



**CATHOLIC HIGH SCHOOL
PRIMARY 5
SEMESTRAL EXAMINATION 1
2010**

SCIENCE

Name: _____ (

• • Class : Primary 5 _____

Date : 25 May 2010

BOOKLET A

30 Questions
60 Marks

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

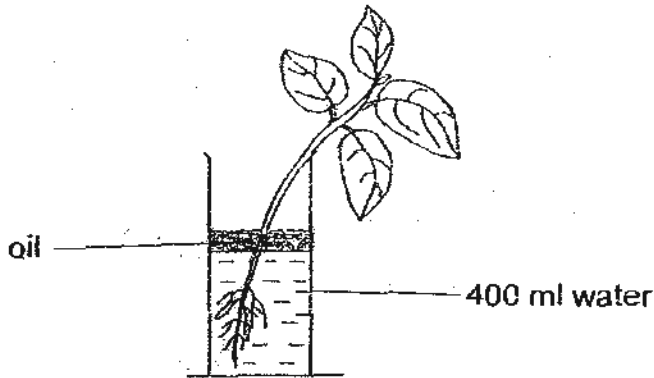
Instructions to Candidates

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

Section A : Multiple Choice Questions (60 marks)

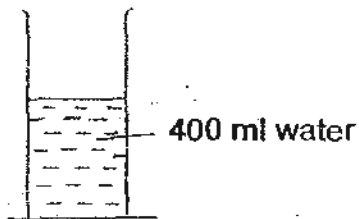
For each question from 1 to 30, four options are given. One of them is the most suitable answer. Make your choice (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Some students were asked to find out if a plant takes in water through its roots. They set up the experiment as shown below and left it in an open area for a few days.

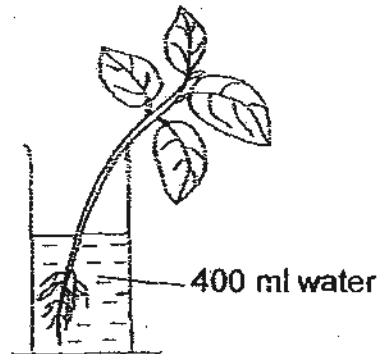


Which one of the following diagrams shows the control for the experiment?

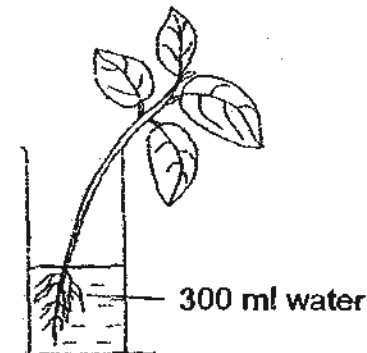
(1)



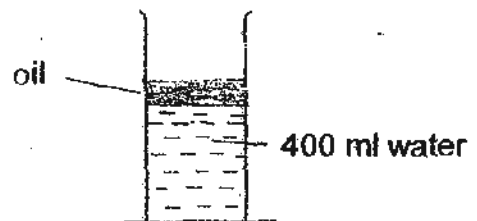
(2)



(3)



(4)



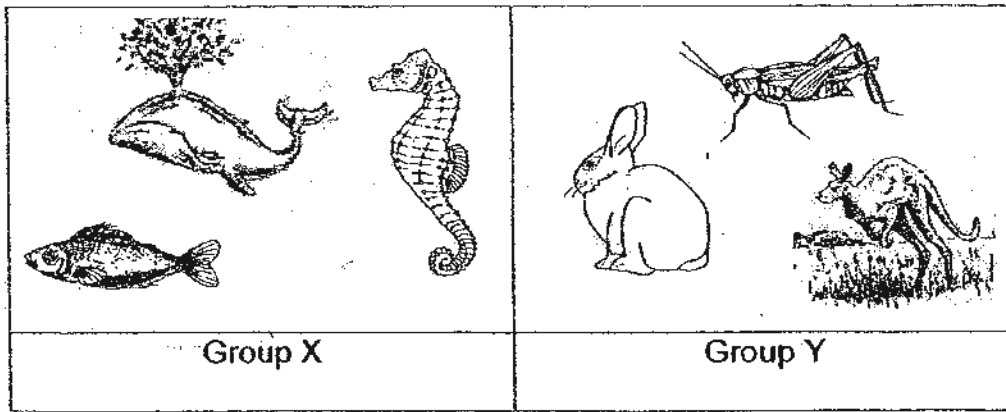
2. The diagram below shows a section of a tree.



What is the function of part X?

- (1) It helps to get more sunlight.
 - (2) It transfers minerals to the leaves.
 - (3) It gives the tree additional support.
 - (4) It takes in air which contains water vapour.
3. During the digestion of a healthy person, starch is broken down into simple sugars. The digestion of starch starts in the mouth. In which of the following can the presence of simple sugars be found after Janet eats a piece of bread?
- A Gullet
 - B Stomach
 - C Blood flowing to the heart
 - D Blood flowing to all parts of the body
 - E Small intestine
 - F Large intestine
- (1) B, C and F only
 - (2) A, B, C and D only
 - (3) A, D, E and F only
 - (4) A, B, C, D and E

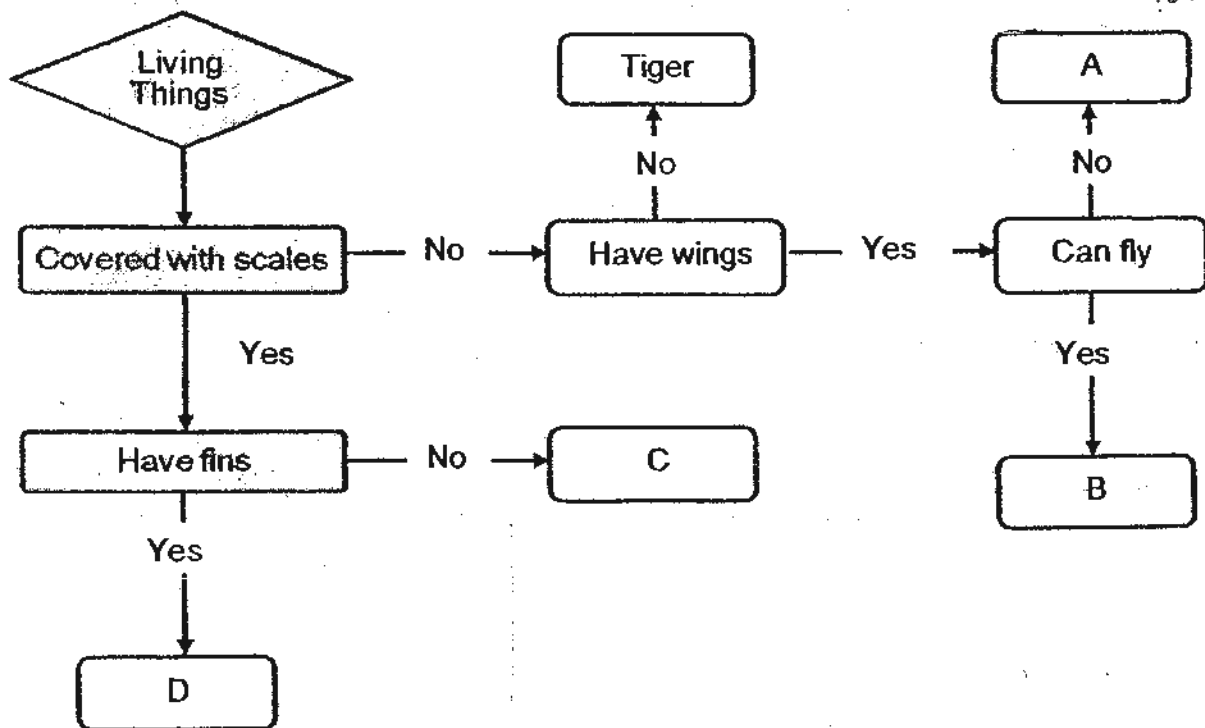
4. Study the pictures below carefully.



The animals are grouped according to _____.

- (1) what they eat
- (2) how they move
- (3) how they reproduce
- (4) their body coverings

5. Study the flow chart below carefully.



Which one of the following correctly identifies animals A, B, C and D?

	Animal A	Animal B	Animal C	Animal D
1)	Ostrich	Emu	Snake	Whale
2)	Penguin	Hawk	Snake	Molly
3)	Ostrich	Hawk	Whale	Crocodile
4)	Penguin	Emu	Whale	Molly

6. Justin observed the life cycles of a butterfly and a chicken. Every time the animals changed from one stage to the next, he noted it on his calendar as shown below.

April 2009						
		1 <i>Chicken Egg laid (Stage 1)</i>	2	3 <i>Butterfly Egg laid (Stage 1)</i>	4	5
6	7	8	9	10	11	12
13 <i>Butterfly (Stage 2)</i>	14	15	16	17	18	19
20	21	22 <i>Chicken (Stage 2)</i>	23	24	25	26
27	28	29	30			
May 2009						
				1	2	3
4 <i>Butterfly (Stage 3)</i>	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25 <i>Butterfly (Stage 4)</i>	26	27	28	29	30	31

On which day would Justin see both a chick and a pupa?

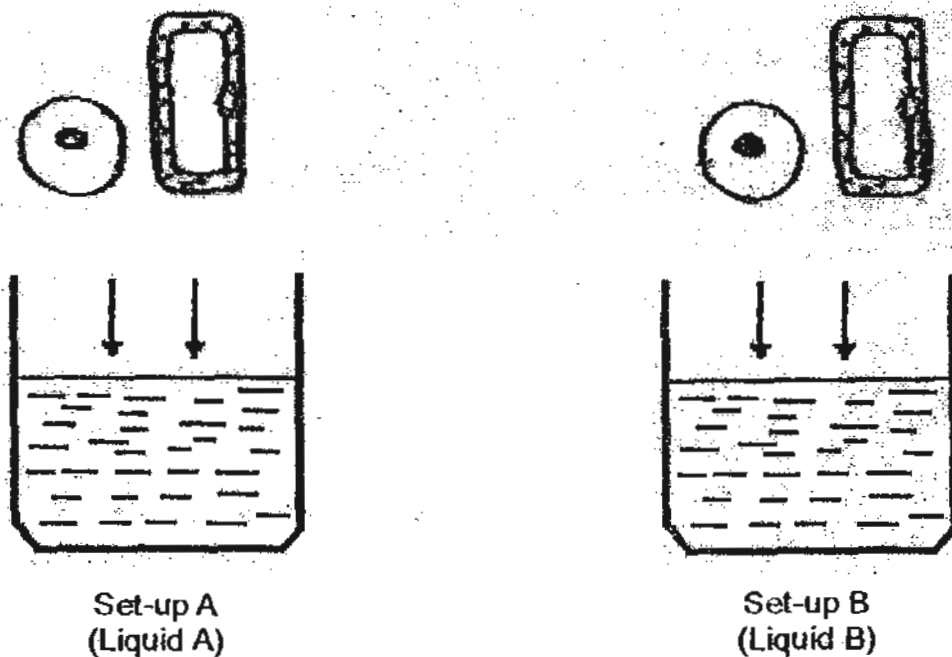
- (1) 10th April
- (2) 20th April
- (3) 1st May
- (4) 9th May

7. Which of the following statements describe the life cycles of a frog and a dragonfly?

- A They have a 3-stage life cycle.
- B The adults care for their young.
- C Their young breathe through gills.

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

8. Ann observed two plant cells and two animal cells under a microscope. She placed one pair of plant and animal cells in a container filled with Liquid A. Then she placed the other pair of plant and animal cells in a similar container filled with Liquid B as shown in the diagram below.



After some time, she made the following observations.

	Plant Cell	Animal Cell
Liquid A	Cell keeps its shape	Cell cannot be found
Liquid B	Cell keeps its shape	Cell looks all crumpled up

Which one of the following statements best explains the above observations?

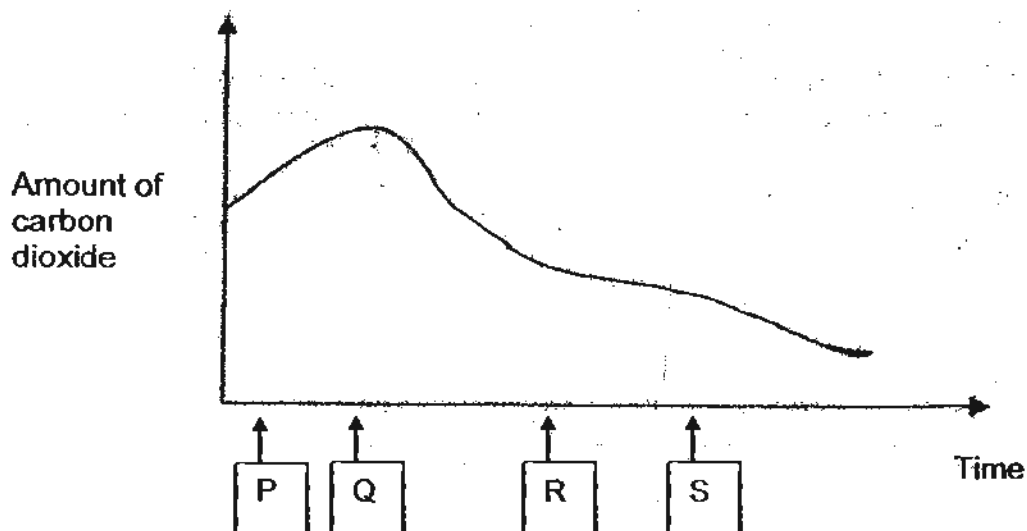
- (1) The plant cell has a cell wall to keep its shape.
- (2) The animal cell does not have chloroplasts to trap light energy.
- (3) The animal cell has cytoplasm to fill the cell with a jelly-like substance.
- (4) The plant cell has a cell membrane to allow the liquid to move in and out of the cell.

9. Five pupils observed some plant and animal cells under a microscope. They recorded their observations and conclusions in the table below.

Name of pupil	Observation on cell parts seen	Conclusion on type of cells
Shane	Cell membrane, cell wall, nucleus	Animal
Ryan	Cytoplasm, nucleus, cell membrane	Animal
Ben	Nucleus, cell wall, cell membrane, chloroplasts	Plant
Nathan	Cell membrane, nucleus, chloroplasts	Animal
Jason	Cell membrane, cell wall, nucleus, cytoplasm	Plant

Which three children made the correct conclusions?

- (1) Ryan, Ben and Jason
 - (2) Shane, Ryan and Ben
 - (3) Ben, Nathan and Jason
 - (4) Shane, Ryan and Nathan
10. The graph below shows the amount of carbon dioxide in the air around a rain tree over a 24-hour period.

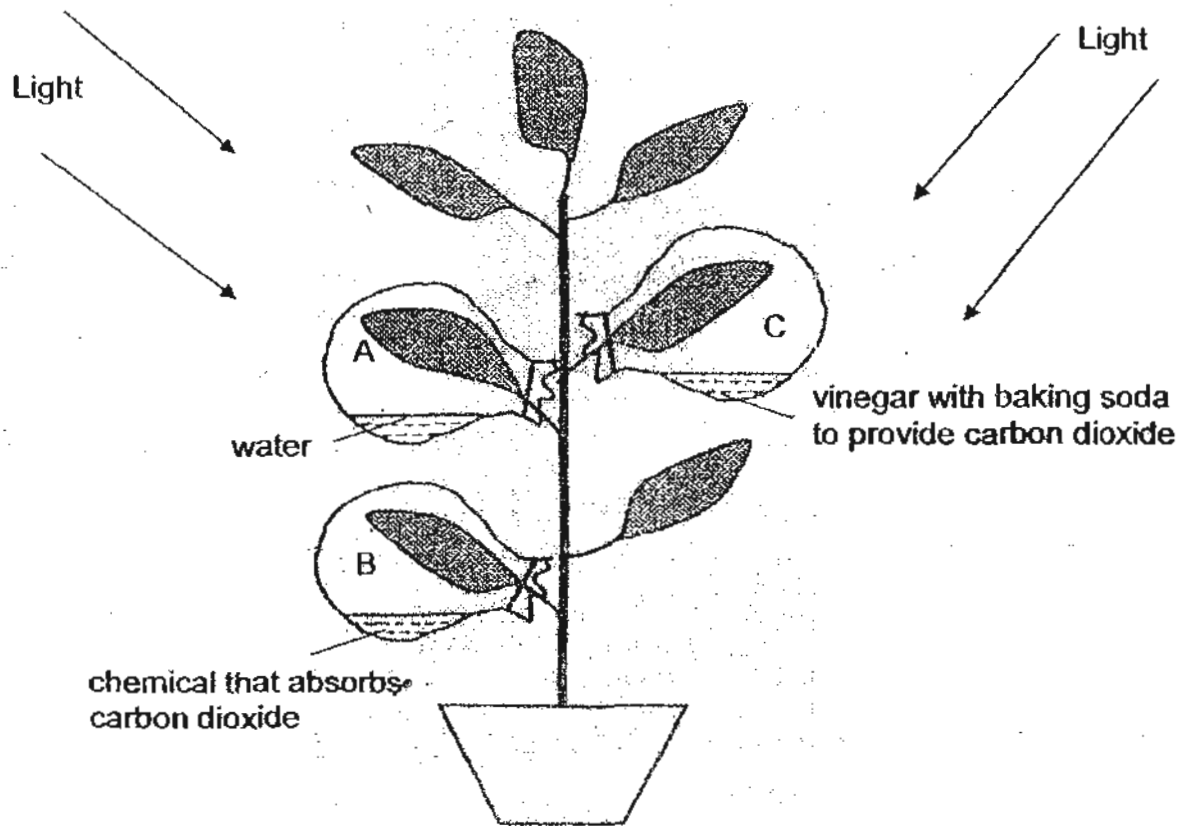


Which one of the following shows the correct times for P, Q, R and S?

	P	Q	R	S
(1)	12 midnight	6 am	12 noon	6 pm
(2)	6 am	12 noon	6 pm	12 midnight
(3)	12 noon	6 pm	12 midnight	6 am
(4)	6 pm	12 midnight	6 am	12 noon

11. Austin wanted to conduct an experiment on photosynthesis. Before he started his investigation, he left the plant in a dark cupboard for 48 hours.

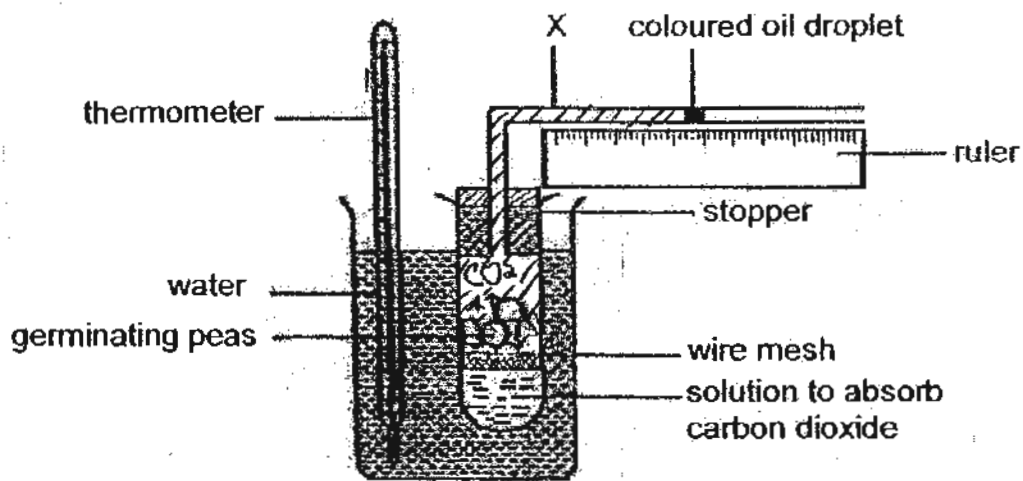
He set up his experiment in the garden as shown in the diagram below.



After five hours, Austin removed leaves A, B and C, and conducted a starch test on the leaves. Which one of the following sets of results would he most likely obtain?

Colour of iodine			
	Leaf A	Leaf B	Leaf C
(1)	Dark blue	Dark blue	Brown
(2)	Dark blue	Brown	Dark blue
(3)	Brown	Dark blue	Brown
(4)	Brown	Brown	Dark blue

12. Gilbert set up an experiment in a dark room as shown in the diagram below.



Gilbert recorded the different positions of the coloured oil droplet using the ruler markings.

What would happen to the coloured oil droplet after a few days? Why?

- (1) It would move toward X because the germinating peas used up oxygen.
- (2) It would not move because germination could not take place in a dark room.
- (3) It would move away from X because the germinating peas gave out carbon dioxide.
- (4) It would not move because the germinating peas used up oxygen and gave out carbon dioxide.

13. Jackie carried out an experiment to find out if the type of water would affect how well fruit that are dispersed by water can float. He planned and carried out an investigation.

- Step 1 Collected a lotus fruit and a coconut.
- Step 2 Filled a pail with 5 litres of tap water.
- Step 3 Filled another identical pail with 5 litres of sea water.
- Step 4 Placed the lotus fruit in the first pail and the coconut in the second pail.

Jackie recorded his observations and presented his findings to his teacher who said that he had made a mistake in his investigation.

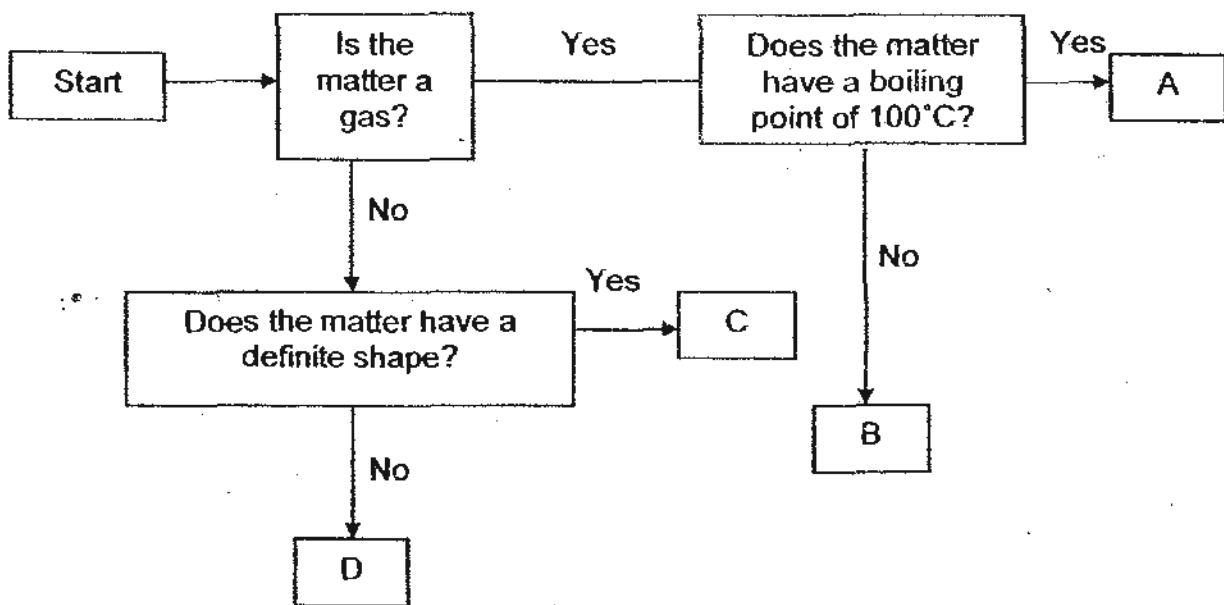
What mistake did Jackie make?

- (1) He used two types of fruit.
- (2) He used two types of water.
- (3) He used two pails instead of one.
- (4) He used the same amount of water.

14. Fruits or seeds can be classified according to their method of dispersal. Which of the following correctly matches the characteristics of fruits/seeds to the method of dispersal?

	By animals	By wind	By water
(1)	indigestible seeds	fibrous husk	heavy seeds
(2)	wing-like structure on fruits	hooks on fruits	seeds that are able to float
(3)	light seeds	explosive pods	indigestible seeds
(4)	indigestible seeds	wing-like structure on fruits	fibrous husk

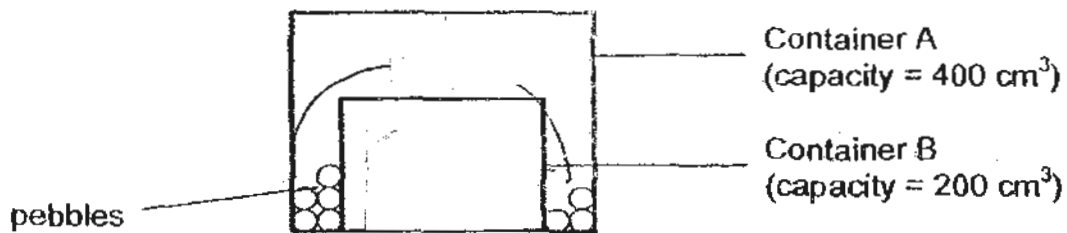
15. Study the flowchart below.



Which of the following is correctly matched?

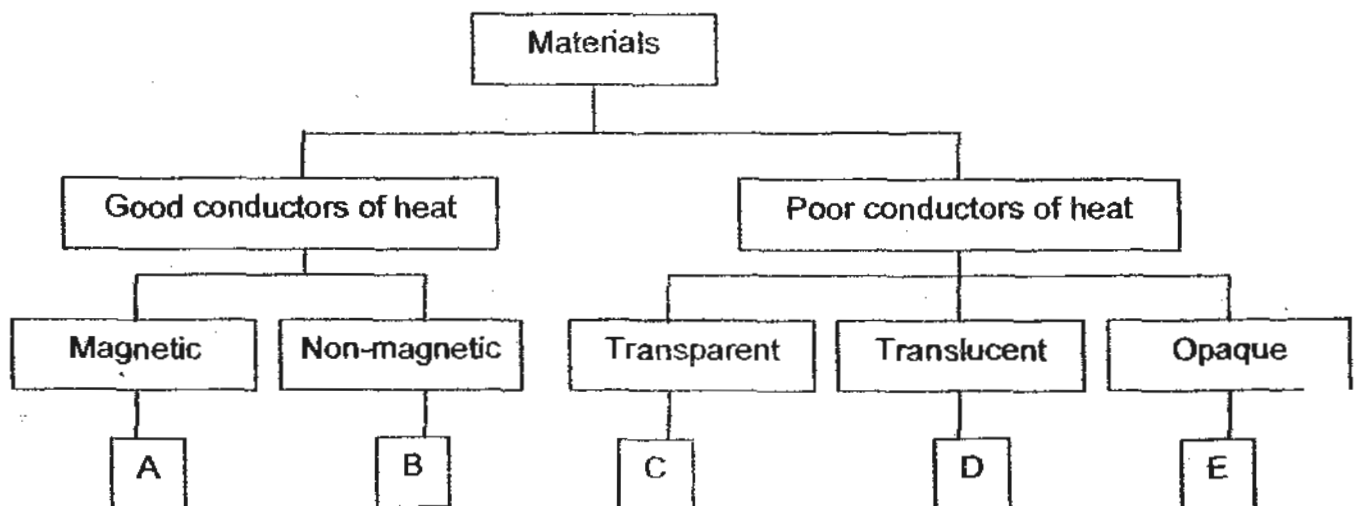
	A	B	C	D
(1)	water	mercury	ice	nitrogen
(2)	water vapour	oxygen	sugar	water
(3)	oxygen	steam	ice	water
(4)	oil	water vapour	sugar	nitrogen

16. The diagram below shows 2 containers, A and B. Container B is placed inside Container A. Some pebbles, with a total volume of 70 cm^3 are also placed in Container A.



From the diagram above, what is the total volume of air in both containers?

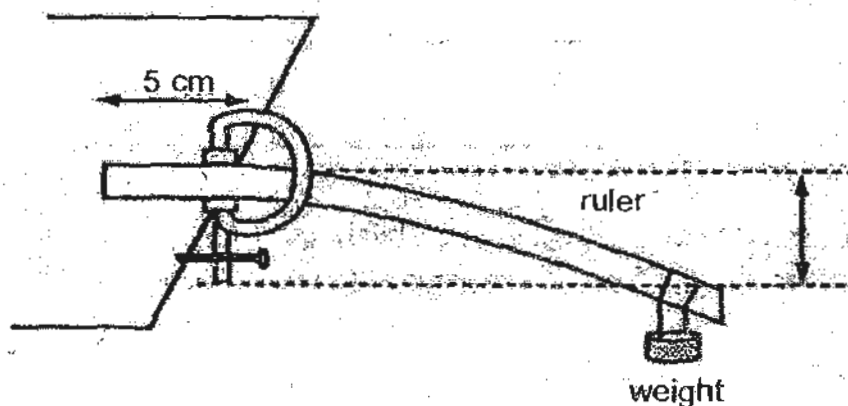
- (1) 330 cm^3
 - (2) 400 cm^3
 - (3) 530 cm^3
 - (4) 600 cm^3
17. Study the classification table below carefully.



What can A, B, C, D and E be?

	A	B	C	D	E
1)	nickel	copper	frosted glass	tinted glass	cloth
2)	silver	steel	tin	oil	leather
3)	cobalt	mercury	clear plastic	frosted glass	styrofoam
4)	iron	aluminum	water	canvas	wood

18. Zoe fixed one end of a ruler to a table and hung a weight on the other end. She then observed how far the ruler can be bent, just before it breaks, by measuring the distance d , as shown in the diagram below.



Zoe repeated the above experiment for three other rulers and recorded her results in the table below.

Ruler	Distance d / cm
A	2 4
B	5 2
C	3 3
D	6 1

Arrange the rulers according to their flexibility. Start with the most flexible.

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

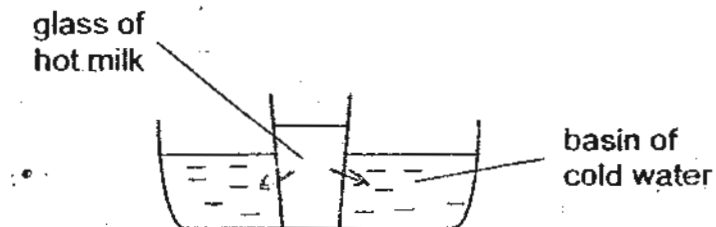
19. The classification table below shows the properties of objects X, Y and Z.

Properties	Object X	Object Y	Object Z
Hard	✓	x	x
Flexible	x	✓	✓
Waterproof	✓	✓	x

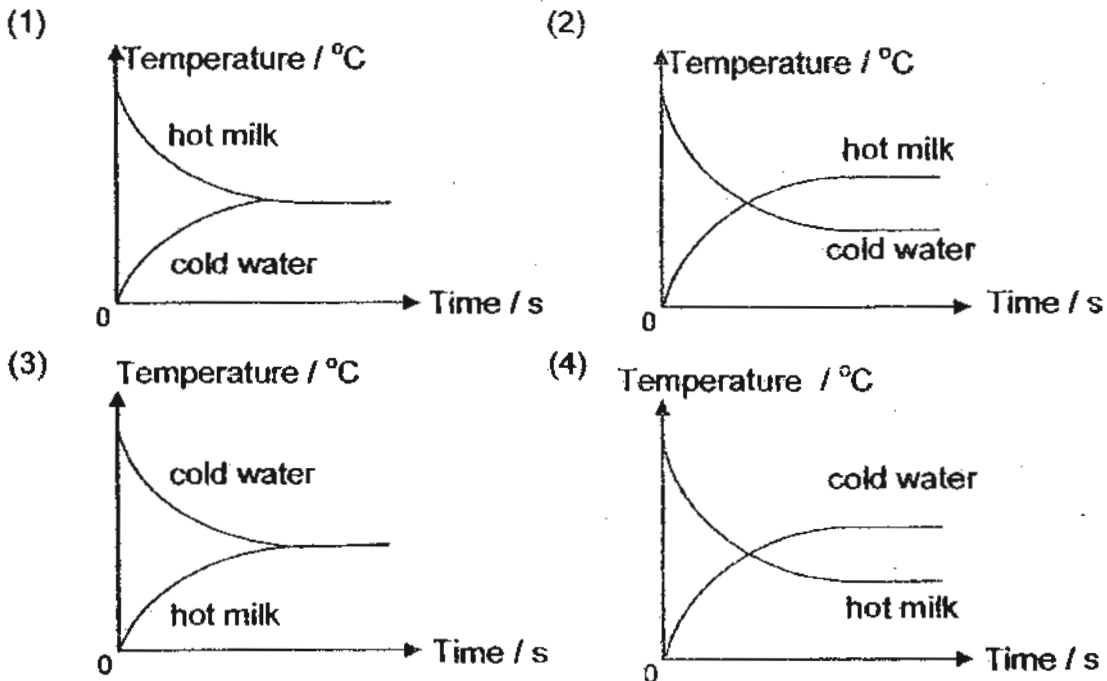
Which one of the following correctly identifies objects X, Y and Z?

	Object X	Object Y	Object Z
(1)	Drink can	Wooden chair	Wire
(2)	Iron nail	String	Pebble
(3)	Pencil lead	Porcelain cup	Glass
(4)	Steel grille	Rubber hose	Cotton thread

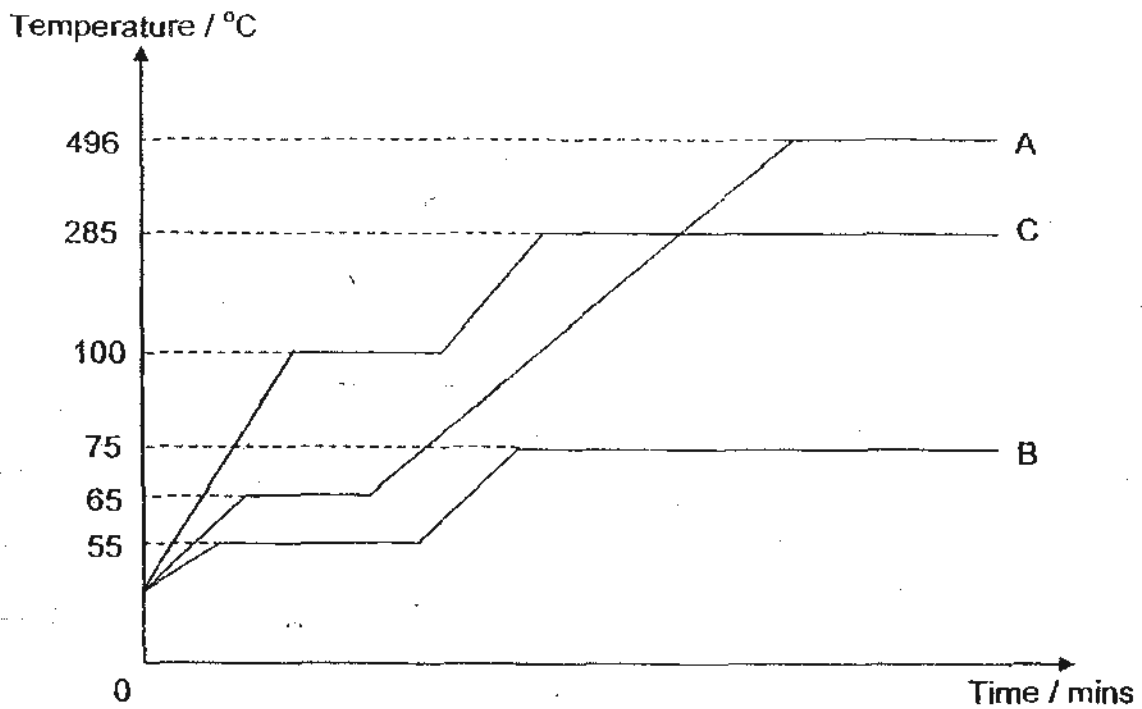
20. Keith put a glass of hot milk into a basin of cold water to cool it.



Which one of the following graphs shows the correct change in temperature of the glass of hot milk and the basin of cold water?



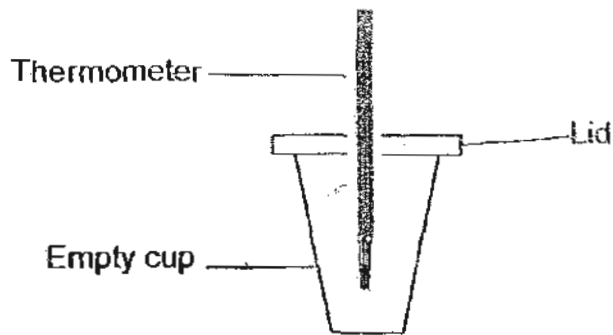
21. 3 different substances, A, B and C were tested for their melting points and boiling points respectively. The graph below shows the results of the experiment.



Which of the following correctly shows the state of the substances, A, B and C at a temperature of 80 °C?

	A	B	C
(1)	Solid	Liquid	Gas
(2)	Liquid	Gas	Solid
(3)	Liquid	Solid	Gas
(4)	Gas	Liquid	Solid

22. The table below shows the temperature of air inside 4 empty coloured cups at different durations when placed under the hot sun.

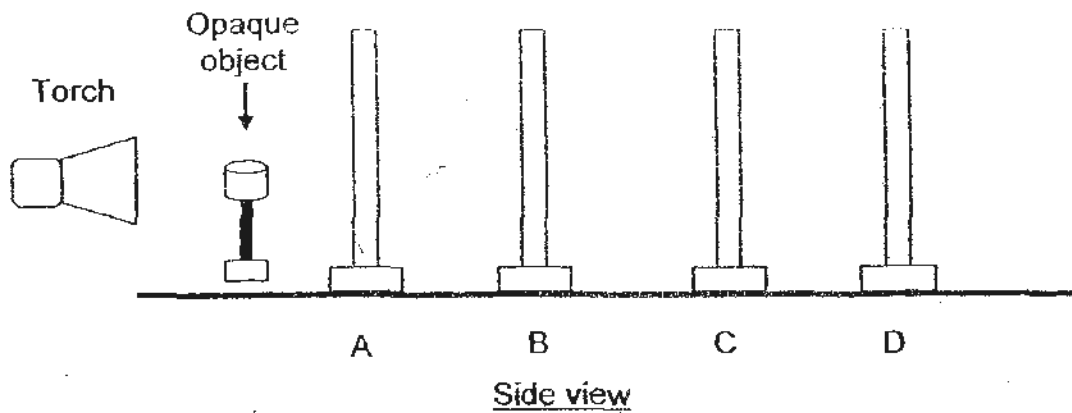


	Temperature at different durations / °C		
	0 hour	½ hour	1 hour
Yellow cup	15	19	27
Blue cup	15	22	35
Green cup	15	20	30
Black cup	15	27	41

Which of the colours below are most suitable for the purposes shown?

	Clothes for keeping cool during hot weather	Solar water heaters
(1)	Green	Yellow
(2)	Black	Blue
(3)	Blue	Green
(4)	Yellow	Black

23. An experiment was carried out in a dark room using the set-up as shown below. A, B, C and D represent four sheets of different materials. An opaque object was placed between the torch and sheet A.



When the torch was switched on, a dark shadow was seen on Sheet C only. Which one of the following shows a possible arrangement of the four different materials?

	A	B	C	D
(1)	Clear plastic	Tracing paper	Clear glass	Copper sheet
(2)	Clear glass	Tracing paper	Copper sheet	Clear plastic
(3)	Clear glass	Copper sheet	Clear plastic	Tracing paper
(4)	Clear plastic	Clear glass	Copper sheet	Tracing paper

24. The diagram below shows the shadow of an object.

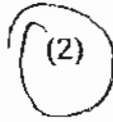


Which one of the following cannot cast this shadow?

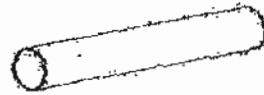
(1)



rugby ball



(2)



straw

(3)



coin

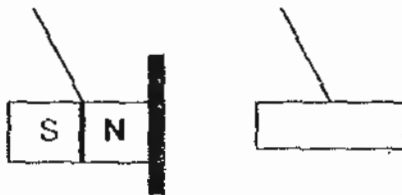
(4)



container

25. One bar magnet and one aluminium bar suspended by thread are separated by a thin piece of iron sheet. Which of the following diagrams correctly shows what happens when the two bars are brought close together?

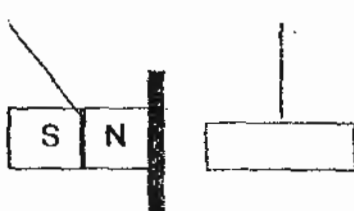
(1)



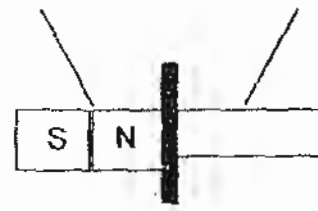
(2)



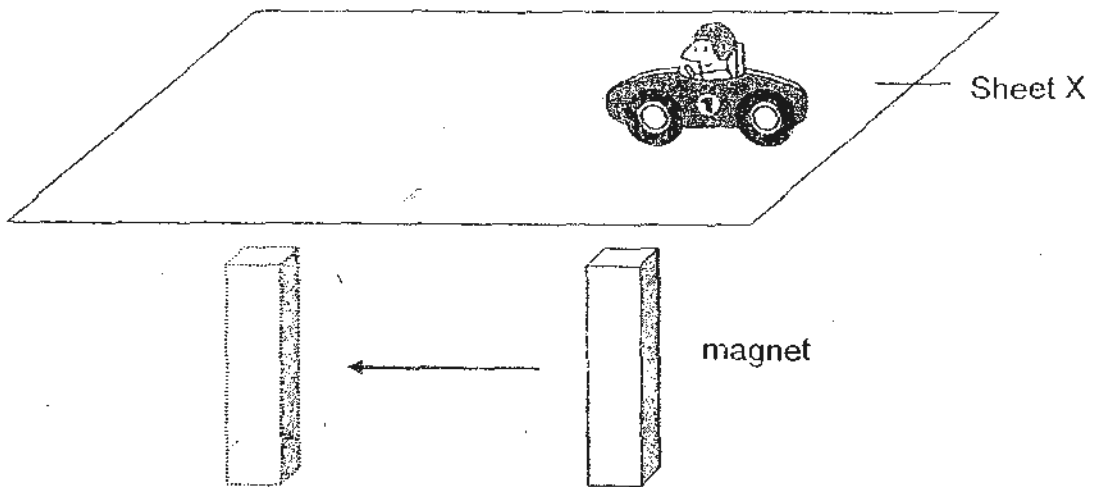
(3)



(4)

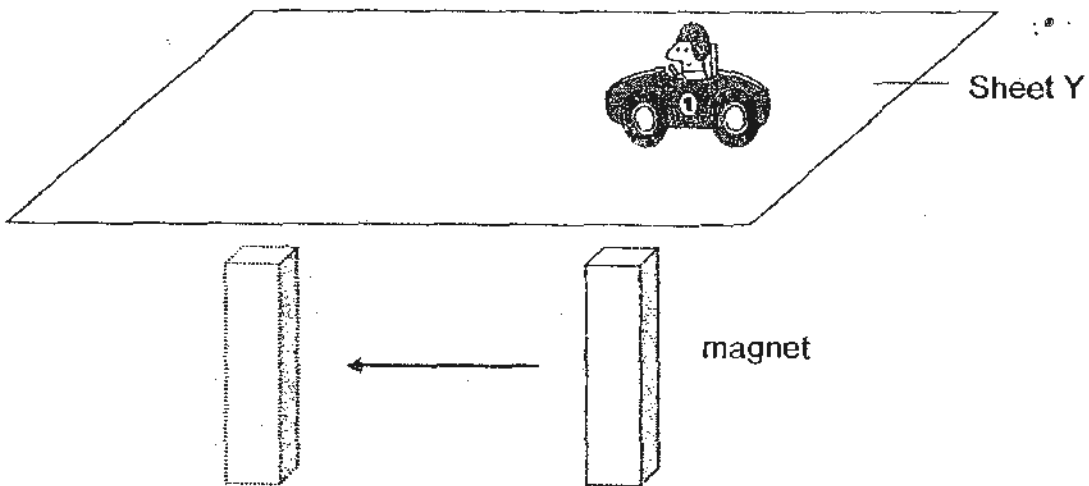


26. A metal car was placed on sheet X.
A magnet was held below the sheet as shown in the diagram.



When the magnet was moved, the toy car would move in the same direction as the magnet.

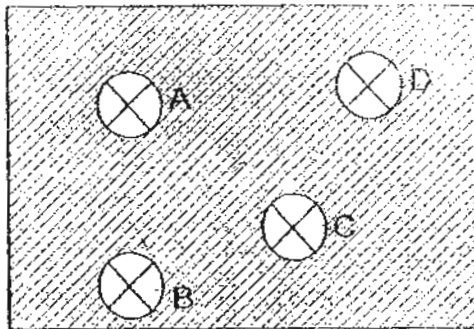
When sheet X was replaced by sheet Y, the toy car did not move even when the magnet was moved as shown.



Which one of the following sets correctly identifies the materials of sheets X and Y?

	Sheet X	Sheet Y
(1)	Plastic	Iron
(2)	Rubber	Copper
(3)	Steel	Paper
(4)	Iron	Aluminium

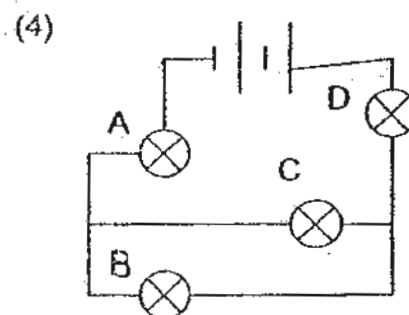
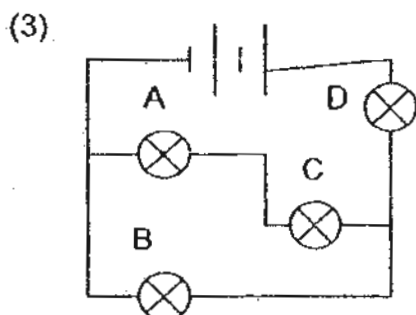
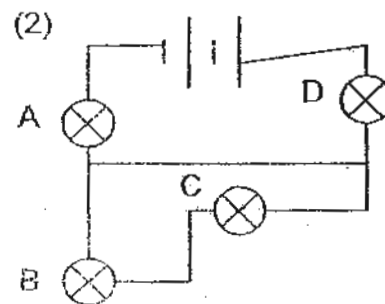
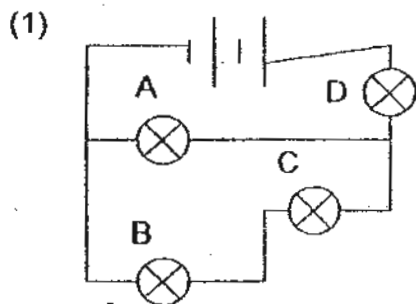
27. Jenny constructed a circuit puzzle with four identical bulbs and two identical dry cells. She covered the circuit arrangement with a piece of cardboard. The bulbs could be seen through the holes as shown below.



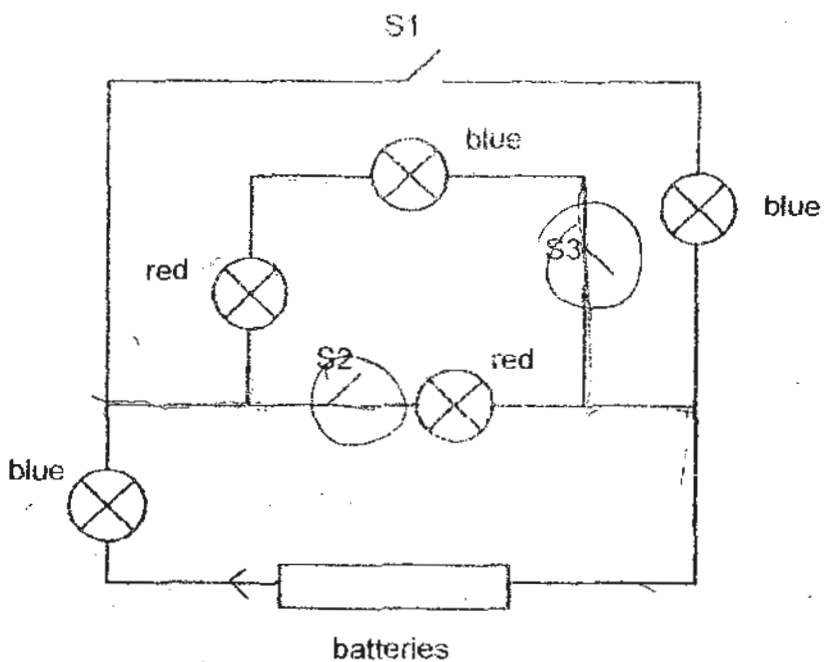
Jenny removed bulbs A, B, C and D one at a time. She observed the effect on the other three bulbs before connecting each bulb back into the circuit. She recorded her observations in the table below.

Bulb removed	Observations
A	B, C and D went off
B	A, C and D remained lit
C	A, B and D remained lit
D	A, B and C went off

Based on above information, which of the following shows the circuit diagram that was lying beneath the cardboard?



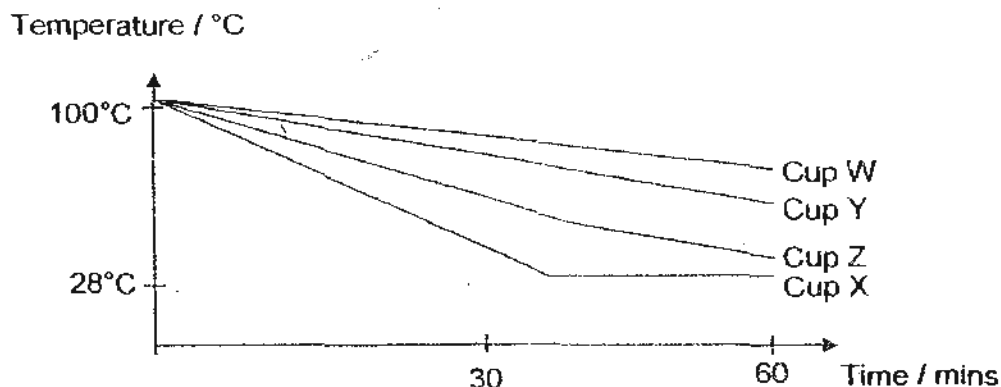
28. The diagram below shows some blue and red bulbs in a circuit.



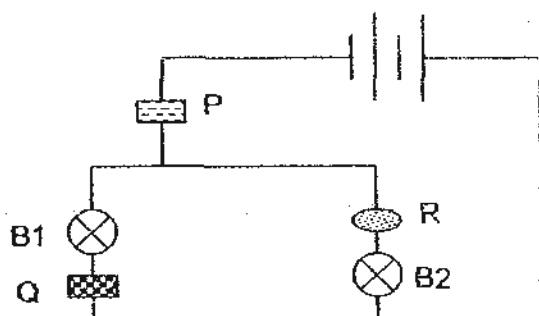
Which switches should be closed in order to light up 2 blue bulbs and 2 red bulbs at the same time?

- (1) S1 and S2
- (2) S1 and S3
- (3) S2 and S3
- (4) S1, S2 and S3

29. The following experiment is conducted on four different materials, W, X, Y and Z. First, an equal amount of boiling water is poured into four similar cups each made of the four materials respectively. The temperature of the water in each of the cups is recorded after 60 minutes.



Next, 4 rods each made of the four materials, W, X, Y and Z respectively are placed in different parts of an electrical circuit, P, Q and R as shown in the diagram below. The table below shows the results of the experiment.



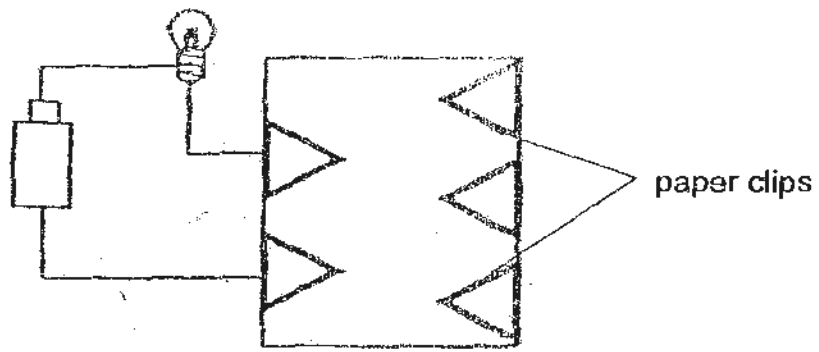
Material at P	Material at Q	Material at R	Did B1 light up?	Did B2 light up?
Y	X	Z	No	No
X	Z	W	Yes	No
Z	W	Y	No	No

Based on the results in the above tables, which of the following best matches the materials used to make the various parts of the electric iron?

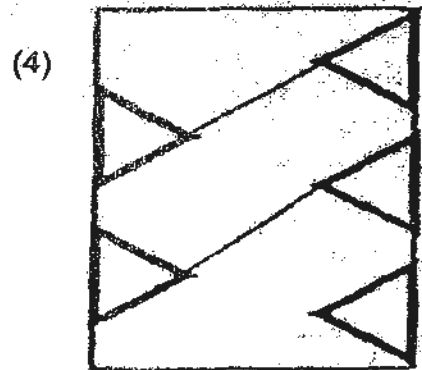
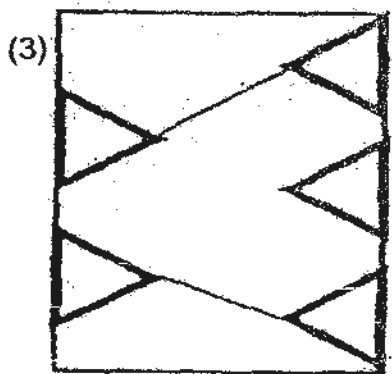
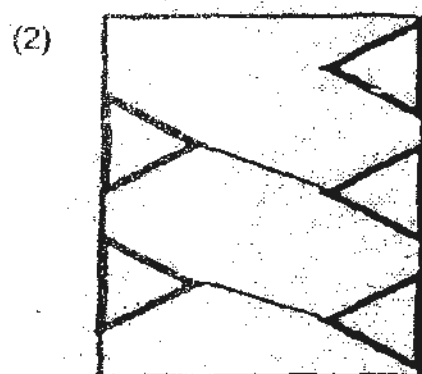
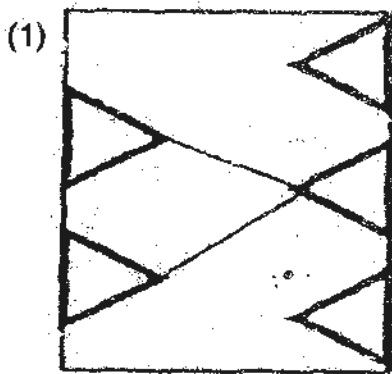


	Sole plate	Handle	Electrical wire
(1)	X	Y	W
(2)	Y	X	Z
(3)	W	Z	Y
(4)	Z	W	X

30. Hans connected a circuit tester to the circuit card shown below and the bulb lights up.



Which one of the following diagrams shows the correct connection on the back of the circuit card?



∞ End of Section A ∞



**CATHOLIC HIGH SCHOOL
PRIMARY 5
SEMESTRAL EXAMINATION 1
2010**

SCIENCE

Name: _____ ()

Class : Primary 5 _____

Date : 25 May 2010

BOOKLET B

14 Questions
40 Marks

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

Instructions to Candidates

Follow all instructions carefully.
Answer all questions.

Parent's Signature: _____

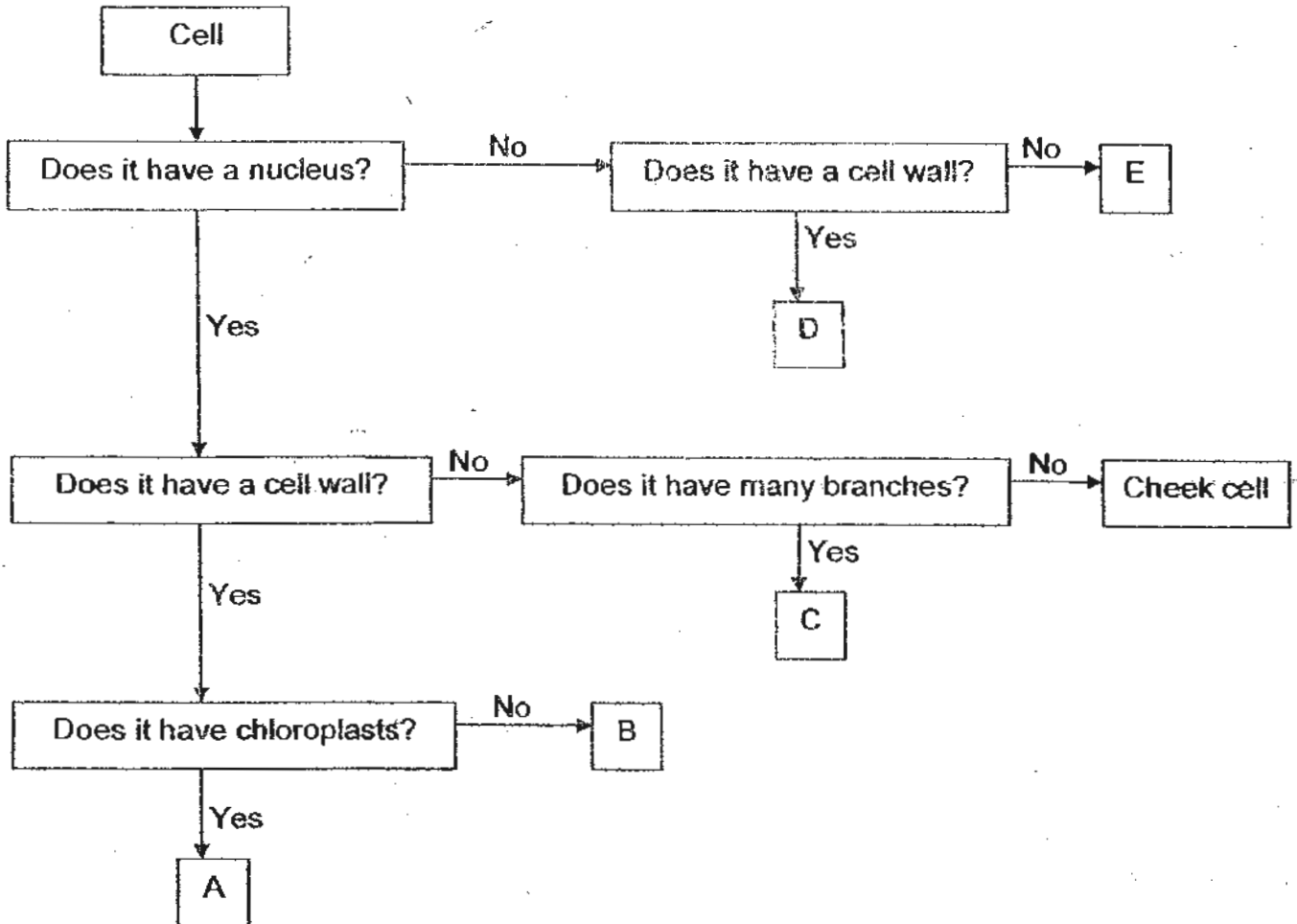
Date: _____

Score	
Section A	60
Section B	40
Total	100

Section B : Open-Ended Questions (40 marks)

Read the following questions carefully and write your answers in the space provided. The maximum marks that can be awarded are shown at the end of each question or part-question

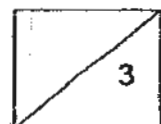
31. Study the flow chart below.



Match the cells given below to the respective letters in the classification chart above. [2]

i	Onion cell		
ii	Nerve cell		
iii	Red blood cell		
iv	Leaf cell		

Based on the flow chart above, write down the characteristics of a cheek cell. [1]



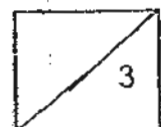
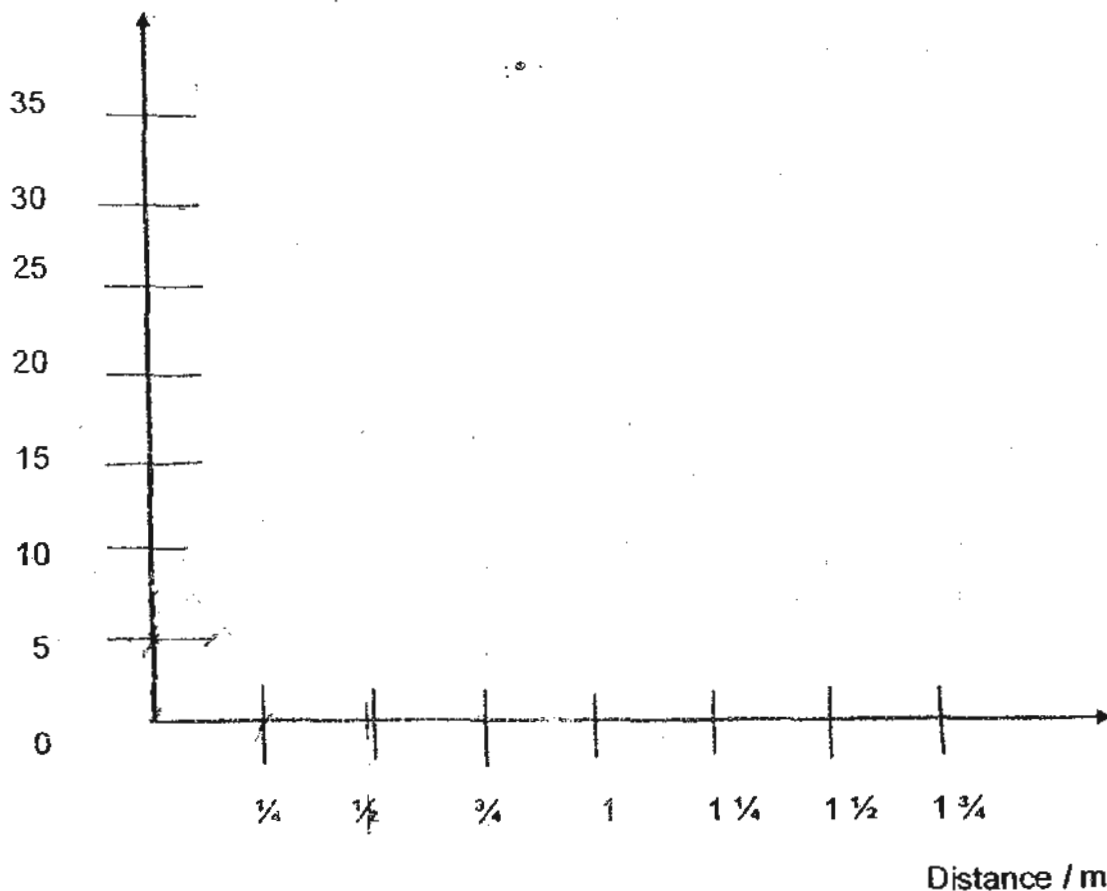
32. Arthur collected 4 fruits from a plant that disperses by splitting. He subjected the 4 fruits to different temperatures. The results are as follows.

	Fruit A	Fruit B	Fruit C	Fruit D
Temperature	35 °C	30 °C	20 °C	5 °C
Time taken to split the fruit	Splits after 2 hours	Splits after 3 hours	Splits after 12 hours	Nothing happens
Distance the seeds scattered	1 ½ m	1 ¼ m	¾ m	0 m

- a) What was Arthur trying to find out? [1]

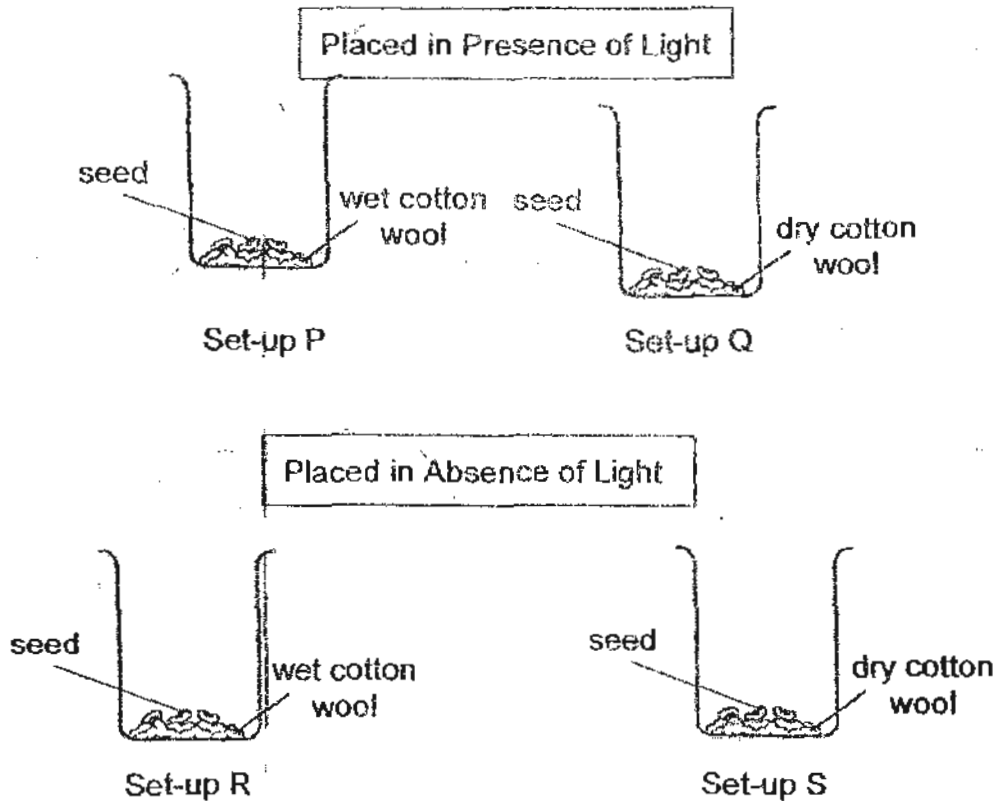
- b) Draw a line graph below to show the relationship between the temperature and the distance the seeds scattered. [2]

Temperature / °C



33. Jasper said, "Since all plants need light to survive, seeds, which grow into plants, also need light to germinate."

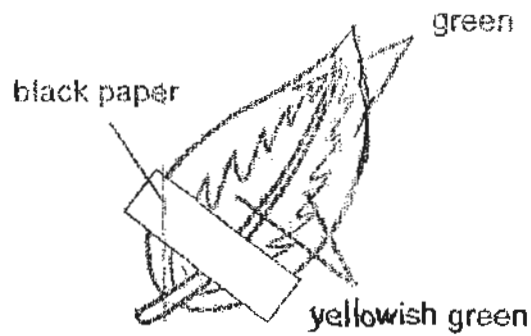
Jasper wants to conduct an experiment to find out if light is needed for seeds to germinate. The diagrams below show four different set-ups, P, Q, R and S.



- a) Which two of the above set-ups should he use to conduct his investigation? [1]

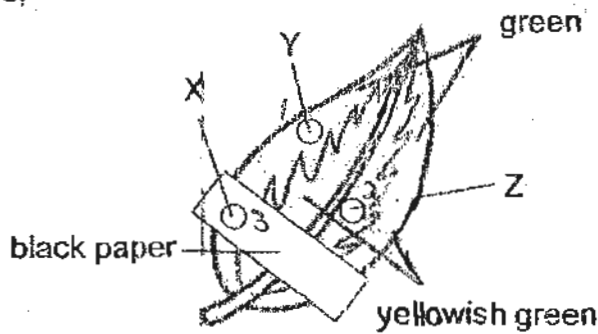
- b) After his experiment, Jasper concluded that light was not needed for germination. Explain clearly why light is necessary for plants to survive but not necessary for seed germination. [1]

34. A variegated leaf (leaf with zones of different colour) was partly covered with black paper as shown in the diagram below. The leaf, while still on the plant, was exposed to sunlight for eight hours.

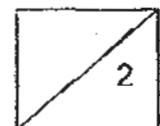


- a) Which part of the leaf, the green or the Yellowish green part, contains less chlorophyll?
How will this affect the amount of food made by that part of the leaf? [1]
-
-

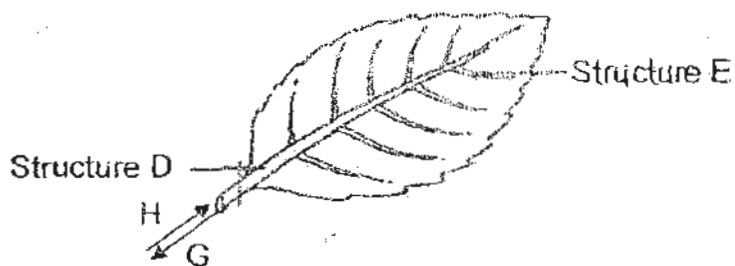
After 8 hours,



- b) Arrange the spots, X, Y and Z, in increasing order of the amount of starch which they contain. [1]
-



35. The diagram below shows a leaf.

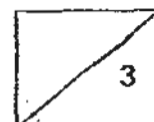


a) Name the tubes that are found in structures D and E. [1]

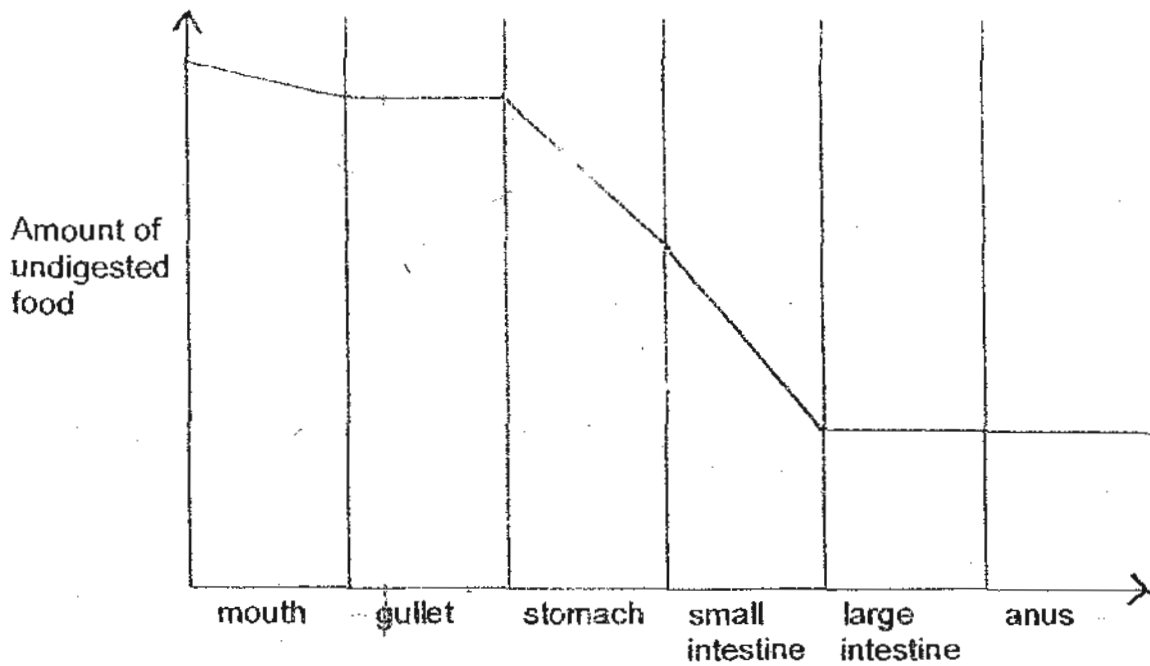
b) The tubes transport substances to and from the leaf, as shown by the Arrows G and H. What are the substances transported in the directions indicated by the arrows? [2]

(i) G: _____

(ii) H: _____

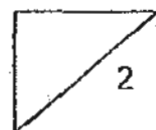


36. The diagram below shows the relative amount of undigested food as it passes through the digestive system.

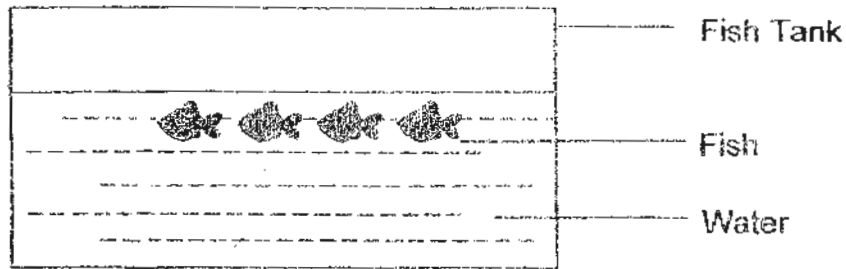


- a) Look at the parts of the graph at the gullet, large intestine and anus. What can you conclude about digestion here? [1]

- b) At which part of the digestive system would there be many blood vessels to absorb the digested food? [1]



37. Henry decided to keep fish as pets. He bought himself a fish tank and four fish as shown below.



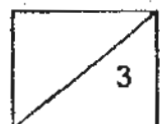
After a few days of observation, he realised that the fish were always swimming near the surface of the water. He told his mother about it and gave the following reasons for the fish's behaviour:

"The fish wanted light so they swam near the surface of the water. The fish thought that there was food near the surface of the water."

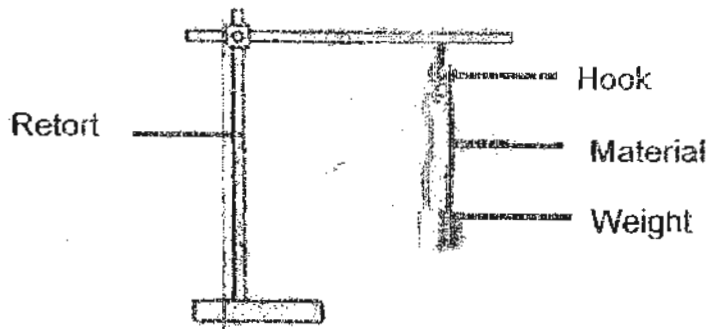
His mother disagreed with his explanation.

- a) What do you think is the main reason for the fish swimming near the surface of the water? [1]

- b) Suggest two things that Henry could do to prevent the fish from swimming near the surface of the water. [2]



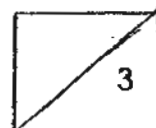
38. Company S conducted a test on three materials, E, F and G. The table below shows the maximum mass each of the three materials, E, F and G, can withstand before it breaks.



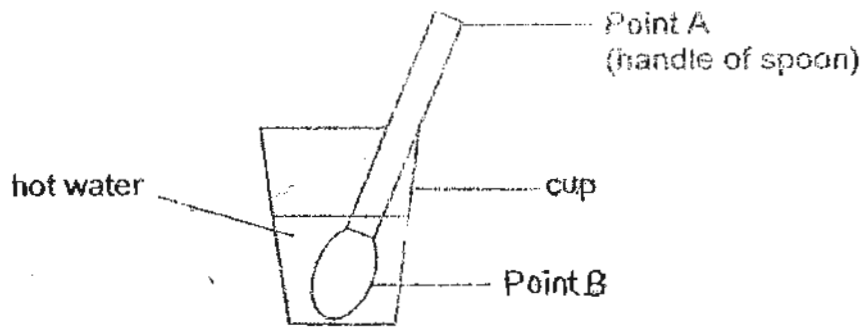
	Maximum mass the material can withstand before breaking occurs
Material E	500 g
Material F	210 g
Material G	965 g

- a) What is the aim of the experiment? [1]

- b) Using the information from the table, which one of the materials, E, F or G, is most suitable to be used to make shopping bags for a bookstore? Explain. [2]

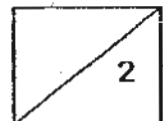


39. Devi left a metal spoon in a cup of hot water. After a while, she touched Point A (handle of the spoon) of the metal spoon and found it hot.



- a) Explain why Point A of the metal spoon was hot after some time. [1]

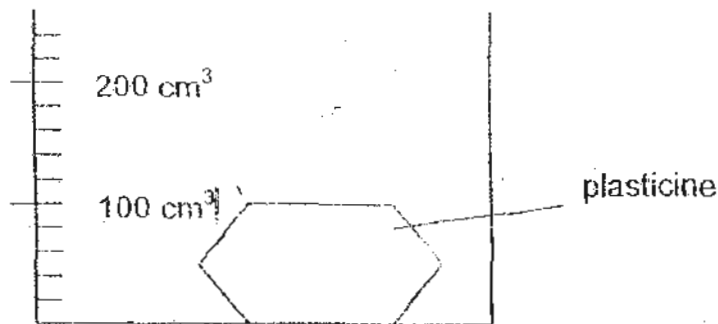
- b) Devi then conducted the same experiment again but with a wooden spoon instead. Explain why the handle of the spoon was not as hot as the handle of the metal spoon. [1]



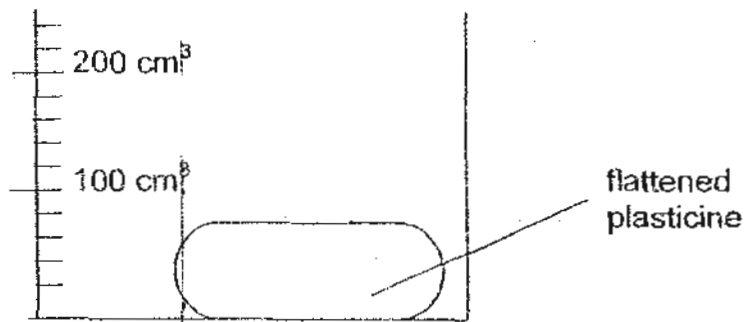
40. Jamie lowered a lump of plasticine into a beaker containing 100 cm^3 of water. The volume of the plasticine was 40 cm^3 .

a) Draw the water level in the diagram below.

[1]

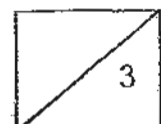


She then took out the same lump of plasticine from the first beaker, dried it and then flattened it. Next, she lowered the flattened plasticine into another identical beaker containing also 100 cm^3 of water as shown below.

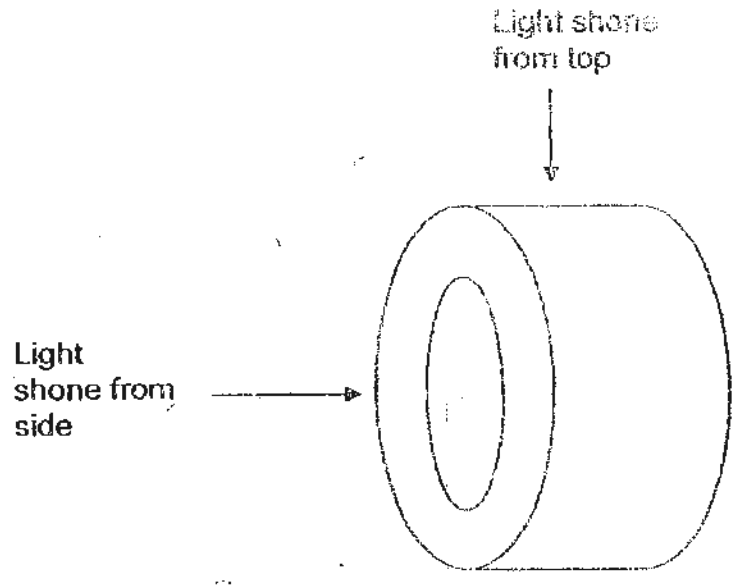


b) What would the new water level be when she lowered the flattened plasticine into the above beaker gently? [1]

c) What does this experiment tell us about the property of plasticine? [1]



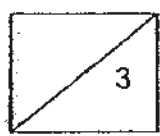
41. The diagram below shows an opaque object with a hollow centre. A torchlight is used to shine at the object from different angles.



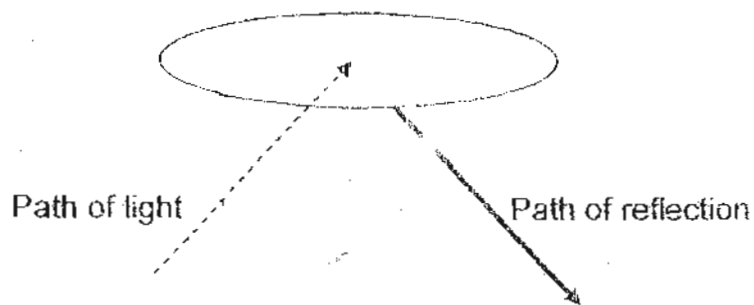
a) In the boxes below, draw and shade the 2 shadows of the object that you would see. [2]

<p style="text-align: center;"><u>Shadow of object when light is shone from side</u></p>	<p style="text-align: center;"><u>Shadow of object when light is shone from top</u></p>
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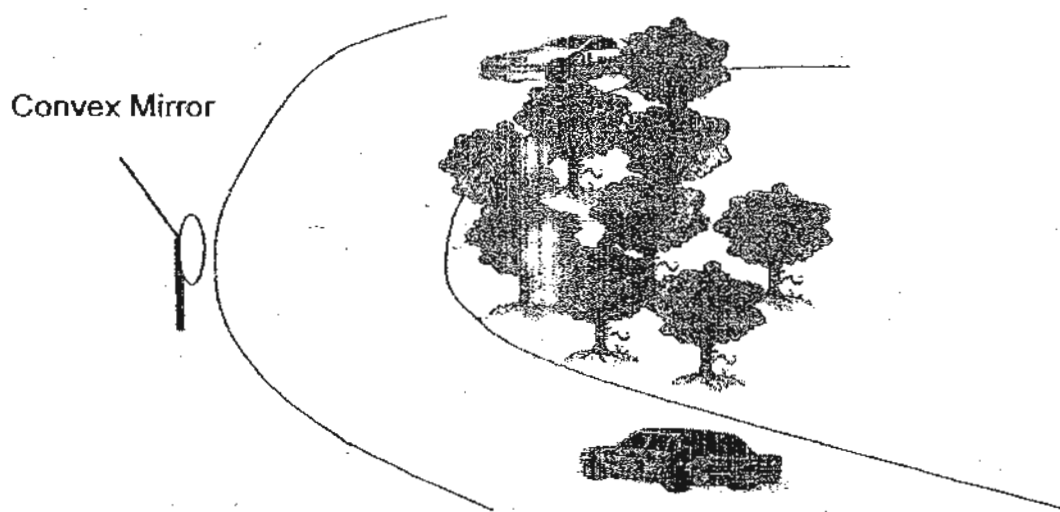
b) What property of light does the experiment demonstrate? [1]



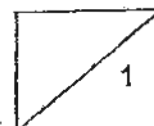
The picture below shows a convex mirror.



2 cars are travelling towards each other along a winding and narrow road as shown below.



c) How does the convex mirror help in preventing accidents from happening? [1]



42. The two diagrams show four similar ring magnets in two different positions.

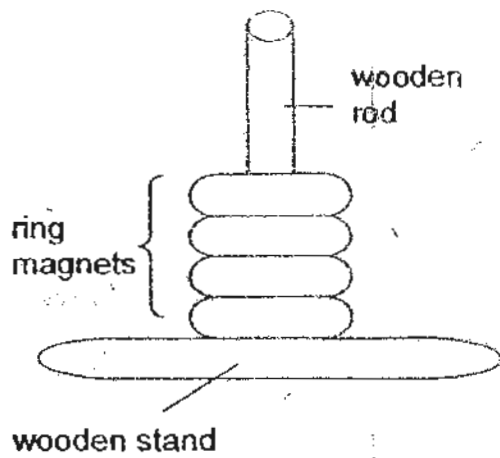


Diagram A

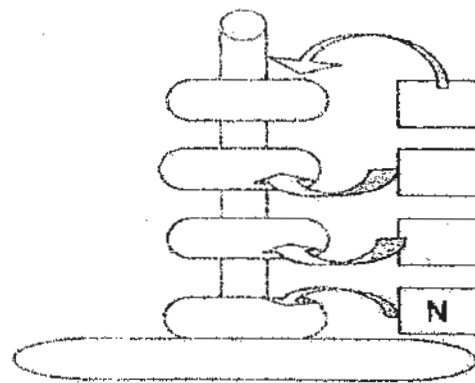
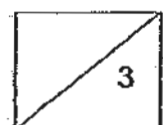


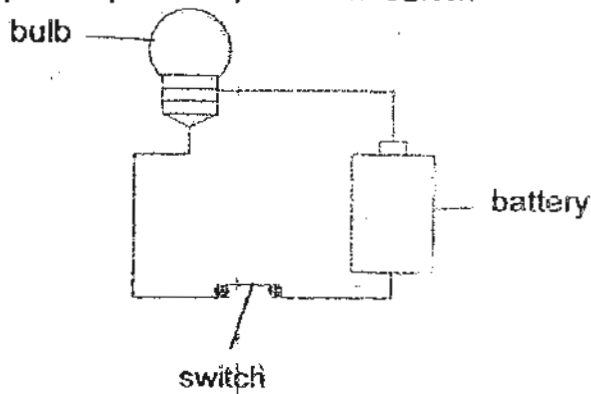
Diagram B

a) Why are the magnets piled up together in Diagram A? [1]

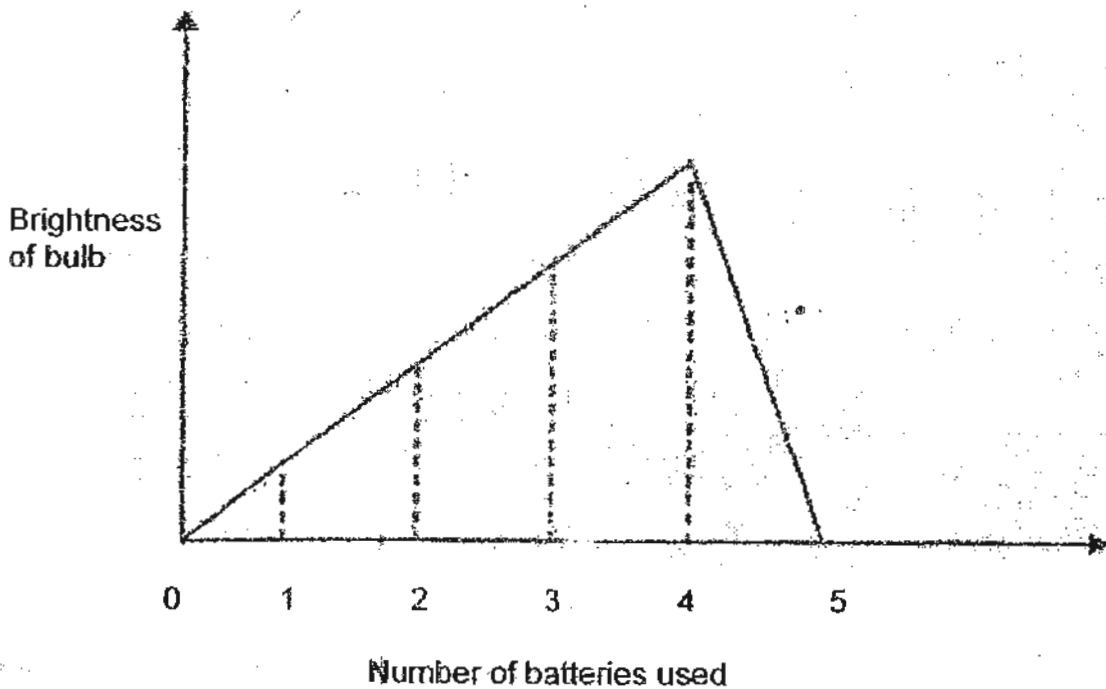
b) In Diagram B, the magnets are rearranged in such a way that one floats above the other. The pole of one magnet has been indicated. Write in the boxes, 'S' for south pole and 'N' for north pole, the poles of the remaining magnets. [2]



43. Paul set up an experiment as shown below.



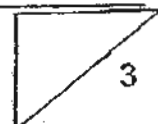
He repeated the experiment with different number of batteries. The results of this experiment are represented by the graph shown below.



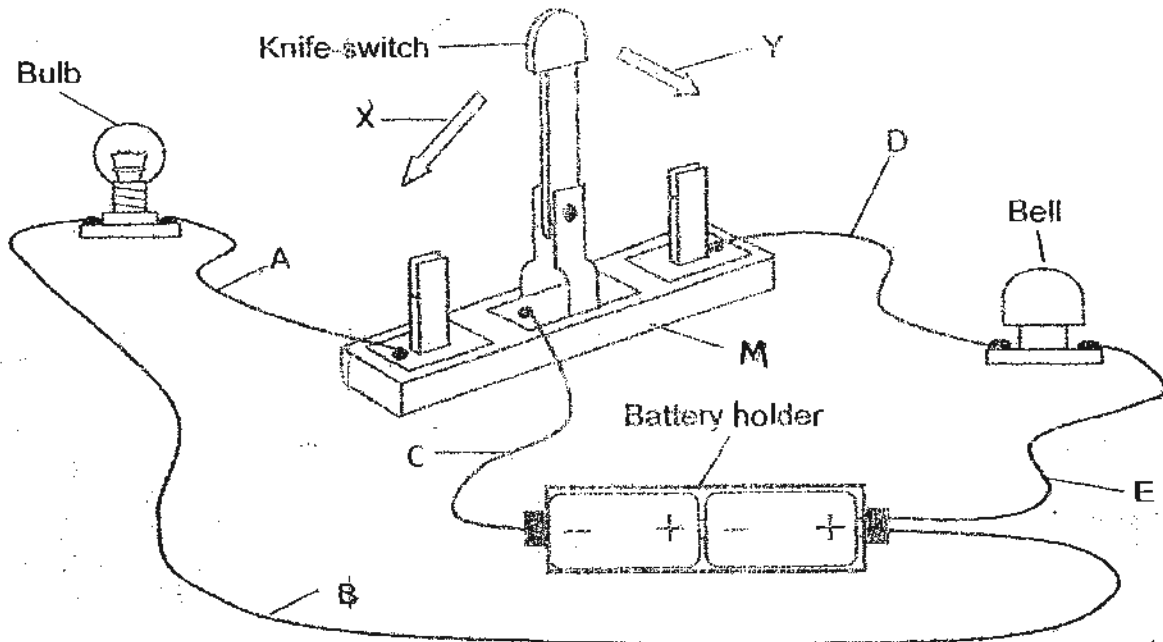
a) What was Paul trying to find out from the above experiment? [1]

b) What happened to the brightness of the bulb when 3 batteries instead of 1 battery were used? [1]

c) What happened to the bulb when the 5th battery was added to the closed circuit above? [1]

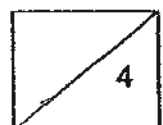


44. The diagram below shows an electric circuit which Pete has set up. It consists of two batteries, five wires A, B, C, D and E, a bulb, a bell and a knife-switch. The circuit can be closed by moving the knife-switch in either direction, X or Y, as indicated in the diagram. Study the circuit carefully and answer the questions that follow.



- a) Which wires, A, B, C, D or E, will not be used if Pete wants the bell to ring? [1]
-
- b) What will happen if Pete moves the knife-switch towards direction X to close the circuit? [1]
-
- c) Name a suitable material that can be used to make Part M. [1]
-
- d) Which wire, when removed, will cause both the bulb and the bell not to work even if the knife-switch is moved towards direction X or Y in an attempt to close the circuit? [1]
-

∞ End of Paper ∞



∞ Have you checked your answers? ∞

ANSWER SHEET

EXAM PAPER 2010

SCHOOL : CATHOLIC HIGH PRIMARY

SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

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

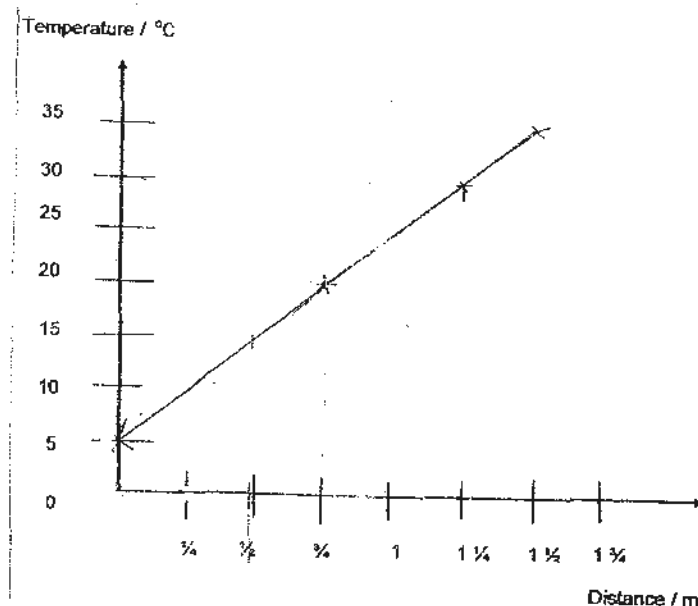
Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	4	1	2	4	4	2	3	1	4	3	4	1

31)i)B ii)C iii)E iv)A

The cheek cell has a nucleus, does not have a cell wall and does not have many branches.

32)a)He was trying to find out if the temperature affects the time taken for the fruit to spilt also affects the distance the seeds scattered.

b)



33)a)Set-up P and set-up R.

b)Light is needed for plants to make food so that they can survive, but during germination, seed leaves provide food for the seed.

34)a) Yellowish green. The more chlorophyll there is, the less food is made by that part of the leaf.

b) X, Z, Y

35)a) The tubes are Xylem and Phloem tubes.

b) i) Food ii) Water and mineral salts.

36)a) Digestion does not happen in the gullet, large intestine and anus.

b) The small intestine.

37)a) The fish is swimming near the surface of the water because there is a lack of oxygen and they need oxygen to survive.

b) He could put water plants in the tank or install an air pump.

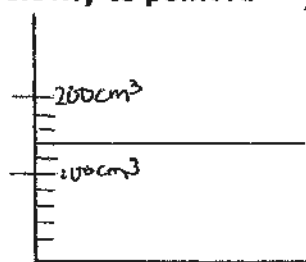
38)a) The aim of the experiment is to find out which material is the strongest.

b) Material G. It can withstand the heaviest mass.

39)a) Metal is a good conductor of heat. Heat from Point B of the metal spoon in the water was transferred through the spoon to Point A of the metal spoon.

b) Wood is a poor conductor of heat and thus heat travelled through the wooden spoon slowly to point A.

40)a)



b) The water level would still be 140cm².

c) Even though the shape of the plastic changes, its volume does not change.

41)a)



b) Light travels in a straight line.

c) The convex mirror reflects light and makes it help drivers see around the bends.

42)a) They are put in a way that the north and south magnetic poles are facing each other and therefore are attracted to each other as opposite poles attract.

b) S S N N

43)a) He was trying to find out if the number of batteries affects the brightness of the bulb.

b) The brightness of the bulb increased.

c) The bulb fused as there was too much electrical energy flowing through it.

44)a) Wires A and B.

c) Plastic.

b) The bulb will light up.

d) Wire C.