METHODIST GIRLS' SCHOOL

Founded in 1887

END-OF-YEAR EXAMINATIONS 2011
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: 13 October 2011

This booklet consists of 15 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 and shade the oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(60 marks)

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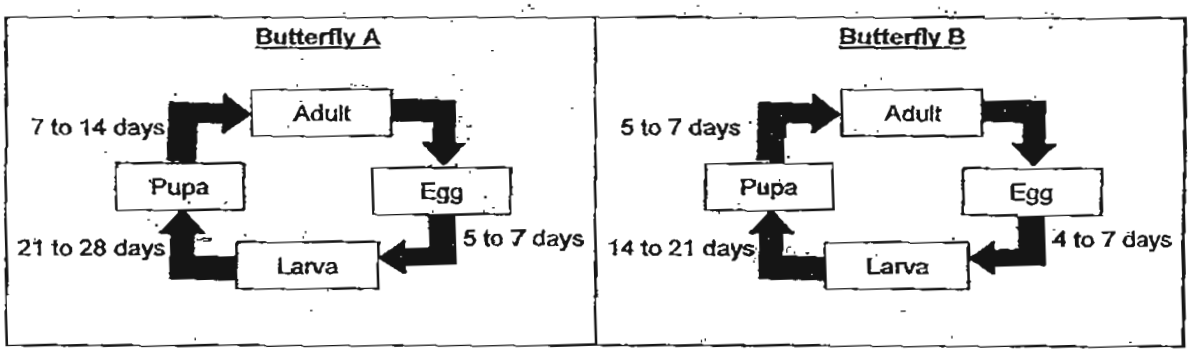
1. The following diagram shows the life cycles of Butterfly A and B.



Which one of the following statements is **correct**?

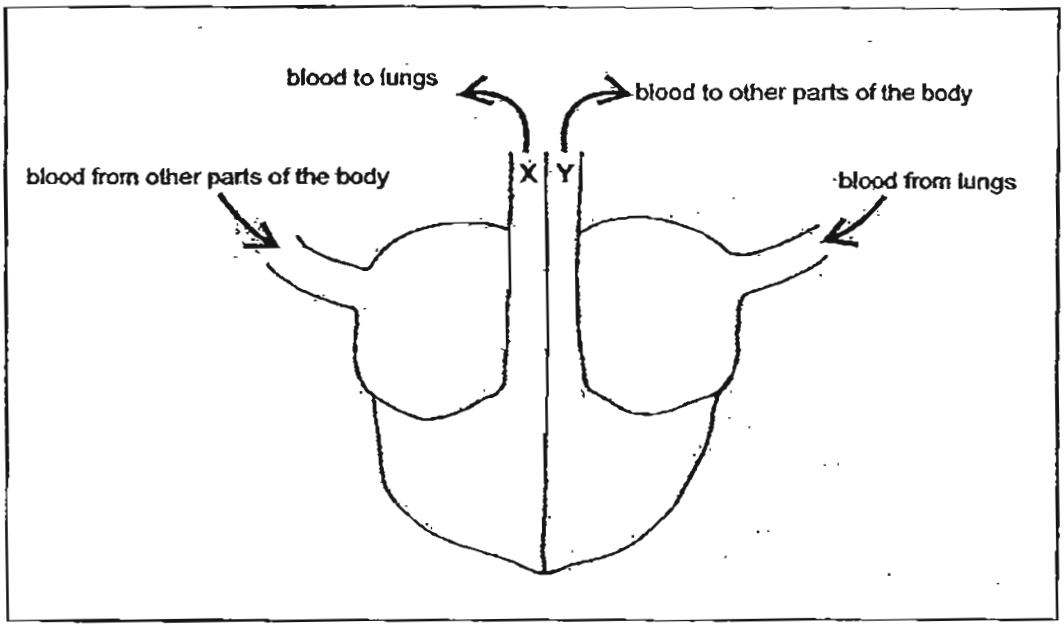
(1) Butterfly A has a shorter life cycle compared to Butterfly B.

(2) Both the life cycles of Butterfly A and B have the same duration.

(3) On day 20, both Butterfly A and Butterfly B will be in the pupa stage.

(4) Butterfly A took a longer time to reach the pupa stage compared to Butterfly B.

2. The diagram below shows the movement of blood to and from a human heart.



Which one of the following about the blood in blood vessels X and Y is **correct**?

(1)	rich in carbon dioxide	rich in oxygen
(2)	poor in carbon dioxide	poor in oxygen
(3)	rich in carbon dioxide	poor in oxygen
(4)	poor in carbon dioxide	rich in oxygen

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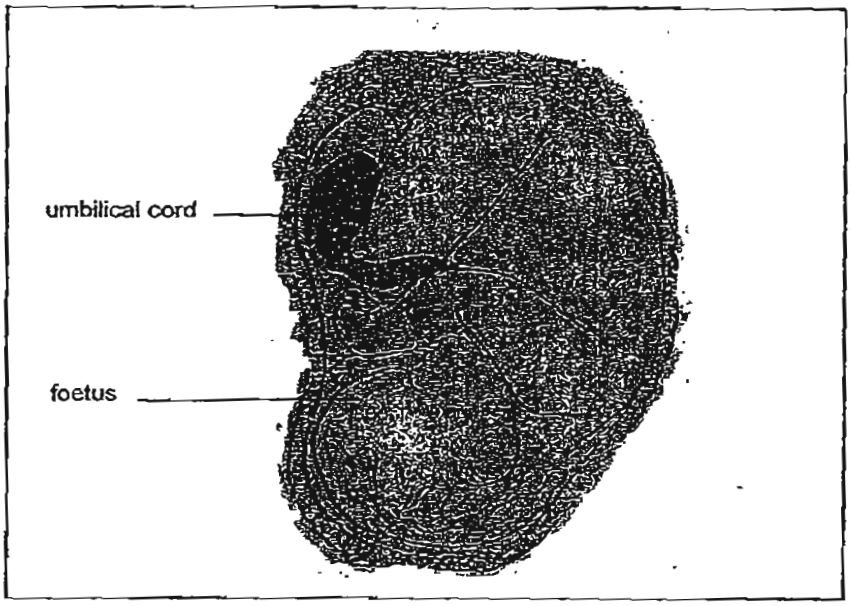
3. The diagram below shows a baby developing in a mother's womb.



Which of the following statements about the umbilical cord are correct?

A: Fertilisation takes place in the umbilical cord.

B: It connects the foetus to the mother.

C: It carries food and oxygen from the mother to the developing baby.

D: Wastes from the developing baby are passed out through the umbilical cord.

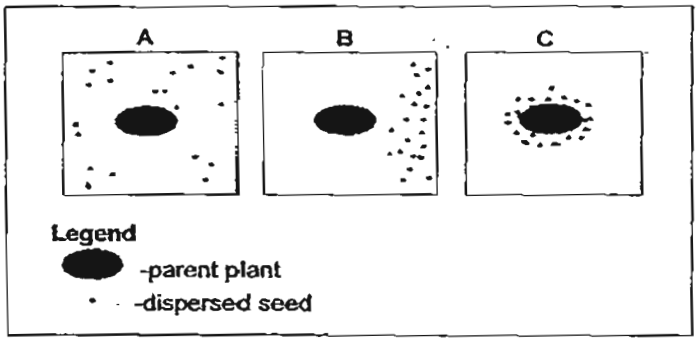
(1) A and B only

(2) B and C only

(3) C and D only

(4) B, C and D only

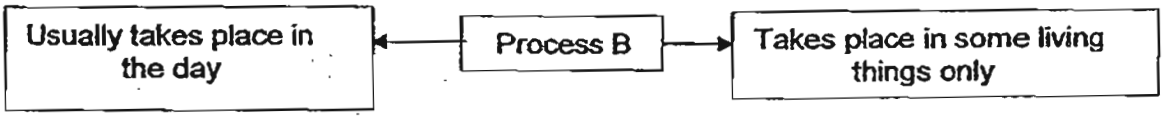
4. Three different types of plants A, B and C dispersed their seeds as shown below.



Which of the following is a likely characteristic of the seeds of the plants?

(1)	has wing-like structure	has a hard outer covering	dries up when ripe
(2)	has fleshy and juicy fruits	has small, light seeds	able to float
(3)	hairy and light	has air spaces	large seeds
(4)	has stiff hairs	has a wing-like structure	splits open when dry

5. Study the diagram below. B is a process that can be found in living things.



Which one of the following equations best represents process B?

(1) Water +Carbon dioxide → Oxygen + Sugar

(2) Sugar + Oxygen → Carbon Dioxide + Energy +Water

(3) Sugar + Carbon Dioxide → Sugar +Oxygen+ Energy

(4) Oxygen + Sugar → Oxygen + Water + Waste Material

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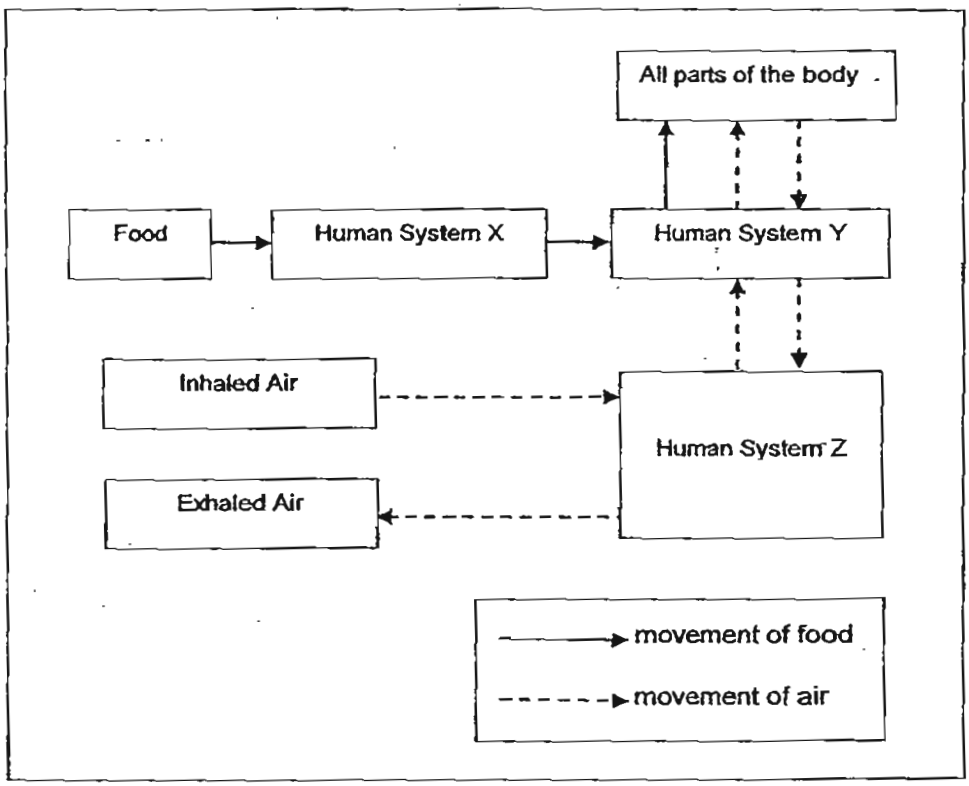
6. Study the diagram below. It shows the human body system.
Which one of the following human systems does X, Y and Z represent?



	X	Y	Z
(1)	Circulatory System	Digestive System	Respiratory System
(2)	Digestive System	Circulatory System	Respiratory System
(3)	Respiratory System	Circulatory System	Digestive System
(4)	Digestive System	Respiratory System	Circulatory System

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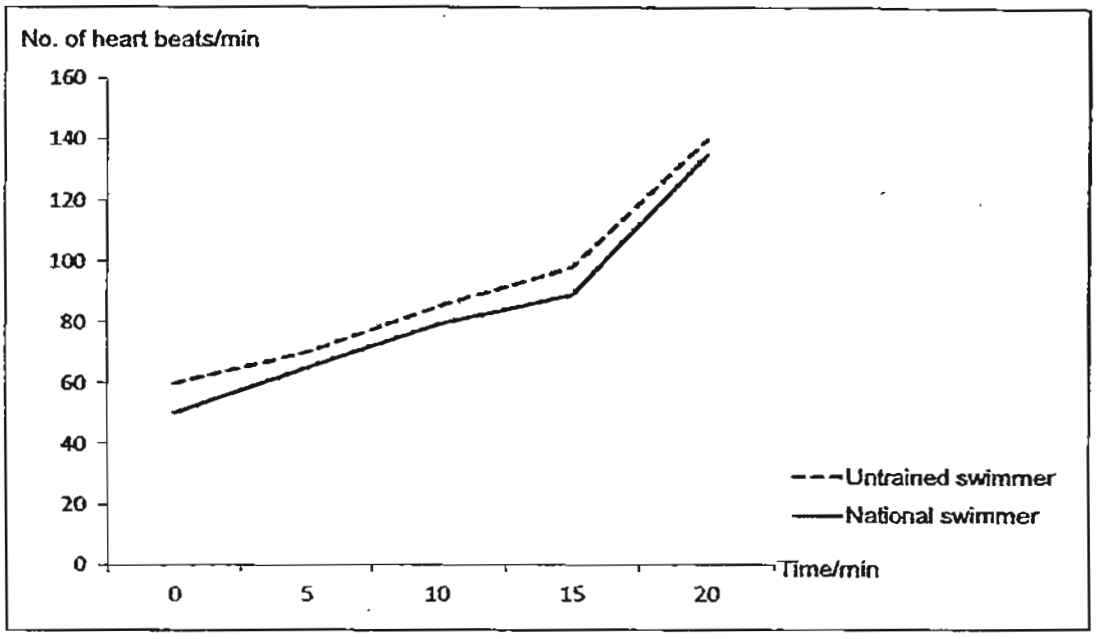
7. The following graphs show the effect of swimming at the same intensity on the heart rate of a national swimmer and an untrained one of the same age.



Based on the graphs above, which one of the following statements is correct?

(1) The national swimmer uses less energy to swim.

(2) The national swimmer uses more oxygen to swim.

(3) The resting heart rate of the untrained swimmer is lower than that of the national swimmer.

(4) The resting heart rate of the national swimmer is lower than that of the untrained swimmer.

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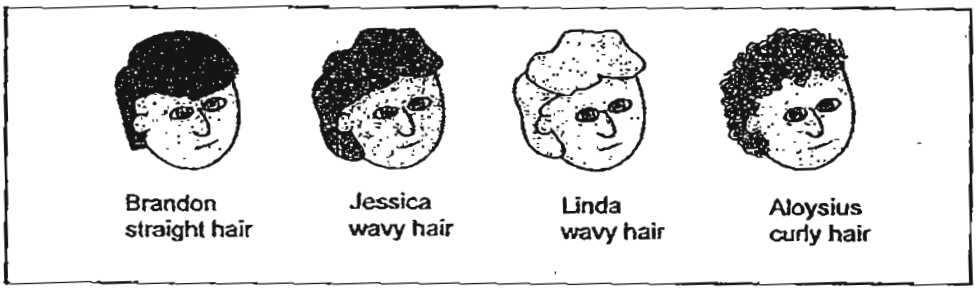
8. The following table shows information of the hair types of four children and their parents.



Name of child	Hair Type	
	Mother	Father
Brandon	wavy	straight
Jessica	straight	curly
Linda	wavy	wavy
Aloysius	curly	curly

Which one of the following statements is consistent with the information shown above?

(1) Both parents of a child with curly hair have wavy hair.

(2) Both parents of a child with wavy hair have curly hair.

(3) Both parents of a child with curly hair have curly hair.

(4) Both parents of a child with straight hair have straight hair.

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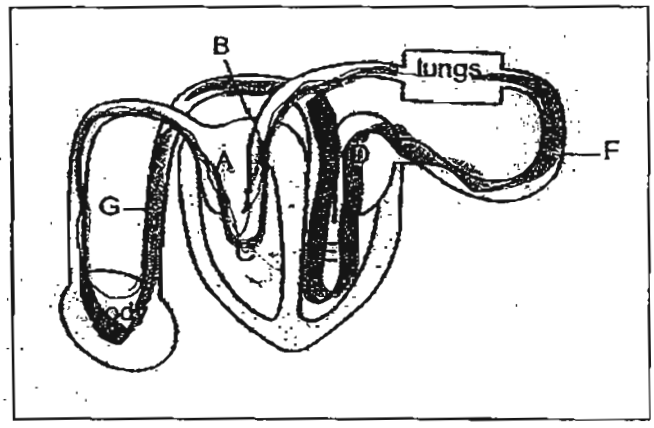
9. The diagram shows a human heart.



Which of the following is the correct sequence of the flow of blood in the human body?

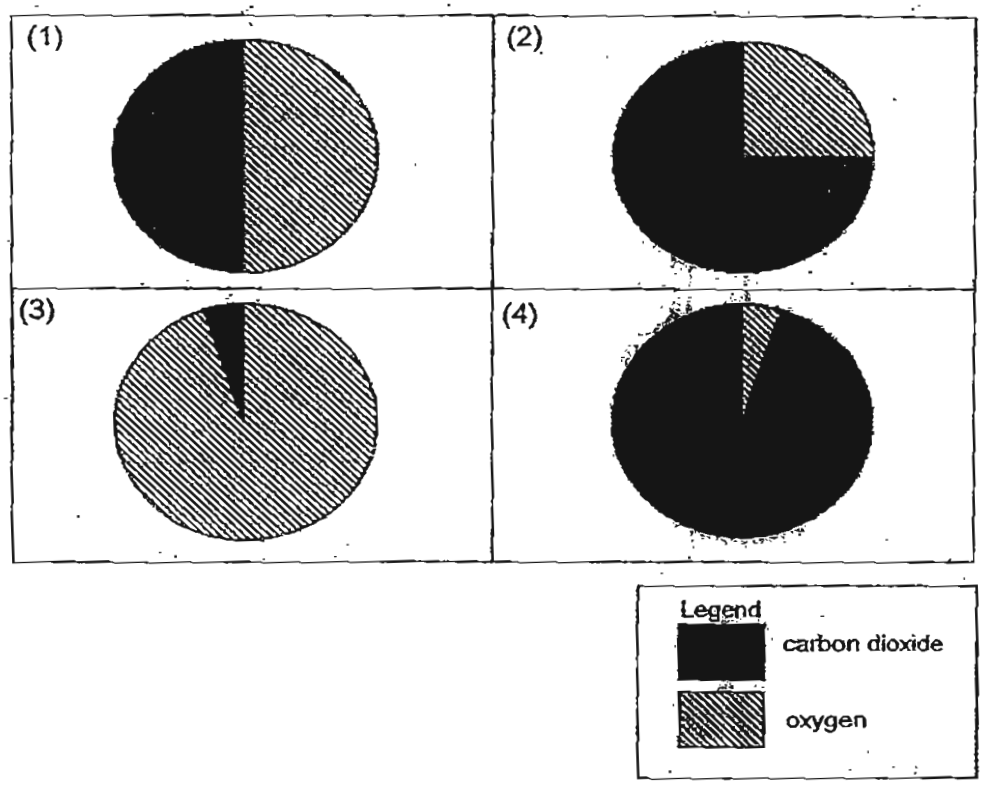
(1) A, B, C, D, E, F ,G

(2) A, C, B, F, D, E, G

(3) C, B, D, E, F, G, A

(4) C, D, F, E, G, A, C

10. Which one of the following pie charts shows the correct proportion of oxygen to carbon dioxide in blood that is pumped from the heart to the rest of the body?



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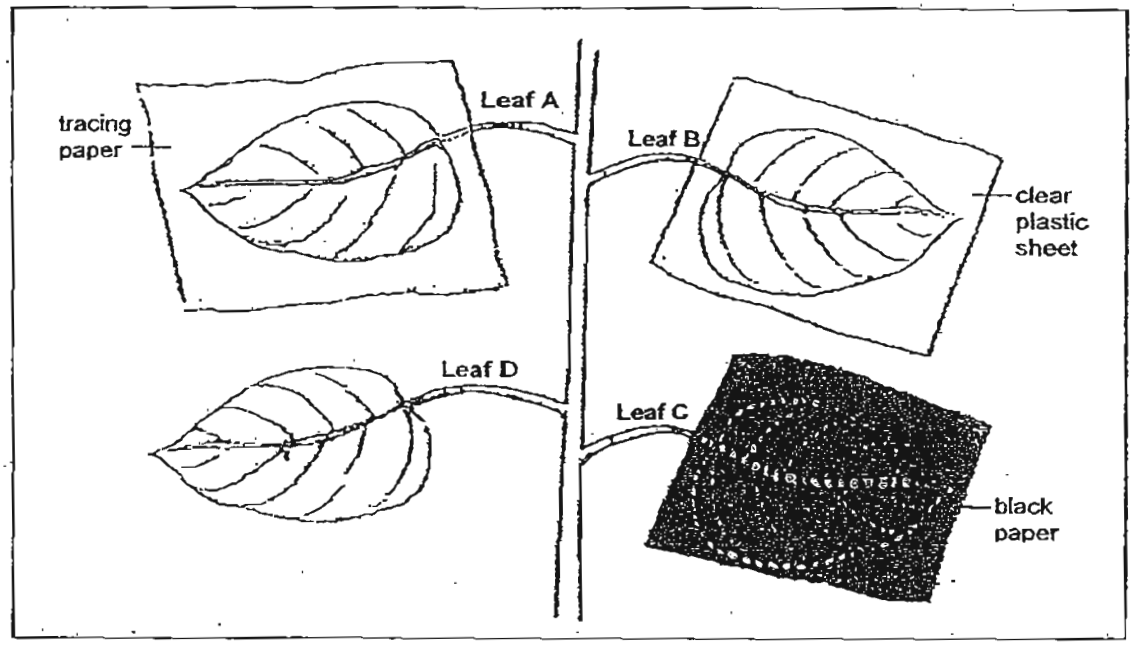
11. Thomas conducted an experiment as shown below. He used four leaves of similar size, A, B, C and D on a plant. Leaf A was covered with tracing paper, Leaf B with a clear plastic sheet and Leaf C with black paper. Leaf D was uncovered. There is free circulation of air in the covered leaves.



Which one of the following shows the correct order of the amount of starch in the leaves?

	Least starch → Most starch			
(1)	C	B	A	D
(2)	D	B	A	C
(3)	D	C	A	B
(4)	C	A	B	D

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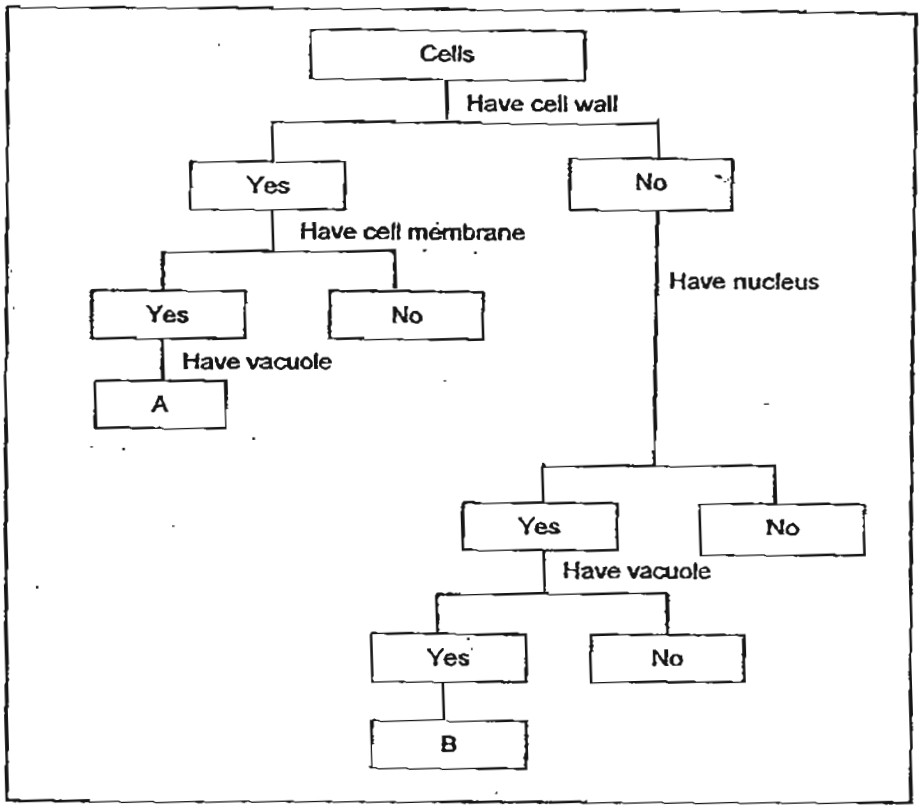
12. Study the classification chart below.



Which of the following **correctly** represents the organisms that can be placed at A and B?

	A	B
(1)	Root cell	Leaf cell
(2)	Nerve cell	Root cell
(3)	Bone cell	Cheek cell
(4)	Onion skin cell	Cheek cell

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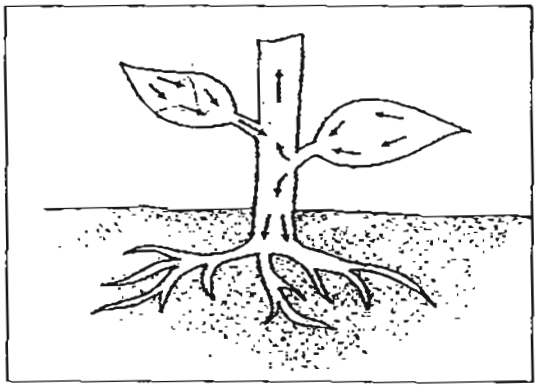
13. The diagram below shows a section of a flowering plant.



What do the arrows in the diagram represent?

(1) Food

(2) Water

(3) Oxygen

(4) Carbon dioxide

14. The following show the materials needed to construct a model of the human respiratory system.

Materials	Description
	Plastic bottle with an open base and a hole in the cap
	Balloons
	Rubber sheet tied with a string
	Drinking straws secured with tape

Which one of the following correctly represents the parts in the human respiratory system?

	Plastic Bottle	Balloons	Rubber sheet	Drinking straws
(1)	Muscle	Air tubes	Chest	Lungs
(2)	Muscle	Lungs	Chest	Air tubes
(3)	Chest	Air tubes	Muscle	Lungs
(4)	Chest	Lungs	Muscle	Air tubes

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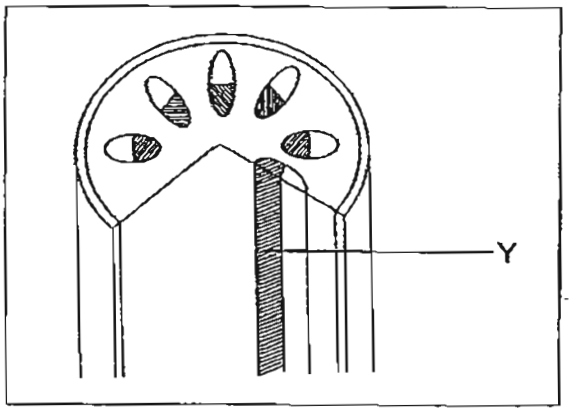
15. The diagram shows the cross section of a stem of a plant.



Which of the following statements are **true** for Y?

A: They transport water from the roots to the leaves.

B: They transport water from the leaves to the roots.

C: They transport food from the leaves to the other parts of the plant.

D: They transport dissolved mineral salts from the roots to the leaves.

(1) A and D

(2) B and C

(3) B, C and D

(4) A, C and D

End of Booklet A1

Go on to Booklet A2

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SCIENCE

BOOKLET A2

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

INSTRUCTIONS TO CANDIDATES

Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

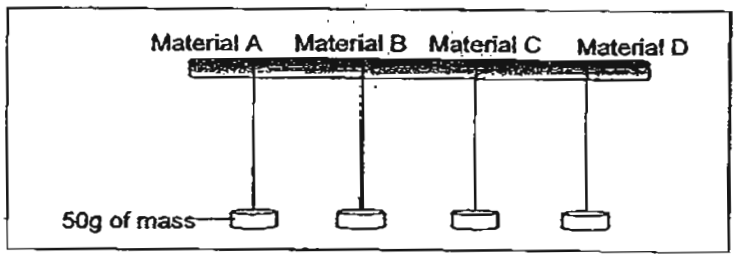
Name: _____ ( )

Class: Primary 5._____

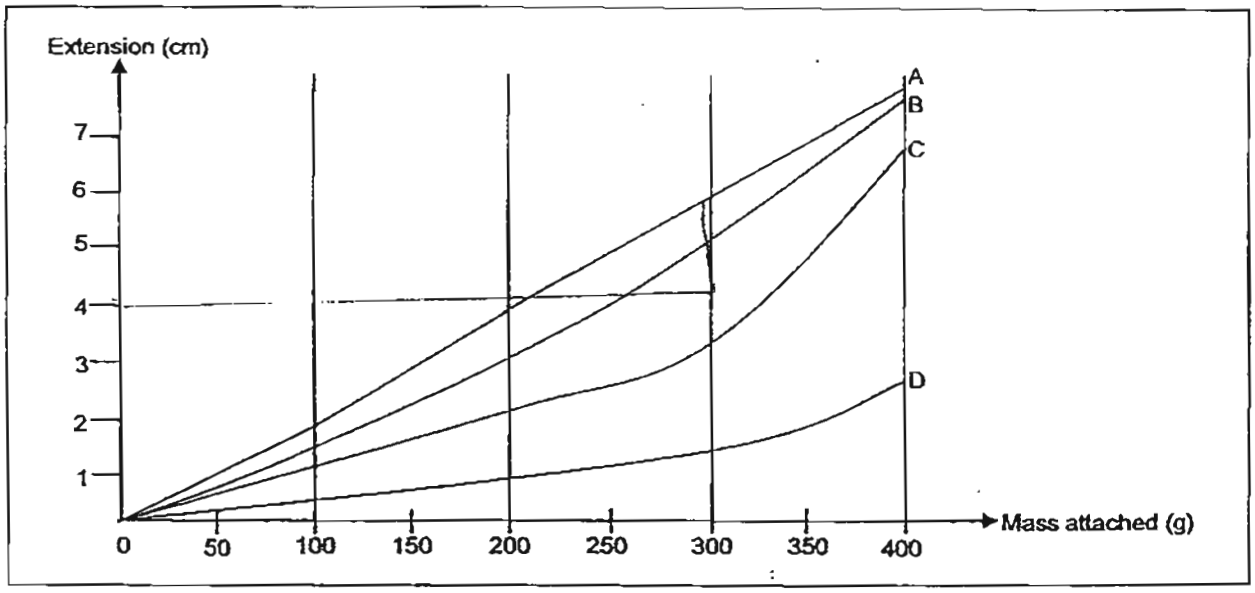
Date: 13 October 2011

This booklet consists of 13 printed pages including this page.

16. Amy hung 50g of mass each on thin strands of Materials A, B, C and D as shown in the diagram below. The original length of each strand of material was 20cm.



She then added more masses to each strand of materials. Each time she added the masses, she measured how much the materials had extended.
The graph below shows how much the materials had extended due to the masses hung from them.



Which strand/s of material became longer than 24cm when a mass of 300g was hung from it/them?

(1) Material A only

(2) Materials A and B only

(3) Materials A, B and C only

(4) Materials A, B, C and D

17. Four students made the following statements based on their understanding of conditions that must be present in order for the water cycle to take place continuously.

Ali: Heat must be present.
Ben: Water must change in state.
Cindy: The temperature in the atmosphere must be high.
Devi: The amount of wind in the atmosphere must be high.

Who made the correct statements?

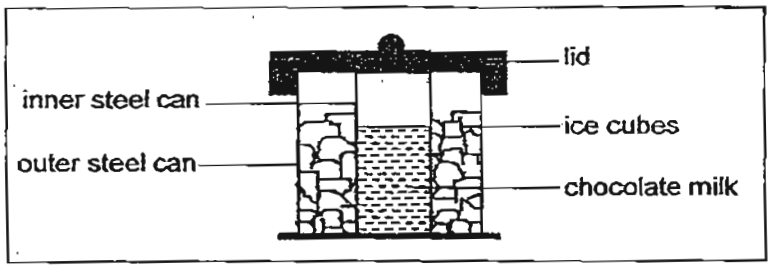
(1) Ali and Ben

(2) Cindy and Devi

(3) Ali, Ben and Cindy

(4) Ben, Cindy and Devi

18. Jenny used the set-up below to turn chocolate milk into ice-cream.



Her friend gave some suggestions to delay the melting of the ice cubes. Which of the following suggestions from her friend are helpful?

A: Remove the lid
B: Mix the ice with salt
C: Use an inner can made of plastic instead of steel
D: Use an outer can made of plastic instead of steel

(1) A and B only

(2) B and C only

(3) B and D only

(4) C and D only

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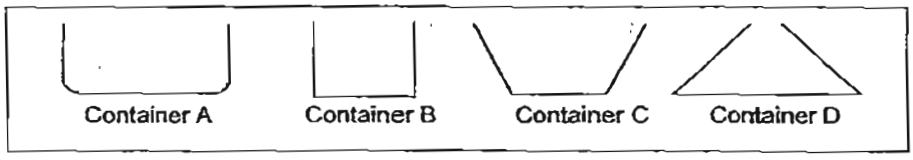
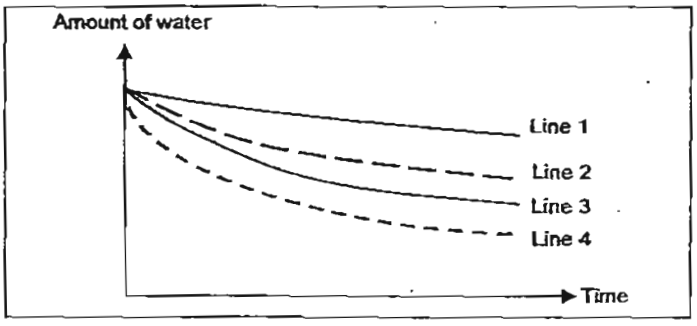
19. Four different containers, A, B, C and D, were each filled with 200 ml of water and placed side by side in one corner of a room as shown in the diagram below.



The amount of water in each container was recorded over a period of five hours and the graph below was plotted



Which of the following lines **correctly** represents the amount of water left in containers, A, B, C and D?

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

20. Which of the following **best** explains why it is necessary to conserve electricity?

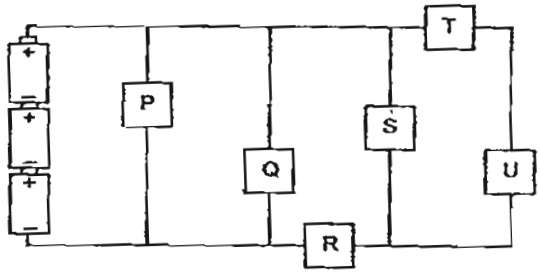
(1) Electricity is inexpensive.

(2) Electricity can only be produced from natural gas, oil and coal.

(3) More and more equipment are dependent on electricity to function.

(4) Natural resources that are used for producing electricity do not last forever.

21. The circuit below has six bulb holders, labelled, P, Q, R, S, T, U, connected to each other.



In which two bulb holders should the bulb be fixed such that both the bulbs would light up together?

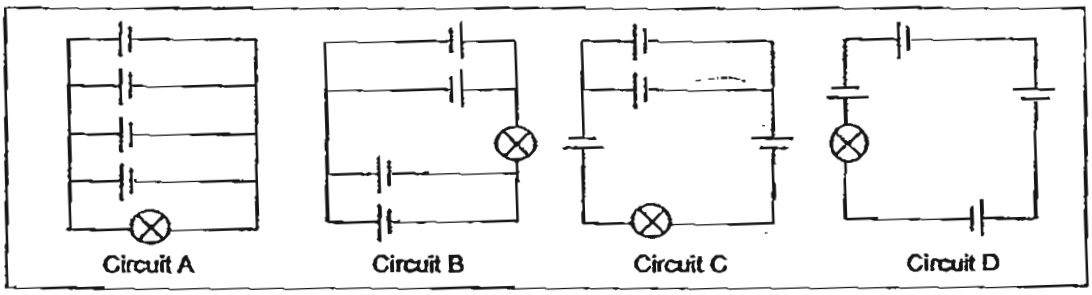
(1) P and R

(2) Q and T

(3) R and S

4) T and S

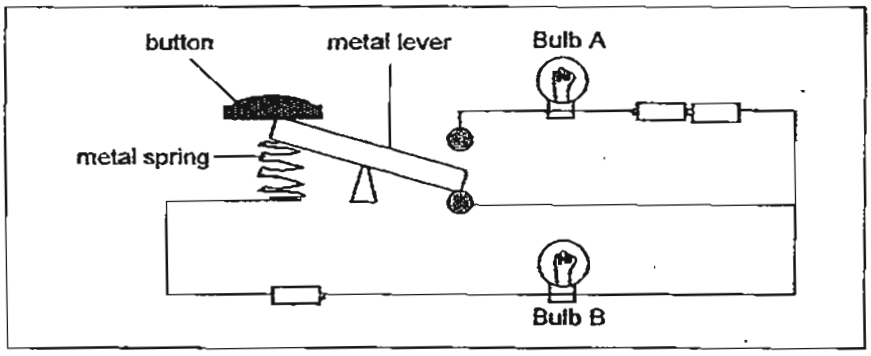
22. The diagrams below show four electrical circuits with different arrangements.



Four pupils, Ron, Sam, Tom and Uma, were asked to rank the circuits in order of the least bright bulb to the brightest bulb. Who has the **correct** order of ranking?

		(least bright) →			(brightest)
(1)	Ron	Circuit A	Circuit B	Circuit C	Circuit D
(2)	Sam	Circuit D	Circuit C	Circuit B	Circuit A
(3)	Tom	Circuit C	Circuit A	Circuit B	Circuit D
(4)	Uma	Circuit C	Circuit A	Circuit D	Circuit B

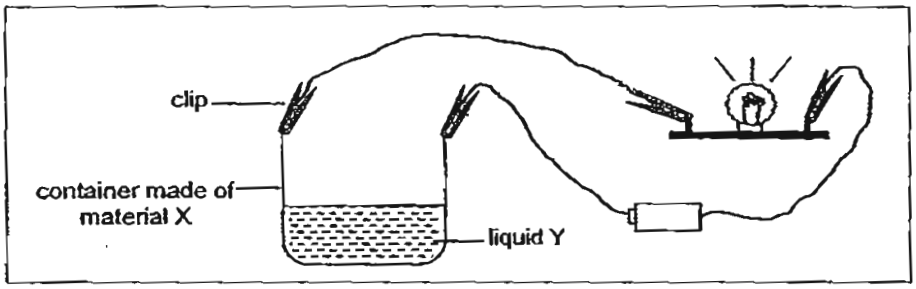
23. Study the circuit below. Bulbs A and B are identical and the three batteries are identical. Each battery supplies 15 units of electrical energy to the circuit. Initially, Bulb B is lit while Bulb A is unlit.



If the button is pressed and held down, what would happen to Bulbs A and B?

	Bulb A	Bulb B
(1)	As bright as 15 units	unlit
(2)	Brighter than 15 units	unlit
(3)	As bright as 15 units	Brighter than 15 units
(4)	Brighter than 15 units	Brighter than 15 units

24. Jenny set up an experiment. When she connected the clips to the container, the bulb lit up as shown in the diagram below.



Which of the following statements about the electric circuit are true?

A: Liquid Y must be a conductor of electricity.
B: Material X must be a conductor of electricity.
C: The clips are likely to be made of metal.

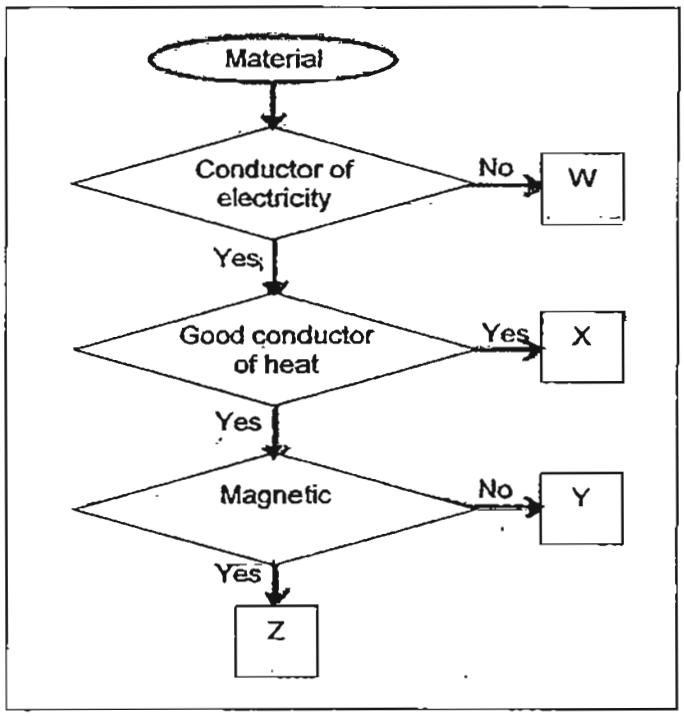
(1) A and B

(2) A and C

(3) B and C

(4) A, B and C

25. Study the flowchart below.



Based on the flowchart above, which of the following statements are true?

A: W can conduct electricity.
B: Y is a good conductor of heat but is non-magnetic.
C: Z is magnetic but is a non-conductor of electricity.
D: X is a good conductor of heat and electricity.

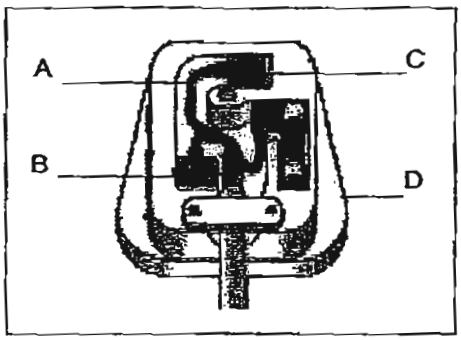
(1) A only

(2) A and B only

(3) B and D only

(4) B, C and D only

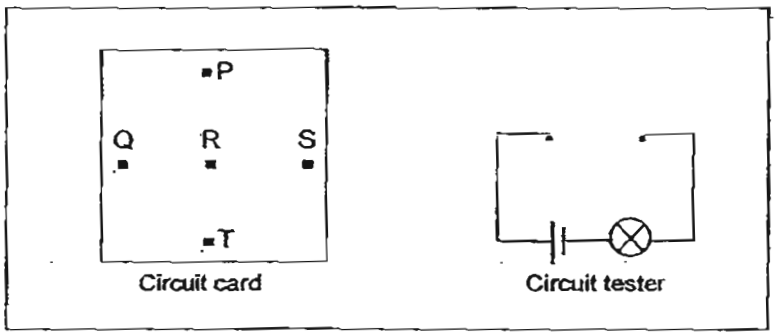
26. Study the diagram of a three-pin plug shown below.



The parts labelled above are either electrical conductors or electrical insulators. Which of the following shows the **correct** grouping of the labelled parts?

	Electrical conductors	Electrical insulators
(1)	Part labelled A and B	Part labelled C and D
(2)	Part labelled B and C	Part labelled A and D
(3)	Part labelled C and D	Part labelled A and B
(4)	Part labelled A and D	Part labelled B and C

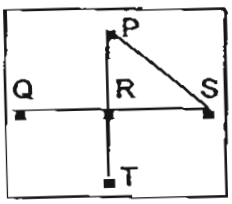
27. The diagram below shows a circuit card and a circuit tester.

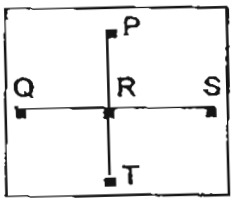


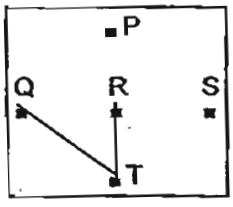
The table below shows what happens to the bulb when two points on the circuit card are connected to the circuit tester.

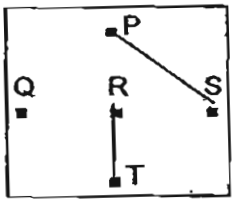
Points connected to circuit tester	Does the bulb light up?
P and S	Yes
P and T	No
Q and S	No
R and T	Yes

Based on the information in the table above, which of the following shows the correct arrangement of wires on the circuit card?

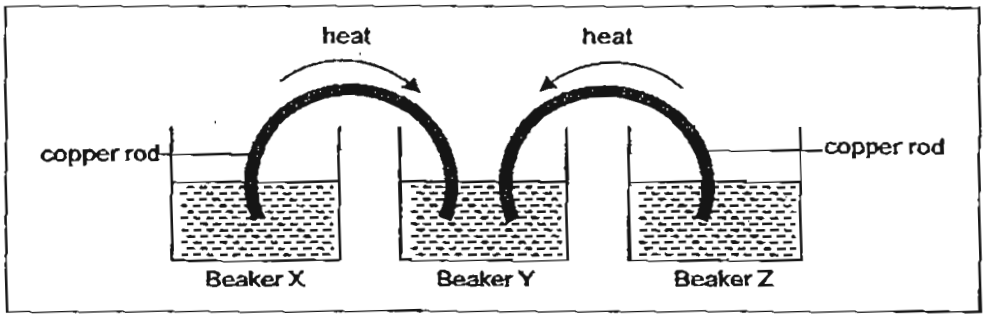
(1)


(2)


(3)


(4)


28. Three beakers, X, Y and Z were each filled with the same amount of water at different temperatures. Copper rods were then immersed in the water in the three beakers as shown in the diagram below. The arrows indicate the flow of heat through the rods as soon as they were immersed.



Which of the following **correctly** describes the initial temperature differences of the water in the three beakers?

(1) The water in beaker X is the hottest while the water in beaker Z is the coolest.

(2) The water in beaker Z is the hottest while the water in beaker X is the coolest.

(3) The water in beaker Y has a higher temperature than the water in beakers X and Z.

(4) The water in beakers X and Z has a higher temperature than the water in beaker Y.

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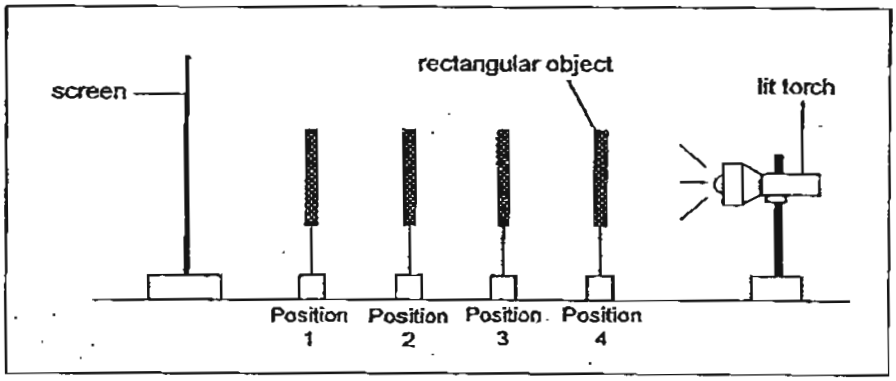
29. Study the experimental set-up below.



At which position should the rectangular object be placed, such that its shadow formed on the screen is the shortest?

(1) Position 1

(2) Position 2

(3) Position 3

(4) Position 4

(Go on to the next page)

30. A steel bar AB was magnetised using the "stroke" method as shown in Diagram 1 below. Diagram 2 shows the magnetic poles of bar AB, after it was magnetised.

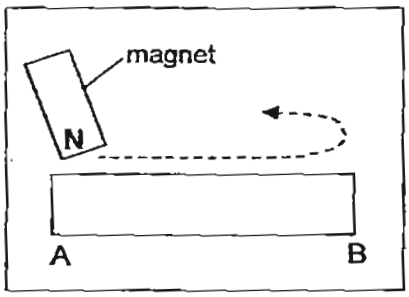


Diagram 1

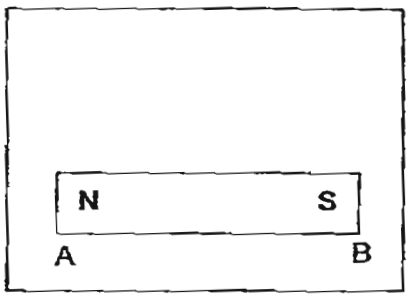


Diagram 2

Another steel bar CD was magnetised by two magnets as shown in Diagram 3 below.

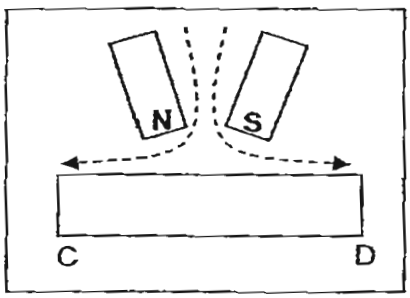


Diagram 3

Which of the following sets shows the magnetic poles at C and D **correctly**?

	At C	At D
(1)	N	S
(2)	S	N
(3)	N	N
(4)	S	S

METHODIST GIRLS' SCHOOL

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END-OF-YEAR EXAMINATIONS 2011
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._____

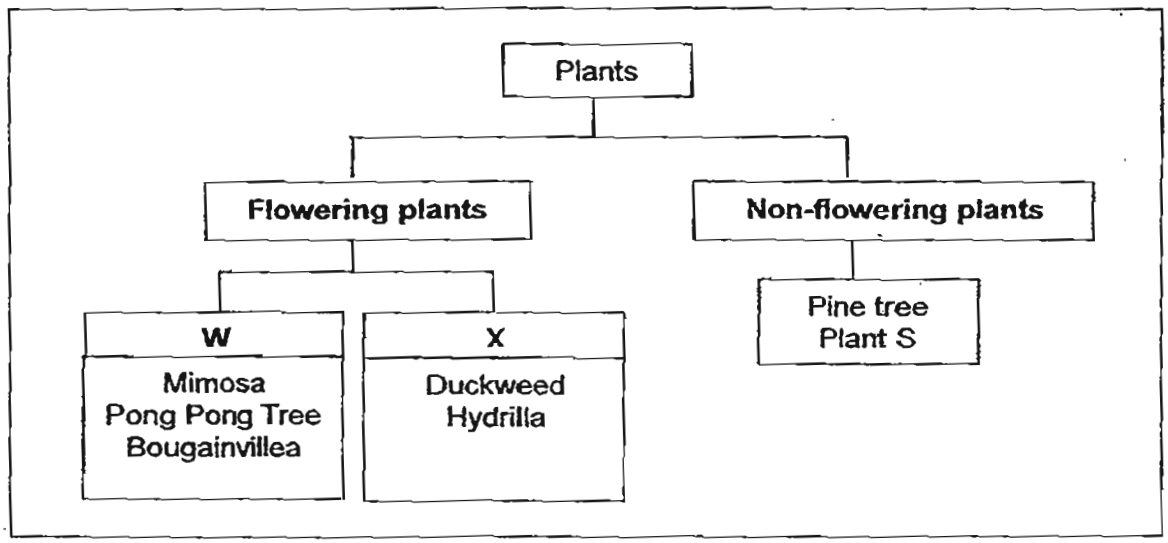
Date: 13 October 2011

Booklet A	/ 60
Booklet B1	/ 20
Booklet B2	/ 20
TOTAL	/ 100

This booklet consists of 8 printed pages including this page.

For questions 31 to 37, write your answers in the space provided. (20 marks)

31 The classification chart below shows the grouping of plants into flowering and non-flowering plants.



(a) Based on the above, what are suitable headings for W and X? [1m]

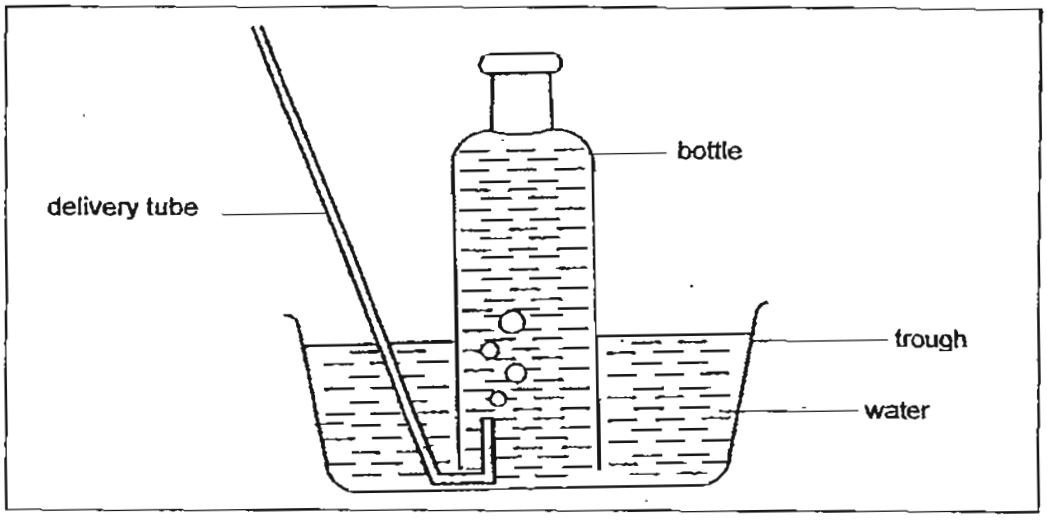
W: _____

X: _____

(b) What could Plant S be? [1m]

_____

32 Danielle and Sean conducted an experiment. They each took a deep breath and blew into the delivery tube in the set up as shown in the picture.



The results are shown in the table below:

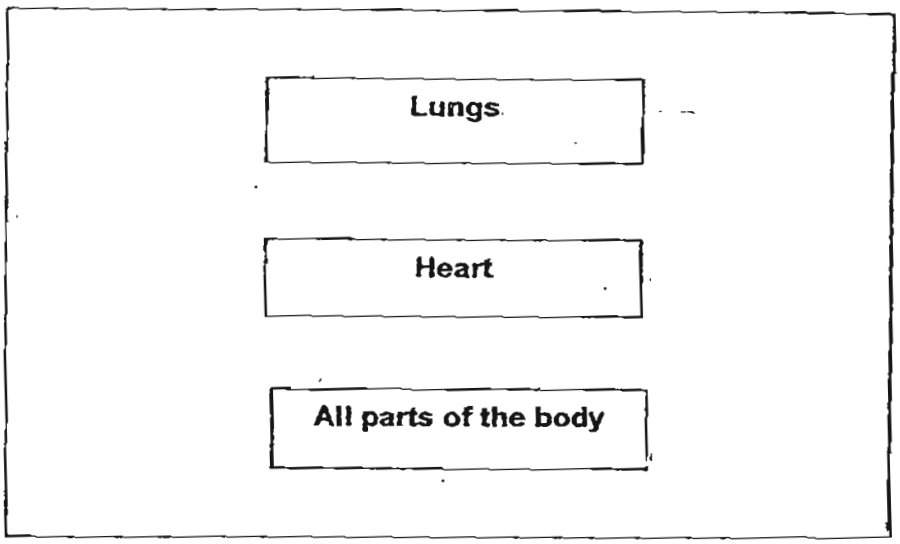
Name of student	Height of water in the bottle at first (cm)	Height of water at the end of the experiment (cm)
Danielle	40	15
Sean	40	9

(a) Why is there a decrease in the height of the water in the bottle when they blew into the delivery tube? [1m]

(b) What can you conclude about Danielle and Sean from the results of the experiment? [1m]

(Go on to the next page)

33 The diagram below represents the human body systems.



(a) In the diagram, **draw four arrows** to show the correct flow of blood in the human body and **label** them:
i) **"Oxygenated blood"**
ii) **"Deoxygenated blood"** [2m]

(b) State a similarity and a difference between the circulatory system of a human and a plant. [2m]

Similarity:

_____

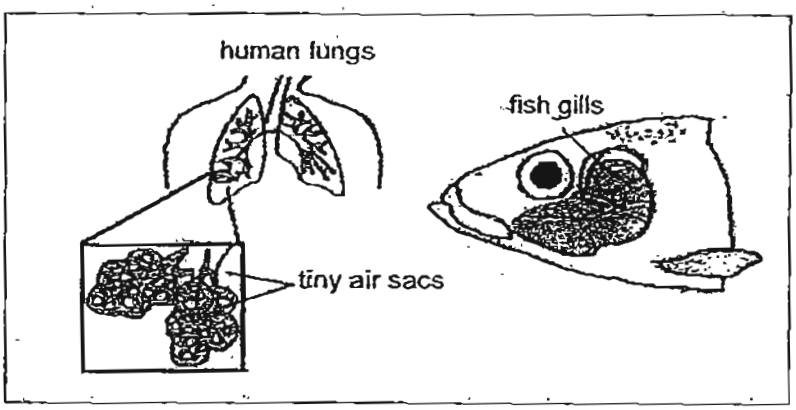
_____

Difference:

_____

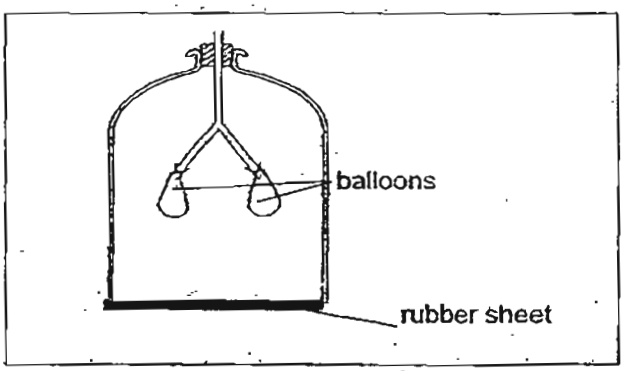
_____

34 The diagram below shows the human lungs and the gills of a fish.



(a) How is the oxygen taken in by the gills of a fish different from the oxygen taken in by the lungs of a human? [1m]

(b) Harris sets up the following to show how the human respiratory system works.

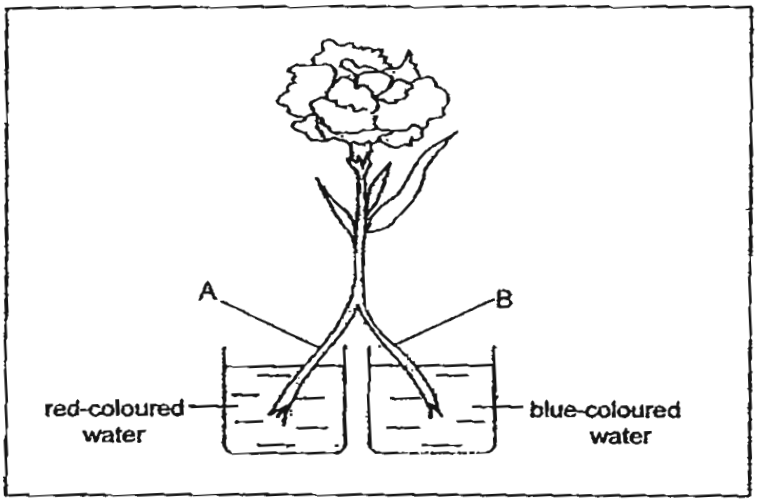


i) Why did the balloons inflate when the rubber sheet is pulled downwards? [1m]

ii) In what way is this set up not a clear representation of how a human respiratory system works? [1m]

(Go on to the next page)

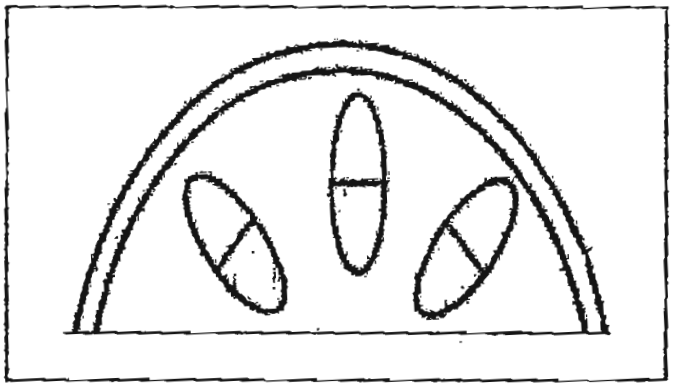
35 Belinda cut the stem of a white carnation length wise. She put one half of the stem, A, into red-coloured water and the other, B, in blue-coloured water as shown in the diagram below. The stem was left overnight till the next day.



(a) What would be the colour of the white carnation on the next day? [1m]

_____

(b) The diagram below shows part of the cross section of A.
Shade the part that will be stained red. [1m]



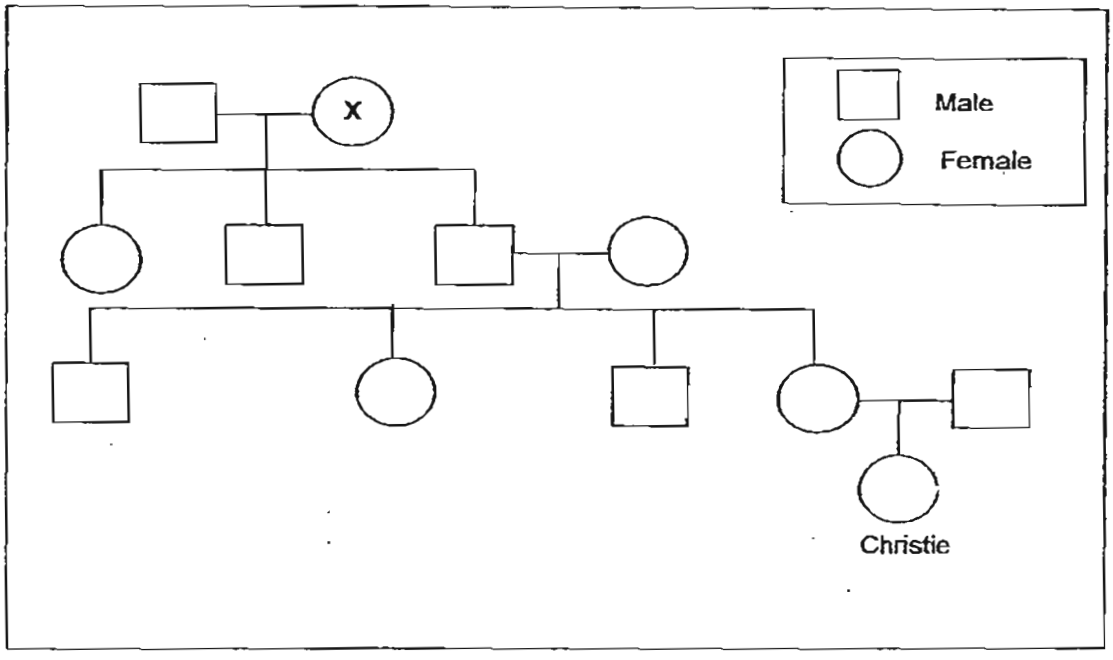
(c) Belinda realized that she could speed up the process of colouring the carnation by cutting the stem at an angle. Give a reason for this. [1m]

_____

_____

(Go on to the next page)

36 Christie's family tree is shown below.



(a) How many uncle/s does/do Christie have? [1m]

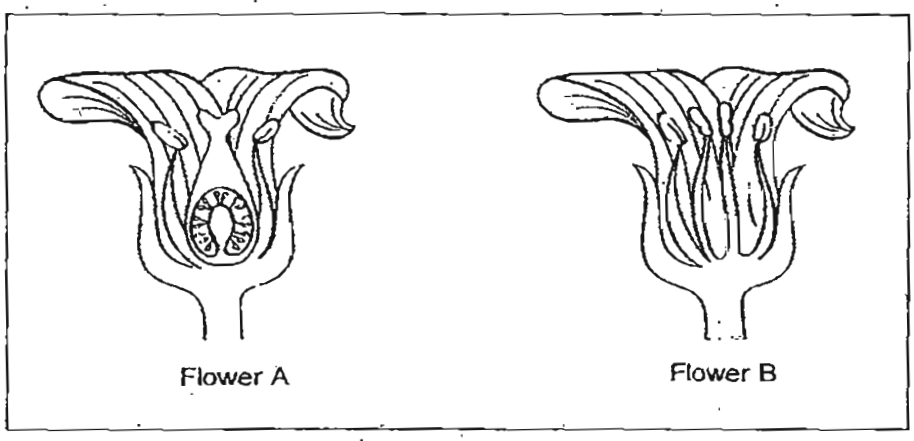
_____

(b) How is "X" related to Christie? [1m]

_____

(c) Christie's aunt got married and gave birth to two sons last year.
Draw on the diagram above, to show her husband and sons. [2m]

37 Joseph plucked two different flowers in his garden. He cut each flower into half and observed the following cross sections.



(a) Which flower(s) can self-pollinate? Explain your answer. [1m]

(b) Pollen grains are usually produced in large amounts. Explain why. [1m]

End of Booklet B1

(Go on to Booklet B2)

METHODIST GIRLS' SCHOOL

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END-OF-YEAR EXAMINATIONS 2011
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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._____

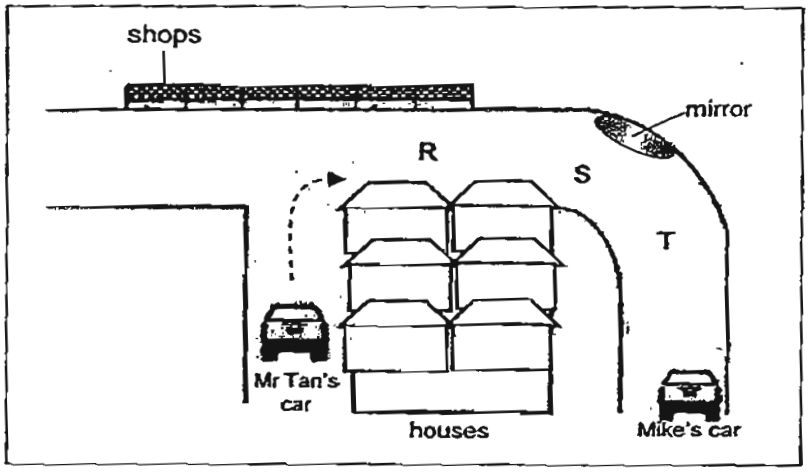
Date: 13 October 2011

Booklet A	**/ 60**
Booklet B1	**/ 20**
Booklet B2	**/ 20**
TOTAL	**/ 100**

This booklet consists of 8 printed pages including this page.

For questions 38 to 44, write your answers in the space provided. (20 marks)

38. A row of shops are built opposite the road junction. A standing mirror is placed at the side of the road round the bend.



Mr Tan is driving his car round the bend as shown in the direction of the arrow in the diagram above. The houses blocked Mr Tan's view of Mike's stationary car round the bend.

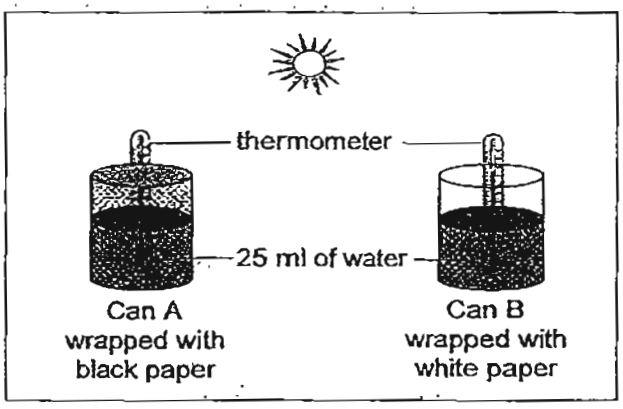
(a) At which point, R, S or T, will Mr Tan first see Mike's car? [1m]

(b) Explain how the mirror at the bend helps Mr Tan to see Mike's car. [1m]

(c) State the property of light illustrated in the above situation. [1m]

(Go on to the next page)

39. Janice conducted an experiment to find out if dark-coloured surfaces or light-coloured surfaces are better absorbers of heat. She set up the experiment below.



The results of the experiment are shown in the table below.

Time(min)	Temperature (°C)	
	Can A	Can B
0	26	26
5	29	27
10	32	28
15	34	29

(a) Based on the results above, which can absorbs heat faster? [1m]

_____

_____

(b) Should buildings in Singapore be painted light colours or dark colours? Explain your answer. [1m]

_____

_____

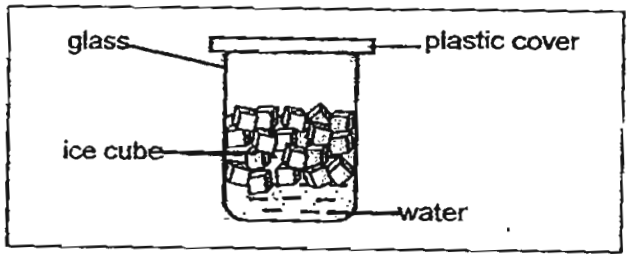
(c) What colour would you coat a solar panel that is used to heat water? Explain your answer. [1m]

_____

_____

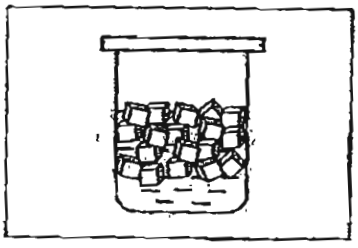
(Go on to the next page)

40. Cleo filled half a glass with water and ice cubes and covered it with a plastic cover as shown below.



Half an hour later, she observed some changes.

(a) On the diagram below, **draw** the changes that Cleo observed. [1m]



(b) What is the process that caused the changes above? [1m]

_____

(c) Explain your answer above. [1m]

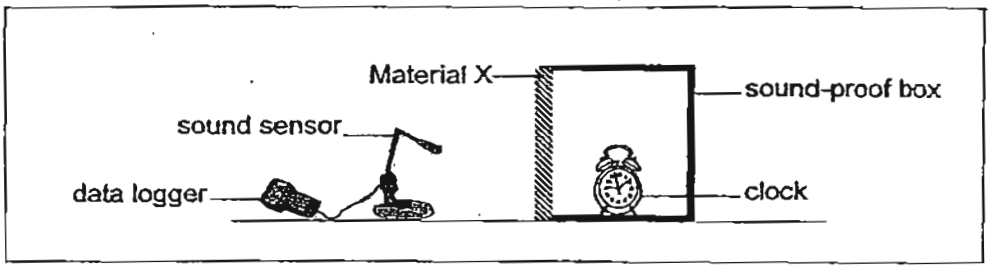
_____

_____

_____

(Go on to the ...

41. Richard wanted to study the effect of Materials X, Y and Z on the loudness of sound. He set up an experiment as shown below.



He covered one side of the sound-proof box with material X first. The clock was set to ring at a certain loudness. He recorded the loudness of the clock with a sound sensor attached to a data logger.
Then, he repeated the experiment using Materials Y and Z. The table below shows the results.

Material	Loudness of sound (unit)
X	40
Y	90
Z	60

(a) State 1 variable that should be kept different in order to ensure that the experiment is a fair test. [1m]

_____

(b) State 1 variable that should be kept the same in order to ensure that the experiment is a fair test. [1m]

_____

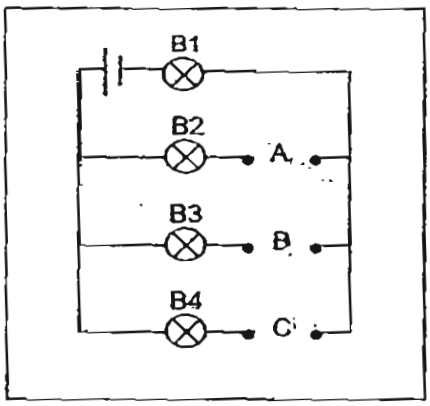
(c) The windows in Richard's room faced a noisy road. He wanted to make his room quieter.
Which Material, X, Y or Z, should he use for the window? Give a reason for your answer. [1m]

_____

_____

(Go on to the next page)

42. Sandra set up a circuit with Bulbs B1, B2, B3 and B4 as shown in the diagram below.



She placed three rods, L, M and N (made of unknown material) at positions, A, B and C in the circuit respectively.

She recorded the results of her experiment in the table as shown below.

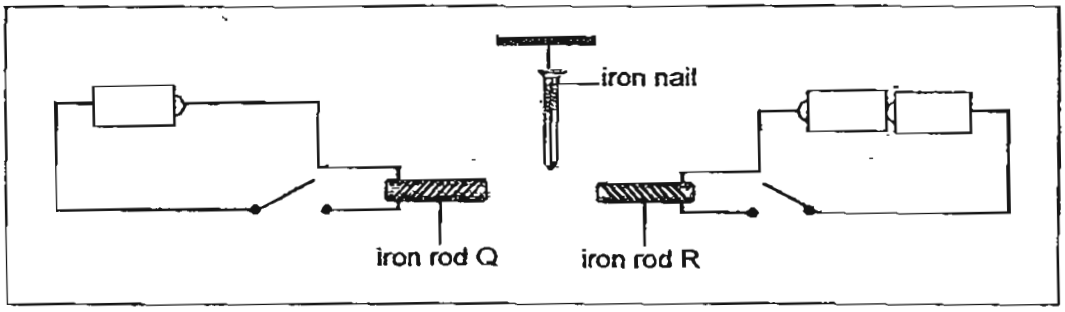
Did the bulb light up?			
B1	B2	B3	B4
Yes	No	Yes	No

Based on the results, Suzy made the following statements.
Put a tick (√) in the appropriate boxes to indicate whether each of the statements is **'True'** or **'False'**. [2m]

	Statement	True	False
(a)	M is made of copper.		
(b)	L and N are electrical insulators.		
(c)	If B1 fused, B3 will light up.		
(d)	If B2 is removed, B4 will light up.		

(Go on to the next page)

43. Jane set up a circuit with an iron nail hanging at equal distance between two identical iron rods, Q and R. Both rods have an equal number of coils of wire around them.



(a) What will happen to the iron nail if both electric set-ups are closed at the same time? [1m]

_____

_____

(b) Give a reason for your answer in (a). [1m]

_____

_____

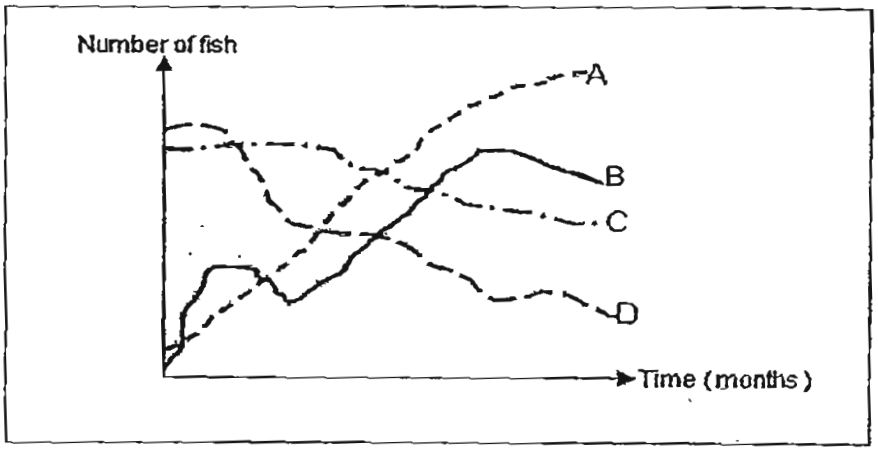
(c) What can Jane do to the set-up if she wants the nail to move in the opposite direction without changing the number of batteries or the circuit arrangements? [1m]

_____

_____

(Go on to the next page)

44. The number of fish in four ponds was monitored over a period of six months. The results obtained are shown in the graph below.



(a) Which line, A, B, C or D represents the pond with the most polluted water? Why? [1m]

_____

_____

(b) Which line, A, B, C or D represents the pond with the unpolluted water? Why? [1m]

_____

_____

(c) How does the setting up of a factory near Pond A affect the quality of its water? [1m]

_____

_____

Answer Ke

EXAM PAPER 2011

SCHOOL : MGS
SUBJECT : PRIMARY 5 SCIENCE3

TERM : SA2

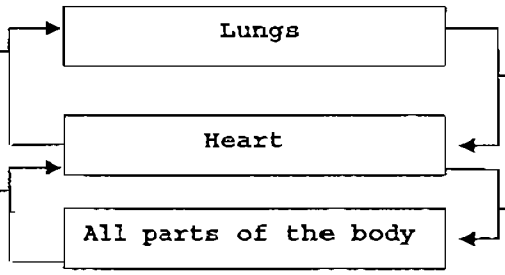
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
4	1	4	4	1	2	4	3	2	3	4	4	1	4	1	2	1

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

31)a)X: Land plants Y: Water Plants
b)Bird nest fern.

32)a)The water will come out of the bottle as the air will replace the water.
b)Sean can hold her breath longer than Danielle.

33)a)de-oxygenated blood



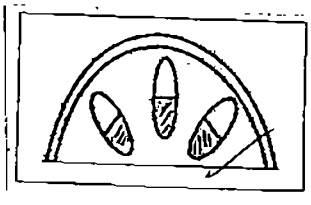
Oxygenated blood
de-oxygenated blood
Oxygenated blood

b)Similarity: food and water.
Difference: The human has a heart to pump the blood to the blood vessels but a plant de not.

34)a)The air taken in by the fish gills is dissolved oxygen while humans take in oxygen.
b)i)Pulling the rubber sheet down increases the volume of space in the jar so air will rush into the balloon.
ii)The bottle does not expand like the ribcage in the human respiratory system.

35)a)Half red, half blue.
c)It has a larger surface area and will absorb more water.

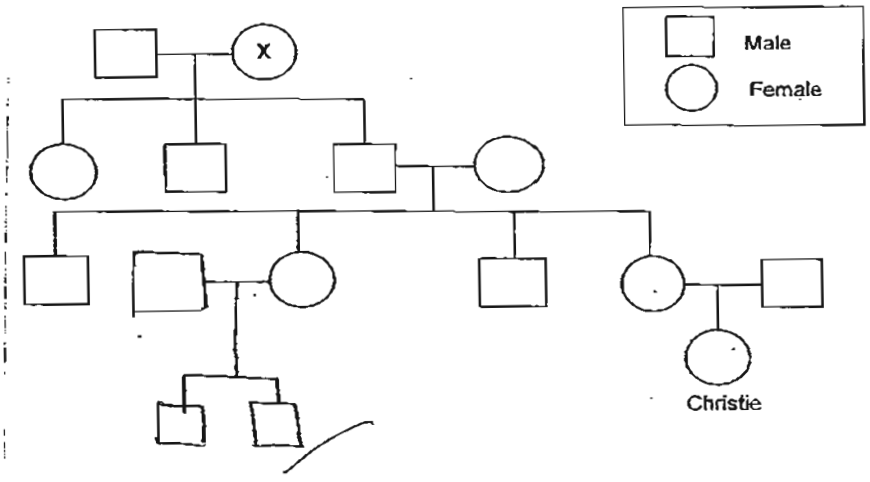
b)



36)a)2 uncles.

b)It is Christie's great-grandmother.

c)



37)a)Flower A, because it has both the female and make parts.

b)It is to increase the chances of fertilizing the egg in the ovary of the plant.

38)a)At point R.

b)The image of the Mike's car will be reflected by the mirror so Mr Tan will be able to Mike's car.

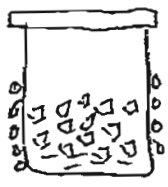
c)Light can be reflected.

39)a)Can A.

b)Light colours, so that the buildings would not be so hot and will not absorb so much heat.

c)Black, because it absorbs heat faster.

40)a)



b)Condensation.

c)When the warm water vapour comes into contact with the cool surface of the glass, it condenses and becomes water droplets.

41)a)The different materials.

b)The thickness of the material.

c)material X. material X does not allow of noise to pass through.

42)a)T b)T c)F d)F

43)a)The iron nail will be attracted to iron rod R.

b)There are two batteries in the circuit where iron rod R is. Therefore the iron rod R's magnetism is stronger.

c)She could close the circuit where iron rod Q is only.

44)a)Line D, There is a significant decrease in the number of fish in the pond over the 6 months.

b)Line A, because the number of fishes are increasing.

c)The water will become polluted because of the toxic discharge from the factory.