METHODIST GIRLS' SCHOOL

Founded in 1887

PRELIMINARY EXAMINATION 2015
PRIMARY 6
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 6._____

Date : 27 August 2015

This booklet consists of 16 printed pages including this page.

For each question from 1 to 15, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval on the Optical Answer Sheet (OAS).

[30 marks]

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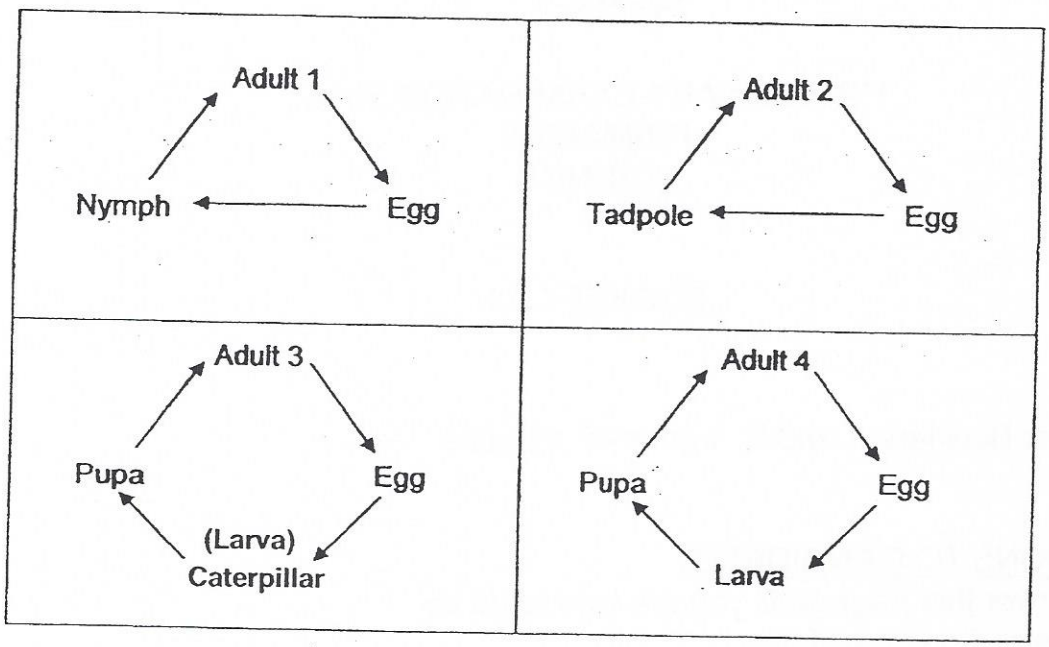
1. Study the life cycles of some animals as shown below.



Which of the following statements are true of the above life cycles of animals?

A: All the adults have wings.
B: Adult 1 could be a dragonfly.
C: All the animals develop from eggs.
D: Both Adult 3 and Adult 4 could be moths.

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

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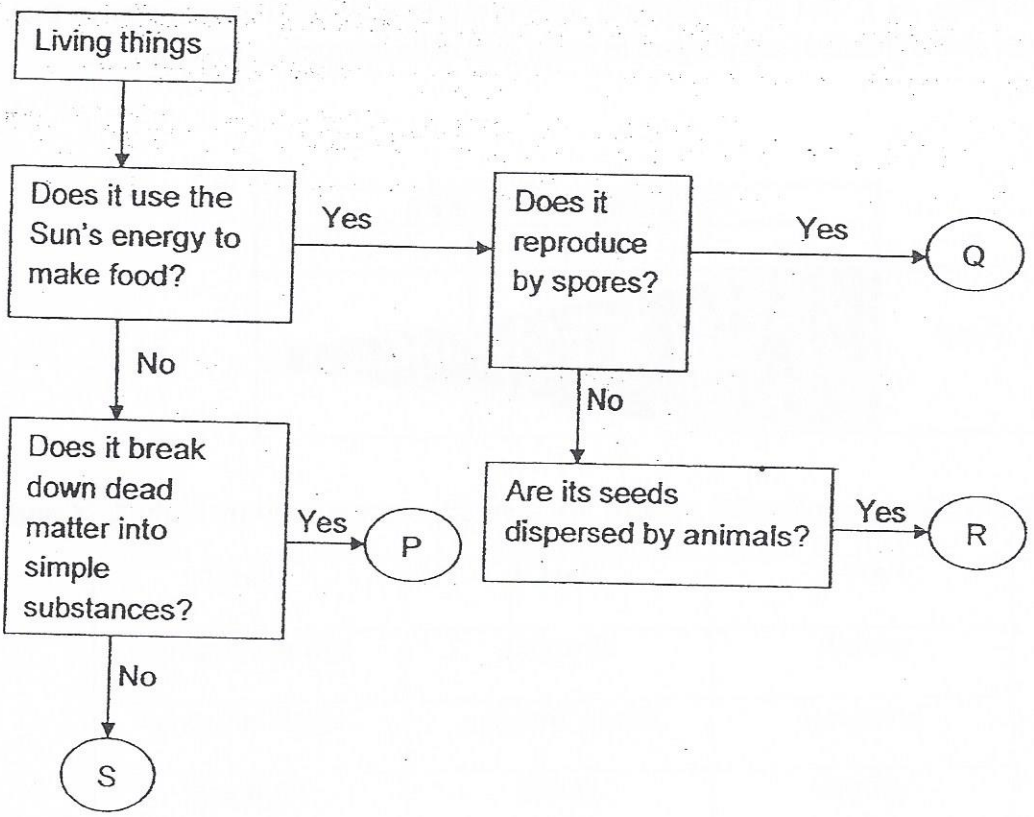
2. The following flowchart shows the characteristics of four different organisms, P, Q, R and S.

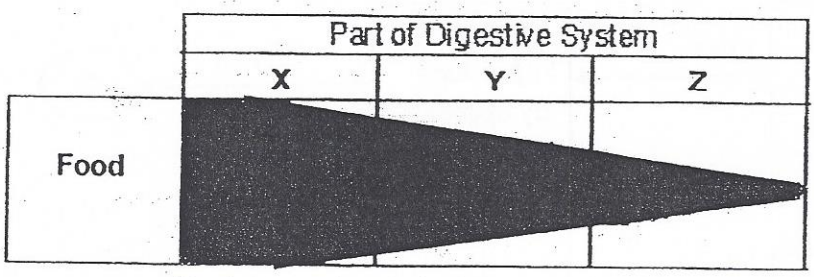


Which one of the following options correctly identifies organisms P, Q, R and S?

	P	Q	R	S
(1)	Toadstool	Bracket fungi	Mimosa	Millipede
(2)	Bracket fungi	Bird's nest fern	Mango tree	Termite
(3)	Grass	Mushroom	Coconut tree	Termite
(4)	Bird's nest fern	Grass	Mango tree	Millipede

(Go on to the next page)

3. The chart below shows how a certain type of food is digested in some parts of the human body, X, Y and Z. The width of the band (black shaded region) shows the amount of undigested food present in each part of the digestive system.



Which organs of the digestive system are correctly represented by Parts X, Y and Z?

	Part X	Part Y	Part Z
(1)	mouth	stomach	small intestine
(2)	stomach	small intestine	large intestine
(3)	mouth	gullet	stomach
(4)	small intestine	stomach	mouth

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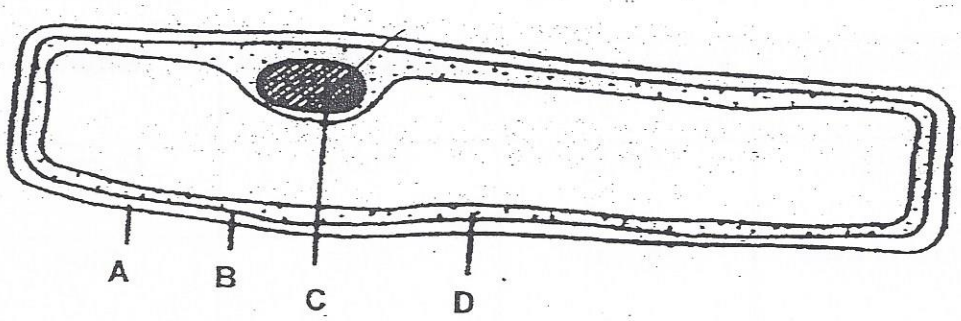
4. The diagram below shows parts A, B, C and D of a cell.



Which one of the following options correctly describes the labelled parts?

	Part A	Part B	Part C	Part D
(1)	Gives the cell its shape	Holds the cytoplasm	Keeps the cell firm	Keeps the plant upright
(2)	Is present only in a plant cell	Is present in an animal cell	Makes food for the plant	Food and oxygen can be found here
(3)	Allows all substances to pass through	Controls the transfer of substances in and out of the cell	Controls everything that happens in the cell	Is held by the cell membrane
(4)	Makes food for the plant	Functions as the skeletal system for the plant	Is found in the cytoplasm	Allows substances to move around in the cell

(Go on to the next page)

5. Four children observed two adult cats and their kitten. The table below shows the characteristics of the cats.

Characteristics	Male Adult Cat	Female Adult Cat	Kitten
Colour of fur	Orange	Orange	Orange
Colour of eyes	Brown	Blue	Blue
Presence of stripes	No	Yes	Yes
Presence of fleas	Yes	No	Yes

The four children then gave statements on their observations about the cats.

Aruna: The kitten inherited two characteristics from its father.
Bala: The kitten inherited the colour of its eyes from its mother.
Charlie: The kitten inherited at least one characteristic from each of its parents.
Debbie: The female adult cat shared three common characteristics with the kitten.

Based on the table above, whose statements are correct?

(1) Aruna only
(2) Bala and Charlie only
(3) Bala, Charlie and Debbie only
(4) Aruna, Bala, Charlie and Debbie

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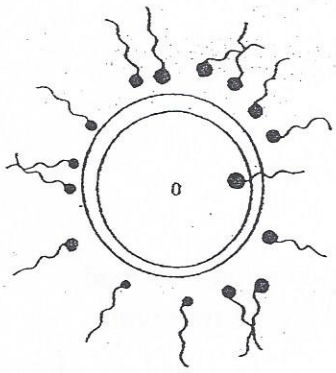
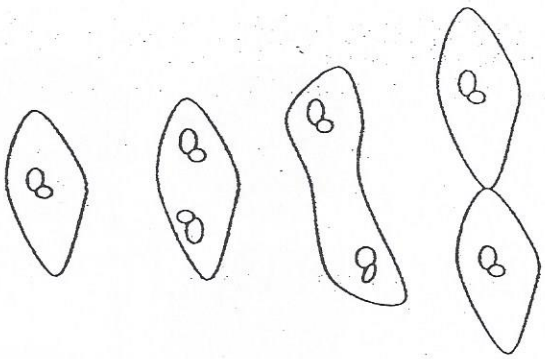
6. The diagram below shows two methods of reproduction, X and Y.



Method X

(Human)



Method Y

(Paramecium)

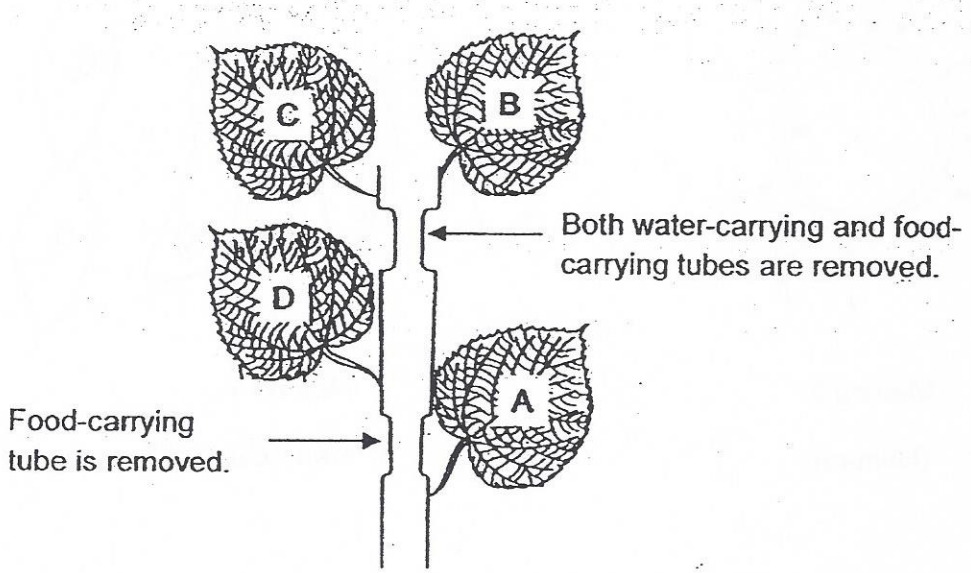
Which of the following statements about the two methods of reproduction, X and Y, are correct?

A: Fertilization takes place in both Method X and Y.
B: For Method X, two parents, a male and a female, are involved while for Method Y, only one parent is involved.
C: For Method X, the young has the same characteristics as the parents but for Method Y, the young does not have the same characteristics as its parent.

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

(Go on to the next page)

7. Two rings of different thickness were cut and removed from the stem of a plant as shown below. The plant was left under the sun for a week before the leaves, A, B, C and D were plucked out. A starch test was then conducted on the leaves.



Which one of the following options correctly shows the colour of iodine solution when it interacted with each leaf?

	Leaf A	Leaf B	Leaf C	Leaf D
(1)	blue	blue	blue	blue
(2)	brown	blue	blue	brown
(3)	blue	brown	brown	brown
(4)	blue	brown	brown	blue

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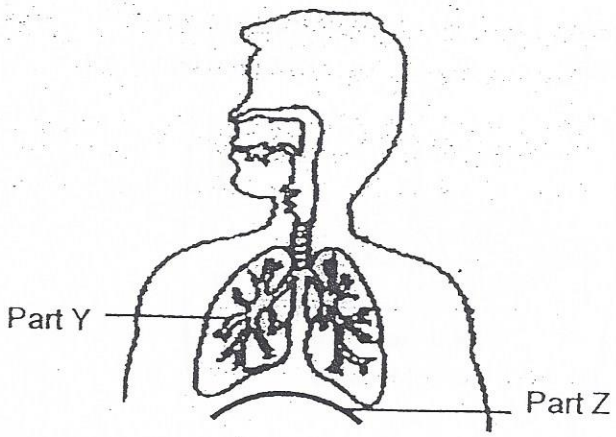
8. The diagram below shows the human respiratory system.



What will happen to Part Y and Part Z when air is exhaled?

	Part Y	Part Z
(1)	expands	moves up
(2)	expands	moves down
(3)	contracts	moves up
(4)	contracts	moves down

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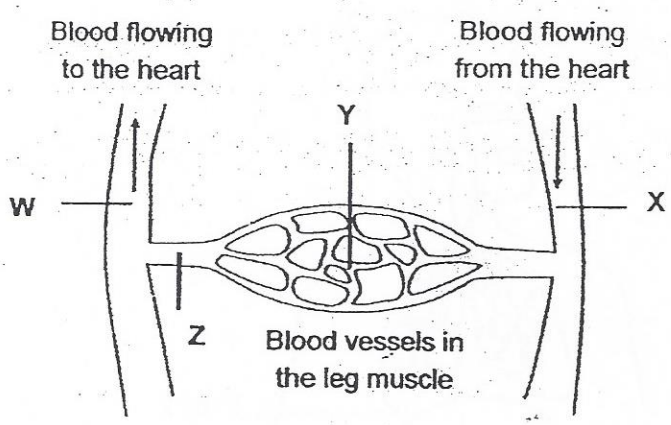
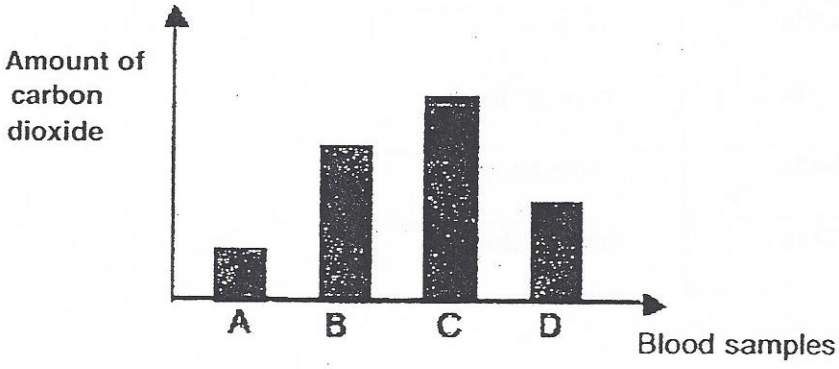
9. Study the diagram below which represents blood flowing through the body.



Blood samples of an equal amount, A, B, C and D, were taken from blood vessels at positions W, X, Y and Z in the body. The graph below shows the amount of carbon dioxide present in each of the blood sample.

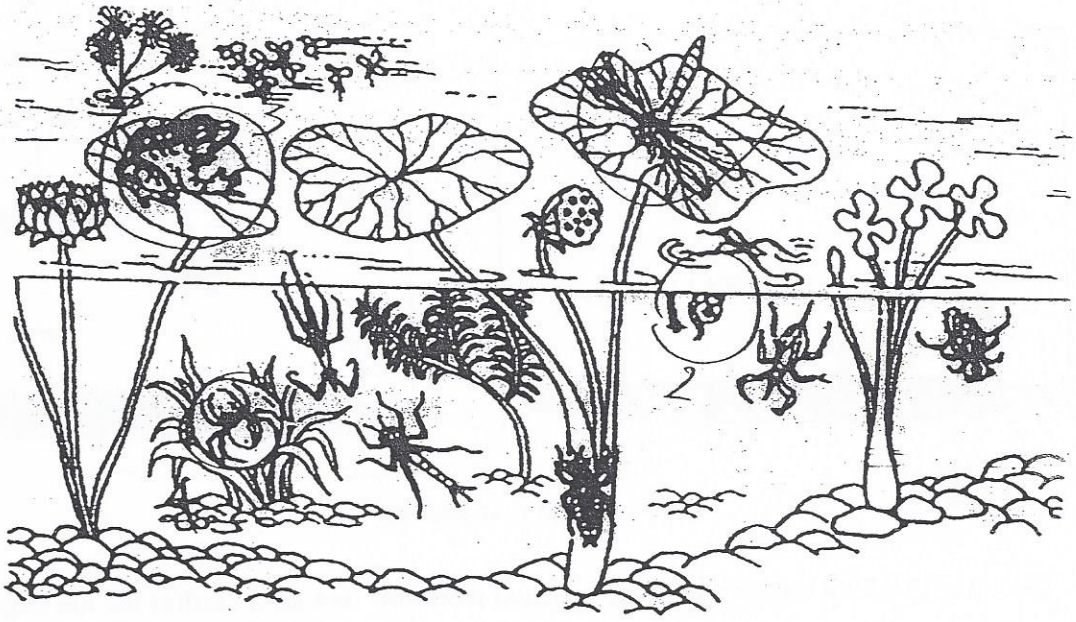


Which one of the following options correctly shows where the blood samples were taken from?

	Position W	Position X	Position Y	Position Z
(1)	Sample D	Sample A	Sample B	Sample C
(2)	Sample C	Sample A	Sample D	Sample B
(3)	Sample C	Sample D	Sample A	Sample B
(4)	Sample D	Sample C	Sample B	Sample A

(Go on to the next page)

10. The diagram below shows the different organisms living in a pond.



Which of the following statements are correct?

A: There are four animal populations.
B: There are at least two different species of submerged plants.
C: All the organisms living together are independent of one another.
D: There are at least two animal populations which spend part of their life cycles in water.

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

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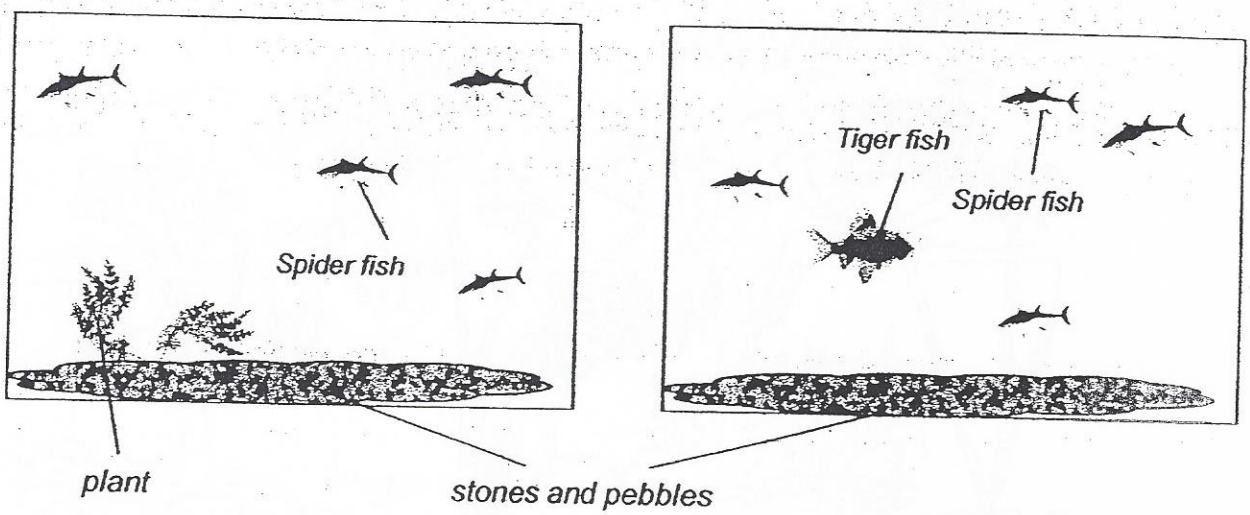
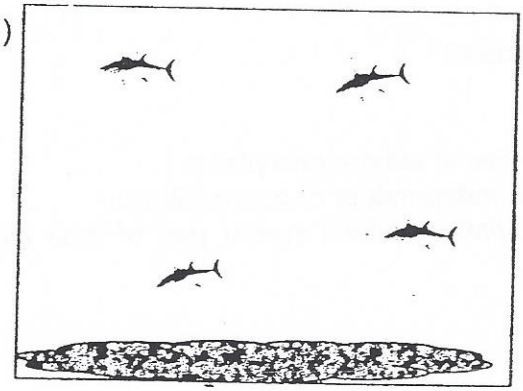
11. Ronaldo prepared two set-ups as shown below to investigate how the introduction of the aquatic plant and Tiger fish, respectively, would affect the population of the Spider fish.

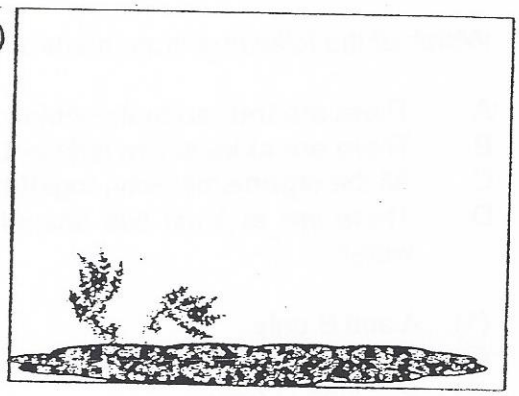


Which one of the following set-ups should Ronaldo use as a control for his experiment?

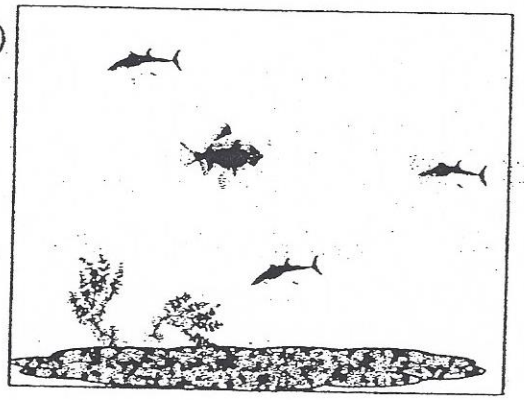
(1)



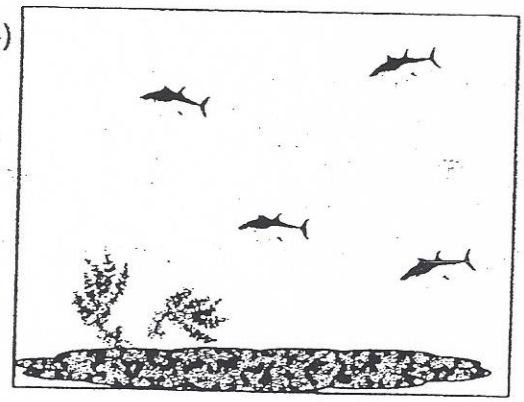
(2)



(3)



(4)



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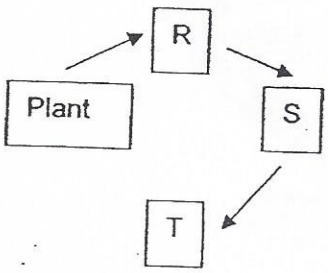
12. Aiden conducted three experiments on food relationships in a community that consisted of a population of a plant and three populations of consumers R, S and T. He set up the experiments and tabulated his results as follows:

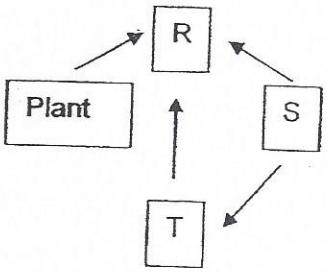
Experiment	Organisms	Population size at the end of experiment
A	Plant	decrease
	R	remains the same
	S	remains the same
B	Plant	decrease
	R	decrease
	T	remains the same
C	Plant	decrease
	S	decrease
	T	remains the same

Based on the above results, which one of the following shows a possible food relationship among the plant and the three animals R, S and T?

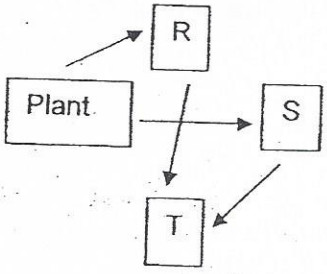
(1)



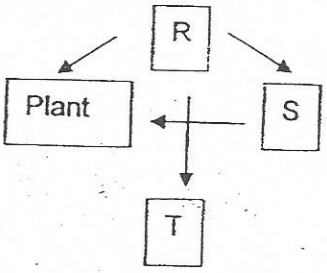
(2)



(3)



(4)



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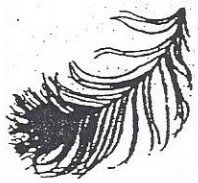
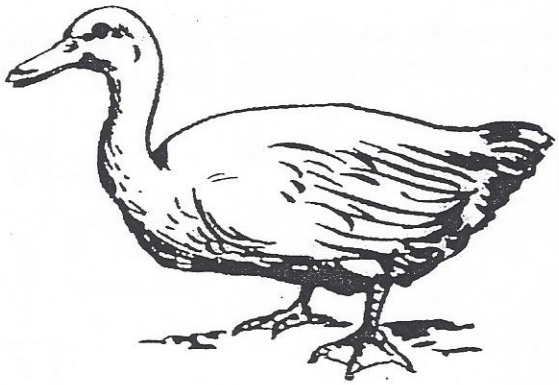
13. Mr Poh went to the Jurong Bird Park and obtained feathers from four different birds. He dipped the four feathers in water and recorded the time taken for each of them to dry in the table below

 P			
Feather P	**Feather Q**	**Feather R**	**Feather S**
200 seconds	100 seconds	30 seconds	80 seconds

Bird Z as shown below can be found near a river.



Which one of the following feathers would most likely belong to Bird Z?

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

(Go on to the next page)

14. Study the table below carefully.

	Positive impact on the environment	Negative impact on the environment	Activities that cause pollution	Prevention
A:	Using a CFC-free hair spray	Using leaded petrol	Lead poisoning from burning of fuels	Use unleaded petrol
B:	Burning trees to clear the land for plantations	Planting trees in previously deforested areas	Emission of greenhouse gases	Increase the use of fossil fuels
C:	Taking a taxi to work instead of a bus	Treating sewage before disposal	Soil erosion	Reduce the use of pesticides
D:	Using genetic selection to increase crop yield	Burning trees to clear the land for plantations	Excessive use of pesticide	Use natural predators to control pests

Which of the following options have activities that are wrongly classified ?

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

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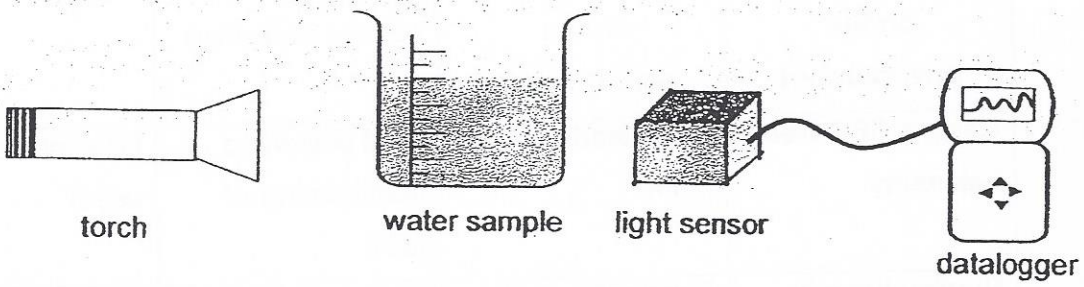
15. Joyce collected a sample of water from a stream flowing near a farm each month and measured the amount of light that could pass through it using a light sensor connected to a datalogger as shown in the diagram below.



The readings for the month of January to June are recorded in the table below.

Month	Jan	Feb	Mar	Apr	May	June
Amount of light (lux)	25	26	30	25	9	5

Which one of the following reasons best explains the drastic change in the readings in May and June?

1) The farmers reduced the amount of fertilizers added to the soil.
2) A factory situated near the farm released thick fumes through a tall chimney.
3) Many crops were harvested and no new crops were grown before a rainstorm.
4) More harmful UV rays enter the stream due to the depletion of the ozone layer.

End of Booklet A1

METHODIST GIRLS' SCHOOL

Founded in 1887

PRELIMINARY EXAMINATION 2015
PRIMARY 6
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.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 6. _____

Date : 27 August 2015

This booklet consists of 16 printed pages including this page.

For each question from 16 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). [30 marks]

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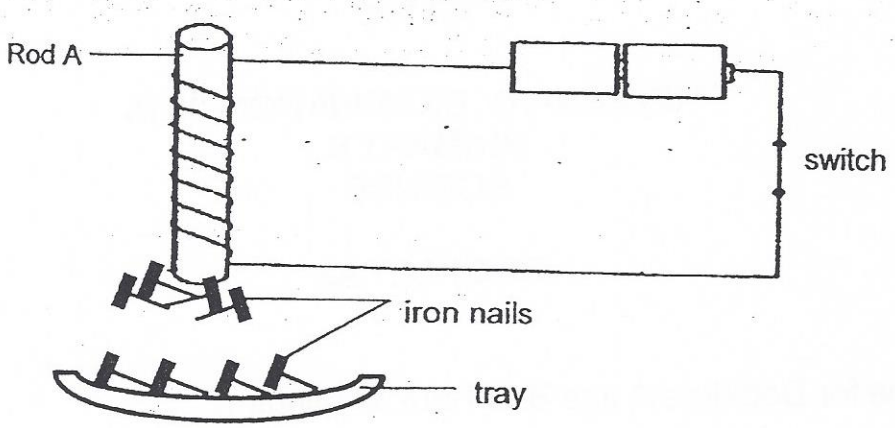
16. Jason set up an experiment as shown below. When the switch was closed, the rod attracted some iron nails while the rest remained on the tray. He then repeated the experiment using the same set up with rods,B,C and D.



Jason then recorded the results as shown in the table below.

Rod	Number of nails left on the tray
A	26
B	30
C	29
D	10

Based on the above results, which rod would be the most suitable for making an electromagnet to separate magnetic from non-magnetic material?

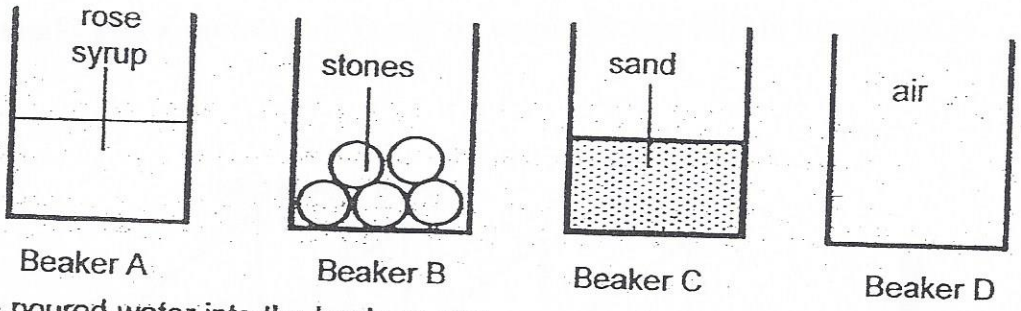
(1) A

(2) B

(3) C

(4) D

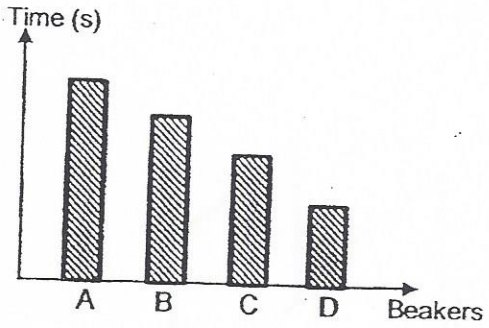
18. Hashim was given 4 similar beakers, A, B, C and D. Each beaker was filled with different substances as shown in the following diagram.



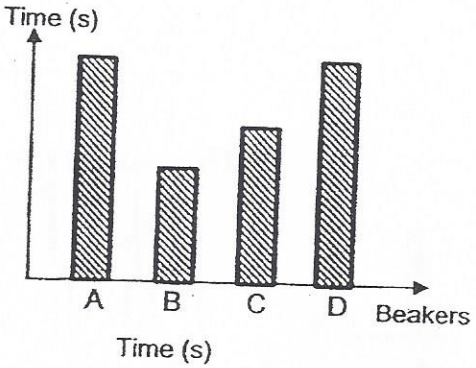
He poured water into the beakers at the same rate. one at a time and measured the time taken for the content in each beaker to overflow.

Which one of the following graphs shows the time taken for the content to overflow?

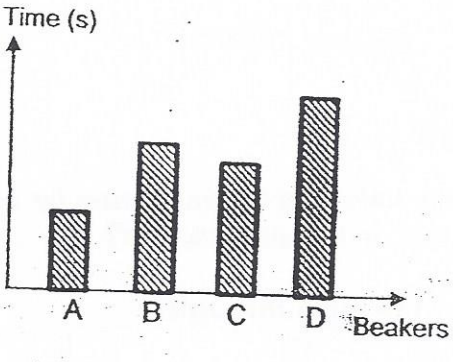
(1)



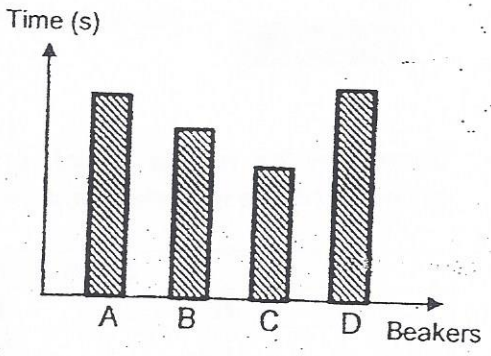
(2)



(3)

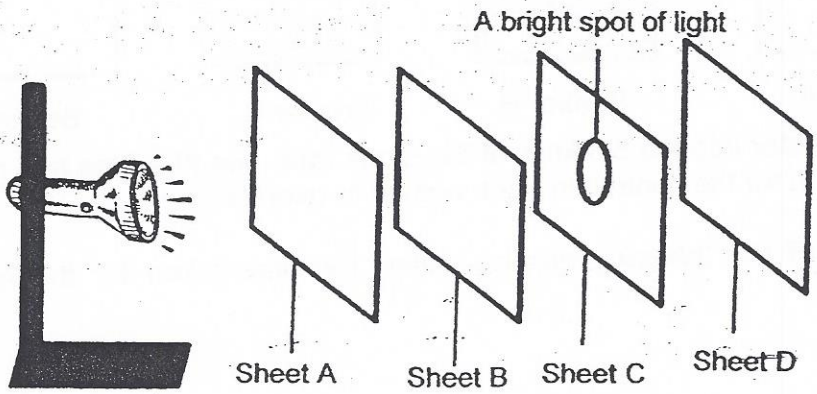


(4)

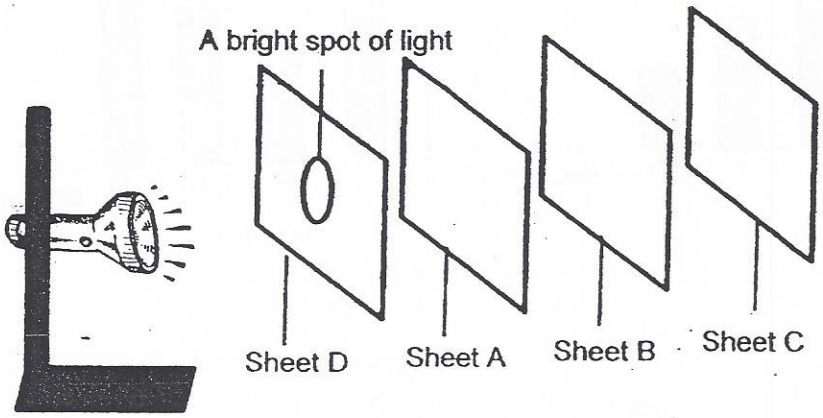


17. An experiment was conducted to investigate whether light can pass through sheets A, B, C and D which were made of different materials. The sheets were arranged at equal interval in two set-ups, X and Y as shown.

A bright spot of light was observed on Sheet C in Set-up X and Sheet D in Set-up Y.



Set-up X

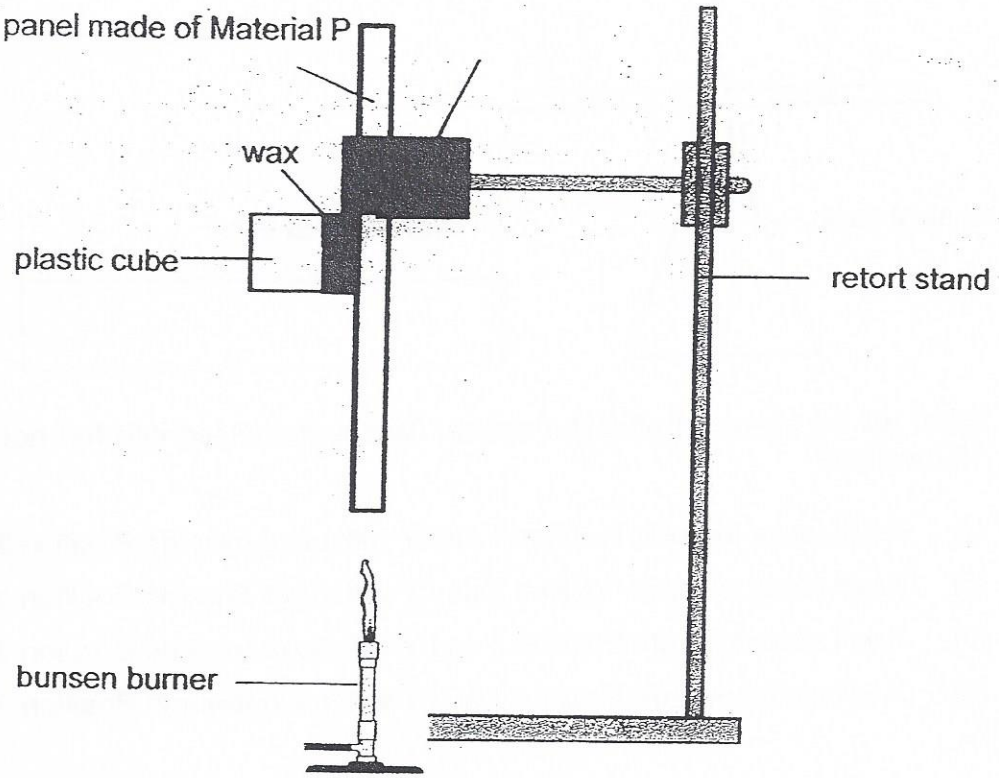


Set-up Y

Based on the results. which one of the following options correctly shows the property of the materials that sheets A, B,C and D are made of?

	Does it allow light to pass through?			
	A	B	C	D
(1)	Yes	No	Yes	No
(2)	Yes	Yes	No	No
(3)	Yes	No	Yes	Yes
(4)	Yes	No	Yes	No

19. Christie used wax to attach a plastic cube onto a panel made of Material P as shown below.



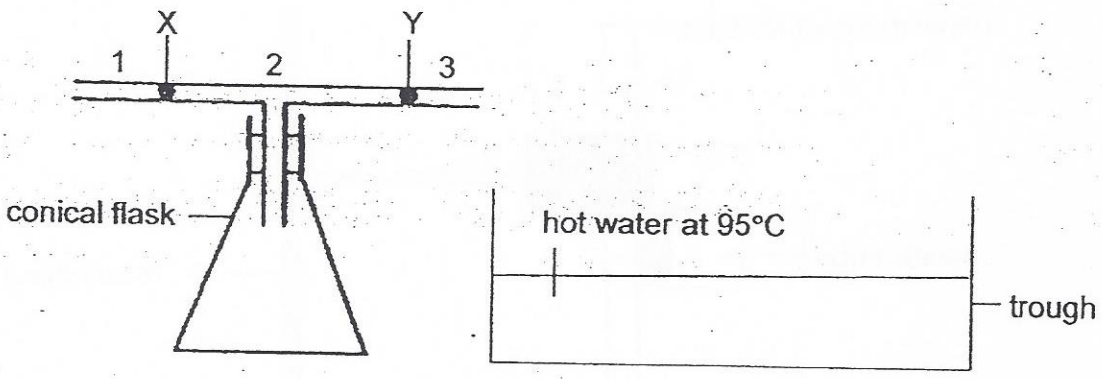
Christie recorded the time taken for the plastic cube to slide down the panel. She repeated the experiment using similar panels of equal thickness but made of different materials, Q, R and S. The results are shown in the table below.

Material	Time taken for plastic cube to slide down the panel (s)
P	50
Q	80
R	100
S	75

Based on the above results, which of these materials are the most suitable to make the following items?

	Base of an electric iron	Handle of a frying pan
(1)	R	P
(2)	R	S
(3)	P	Q
(4)	P	R

20. The diagram below shows an empty conical flask with a T-shaped tube. X and Y are two drops of ink in the tube. The conical flask was then immersed in a trough of hot water at 95°C



What will be observed after the conical flask is immersed into the hot water for 10 minutes?

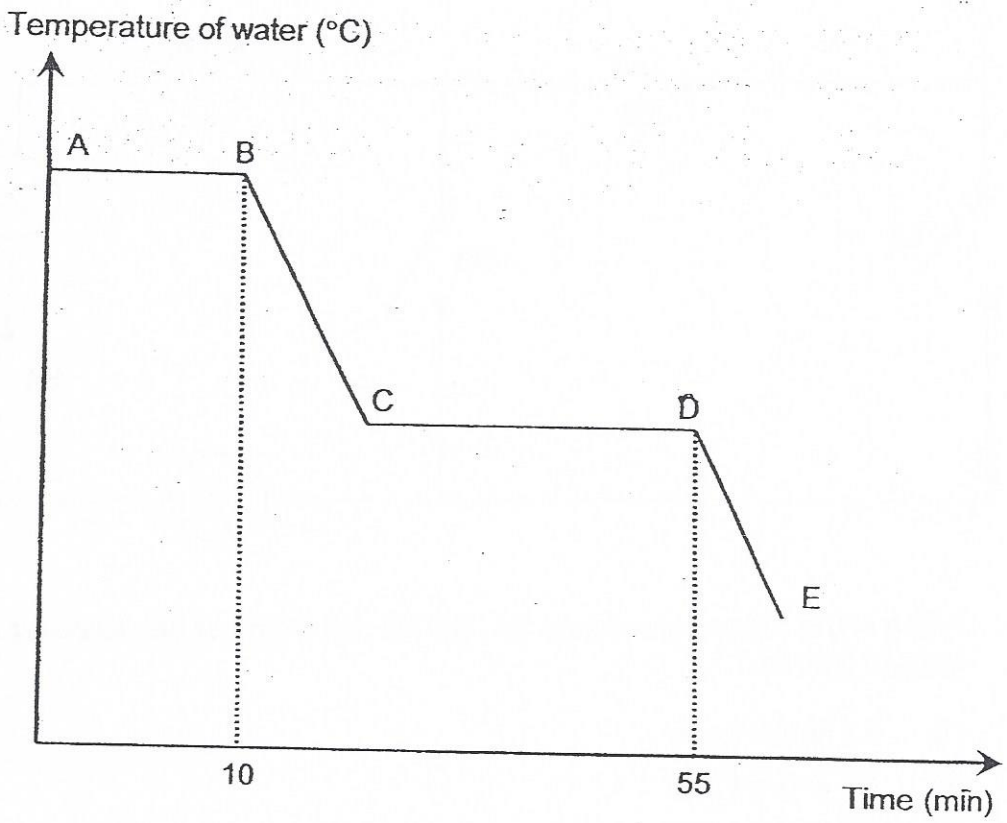
(1) X will move towards Position 1 and Y will move towards Position 2.

(2) X will move towards Position 2 and Y will move towards Position 3.

(3) X will move towards Position 2 and Y will move towards Position 2.

(4) X will move towards Position 1 and Y will move towards Position 3.

21. **A beaker of boiling water was left to boil for 10 minutes. It was then left on a table to cool down. When the water reached room temperature for a while, some ice cubes are added. The following graph was plotted to show the change in temperature.**



Based on the above graph, four students each made a statement.

Winnie: Ice cubes were added at Point D of the graph.

Xue Min: No condensation occurred during the experiment.

Yahya: There was a change of state at Point A to B in the experiment.

Zoe: The water eventually changed to solid state after 55 minutes.

Whose statement(s) is/are correct?

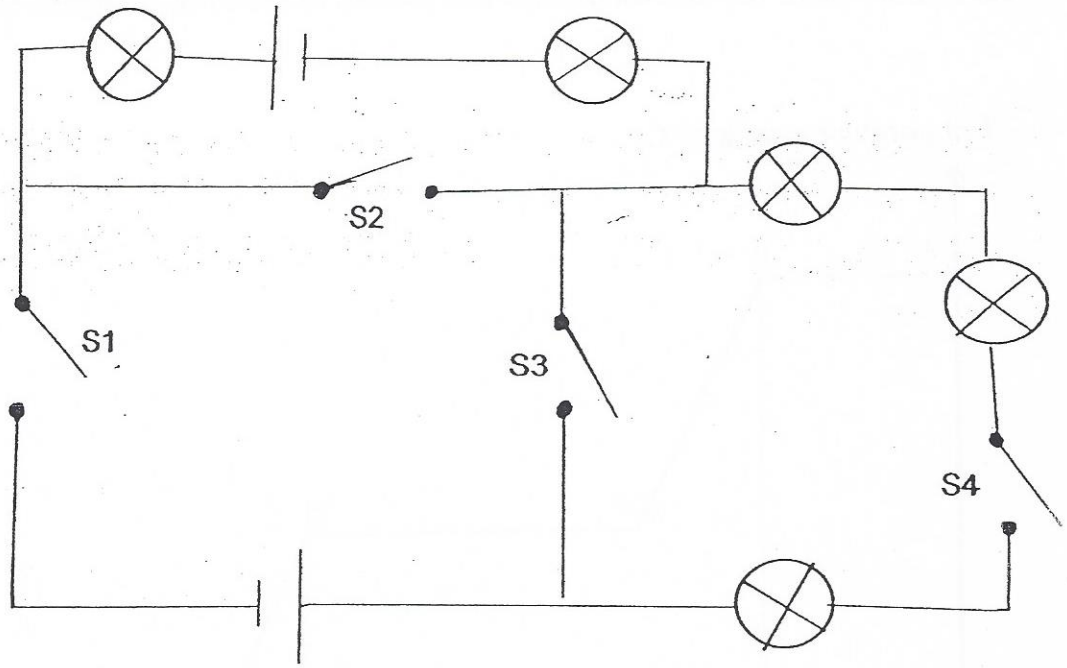
(1) Winnie only

(2) Xue Min only

(3) Winnie and Yahya only

(4) Winnie, Yahya and Zoe only

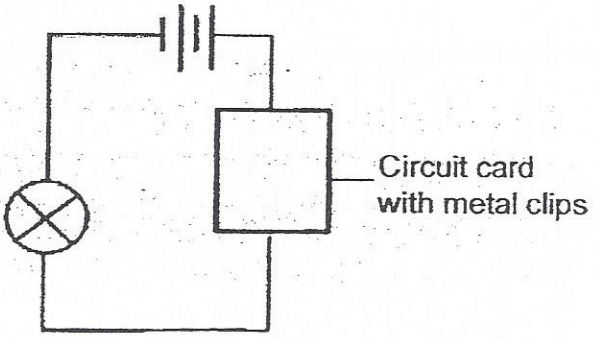
22. Study the following electrical circuit.



Which of the following switches S1, S2, S3 and S4 must be closed for all the bulbs to light up?

(1) S1 and S4 only
(2) S2 and S4 only
(3) S2 and S3 only
(4) S3 and S4 only

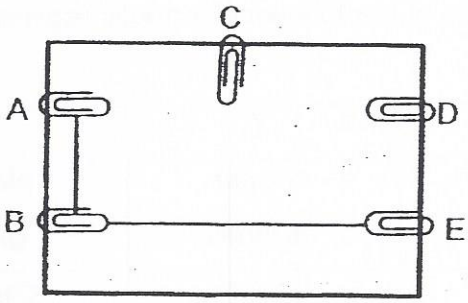
23. Anne used a circuit tester to test a circuit card as shown below. She recorded her observations in the table below.



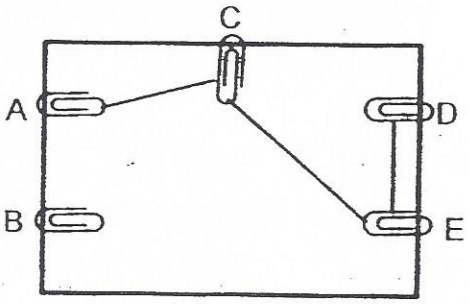
Metal clips tested	Bulb of circuit tester
A and B	Does not light up
A and C	Lights up
C and D	Lights up
B and C	Does not light up
B and E	Does not light up
A and D	Lights up

Based on the above results, which one of the following represents the correct circuit card?

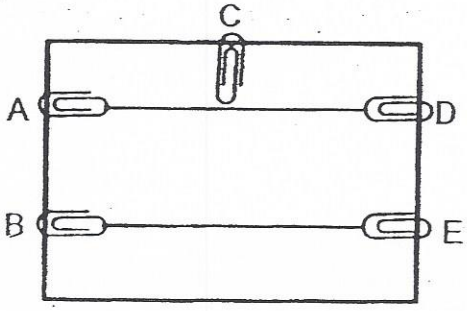
(1)



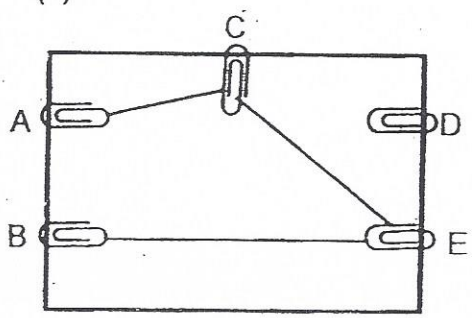
(2)



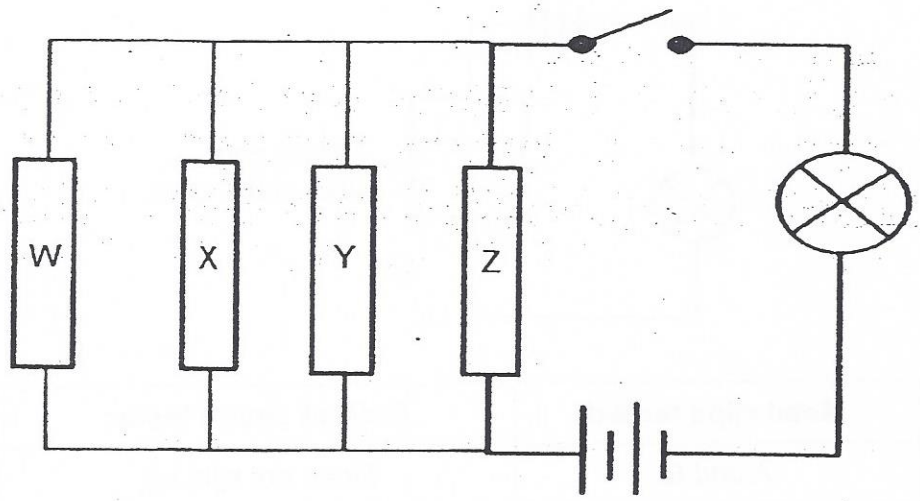
(3)



(4)



24. Sam carried out an experiment to find out the electrical conductivity of rods W, X, Y and Z as shown below.



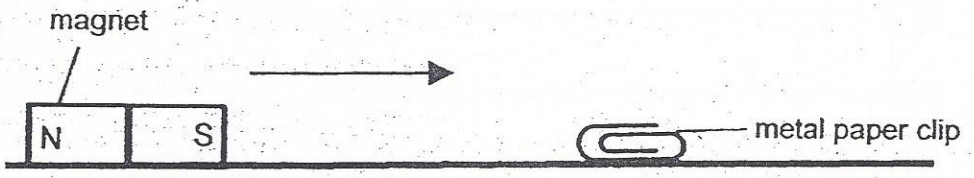
His findings, when the switch was closed, were shown in the table below.

Rods removed from the circuit	Did the bulb light up?
W	yes
X and Y	yes
W, X and Y	no
W, Y and Z	no

Based on the above results which one of the following correctly represents the materials of rod W, X, Y and Z?

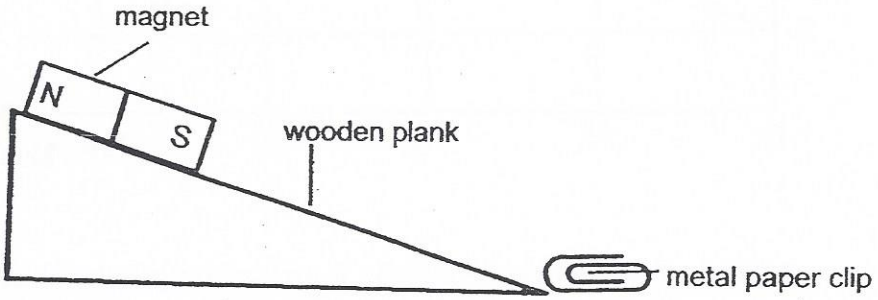
	W	X	Y	Z
(1)	steel	glass	copper	plastic
(2)	copper	wood	ceramic	glass
(3)	steel	plastic	glass	copper
(4)	copper	steel	plastic	glass

25. Devi set up the experiment as shown in Set-up A. She slid the magnet slowly towards the metal paper clip until the paper clip was attracted to magnet. She recorded the distance between the magnet and the metal paper clip when the attraction occurred.



Set-up A

Devi then repeated the experiment by using the same wooden plank which is raised to a height as shown in Set-up B. For each set-up, the experiment is repeated twice.



Set-up B

She then recorded the experiment results in the table below.

	Set-up A		Set-up B	
	1st try	2nd try	1st try	2nd try
Distance (cm)	1.6cm	1.5cm	0.8cm	0.7cm

Based on the results in the table, which of the following statement(s) is/ are correct?

A: The magnetic force of attraction can act at a distance.

B: The magnetic force of attraction is weaker in Set-up A than in Set-up B.

C: The force of gravity acting on the paper clip in Set-up B is more than Set-up A

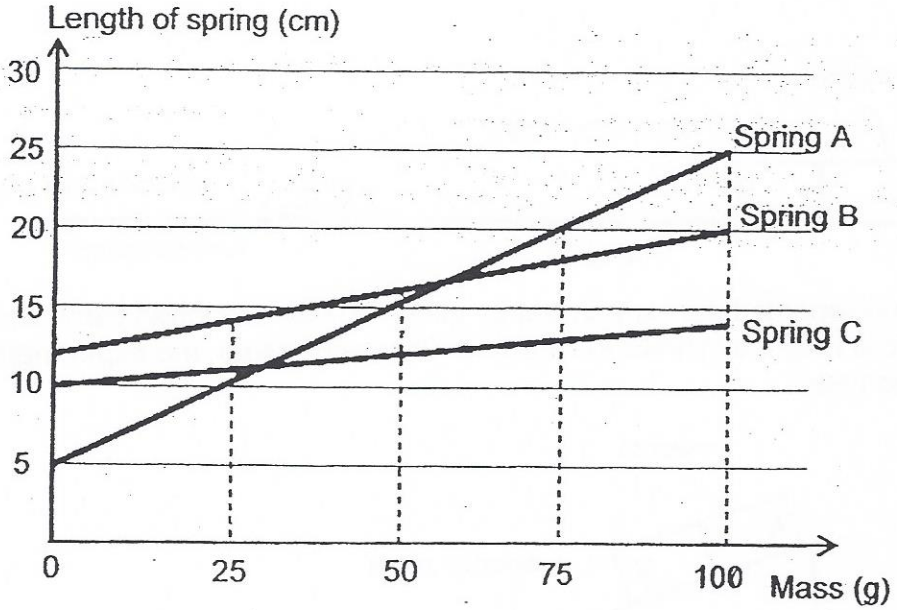
(1) A only

(2) A and B only

(3) C and D only

(4) A, B, C and D

26. Ah Soon carried out an experiment with three different springs in which he hung masses on them. Based on his results, he plotted the line graphs as shown below.



What could Ah Soon conclude from the line graphs above?

A: Spring C is the least elastic.

B: When the mass is doubled, the length of Spring A is also doubled.

C: The extension of Spring A is the same with every 25g of mass added.

D: When a mass of 100g is hung on Spring B, the extension of the spring is 20cm.

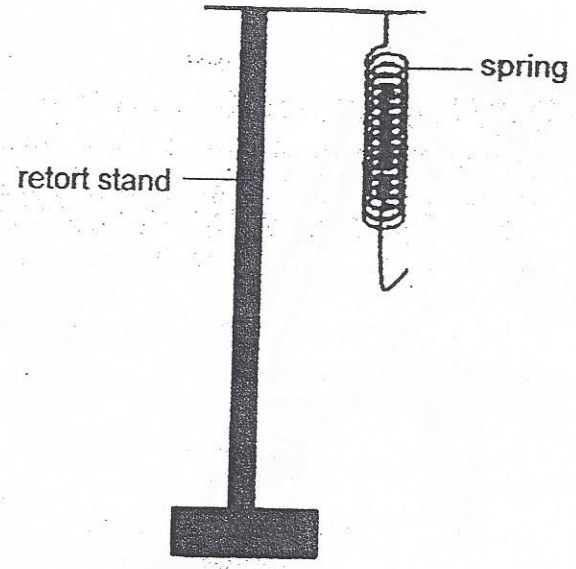
(1) A only

(2) A and C only

(3) B and C only

(4) A, B and D only

27. Marie set up a spring suspended on a retort stand as shown in the following diagram. The original length of the spring is 5 cm.



She then hung four different objects, A, B, C and D in different combinations on the spring and recorded her results in the table below.

Object(s) hung on the spring	Length of the spring (cm)
A	10
A and B	20
B and D	18
A, C and D	25

Based on the above results, arrange the objects according to their mass, from the **lightest to heaviest.**

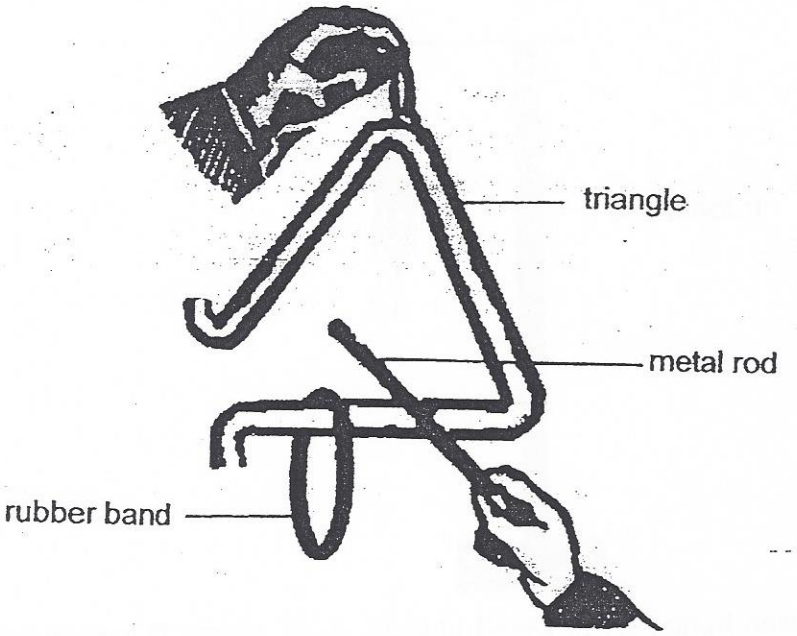
(1) A, B, D and C

(2) C, D, B and A

(3) D, C, A and B

(4) D, A, B and C

28. Wei Wei hung a rubber band on a triangle which is a percussion instrument and then hit it with a metal rod as shown in the diagram below.



After hitting for several minutes, the rubber band dropped off the triangle.

Which one of the following options shows the energy conversion from the time the triangle was hit by the metal rod to the point when the rubber band dropped?

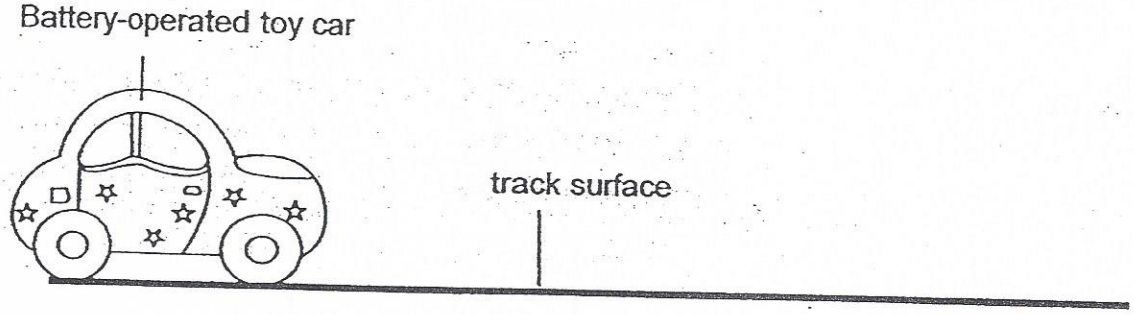
(1) sound energy (metal rod) → potential energy (triangle and rubber band) + kinetic energy (triangle and rubber band)

(2) kinetic energy (triangle) → kinetic energy (metal rod) + potential energy (rubber band)

(3) kinetic energy (metal rod) → sound energy (triangle) + kinetic energy (triangle and rubber band)

(4) sound energy (triangle) → potential energy (rubber band) + kinetic energy (rubber band)

29. Thomas carried out an investigation to measure the distance travelled by a battery operated toy car in 1 minute along different track surfaces made of materials A, B, C and D.



He then recorded the results of the investigation in the following table.

Track surface	Distance travelled by toy car (m)
A	37.5
B	40.2
C	35.3
D	29.6

Based on the results, which one of the track surfaces would be the most suitable to make the surface of a slide in the playground?

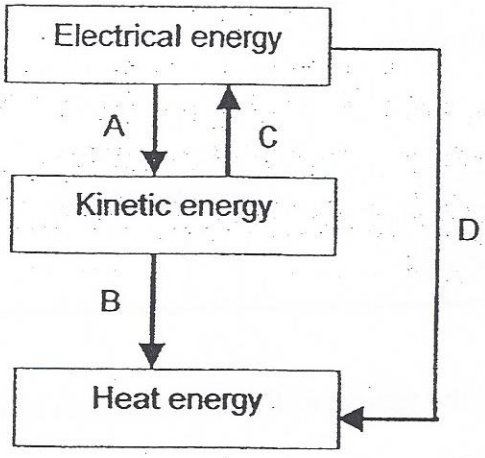
(1) A

(2) B

(3) C

(4) D

30. Study the diagram below which shows the energy conversion for activities A, B, C and D.



Which one of the following options best describes activities A, B, C and D?

	A	B	C	D
(1)	switching on a ceiling fan	striking a matchstick	operating a turbine	switching on a toaster
(2)	switching on an iron	pressing a doorbell	running on treadmill	rubbing hands together
(3)	pressing a doorbell	beating an egg	striking a matchstick	switching on the television
(4)	operating a turbine	rubbing hands together	beating an egg	switching on a toaster

METHODIST GIRLS' SCHOOL

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PRELIMINARY EXAMINATION 2015
PRIMARY 6
SCIENCE

BOOKLET B1

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.
Write your answers in this booklet.

Name: _____

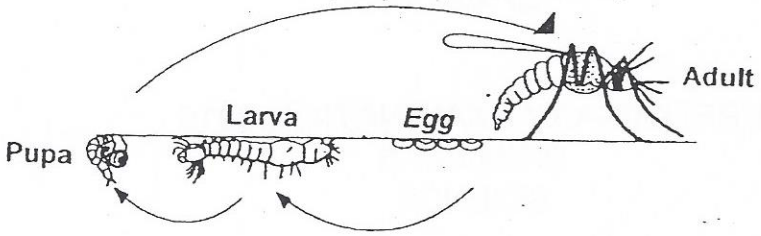
Class: Primary 6._____

Date : 27 August 2015

This booklet consists of 8 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. Dengue fever is an illness caused by infection with a virus transmitted by the *Aedes* mosquito. Researchers carried out an experiment on some mosquitoes kept at different temperatures. They then observed and recorded the duration of each stage of their life cycle.



The results are shown in the table below:

	Duration of stage at different temperatures (Days)			
	26°C	28°C	30°C	32°C
Egg	2	2	2	2
Larva	9	8	7	6
Pupa	2	2	2	2

(a) Based on the results above, suggest how global warming would affect the number of dengue fever cases. Explain your answer clearly. [1]

(b) Suggest two advantages to the species if the young and the adult mosquito lived in different surroundings. [2]

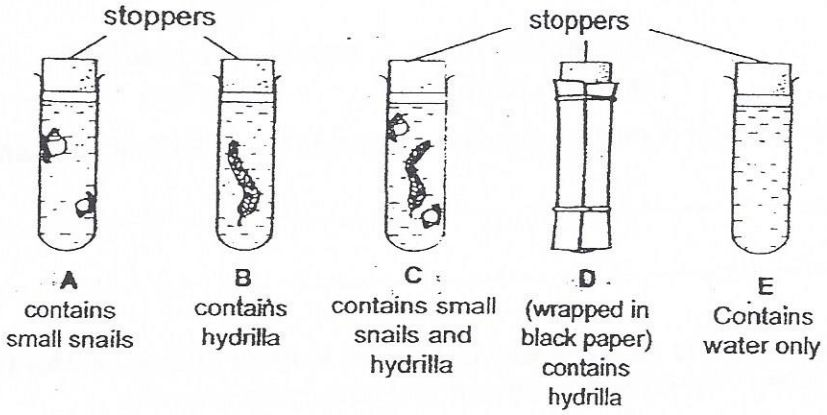
Advantage 1:

Advantage 2:

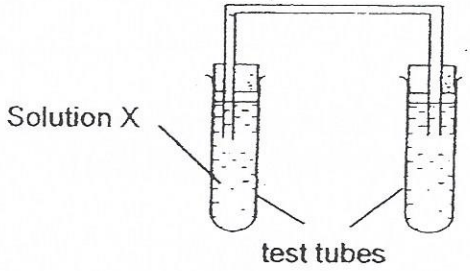
32. Solution X is orange in colour. The table below shows what happens when Solution X reacts with different amounts of carbon dioxide dissolved in it.

Colour of Solution X	Amount of dissolved carbon dioxide
orange	same amount of carbon dioxide as in the air
yellow	more carbon dioxide than in the air
purple	less carbon dioxide than in the air

Five test-tubes, A, B, C, D and E were used in the experiment conducted in a science laboratory. Each of the test tubes contains the same amount of water.



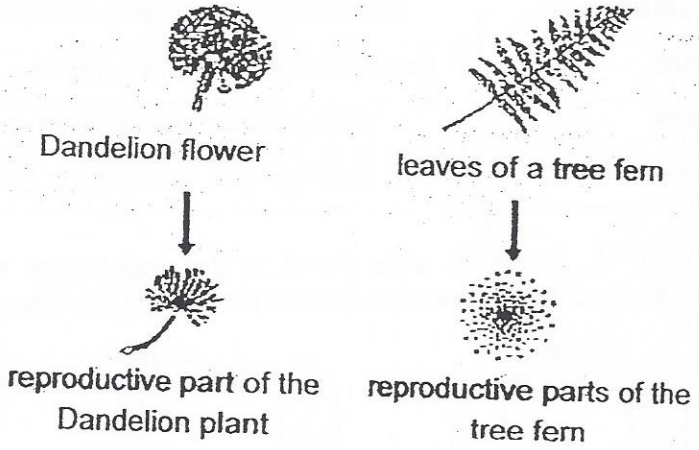
Each of the test tubes was set up as shown below and left in the sun for two hours.



(a) In which test tubes, A, B. C, D or E would Solution X turn yellow after two hours? Explain your answer [2]

(b) What would the colour of Solution X be in Set-up E after two hours? Give a reason for your answer. [1]

33. Fandi went on a Science trail in his school garden and he drew the following diagram in his Biology notebook.



(a) Do both the plants reproduce in the same way? Explain your answer. [1]

_____

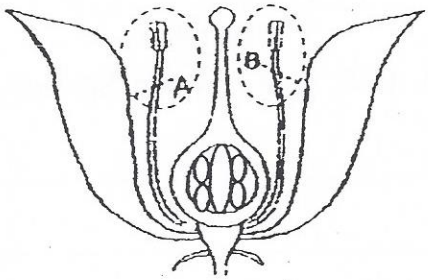
_____

(b) Based on the diagram above, infer the method of dispersal for the reproductive parts of ~~Plant X and Plant Y.~~ Give a reason for your answer. [1]

_____

_____

Fandi then saw Flower Z as shown below. He decided to carry out an investigation to see what would happen to the flower if he removed parts A and B



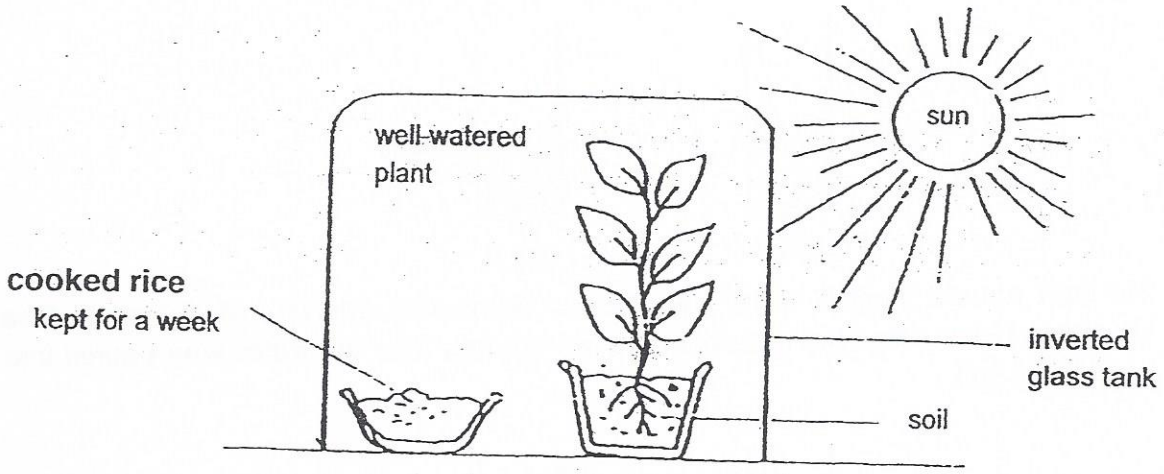
(c) At the end of the week, he was surprised to see a fruit develop from the flower. Describe a feature of Flower Z to explain how the fruit could have developed. [1]

_____

_____

3

34. Ryan set up an experiment as shown below.



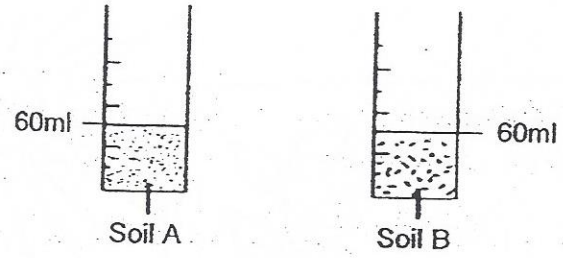
(a) Describe what you would observe about the cooked rice at the end of the week? Give a reason for your answer. [1]

(b) How does the presence of the plant affect the speed of the process taking place in the cooked rice? Explain your answer. [1]

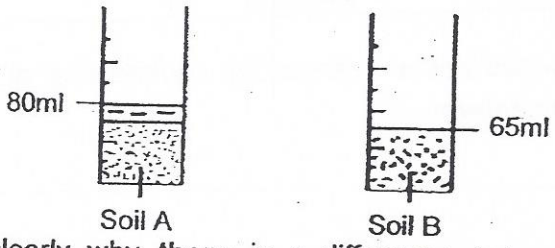
(c) Suggest what Ryan could add to the cooked rice to speed up the process taking place in the cooked rice. Explain your answer. [1]

3

35. Siva poured the same amount of soil A and soil B into two measuring cylinders as shown in the diagram below.

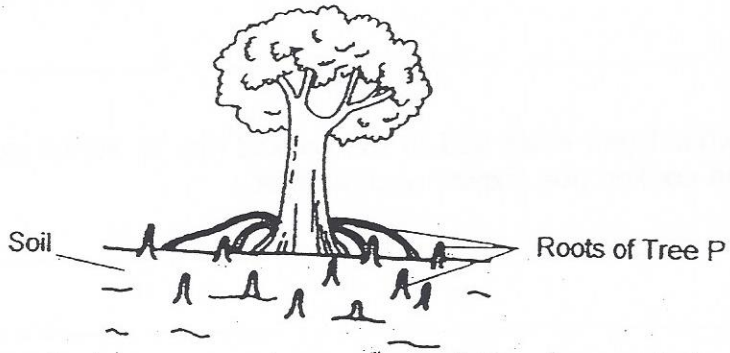


He then poured 30ml of water into the two measuring cylinders at the same time. The diagrams below show the results of the two set-ups after the water was poured into each cylinder of soil.



(a) Explain clearly why there is a difference between the water levels in the two measuring cylinders. [2]

Siva then visited Sungei Buloh Park and saw Tree P as shown below.

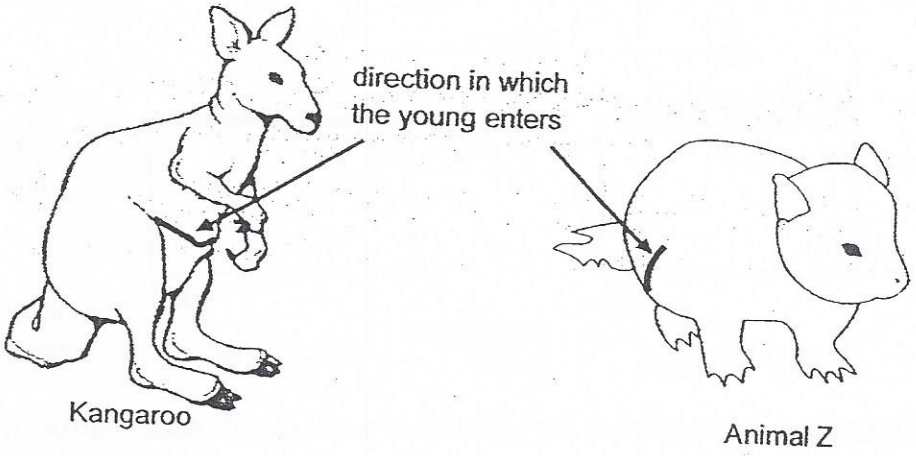


(b) Which type of soil is more suitable for Tree P? Based on your choice, describe the structural adaptation of Tree P. [1]

3

(Go on to the next page)

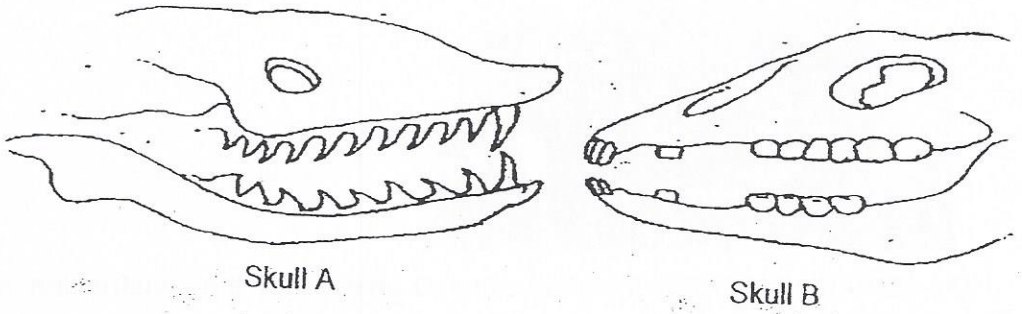
36. Like the kangaroo, Animal Z is a plant eater. It also has a pouch to carry its young. However, the pouch of Animal Z is backward-opening instead of forward-opening.



(a) Animal Z burrows in the soil. Explain an advantage for Animal Z in having a backward-opening pouch instead of a forward-opening pouch. [1]

(b) Animal Z is a slow-moving mammal which comes out only at night. Give a reason why this behavioural adaptation is an advantage to Animal Z. [1]

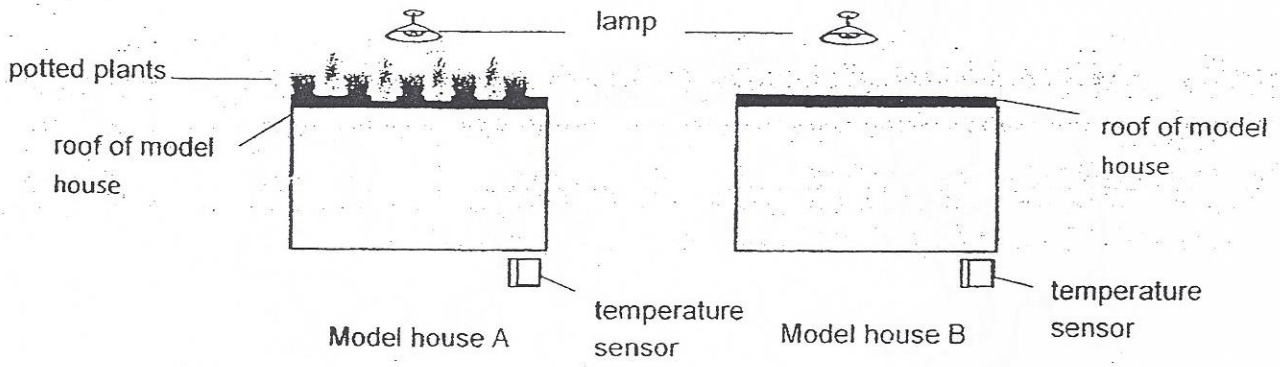
The animal skulls below were found in an area inhabited by a number of animals, including Animal Z.



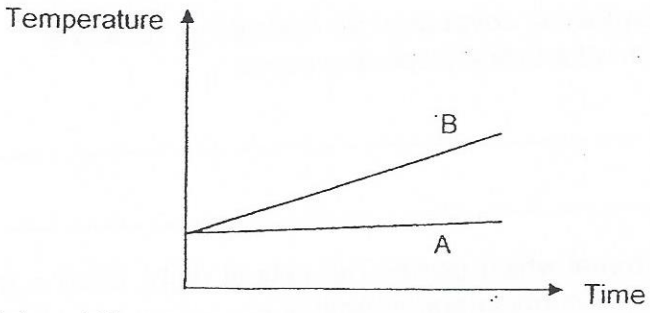
(c) Which one of the skulls, A or B, belongs to Animal Z? Explain your answer. [1]

3

37. Michelle conducted an experiment to find out if the presence of plants affects the temperature of the model houses as shown in the diagram below.

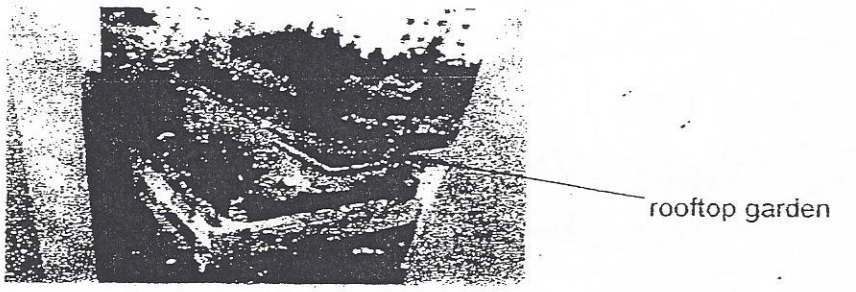


The graph below shows the change of temperature in each of the model house over time.



(a) What could Michelle conclude based on the graph shown above? [1]

The diagram below shows a rooftop garden found in a block of apartment.



(b) How would the surrounding temperature be affected by the construction of a rooftop garden? Give a reason for your answer. [1]

2

METHODIST GIRLS' SCHOOL

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PRIMARY 6
SCIENCE

BOOKLET B2

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.
Write your answers in this booklet.

Name: _____

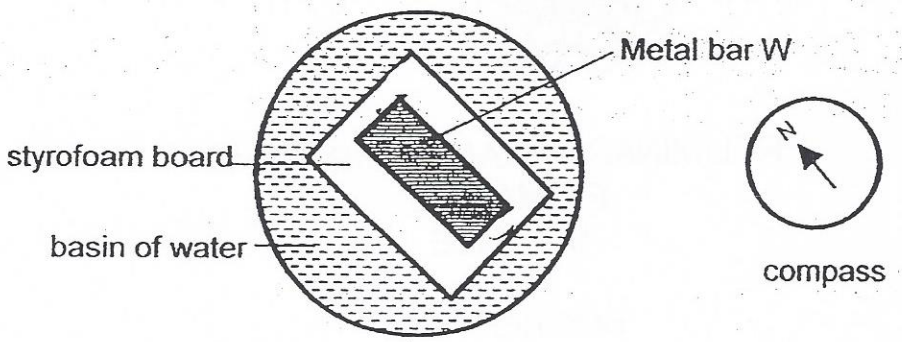
Class: Primary 6._____

Date : 27 August 2015

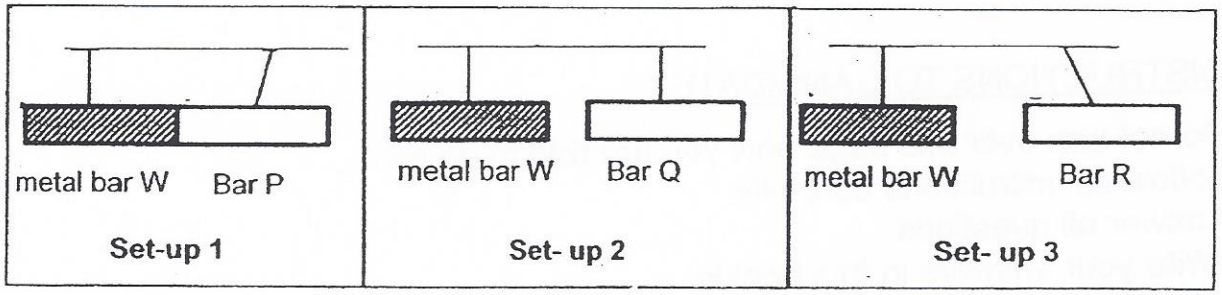
This booklet consists of 9 printed pages including this page.

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. Jessica placed a metal bar W, on a rectangular piece of styrofoam board in a basin of water. A compass was then placed beside the basin of water. After 5 minutes, Jessica observed that the metal bar came to a rest as shown in the diagram below.



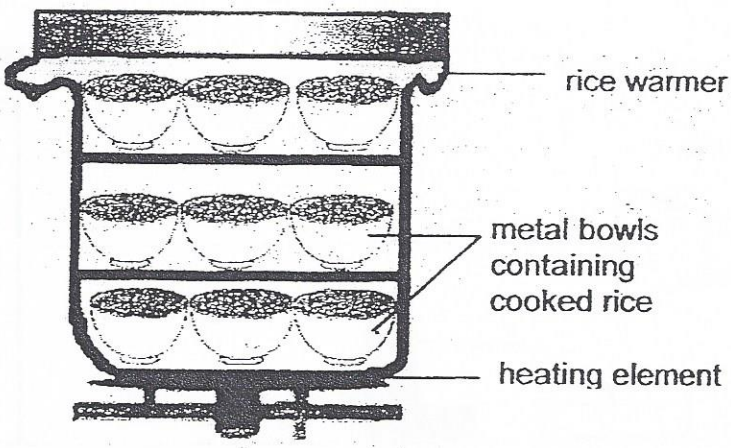
Jessica then introduced three different bars, P, Q and R and suspended them separately in three different set-ups as shown below. The following results were observed.



(a) What would happen when Bar Q is brought close to Bar R? Give a reason for your answer. [1]

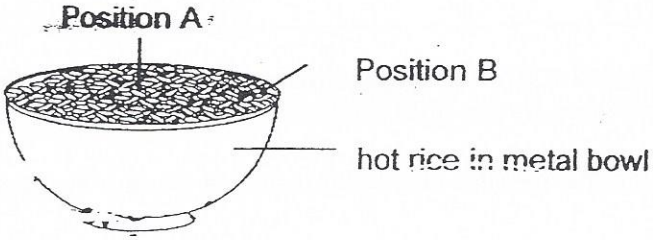
(b) Jessica concluded that Bar P is a magnet. Do you agree with her? Explain your answer. [1]

39. Mr Kim sells Korean cuisine in an air-conditioned food court. He stored cooked rice in metal bowls which were stacked together in a large rice warmer before serving them to his customers.



(a) What is one advantage of using metal bowls instead of plastic bowls? Explain your answer clearly. [1]

Mrs Tan serves rice to her toddler who prefers to have her food slightly colder. There are two positions in the bowl, A and B which Mrs Tan can scoop to feed her toddler.

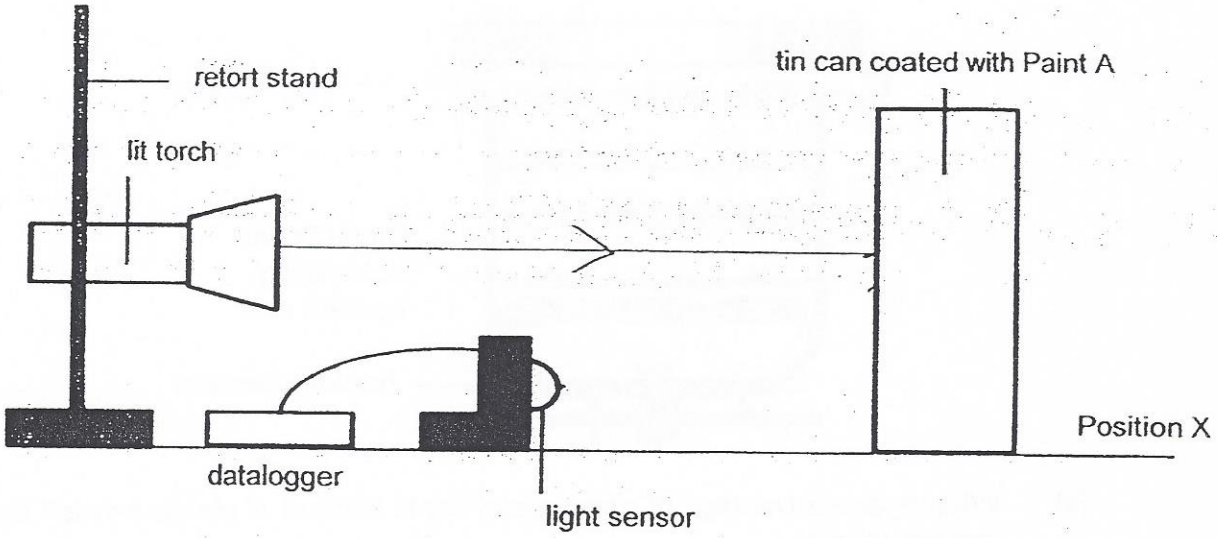


(b) Assuming that Mrs Tan scoops rice at the same depth, at which position should Mrs Tan start scooping the rice to feed her toddler? Give a reason for your answer. [1]

(c) Mr Kim suggested pouring the rice onto a serving plate to cool it down faster. Do you agree with him? Give a reason for your answer. [1]

3

40. Danny carried out an experiment to measure the amount of light in the following set up. Four identical tin cans were each coated with one type of paint. The experiment is carried out in a completely dark room.



Danny repeated the experiment and recorded his results in the table below.

Type of paint	Amount of light (Lux)
A	20
B	10
C	5
D	35

(a) On the diagram above, **draw** arrows to indicate how light from the torch is reflected from the tin can to the light sensor. [1]

(b) How would the results change if the light sensor is placed at position X? Explain your answer. [1]

_____

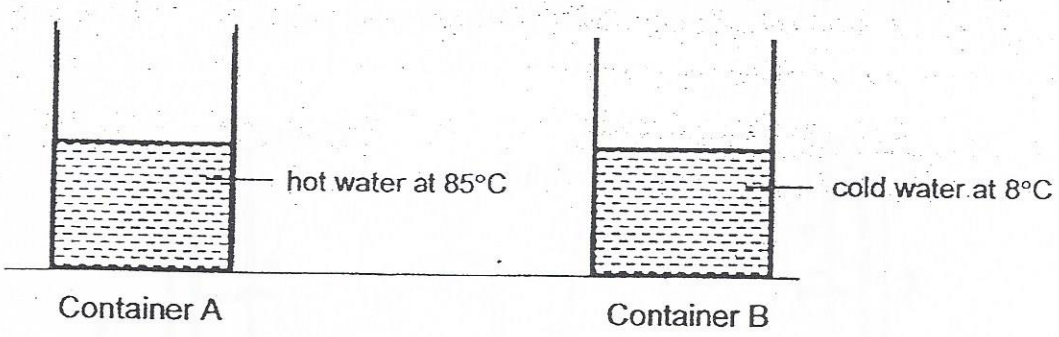
_____

(c) Which type of paint would be the most suitable for painting road signs so that drivers can see clearly at night? Explain why. [1]

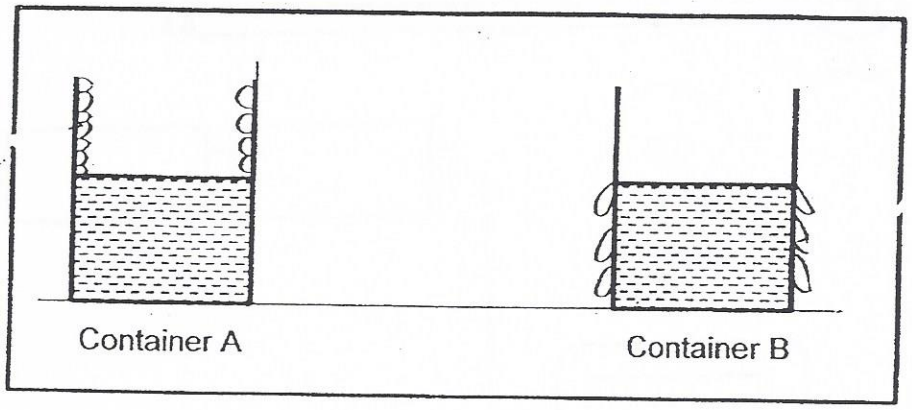
_____

_____

41. Benny poured the same amount of water at different temperatures, 85°C and 8°C, into two identical metal containers, A and B as shown. The containers were left on the table in the science laboratory at room temperature. After 6 hours, he measured the amount of water left in each container.



(a) Condensation occurred in both containers and water droplets were formed. Indicate where the water droplets were formed after 5 minutes by drawing them in the containers below. [1]



(b) Give a reason how each of the following actions helps to make Benny's experiment a fair test. [2]

(i) using similar containers

_____

_____

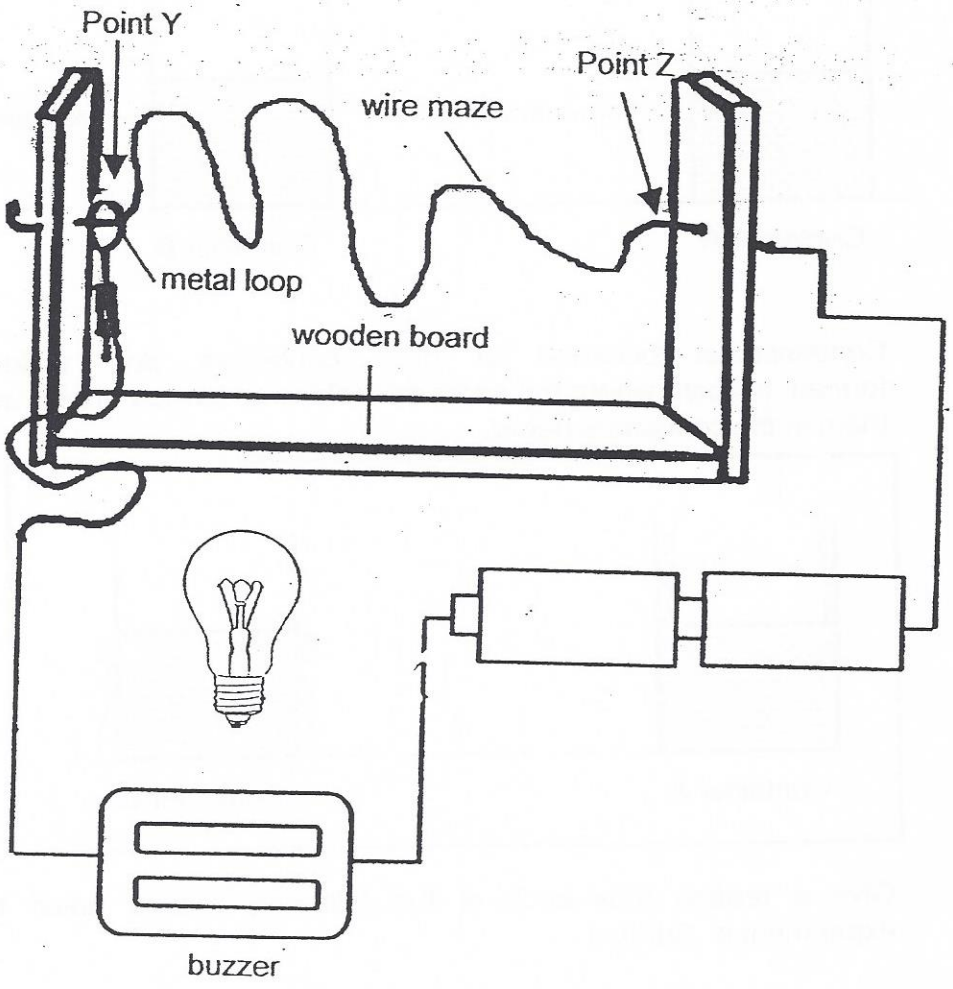
(ii) placing the two containers at the same place

_____

_____

42. In a Science fair, Ahmad came across an electric circuit game, "Buzz Wire". The objective of the game was to guide the metal loop through the wire maze from Point Y to Point Z without touching the loop against the metal maze. If the metal loop touched the maze, the buzzer would sound and the bulb would light up.

(a) In the following diagram, **draw two lines** to represent wires to connect the components so that the circuit game will work properly. [1]

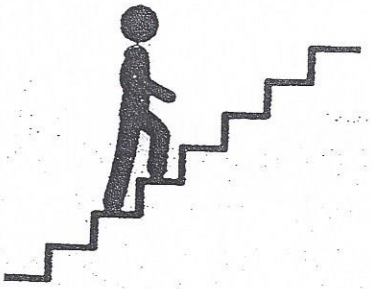


Ahmad modified the electrical circuit game at home by adding another bulb in series to the circuit while keeping the other variables constant. He found that the bulbs did not light up even though all electrical components are connected properly.

(b) Explain clearly why the bulbs did not light up. [1]

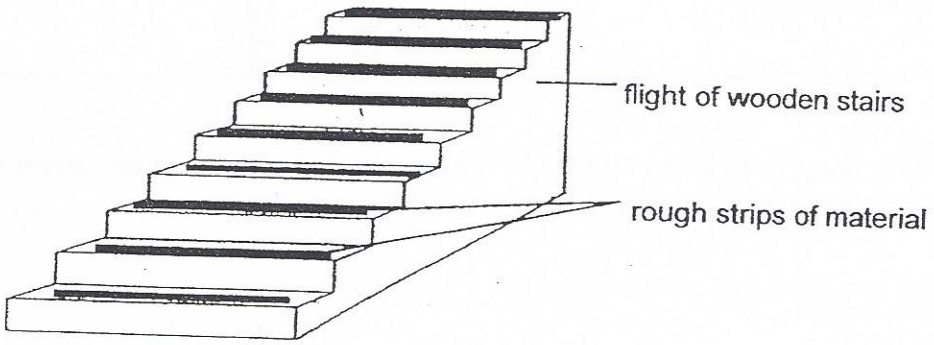
(c) Suggest how he can make the circuit work if he wants to include an additional bulb. [1]

43. The diagram below shows Mr Aariz climbing up the stairs.



(a) Mr Aariz found that it requires more effort to climb up the stairs compared to going down. Give a reason for your answer. [1]

(b) The diagram below shows a flight of wooden stairs in an elderly nursing home.

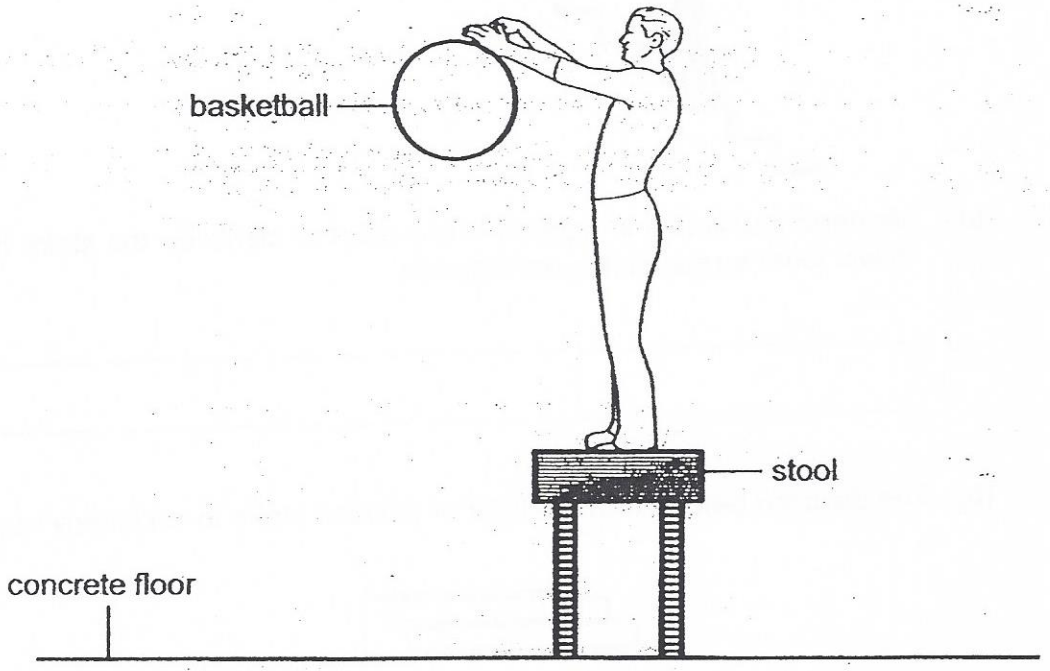


(i) What is the function of the rough strips of material which are mounted on the stairs? Explain your answer clearly. [1]

(ii) After several years of use, it was observed that some patients would slip occasionally as they went up or down the stairs. What could be a possible reason for this? [1]

3

44. Mr Koh dropped a basketball from a height on a concrete floor as shown. He then measured the height at which the basketball bounced back. He then repeated the experiment with a table tennis ball.



(a) Why were both balls unable to bounce back to the original height from which they were dropped? Explain in terms of energy conversion. [1]

_____

_____

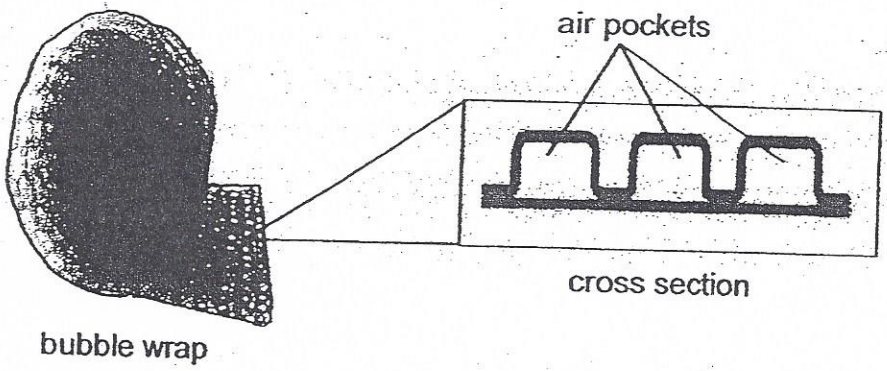
(b) Mr Koh repeated the experiment by letting the balls drop on a tray of sand. All the other variables were kept constant. How would the results of the experiment change? Explain your answer clearly. [1]

_____

_____

_____

The diagram below shows a roll of bubble wrap and its cross section. It is usually made of a transparent plastic material,and is often used for packing items in house mover companies.



(c) What is the advantage of using bubble wrap to pack fragile items? Explain your answer clearly.

[1]

EXAM PAPER 2015
LEVEL : PRIMARY 6
SCHOOL : METHODIST GIRLS SCHOOL
SUBJECT : SCIENCE
TERM : PRELIMINARY EXAMINATION

BOOKLET A

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
3	2	1	3	3	2	1	2	2	4
Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20
1	3	3	2	3	4	2	3	4	4
Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q29	Q30
3	1	2	1	1	2	4	3	2	1

BOOKLET B

Q31a. Global warming causes the Earth's temperature to rise which would cause the number of dengue fever cases to increase. The higher the temperature of the surroundings, the faster the mosquito lava will become a pupa and into an adult thus causing more larva will become a pupa and into an adult thus causing more dengue fever cases.

Q31b. Advantage 1 : Living in surroundings increase its chance of survival s they have different predators. Q31b. advantage : The young mosquito and adult mosquito do not need to compete for food.

Q32a. Test tubes A and D. Test tube A only has snails which produces more carbon dioxide than the amount of carbon dioxide in the air while in Test tube D, the hydrilla would not be able to phtosynthesise thus producing more carbon dioxide than the amount of carbon dioxide in the air.

Q32b. The colour would be orange. The water does not produce oxygen or carbon dioxide thus there would be the same amount of carbon dioxide as in the air.

Q 33a. No. Plant X reproduces with seeds but Plant Y reproduces with spores.

Q33b. The reproductive parts of the plants. The Dandelion flower and tree fern are dispersed by the wind. The reproductive part of the Dandellion plant was a wing like structure while the reproductive parts of the tree fern are light, thus, they are both dispersed by the wind.

Q33c. The stigma transports the pollen grain from another flower of the same species to the ovary which contains the ovule and when the ovule is fertilized, the ovary develops into a fruit.

Q34aThere would be mould growing on the cooked rice. As the cooked rice is moist, mould would start to grow on it. Q34b.The presence of the plants increases the speed of the process. The plant gives out oxygen produced during photosynthesis which increase the speed of the process taking place in cooked rice. Q34c. Ryan could add water on the cooked rice. Mould grows in place that are moist and adding water to the cooked rice would cause it to be moist.

Q35a. Soil A has smaller air particles which does not allow some water to enter while Soil B has bigger air particles to allow all the water to enter the soil.

Q35b. Tree P is most likely to grow in soil A as it has roots growing above the soil to breathe

Q36a. A backward - opening pouch will prevent dirt from getting to the young when burrowing in the soil. Q36b. At night, there would be less predators and as animal Z moves slowly, it would increase its chances of survival than coming out in the day. Q36c. Skull B. Animal Z is a plant eater which means it has flat teeth to eat plants unlike Skull A which has sharp teeth.

Q37a. The presence of plants causes the temperature of the model house to remain constant.

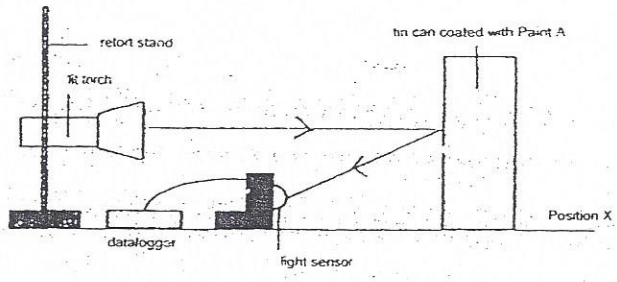
Q37b. The surrounding temperature would be lower. The plants take in the surrounding carbon dioxide which lowers the Earth's temperature.

Q38a. Nothing would happen. Bar Q is not a magnetic material thus, when Bar Q is brought close to Bar R, which is a magnet , nothing would happen.

Q38b. No. Bar P may be a magnetic material and not necessarily a magnet as there is only attraction shown between metal bar W and Bar P.

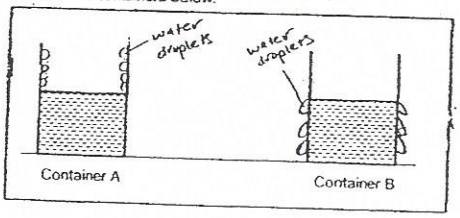
Q39a. Metal is a better conductor of heat than plastic. The metal would gain heat faster, thus caused the cooked rice to heat up while plastic would gain heat slower thus cause the cooked rice to take a longer time to heat up. Q39b. Position B, because it is located at the extreme and of the fmetal bowl where heat will be conducted away from the hot rice to the metal bowl more will be quickly to the surrounding air faster. Q39c. Yes, I agree with Mr Kim. Pouring the rice onto a plate increases the surface area so that heat can be lost to the surrounding air more quickly.

Q40a. SEE PICTURE. Q40B. The amount of light recorded would decrease. At a further distance less light would be reflected off the tin can and to the light sensor. Q40c. Paint D as the most amount of light was recorded. When driving at night, bright lights would be needed to see in the dark thus Paint D would be the most suitable.

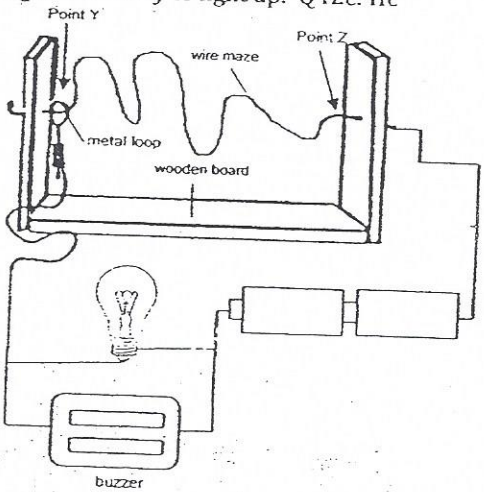


Q41a. SEE PICTURE Q41b.i) To ensure that the temperature of both containers would gain heat or lose heat equally. Q41bii) This ensures that both containers are under the same conditions such as temperature, humidity and presence of wind that affect the rate of evaporation.

(a) Condensation occurred in both containers and water droplets were formed. Indicate where the water droplets were formed after 5 minutes by drawing them in the containers below. [1]



Q42a. SEE PICTURE Q42b. The bulbs did not receive enough electricity to light up. Q42c. He should connect the bulbs in a parallel circuit.



Q43a. Climbing up the stairs is going against the direction of gravity acting on a person. While going sown the stair is following the direction of gravity acting on a person.
Q43bi) The strips are to increase the amount of friction between the person and the stairs to prevent the person from falling. Q43bii) The roughness of the strips were worn out and less friction was produced over time thus causing some people to skip.
Q44a. Gravitational potential energy from the balls is converted to kinetic energy as the balls hit the ground. Some kinetic energy so it is unable to bounce back to its original height. Q44b. The balls will rebound to a lower height. The basket ball will rebound to a lower height and the table tennis ball will not bounce back. Q44c. The air pockets prevent the fragile item form breaking as it cushions the item thus , when dropped the air pockets might burst but leaving the bulb not broken.

THE END