METHODIST GIRLS' SCHOOL

Founded in 1887

SEMESTRAL ASSESSMENT 1
2015
PRIMARY 4
SCIENCE

BOOKLET A1

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

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

Name: _____ ( )

Class: Primary 4._____

Date : 14 May 2015

This booklet consists of 13 printed pages including this page.

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS). [50 marks]

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1. Look at the diagrams of living things X and Y below.

X Y

Which of the following statement(s) about living things X and Y is/are true?

A: Both X and Y can grow.

B: Both X and Y can reproduce.

C: Both X and Y can make their own food.

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

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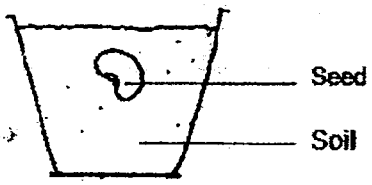
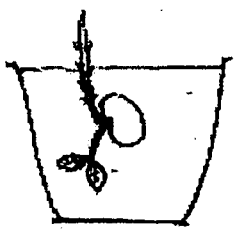
2. Jill placed a seed into a container of soil as shown below. She poured water on the soil daily.

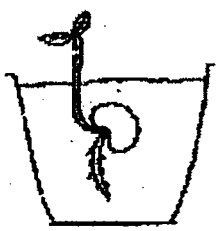


Which one of the following diagrams shows what Jill would observe after a few days?

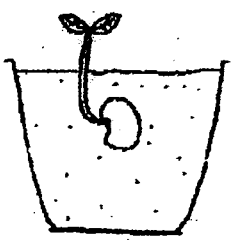
(1)



(3)



(2)



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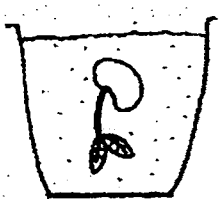
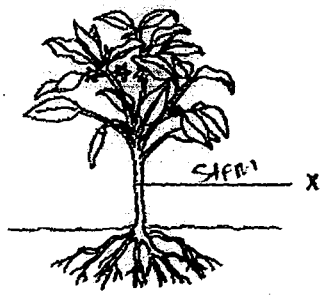


3. Four pupils, A, B, C and D, planted a seed which grew into a strong and healthy young plant as shown below.



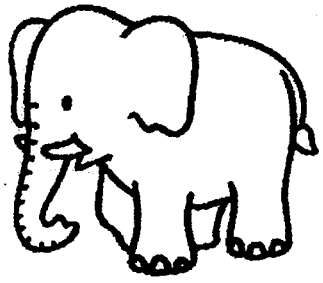
They made the following statements about the main functions of the part labelled X.

Pupil	Statement
A	It supports the leaves and the flowers.
B	It makes food for the plant.
C	It takes in water and mineral salts from the soil.
D	It helps to transport water from the roots to other parts of the plant.

Which pair of pupils had made the correct statement?

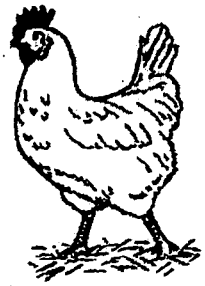
(1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

4. Jasvinder observed four animals, P, Q, R and S as shown below.



P

Q



R

S

She classified the animals into Group 1 and Group 2 in the table shown below.

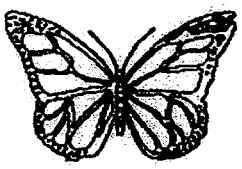
Group 1	Group 2
P	Q
S	R

Which one of the following pair of headings is the most suitable for the groups?

	Group 1	Group 2
1	Have hair	Have feathers
2	Have young	Have no young
3	Have no wings	Have wings
4	Have backbone	Have no backbone

(Go on to the next page)

5. Study the pictures below.

Butterfly	Ball
	

Which of the following correctly describes the difference(s) between a butterfly and a ball?

	Butterfly	Ball
A:	Cannot move on its own	Can move on its own
B:	Can grow and reproduce	Cannot grow and reproduce
C:	Needs air, water and food	Does not need air, water and food

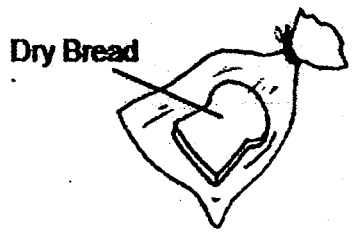
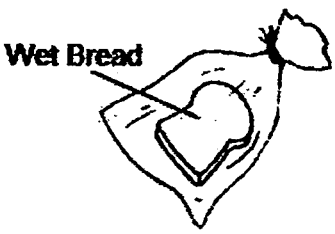
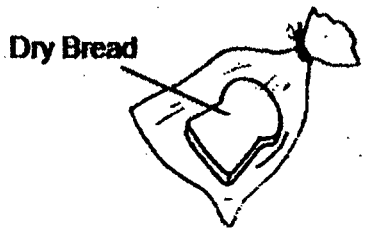
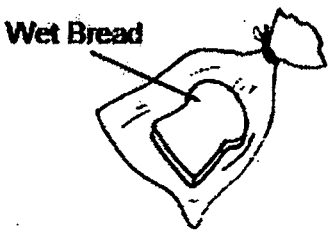
(1) A only

(2) B only

(3) B and C only

(4) A and C only

6. Zimri placed four slices of bread in identical bags which were sealed as shown below.

Set-up A	Set-up B
 In Refrigerator	 In Refrigerator
Set-up C	**Set-up D**
 In Wooden Cupboard	 In Wooden Cupboard

After a few days, Zimri observed that some fungi started to appear on the bread in one of the set-ups. Which set-up is most likely to have fungi growing on the bread?

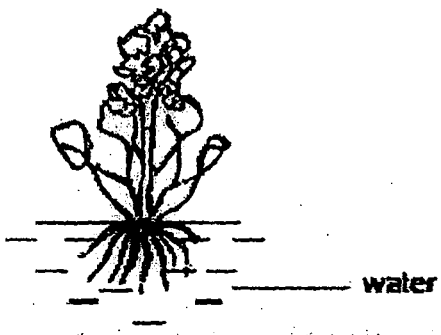
(1) A
(2) B
(3) C
(4) D

(Go on to the next page)

7. The table below shows some information of four organisms, E, F, G and H. A tick (√) shows that the characteristic is present and a cross (X) shows that it is not present.

	Characteristics		
	Has flowers	**Can make its own food**	**Grows on land**
E	√	√	√
F	X	√	X
G	√	√	X
H	X	X	√

The following plant has similar characteristics as one of the four organisms E, F, G and H.

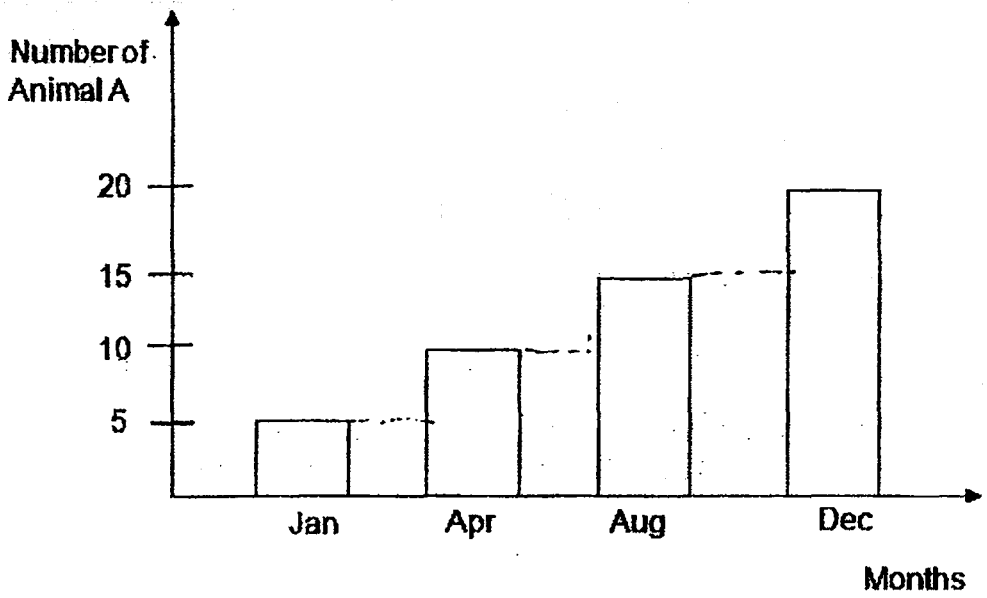


Which organism has similar characteristics as the above plant?

(1) Organism E
(2) Organism F
(3) Organism G
(4) Organism H

(Go on to the next page)

8. The graph below shows the number of Animal A over 12 months.



Based on the graph above, what can you conclude about Animal A?

(1) Animal A reproduced during the 12 months.
(2) The height of Animal A increased every month.
(3) Animal A grew in Jan, April, Aug and Dec only.
(4) Number of Animal A increased the most in the month of Dec.

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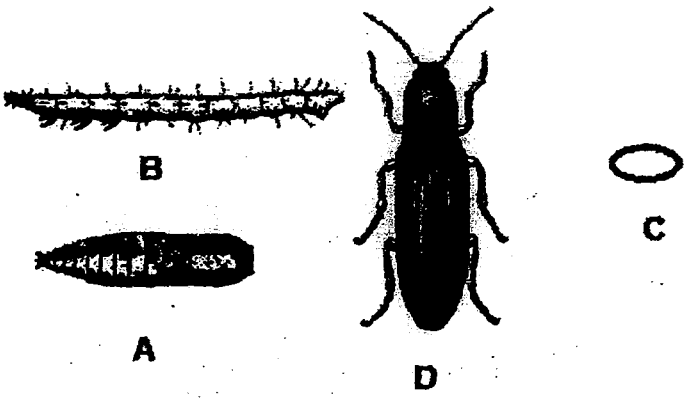
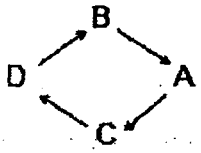
9. Ah Seng has some picture cards that show the life cycle of an animal.

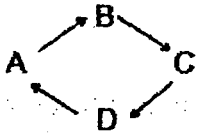


Which one of the following diagrams shows the correct life cycle of the animal?

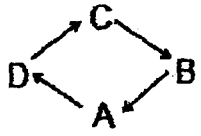
(1)



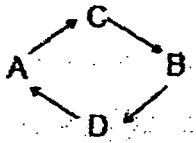
(2)



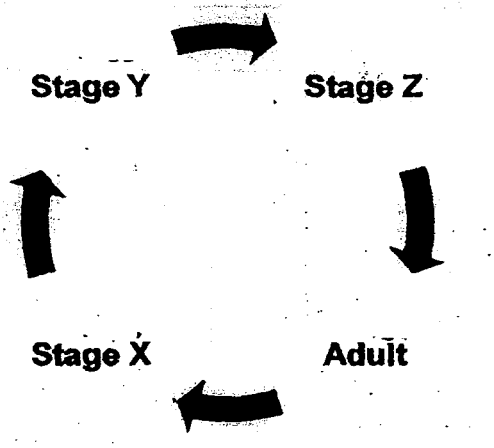
(3)



(4)



10. Azman observed an insect that goes through the life cycle as shown below.

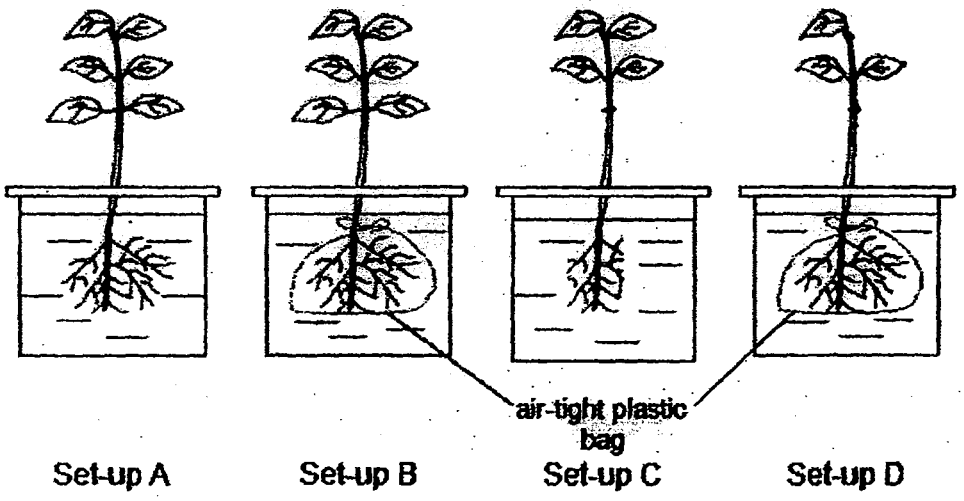


He found that the insect does not take in food from the surrounding at some stages of the life cycle.

At which stage(s) did this happen?

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

11. Gina wanted to find out if plants take in water through their roots.



The roots of the plants in set-up B and set-up D were tied with air-tight plastic bags at the start of the experiment before putting into the beaker of water. Each set-up had the same amount of water.

Which of the two set-ups above should she choose to conduct a fair test?

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

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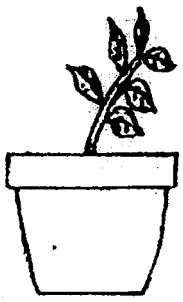
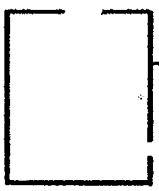
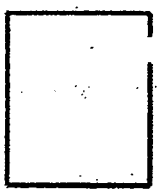
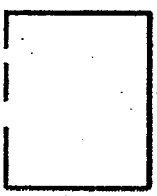
12. Sally placed a pot of plant in a black box with a small hole. She made sure that the plant was well watered. After a month, she observed the plant growing as shown below.

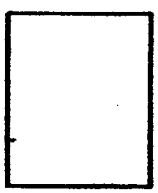


Which one of the following correctly shows the box in which the pot of plant was placed?

(1) 

(2) 

(3) 

(4) 

End of Paper A1

METHODIST GIRLS' SCHOOL

Founded in 1887

SEMESTRAL ASSESSMENT 1
2015
PRIMARY 4
SCIENCE

BOOKLET A2

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

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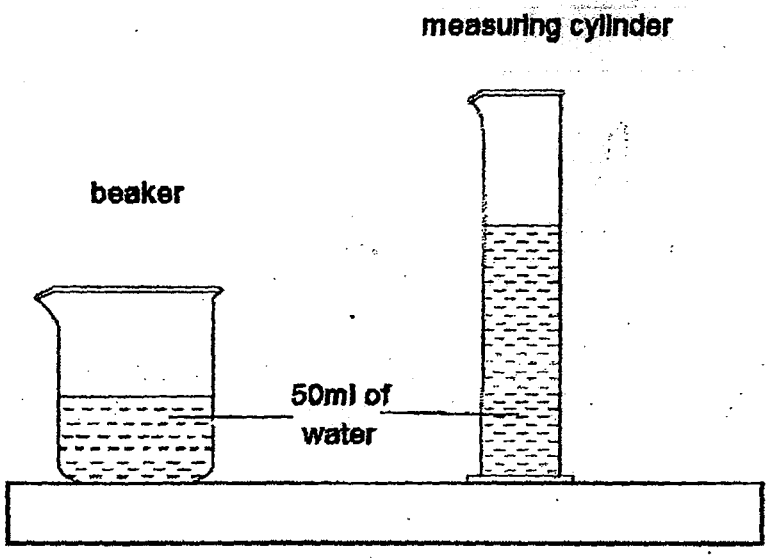
Name: _____ ( )

Class: Primary 4. _____

Date :14 May 2015

This booklet consists of 12 printed pages including this page.

13. James poured 50 ml of water each into a beaker and a measuring cylinder as shown below.



Which of the following statement(s) is/are true about water inside the beaker and measuring cylinder?

A: The mass of water is the same.

B: The shape of water is different.

C: The volume of water is the same.

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

(Go on to the next page)

14. Devi blew up a balloon as shown in Diagram A. After that, she twisted the balloon into the shape as shown in Diagram B. She had performed this task at room temperature.

Diagram A

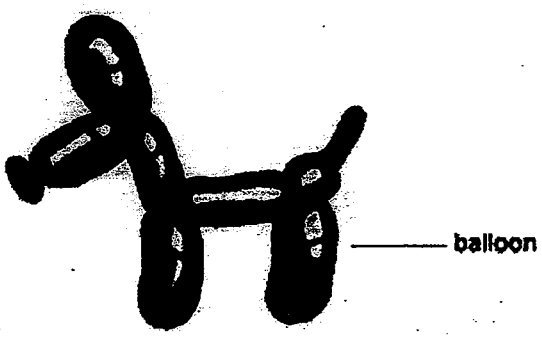


Diagram B

What can you conclude from Devi's experiment?

(1) Air has mass
(2) Air can expand
(3) Air can contract
(4) Air has no definite shape

15. A glass bottle has a volume of 1000 cm^3. Which of the following can be stored in this bottle?

A: 800 cm^3 of air

B: 1100 cm^3 of air

C: 800 cm^3 of water

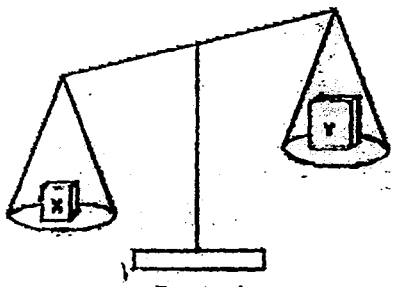
D: 1100 cm^3 of water

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

(Go on to the next page)

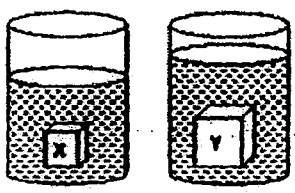
16. Neela used the set-ups below to find out more about solids X and Y.

First, she placed each of the solids on the balance as shown in Set-up A.



Set-up A

Next, she placed each of the solids into two containers which have the same volume of water as shown in Set-up B.



Set-up B

Based on Neela's observations in Set-ups A and B above, what conclusion could she draw about the solids X and Y?

A: X has a greater mass than Y.

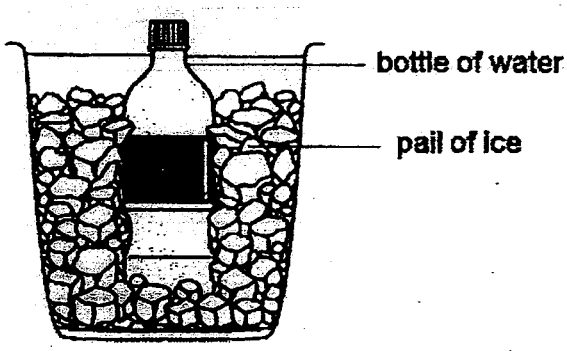
B: Y occupied more space than X.

C: The amount of space a matter occupied depends on its mass.

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

(Go on to the next page)

17. Tee Hock placed a bottle of water which was at room temperature in a pail of ice.

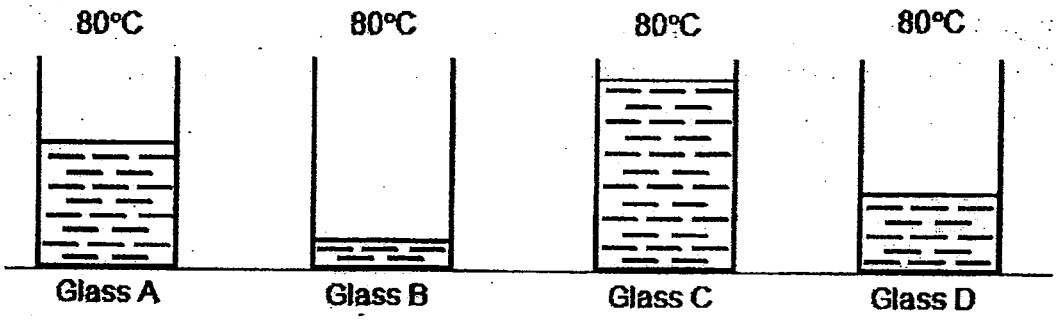


Which one of the following statements best describe(s) the changes in the set-up after 5 minutes?

A: The bottle of water lost heat to the ice.
B: The ice lost heat to the bottle of water.
C: The temperature of the bottle of water decreased.

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

18. Four similar glasses, A, B, C and D contain different amounts of hot water at 80° C.

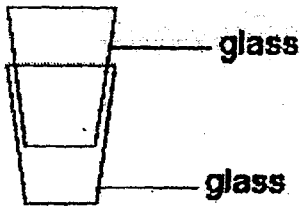


Which glass of water will take the longest time to cool to 30°C?

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

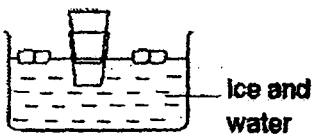
(Go on to the next page)

19. Two glasses were stuck together as shown below.

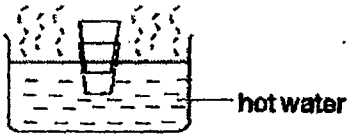


Which one of the following would be the most suitable way of separating the glasses?

(1)



(2)



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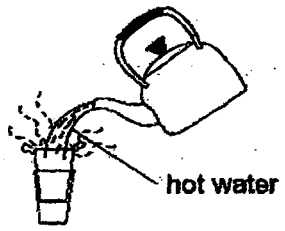

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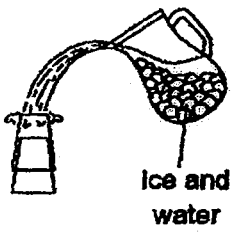

20. Sue poured equal amounts of water at 100°C into four cups of the same shape and size. The four cups were made of different materials, T, U, V and W.

She measured the temperature of water in the cups after 20 minutes and recorded the results in the table below.

Material	Temperature of water after 20 minutes (°C)
T	75
U	60
V	45
W	80

From the table above, which one of the following materials is the poorest conductor of heat?

(1) T
(2) U
(3) V
(4) W

(Go on to the next page)

21. The table below shows the properties of three types of materials, P, Q and R. A tick (√) shows that the property is present, while a cross (X) shows that the property is not present.

Properties	Materials		
	P	Q	R
Flexible	√	X	X
Magnetic	X	√	X
Allows light to pass through	X	X	√

Based on the information given in the table above, which one of the following materials would P, Q and R most likely be?

	P	Q	R
(1)	Rubber	Iron	Steel
(2)	Clear glass	Steel	Iron
(3)	Clear glass	Steel	Rubber
(4)	Rubber	Iron	Clear glass

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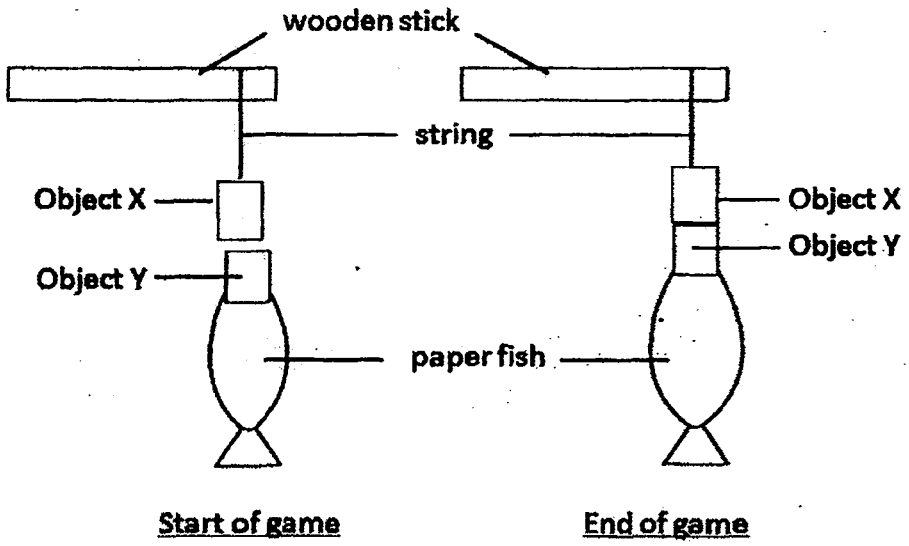
22. Ben and Jill played a game as shown in the diagram below. The aim of the game is to make use of object X to pick up object Y, which is attached to a paper fish.



Which of the following could represent objects X and Y?

	Object X	Object Y
A	iron rod	steel block
B	magnet	iron block
C	magnet	steel block

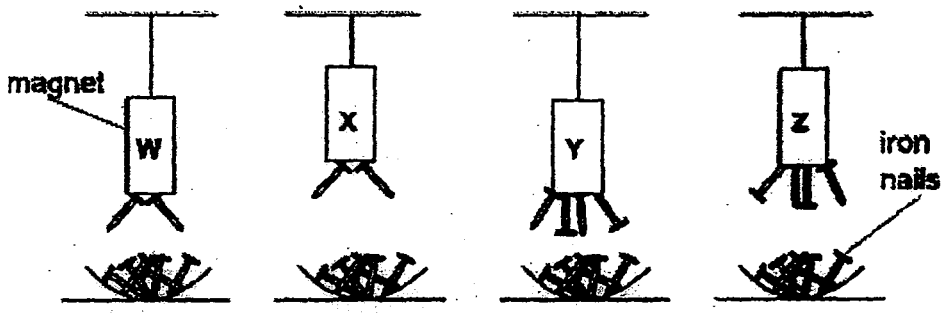
(1) A only

(2) C only

(3) B and C only

(4) A, B and C

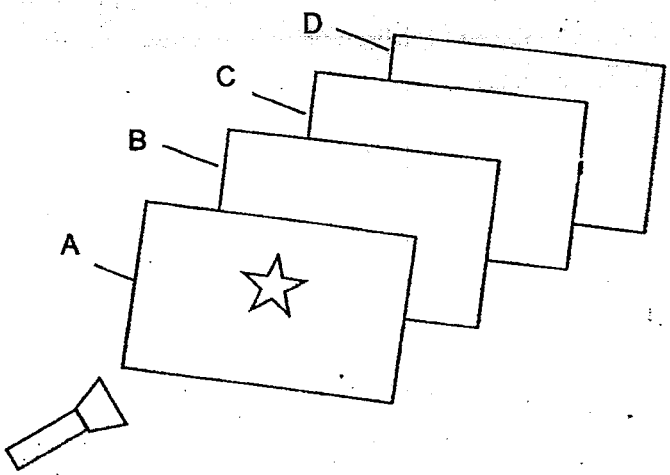
23. Four similar magnets, W, X, Y and Z were hung from strings of two different lengths. A tray with the same number of iron nails was placed below each magnet. It was observed that different number of iron nails was attracted as shown below.



Based on the observation above, which one of the magnets was the weakest?

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

24. Bryan carried out the experiment below in a dark room.



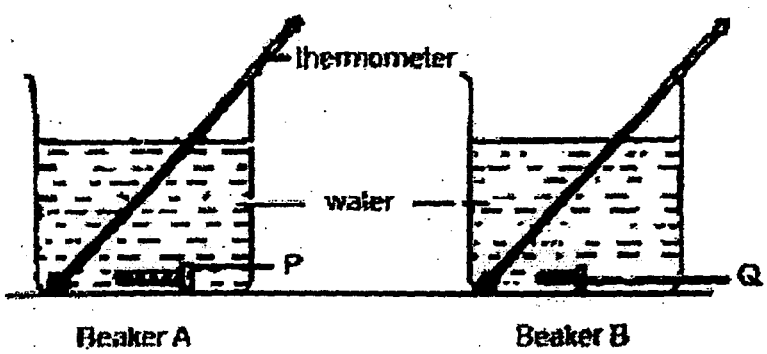
Four sheets, A, B, C and D are arranged in a straight line. Sheet A has a star shaped cut-out on it.

When Bryan switched on the torch, a star shaped light is seen only on Sheet C. Which one of the following correctly describes the degree of transparency of sheets A, B, C and D?

	Light passes through	Light does not pass through	Not possible to tell
1	A	C	B and D
2	B	C	A and D
3	B and D	A	C
4	A and C	B	D

25. Isa poured an equal amount of tap water at room temperature into two identical beakers, A and B, containing identical thermometers. He then placed two screws, P and Q, in boiling water.

After ten minutes, he lifted the screws out of the boiling water with tongs. He put P in Beaker A and Q in Beaker B as shown below.



Which thermometer do you think would show the higher temperature and why?

	Thermometer in Beaker	Reason
(1)	A	P had more heat energy than Q.
(2)	B	Q lost heat faster to the water than P.
(3)	A	P would take more heat out of the water than Q.
(4)	B	The heat in Q was concentrated in a smaller mass and so is more intense.

End of Paper A2

METHODIST GIRLS' SCHOOL

Founded in 1887

SEMESTRAL ASSESSMENT 1
2015
PRIMARY 4
SCIENCE

BOOKLET B

Total Time for Booklets A and B: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

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

Name: _____ ( )

Class: Primary 4._____

Date : 14 May 2015

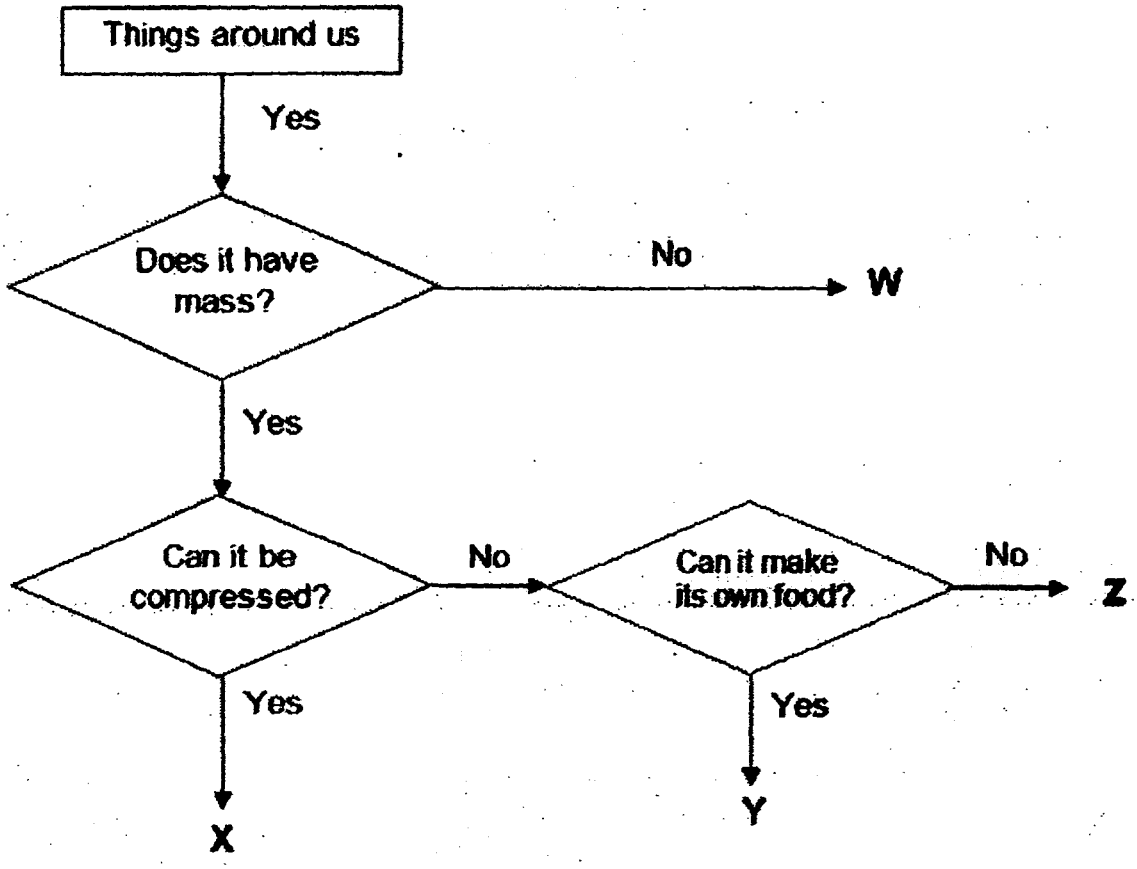
Booklets A1 & A2	50
Booklet B	30
Total	80
Parent's Signature	

This booklet consists of 12 printed pages including this page.

For questions 26 to 35, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[30 marks]

26. Study the flow chart below carefully.



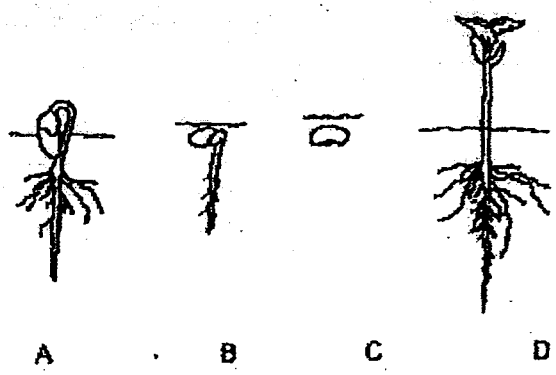
(a) Based on the flow chart above, match the objects below with the letters, W, X, Y and Z. [2]

rock	
air	
light	
fern	

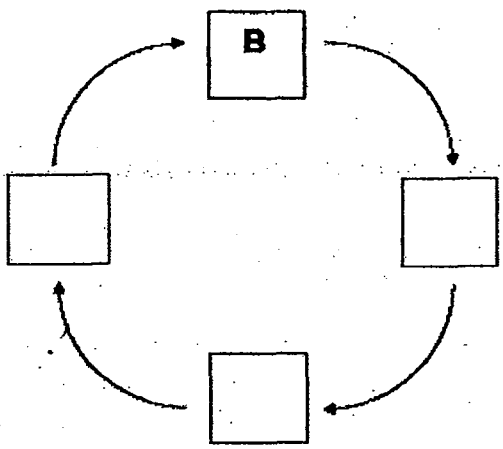
(b) Based on the flow chart, state one property of matter that is the same for both Y and Z. [1]

3

27. Study the diagram below.



(a) Write the letters A, C and D in the boxes below to show the life cycle of the plant. [1½]



(b) List three ways in which the roots help the plant to survive? [1½]

_____

_____

3

28. The table below shows two animals X and Y

Characteristics	X	Y
Type of movement	Swims and walks	Flies
Place where they live	Water	Land
Type of body covering	Feathers	Hair
Method of reproduction	Lays eggs	Gives birth

(a) Classify X and Y into their correct groups by filling in the most suitable boxes below. [2]

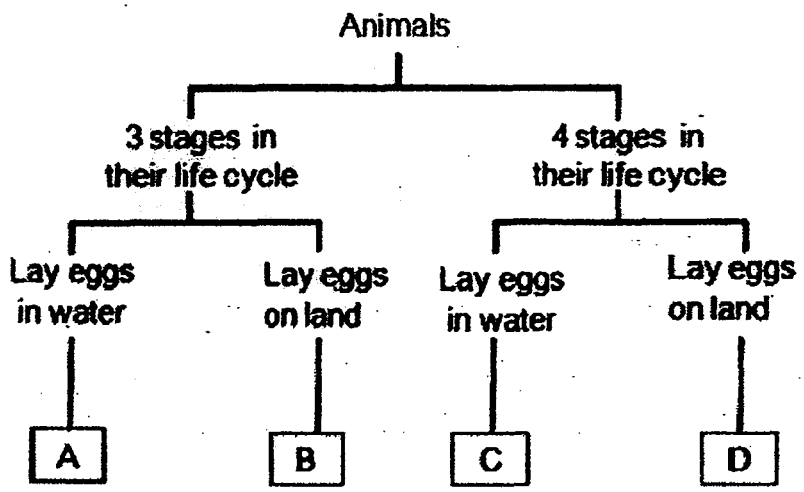
Mammal	Bird	Fish

(b) Which group of animals produces milk to feed their young? [1]

_____

3

29. Study the classification chart below.



(a) Based on the classification chart, state one similarity between Animals B and D. [1]

_____

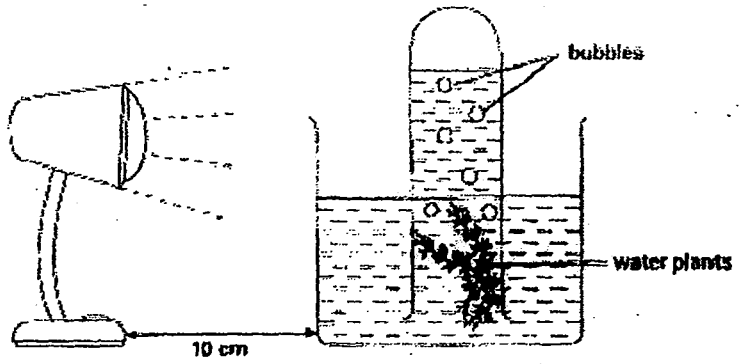
(b) Identify one animal that has the same characteristics as: [2]

(i) Animal A: _____

(ii) Animal C: _____

3

30. Thirui placed an inverted test-tube containing some water and water plants inside a beaker of water. The diagram below shows the initial set-up of his experiment.



After ten minutes, he counted the number of bubbles produced by the water plants over a period of one minute. He repeated the procedure several times, each time increasing the distance between the beaker and the lamp by 10 cm.

(a) What is the <u>main</u> function of the water plant leaves as shown in this experiment? [1]

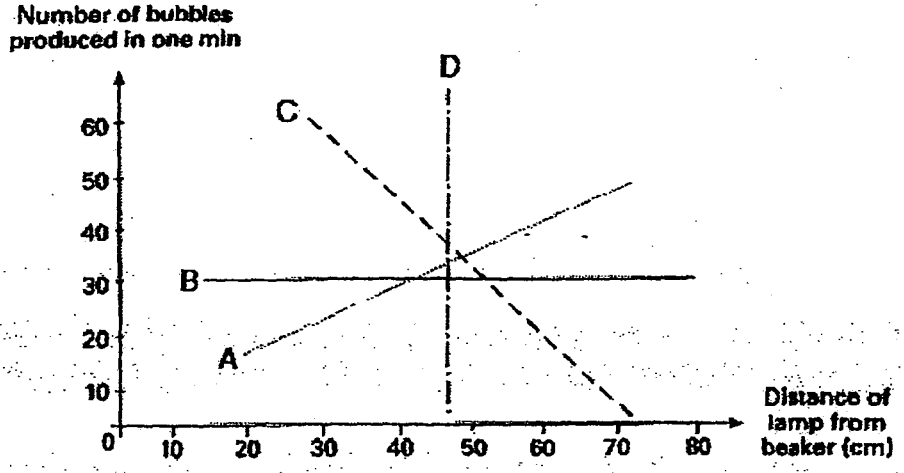
_____

(b) What is the gas that is found mainly in the bubbles? [1]

_____

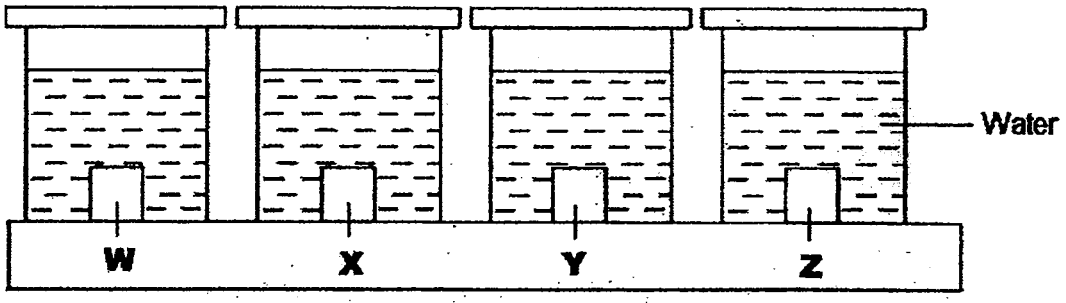
(c) Which line in the graph below correctly shows the result that Thirui would get? [1]

Line: _____



3

31. Yenni had four cubes which are made of different materials, W, X, Y and Z. She wanted to find out how well these cubes can absorb water. She placed the four cubes in four covered containers, each filled with 200ml of water as shown below.



She left the above set-ups in the science room for some time. At the end of the experiment, the cubes were removed and the amount of water left in each container was recorded in the table below.

Material of cube	**W**	**X**	**Y**	**Z**
Amount of water left in container (ml)	170	200	160	165

(a) Based on the table above, which material absorbed the most water? [1]

_____

(b) Which material is best suited to make a raincoat? Explain your answer. [2]

_____

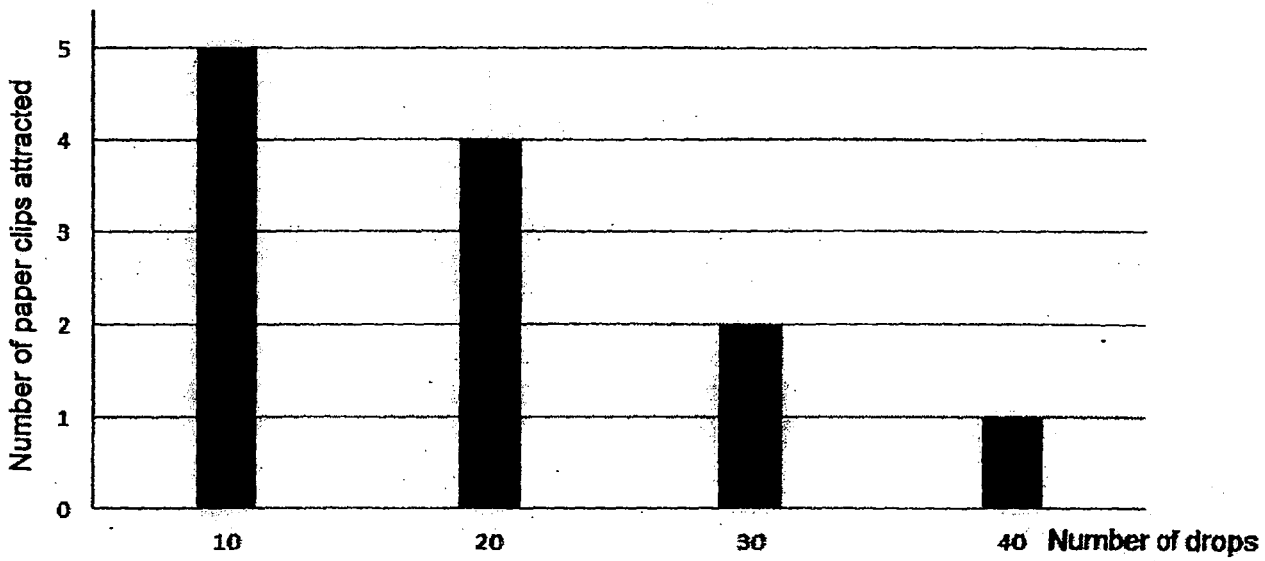
_____

(c) Name one other variable, other than the amount of water, which must be kept the same. [1]

_____

4

32. Ghaffar conducted an experiment to find out if the strength of a magnet is affected when it is dropped. He counted the number of times a magnet was dropped and also the number of paper clips attracted by the magnet after that. The graph below shows the results of his experiment.

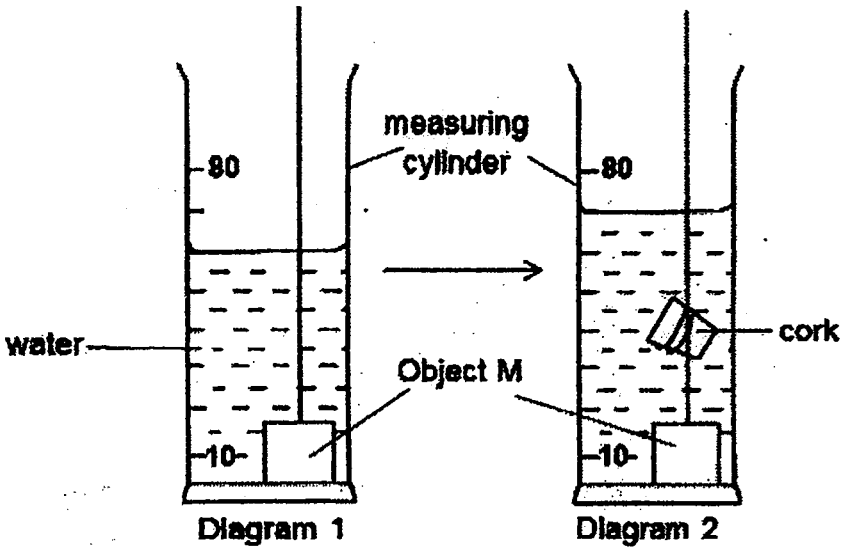


(a) What was used to measure the strength of the magnet? [1]

(b) What conclusion can Ghaffar make from his results? [1]

2

33. Ali poured 30cm^3 of water into a measuring cylinder. When Object M was lowered into the water by tying it to a string, the water level increased, as shown in diagram 1. When a cork was tied to the same string and lowered together with Object M, the water level increased further, as shown in diagram 2.



(a) What is the volume of the cork? [1]

_____

(b) Devi followed the same steps as Ali but she started with 40cm^3 instead of 30cm^3 of water in the measuring cylinder. Will the volume of the cork be the same? Explain your answer. [1]

_____

_____

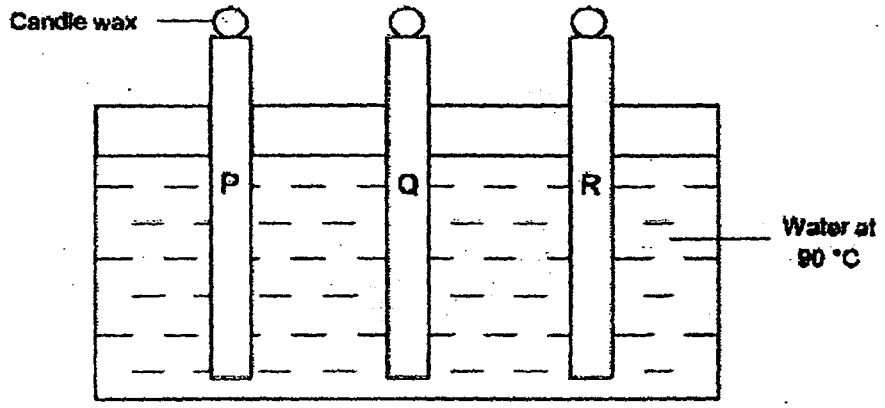
(c) Ali decided to replace the cork with a piece of sponge of the same volume. He repeated his experiment. He noticed a difference in the water level as compared to that in Diagram 2. Why is there a difference? [1]

_____

_____

3

34. Leng Leng carried out an experiment to find out how well different materials can conduct heat. She used three rods that were made of different materials, P, Q and R and three identical balls of candle wax were placed on top of each rod as shown below.



Leng Leng recorded the time taken for the ball of wax to melt completely for each of the rods in the table below.

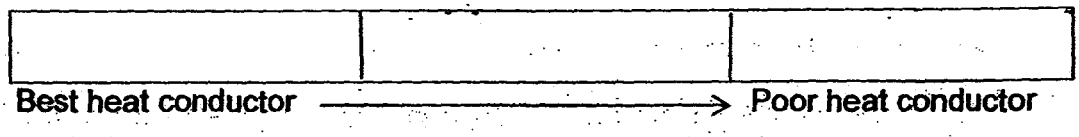
Material	Time taken for candle wax to melt completely (min)
P	4
Q	2
R	8

(a) What had caused the candle wax to melt? Explain your answer. [2]

_____

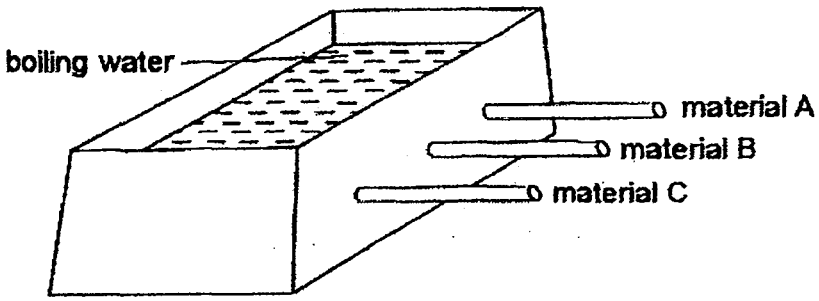
_____

(b) Arrange the materials, P, Q and R, based on how well they conduct heat by starting with the **best** heat conductor. [1]



3

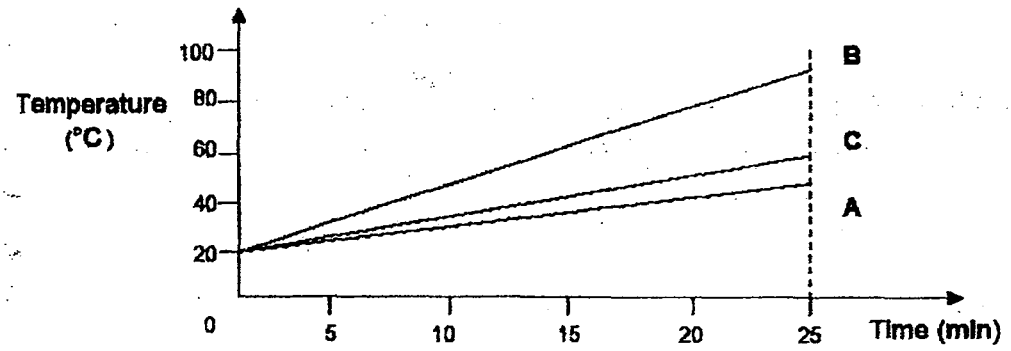
35. Melody placed three rods of different materials, A, B and C in the same container of boiling water as shown below. She measured the temperature of the three rods over time.



(a) If Melody wants to find out which one of the three materials is the best conductor of heat, state a variable which is not mentioned in the question that she needs to keep the same to ensure a fair test. [1]

_____

The graph below shows the change in temperature recorded for each material after some time. The last readings were recorded at the 25-minute mark.



(b) Which one of the materials (A, B or C) is most suitable to make the base for a frying pan? Explain your answer. [1]

_____

_____

(c) What will happen to the temperature of each material after several hours? [1]

_____

_____

3

End of Paper

EXAM PAPER 2015
LEVEL : PRIMARY 4
SCHOOL : METHODIST GIRLS' SCHOOL
SUBJECT : SCIENCE
TERM : SA1

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

Q26a. Z , X , W , Y Q26b. Has mass

Q27a. B → A→ D →C

Q27b. It absorbs the water and mineral salts from the soil, anchors the plant firmly to the ground and keeps the plant upright to prevent it from falling.

Q28a. Mammal – Y Q28a. Bird – X Q28b. Mammals

Q29a. Both animals B and D lay eggs on land.

Q29b (i) Frog Q29b (ii) Mosquito

Q30a. They need light to photosynthesize and make food.

Q30b. Oxygen Q30c. Line C Q31a. Material Y

Q31b. Material X as it did not absorb any water and is waterproof and a raincoat should be waterproof to keep the user dry. Hence, material X is best suited to make a raincoat.

Q31c. The thickness of the cubes. Q32a. See how many paper clips it can attract.

Q32b. The strength of the magnet will decrease when it is dropped.

Q33a. $10cm^3$ Q33b. Yes. All solids have a definite volume.

Q33c. The sponge absorbed some of the water, causing the water level to decrease.

Q34a. The hot water. The rods conducted heat from the hot water and to the candle wax, causing the candle wax to melt.

Q34b. Q , P, R Q35a. The thickness of the rods should be the same.

Q35b. Material B. A base of a frying pan should conduct heat very fast in order to cook the food. As material B conducted the heat the fastest, it should be the most suitable to make the base for a frying pan.

Q35c. It will turn to room temperature.