



**SEMESTRAL ASSESSMENT 2 (2011)
PRIMARY 4**

SCIENCE

BOOKLET A

Tuesday

01 November 2011

1 hour 30 minutes

Name : _____ ()

Class : P4 _____

INSTRUCTIONS TO PUPILS

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

Follow all instructions carefully.

There are 25 questions in this booklet.

Answer ALL questions.

INFORMATION FOR PUPILS

The total marks for this booklet is 50.

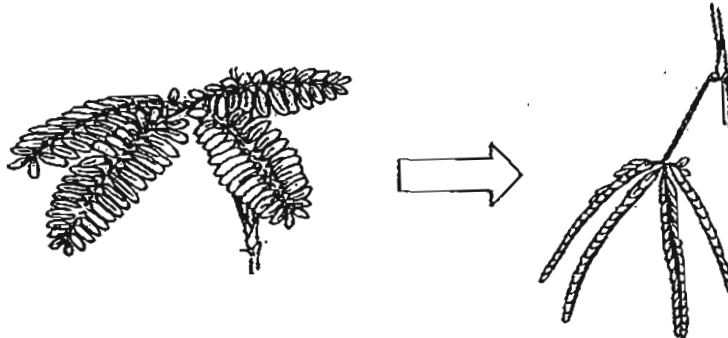
The total time for Booklets A and B is 1 hour 30 minutes.

This question paper consists of 13 printed pages..(Inclusive of cover page)

Section A (50 marks)

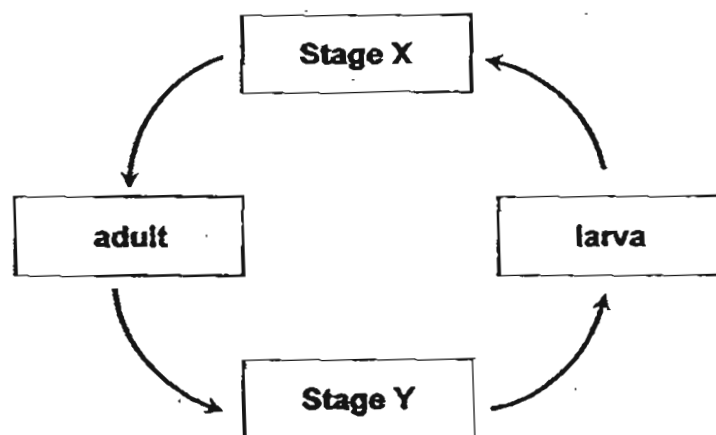
For each question from 1 to 25, four options are given. One of them is the correct answer. Choose the correct option (1, 2, 3 or 4) and shade the correct oval on the Optical Answer Sheet (OAS).

- 1 A mimosa plant, as shown below, will fold its leaves when touched or exposed to heat.



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

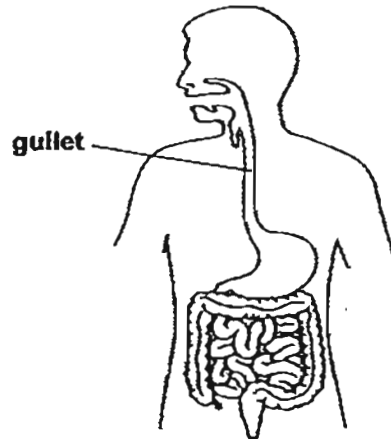
- (1) grow
 - (2) breathe
 - (3) respond
 - (4) reproduce
- 2 The diagram below shows the stages in the life cycle of a butterfly.



Which of the following best represent stages X and Y?

	Stage X	Stage Y
(1)	young adult	egg
(2)	pupa	young
(3)	young adult	young
(4)	pupa	egg

3 Which of the following is true about the gullet in a human digestive system?

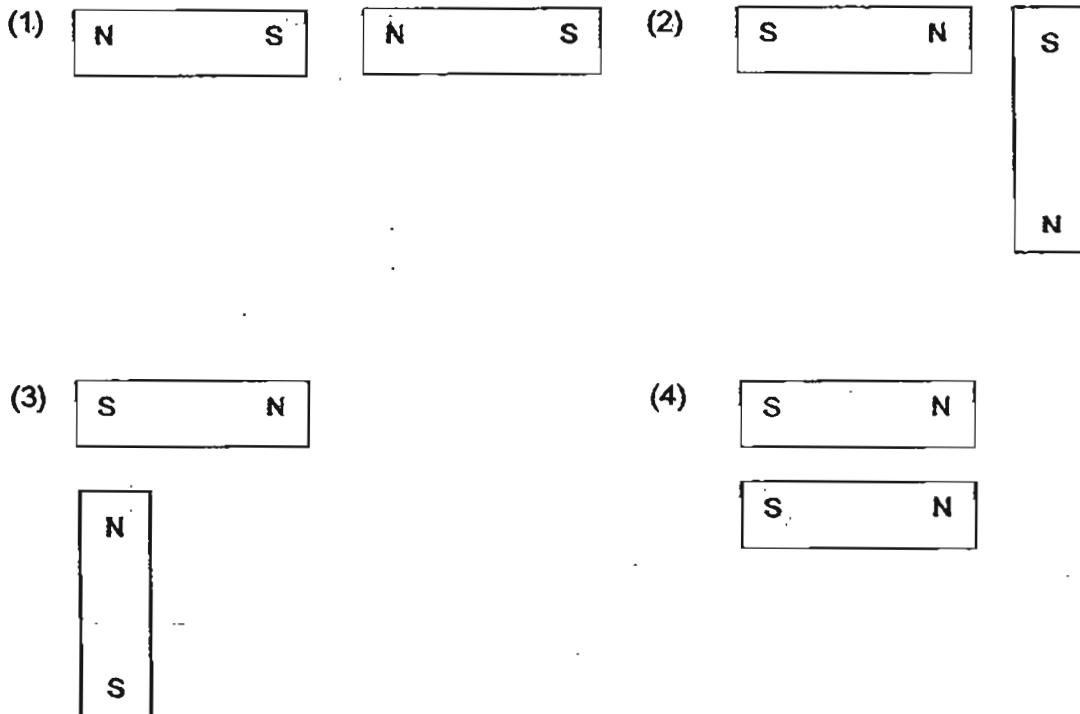


- (1) It absorbs water and mineral salts.
- (2) It is connected to the small intestine.
- (3) It breaks down food into smaller pieces.
- (4) It transports chewed food into the stomach.

4 Which of the following properties do both water and air have?

- (1) They can be seen.
- (2) They take up space.
- (3) They have fixed shaped.
- (4) They can be compressed.

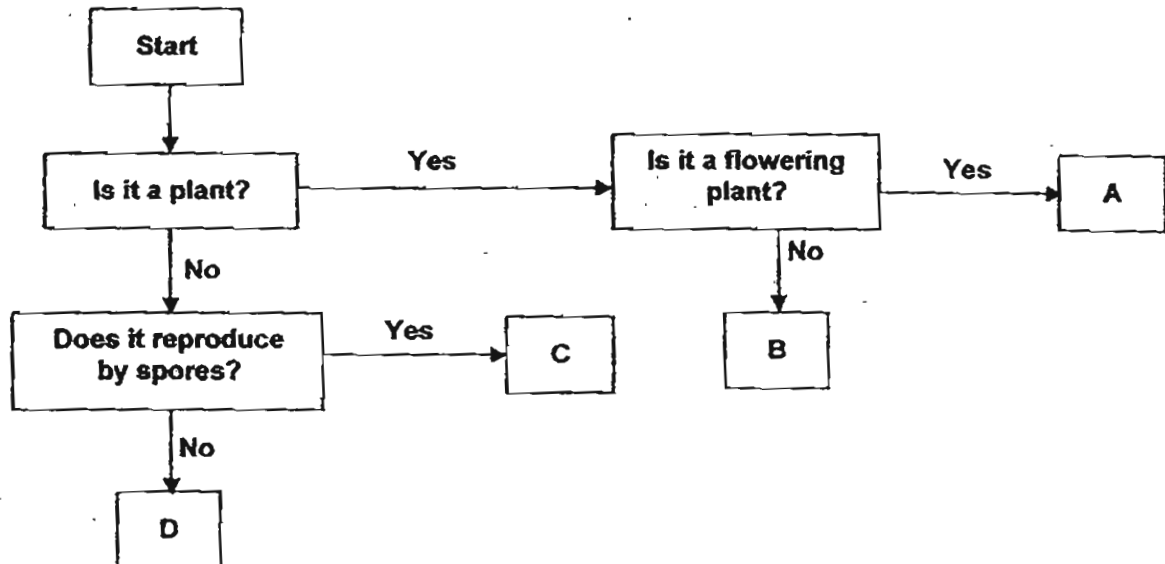
5 In which one of the following will the two magnets push each other away?



6 Which one of the following is the best conductor of heat?

- (1) A paper plate
- (2) A metal plate
- (3) A plastic plate
- (4) A wooden plate

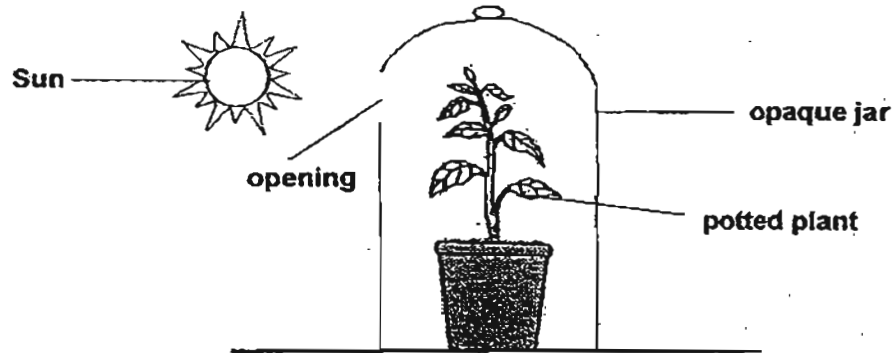
7 Study the flowchart below.



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

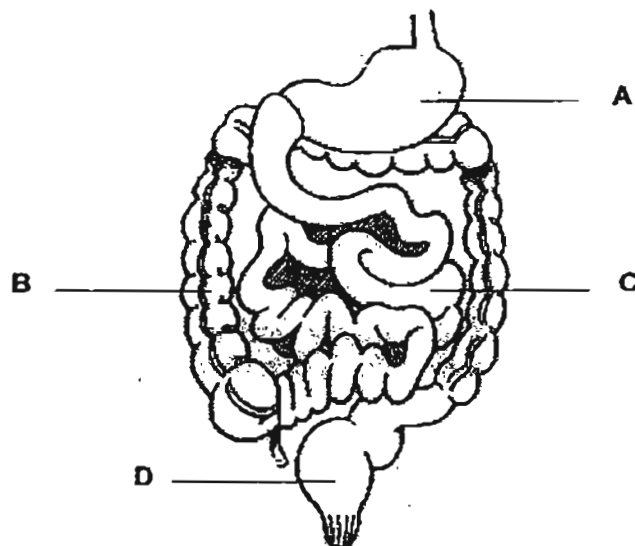
	A	B	C	D
(1)	Mushroom	Balsam	Bacteria	Hibiscus
(2)	Balsam	Mushroom	Toadstool	Bacteria
(3)	Birds nest fern	Hibiscus	Bacteria	Toadstool
(4)	Hibiscus	Bird nest fern	Toadstool	Bacteria

- 8 Albert placed a plant in a black-coloured opaque jar.



A few days later, he noticed that the plant was leaning towards the opening in the jar as shown above. What can Albert conclude about the plant based on his observation?

- A It is able to reproduce.
 - B It needs water to survive.
 - C It needs sunlight to survive.
 - D It is able to respond to changes.
- (1) A and B
 - (2) C and D
 - (3) A, B and C
 - (4) A, B, C and D
9. The diagram below shows part of the human digestive system.



In which part, A, B, C or D, is digested food absorbed into the bloodstream?

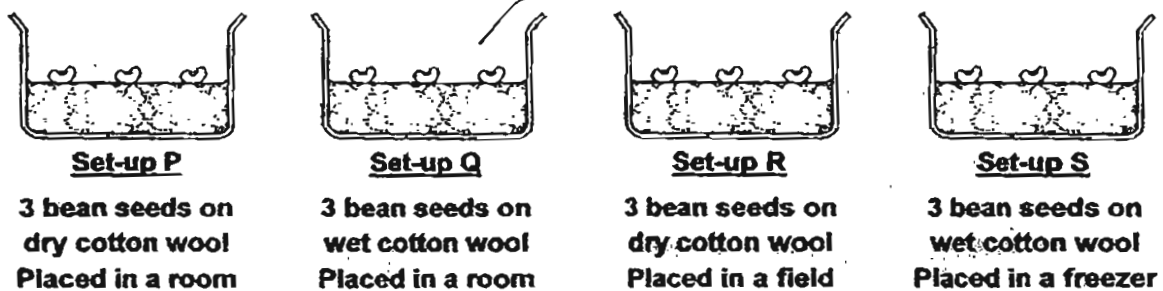
- (1) A
- (2) B
- (3) C
- (4) D

- 10 The diagram below shows how a leaf on a plant changed over a period of time.



The change in the leaf was caused by a butterfly in one of its stages. Which stage was it?

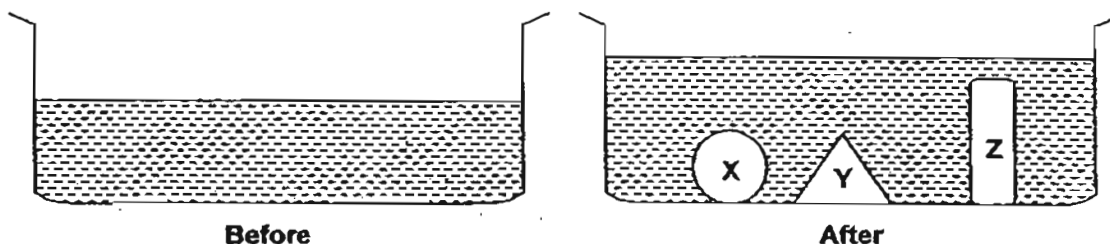
- (1) egg
 - (2) larva
 - (3) pupa
 - (4) adult
- 11 The diagram below shows 4 set-ups using similar types of beans and containers.



In which set-up will germination take place?

- (1) P
 - (2) Q
 - (3) R
 - (4) S
- 12 Steve compared the life cycle of a butterfly and a mosquito. He then listed the similarities between the two life cycles. Which one of his statements is incorrect?
- (1) They both lay eggs.
 - (2) They have the same number of stages.
 - (3) Their young look different from their adult
 - (4) At stage 3 of their life cycles, the young eats a lot.

- 13 Charlie dropped three objects (X, Y and Z) into a tank of water as shown in the diagram below.



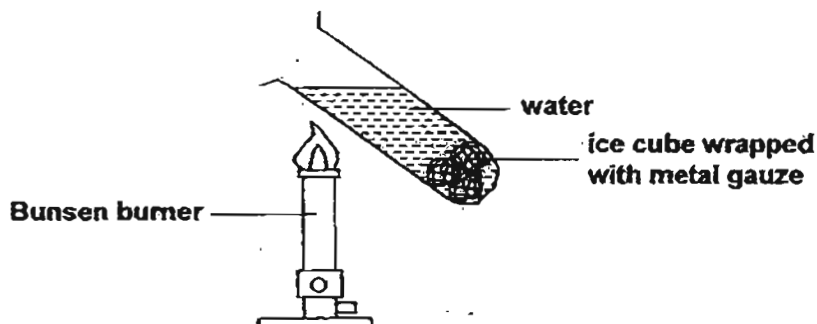
Based on the diagram, he made a few conclusions.

- A The 3 objects have the same mass.
- B The 3 objects have a definite volume.
- C The 3 objects have the same volume.
- D The 3 objects do not have a definite volume.

Which of his conclusions is/are true?

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

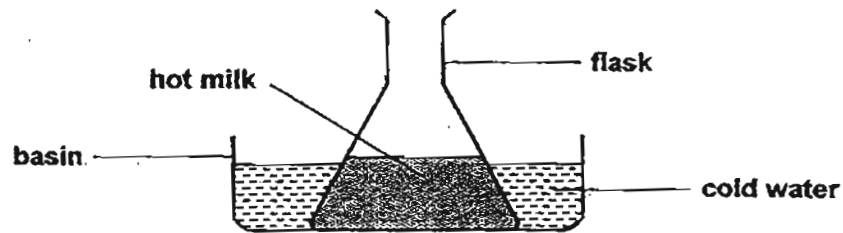
- 14 Jenson conducted an experiment as shown below.



After a minute, he noticed that the ice cube in the test tube did not melt completely. What can Jenson conclude from this experiment?

- (1) Water is a poor conductor of heat.
- (2) The Bunsen burner flame is too strong.
- (3) The metal gauze is a poor conductor of heat.
- (4) The Bunsen burner flame helps to slow down the melting of the ice cube.

- 15 Jordan poured some hot milk into a flask and placed it in a basin of cold water as shown in the diagram below.



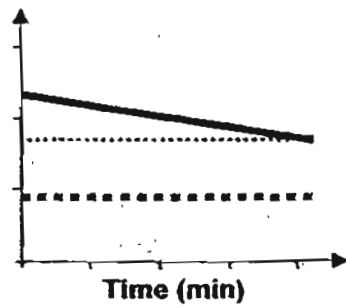
He then plotted a graph to show the temperatures of the milk and water over a period of time.

Which of the graphs below shows the correct temperature changes of the milk and water after some time?

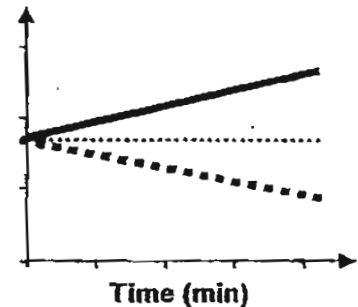
Legend

room temperature	
water	
milk	———

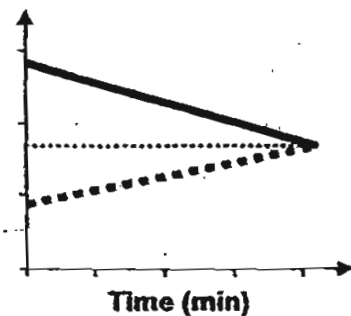
(1) Temperature ($^{\circ}\text{C}$)



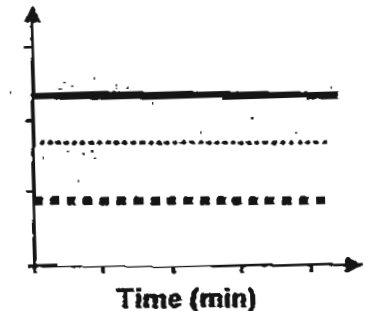
(2) Temperature ($^{\circ}\text{C}$)



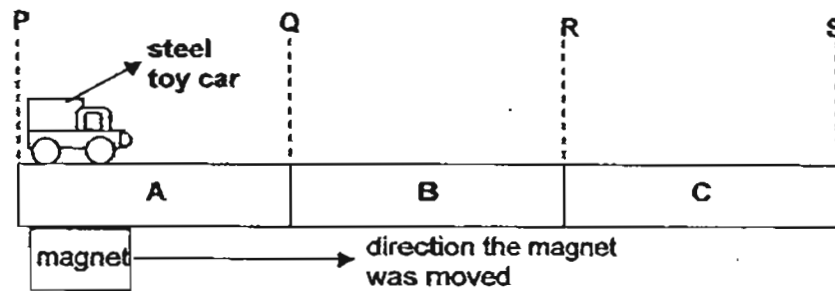
(3) Temperature ($^{\circ}\text{C}$)



(4) Temperature ($^{\circ}\text{C}$)



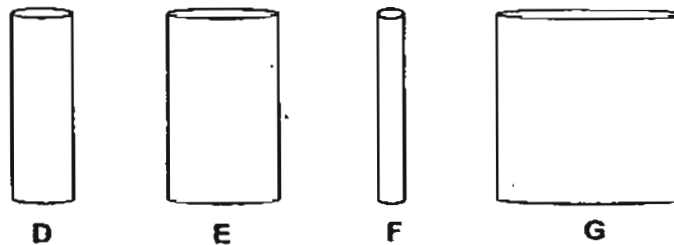
- 16 Aziz placed a steel toy car on a board made from three different materials, A, B and C, which were glued together. He used a magnet to move the toy car from point P to point S. However, the toy car came to a stop at point R.



What could materials A, B and C be made of?

	A	B	C
(1)	nickel	steel	glass
(2)	copper	iron	plastic
(3)	glass	nickel	copper
(4)	copper	plastic	nickel

- 17 Peter had four magnets (D, E, F and G) as shown below.



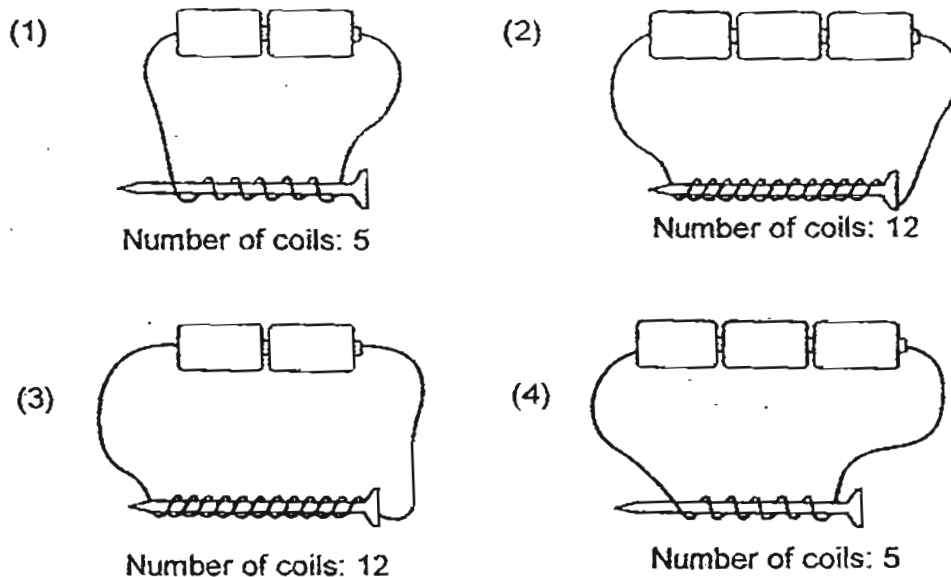
To compare the strength of the magnets, he brought each of them near a pile of pins. The table below records the number of pins attracted by the four magnets.

Magnet	Distance between magnets and pins (cm)	Number of pins attracted
D	4	18
E	4	16
F	4	11
G	4	13

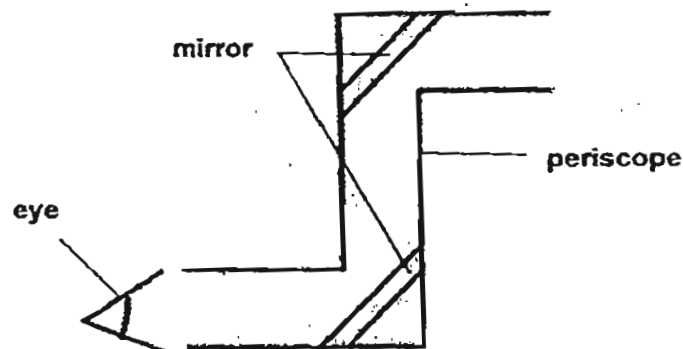
Which of the following statements is correct?

- (1) Magnet G is weaker than magnet F.
- (2) Magnet G is as strong as magnet E.
- (3) Magnet D is stronger than magnet E.
- (4) All the magnets are of the same strength.

- 18 Which one of the following electromagnets is able to attract the greatest number of paperclips?



- 19 The diagram below shows a periscope.

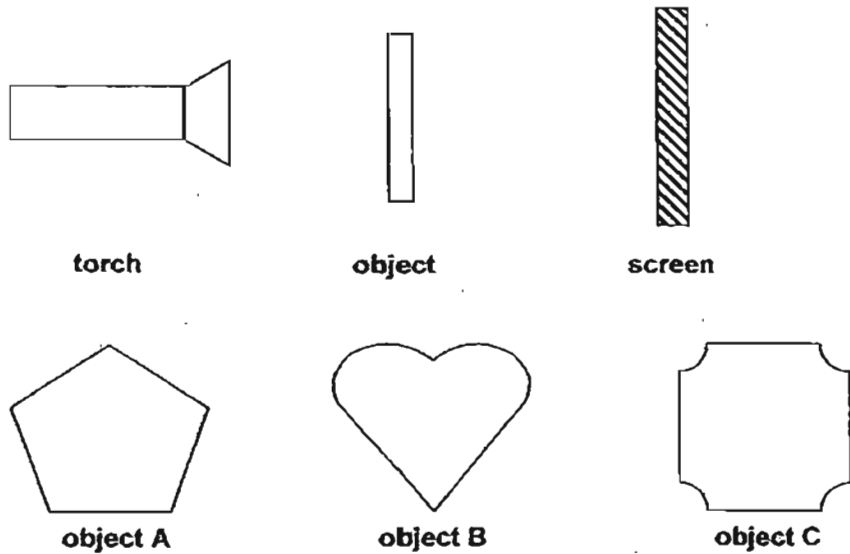


Which of the following statements about light correctly describes why we can see the image of an object through a periscope?

- A Light can bend.
- B Light can be reflected.
- C Light travels in a straight line.
- D Light is given out by all objects.

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

- 20 Sam placed object A in between a light source and a screen. He repeated the experiment with objects B and C.



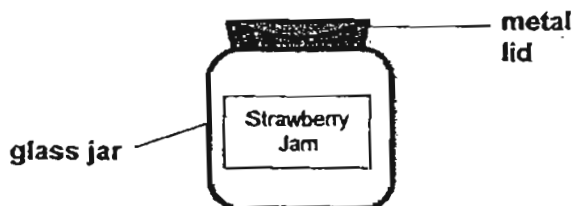
He recorded what he observed on the screen in the table below.

object A	object B	object C

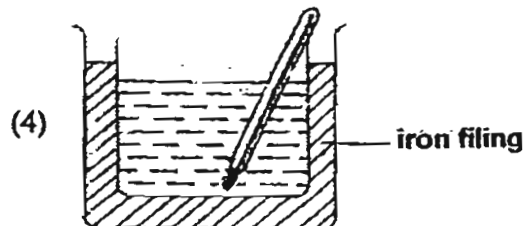
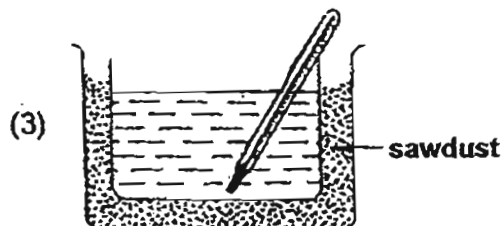
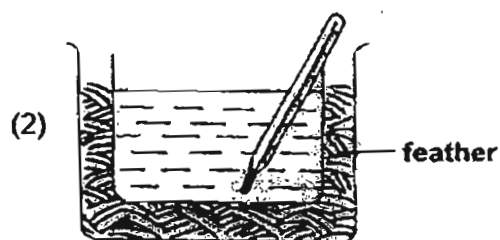
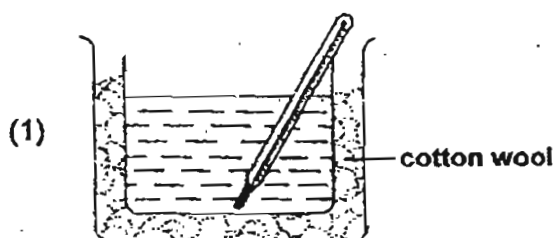
Which of the following statements explain his observations?

- A The path of light is blocked by object A
 - B The path of light is not blocked by object B.
 - C Object A allows light to pass through while object B does not.
 - D Object A allows light to pass through while object C only allows some light to pass through.
- (1) A and B only
 (2) B and C only
 (3) C and D only
 (4) A, C and D only

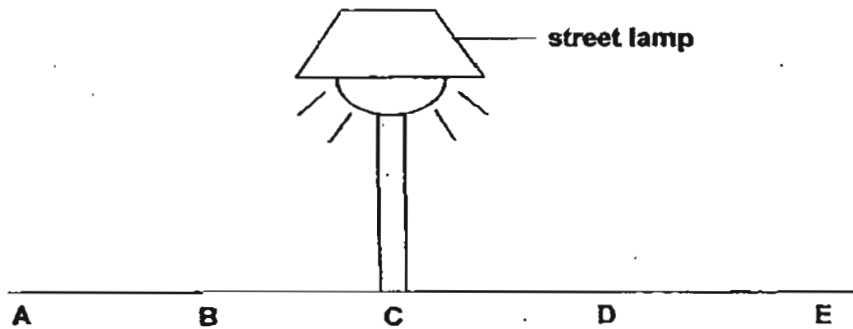
- 21 Ali tried to open the metal lid of a jar of strawberry jam which he had just removed from the refrigerator. He found it hard to open the lid. Which of the following explains why this is so?



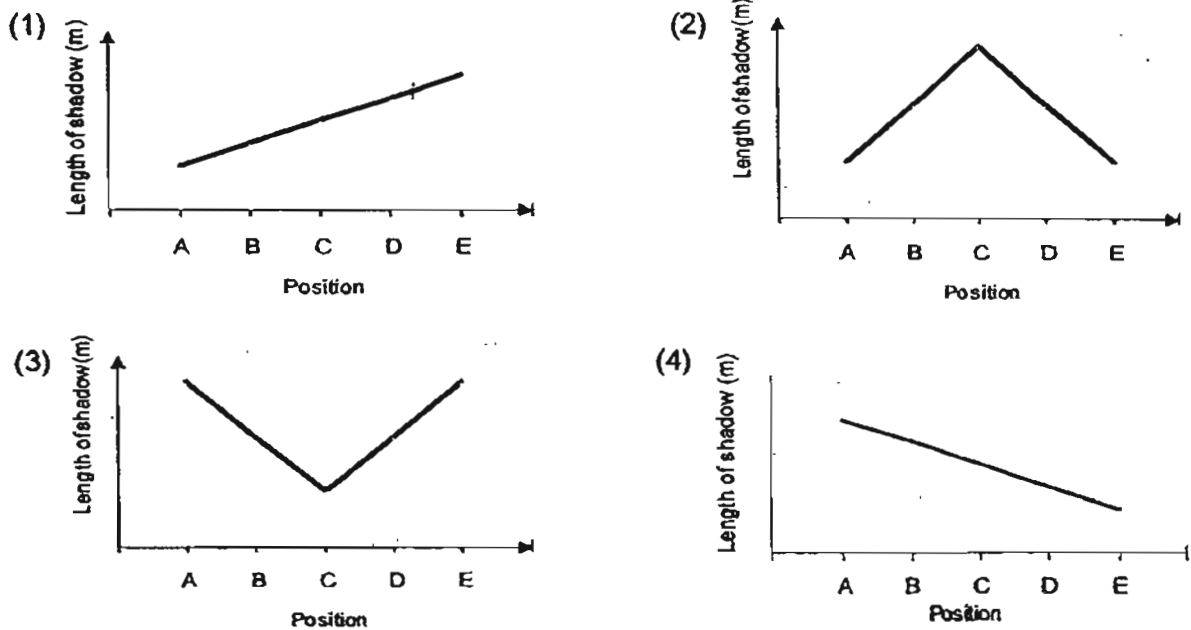
- (1) The metal lid expanded more than the glass jar.
 - (2) The metal lid contracted more than the glass jar.
 - (3) The glass jar expanded more than the metal lid.
 - (4) The glass jar contracted more than the metal lid.
- 22 Paul placed some ice on a metal tray. After a while, he observed that the metal tray felt cold to his touch and the ice melted. He made some conclusions. Which of his conclusions is incorrect?
- (1) The ice gained heat from the metal tray and melted.
 - (2) The ice gained heat from the surrounding air and melted.
 - (3) The metal tray felt cold because heat was conducted away from Paul's hands.
 - (4) The metal tray felt cold because heat from the ice was conducted to the metal tray.
- 23 An equal amount of hot water was poured into 4 identical beakers. Each beaker was then put into a larger beaker which contained a different substance between the beakers. In which beaker would the temperature of water be the lowest after 10 minutes?



- 24 Anthony walked past a lighted street lamp from point A to E one night.



Which of the following graphs best represents the changes in Anthony's shadow as he walked from point A to E?



- 25 We feel cool in an air-conditioned room because our body is _____.

- (1) too hot
- (2) losing heat
- (3) gaining heat
- (4) not producing heat

**ANGLO-CHINESE SCHOOL
(JUNIOR)**



**SEMESTRAL ASSESSMENT 2 (2011)
PRIMARY 4**

SCIENCE

BOOKLET B

Tuesday

01 November 2011

1 hour 30 minutes

Name : _____ ()

Class : P4 _____

INSTRUCTIONS TO PUPILS

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

Follow all instructions carefully.

There are 14 questions in this booklet.

Answer ALL questions.

INFORMATION FOR PUPILS

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

The total marks for this booklet is 40.

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

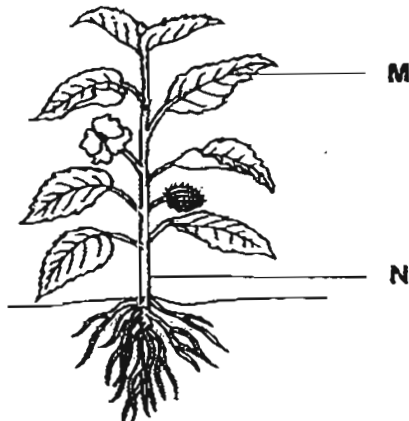
This question paper consists of 12 printed pages. (Inclusive of cover page)

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

Section B (40 marks)

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

26 The diagram below shows a plant.

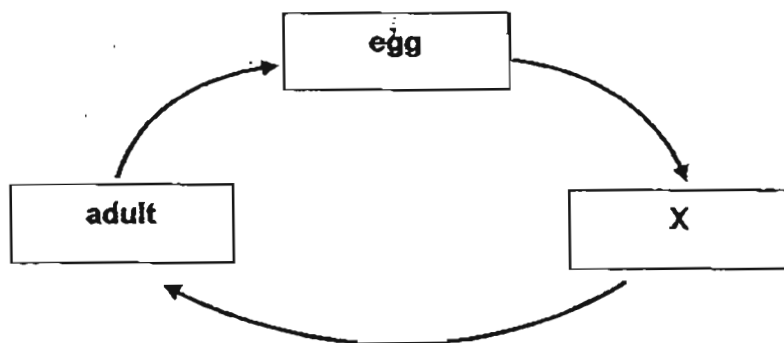


(a) Label plant part N. [1]

N : _____

(b) Name one substance that part M needs in the process of making food. [1]

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



(a) Choose the words from the box to answer the question below.

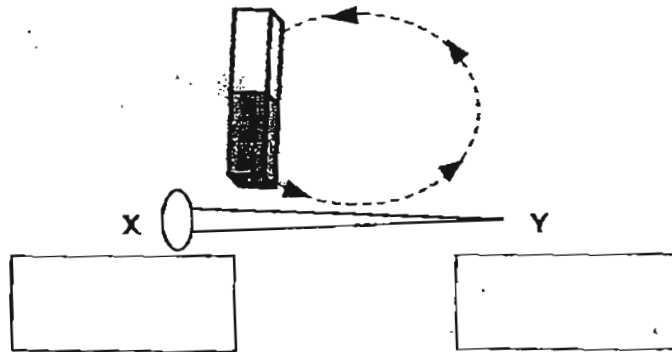
larva	pupa	caterpillar	nymph
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Name stage X. [1]

X : _____

(b) Which animal is likely to have the life cycle shown above? [1]

- 28 Sui Mei used a magnet to magnetise an iron nail in the direction as shown in the diagram below.

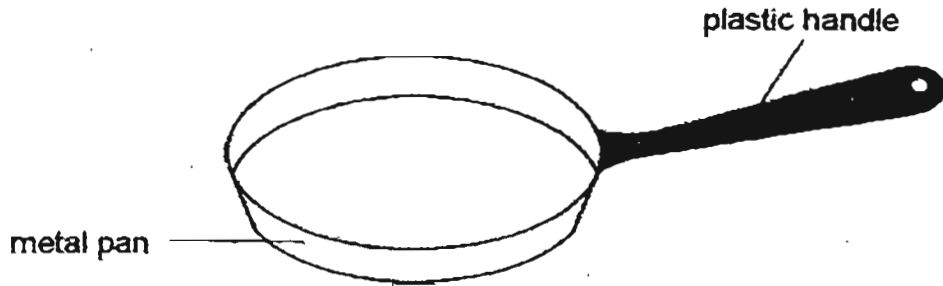


- (a) Write 'North' or 'South' in the boxes to indicate the poles at X and Y. [1]

- (b) Besides the stroke method, describe another method of making a temporary magnet. [1]

- (c) State a way a permanent magnet can lose its magnetism. [1]

29 The diagram below shows a frying pan.



- (a) The handle is made of plastic because it is a _____ conductor of heat. [1]
- (b) The pan is made of metal because it is a _____ conductor of heat. [1]
- (c) Name another material that is suitable to make the handle of the frying pan. [1]

30



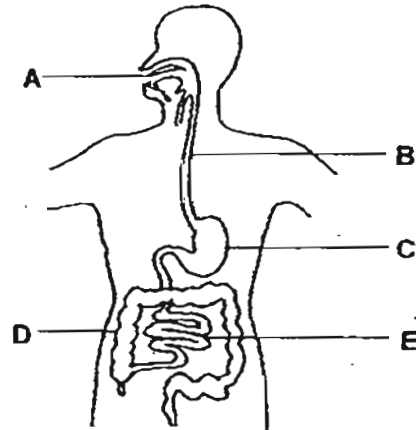
raincoat

- (a) The diagram above shows a raincoat. State a man-made material that can be used to make a raincoat. [1]

- (b) State 2 properties of the material which are suitable for making a raincoat. [2]

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- 31 The diagram shows the human digestive system.



Match the alphabets (A, B, C, D or E) to the correct statements.

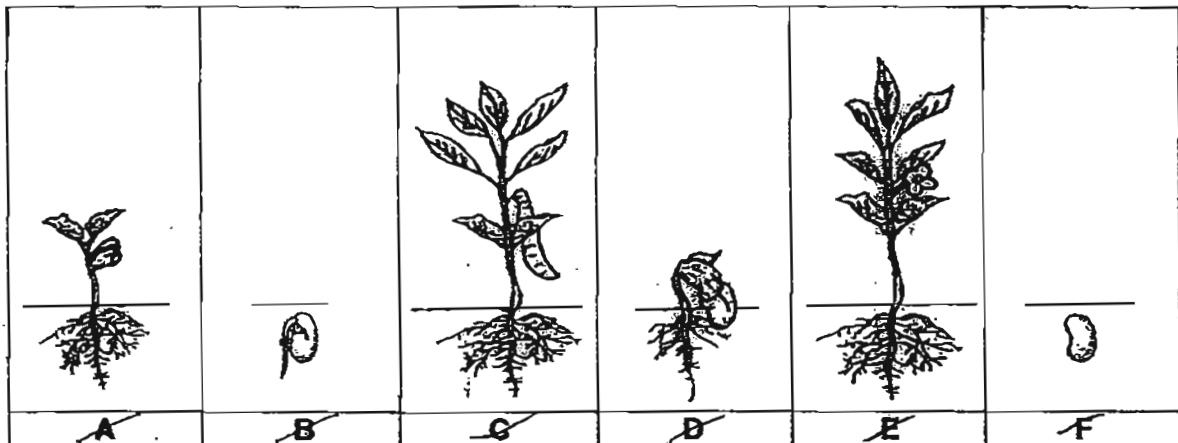
[3]

This is where the food is mixed with other digestive juices and becomes something that looks like a thick soup.

At this point, water and some mineral salts are absorbed.

This is where food first mixes with saliva so that it is soft enough to be swallowed.

- 32 The diagram below shows the different stages of the growth of a bean plant.



- (a) Arrange the growth of the bean plant in the correct order.

[1]

E → → → → →

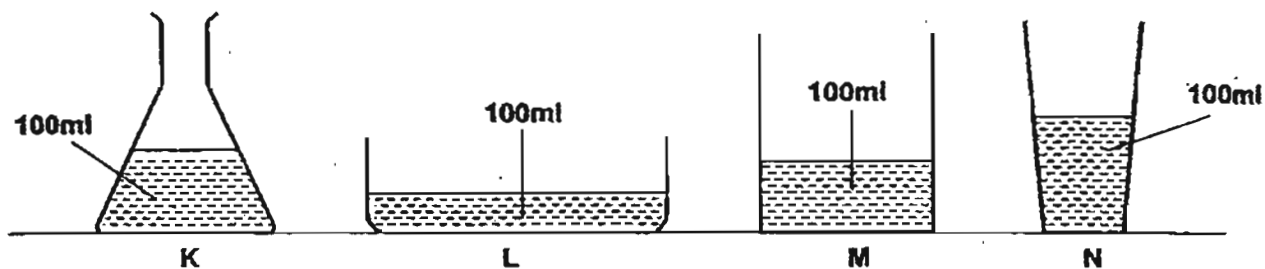
- (b) Based on the diagram above, at which stage(s) of the growth, can the plant make its own food?

[1]

- (c) What are the conditions needed for germination to take place?

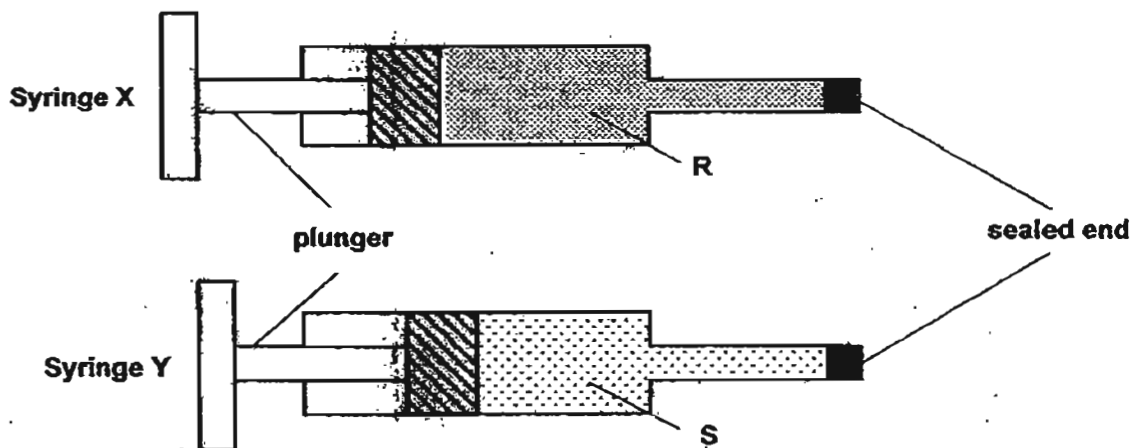
[1]

- 33 Jason poured 100ml of liquid into 4 different containers of different shapes and sizes as shown below.



- (a) Besides taking up space, state another property of a liquid based on the observation above. [1]

In another experiment, Jason filled two similar syringes, X and Y, with substances R and S respectively and then sealed the ends of the syringes. He then tried to push the plunger in each syringe. The plunger in syringe X could not be pushed in while the plunger in syringe Y could be pushed in slightly as shown below.



- (b) Name the possible substances that could be R and S. [2]

R: _____

S: _____

34 Sean carried out an experiment with 4 different types of balls as shown below.

			
a styrofoam ball	a bowling ball	a soccer ball	a marble

He randomly placed each ball into 4 different identical boxes, P, Q, R and S. He then arranged them in the 3 different set-ups as shown below.

Set-up 1	Set-up 2	Set-up 3
		

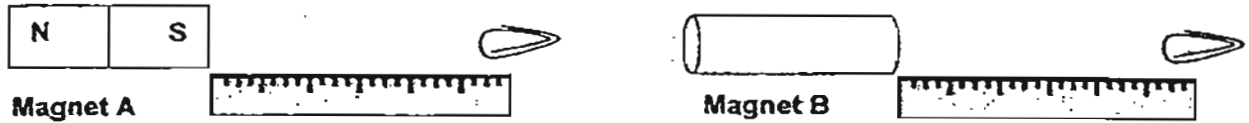
- (a) Based on the result of his experiment, arrange the boxes (P, Q, R and S) according to their masses. Write the letters of the boxes in the space below. [1]

Heaviest Lightest

- (b) From the experiment above, which box (P, Q, R or S) most likely had the styrofoam ball? [1]

- 35 Tom was given a bar magnet and a rod magnet. He placed the bar magnet at one end of the ruler and slowly pushed a paper clip towards it until the paper clip was attracted to the magnet. He repeated the experiment with the rod magnet.

Before



After



- (a) What must Tom measure to find out which is a stronger magnet? [1]

- (b) What would Tom observe if he replaced the magnet with a glass rod and repeated the experiment? [1]

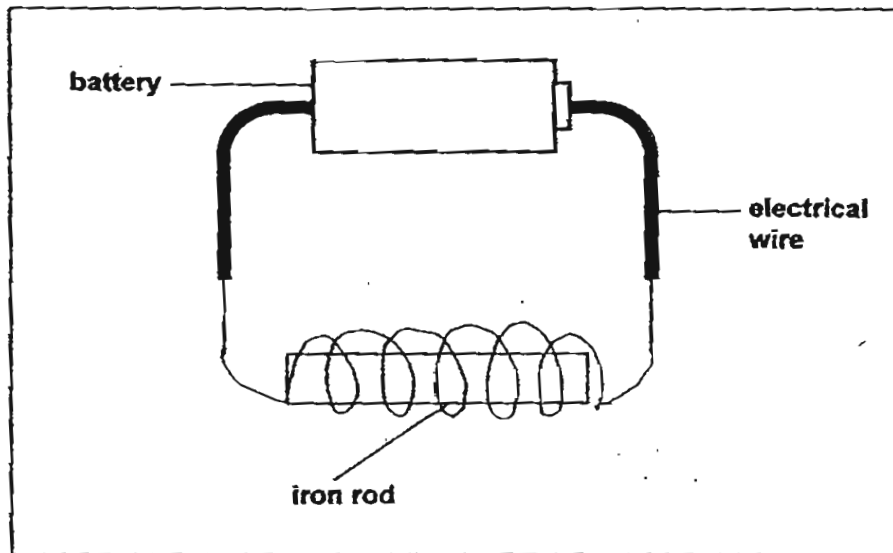
- (c) Using only the bar and rod magnets and a pile of paper clips, describe another method that Tom can use to find out which is the stronger magnet. [1]

- (d) Based on your answer in (c), state what Tom should observe. [1]

100h

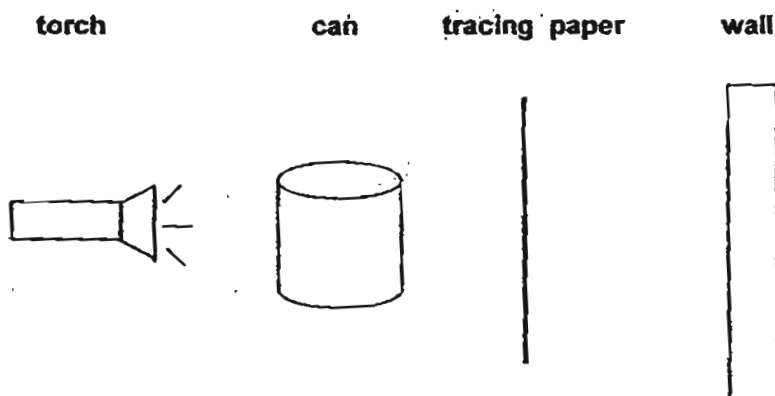
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- 36 Alvin was given the following incomplete set-up for an electromagnet.

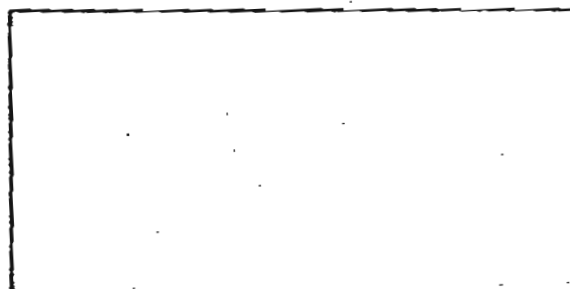


- (a) Complete the diagram above to make the iron rod into an electromagnet. [1]
- (b) Suggest two ways to increase the magnetic strength of the iron rod. [2]

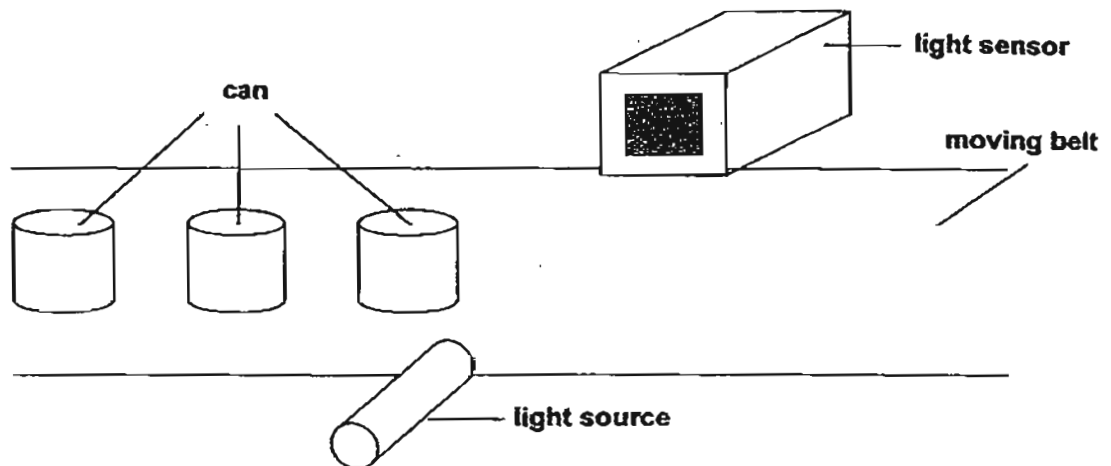
- 37 Aaron set up the experiment as shown and a shadow was formed on a smooth wall.



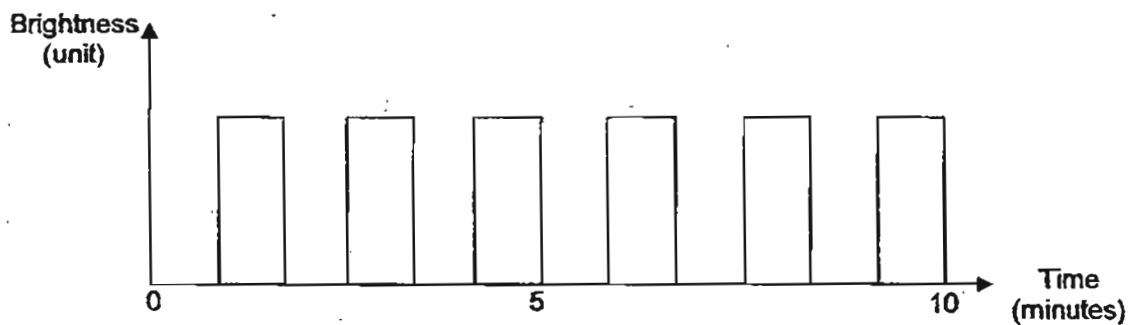
- (a) Draw the shadow that is formed on the wall. [1]



- (b) Aaron set up a light sensor to count the number of identical cans on a moving belt.



The belt moves at the same speed. As the cans pass between the light source and the sensor, they block light from reaching the sensor. The data recorded is shown in the graph below.

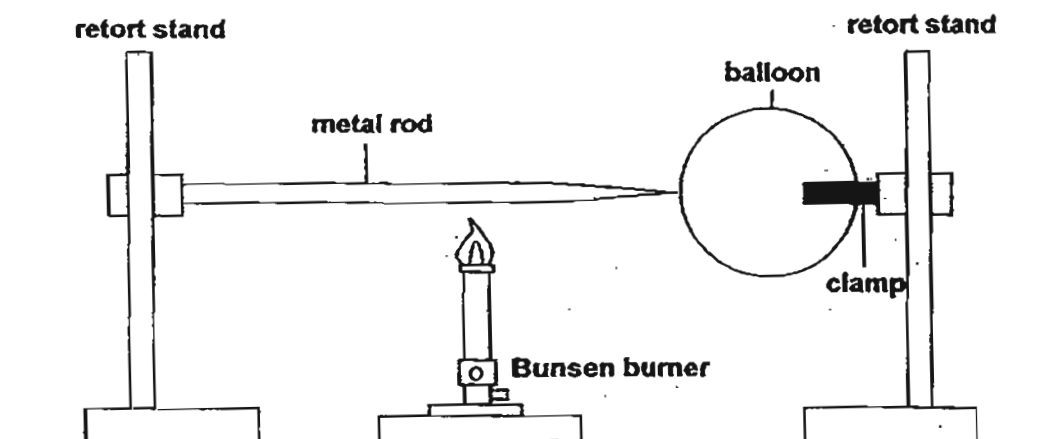


- (i) How many cans could be counted in 10 minutes? [1]

- (ii) Based on Aaron's experiment, state the property of light that was used. [1]



- 38 Sundram set up the experiment below and heated the metal rod as indicated in the diagram.

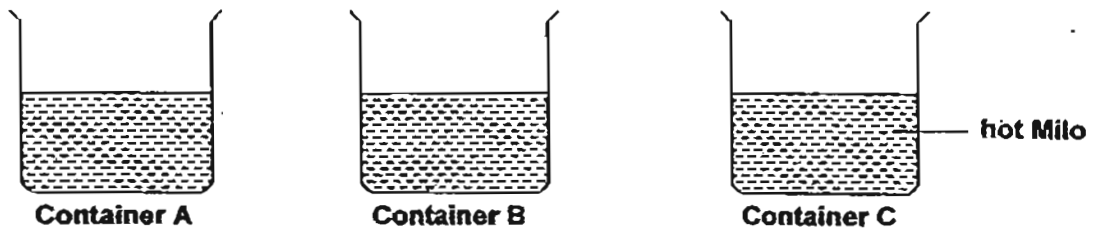


- (a) What will happen to the balloon when the metal rod is heated for 5 minutes? Explain your answer. [2]

- (b) Sundram changed the metal rod to a ceramic rod and repeated the experiment. After 5 minutes, nothing happened to the balloon. Why? [1]



- 39 Fazli wants to conduct an experiment to find out which container could best keep a hot Milo warm. He set up the experiment as shown below.



- (a) Complete the table by ticking (✓) the variables that are to be kept the same.

[1]

Variables	Keep the same
Size of container	
Volume of hot Milo	
Material of container	
Temperature of hot Milo	
Size of opening of container	

- (b) What should he measure after 10 minutes to reach a conclusion?

[1]

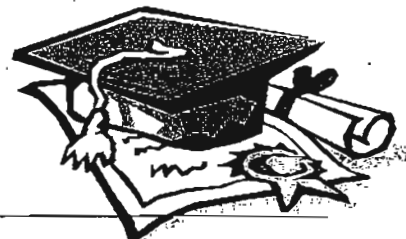
- (c) How can he tell which container is most suitable for keeping the hot Milo warm? [1]



ANSWER SHEET

EXAM PAPER 2011

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
3	4	4	2	4	2	4	2	3	2	2	4	1	1	3	4	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25
2	3	3	2	4	4	3	2

26)a)N: stem
b)Sunlight

27)a)X: nymph
b)It is most likely to be a cockroach.

28)a)X: North Y: South
b)We can also make an electromagnet.
c)By dropping a magnet many times, it can lose its magnetism.

29)a)poor
b)good
c)Another material that is suitable to make the handle of the frying pan is rubber.

30)a)It could be plastic.
b)It has to be flexible and waterproof.

31)CDA

32)a)E→C→F→D→A
b)A,C and E.
c)Air, water and warmth.

33)a)It has no definite shape.
b)R: Water
S: Air

34)a)Q,P,S,R
b)Box R is most likely to be the Styrofoam ball.

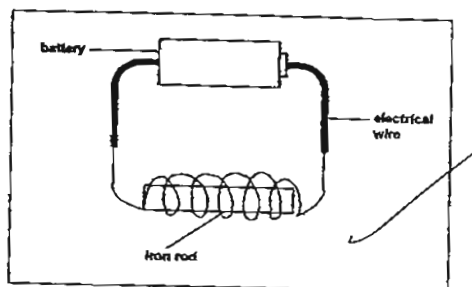
35)a)He must measure distance between the magnet and the paper clip, when the paper clip is being attracted to the magnet.

b)He would observe that no matter how close the paper clip is to the glass rod, it will not be attracted to it.

c)He could dip the magnets in the pile of paper clip, the magnet with the more paper clips attached to it is the stronger magnet.

d)The magnet with more paper clips attracted to it is the stronger magnet.

36)a)



b)He should increase the number of coils around the iron rod and he should add a few more batteries to increase the magnetic strength of the iron rod.

37)a)



b)i)6 cans should have been counted after 10 minutes.

ii)Light travels in straight lines.

38)a)It will burst. It will burst as the metal rod expands thus the sharp end of the metal rod will expand and will poke a hole in the balloon, causing it to burst.

b)Ceramic is a poor conductor of heat thus it will take longer to expand as much as the metal rod and will not be able to expand enough to burst the balloon in 5 minutes.

39)a)Size of container

Volume of hot Milo

Temperature of hot Milo

b)After 10 minutes container C will still be hot than the other two containers when u touch them.

c)He can tell as one containers hot Milo will be hotter than the rest thus the container with the hottest Milo is the most suitable for keeping the hot Milo warm.