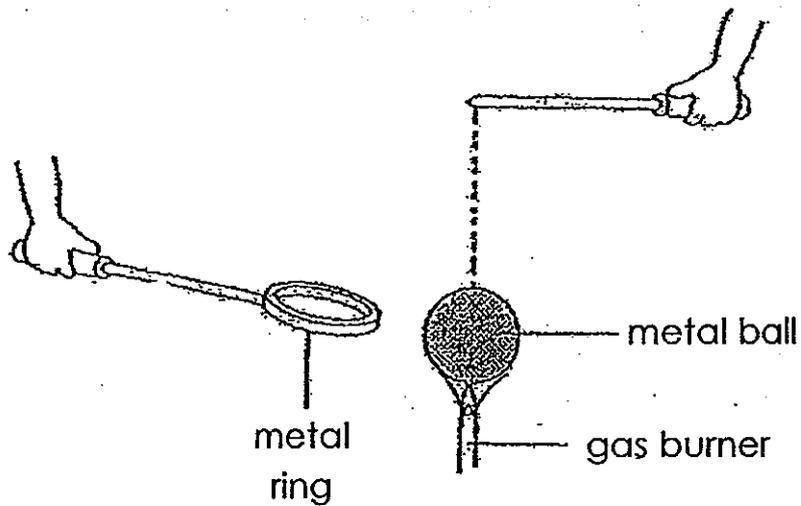


(a) His mother gave him a jug of ice water and told him that the cups can be separated using that. Describe how James can use the ice water to separate the 2 cups without breaking them. (1m)

(b) Explain James' action in (a). (1m)

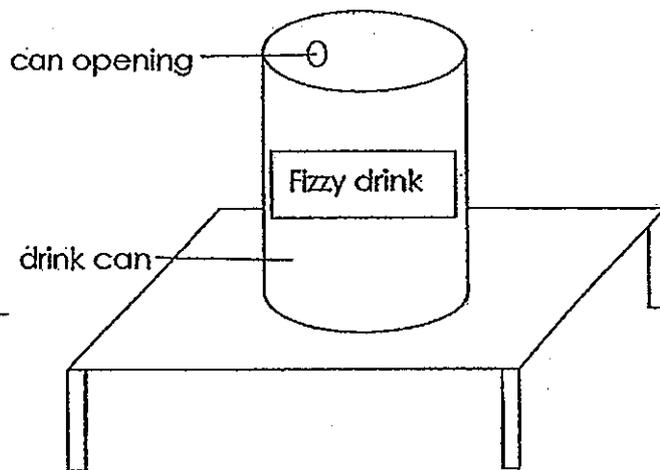
(c) In an experiment, a metal ball was able to pass through a metal ring.

The metal ball was then heated as shown in the diagram below.

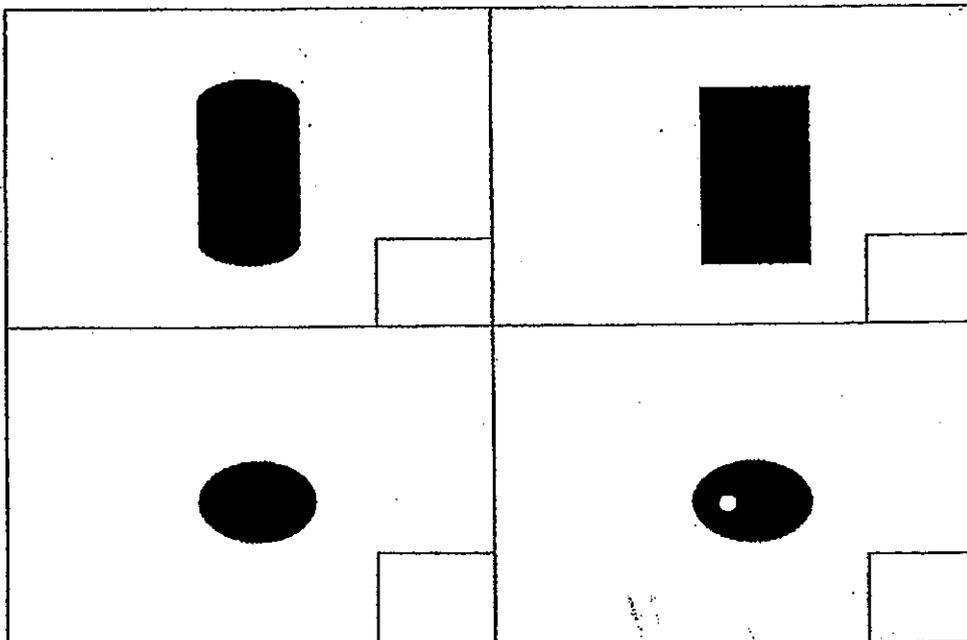


Explain why the metal ball was unable to pass through the metal ring after it was heated? (1m)

41. James left a drink can on a table and shone a torch on the drink can from different positions, forming different shadows.

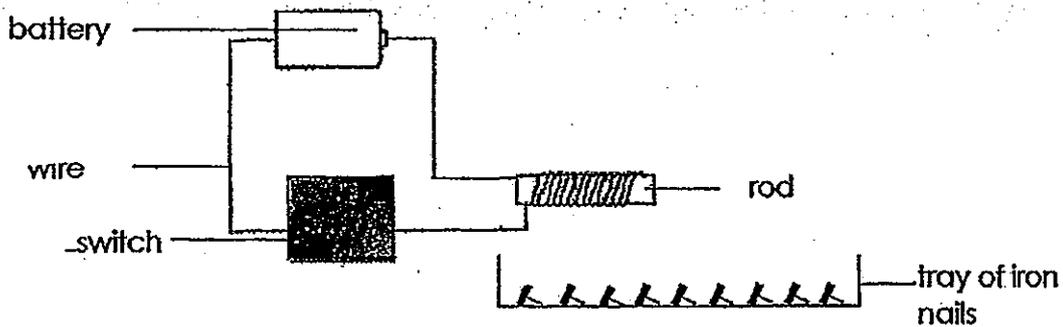


(a) What are the possible shadows could the drink can cast? Put a tick (✓) in the boxes provided. (1m)



(b) State a property of light that causes shadows to be formed. (1m)

42. Mark had four rods, P, Q, R and S, made of different materials. He wanted to investigate the magnetic strength of each rod using the following set-up.



When the switch was turned on, the rod attracted some of the iron nails in a tray. The number of nails attracted from the tray was recorded in the table below.

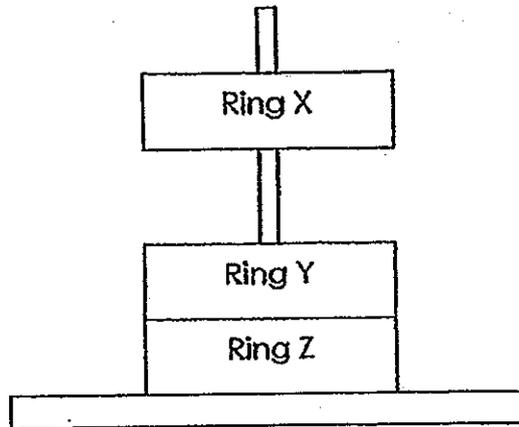
Rod	Number of iron nails attracted from the tray
P	36
Q	29
R	32
S	25

(a) Based on the table above, which rod was the weakest electromagnet when the switch is turned on? Explain your answer.

(b) Which variable(s) should be kept constant in the experiment? Put a tick (✓) in the boxes provided. (2m)

Variables	Put a tick (✓)
Type of rod	
Number of coils around the rod	
Number of batteries	
Type of batteries	

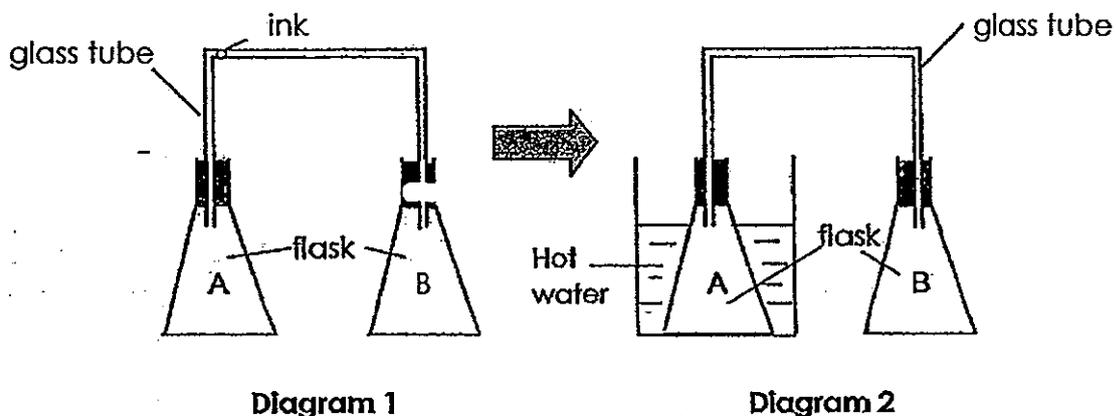
43. Below are two ring magnets and a plastic ring.



Based on the information in the table below, put a tick (✓) in the correct boxes. (2m)

		True	False	Not Possible to Tell
(i)	Both X and Y are magnets.			
(ii)	Z is the plastic ring.			
(iii)	X is made of iron.			
(iv)	Y and Z attract each other.			

44. Diagram 1 shows two empty flasks, A and B, connected by a glass tube. There is a drop of ink in the tube as shown. In Diagram 2, when flask A was put into a beaker of hot water, the drop of ink moves.



(a) Indicate with a "X" on the glass tube where the drop of ink will be after flask A is placed in the beaker of hot water in Diagram 2. (1m)

(b) Explain your answer in (a) (2m)

End of paper



ANSWER SHEET

EXAM PAPER 2013

SCHOOL : TAO NAN

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
4	3	4	1	3	1	2	4	3	4	3	4	3	4	1	1	1

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	3	4	2	2	4	1	4	1	1	2	4	2

31)a)Both of them have at least one eye.

b)The duck has a beak while the housefly does not.

32)a)E live in water while F does not.

b)Both of them do not fly.

c)E is an animal that flies and live in water.

33)a)A.

b)C: Stomach D: Small intestine.

34)a)Container P is a poorer conductor of heat than Container Q.

b)Steel is a good conductor of heat. The steel rod transferred the heat from the surrounding air into the water in Container P faster than before.

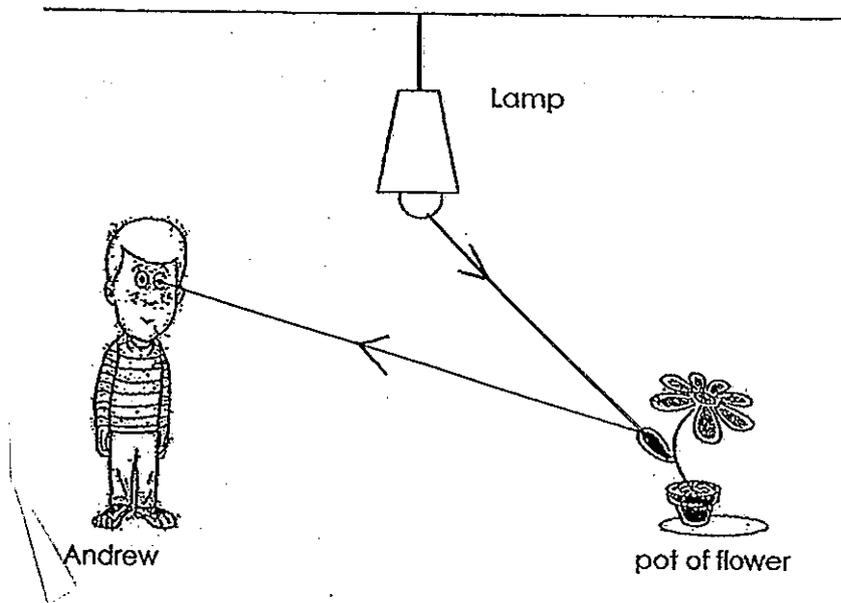
35)a)The rods conducted the heat from the flame to the wax, making the thumbtacks drop.

b)Rod C is a poorer heat conductor than Rod A. Heat flowed through Rod C slower than Rod A.

c)Move the Bunsen burner closer to the thumbtack.

- 36)a) Three objects.
 b) Place the objects closer together.
 c) Glass is transparent.

37)



- 38)a) E.
 b) 1) She can move the torch further from the screen.
 2) She can move the object closer to the torch.

- 39)a) B → A → D → C
 b) Container C. C is the poorest conductor of heat as compared to the rest and so heat is lost the slowest from the drink to the surrounding.

- 40)a) He could pour the ice water in cup A.
 b) The cup would lose heat to the ice water and contract so James could pull it out.
 c) The metal ball gained heat and expanded.

41)a)

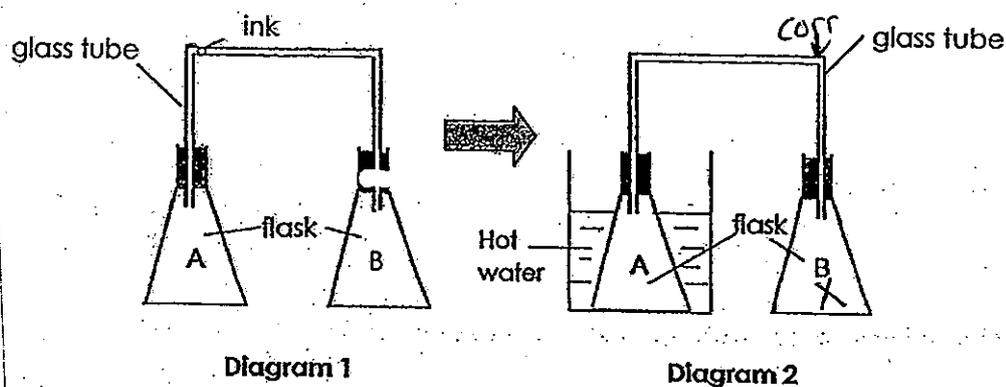
	✓
✓	

- b) Light travels in straight lines.

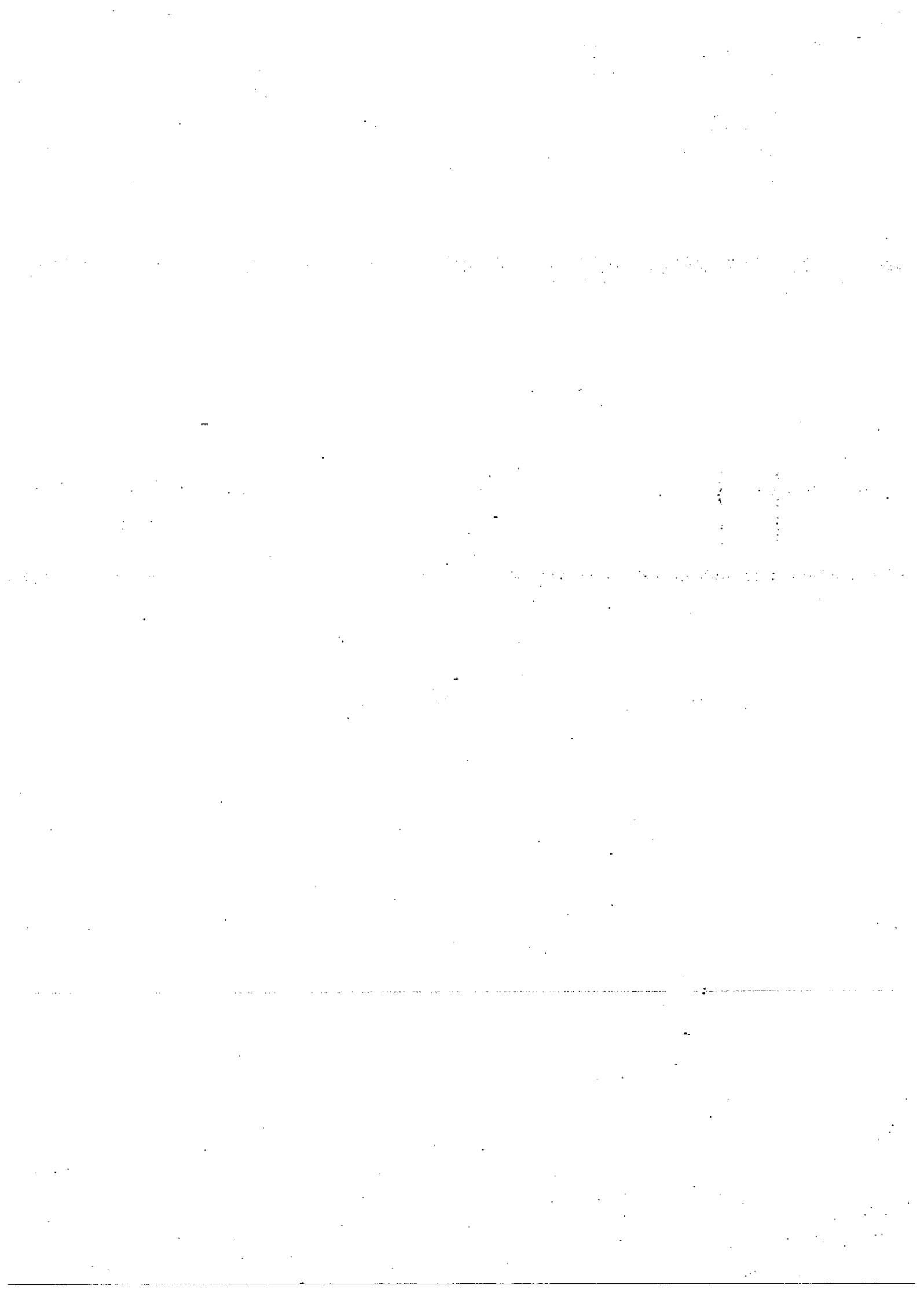
- 42)a) Rod S. It attracted the least number of iron nails
b) Number of coils around the rod
Number of batteries
Type of batteries

- 43)i)Not
ii)Not
iii)Not
iv)F

44)a)



b)The air in flask A would gain heat from the hot water and expand causing the ink to be pushed by the air to the right side of the glass tube and into flask B.





Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2013
SCIENCE
PRIMARY FOUR
BOOKLET A

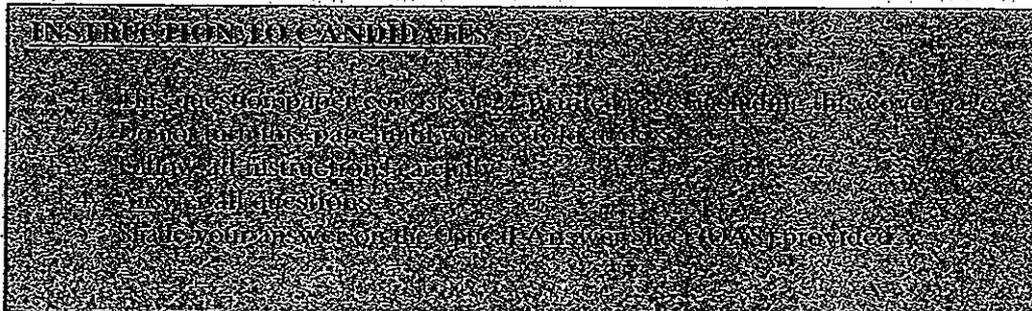
Name: _____

Class: Primary 4

Date: 28 October 2013

Duration of paper: 1h 30 min

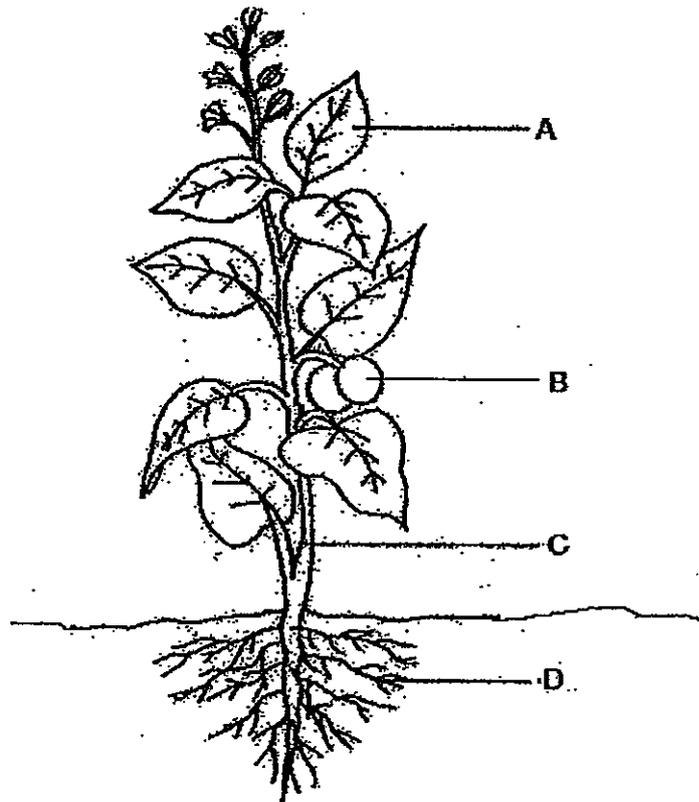
Parent's/Guardian's signature





For each of the following questions from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet. [60 marks]

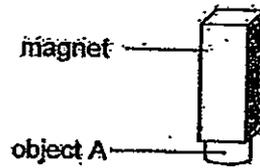
- 1 The diagram below shows different parts of a plant. Which part (A, B, C or D) makes food for the plant?



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

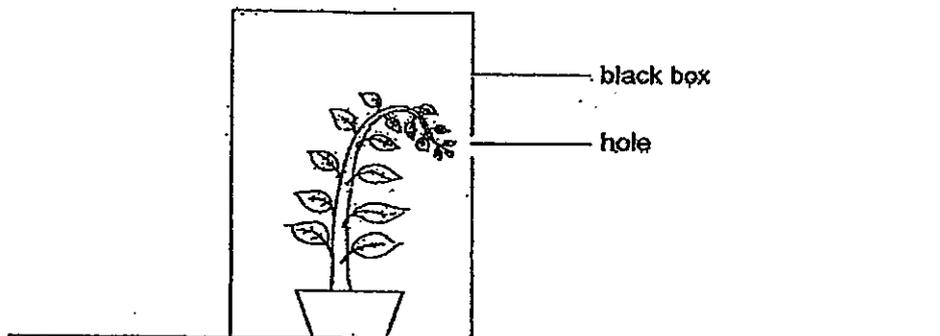
(Go on to the next page)

- 2 An object A was attracted to a magnet, as shown in the figure below.



Object A is most probably made of _____.

- (1) Steel
 - (2) Wood
 - (3) Plastic
 - (4) Rubber
- 3 A plant was placed inside a black box with a hole. The black box was placed in a well-lit place and the plant was watered daily.

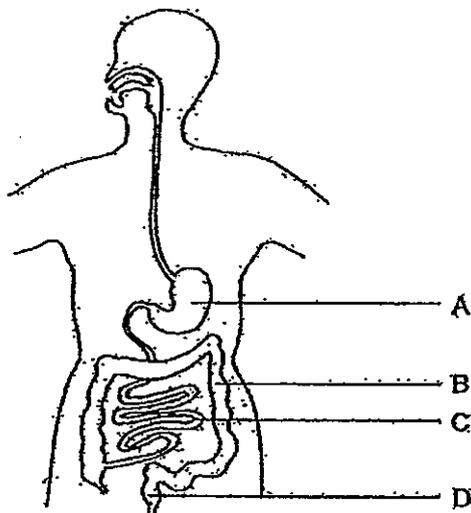


After a week, it was observed that the plant grew towards the hole as shown in the diagram above. Why was this so?

- (1) There was more air outside the box.
- (2) There was more light outside the box.
- (3) There was more water outside the box.
- (4) The leaves made the top of the plant heavier.

(Go on to the next page)

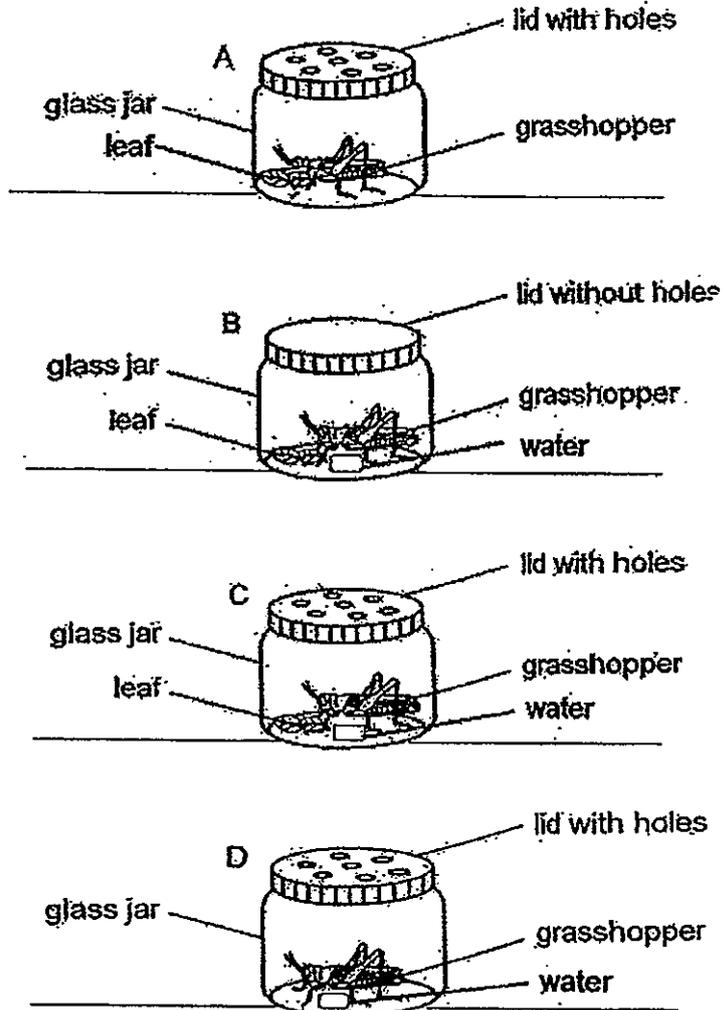
- 4 The diagram below shows parts of the human digestive system. Which part (A, B, C or D) absorbs all the water from the undigested food?



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

(Go on to the next page)

- 5 Dylan wanted to find out the best set-up that would keep a grasshopper alive for the longest time. He created the following set-ups A, B, C and D as shown below.

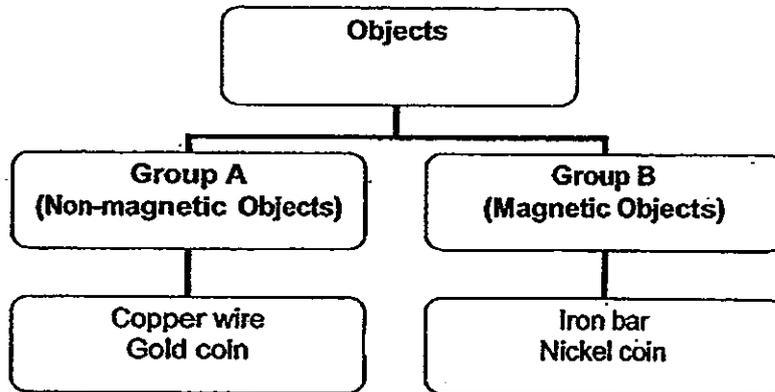


Based on your observation of the four set-ups above, in which set-up will the grasshopper most likely live the longest?

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

(Go on to the next page)

- 6 Study the classification chart below carefully.



Which of the following can be placed in groups A and B respectively?

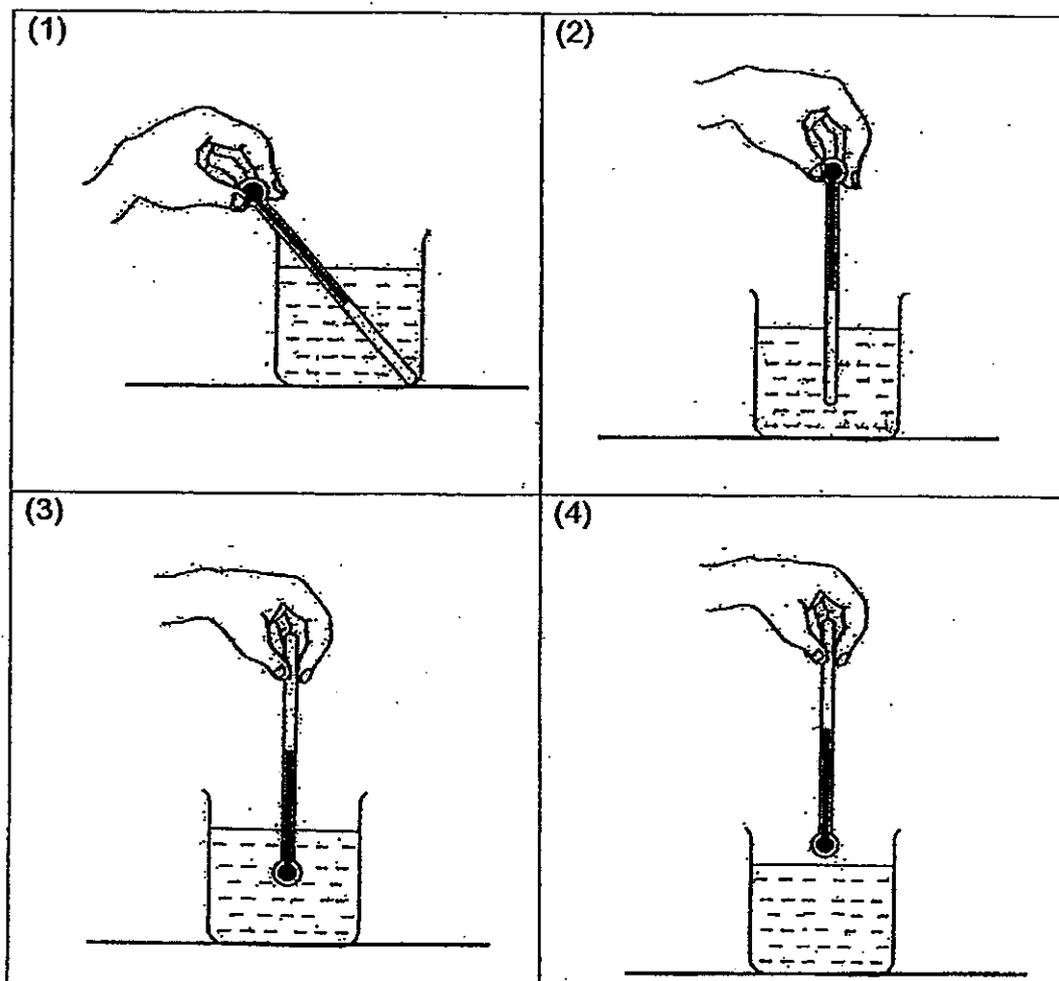
	Group A	Group B
(1)	Steel paperclip	Aluminium foil
(2)	Aluminium foil	Cobalt ring
(3)	Cobalt ring	Steel paperclip
(4)	Cobalt ring	Aluminium foil

- 7 Which one of the following substances has a fixed shape?

- (1) Air
- (2) Oil
- (3) Stone
- (4) Water

(Go on to the next page)

- 8 Catherine wants to measure the temperature of hot water in a beaker. Which one of the following diagrams shows the correct way of holding the thermometer when taking the temperature reading?

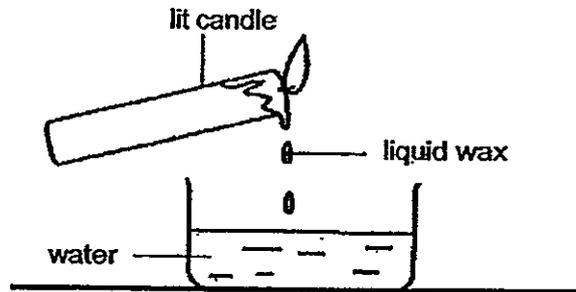


- 9 In which of the following does the underlined item loses heat energy?

- (1) Ice-cream melting.
- (2) Heating a metal ball.
- (3) Water turning into ice.
- (4) Frozen meat being thawed.

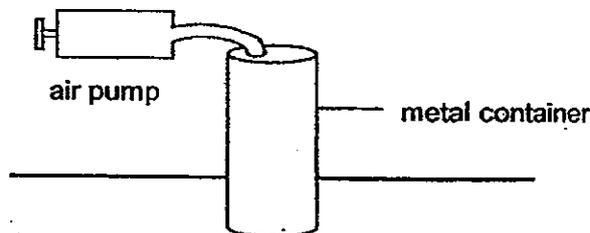
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- 10 Study the diagram below carefully.



What happens when the liquid wax falls onto the water surface?

- (1) Both the wax and water gain heat energy.
 - (2) Both the wax and water lose heat energy.
 - (3) The wax gains heat energy while the water loses heat energy.
 - (4) The wax loses heat energy while the water gains heat energy.
- 11 John connected a pump to a metal container as shown in the diagram below.



The capacity of the metal container is 400 cm^3 . When the plunger is pushed in completely, 50 cm^3 of air is forced into the metal container. What is the volume of air in the container after the plunger is pushed in once?

- (1) 350 cm^3
- (2) 400 cm^3
- (3) 450 cm^3
- (4) 500 cm^3

(Go on to the next page)

12 Which one of the following is not a source of heat?

- (1) Boiling water
- (2) Human body
- (3) Woolen gloves
- (4) Lighted light bulb

13 Four pupils, Ashley, Betty, Claire and Deborah, are predicting what will happen when a piece of plasticine is compressed.

Ashley: The shape of the plasticine will change.

Betty: The volume of the plasticine will change.

Claire: Some plasticine will flow out from the original piece.

Deborah: The volume of the plasticine will remain the same.

Which of the pupils' predictions are most likely true?

- (1) Betty and Claire only.
- (2) Ashley and Deborah only.
- (3) Ashley, Betty and Claire only.
- (4) Ashley, Claire and Deborah only.

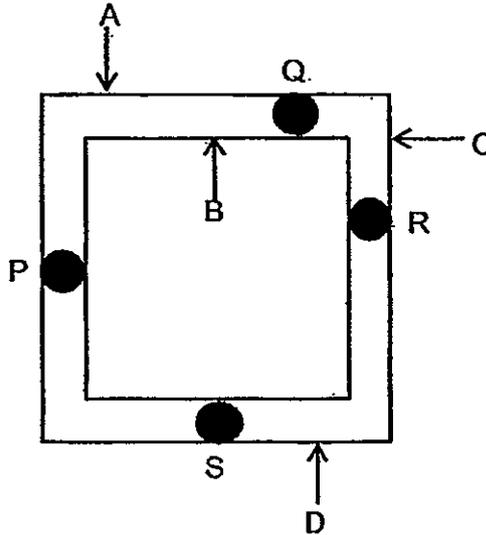
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- 14 Which one of the following list of items has been classified correctly under the various headings?

	Solid state	Liquid state	Gaseous state
(1)	Milk Powder	Fruit Juice	Carbon Dioxide
(2)	Sand	Water	Milk Powder
(3)	Wooden Block	Coffee	Shadow
(4)	Mug	Blood	Fire

(Go on to the next page)

- 15 The diagram below shows a square metal frame with four similar drops of wax attached to positions P, Q, R and S on it.



Timothy heated the metal frame at one point on the metal frame and recorded the time taken for the drops of wax to melt in the table below.

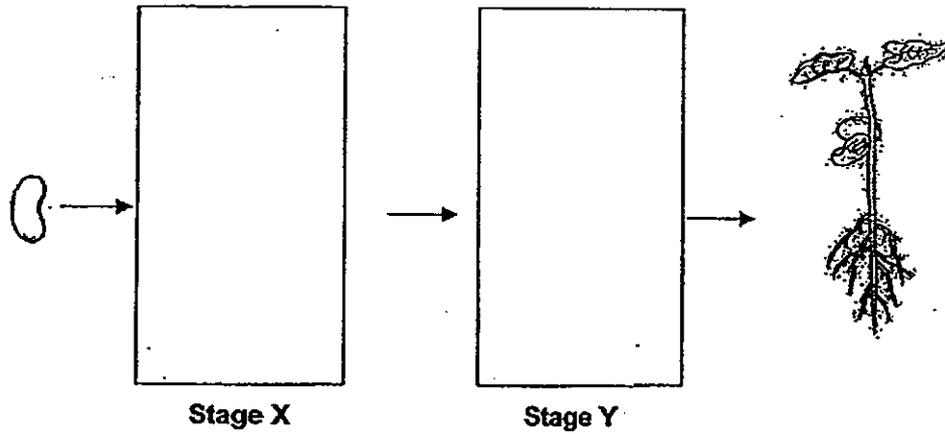
Position of drop of wax	Time taken for the drop of wax to melt (seconds)
P	53
Q	17
R	40
S	95

Based on the results above, at which point (A, B, C or D) did Timothy heat the metal frame?

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

(Go on to the next page)

- 16 The diagram below shows the growth of a seed into a young plant with two missing stages X and Y.

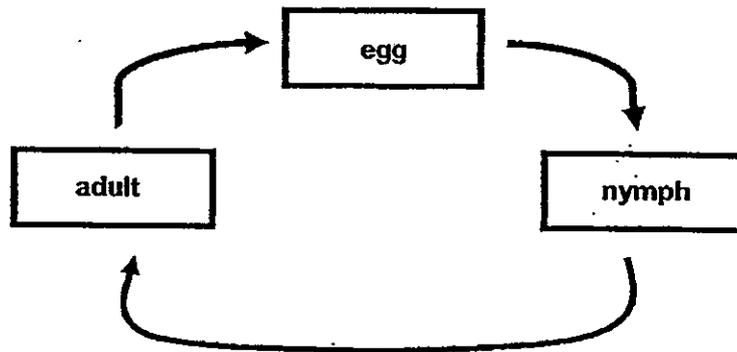


Which one of the following shows the correct stages for X and Y?

	Stage X	Stage Y
(1)		
(2)		
(3)		
(4)		

(Go on to the next page)

17 The diagram below shows the life cycle of an animal.



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

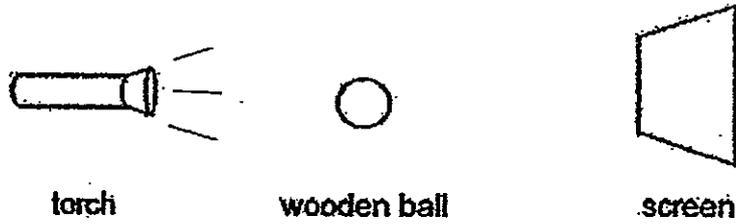
- (1) chicken
- (2) mosquito
- (3) housefly
- (4) cockroach

18 Which one of the following is the source of light ?

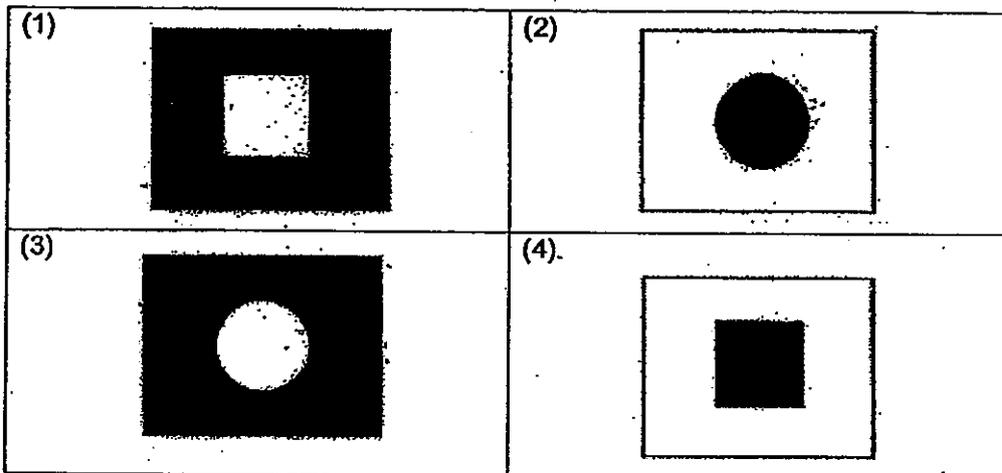
<p>(1)</p>  <p>an orange</p>	<p>(2)</p>  <p>a candle flame</p>
<p>(3)</p>  <p>the moon</p>	<p>(4)</p>  <p>a leaf</p>

(Go on to the next page)

- 19 The set-up below shows light from a torch shining on a wooden ball.

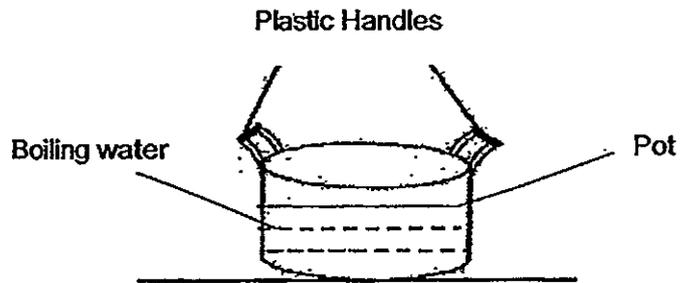


Which one of the following would likely be seen on the screen?



(Go on to the next page)

20 Adric boiled some water using the pot as shown in the diagram below.

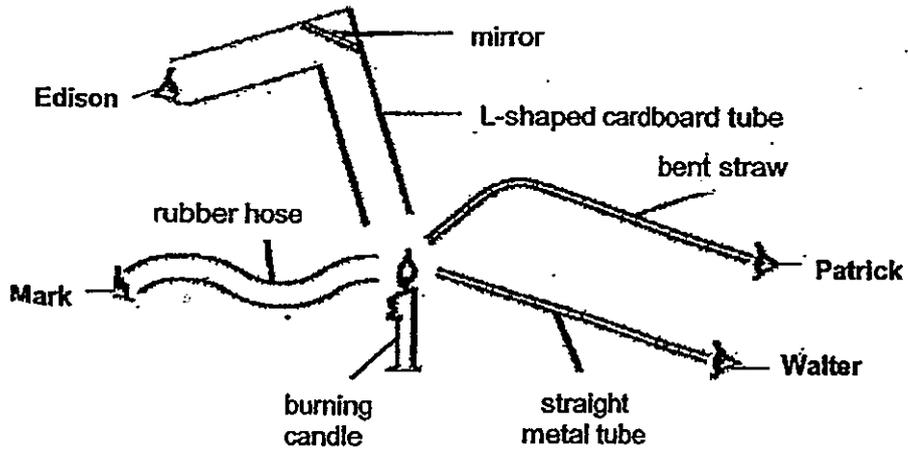


He is able to hold the pot of boiling water using the plastic handles. This is because plastic is a _____.

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

(Go on to the next page)

- 21 Four boys, Edison, Mark, Patrick and Walter, tried to look at a burning candle using ~~for~~ different items as shown below.

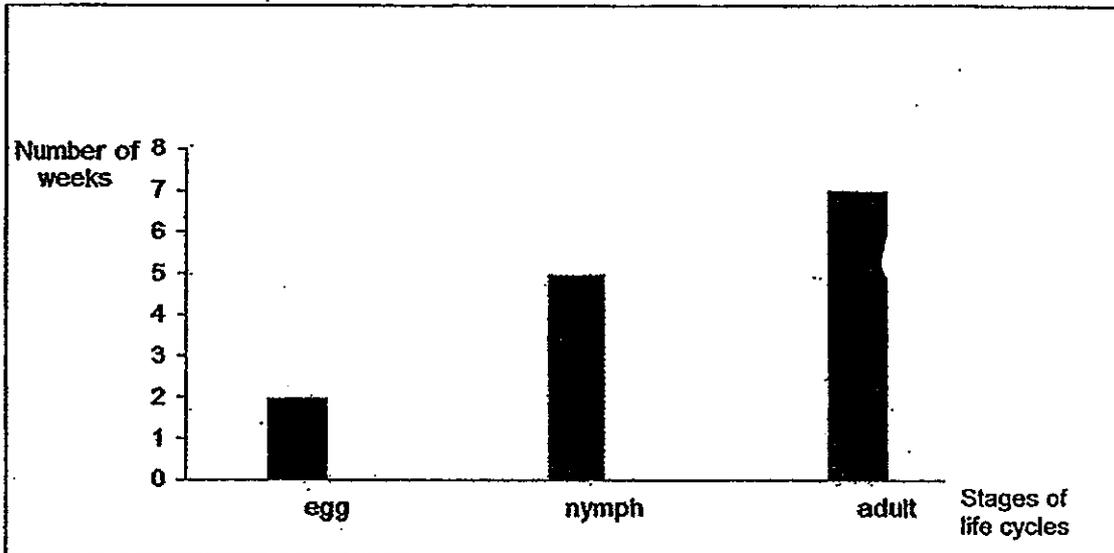


Which boys were able to see the candle flame?

- (1) Edison and Mark only.
- (2) Mark and Patrick only.
- (3) Edison and Walter only.
- (4) Patrick and Walter only.

(Go on to the next page)

- 22 The graph below shows the number of weeks that was spent in the different stages in the development of the life cycle of an insect.



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

- (1) The nymph resembles the adult.
- (2) The insect has a total lifespan of 14 weeks.
- (3) The nymph took two weeks to become an adult.
- (4) It took five weeks for the insect to hatch from its egg.

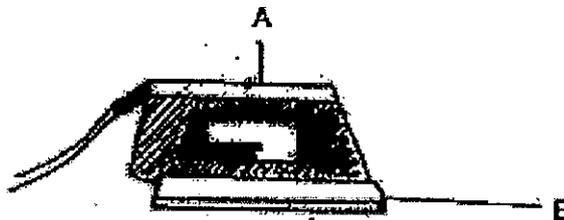
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23 Which of the following will happen when ice changes to water?

- A It gains heat energy
- B It loses heat energy
- C There is a change in the state of matter.
- D There is no change in the state of matter.

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

24 The diagram below shows an electric iron.

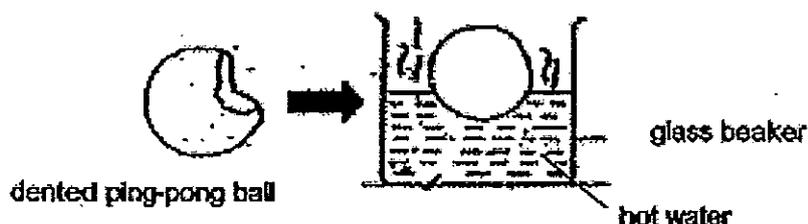


Which of the following correctly describe the properties of the parts A and B?

	Property of A	Property of B
(1)	Poor conductor of heat	Poor conductor of heat
(2)	Poor conductor of heat	Good conductor of heat
(3)	Good conductor of heat	Poor conductor of heat
(4)	Good conductor of heat	Good conductor of heat

(Go on to the next page)

- 25 Jerome has a dented ping pong ball as shown in the diagram below. He then placed it into a beaker of hot water. After ten minutes, he observed that the ping pong ball had returned to its original shape.

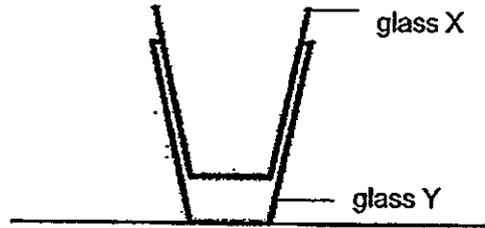


Why did the ping pong ball return to its original shape?

- (1) The air in the ping pong ball lost heat and expanded
 - (2) The air in the ping pong ball lost heat and contracted
 - (3) The air in the ping pong ball gained heat and expanded
 - (4) The air in the ping pong ball gained heat and contracted
- 26 Which of the following statements are true?
- A Light is a form of energy.
 - B We can see things because light is reflected into our eyes.
 - C A shadow can come in many shape, sizes and thickness.
 - D The darkness of a shadow depends on the amount of light that is blocked by an object.
- (1) A and B only.
 - (2) B and C only.
 - (3) B and D only.
 - (4) A and D only.

(Go on to the next page)

- 27 Shaun finds it hard to separate the two glasses, X and Y, as ~~shown~~ ^{shown} in the diagram below.



Which of the following instructions will help him to separate the two glasses?

- A Pour hot water into glass X.
- B Put some ice cubes into glass X.
- C Place glass Y into a basin of hot water.
- D Place glass Y into a basin of cold water.

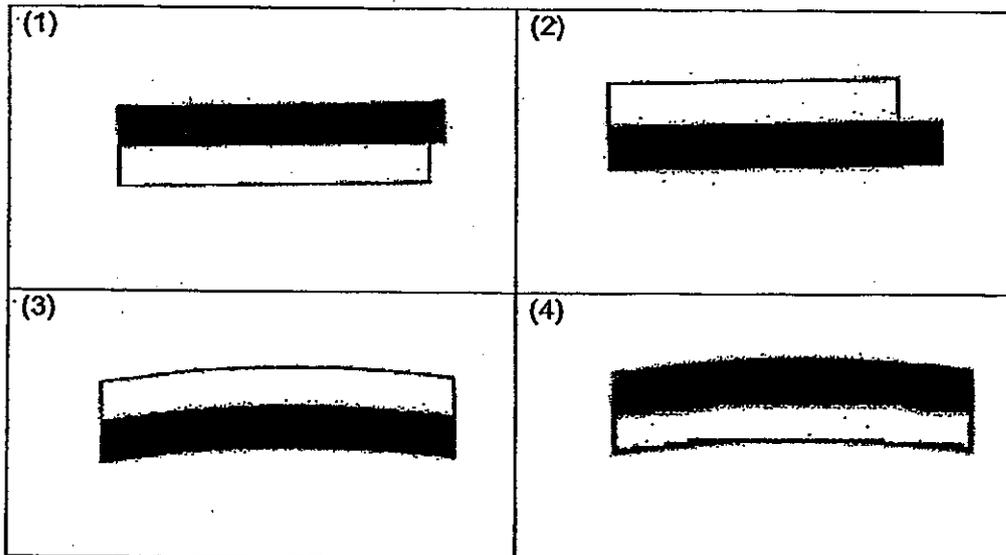
- (1) A and D only
- (2) B and D only
- (3) B and C only
- (4) A and C only

(Go on to the next page)

- 28 Zubair has a metal strip made of 2 kinds of metals, A and B, which are tightly joined together.



Metal A expands more than Metal B when they are both heated. Which of the following diagrams below represents the side view of the metal strip when it is heated?



(Go on to the next page)

29 Which of the following are needed for a seed to germinate?

- A Air
- B Sunlight
- C Water.
- D Warmth

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

30 Gabriel attached a light sensor to a data logger and used it to find out how much light from a lit torch is passing through four sheets of different materials, A, B, C and D. He recorded the results as shown below.

Sheet	Amount of light that passed through (units)
A	105
B	876
C	347
D	576

Which one of the following sheets is likely to be made of clear glass?

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

END OF BOOKLET A

Check your answers carefully



Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2013
SCIENCE
PRIMARY FOUR
BOOKLET B

Name: _____ ()

Class: Primary

Date: 28 October 2013

Duration of paper : 1h 30min

Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 14 printed pages, including this cover page.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write all your answers in this booklet.

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

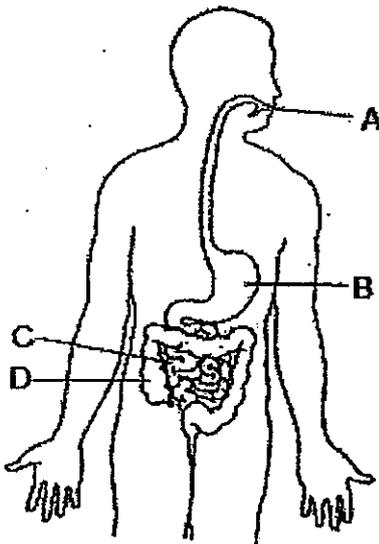
For questions 31 to 44, write your answers in the spaces provided in this booklet.

The number of marks available is shown in the brackets [] at the end of each question or part question. (40 marks)

31. Fill in the correct parts of a plant in the table below. [2]

Functions of plant parts	Plant parts
It holds the plant upright.	
It obtains water for the plant.	

32. The diagram below shows the human digestive system.



Identify the part where

(a) digestion first takes place : _____ [1]

(b) there is no digestion : _____ [1]

(Go on to the next page)

Score	4
-------	---

- 33 Yvonne conducted an experiment with four different magnets, A, B, C and D. The results of her experiment are shown in the table below.

Magnets	Number of thumbtacks that were attracted to the magnet
A	4
B	2
C	7
D	5

(a) What was the aim of her experiment?

[1]

(b) Yvonne has another magnet E. She found that magnet E is stronger than magnet B but weaker than magnet D.

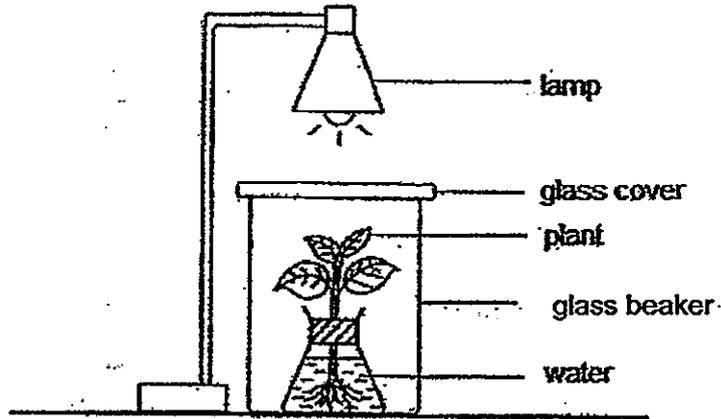
Predict how many thumbtacks would magnet E be able to attract?

[1]

(Go on to the next page)

Score	2
-------	---

34 An experiment was set up as shown below.



The amount of food made by the plant was recorded in the table below.

Time (min)	Amount of food made by plant (units)
0	0
30	30
60	50
90	40
120	20

(a) What can be observed from the table above?

[2]

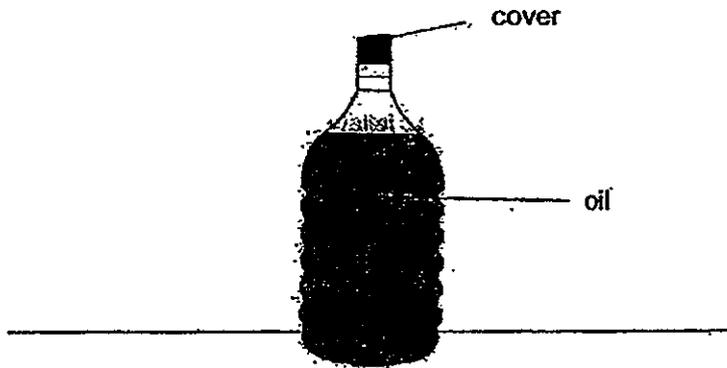
(b) Explain why there was a decrease in the amount of food made by the plant at the 90th and 120th minute

[1]

(Go on to the next page)

Score	3
-------	---

- 35 The diagram below shows a bottle of cooking oil.



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

- (a) The cover is a [1]
- (b) Oil is a [1]

- 36 Cyrus conducted an experiment to find out the relationship between the number of times he rubbed his hands against each other and the time taken for one ice cube to melt when they were held in his hands. He recorded his results in the table below.

Number of times hands rubbed	5 times	10 times	15 times	20 times
Time taken for one ice cube to melt in his hands (min)	8	6 ½	5	3 ½

- (a) What would be the estimated time taken for one ice cube to melt if he rubbed his hands 18 times? [1]

- (b) Based on the results above, what can Cyrus conclude about his experiment? [1]

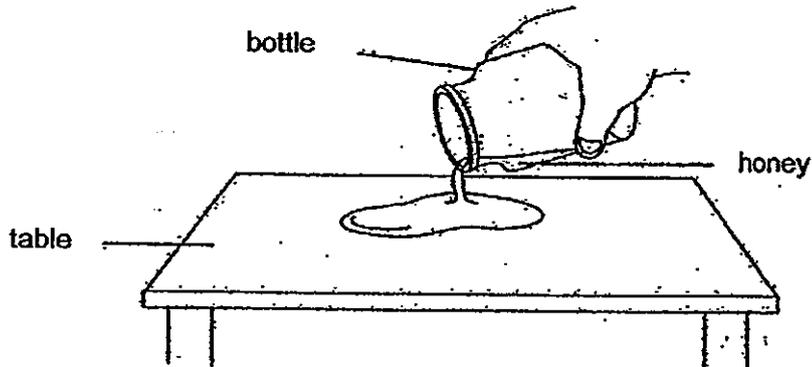
(Go on to the next page)

Score	4
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- 37 Choose the correct words from the box to fill in the blanks below.

Solid	Liquid	Gas
-------	--------	-----

- (a) Ali pours honey from a bottle onto a table as shown below.

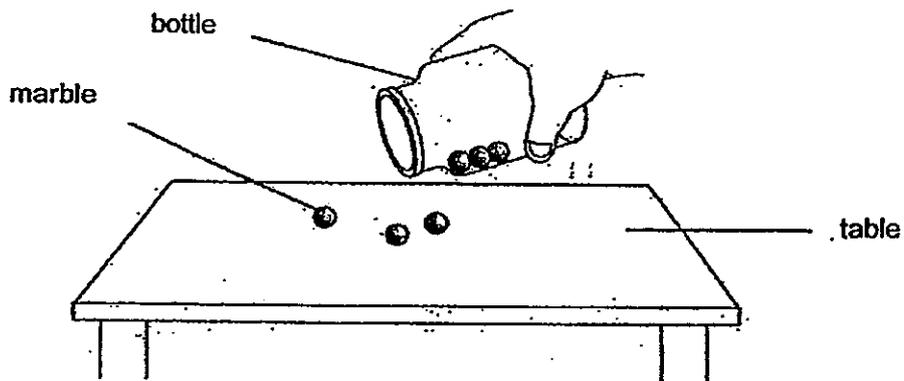


The volume of honey remains the same but its shape changes.

This shows that honey is a _____.

[1]

- (b) Ali pours some marbles from a bottle onto a table as shown below.



The shape and volume of the marbles remains the same.

This shows that a marble is a _____.

[1]

(Go on to the next page)

Score	2
-------	---

- 38 Two identical beakers, A and B, containing equal volumes of water, were left on a kitchen table. The temperature of the water in beaker A is at 80°C , while the temperature of water in Beaker B is at 10°C .

(a) What will happen if the beakers of water are left on the kitchen table after an hour?

Put a tick (\checkmark) in the correct boxes below.

[2]

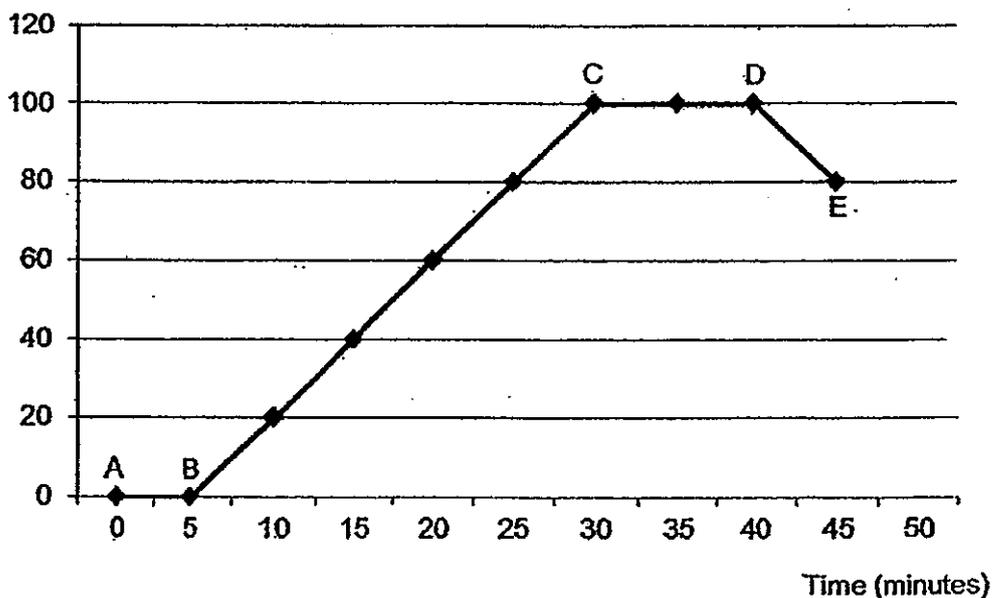
	Lose heat	Gain heat	Increase in temperature	Decrease in temperature
Water in beaker A				
Water in beaker B				

(b) What will the temperature of the water in beakers A and B be after five hours?

[1]

Jim placed a laboratory thermometer into a beaker of ice cubes and heated it continuously until the water is boiling. He recorded the temperature of the water and plotted a line graph as shown below.

Temperature ($^{\circ}\text{C}$)



(Go on to the next page)

Score	3
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(c) Which part(s) of the graph show(s) a gain of heat?

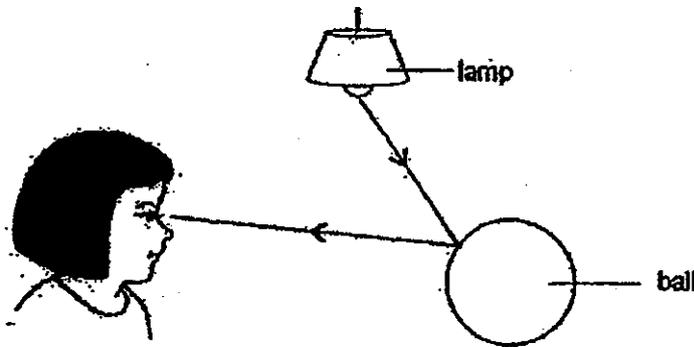
Tick (✓) the correct box(es).

[2]

AB	<input type="checkbox"/>
BC	<input type="checkbox"/>
CD	<input type="checkbox"/>
DE	<input type="checkbox"/>

(d) Jim turned off the flame of the burner to allow the beaker of water to cool down. Which part of the graph showed exactly when Jim had ~~turned~~ off the flame? [1]

39 The diagram below shows how Yvonne sees the ball.



Based on diagram above, fill in the blanks with the correct scientific terms for the statement below.

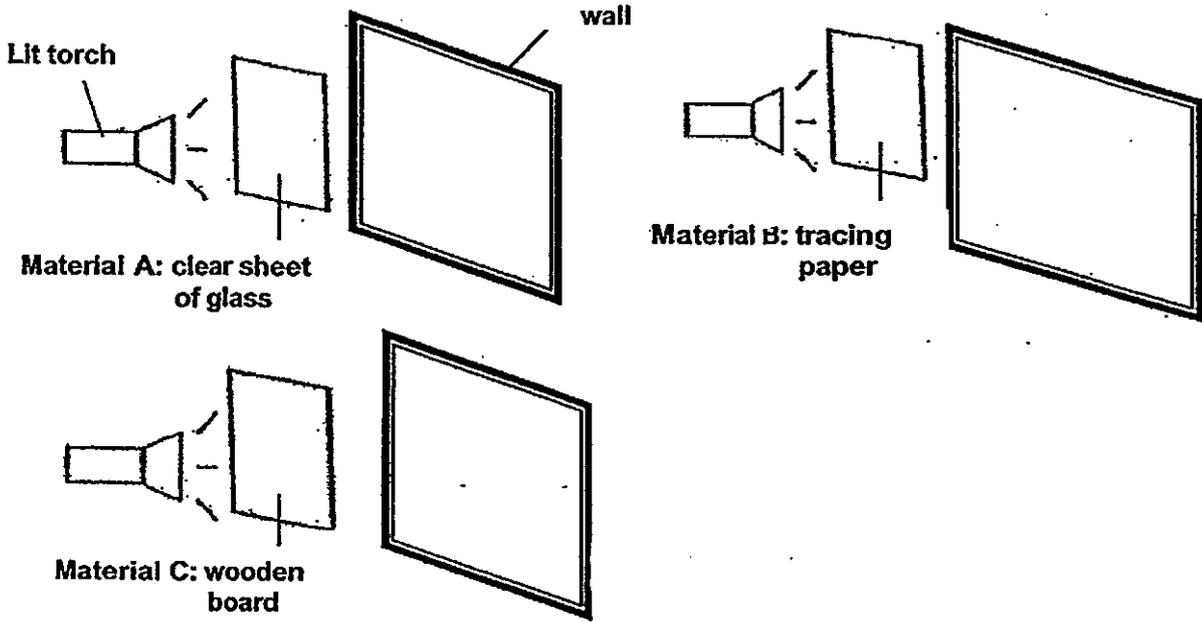
(a) The _____ from the lamp is _____ by the ball and enters ^{Yvonne} ~~Mary~~'s eye.

[2]

(Go on to the next page)

Score	5
-------	---

Jaryl shone his torchlight at three different types of materials A, B and C which were placed in front of a wall as shown in the diagram below.



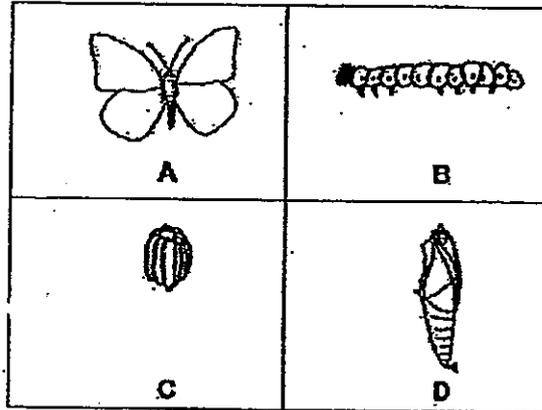
(b) Which material will cast the darkest shadow on the wall? [1]

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

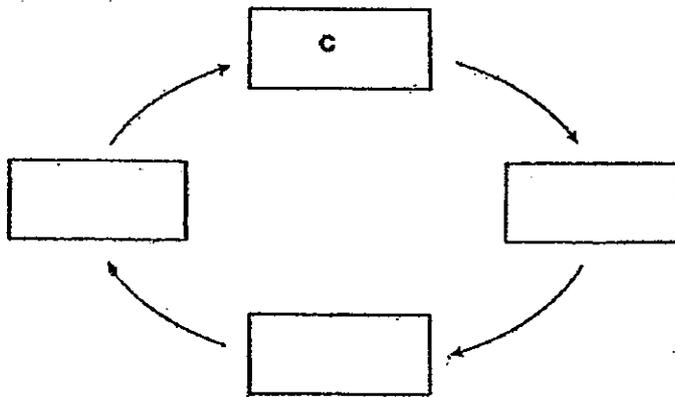
(Go on to the next page)

Score	2
-------	---

40 A, B, C and D are the various stages in the life cycle of a butterfly.



(a) Arrange A, B, C and D in the correct order of the life cycle starting from C. [1]



(b) Based on the life cycle in (a), choose the correct words from the box below to answer the following questions below.

larva	nymph	egg	pupa	young
-------	-------	-----	------	-------

Name the stages in the life cycle of a butterfly.

[4]

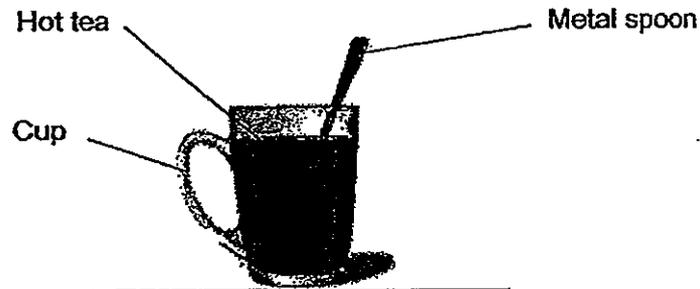
Stage B: _____

Stage C: _____

(Go on to the next page)

Score	3
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- 41 The diagram below shows a cup filled with hot tea left on a table in an air-conditioned room over a period of two days.

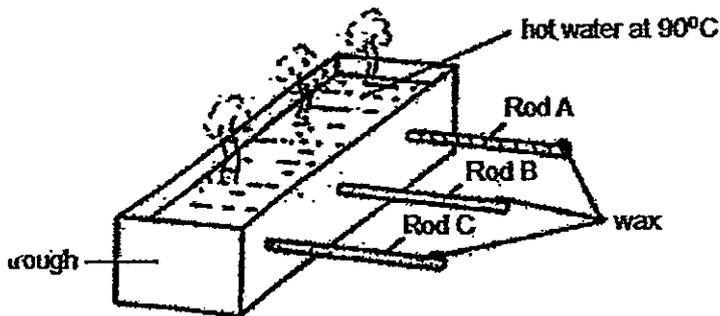


- (a) Based on the diagram above, put a letter (T) to indicate that the statement is true and (F) to indicate that the statement is false. [2]
- i. The hot tea will lose heat to the cup. ()
 - ii. The air in the room will lose heat to the hot tea. ()
 - iii. The metal spoon will gain heat from the air in the room. ()
 - iv. The hot tea, spoon and cup will have the same temperature the next day. ()
- (b) If the metal spoon is replaced with a plastic spoon, explain why the plastic spoon will gain heat slower than the metal spoon. [1]

(Go on to the next page)

Score	3
-------	---

42 Joseph filled a trough with hot water. The trough has three rods A, B and C attached to it. Rods A, B and C are made of different materials. Each rod has a similar piece of wax stuck to its end as shown in the diagram below.



Joseph used a stopwatch and recorded the time taken for each piece of wax to melt. He recorded his observations in the table shown below.

Rod	Time taken for the wax to melt (min)
A	8
B	12
C	10

(a) Based on the table above, arrange the rods A, B and C from the one that will melt the wax the fastest to the one that melt the wax the slowest. Fill in the boxes below with the letters A, B and C. [1]

--	--	--

Drop of wax that melted the fastest



Drop of wax that melted the slowest

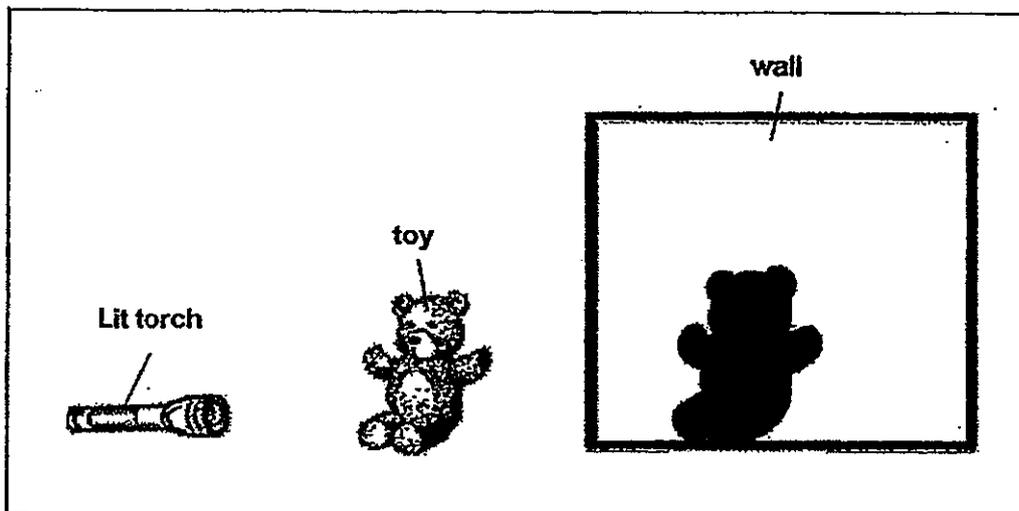
(b) Based on the results in the table above, which rod is the best conductor of heat? [1]

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

(Go on to the next page)

Score	
-------	--

- 43 Edison formed a shadow on the wall of his room by placing a toy in front of a lighted torch as show in the diagram below.



- (a) Suggest 2 ways that Edison can cast a bigger shadow. [2]

(i)

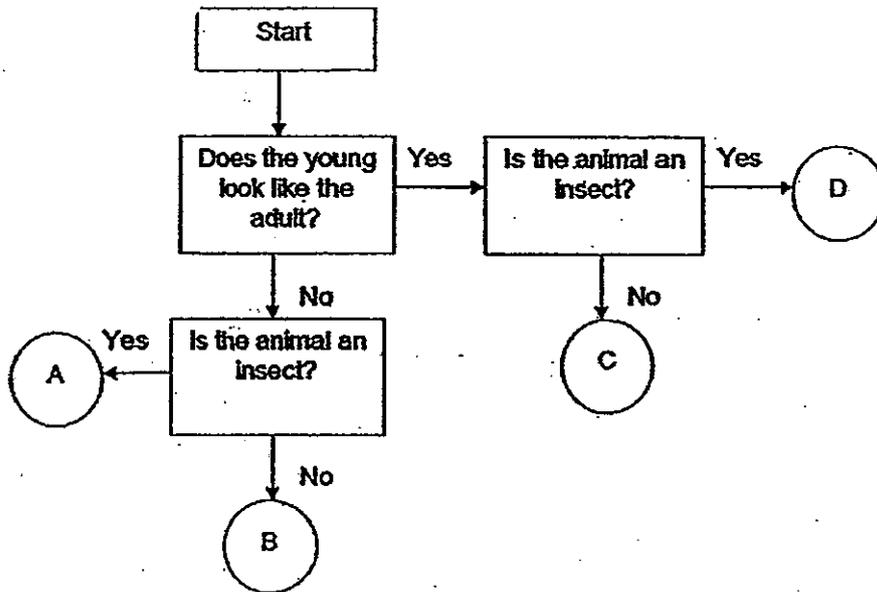
(ii)

- (b) Explain how a shadow is formed. [1]

(Go on to the next page)

Score	
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44 Study the flowchart below.



(a) Based on the flowchart above, state two differences between animal B and D. [2]

(i)

(ii)

(b) Using the flowchart above, identify the following animals using the correct letter (A, B, C or D). [1]

(i) Frog : Animal

(ii) Shark : Animal

Score	3
-------	---

END OF BOOKLET B

ANSWER SHEET

EXAM PAPER 2013

SCHOOL : ACS

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	1	2	2	3	2	3	3	3	4	2	3	2	1	2	3	4

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	2	3	3	2	1	2	3	4	3	3	2	2

**31)Stem
Roots**

**32)a)A
b)D**

**33)a)To find out which magnet is the strongest.
b)4 thumbtacks.**

34)a)The amount of food made by the plant increased for the first 60 minutes and decreased in the next 60 minutes.

b)There was a lack of carbon dioxide needed for the plant to make food.

**35)a)solid.
b)liquid.**

36)a)4½ minutes.

b)The number of times his hands rubbed increases, the time taken for one ice cube to melt in his hands decreases.

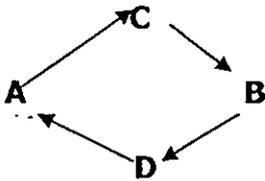
37)a)liquid.
b)solid.

38)a)Lose heat
Gain heat
b)27°C.
c)AB, BC, CD
d)Part D.

Decrease in temperature
Increase in temperature

39)a)The light from the lamp is reflected by the ball and enters Yvonne eye.
b)Material C.
c)Material C is opaque so it will cast the darkest shadow on the wall compared to the other materials.

40)a)



b)Stage B: larva Stage C: egg

41)a)i)T ii)F iii)F iv)T

b)The plastic spoon is a poor conductor of heat so it will conduct heat slower than the metal spoon as the metal spoon is a good conductor of heat.

42)a)A , C , B
b)Rod A.

c)The time taken for the wax to melt on Rod A was the fastest compared to the other rods as it was the best conductor of heat.

43)a)i)Move the toy nearer to the lit torch.
ii)Move the lit torch nearer to the torch.

b)Light travels in a straight line so when the light was shined on the toy, the toy blocked the light from passing through if as the toy is opaque.

44)a)i)The young of animal B does not look like the adult but the young of animal D looks like the adult.

ii)Animal B is not an insect but animal D is a insect.

b) i)B
ii)C



AI TONG SCHOOL

2013 SEMESTRAL ASSESSMENT (2) PRIMARY FOUR SCIENCE

DURATION : 1hr 45 min

DATE: 25 October 2013

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 : _____

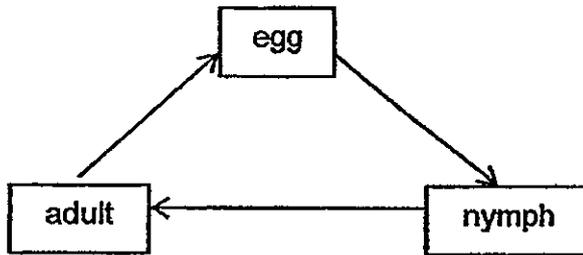
Date : _____

Section A	60
Section B	40
Total	100

Section A: 60 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 oval (1, 2, 3 or 4) on the Optical Answer Sheet. (60 marks)

1. The diagram below shows the life cycle of an animal.



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

- (1) beetle
- (2) chicken
- (3) butterfly
- (4) cockroach

2. Which one of the following objects can be bent easily without breaking?

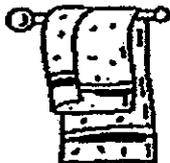
(1) a sheet of glass



(2) a wooden ruler



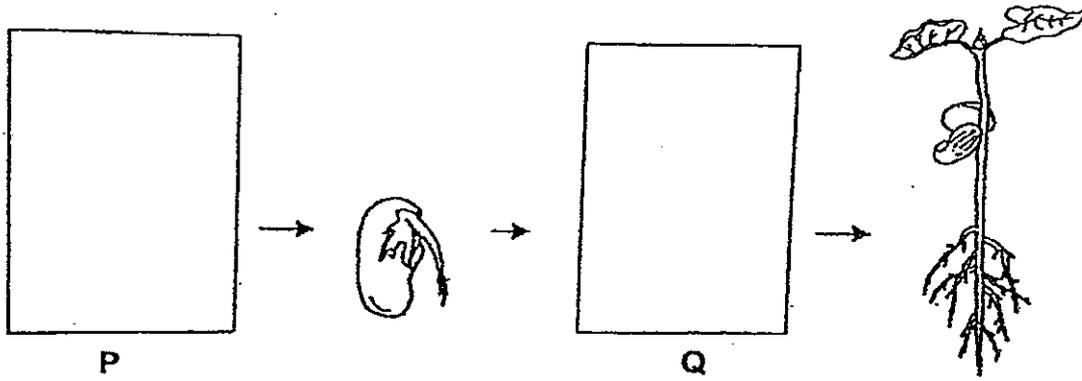
(3) a towel



(4) a plastic spoon



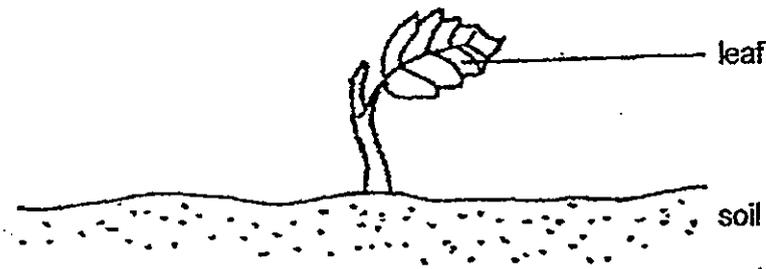
3. The diagram below shows the growth of a young plant with two missing stages P and Q.



Which one of the following shows the correct stages for P and Q?

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

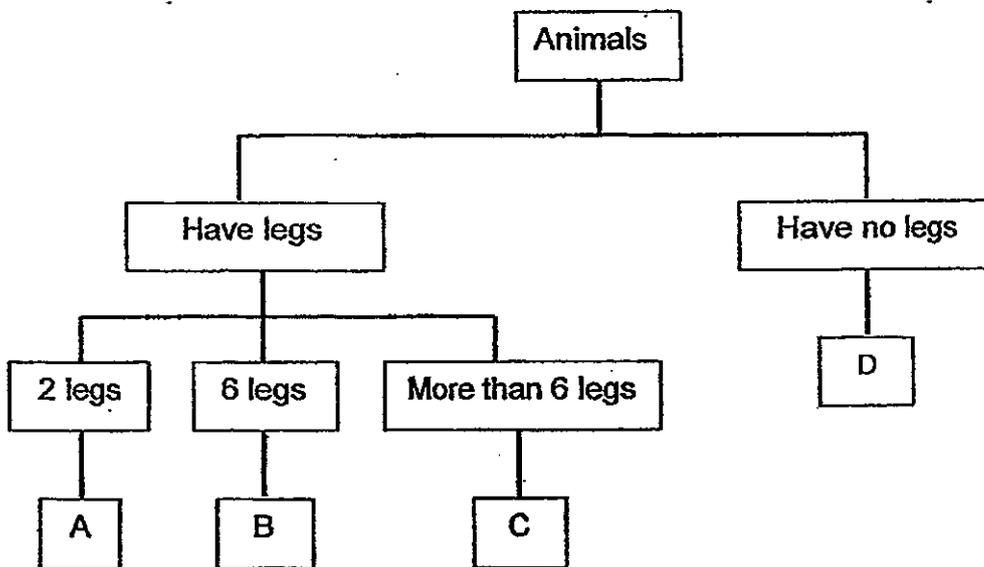
4. The diagram below shows a young plant.



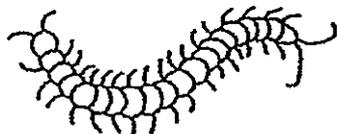
The leaf helps the plant to _____.

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

5. Study the chart below.



Where would you put this animal in the chart above?



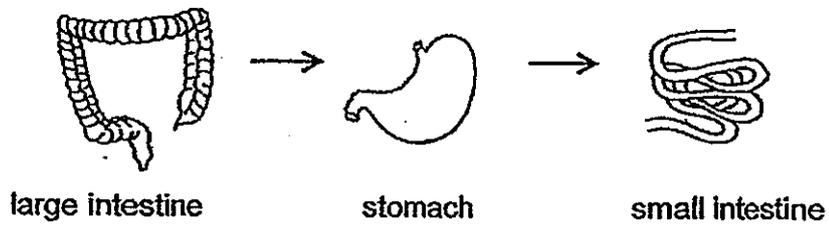
- (1) A
- (2) B
- (3) C
- (4) D

6. Which one of the following shows the correct order when food moves through some parts of the digestive system?

(1)



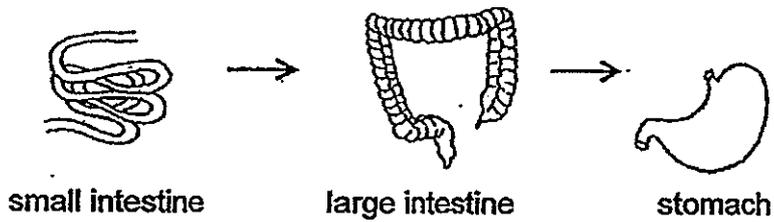
(2)



(3)



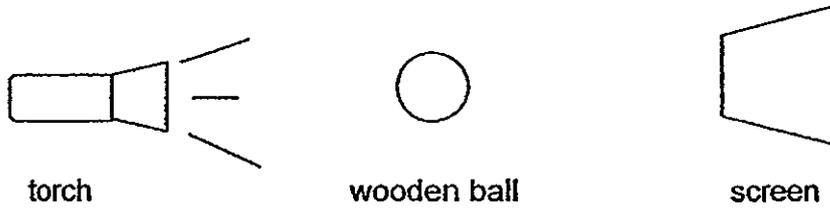
(4)



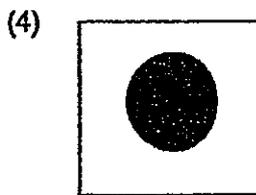
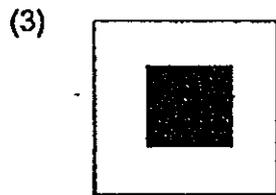
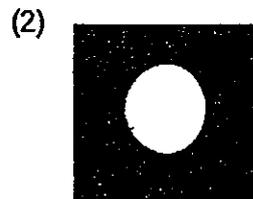
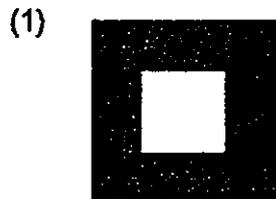
7. Which of the following properties is true for both air and a pencil?

- (1) They can be seen
- (2) They take up space.
- (3) They have fixed shapes.
- (4) They have fixed volumes.

8. The set-up below shows light shining on a wooden ball.



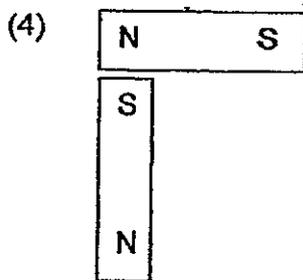
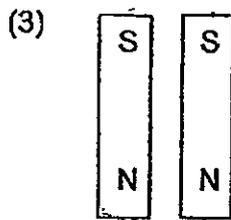
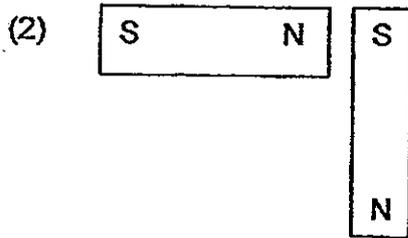
Which one of the following would likely be seen on the screen?



9. Which one of the following is the best conductor of heat?

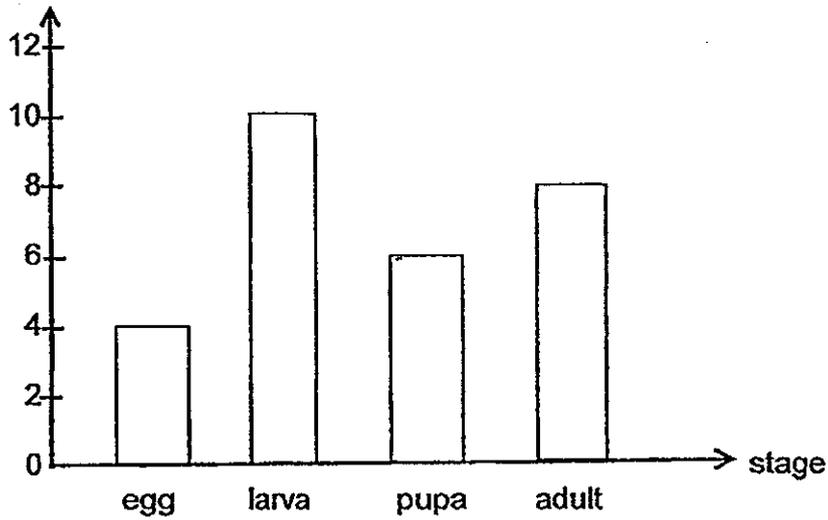
- (1) paper plate
- (2) plastic plate
- (3) metal plate
- (4) wooden plate

10. In which of the following will the two magnets push each other away?



11. The graph below shows the number of days in each stage of the life cycle of animal X.

Number of days

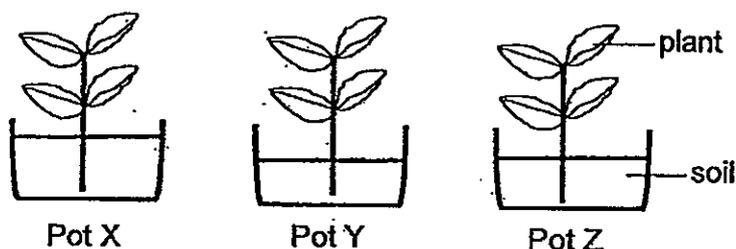


Which of the following statement(s) is/are true?

- A The egg takes 4 days to hatch.
- B There are only 3 stages in the life cycle of animal X.
- C It takes 20 days for animal X to become an adult after it is hatched.

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

12. Jenny wanted to find out if the amount of water given to each plant affects its growth. She planted 3 plants of similar sizes in 3 pots, X, Y and Z. The pots were made of clay. The type of soil used was the same for all the 3 pots.



The 3 plants were then placed in the garden.

Why was the experiment not a fair test?

- (1) The type of soil used was the same.
- (2) The pots were made of the same material.
- (3) The amount of soil in each pot was different.
- (4) The plants were given different amount of water.

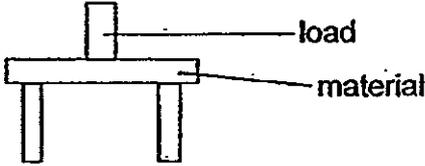
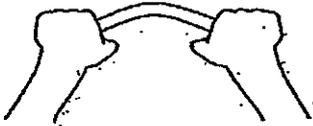
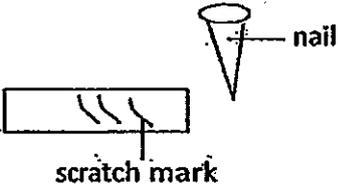
13. Trina conducted an experiment to find out the characteristics of three objects, X, Y and Z. A tick (✓) means that the objects have the characteristics.

	X	Y	Z
Bends easily	✓	✓	✓
Stretches easily	✓	✓	
Absorbs water		✓	✓

Which one of the following sets of objects best fits the description in the table above?

	X	Y	Z
(1)	rubber boots	cardboard	rubber band
(2)	paper	sponge	rubber band
(3)	rubber band	socks	cardboard
(4)	cardboard	rubber band	socks

14. Mrs Chua had 4 different materials. She cut a strip of the same length, width and thickness out of each material. She asked her class to carry out 3 different tests with the materials.

Test	Aim of experiment
A	<p>To find out how many loads are being placed on the material before the material breaks.</p>  <p>load material</p>
B	<p>To find out how much the material can bend when a fixed amount of strength is applied to it.</p> 
C	<p>To find out how deep the scratch mark is when a nail is used to scratch the material.</p>  <p>nail scratch mark</p>

Which of the above tests can the pupils use to find out which material is the strongest and hardest?

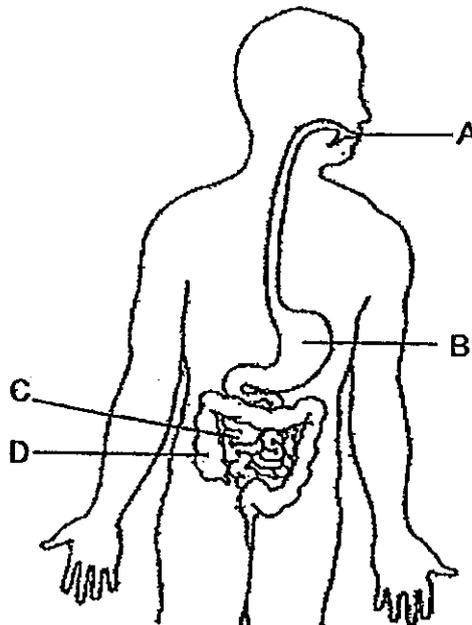
- (1) A only
- (2) B only
- (3) A and C only
- (4) B and C only

15. Which of the following statements are reasons why food needs to be chewed before being swallowed?

- A to cut the food into smaller pieces
- B so that saliva will not be produced
- C to increase exposed surface area of food
- D to fully digested the food in the mouth

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

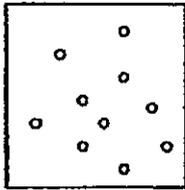
For questions 16 and 17, refer to the diagram below. The diagram below shows the human digestive system.



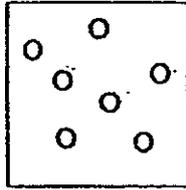
16. Which of the above organs produce digestive juices?

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

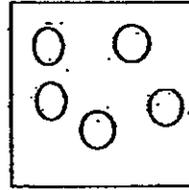
17. X, Y and Z are samples of the same food taken from different parts of the digestive system.



Sample X



Sample Y

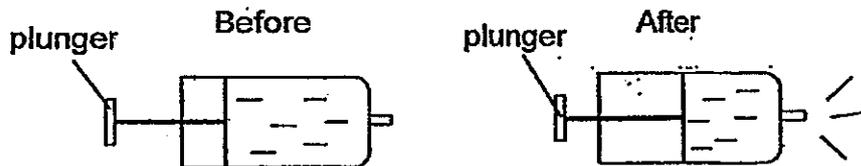


Sample Z

From which part of the digestive system could samples X, Y and Z be taken from?

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

18. A syringe is filled with water. When its plunger is pushed, a jet of water shoots out in the direction as shown in the picture below.

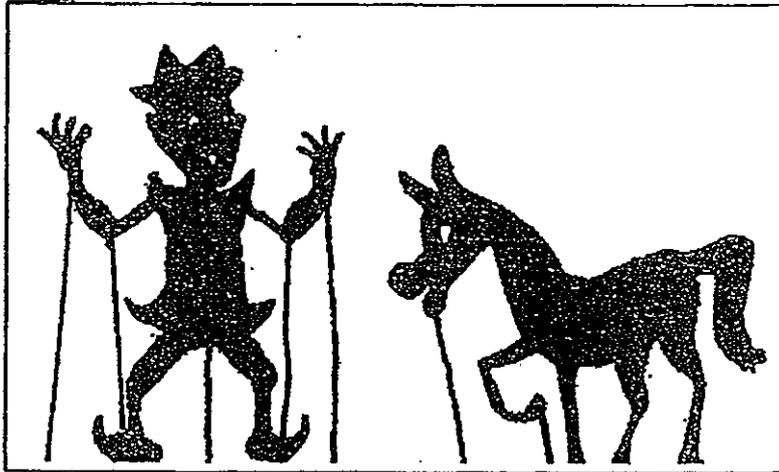


Which of the following statements are true about the air and water in the syringe after its plunger is being pushed?

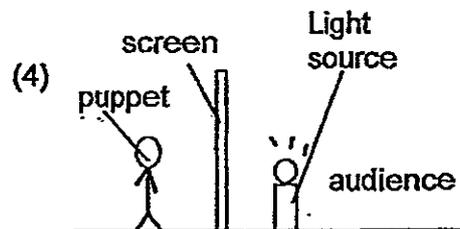
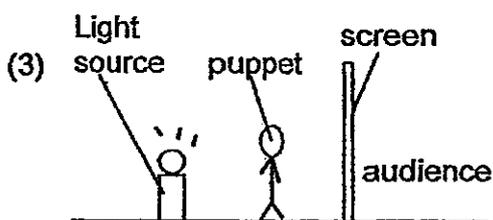
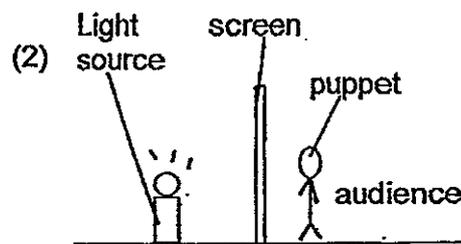
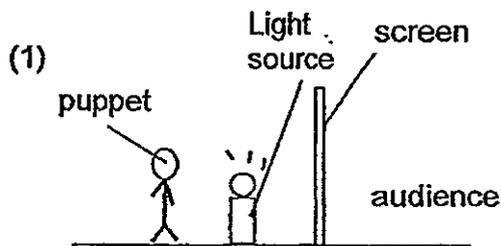
- A The volume of air has increased.
- B The mass of air has decreased.
- C The volume of water has increased.
- D The mass of water has decreased.

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

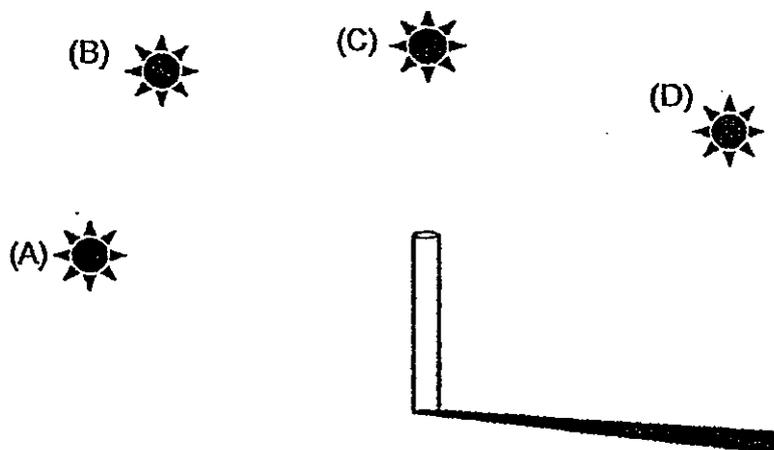
19. During the school holidays, Jia Min watched a shadow puppet performance where dark shadows of figures were cast on a cloth screen.



Which of the following shows the correct arrangement of the puppet, screen and light source?

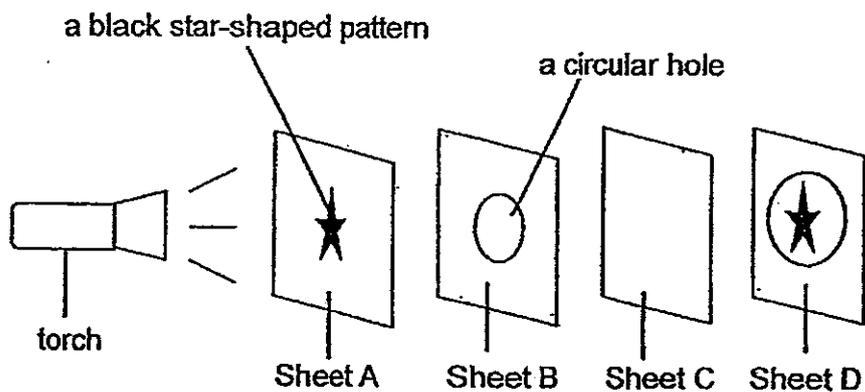


20. In which position must the sun be to cast the shadow as shown below?



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

21. The experiment shown below is carried out by some pupils in a dark room.

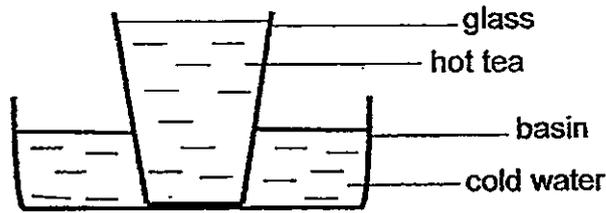


Sheets A, B, C and D are arranged in a straight line. A star-shaped pattern is painted black on Sheet A. A circular hole is cut out on Sheet B. When the torch is switched on, a bright patch of light with a star-shaped shadow is seen on Sheet D only.

Based on the above observation, which of the following would describe the degree of transparency to light of Sheets A, B, C and D?

	Made of transparent material	Made of opaque material	Not possible to tell
(1)	A and B	C and D	None
(2)	A and C	B and D	None
(3)	B and C	D only	A only
(4)	B only	A and C	D only

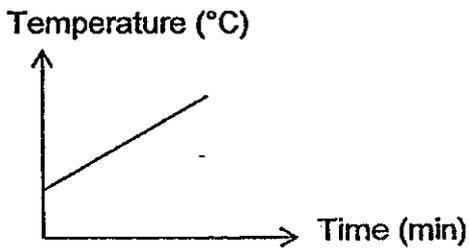
22. A glass of hot tea is put into a basin of cold water as shown in the diagram below.



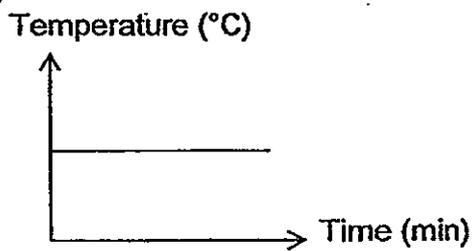
The line graph below shows the changes in the temperature of the hot tea.

Which of the graphs correctly represents the temperature changes of the hot tea after 1 hour?

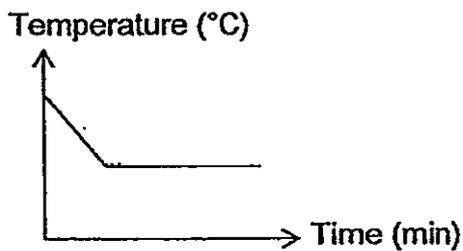
(1)



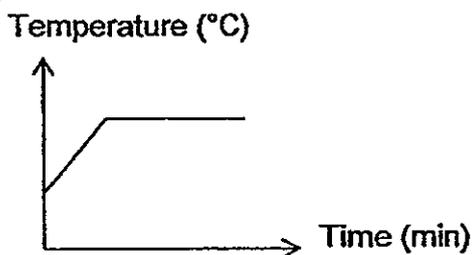
(2)



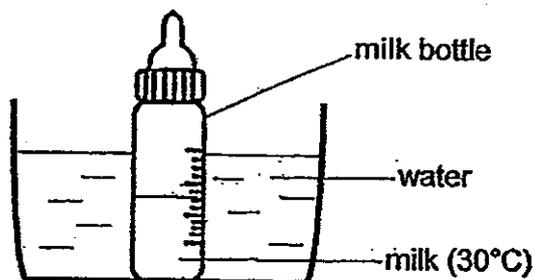
(3)



(4)



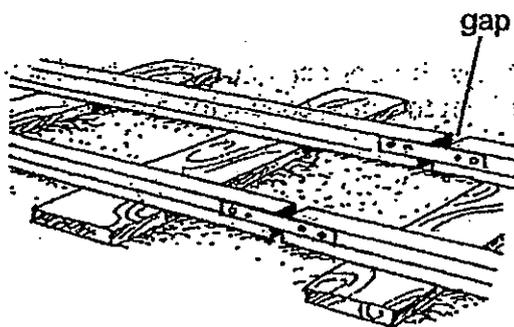
23. A bottle of milk at 30°C was placed in a basin of water as shown in the diagram below.



After 2 minutes, the temperature of the milk becomes 50°C .

What was the likely temperature of the water in the basin at first?

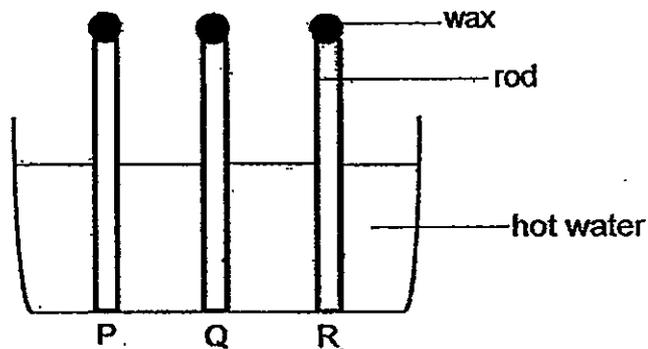
- (1) 10°C
 - (2) 30°C
 - (3) 50°C
 - (4) 80°C
24. Peter was at the train station. He observed that there are gaps along the train track as shown below.



The purpose of having the gaps on the train tracks is to allow

-
- (1) the expansion of the track on hot days
 - (2) the expansion of the track on cold days
 - (3) the contraction of the track on hot days
 - (4) the contraction of the track on cold days

25. Rods P, Q and R were left in a beaker of hot water. A drop of wax was placed on each end of the rods as shown in the diagram below.



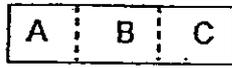
The time taken for the wax on the rods to melt was recorded in the table below.

Rod	Time taken for the wax to melt (s)
P	28
Q	115
R	54

Which of the following shows the correct order of the heat conductivity of rods P, Q and R starting from the best conductor of heat?

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

26. Timmy used magnet P for an experiment. Different parts of the magnet were labeled A, B and C as shown below.

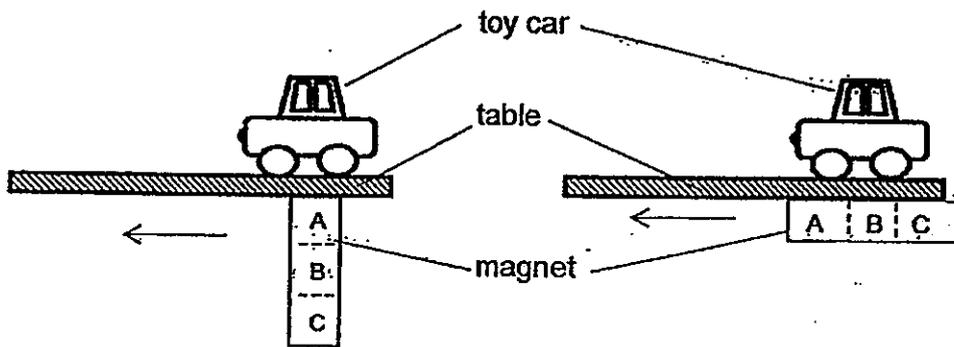


magnet P

He then used magnet P to move a toy car across a thin wooden surface as shown below.

Trial 1

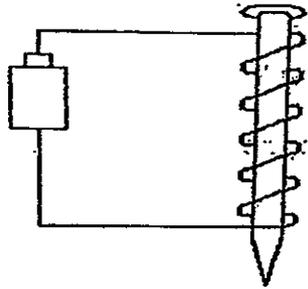
Trial 2



In which of the following trial 1 or 2 did the car move slower and what was the correct explanation for the observation?

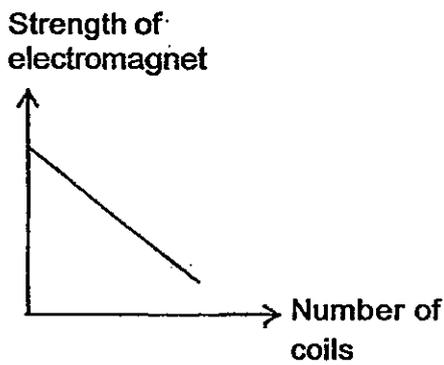
	Trial	Explanation
(1)	1	Contact area between the car and the magnet is lesser.
(2)	1	Magnetism could not pass through wooden surface.
(3)	2	Part B of the magnet has a weaker magnetic force than part A.
(4)	2	Part B of the magnet has no magnetic force at all.

27. Hui Ling wanted to find out if the number of batteries used would affect the strength of the electromagnet. She used the set-up below to magnetize an iron nail.

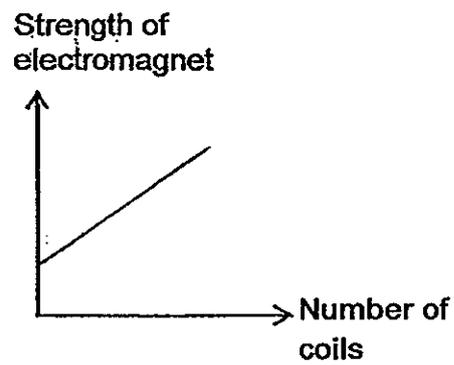


Which of the following graphs shows the correct results when Hui Ling carried out her experiment?

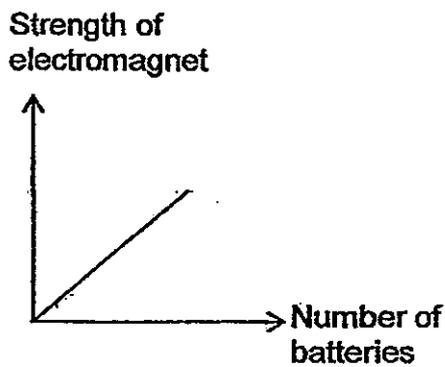
(1)



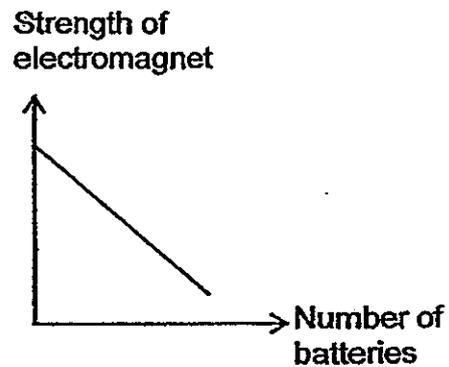
(2)



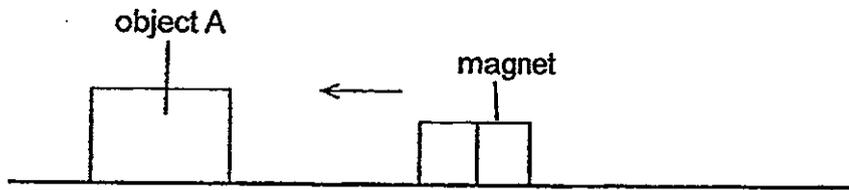
(3)



(4)



28. Kathy placed object A on the table top and moved a strong magnet towards it as shown in the diagram below.



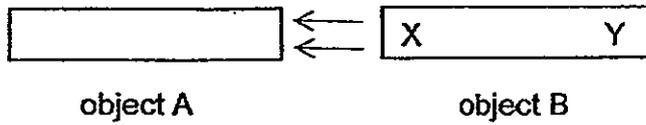
She repeated the experiment for objects B, C and D and recorded her results in the table below. A tick (✓) is used to show the observation that she had made for each object.

Objects	Moved towards the magnet	Did not move at all
A	✓	
B		✓
C	✓	
D	✓	

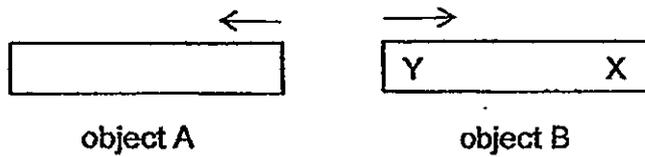
Which of the following objects had been correctly matched with the material it is made from?

	Object	Material
(1).	A	iron
(2)	B	steel
(3)	C	wood
(4)	D	aluminium

29. When object A is placed near point X of object B, object B moves towards it.



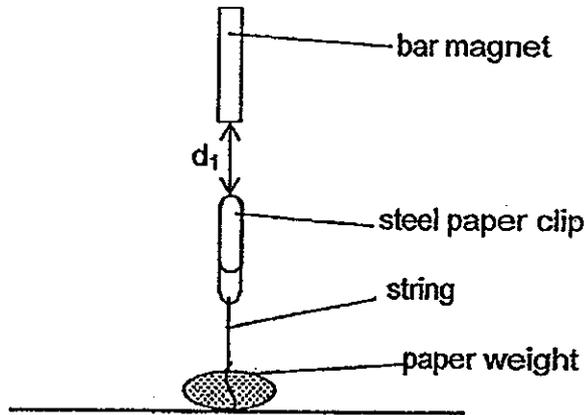
When object A is placed near point Y of object B, objects A and B move away from each other.



Which of the following statements are true about objects A and B?

- A Only object B is a magnet.
 - B Object B is made of a magnetic material.
 - C Both objects A and B are magnets.
 - D Object A is made of copper.
- (1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

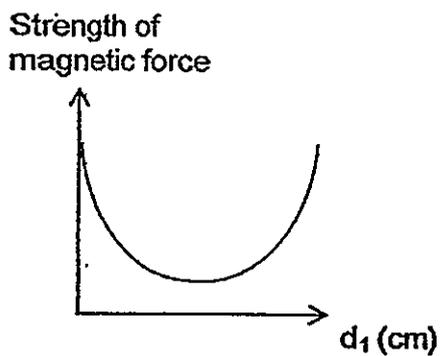
30. Lynn placed a bar magnet above a steel paper clip tied to a weight by a string. The magnet pulled the paper clip up. She measured d_1 , the distance between the bar magnet and the paper clip.



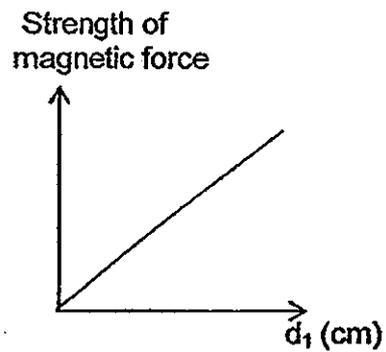
She then slowly moved the bar magnet away from the paper clip until the paper clip dropped.

Which of the following shows the relationship between the strength of the magnetic force exerted on the paper clip and d_1 ?

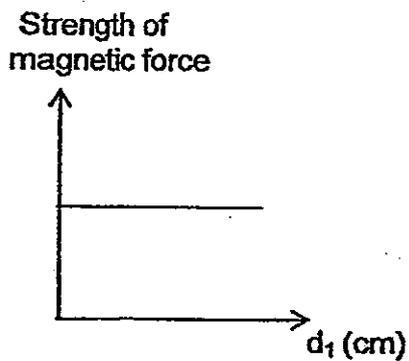
(1)



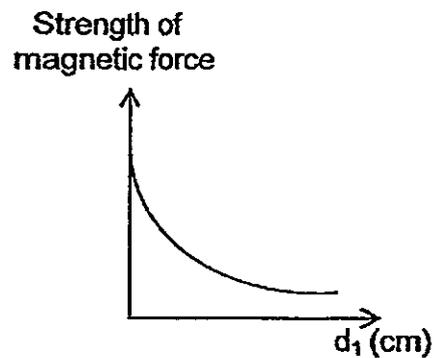
(2)



(3)



(4)



Name: _____ ()

_____/40

Class: 4 ()

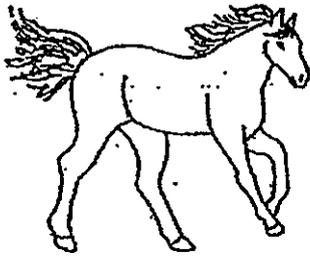
Section B: 40 marks

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

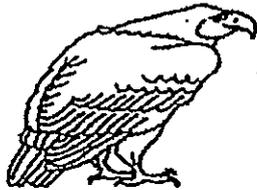
31. Draw lines to match the following animals to the correct groups. (3m)

Animals

Group



• mammal

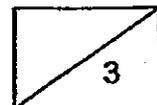


• insect

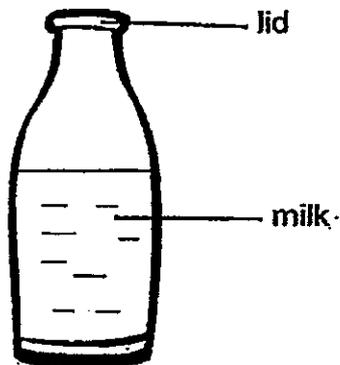
• bird



• fish



32. The diagram below shows a bottle of milk.

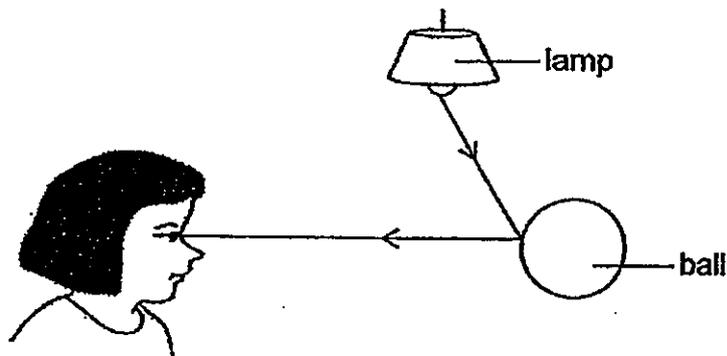


Complete the sentences to state if the parts are solid, liquid or gas. (2m)

(a) The cover is _____.

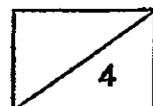
(b) Milk is a _____.

33. The diagram below shows how Mary sees the ball.

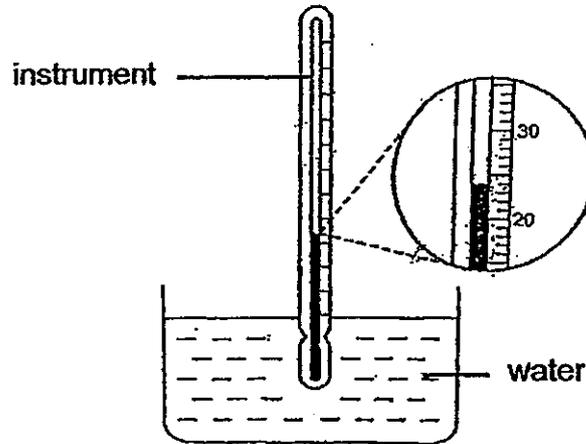


The _____ from the lamp is _____
by the ball and enters Mary's eye.

(2m)



34. Jane used an instrument to measure the temperature of water in a glass.



(a) What is the instrument called? (1m)

(b) What is the temperature of the water in the glass? (1m)

_____ °C

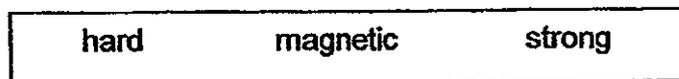
35.



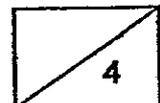
Susan places a magnet near an iron rod. The iron rod moves towards the magnet.

(a) The magnet exerts a _____ on the iron rod. (1m)

(b) Choose the correct word from the box to answer the question below.

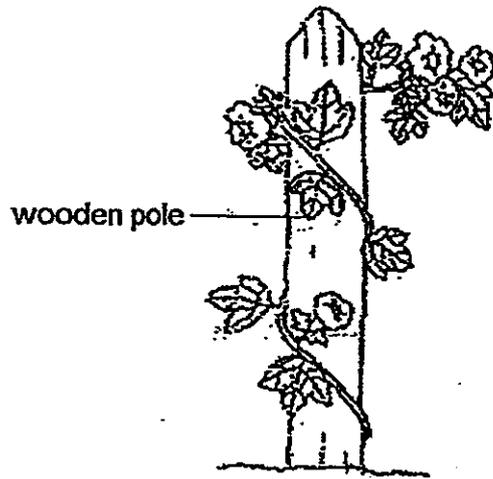


Susan's observation shows that iron is a _____ material. (1m)



36. Write down 2 physical differences between plant A and plant B.

(2m)



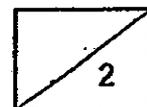
plant A



plant B

Difference 1: _____

Difference 2: _____



37. Max set up an experiment as shown in the diagram below. He placed the different set-ups A, B, C and D in different locations at different temperatures.

At the end of the experiment, it was observed that the seeds grew into seedlings in some set-ups but not in others.

Set-up A
Put under light (4°C)



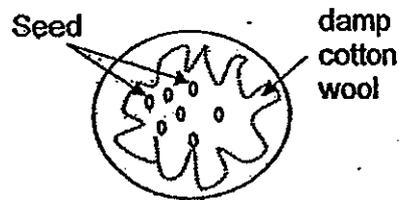
Set-up B
Put in the dark (30°C)



Set-up C
Put under light (30°C)



Set-up D
Put in the dark (4°C)



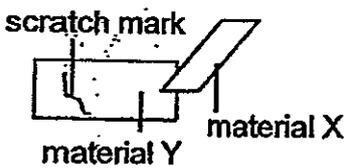
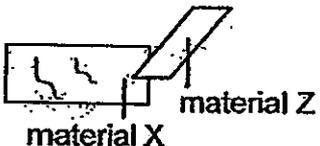
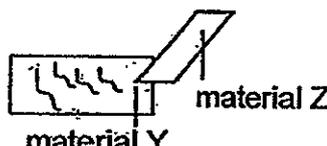
- (a) In which set-up A, B, C and/or D will the seedlings germinate?
Explain your answer. (2m)

- (b) What was Max trying to find out when he compared the following pairs of set-ups in his experiment? (2m)

Set-ups A and D

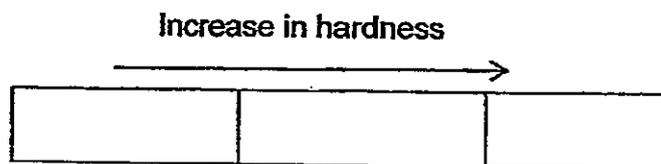
Set-ups A and C

38. Ani carried out a scratch test on similar sized materials X, Y and Z. She used material X to scratch on Y and Z and noted the number of scratch marks made. She then repeated the experiment using Z. The results of her experiment are shown in the table below.

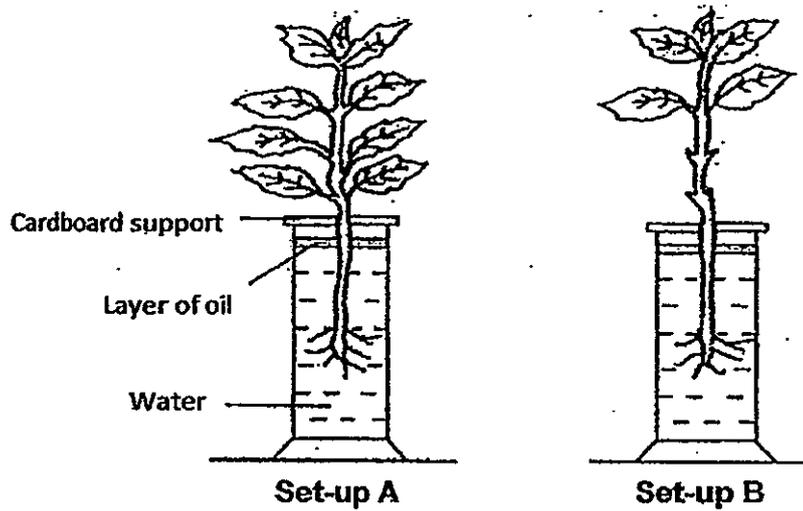
Observation	
 <p>scratch mark material Y material X</p>	 <p>material Z material X</p>
 <p>material X material Z</p>	 <p>material Y material Z</p>

- (a) Based on the results above, is material X or Z harder? Explain your answer. (1m)

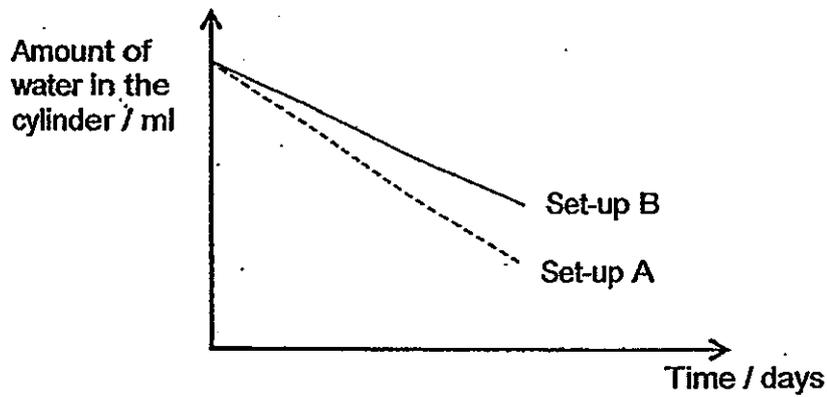
- (b) Arrange the materials X, Y and Z according to the hardness. (1m)



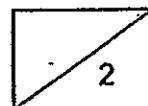
39. Ahmad set up an experiment to find out if the number of leaves a plant has affects the amount of water absorbed.



He recorded the amount of water left in the cylinder daily over a week. The results are shown in the graphs below.



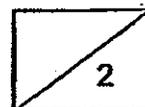
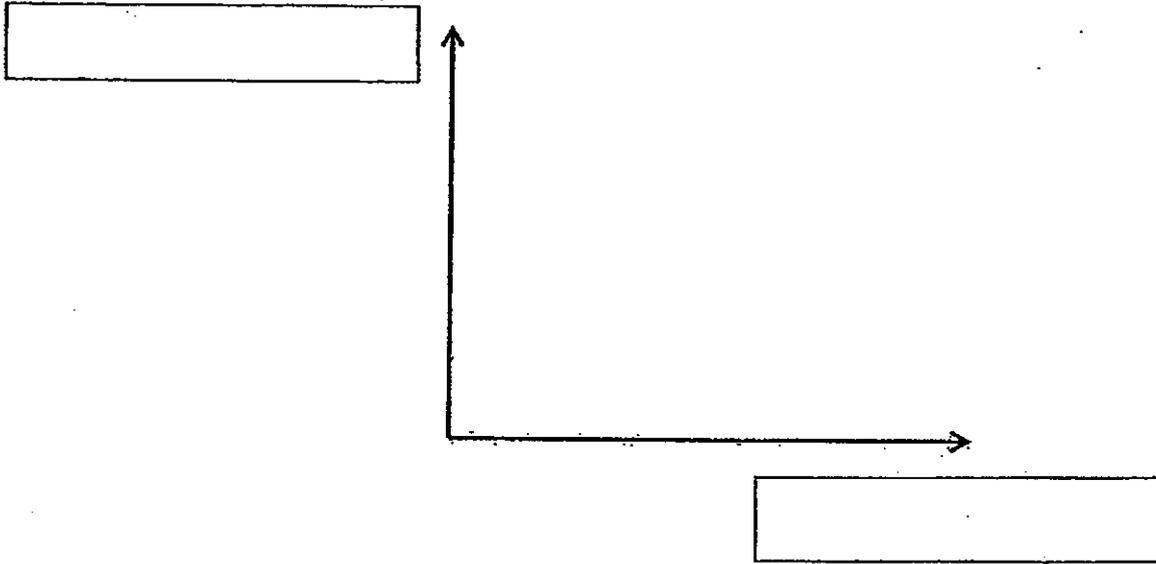
- (a) Did Ahmad conduct a fair test? Explain your answer. (2m)



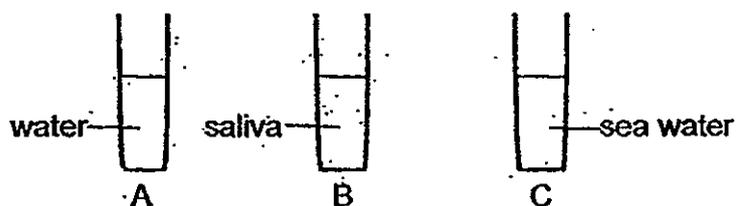
(b) In the space below, draw a line graph to show the relationship between the amount of water absorbed and the number of leaves a plant has.

Label the axes.

(2m)



40. Ryan prepared 3 test-tubes filled with equal amounts of different liquids as shown below.



He then poured equal amounts of starch solution into the test-tubes. After 2 hours, he placed 2 drops of iodine into each test tube.

(Note: Iodine will turn from brown to dark blue in the presence of starch.)

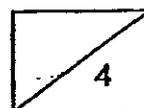
- (a) Based on Ryan's experiment, what would his observation be when he placed iodine into test-tubes A and B? (2m)

Test-tube	Observation on the colour of iodine
A	
B	
C	dark blue

- (b) Explain Ryan's observation for the colour of iodine for test-tubes A and B. (2m)

Test-tube A: _____

Test-tube B: _____

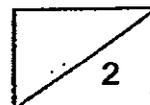


41. Ali has 3 empty containers, (A, B and C), of different sizes. He pumped 200 cm^3 of air into each container.

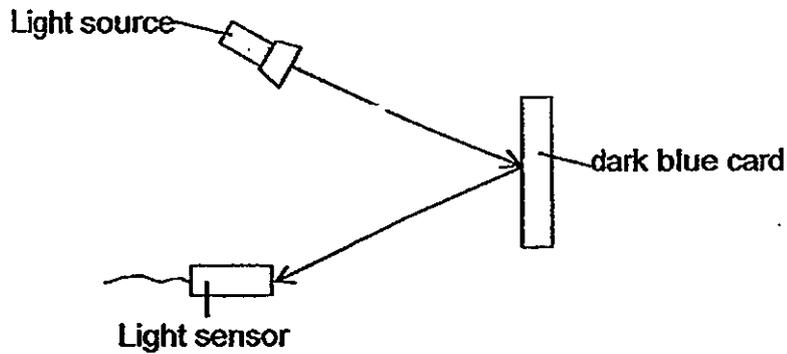
Container	Volume of container (cm^3)	Volume of air pumped into the container (cm^3)
A	100	200
B	200	200
C	300	200

- (a) In which container is the air compressed? Explain your answer. (1m)

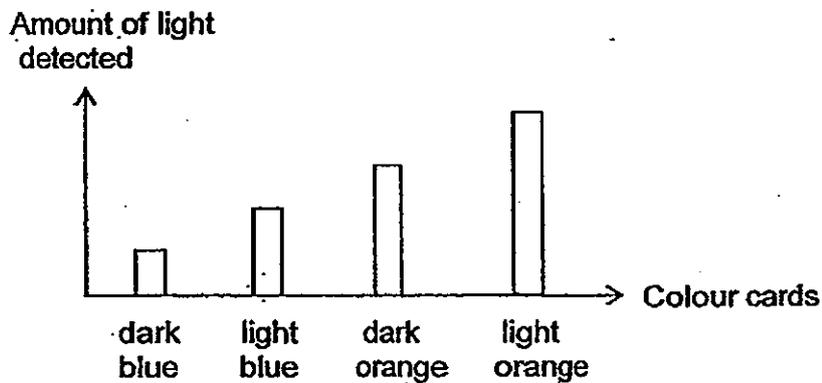
- (b) Which property of air allows air to be compressed? (1m)



42. Kumar wanted to find out if darker colours reflect more or less light. He used the set-up below for his experiment.



He shone the light source at a dark blue card and used the light sensor to record the amount of light reflected by the card. He repeated his experiment using light blue, dark orange and light orange cards and recorded his results as shown in the graph below.

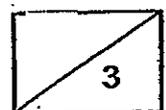


- (a) What can Kumar conclude from his experiment?

(1m)

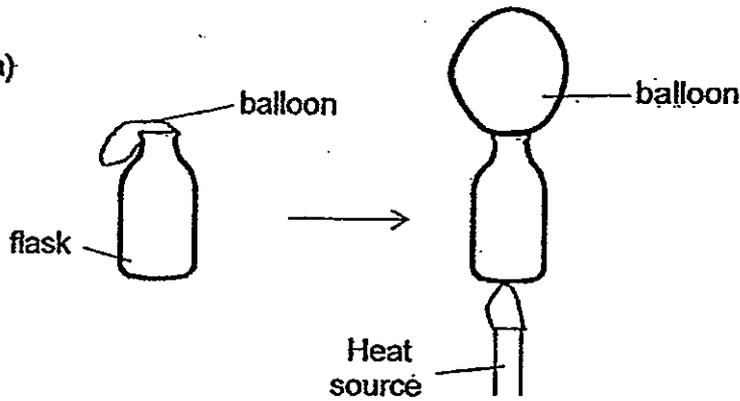
- (b) Using the results obtained by Kumar, explain why wearing lighter colour clothing at night is safer for road users.

(2m)



43.

(a)

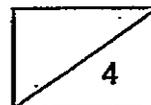


The balloon became inflated when the flask was heated. Explain why. (2m)

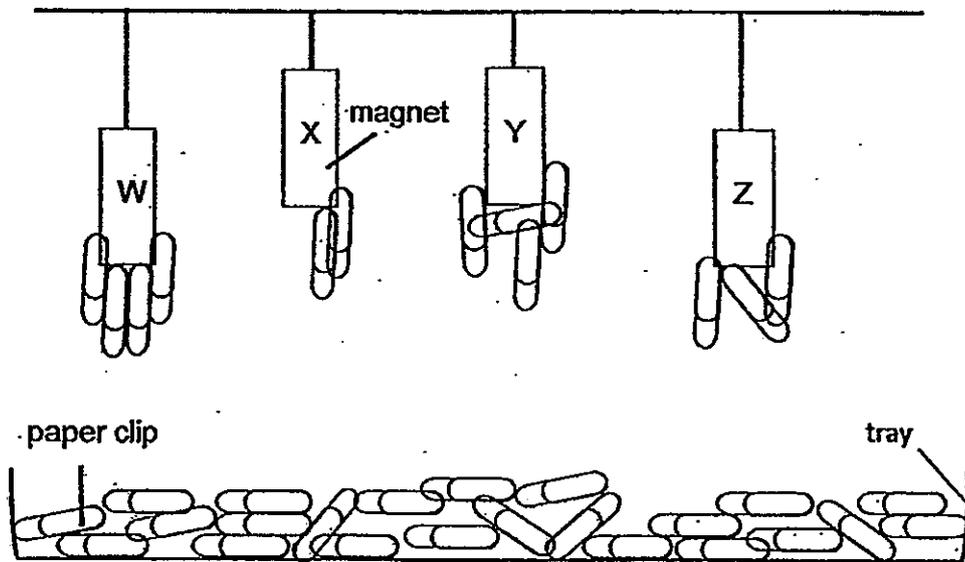
(b)



2 bars of chocolate of the same size are wrapped in different materials as shown above. It was observed that even though both bars of chocolates were placed in the same location, the chocolate wrapped in material Y melted faster than the one wrapped in material X. Suggest a reason for this observation. (2m)



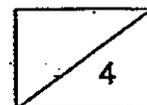
44. W, X, Y and Z are magnets of similar sizes hanging from two different lengths as shown below. A tray of paper clips is placed below and different number of paper clips is attracted to the magnets.



- (a) Which magnet, W, X, Y or Z is the strongest? Explain your answer. (1m)

- (b) Based on the diagram above, explain why it is difficult to compare the strengths of magnets X and Z. (2m)

- (c) Suggest a change that you could do to the set-up to make it a fair test. (1m)



End of paper

ANSWER SHEET

EXAM PAPER 2013

SCHOOL : AI TONG

SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
4	3	4	1	3	3	2	4	3	3	1	3	3	3	2	1	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	3	2	2	3	4	1	2	3	3	1	3	4

Q31a) mammal, bird, fish

Q32a) solid

Q32b) liquid

Q33) The light from the lamp is reflected by object A and enters Mary's eye.

Q34a) thermometer

Q34b) 24°C

Q35a) magnetic force

Q35b) magnetic

Q36) Difference 1: Plant A has a weak stem while plant B has a strong stem.

Difference 2: Plant A has flowers but plant B does not.

Q37a) Set-ups B and C. In order for germination, air, water and warmth must be present and only set-ups B and C have air, water and warmth.

Q37b) Set-ups A and D: To find out if seeds need light to germinate.

Set-ups A and C: To find out if seeds need warmth to germinate.

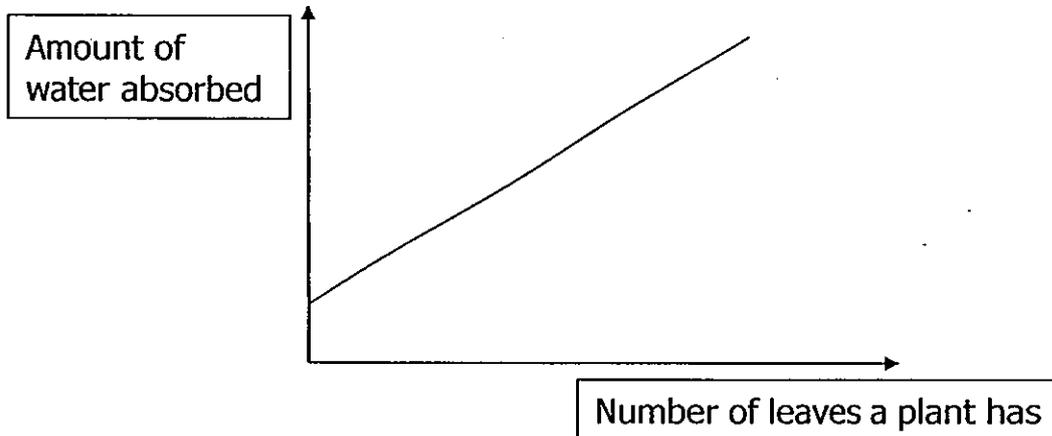
Q38a) Material Z. When X scratched material Z, there were no scratch marks on Z.

Q38b)

Y	X	Z
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Q39a) Yes. Only one variable was changed. He was able to compare and conclude that the amount of water absorbed is solely due to the number of leaves a plant has.

Q39b)



Q40a) A: dark blue

B: brown

Q40b) Test-tube A: Starch is present. Water cannot digest starch.

Test-tube B: Starch is not present. Saliva contains digestive juice which will digest the starch.

Q41a) Container A as the volume of container is smaller than the volume of air pumped in.

Q41b) Air does not have a definite volume.

Q42a) Darker colours can reflect lesser light than lighter colours.

Q42b) Lighter colours can reflect more light and drivers can see you more clearly.

Q43a) Air in the flask is heated. Air expands and occupies more space, entering the balloon and inflating it.

Q43b) Material Y is a better conductor of heat than X. Material Y conducts heat faster from the surroundings to the chocolate.

Q44a) Magnet Y is the strongest as it is the furthest from the paper clips, but it attracted the most number of paper clips.

Q44b) Although magnet X attracted lesser paper clips than magnet Z, it was hung further from magnet Z.

Q44c) Hang all the magnets at the same length.