

METHODIST GIRLS' SCHOOL

Founded in 1887



MID-YEAR SEMESTRAL ASSESSMENT 2014 PRIMARY 5 SCIENCE BOOKLET A1

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 5. _____

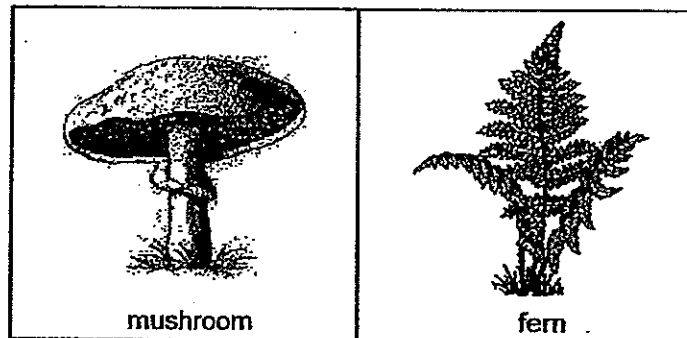
Date: 12 May 2014

This booklet consists of 12 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.

[60 marks]

1. Study the diagram below.



Which of the following statement/s about the organism above is/are Incorrect?

- A: Both have leaves.
- B: Both reproduce by spores.
- C: Both are non-flowering plants.
- D: Both cannot make their own food.

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

2. Four pupils, Ali, Bala, Candy and Dan were having a discussion about the germination of seeds. They made the following statements.

Ali: The seed obtains its nutrients from the seed leaves.

Bala: During germination, the root breaks out of the seed coat first and grows upwards.

Candy: During germination, the shoot breaks out of the seed coat first and grows downwards.

Dan: Light, moisture and warmth are three conditions that are always necessary for seed germination.

Who made the correct statement/s?

- (1) Ali only
 - (2) Dan only
 - (3) Ali, Bala and Candy only
 - (4) Ali, Bala, Candy and Dan
3. The table shows the physical descriptions of four boys.

Name	Description
Andy	Has pimples
Bob	Has double eyelids
Charlie	Has short hair
Danny	Has attached earlobes

Which of the boys could have inherited these traits from their parents?

- (1) Andy and Charlie only
- (2) Charlie and Danny only
- (3) Bob and Danny only
- (4) Bob and Charlie only

(Go on to the next page)

4. Ruth and Jamie were asked to classify the following fruits into two groups.

Kiwi	Coconut	Love grass	Pong pong
------	---------	------------	-----------

Ruth classified the fruits into two groups as shown in the table below.

Group A	Group B
Kiwi	Coconut
Love grass	Pong pong

Jamie, on the other hand, classified the fruits into two groups as shown in the table below.

Group A	Group B
Kiwi	Love grass
Coconut	Pong pong

Which of the following shows the correct headings for the girls' grouping?

	Ruth		Jamie	
	Heading for Group A	Heading for Group B	Heading for Group A	Heading for Group B
(1)	Flowering plants	Non-flowering plants	Big	Small
(2)	Dispersed by animals	Dispersed by water	Edible	Inedible
(3)	Has many seeds	Has only one seed	Smooth surface	Rough surface
(4)	Has fibrous husk	Has stiff hairs	Seeds scattered randomly	Seeds scattered in one direction

5. A group of students wanted to find out if the parts of a flower affect the fertilization of the plant. They took four similar hibiscus flowers A, B, C and D. They removed various parts of the hibiscus flowers. The parts that were removed are shown in the table below.

Flowers	Parts removed
A	Petals only
B	Sepal only
C	Stigmas only
D	Anthers only

Then pollen grains from another flower was collected and dusted on the remaining parts of the four groups of flowers. The development of these flowers was then observed over a period of time.

Which flower/s did not develop into fruits after a few weeks on observation?

- (1) C only
 - (2) D only
 - (3) A and B only
 - (4) C and D only
6. Pansy found some fruits, A, B, C and D while jogging one day. She observed the fruits and recorded some characteristics of the fruits as shown in the table below.

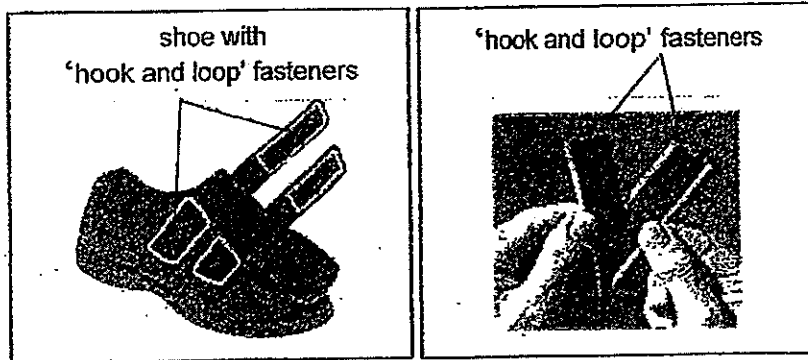
Fruit	Colour	Characteristics		Special Feature
		Flesh	Texture of outer covering	
A	Yellow	Thick	Smooth	None
B	Dark brown	Thin	Rough	None
C	Brown	Thin	Rough	Stiff hairs
D	Brown	Thin	Smooth	Wing-like

Which of the fruits are likely to be dispersed by animals?

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

(Go on to the next page)

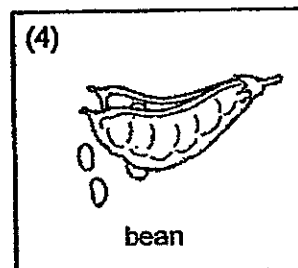
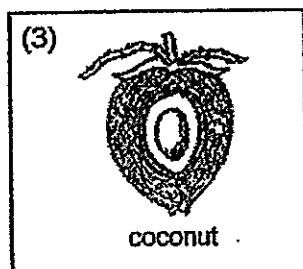
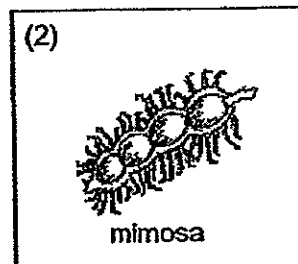
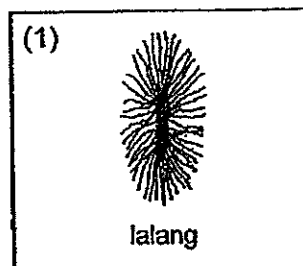
7. The diagram below shows the 'hook and loop' fasteners.



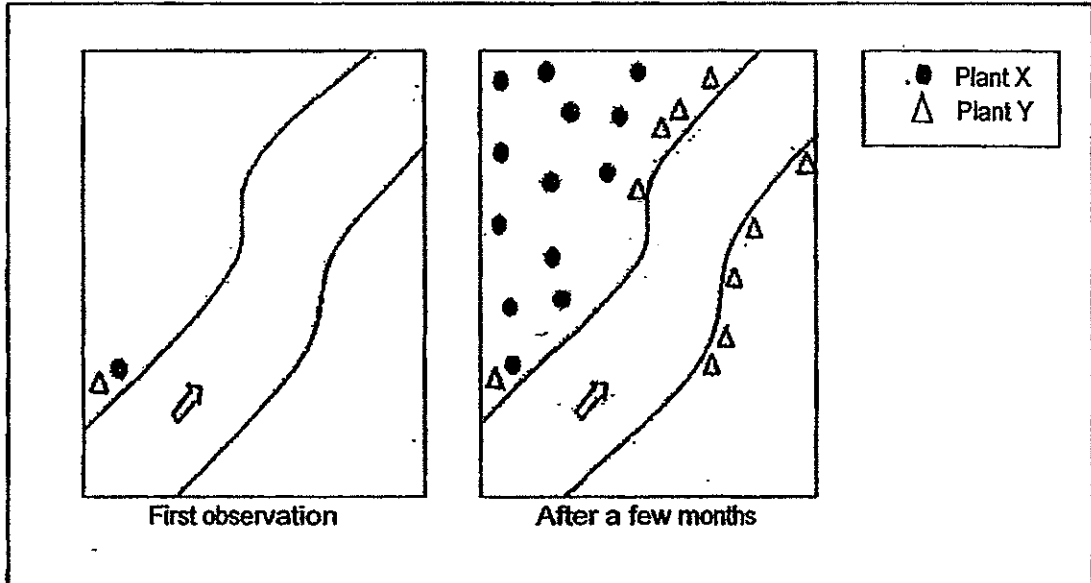
It is made up two components. One of the components feature tiny hooks while the other features hairy loops.

When the two components are pressed together, the hooks catch in the loops and the two pieces fasten or bind temporarily until they are separated.

Which of the following fruit has the same characteristics as the hook?



8. A group of friends recorded the number of wild plants X and Y on a piece of land. After a few months, they visited the piece of land again. Their observations are shown in the diagrams below.



What are the characteristics of the fruits of plants X and Y respectively?

	Plant X	Plant Y
(1)	stiff hairs	wing-like structures
(2)	wing-like structures	fibrous husk
(3)	fibrous husk	bright red outer covering
(4)	bright red outer covering	stiff hairs

(Go on to the next page)

9. Jenny and her friends carried out an experiment using two shorea fruits. They carried out the following procedure.

Prosedure	
Step 1	Collect two shorea fruits.
Step 2	Cut off the wing-like structure of one fruit.
Step 3	Drop both fruits from the same height and record the time taken for each fruit to reach the ground.
Step 4	Repeat the experiment three times.

What was the aim of their experiment?

They were trying to find out if the _____.

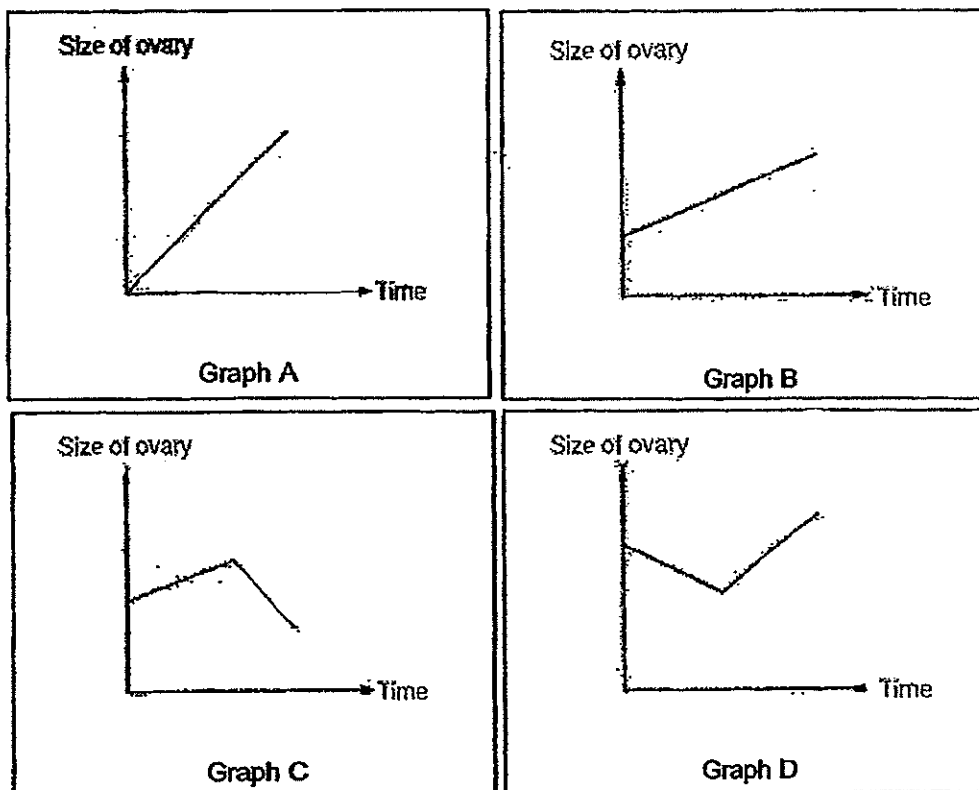
- (1) strength of the wind affect the distance travelled by the shorea fruit
 - (2) wing-like structure of the shorea fruit helped it to stay in the air longer
 - (3) number of fruits affect the time taken for the shorea fruits to stay in the air
 - (4) direction of the wind affect the time taken for the shorea fruit to stay in the air
10. The table below shows the comparison between the sexual reproduction in flowering plants and animals.

Type of sex celis	In flowering plants	In animals
Male	A	C
Female	B	D

Which of the following shows the correct representation of A, B, C and D?

	A	B	C	D
(1)	Anther	Ovum	Sperm	Egg
(2)	Sperm	Egg	Pollen grains	Ovum
(3)	Sperm	Pollen grains	Egg	Ovum
(4)	Pollen grains	Ovum	Sperm	Egg

11. The graph below shows the relationship between the size of the ovary over time after fertilisation takes place.

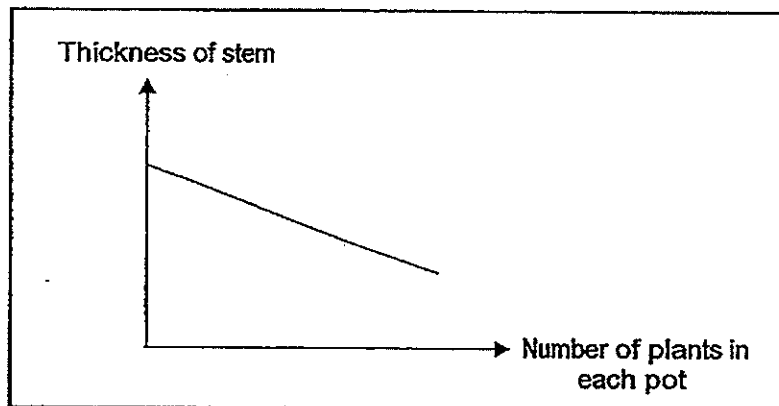


Which of the graphs above correctly shows the changes in the size of a flower's ovary after fertilization?

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

(Go on to the next page)

12. Julia had several similar pots. She planted different numbers of plants in each of the pots. She kept them in the same place and watered them with equal amounts of water. She noted that the thickness of the stems in each pot was different. The graph below shows how the number of plants in each pot affects the thickness of the stem.



Which of the following can you conclude from her experiment?

- A: Overcrowding can cause plants to have thin stems.
- B: The fewer the plants in the pot, the thinner their stems.
- C: The pots with the most number of plants have the thinnest stems.
- D: The greater the number of plants in the pot, the thicker the stem.

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

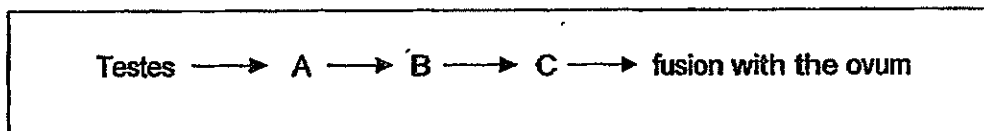
13. The table below shows the description of **Organisms P** and **Q**.

Description	Organism P	Organism Q
Lays eggs	Yes	Yes
Its young resembles its parent	No	No
Number of stages in a life cycle	4	3
Method of fertilization	Internal	External

Based on the information given in the table above, identify **Organism P** and **Q**.

	Organism P	Organism Q
(1)	Butterfly	Ostrich
(2)	Dragonfly	Rhinoceros
(3)	Cockroach	Pigeon
(4)	Mosquito	Toad

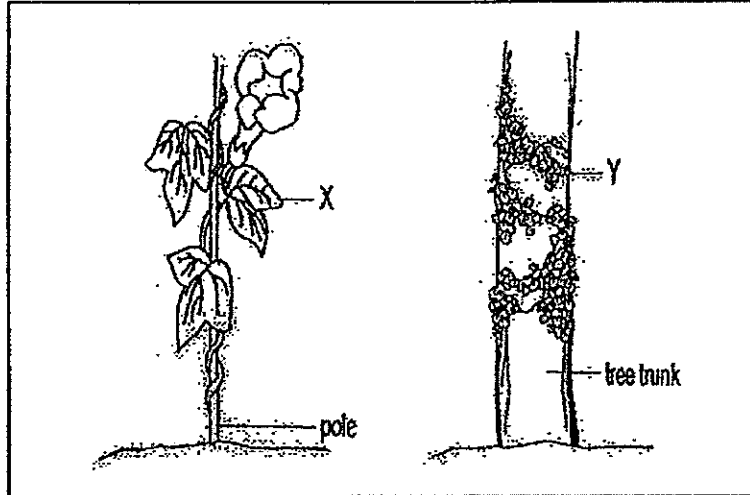
14. The **process of fertilisation** in animals takes place when the fusion of the sperm and the ovum occurs. Three letters A, B and C represent the movement of sperm from the male body to the female body as shown in the diagram below.



Which sexual organ is represented by B?

- (1) Uterus
- (2) Penis
- (3) Vagina
- (4) Fallopian tube

15. The diagram below shows two green plants, X and Y, growing in a garden.



The following statements describe plants X and Y.

- A: They have roots
- B: They reproduce by spores
- C: They make their own food
- D: They need support to grow

Which of the following statements about both plants, X and Y, is correct?

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

METHODIST GIRLS' SCHOOL



MID-YEAR SEMESTRAL ASSESSMENT 2014 PRIMARY 5 SCIENCE BOOKLET A2

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 5. _____

Date: 12 May 2014

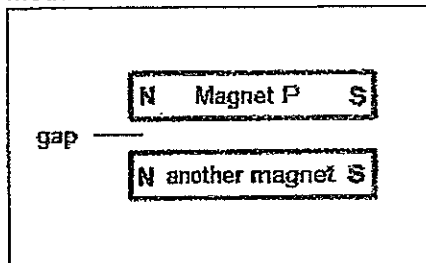
This booklet consists of 16 printed pages including this page

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.

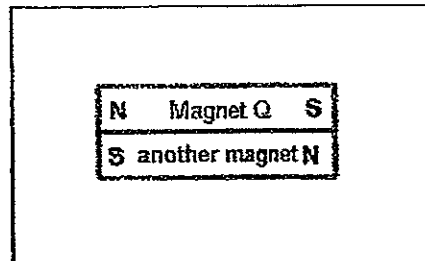
[60 marks]

16. Ah Teck wanted to find the best method, 1, 2, 3 or 4, to store magnets. He stored four identical magnets, P, Q, R and S, with other magnets of similar strength as shown below.

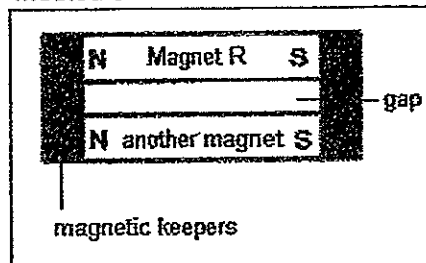
Method 1



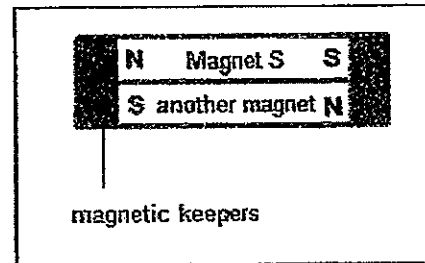
Method 2



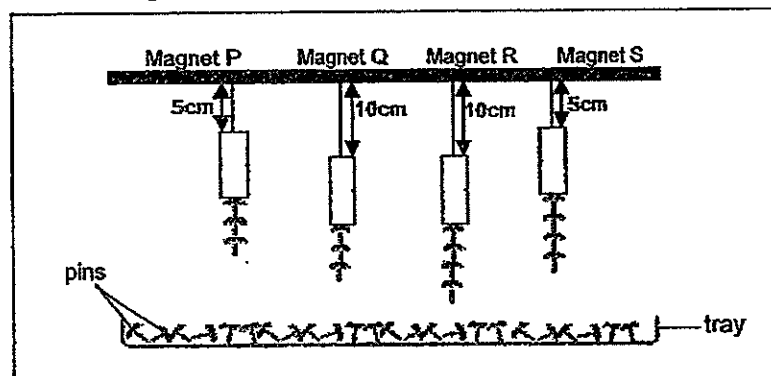
Method 3



Method 4



Two weeks later, he suspended the four magnets, P, Q, R and S above a tray containing some pins. He observed the number of pins attracted to each magnet to determine its strength.

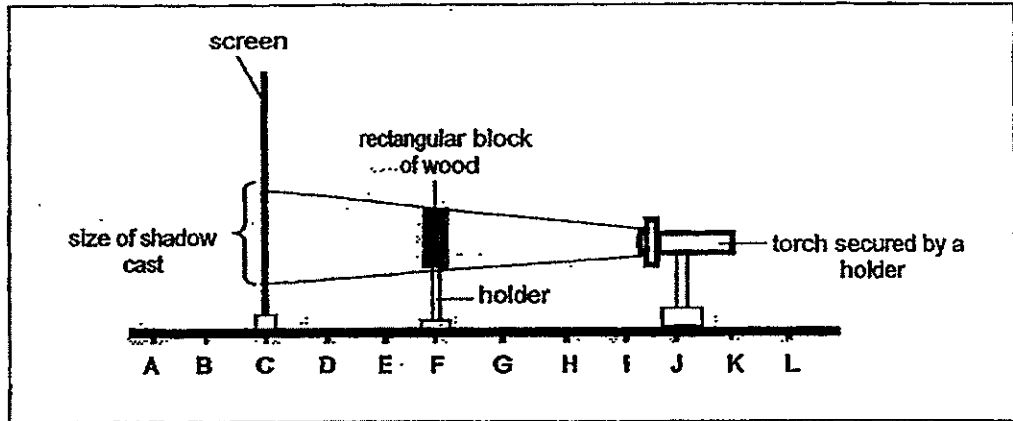


Based on his observations made, which is the best method to store magnets?

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

(Go on to the next page)

17. Ahmad made some markings A to L, at regular intervals, on a platform. He then positioned 3 objects on it. The screen was placed at position C, the rectangular block of wood at F and the torch at J. When the torch was switched on, a shadow was cast on the screen as shown in the diagram below.

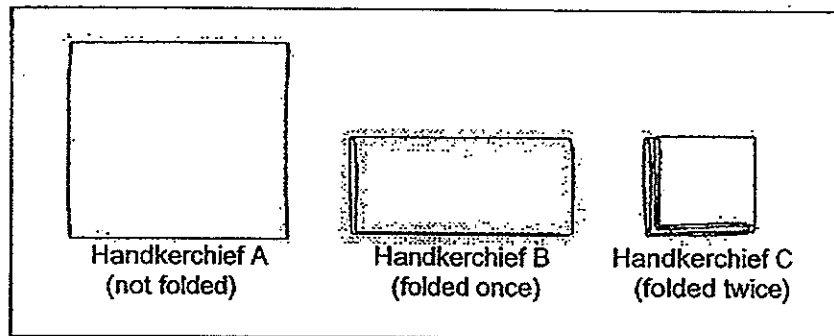


If Ahmad were to shift the torch to position H on the platform, which of the following differences would he notice in the shadow cast?

- A : The shadow would be bigger.
- B : The shadow would be smaller.
- C : The shadow would be clearer.
- D : The shadow would be blurred.

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

18. Valerie conducted an experiment using three identical handkerchiefs A, B and C.



She poured the same amount of water on each of them. She then made different number of folds and recorded the time taken for each handkerchief to dry completely.

Her results are shown below.

Handkerchief	Time taken to dry completely (min)
A	20
B	40
C	100

Based on the results above, Valerie and her friends made the following conclusions.

Sumei: The more the number of folds, the higher the rate of evaporation.

Tim: The fewer the number of folds, the higher the rate of evaporation.

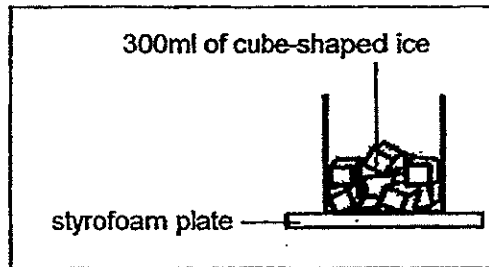
Usha: The smaller the exposed surface area of the handkerchief, the lower the rate of evaporation.

Valerie: The larger the exposed surface area of the handkerchief, the lower the rate of evaporation.

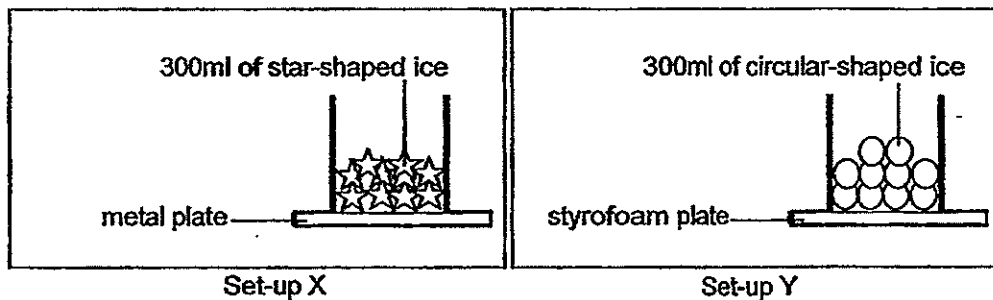
Who made the correct conclusion/s?

- (1) Sumei only
- (2) Tim and Usha only
- (3) Usha and Valerie only
- (4) Tim, Usha and Sumei

19. Lily wanted to find out whether the shape of ice affects its melting rate. She placed ten pieces of cube-shaped ice with a combined volume of 300ml into a glass beaker as shown in the diagram below.



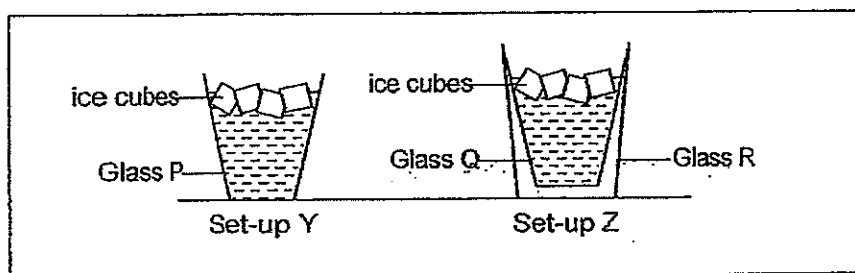
Lily then prepared the following set-ups to compare her results.



Which of the set-ups above, X or Y, should Lily choose to compare her results and what should Lily measure in order to find out how the shape of ice affects the rate at which ice melts?

	She should choose Set-up	She should measure
(1)	X	The amount of water droplets formed on the outer surface of the glass beaker.
(2)	Y	The time taken for ice to melt completely.
(3)	X	The amount of water left in the glass beaker.
(4)	Y	The temperature of the water in the glass beaker.

20. Nora filled two identical glasses, P and Q, with the same amount of water. She then added four ice cubes into each glass. Next, she placed glass Q into glass R, as shown in the diagram below.



Five minutes later, she recorded her observation in the table as shown below.

Observation	Set-up Y	Set-up Z
Condition of ice cubes	Completely melted	Slightly melted
Water droplets forming outside of glass	Yes	No

Based on Nora's experiment, the outside of Set-up Y felt cooler compared to the outside of Set-up Z.

Mrs Tan, Nora's teacher, said that glasses with double walls reduced the amount of water droplets condensing on the outside of the glass when ice water was placed inside the glass.

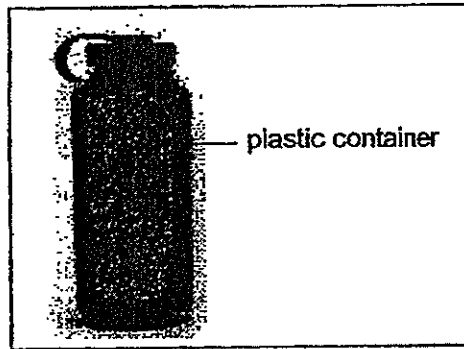
Nora thought of the following reasons to explain Mrs Tan's theory.

- A: The air between Glass Q and Glass R acted as a poor conductor of heat.
- B: The heat from the surrounding air had to travel through Glass R before it could come into contact with the cooler surface of Glass Q.
- C: The heat from the surrounding air was able to reach Glass P faster than Glass Q.

Which of the following reason/s explain/s Mrs Tan's theory correctly?

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

21. The diagram below shows a plastic container with a capacity of 3000 cm^3 .



Four students, John, Hassan, Limin and Muru, made the following statements about the container.

- John: The plastic bottle can store 2000 cm^3 of carbon dioxide.
- Hassan: It can store 3050 cm^3 of oxygen.
- Limin: It can store 1000 cm^3 of sand:
- Muru: It can store 3010 cm^3 of water.

Who made the correct statements?

- (1) John and Hassan only.
- (2) John, Hassan and Limin only
- (3) John, Limin and Muru only
- (4) John, Hassan, Limin and Muru only

22. Wendy conducted an experiment by heating three similar rods made of metals, W, X and Y for 30 minutes. She recorded the lengths of each rod before and after the heating in the table as shown below.

Metal	length before heating (mm)	Length after 30 min of heating (mm)
W	200	210
X	200	203
Y	200	207

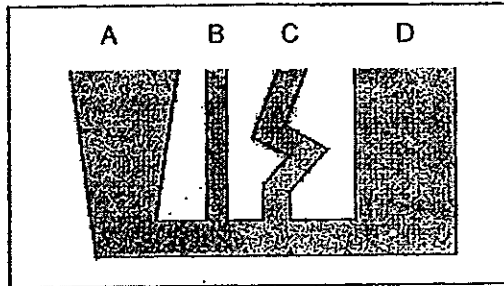
Based on the results of her experiment, Wendy concluded that different metals increase by different lengths after heating.

Using the same heat intensity, Wendy then heated another thicker rod made of metal Z of length 200 mm for 30 minutes.

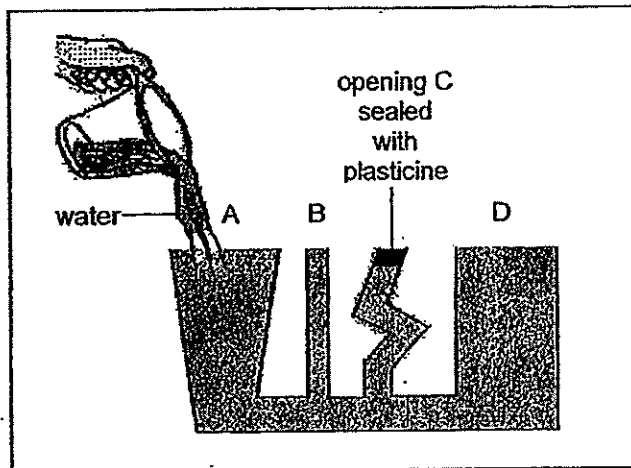
Which of the following correctly describes the length of the rod made of metal Z after heating?

	Length of rod made of metal Z	Reason
(1)	more than 200 mm	The amount of heat supplied is the same. The thicker rod will take a longer time to heat up as compared to the thinner rod. Hence, it will expand less than the other metals.
(2)	more than 200 mm	The amount of heat supplied is higher. The thicker rod will take a shorter time to heat up as compared to the thinner rod. Hence, it will expand more.
(3)	equal to 200 mm	The amount of heat supplied is too low. The thicker rod will need a longer time to heat up as compared to the thinner rod. Hence, its length will remain the same.
(4)	not able to tell	The amount of heat supplied is not indicated. Hence, there was not enough information to determine the length of rod made of metal Z.

23. The diagram below shows a communicating vessel with openings, A, B, C and D.



Ah Mei sealed opening C with some plasticine and started pouring water into the communicating vessel as shown in the diagram below.



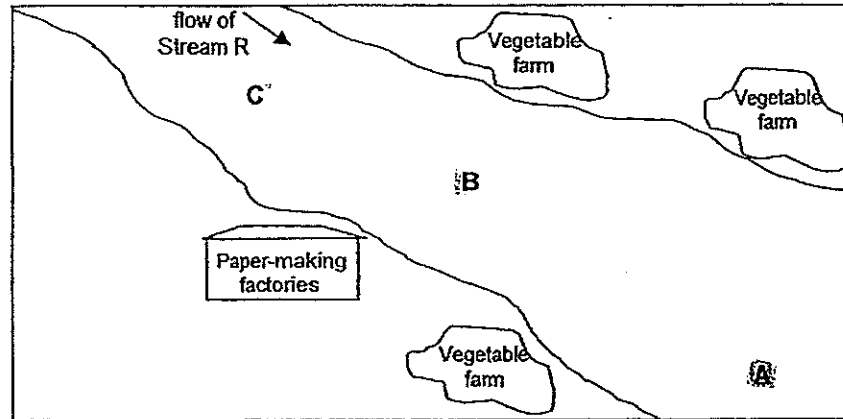
Which of the following shows the correct water level after the water has been poured into the communicating vessel?

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

(Go on to the next page)



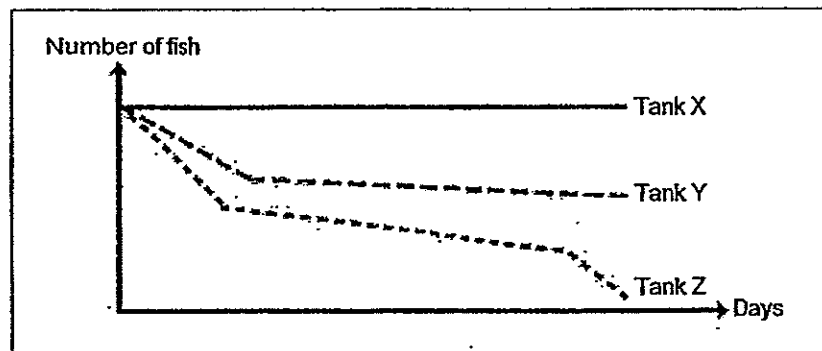
24. The diagram below shows Stream R. Some nearby vegetable farms and a paper-making factory were reported to discharge their waste into the stream.



To determine the effect of water pollution on living organisms, three water samples were taken from Points A, B and C of Stream R.

The water samples were then used to fill up three identical tanks, X, Y and Z respectively. Six identical fish were placed in each tank and then placed in the same room.

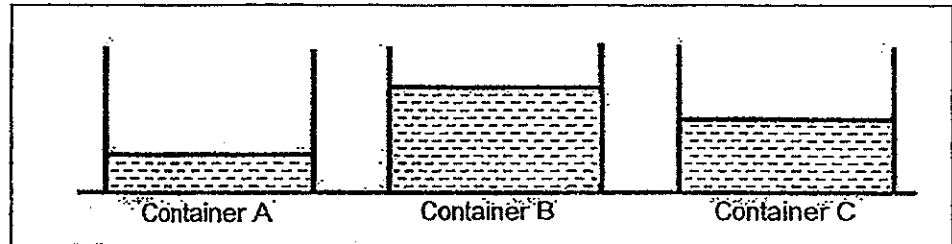
The fish were fed daily with the same amount of food. The same number of water plants was also included in each tank. The number of live fish in the tank was recorded over 2 weeks and presented in a graph as shown below.



Based on the graph above, which of the following shows the tanks and its corresponding water samples contained in each of them correctly?

	Tank X	Tank Y	Tank Z
(1)	Point B	Point A	Point C
(2)	Point C	Point A	Point B
(3)	Point A	Point B	Point C
(4)	Point C	Point B	Point A

25. Kok Sing filled three identical containers A, B and C with different amounts of water as shown in the diagram below. He placed the containers at the same place in a humid area.



Three hours later, he measured the amount of water left in the three containers using a measuring cylinder.

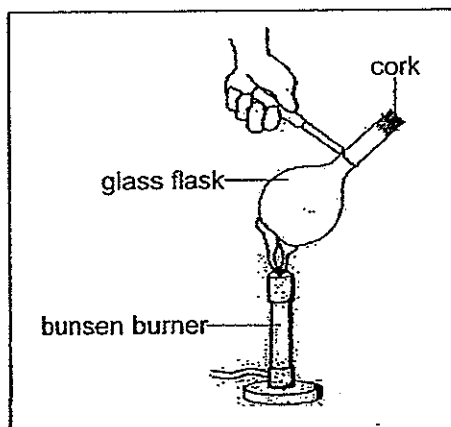
Based on his findings, he wrote the following statements.

- Statement 1: There is more water left in container B than in container C after three hours.
- Statement 2: There is no more water left in container A after three hours.
- Statement 3: The water in container C evaporates the slowest.
- Statement 4: The rate of evaporation for all the three containers is the same.

Which of the statements above are correct?

- (1) Statements 1 and 2 only
- (2) Statements 3 and 4 only
- (3) Statements 1 and 4 only
- (4) Statements 2 and 3 only

26. Mina heated an empty glass flask over a bunsen burner for 30 minutes as shown in the diagram below



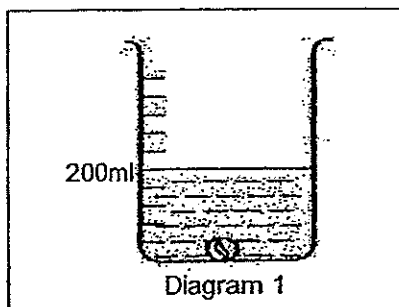
Mina's friends made the following predictions about what would happen after the flask was heated for 30 minutes.

- Ahmad: The cork would pop out because when the flask was heated, the air inside the flask gained heat. As it gained heat, it would expand and push the cork out.
- Britney: Nothing would happen because the heat could not travel through the flask. The air inside the flask would remain the same hence there would be no reaction.
- Chitra: The cork would be sucked into the flask because when the flask was heated, the flask would expand. There would be more space inside the flask hence the cork would be sucked into the flask.
- David: The cork would pop out because when the flask was heated, the flask would gain heat from the surrounding air. The heat would then push the cork out.

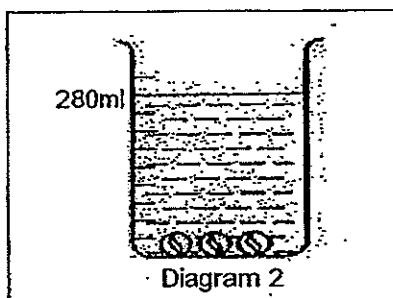
Who made the correct prediction?

- (1) Ahmad
- (2) Britney
- (3) Chitra
- (4) David

27. When Ravi placed a marble into a beaker of water, the water rose to the level as shown in Diagram 1 below.



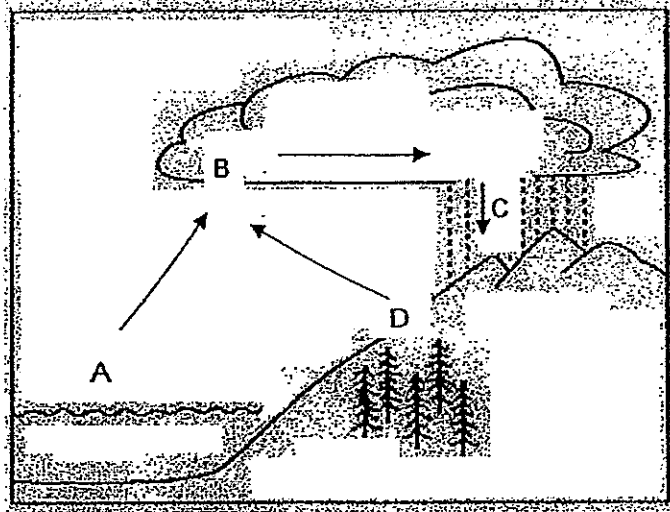
When Ravi added two more marbles of the same size into the beaker of water, the new water level is as shown in Diagram 2.



What would the water level be if all the marbles were removed and what property of matter did it show?

	Water level	Property of matter
(1)	80 ml	Matter occupies space.
(2)	100 ml	Matter occupies space and it has mass.
(3)	160 ml	Matter occupies space and it has volume.
(4)	240 ml	Matter occupies space and has no definite volume.

28. The diagram shows the different stages of the water cycle.



Based on the diagram above, some pupils made the following statements about the stages of the water cycle.

Deborah: Evaporation occurs only at stage A.

Elsie: There is heat lost both at Stage A and Stage B.

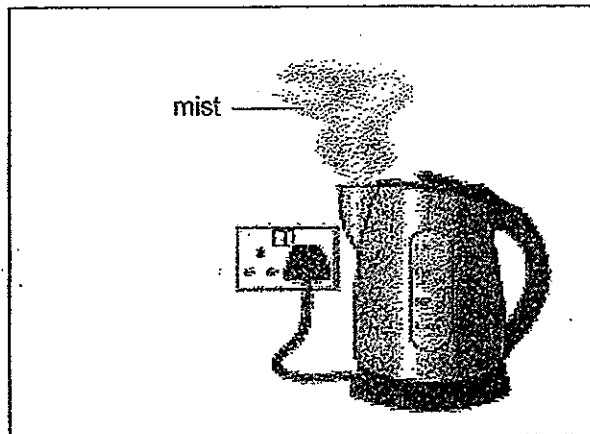
Fandi: At Stage D, plants give out water vapour into the surrounding.

Who made the correct statement/s?

- (1) Elsie only
- (2) Fandi only
- (3) Deborah only
- (4) Elsie and Deborah only

(Go on to the next page)

29. When water boils, a mist can be seen coming from the boiling water as shown below.



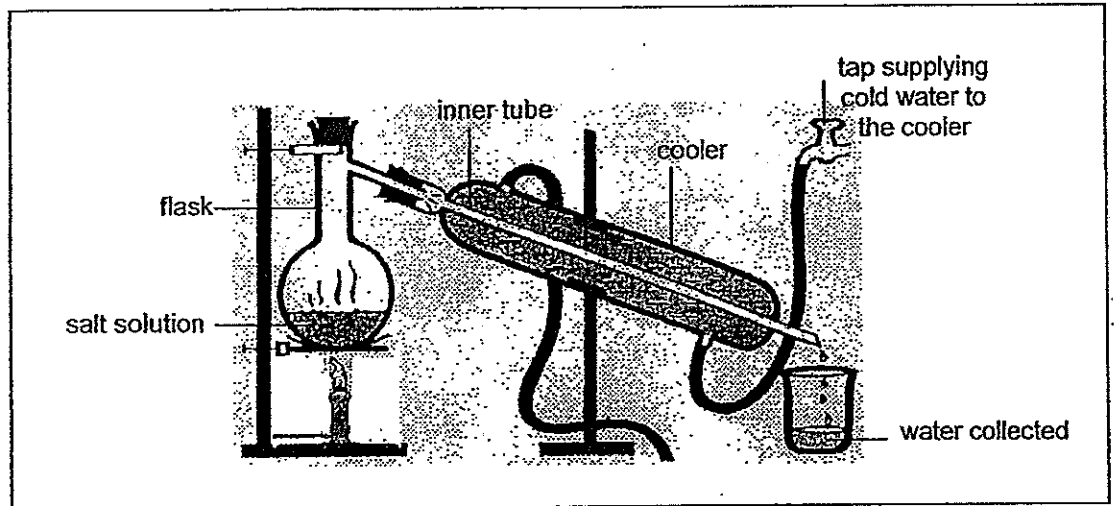
The table below shows some differences between mist and steam made by some pupils.

Pupil	Mist	Steam
Jenna	It can be seen	It cannot be seen
Kaili	It is made up of tiny water droplets	It is made up of water vapour
Lionel	There is heat gain	There is heat lost
Muthu	The process is called condensation	The process is called evaporation

Whose comparisons were correct comparison/s?

- (1) Jenna and Kaili only
- (2) Lionel and Muthu only
- (3) Lionel, Muthu and Jenna only
- (4) Jenna, Kaili and Muthu only

30. The diagram below shows the process known as distillation.



Distillation may be used to remove salt from water.

The table below shows the steps involved in distillation.

Step	Description
1	The salt solution is heated in a flask to boiling point.
2	The water will vaporize (or become steam) while the salt remain in the flask.
3	The steam is then directed into an inner tube.
4	In the inner tube, the steam cools down and returns to water as it come into contact with the cooler.

Which of the following shows the correct sequence of processes in distillation?

- (1) heating → evaporating → cooling → condensing
- (2) heating → condensing → cooling → evaporating
- (3) cooling → condensing → heating → evaporating
- (4) cooling → evaporating → heating → condensing

METHODIST GIRLS' SCHOOL

Founded in 1887



MID-YEAR SEMESTRAL ASSESMENT 2014 PRIMARY 5 SCIENCE BOOKLET B1

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

Name: _____ ()

Class: Primary 5. _____

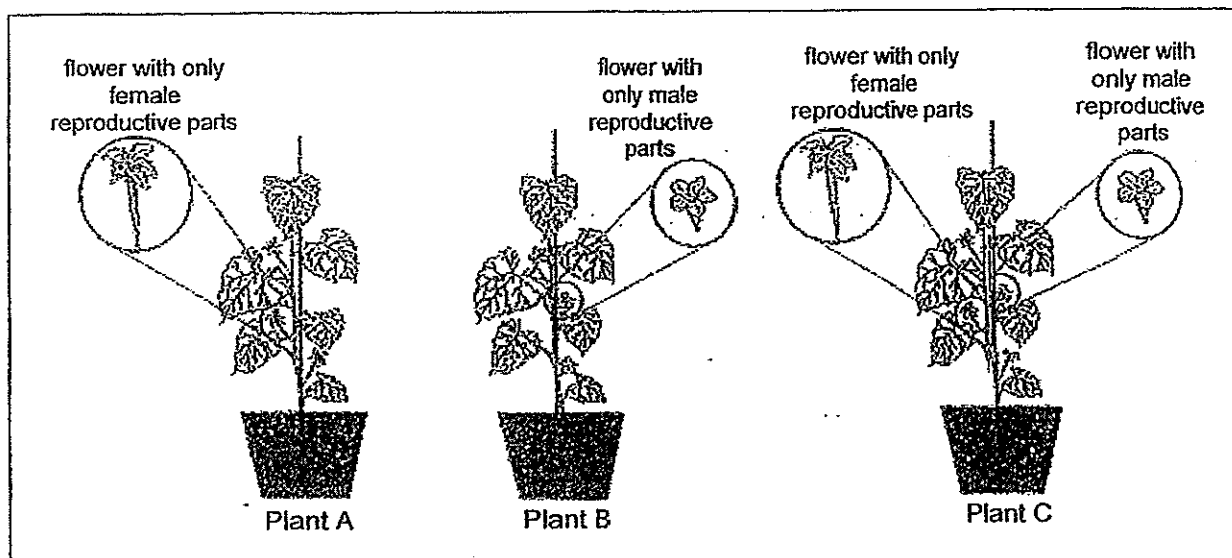
Date: 12 May 2014

Booklet A1 & A2	/ 60
Booklet B1	/ 20
Booklet B2	/ 20
Total	/ 100

This booklet consists of 7 printed pages including this page.

For questions 31 to 37, 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. [20 marks]

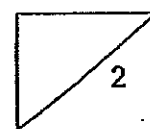
31. Study the diagram of the cucumber plant shown in the diagram below.



Plants A, B and C are found in the same garden.

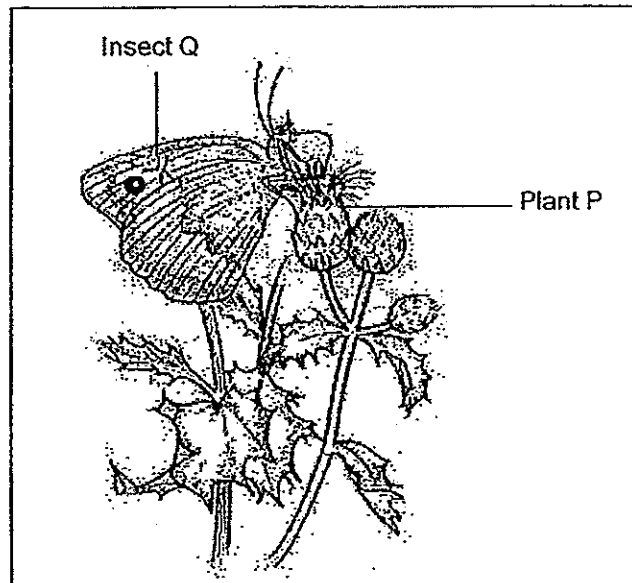
Which of the following statements about these three plants are "True", "False" or "Not possible to tell"? Put a tick in the correct column. [2]

	Statement	True	False	Not possible to tell
(a)	The flowers on plant B can undergo self-pollination			
(b)	Plant B will not be able to produce any fruits			
(c)	Any fruits that develop on Plant C will have a combination of characteristics from Plant A and Plant B.			



(Go on to the next page)

32. The diagram below shows Plant P and Insect Q depending on each other to survive. Insect Q feeds on the nectar of the flower of Plant P.

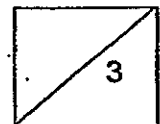


- (a) Name two possible characteristics of the flowers of Plant P. [2]

(i) _____

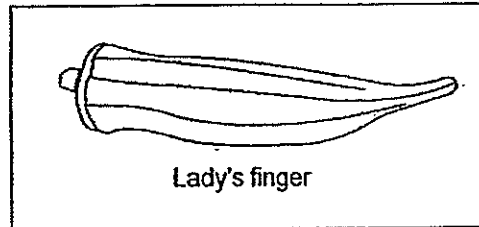
(ii) _____

- (b) How is Insect Q important in ensuring the continuity of Plant P? [1]



(Go on to the next page)

33. Study the picture of a lady's finger as shown in the diagram below.

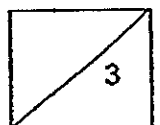


When mature, the fruit of the lady's finger dries up and becomes tougher and more woody in texture.

- (a) Based on the information given only, what is the most likely method of seed dispersal for the fruit shown above? [1]

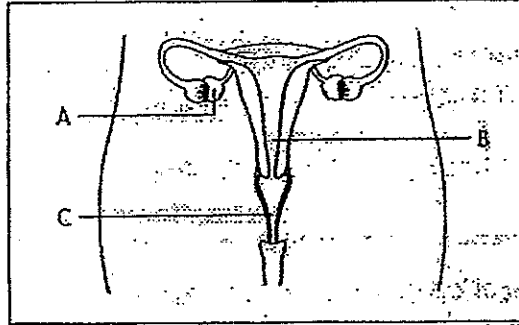
- (b) Give a main reason why plants disperse their seeds [1]

- (c) Name another plant that disperses its seeds using the same dispersal method mentioned in (a). [1]



(Go on to the next page)

34. Study the human system below carefully.



(a) Name the parts labelled, A, B and C. [1½]

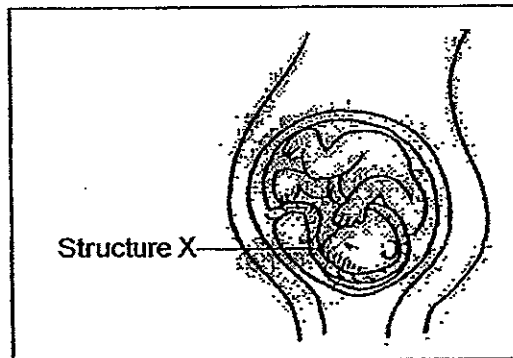
A: _____

B: _____

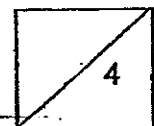
C: _____

(b) What is the importance of organ A? [1]

35. The diagram below shows a foetus and structure X.

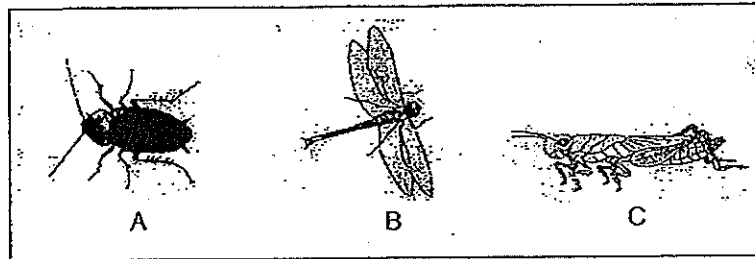


Identify structure X and how is structure X important to the foetus? [1½]



(Go on to the next page)

36. Study the insects shown below.



(a) List one similarity in their life cycles:

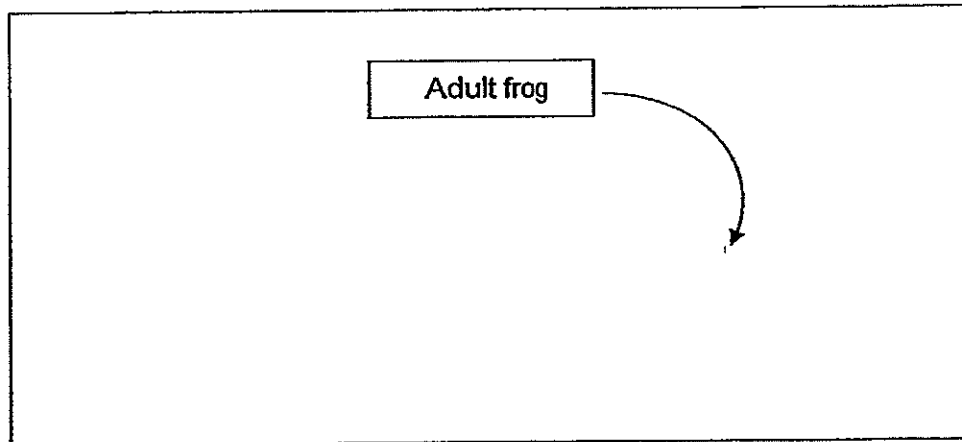
[1]

(b) What is one difference between Insect A and its young in terms of their appearance? (Do not compare size and shape)

[1]

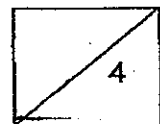
(c) In the space below, complete the life cycle of the frog.

[1]



(d) State one difference between the life cycle of a frog and that of Insect A.

[1]

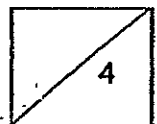


(Go on to the next page)

37. Sam planted 30 seeds of chilli and pumpkin in soils of different temperatures. The percentage of seeds which germinated and the number of days taken for the first seed of each batch to germinate were recorded in the table below.

Temperature °C	Chilli		Pumpkin	
	Percentage germinated	Number of days taken to germinate	Percentage germinated	Number of days taken to germinate
0	0	-	0	-
5	0	-	0	-
10	80	30	0	-
15	98	14	0	-
20	98	8	20	13
25	97	6	50	8
30	85	6	60	5
35	40	9	0	-
40	0	-	0	-

- (a) What is the best temperature range for both types of seed to germinate? [1]
- _____
- (b) Give a reason for your answer in (a). [1]
- _____
- _____
- (c) By comparing the results for the chilli and pumpkin seeds, which type of seed is more sensitive to the temperature of the soil? [1]
- _____
- (d) Give a reason for your answer in (c). [1]
- _____
- _____



METHODIST GIRLS' SCHOOL

Founded in 1887



MID-YEAR SEMESTRAL ASSESMENT 2014 PRIMARY 5 SCIENCE BOOKLET B2

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

Name: _____ ()

Class: Primary 5 . _____

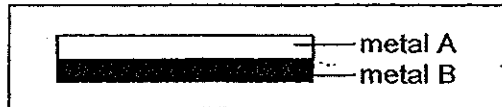
Date: 12 May 2014

Booklet B2	/ 20
------------	------

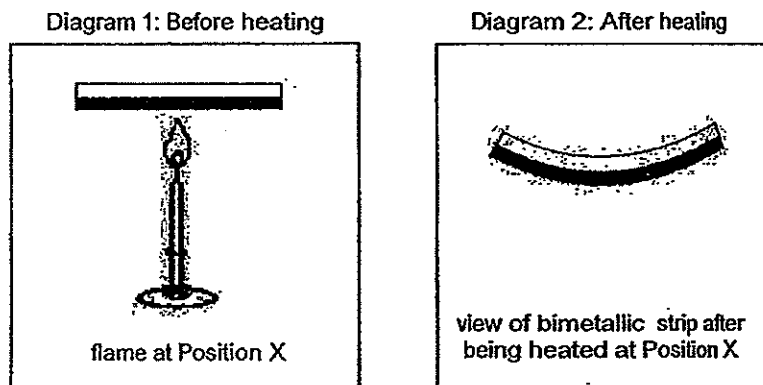
This booklet consists of 12 printed pages including this page

For questions 38 to 44, 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. [20 marks]

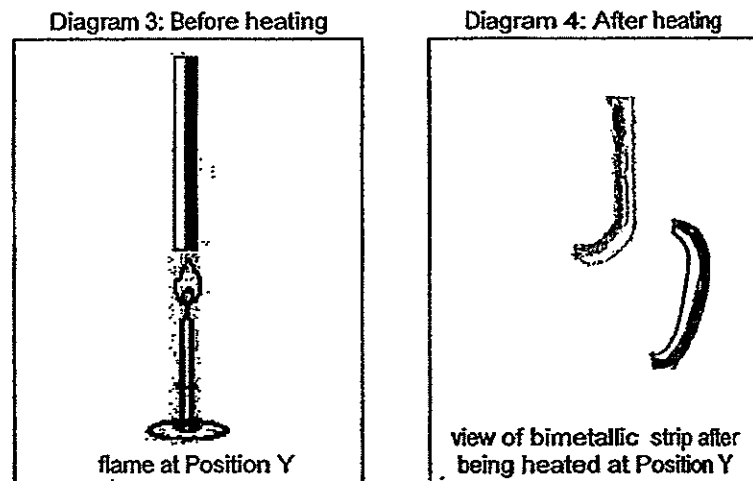
38. A bimetallic strip consists of two metals attached firmly to each other. In the bimetallic strip shown below, metal A expands at a slower rate than metal B when heated.



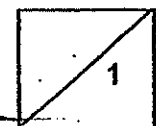
A flame is positioned at Position X of the bimetallic strip as shown in the Diagram 1 below. Diagram 2 shows what the bimetallic strip looked like after it was heated.



The flame is then placed at Position Y of the bimetallic strip as shown in Diagram 3.

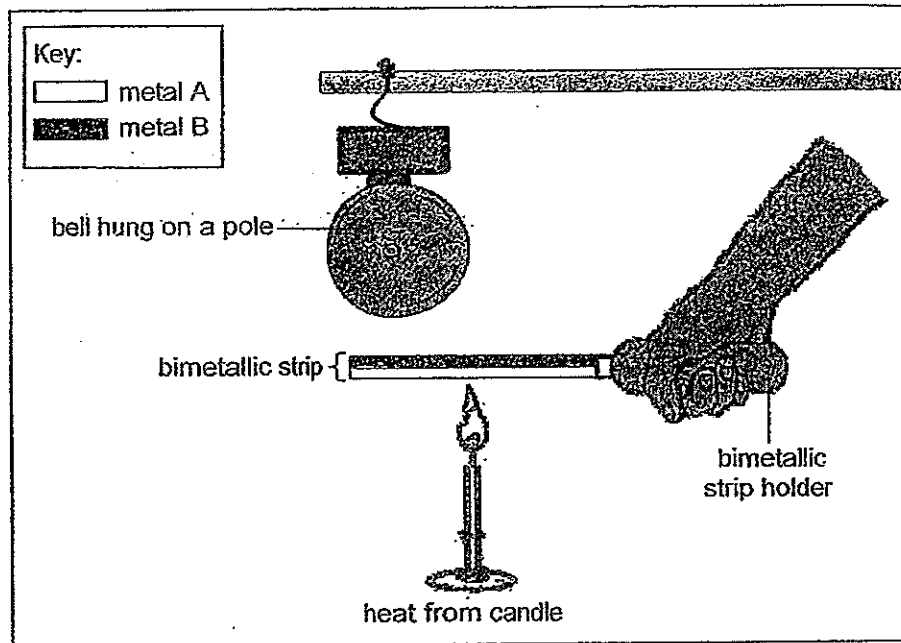


- (a) In Diagram 4 above, **draw and shade** the bimetallic strip to show what it would look like after it was heated at Position Y. [1]



(Go on to the next page)

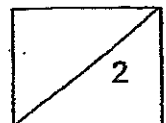
Jenny wanted to use the **same type** of bimetallic strip to carry out an experiment. She attached the bimetallic strip to a holder and placed a heated candle under the strip as shown in the diagram below.



When the bimetallic strip gets heated up by the candle, it will bend and touch the bell causing the bell to ring.

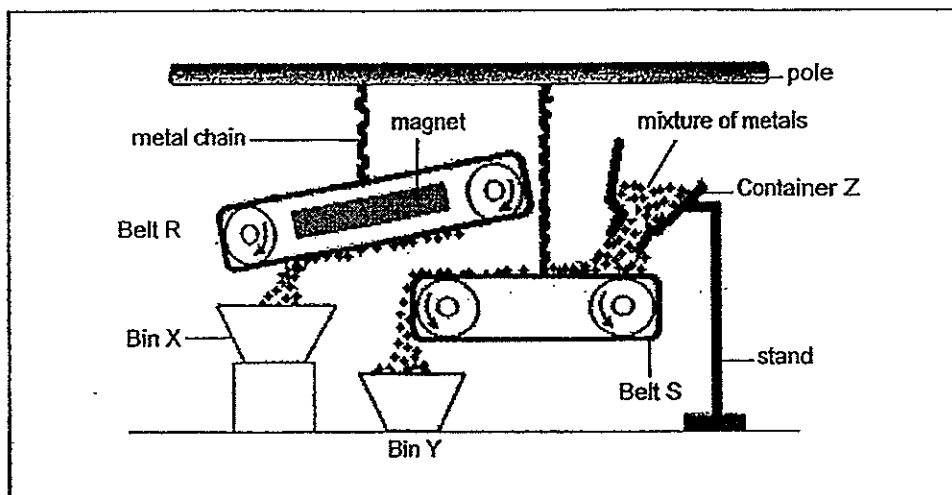
- (b) Jenny's friend commented that there is a mistake in her set-up. Identify the mistake. [1]

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



(Go on to the next page)

39. The diagram below shows some machines that were used to separate magnetic metals from non-magnetic metals.



Siti poured a mixture of metals into Container Z. The mixture landed onto moving Belt S.

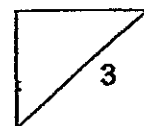
As the mixture moved along Belt S, Siti observed that at certain points, some metals were 'picked up' by the moving Belt R. These metals then travelled along Belt R, before they were collected in Bin X.

- (a) What metals were collected in Bin X? [½]

- (b) Explain how the magnetic metals were 'picked up' by the moving Belt R and then collected in Bin X? [1½]

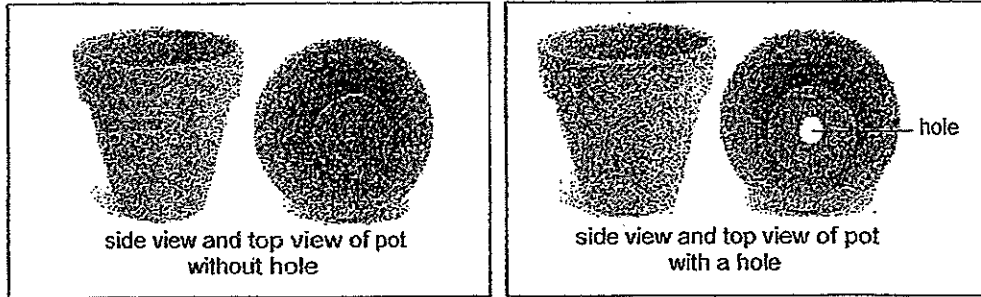
Siti's teacher said that one way to fill up Bin X faster is to pour more metals into Container Z.

- (c) Suggest another way for Siti to fill up Bin X faster. [1]

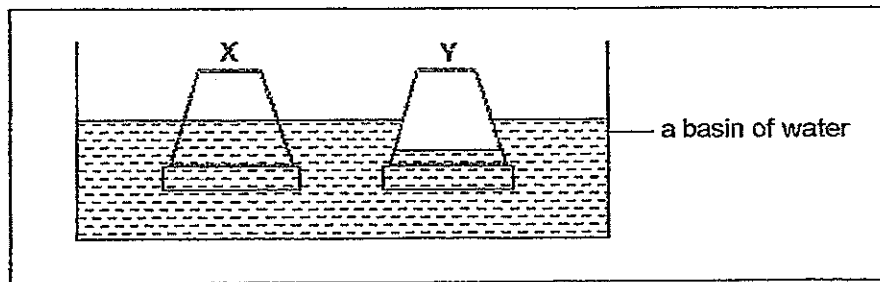


(Go on to the next page)

40. Ali found two clay pots. The pots are similar in every way except that one has a hole at the base while the other does not as shown in the diagrams below.

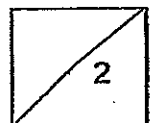


He then inverted the two pots into a basin of water as shown in the diagram below.



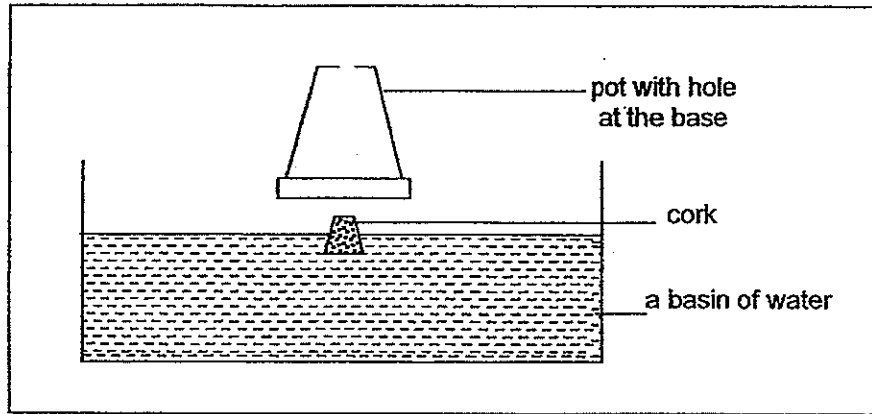
- (a) Identify the pot (X or Y) which has a hole at the base and the one without any hole at the base respectively. [1]
- (i) Pot with a hole at the base: Pot _____
- (ii) Pot without any hole at the base: Pot _____

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



(Go on to the next page)

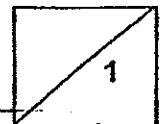
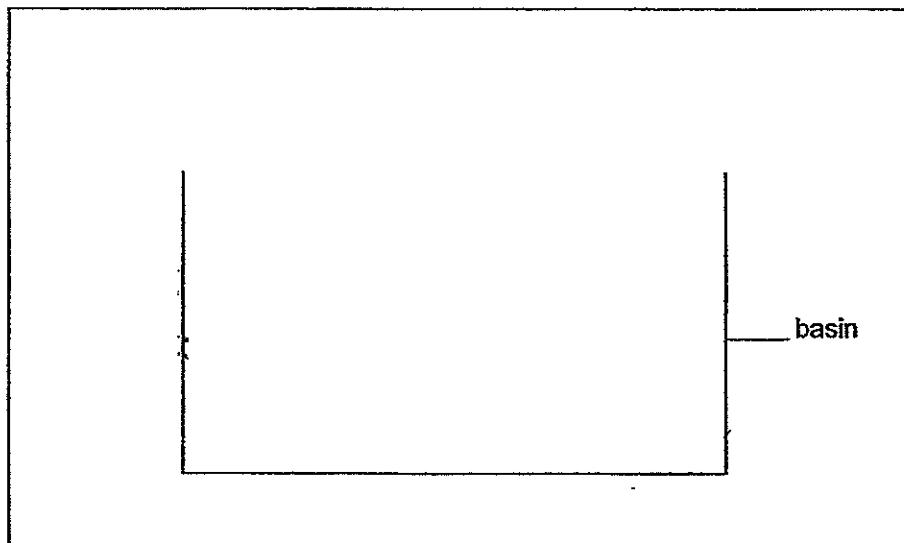
Ali then placed a piece of cork in the basin of water. Next, he inverted the pot with the hole over the piece of cork as shown in the diagram below.



- (c) In the box below, complete the diagram by drawing in
- (i) the cork
 - (ii) the pot with the hole at the base
 - (iii) the water level in the basin and in the inverted pot

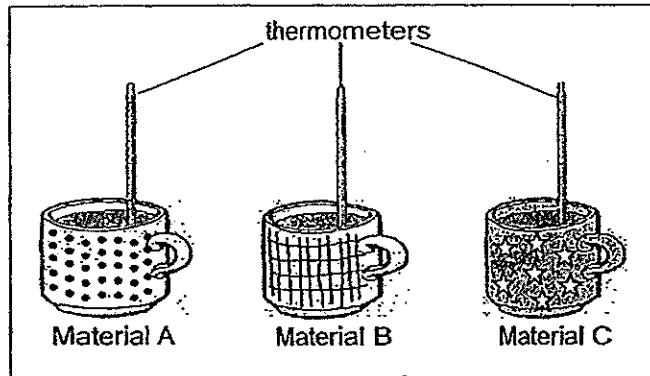
when Ali pushed the inverted pot vertically into the water.

[1]

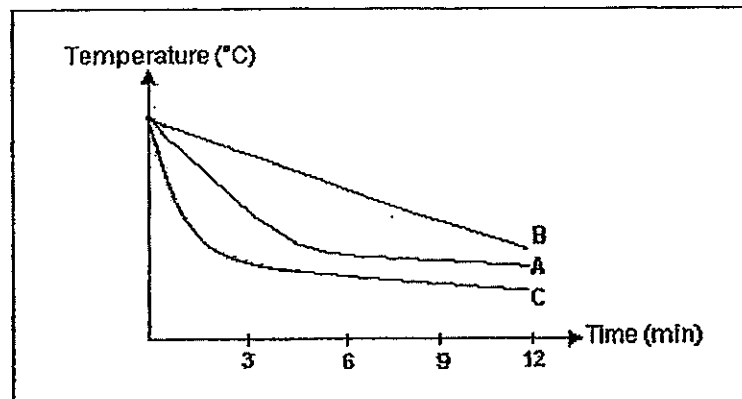


(Go on to the next page)

41. Hadi carried out an experiment to find out which kind of mug is best for keeping his tea hot. All the mugs are of the same size and thickness but are of different materials. Each mug was filled with the same amount of tea at 100°C as shown in the diagram below.



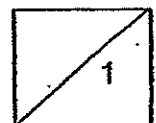
The changes in the temperatures of the tea in each mug were then recorded over a period of time. The graph below shows the temperature change of the tea in the 3 mugs.



Based on the graph above, Hadi concluded that mug B is best for keeping the tea hot.

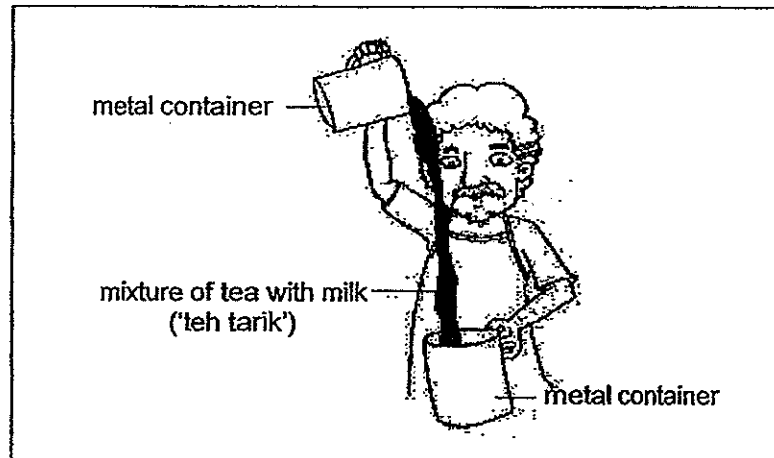
- (a) Do you agree with him? Explain your reason.

[1]



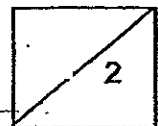
(Go on to the next page)

One morning, Hadi went to a hawker centre to have breakfast with his father. His father ordered 'teh tarik'. His father explained that 'teh tarik' was actually tea with milk. Hadi then noticed that the mixture of tea with milk was then poured up and down between two metal containers repeatedly as shown in the diagram below before it was served to his father.



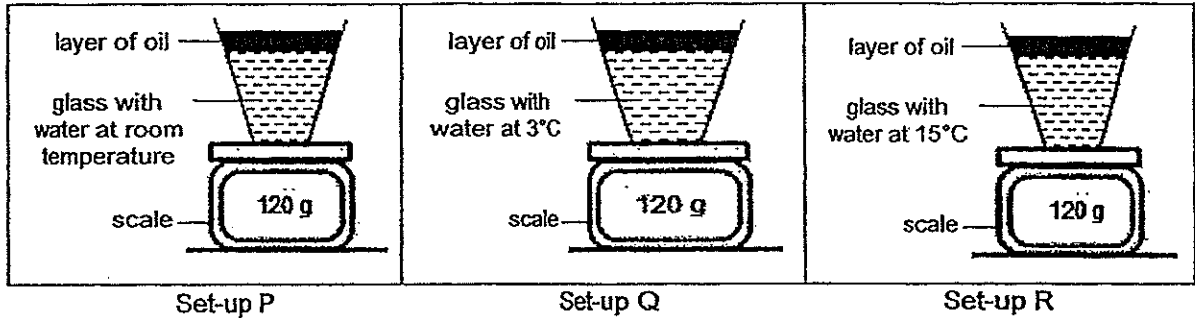
- (b) How did the action of repeatedly pouring the mixture of tea with milk between the two metal containers help to cool the tea? [1]

- (c) According to Hadi's observation above, why do you think metal containers are used to prepare the 'teh tarik'? [1]



42. Suling filled three identical glasses with 100 ml of water and 10 ml of oil each. One of the glasses contained water and oil at room temperature, another glass contained water and oil at 3°C and another glass contained water and oil at 15°C.

She placed all the glasses on identical digital scales as shown below.



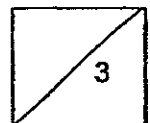
- (a) Why did Suling pour the layer of oil into each glass of water? [1]

Five minutes later, Suling observed that the mass of the glass and its content in set-up Q was greater than that in set-up R.

- (b) Explain Suling's observations. [1]

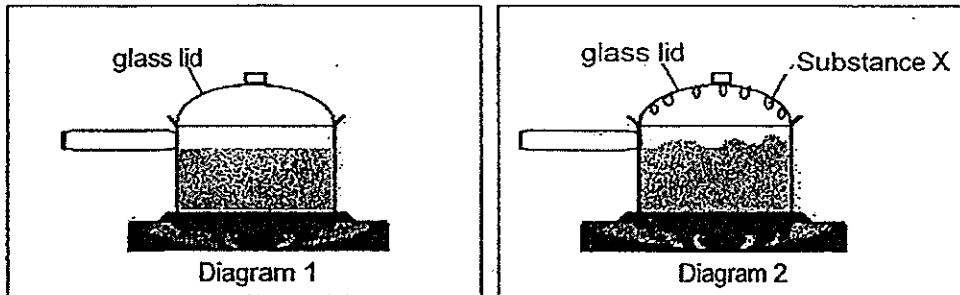
After another ten minutes, Suling observed that the mass of the glass of water and oil in set-up P remained unchanged.

- (c) Based on Suling's observations of set-up P only, what will happen to the mass of the glass after another 10 minutes later? [1]



(Go on to the next page)

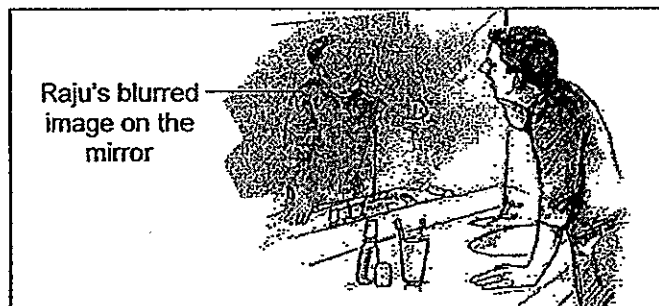
43. Raju's wife heated up a pot of soup as shown in Diagram 1. Twenty minutes later, he noticed that Substance X formed on the underside of the transparent glass lid as shown in Diagram 2. It then became difficult for him to see through the glass lid of the pot.



- (a) Identify Substance X.

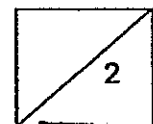
[1]

After work, Raju had a hot shower. After his shower, while he was still in the bathroom brushing his teeth, he realized that he could not see his image clearly in the mirror.



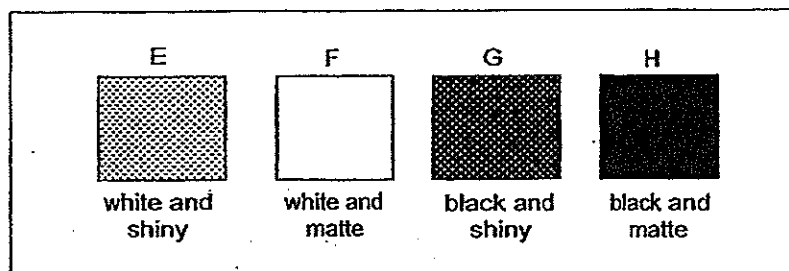
- (b) How did Raju's image in the mirror become blurred?

[1]



(Go on to the next page).

44. Brenda selected 4 metal sheets, E, F, G and H of different surfaces and labelled them as shown in the diagram below to investigate if the colour and the finishing of materials affects the rate at which heat is transferred.



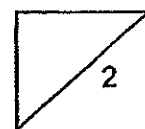
She left the 4 metal sheets under the hot sun for 3 hours before measuring their temperature. She recorded the results in the table as shown below.

Metal sheet	Colour	Finishing	Temperature at the end of 3 hrs
E	white	shiny	50° C
F	white	matte	55° C
G	black	shiny	70° C
H	black	matte	75° C

Based on the results of the experiment, Brenda concluded that the colour of the metal sheets affects the rate at which heat is transferred more than the finishing.

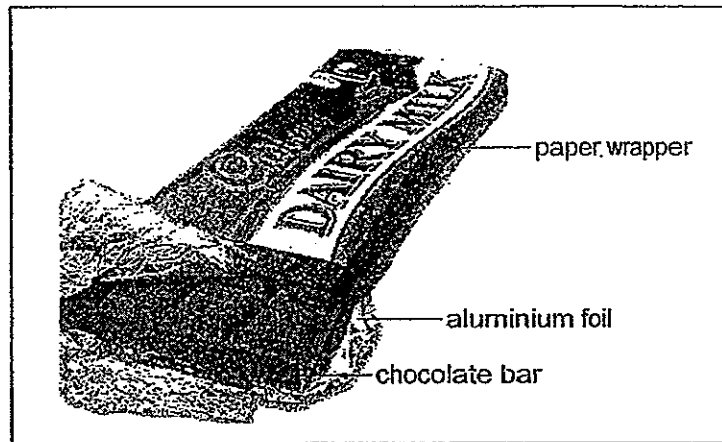
- (a) Do you agree with her? [1]

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



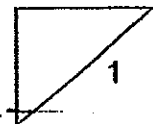
(Go on to the next page)

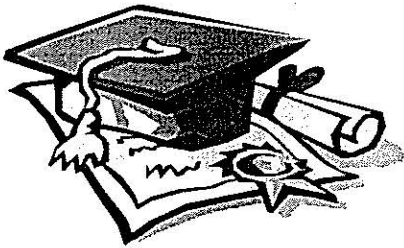
Most chocolates sold are wrapped in aluminium foil which is beneath the paper wrapper as shown in the diagram below.



The aluminium is used to provide a barrier against light, moisture and other gases so as to prevent the chocolates from spoiling.

- (c) Explain how by wrapping the chocolate bar with aluminium foil increases its life span. [1]





ANSWER SHEET

EXAM PAPER 2014

SCHOOL : MGS

PRIMARY : P5

SUBJECT : SCIENCE

TERM : SA1

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

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

31)a)False

b)True

c)Not

32)a)i)The flowers of Plant P is bright and attractive.

ii)The flowers of Plant P is colourful.

b)In sect Q might have taken pollen grains from another plant, and can bring the pollen grains to the stigma of plant P, that can help Plant P to fertilise.

33)a)Splitting/explosive action.

b)To prevent overcrowding.

c)Peas.

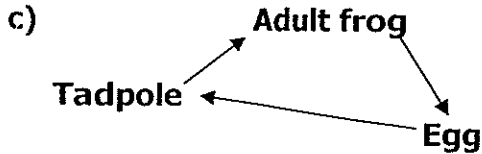
34)a)A: Ovary B : Womb C : Vagina

b)It produces eggs.

35) Umbilical cord. The umbilical cord carries nutrients to the fetus and helps it to pass out waste.

36)a) They have three stages in their life cycle.

b) Insect As young do not have wings but the adult has wings.



d) The eggs of cockroach are fertilised internally but the frog's eggs are fertilised externally.

37)a) 20°C ---- 30°C

b) When both seeds are placed at 30°C , the most number of their seeds are germinated.

c) Pumpkin seeds.

d) The pumpkin seeds germinate at a narrower temperature range than the chili seeds.

38)a)



b) Metal B should be the one being heated by the candle.

c) When it is heated, Metallic B would curve more than metallic strip A, causing the strip to bend downwards and not hitting the bell.

39)a) Magnetic Metals.

b) Belt R when the magnetic force is no longer present.

c) She could make the magnet stronger.

40)a) i) X ii) Y

b) The hole in the cup when placed in the water, will allow air to escape, letting more air into the cup. Cup Y does not have a hole in it therefore there will be loss water in it as air takes up space.

c)

41)a)Yes. The temperature remained the hottest for the longer period of time compared to mug A and C.

b)As the tea is poured from one container to another, heat is lost to the surrounding air.

c)Metal containers are a good conductor of heat, so the tea will lose heat faster.

42)a)To prevent the water from evaporating.

b)Water in Set-up Q has a lower temperature than Set-up R so more water vapour from the surrounding air condensed on the cool surface of the glass in Set-up Q than Set-up R.

c)It will still remain unchanged.

43)a)Water droplets.

b)The hot air of the bath room comes in contact with the cool surface of the mirror, causing the mirror to condense, forming water vapour on the mirror. Therefore, Raju's image on the mirror cannot be seen clearly.

44)a)Yes.

b)There is a greater increase in the temperature of the metal sheet between the 2-coloured metal compared to the different finishings.

c)The aluminium has a shiny surface which reflects most of the light away from the chocolate resulting in reducing excessive heat gain from the chocolate.h

