RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (2)
2013

Name : _____ Index No: ___Class: P4__

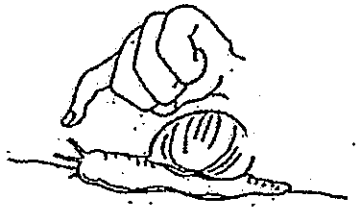
21 October 2013 **SCIENCE** **Att: 1 h 30 min**

Section A	/50
Section B	/40
Your score out of 90	
Parent's signature	

SECTION A (25 x 2 marks)

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

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



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

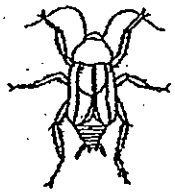
(1) grow

(2) respond

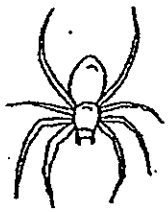
(3) breathe

(4) reproduce

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

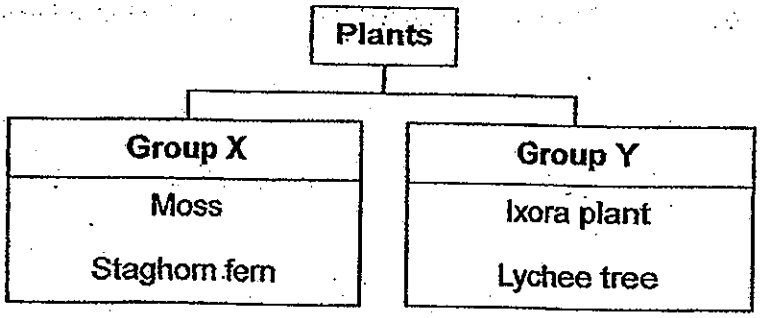
(1) 

(2) 

(3) 

(4) 

3. Study the classification table shown below.



Which of the following **best describe** how the plants are grouped?

	X	Y
(1)	Fungi	Plants
(2)	Water	Land
(3)	Non-poisonous	Poisonous
(4)	Non-flowering	Flowering

4. Which of the following animal(s) has/have young that looks completely different from the adult?

A: mosquito

B: grasshopper

C: frog

D: cockroach

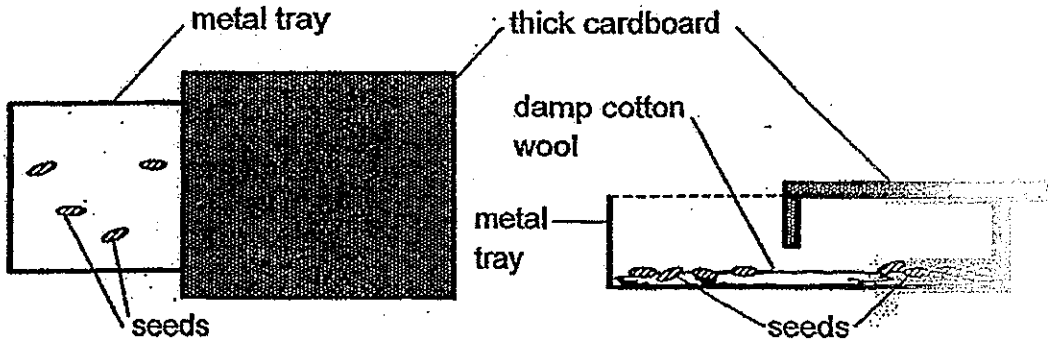
(1) C only

(2) B and D only

(3) A and C only

(4) B, C and D only

5. Ali set up an experiment as shown in the diagrams below.



Top view **Side view**

He planted eight seeds in a metal tray of damp cotton wool. He then covered one half of the metal tray with a piece of thick cardboard and left his set-up near a window.

Ali was trying to find out whether seeds need _____ to germinate.

(1) air

(2) water

(3) warmth

(4) sunlight

6. Ali, Ben, John and Peter each gave a reason below to explain why the seeds they planted did not germinate.

Ali : My seeds did not have enough warmth.

Ben : My seeds did not receive any water.

John : My seeds were left in the dark cupboard.

Peter : My seeds were not given enough fertilisers.

Whose reason(s) is/are possible to explain why the seeds he/they planted did not germinate?

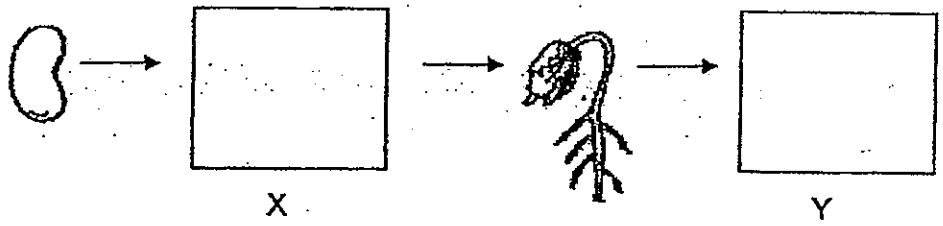
(1) Peter only

(2) Ben and John only

(3) Ali and Ben only

(4) Ali, Ben, John and Peter

7. The diagram below shows the growth of a young plant with two missing stages X and Y.



which one of the following shows the correct stages for X and Y?

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

8. Which of the following statements about our body system is incorrect?

(1) The anus is part of the digestive system.

(2) The rib cage protects the lungs and the stomach.

(3) The muscular system works together with the skeletal system to help the body move.

(4) The circulatory system helps to transport oxygen, digested food and water to all parts of the body.

9. The diagram below shows a young plant

The leaf helps the plant to _____.

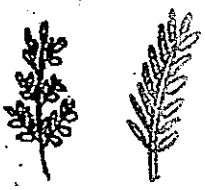
(1) absorb nutrient

(2) absorb water

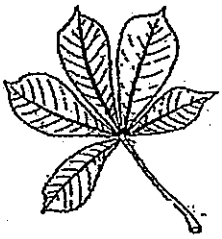
(3) grow upright

(4) make food

10. Study the groups of leaves below carefully.

Group A	Group B	Group C	Group D
			

In which group would you place leaf X?



leaf X

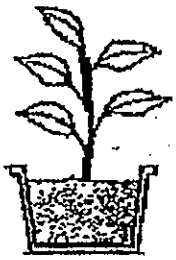
(1) Group A

(2) Group B

(3) Group C

(4) Group D

11. James wanted to find out whether the amount of light affects the growth of the plant.
He put four similar plants into 4 identical pots.
He gave each plant an equal amount of water every day.

			
Plant W In the field	**Plant X** In the store room	**Plant Y** In the store room	**Plant Z** In the field

Which two plants above should he use to make the experiment a fair one?

(1) W and Z

(2) X and Y

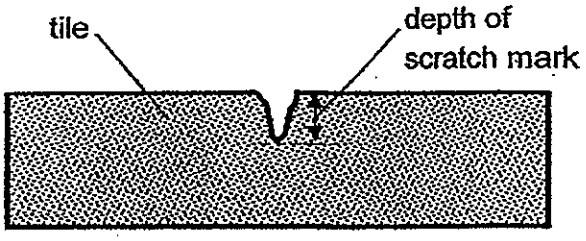
(3) Y and Z

(4) X and Z

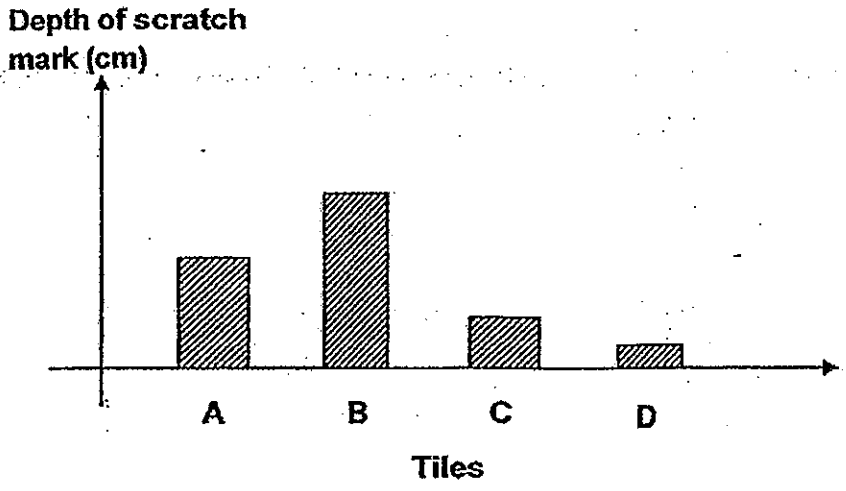
12. Tom wanted to compare the hardness of four different tiles, A, B, C and D.

He scratched each tile once with a metal rod using the same amount strength.

He measured the depth of the scratch mark made by the metal rod as shown below.



He then drew a bar graph to show the depth of the scratch mark left on the tile.



Based on the result above, which tile is the hardest?

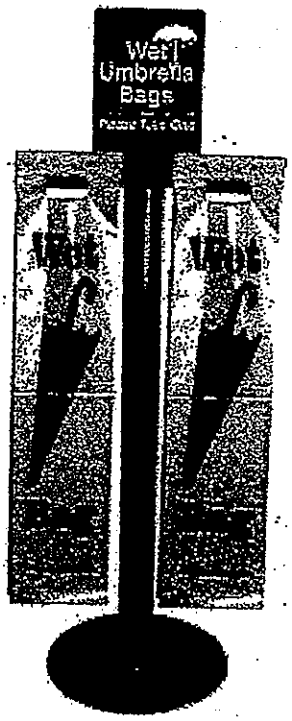
(1) A

(2) B

(3) C

(4) D

13. To keep the floor dry in a building on rainy day, people entering the building are to keep their wet umbrellas in umbrella bags placed at the entrance of the building shown in the diagram below.



What are the **two** most important properties the umbrella bags must have to best serve this purpose?

A : Light

B : Flexible

C : Waterproof

D : Able to float

(1) A and B only

(2) A and D only

(3) B and C only

(4) C and D only

14. Which one of the following substances has a fixed shape?

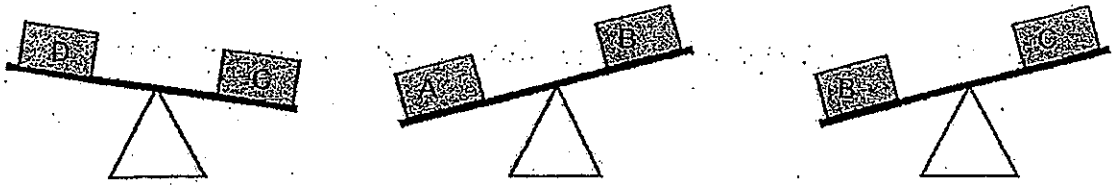
(1) air

(2) oil

(3) stone

(4) water

15. Study the diagrams below carefully.



Arrange the objects, A, B, C and D, according to their mass, from the heaviest to the lightest.

	heaviest ⟶ lightest			
(1)	A	B	C	D
(2)	B	C	D	A
(3)	C	B	A	D
(4)	D	C	B	A

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

(1) 

an orange

(2) 

a moon

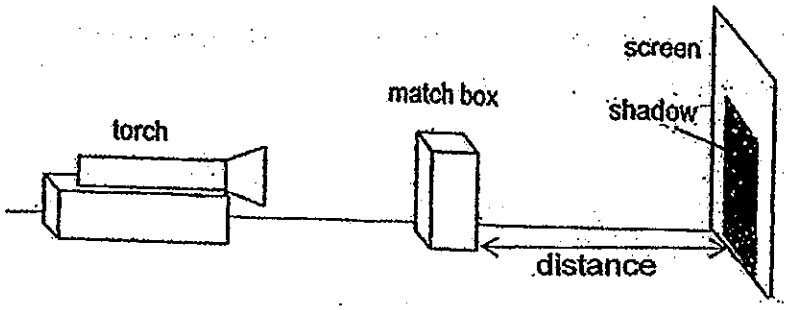
(3) 

a candle flame

(4) 

a leaf

17. Roy set up the experiment as shown in the diagrams below.



He carried out the experiment four times using the distance between the match box and the screen as shown in the table below.

Distance between the match box and the screen (cm)	Shadow
15	A
20	B
5	C
10	D

Roy also recorded the size of the corresponding shadows cast on the screen.

Arrange the shadows of the match box formed on the screen from the smallest to biggest in ascending order according to their sizes.

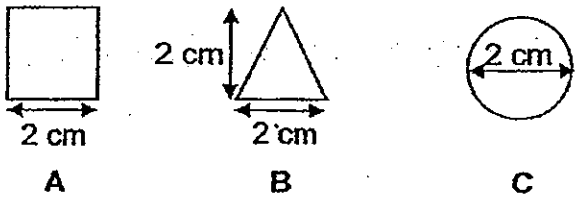
(1) A, B, C, D

(2) B, A, D, C

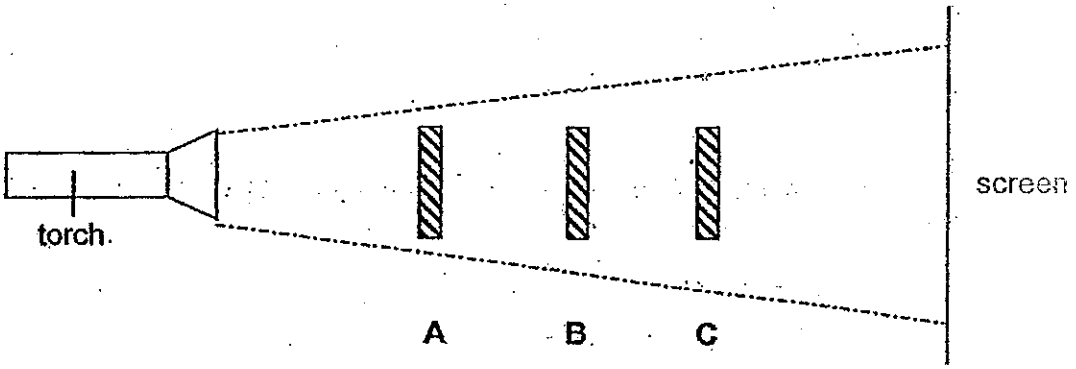
(3) C, D, A, B

(4) D, C, B, A

18. The diagram below shows three pieces of wood, A, B and C, in the shapes of a square, a triangle and a circle respectively.

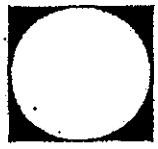


The three pieces of wood are placed in front of a torch as shown in the diagram below.

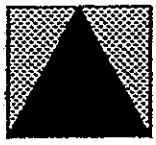


Side view of the set up

Which one of the following shows how the shadow would look like on the screen?

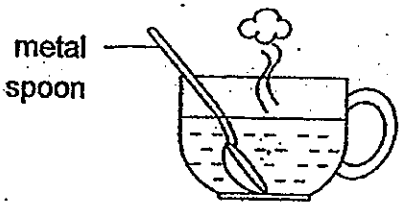
(1) 

(2) 

(3) 

(4) 

19. Ronald placed a metal spoon in the hot tea.



a cup of hot tea

The spoon became hotter after a while.

Which one of the following explains this ?

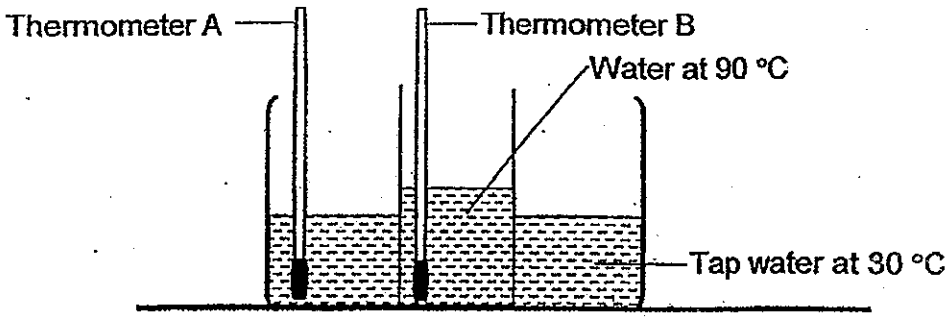
(1) The cup lost heat to the hot tea.

(2) The hot tea gained heat from the spoon.

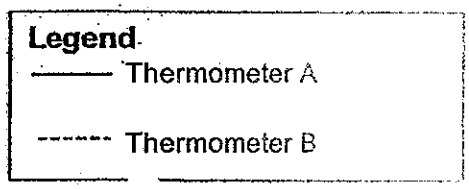
(3) The spoon gained heat from the hot tea.

(4) The spoon lost heat to the hot tea.

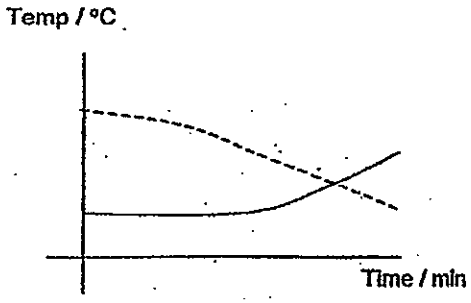
20. Jason set up the apparatus as shown in the diagram below.
He placed the thermometers in two water containers and left the apparatus on the science laboratory table.
He recorded the readings of the thermometers every 10 minutes for 2 hours.
He plotted his results on a graph.



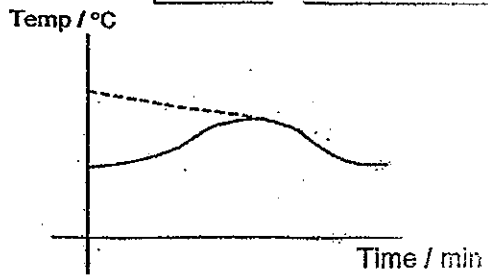
Which one of the graphs below correctly shows Jason's results?



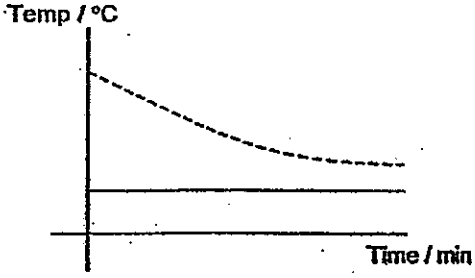
(1)



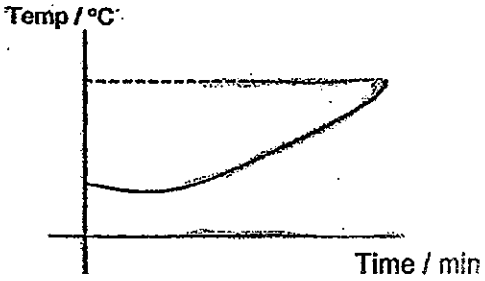
(2)



(3)

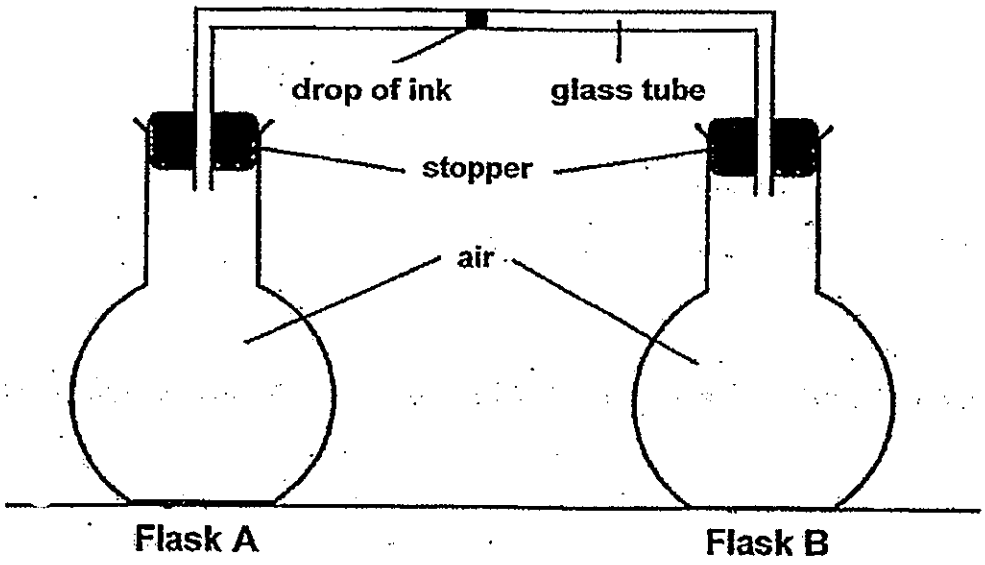


(4)



21. The diagram below shows two flasks, A and B, containing air.

The flasks are connected by a glass tube and there is a drop of ink in the tube as shown in the diagram below.



Which one of the following methods will cause the drop of ink to move towards flask B?

(1) Place each flask in a basin containing ice.

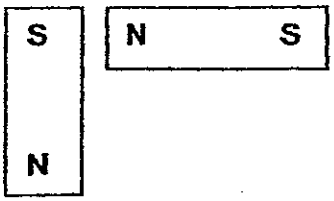
(2) Place Flask A in a basin containing hot water.

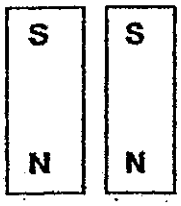
(3) Place Flask B in a basin containing hot water.

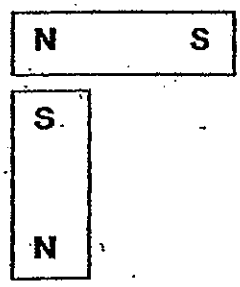
(4) Place each flask in a basin containing hot water at the same temperature.

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

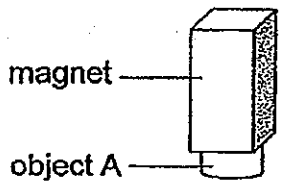
(1) 

(2) 

(3) 

(4) 

23. An object A was attracted to a magnet as shown in the figure below.



Object A is made of _____.

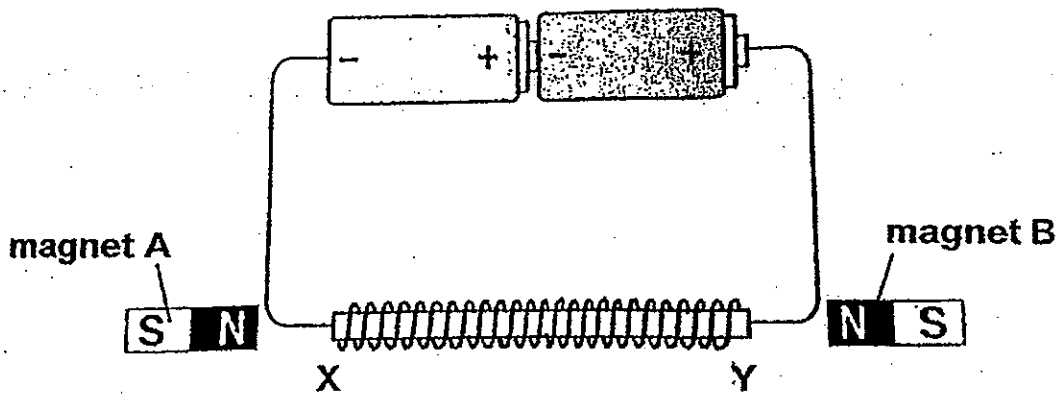
(1) plastic

(2) rubber

(3) steel

(4) wood

24. Siti magnetised an iron rod by placing it inside a coil of wire connected to some batteries as shown in the diagram below.

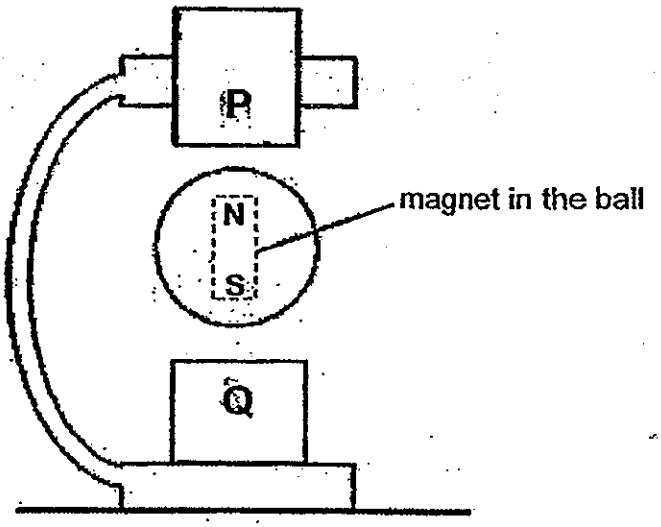


She observed that magnet A is attracted towards the iron rod at point X, while magnet B is repelled from the iron rod at point Y.

Based on Siti's observation, what can she conclude about the pole at Point X and Y of the iron bar when it was magnetised?

	Point X	Point Y
(1)	North	South
(2)	North	North
(3)	South	North
(4)	South	South

25. The diagram below shows a toy that makes use of magnets.
A ball with a magnet in it floats in between two magnets at point P and Q.



How should the magnets be placed at point P and point Q for the ball to float?

	Point P	Point Q
(1)	N S	N S
(2)	S N	N S
(3)	N S	S N
(4)	S N	S N

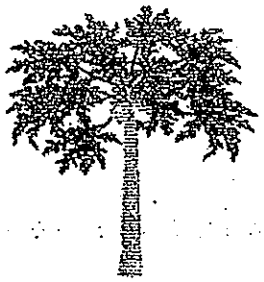
End of Section A

Name : _____ Index No : _____ Class : _____ / 40

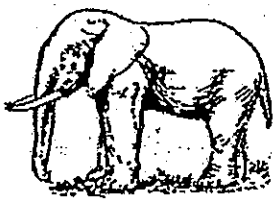
SECTION B (40 marks)

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

26. Classify the following living things into animals and plants. [2]



papaya tree



elephant

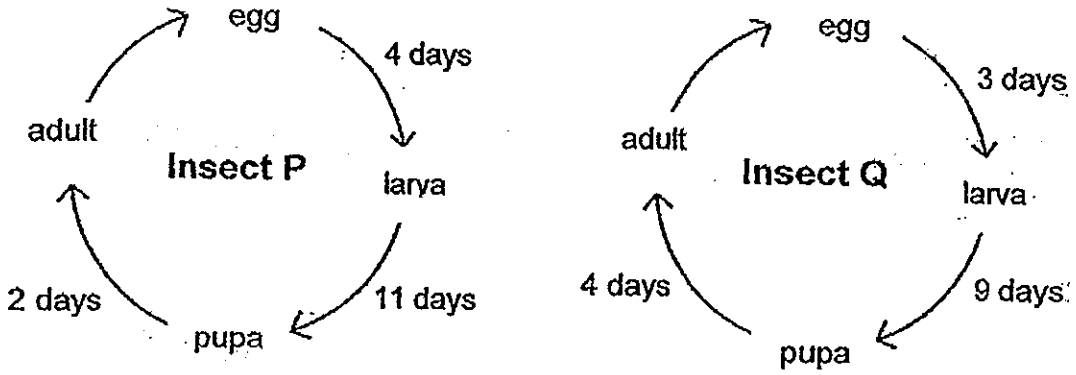
eagle

fern

animals	plants

Score / 2

27. Study the life cycles of insect P and insect Q below.



Based on the information above, answer the questions below:

(a) Besides the number of stages and the name of each stage, state one more similarity between the life cycle of insect P and insect Q. [1]

(b) Do you agree that insect P lives longer than insect Q ? Give a reason for your answer. [1]

Continue Q27 on the next page

Score	/ 2

Meiling learnt that different caterpillars feed on different types of leaves. She conducted an experiment to see which type of leaf, A, B, C, D or E the caterpillar of butterfly X **only** feed on.

She caught a few caterpillars of butterfly X and placed them in a tank. She then put in few different types of leaves at a time into the tank to see which type of leaves the caterpillar fed on.

She recorded her observations in the table below:

	Types of leaves put into the tank each time					
	Leaf A	Leaf B	Leaf C	Leaf D	Leaf E	Observation
1st try	✓		✓		✓	only one type of leaf was eaten
2nd try	✓		✓	✓		no leaf was eaten
3rd try	✓	✓			✓	only one type of leaf was eaten
4th try		✓	✓	✓		no leaf was eaten

(c) Based on the result above, which type of leaf, A, B, C, D or E, did the caterpillar of butterfly X feed on? [1]

_____

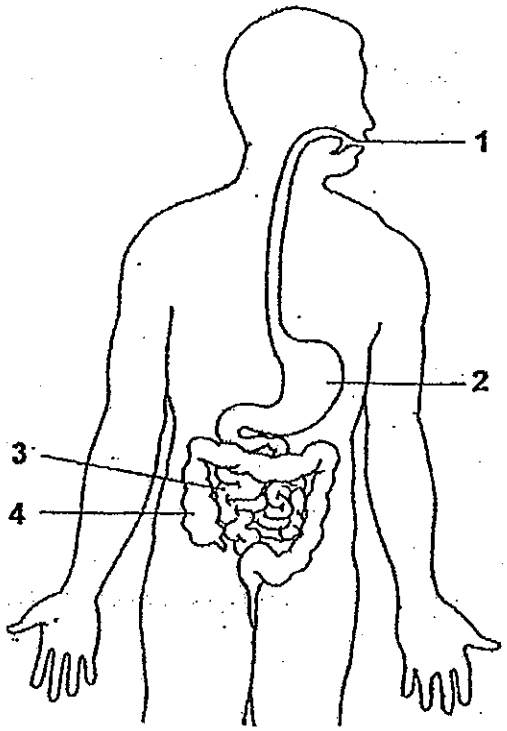
(d) Name one variable that Meiling must keep the same in order to ensure it is a fair test. [1]

_____

_____

Score / 2

28. The diagram below shows the human digestive system.



Fill in 1, 2, 3 or 4 in the blanks below.

Identify the part where

(a) digestion first takes place : _____ [1]

(b) there is no digestion : _____ [1]

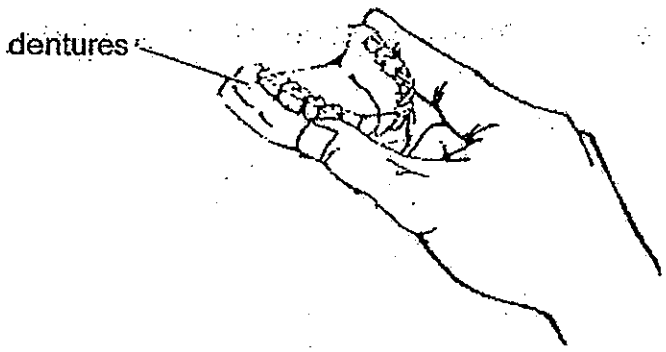
Score	/ 2

29 The diagram below shows an organ, labelled X, which is part of the human digestive system.

(a) Where does the food next travel to when it leaves organ X? [1]

_____

(b) Grandma Mary needs to put on her dentures (false teeth) before she eats. The diagram below shows how the dentures look like.



Explain how the use of the dentures help Grandma Mary in the process of digestion. [1]

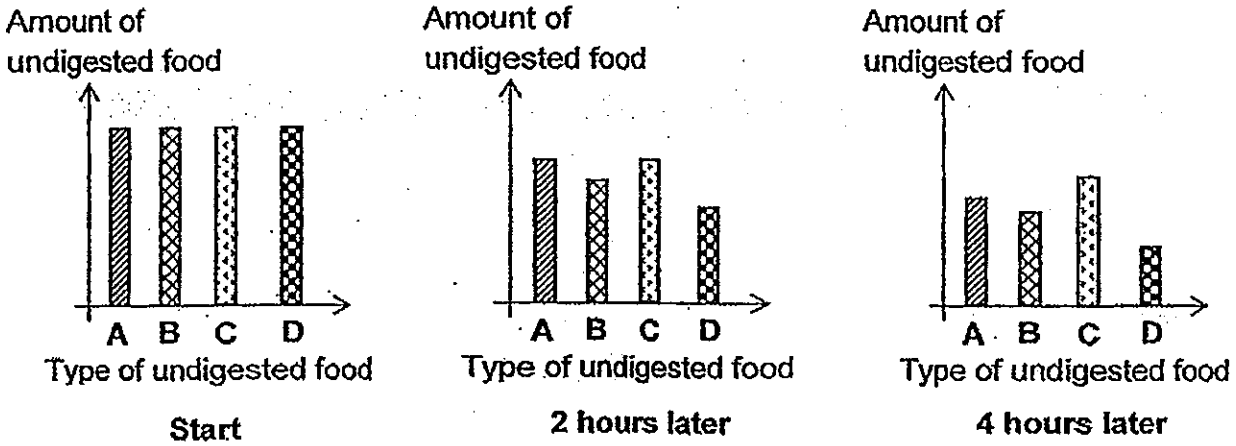
_____

_____

Continue Q29 on the next page

Score 2

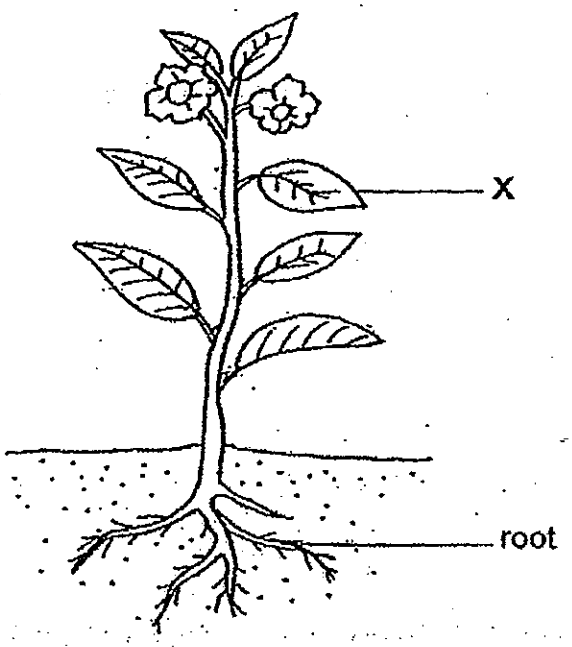
(c) The graphs below show the changes in the amount of four different type of undigested food, A, B, C and D, in a human digestive system over a period of time.



Based on the information given in the graphs, which type of food, A, B, C or D, is the most difficult to be digested? [1]

Score	/ 1

30. (a) The diagram below shows a plant.



(i) Name plant part X. [1]

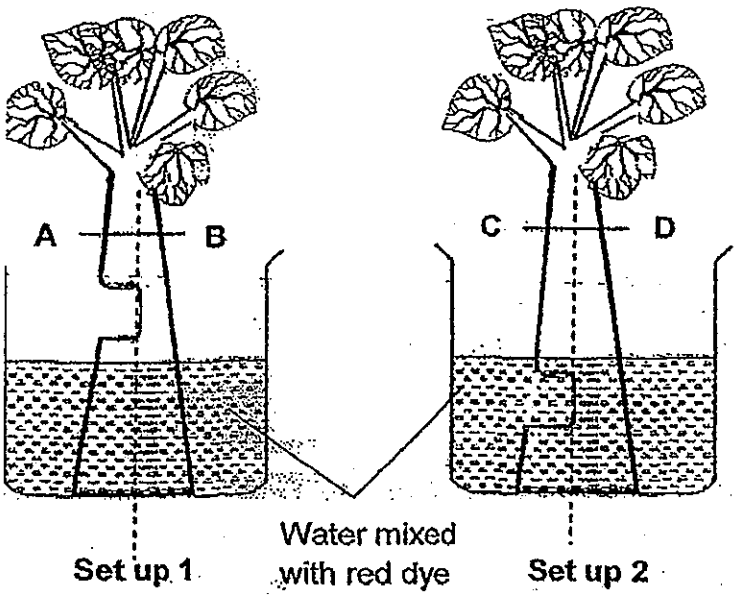
X :

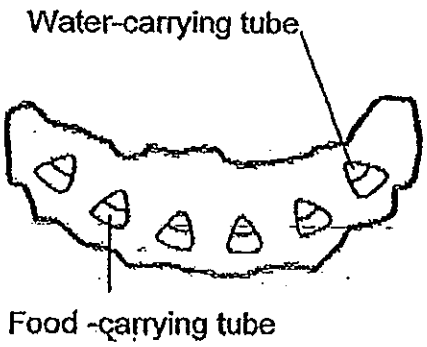
(ii) One substance that the roots of plant take in from the soil is [1]

Continue Q30 on the next page

Score	/ 2

(b) Sally removed parts of the stalk of two similar plants. She then placed them into two containers of water which had been mixed with red dye. After two days, the plants were cut at two positions, AB and CD, as shown below to observe how much of the red dye could be seen at the cross-sections AB and CD.

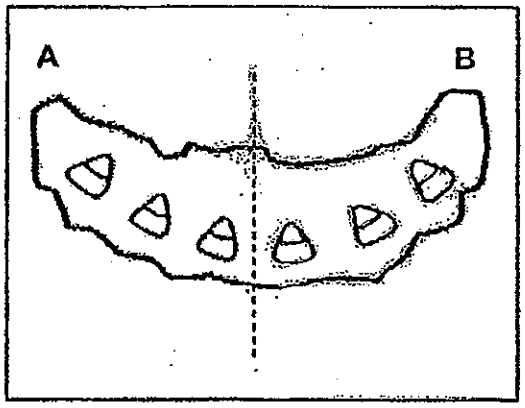




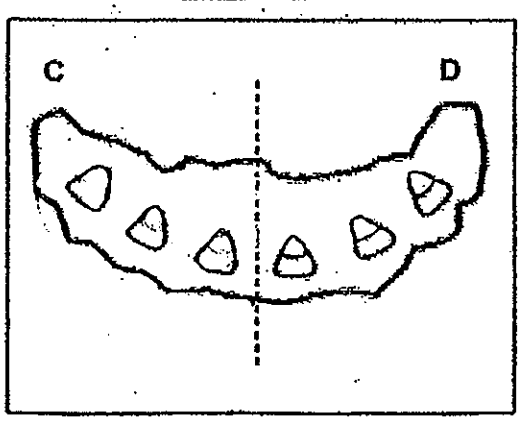
Cross section of plant at cut locations at the start

In the diagrams below, **shade the parts in the cross sections AB and CD** which you would expect to be stained with the red dye after one day. [2]

Set up 1

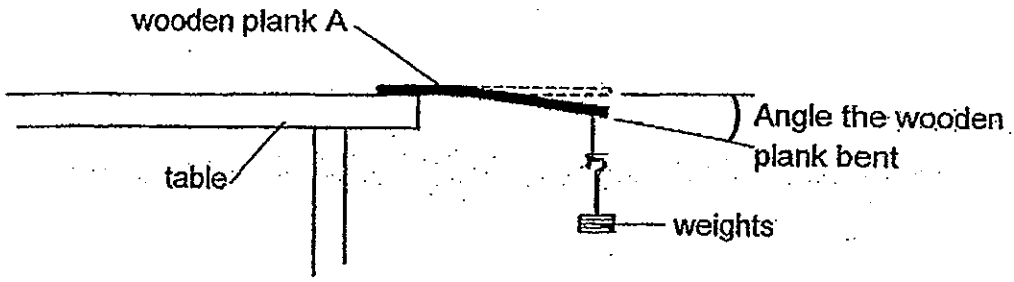


Set up 2



Score	/ 2

31. Fatimah set up an experiment as shown in the diagram below.



She added weights, one at a time, to one end of wooden plank A.

She recorded the number of weights wooden plank A could hold and the angle it can bend before it broke, She then repeated the same steps for another three wooden planks, B, C and D.

The table below showed what Fatimah has recorded.

Wooden plank	Number of weights before the wooden plank broke	Angle the wooden plank bent before breaking
A	6	11°
B	11	25°
C	7	9°
D	4	28°

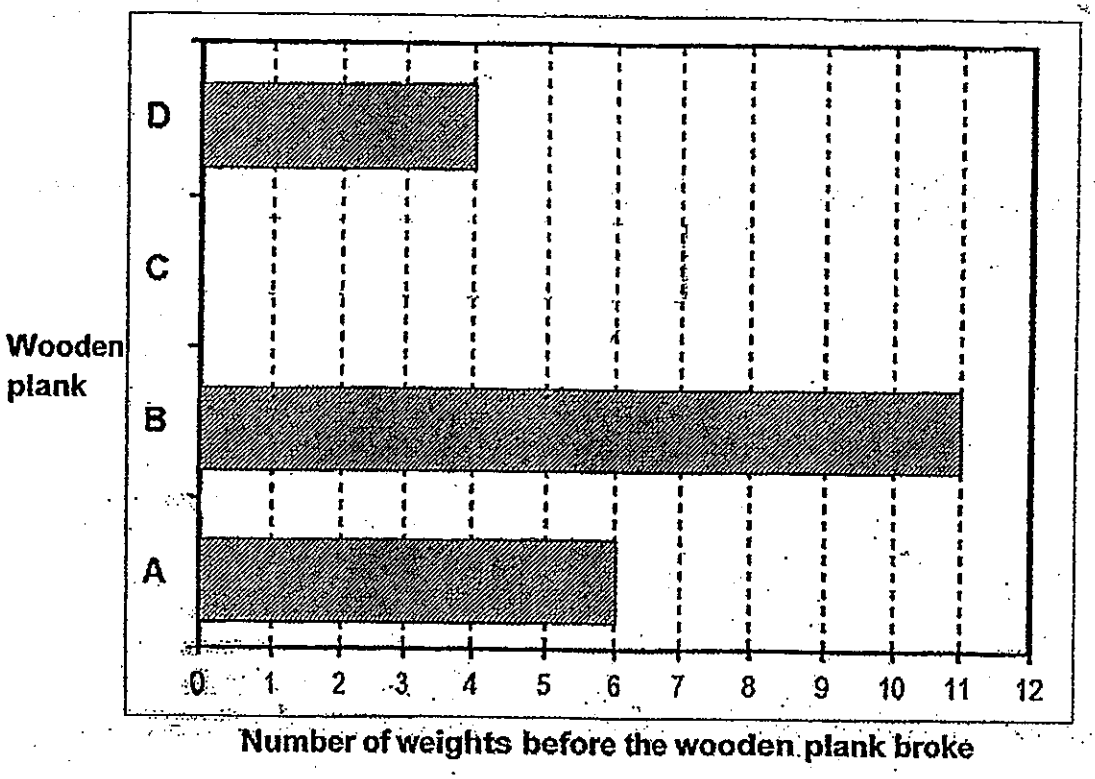
(a) Based on the information, which wooden plank, A, B, C or D, is the strongest ? [1]

(b) Based on the information, which wooden plank, A, B C or D,is the most flexible? [1]

Continue Q31 on the next page

Score	/ 2

(c) Complete the bar graph based on the information given in the table.

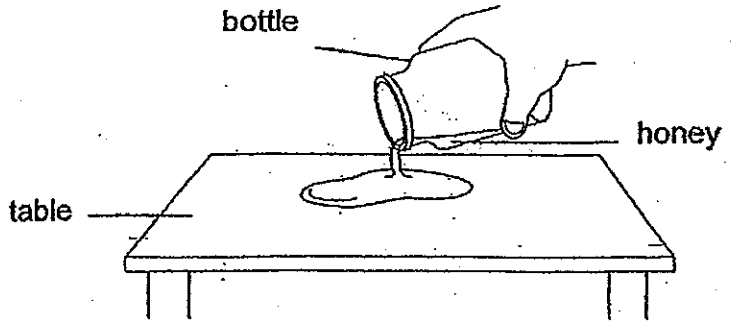


Score	/ 1

32 Choose the correct words from the box to fill in the the blanks below.

solid	liquid	gas

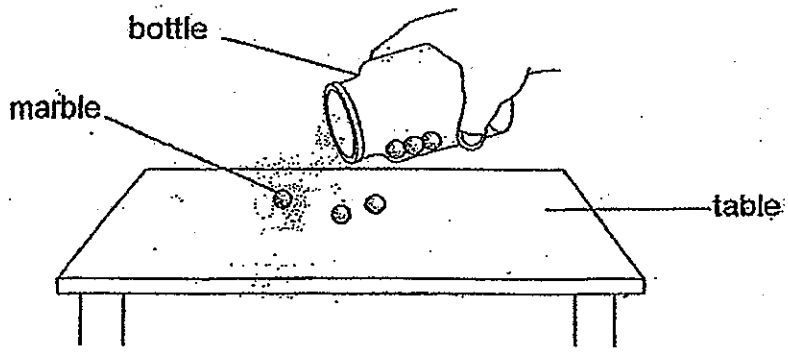
(a) Ali pours honey from a bottle onto a table as shown below.



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.

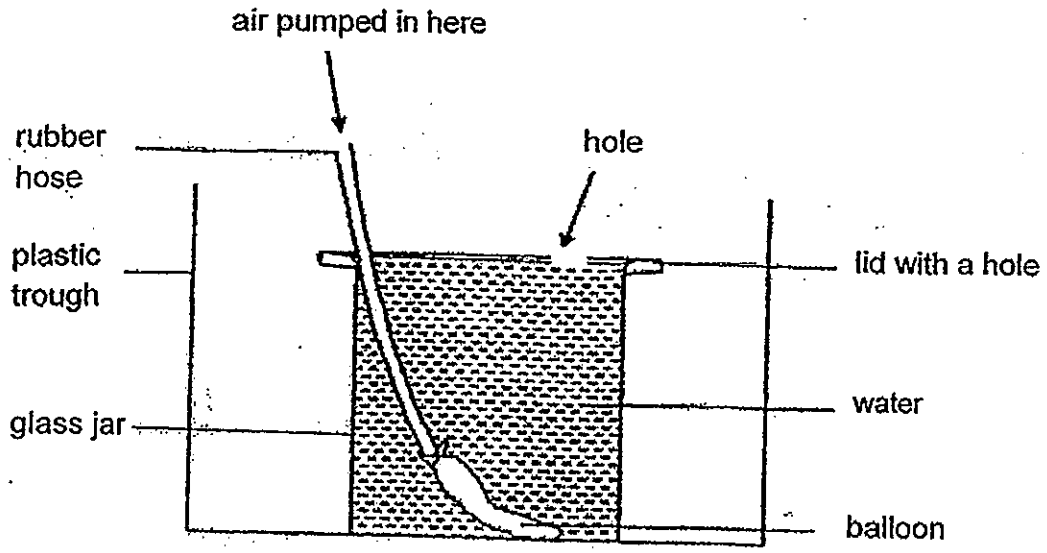


The shape and volume of the marbles remain the same.

This shows that a marble is a _____ [1]

Score 2

33. The glass jar in the diagram below is filled to the brim with 500 cm. $250cm^3$ of air is then pumped into the balloon.



(a) Describe what will happen to the water in the glass jar when the balloon is inflated. [1]

_____

_____

(b) Explain your answer in part (a). [2]

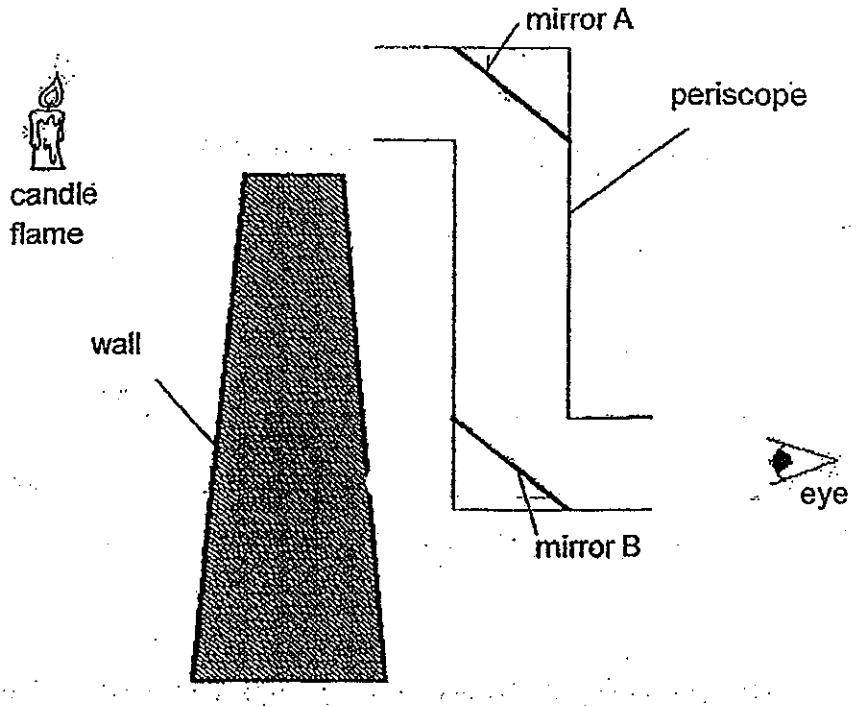
_____

_____

_____

Score	/3

34. A periscope allows our eyes to see the candle flame even though there is a wall blocking our view.



(a) In the diagram above, **draw** the direction of the light that allows the eye to see the candle flame. [1]

(b) Name two properties of light that allows the periscope to work.

Property 1: [1]

_____

_____

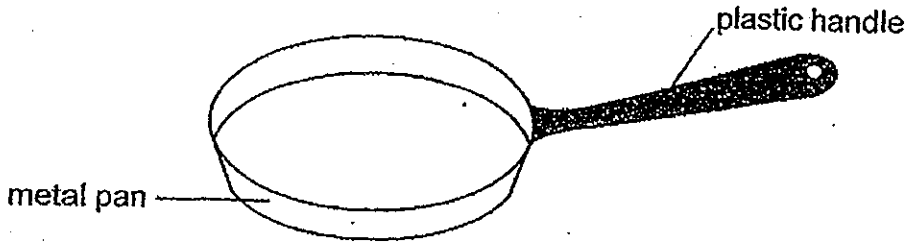
Property 2: [1]

_____

_____

Score	/ 3

35. The diagram below shows a frying pan.

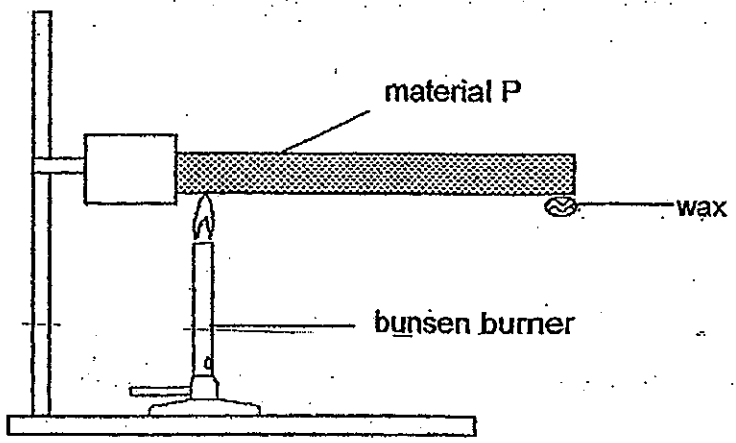


(a) The handle is made of plastic because it is a _____ conductor of heat. [1]

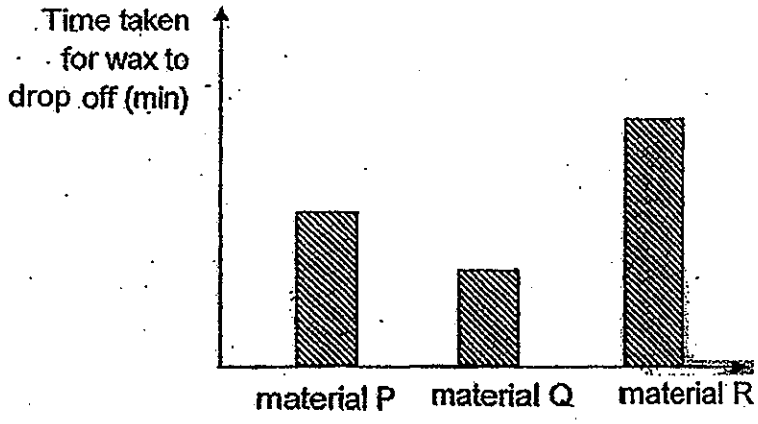
(b) The pan is made of metal because it is a _____ conductor of heat. [1]

Score	/ 2

35. Sam carried out an experiment as shown below. He sticked one end of a rod made of material P with some candle wax. He heated the other end of the rod over a bunsen burner flame. He recorded the time taken for the candle wax to drop off from the rod.



He then repeated the experiment with two other rods made of materials Q and R. The time taken for the candle wax to drop off from rods made of materials Q and R was also shown in the graph below.



(a) Based on the results he obtained, what could Sam conclude about material Q as compared to the other two materials? [1]

continue Q35 on the next page

Score	/2

(b) State two variables that Sam should keep constant for the experiment a fair one.

Variable 1:

_____

_____

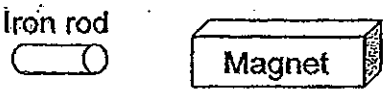
Variable 2:

_____

_____

Score	/ 2

Susan places a magnet near an iron rod. The iron rod moves towards the magnet.



(a) The magnet exerts a _____ on the iron rod. [1]

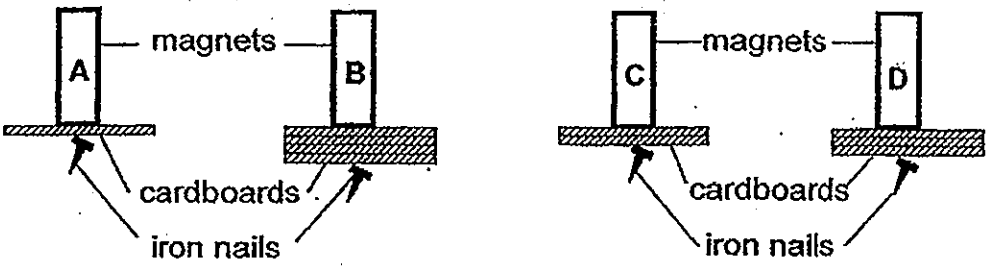
(b) Choose the correct word from the box to answer the question below.

hard	magnetic	strong

Susan's observation shows that iron is a _____ material [1]

Score / 2

38. The diagrams below shows the maximum number of cardboard that can be placed between an iron nail and four magnets, A, B, C and D, before the magnets are unable to attract the iron nail.



The magnets, iron nail and cardboard are of similar size and shape.

(a) Based on the diagram above, arranged the magnets, A, B, C and D, according to their magnetic strength, from the weakest to the strongest. [1]

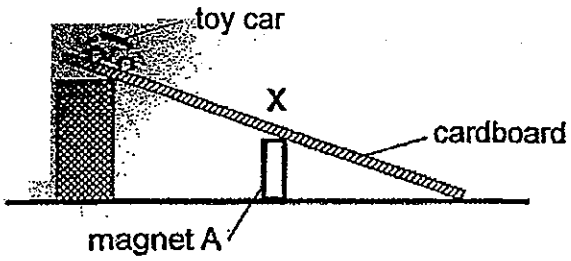
_____, _____, _____, _____

weakest strongest

Continue Q38 on the next page

Score	/ 1

David used magnet A for the set up as shown below.



He released the toy car from the top of the cardboard and observed that the toy car stopped at point X. He repeated the test for another 3 times and observed the same result.

(b) Explain clearly why the toy car is able to stop at point X. [2]

_____

_____

_____

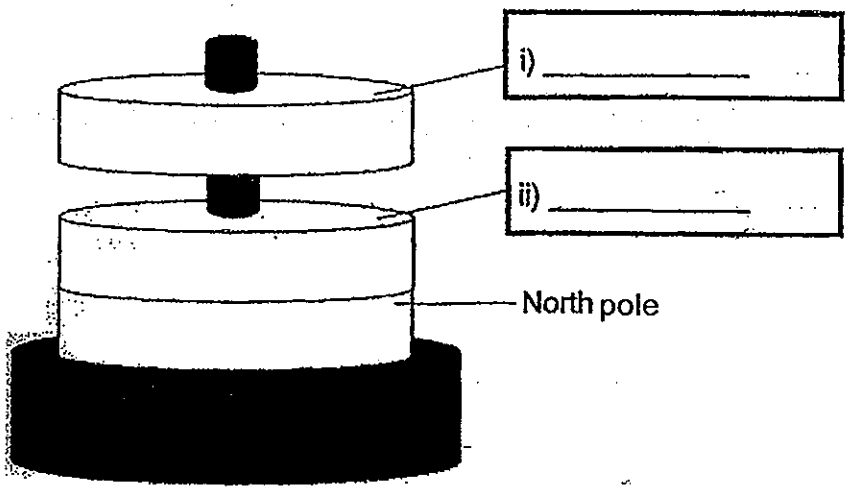
(c) Why did David repeat his test for more than 2 times? [1]

_____

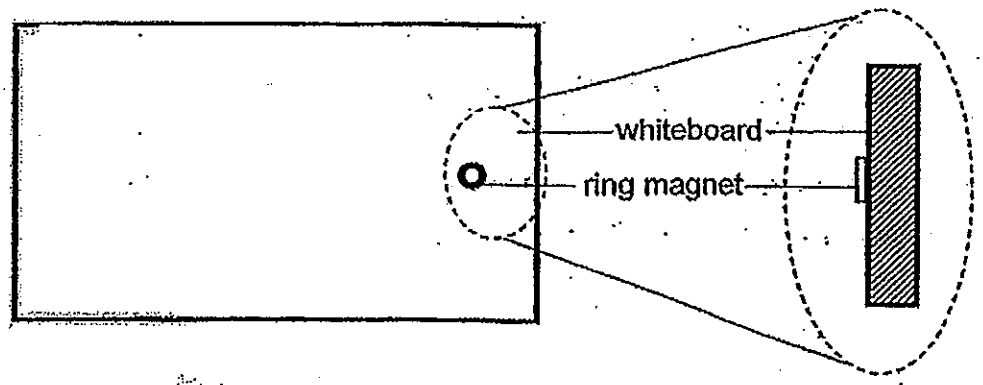
_____

Score / 3

39. (a) The diagram below shows three ring magnets placed in a wooden rod.
~~Find~~ Fill in the blanks with the correct word.



(b) Simon brought a ring magnet to school.
He placed the ring magnet on the whiteboard and observed that it stuck on the whiteboard as shown in the diagrams below.



Describe clearly how Simon can find out whether the whiteboard is a magnet or is made of magnetic material using only the ring magnet. [2]

_____

_____

_____

END-OF-PAPER

Score	/3

ANSWER SHEET

EXAM PAPER 2013
SCHOOL : RAFFLES GIRLS PRIMARY SCHOOL
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

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

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

Section B

Q26)

Animals	Plants
Elephant	Papaya tree
Eagle	Fern

Q27

a) Both insects lay eggs

b) Yes. Insect P took 17 days to develop into an adult, while insect Q took 16 days to develop into an adult.

c) Leaf E

d) The location of the tank

Q28

a) 1

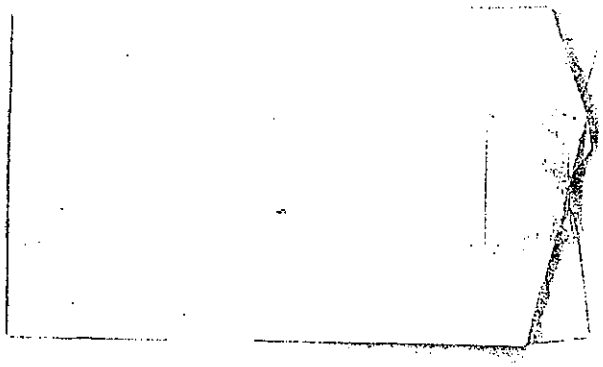
b) 4

Q29

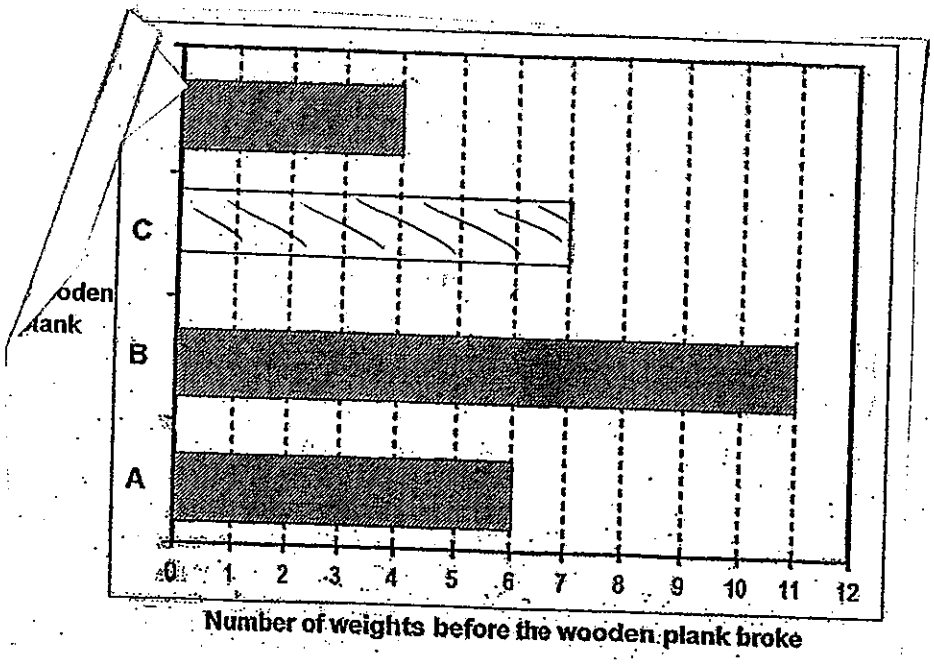
a) The food will travel to the small intestine

b) The dentures help to break the food into smaller pieces and increase surface area so that digestion is faster.
c) Type C

Q30
a) i) X: Leaf
ii) Water
b)



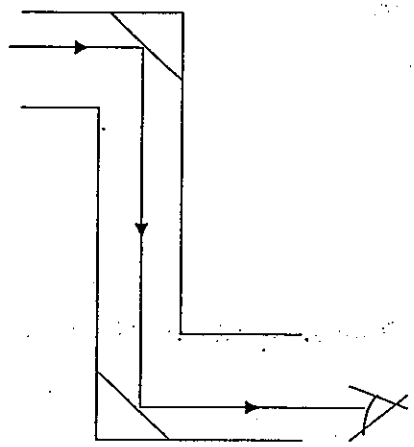
Q31
a) Wooden Plank B
b) Wooden Plank D
c)



Q32
a) Liquid
b) Solid

Q33
a) The water in the glass jar will flow out from the hole and into the plastic through
b) Water cannot be compressed, so the water escapes from the hole in the lid

Q34
a)



b) Property 1: Light travels in a straight line
Property 2: Light can be reflected by the mirror

Q35
a) poor
b) good

Q36
a) Material Q is the best conductor of heat among the three materials
b) Variable 1: The amount of heat
Variable 2: The amount of wax on each material

Q37
a) pull
b) magnetic

Q38
a) A, C, D, B

b) The toy car is magnetic and was attracted to magnet A as magnetism can pass through non-magnetic materials thus the toy car is able to stop at point X
c) To ensure that David's result was reliable

Q39
a)i) South-seeking
ii) North-seeking
b) Simon should flip the ring magnet around. If the whiteboard repels the ring magnet, the whiteboard is made of a magnet, if it attracts the ring magnet, that means the whitboard is not magnetic.