Name: _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5
Second Semestral Assessment – 2009
SCIENCE

BOOKLET A

2 October 2009

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

30 questions
60 marks

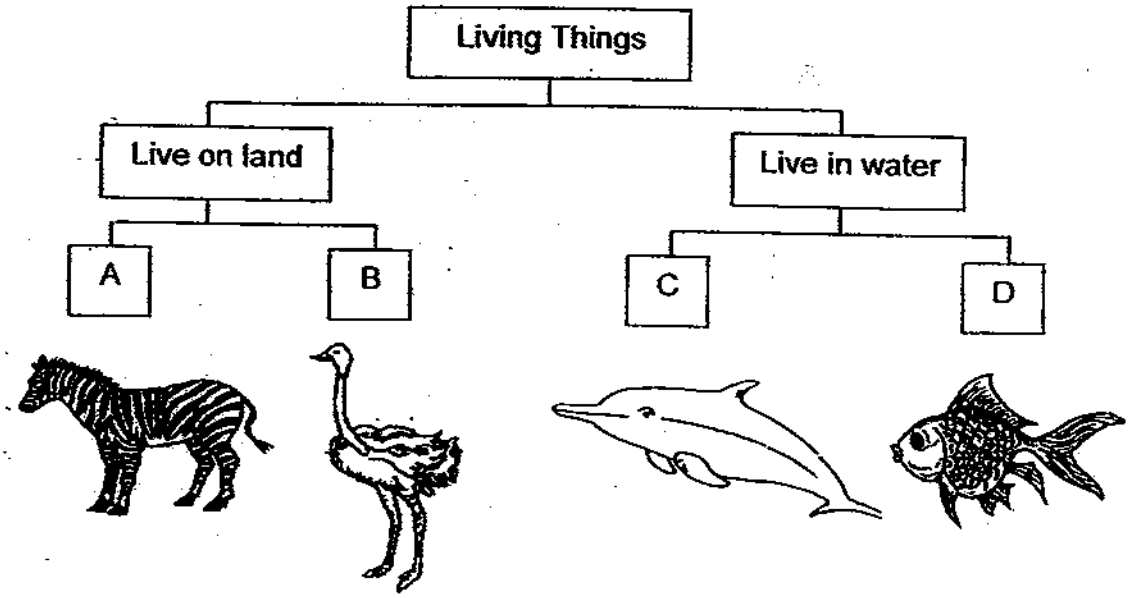
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of 23 printed pages.

Section A : (30 x 2 MARKS)

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

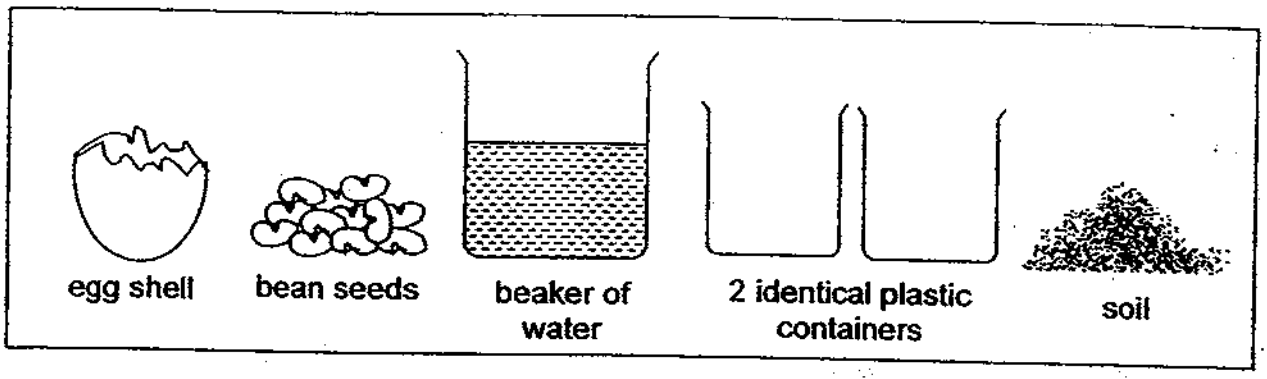
1. The classification chart below shows how some animals can be grouped according to different ways of reproduction.



In which group, would you put the following animal in?

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

2. Danny had the following materials.



Which one of the following experiments **cannot** be investigated using only the materials from above?

(1) Do the roots of seedlings exert force when they grow?
(2) Does the amount of water affect the germination of the bean seeds?
(3) Does the type of egg shells affect the germination of the bean seeds?
(4) Does the use of crashed egg shell as fertiliser achieve the best seedling growth?

3. The pictures below show two different types of cells, E and F, viewed from a microscope.

Cell Type E

Cell Type F

Which of the following best describe cell types, E and F?

	Cell Type E	Cell Type F
(1)	Reproduce from seeds	Do not reproduce from seeds
(2)	Cannot move freely	Can move freely
(3)	Feed on decaying matter	Make their own food
(4)	Has nucleus	Has no nucleus

4. The table below lists the parts of a cell. Each tick (✓) represents the part of a cell that Cells G, H and J have.

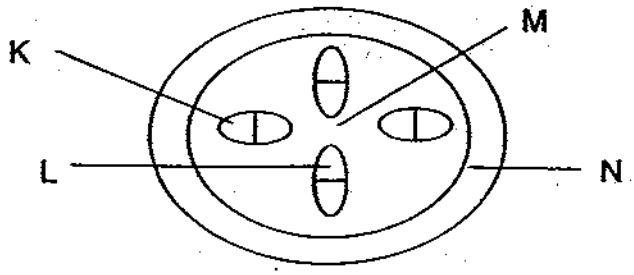
Parts of the cell	Cell G	Cell H	Cell J
Cell membrane	✓	✓	✓
Cell Wall	✓		✓
Chloroplasts	✓		
Cytoplasm	✓	✓	✓
Nucleus	✓		✓

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

A H and J are animal cells.
B G and J carry genetic information but H does not.
C G is the only cell that can carry out photosynthesis.

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

5. The diagram below shows the cut stem (top view) of a plant which has been placed in coloured water for a day.

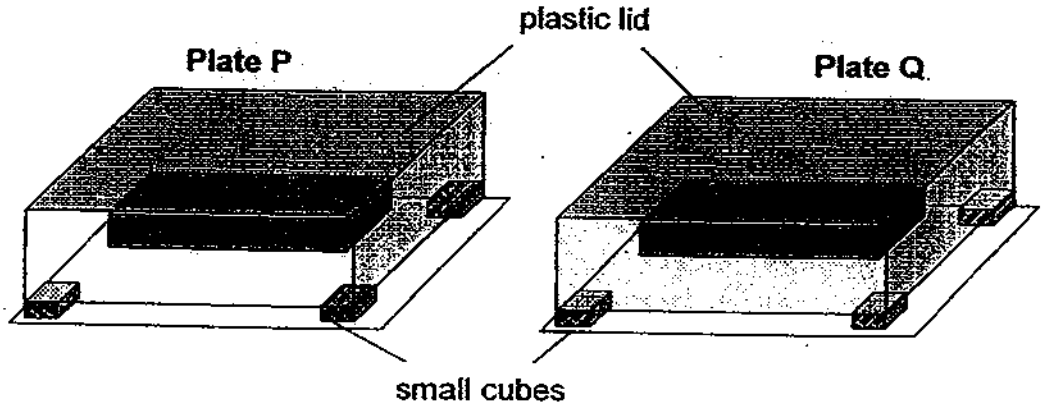


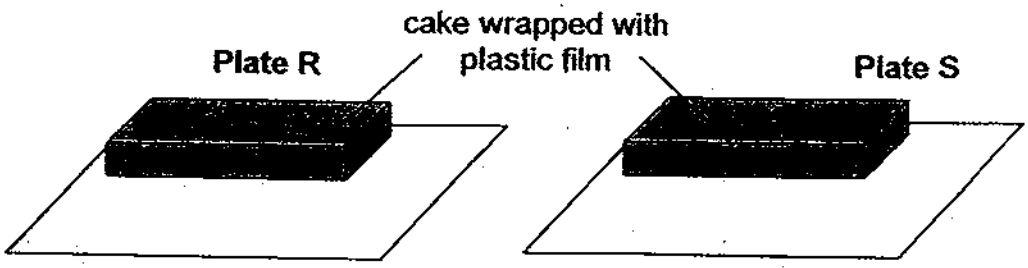
Which part of the stem is responsible for transporting food from the leaves to other parts of the plant?

(1) K
(2) L
(3) M
(4) N

6. A group of pupils conducted an investigation to find out which conditions are best suited for mould growth. They cut a big piece of cake into four quarters and put each quarter onto a different plate. They placed the plates in the open for an hour, so that mould spores could fall on all four pieces of cake. Then they did the following to each smaller piece of cake:

Plate P:	They covered the cake with a clear plastic lid. The lid stood on four small cubes to let air in, but at the same time stopped any more spores landing on the cake.
Plate Q:	They moistened the cake with water and covered it the same way as Plate P.
Plate R:	They wrapped the cake in a plastic film so that no air could get in.
Plate S:	They moistened the cake with water, then wrapped it with a plastic film so that no air could get in.

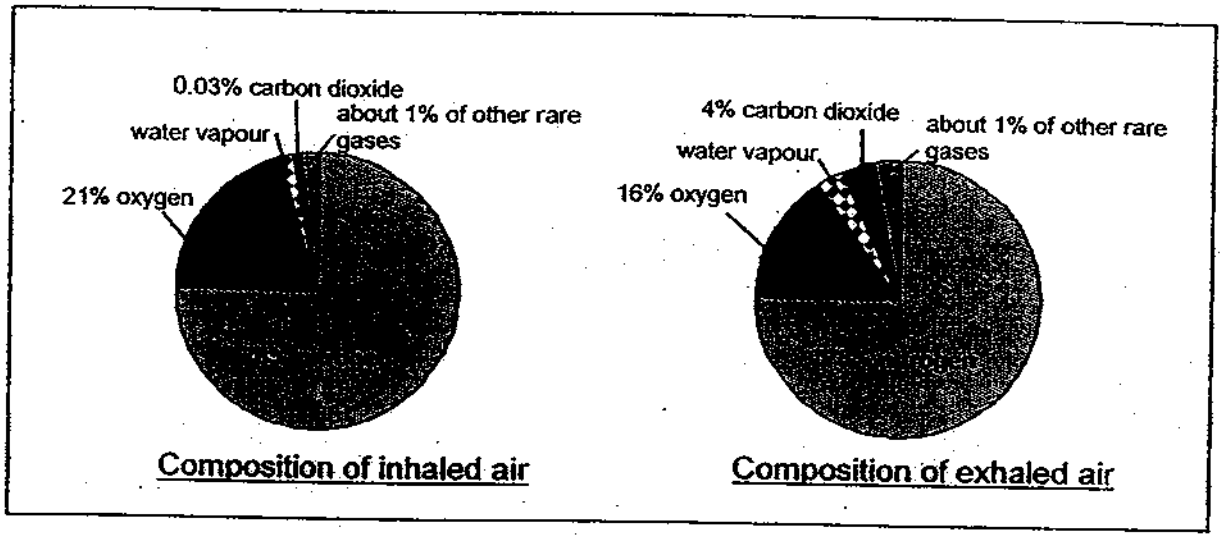




What can the pupils find out from the experiment?

(1) They can only find out whether mould needs air to grow.
(2) They can only find out whether mould needs water to grow.
(3) They can find out whether mould needs air and water to grow.
(4) They can find out whether mould needs air, water and light to grow.

7. Study the two pie charts carefully.

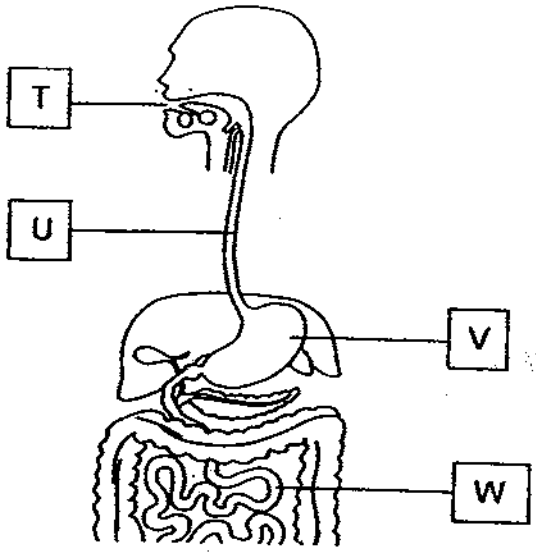


Which of the following statements can be concluded from the charts above?

A Inhaled air has more oxygen.
B Exhaled air has more water vapour.
C Inhaled air is of a lower temperature.
D Exhaled air has more carbon dioxide.
E Rare gases are not taken in by the body.

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

8. The diagram below shows part of the human digestive system.

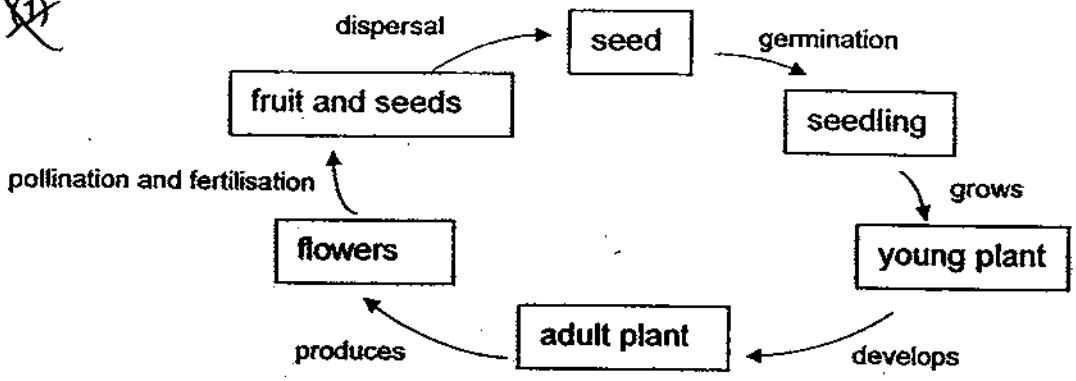


Which one of the following sets of information correctly indicates the changes in the amount of digested food when it leaves parts T, U, V and W?

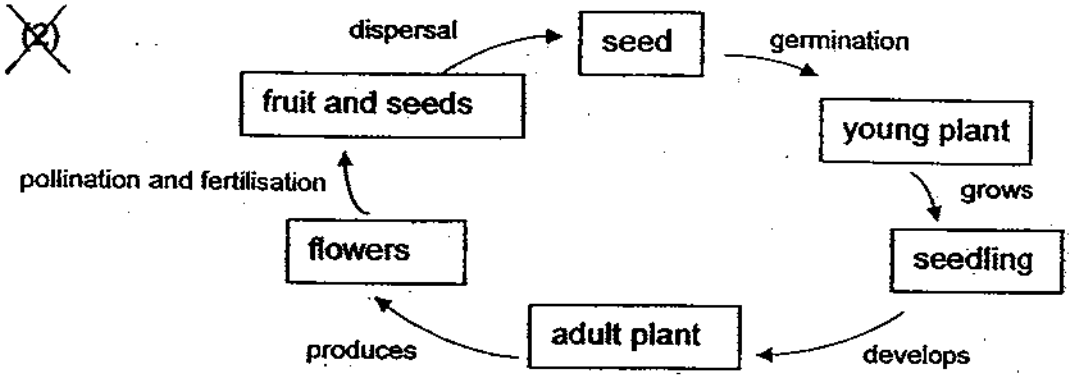
	Changes in the amount of digested food when leaving...			
	T	U	V	W
(1)	No change	No change	Increases	No change
(2)	No change	Increases	Increases	No change
(3)	Increases	No change	No change	Increases
(4)	Increases	No change	Increases	Increases

9. Study the diagrams below carefully. Which one of the following shows the life-cycle of a flowering plant?

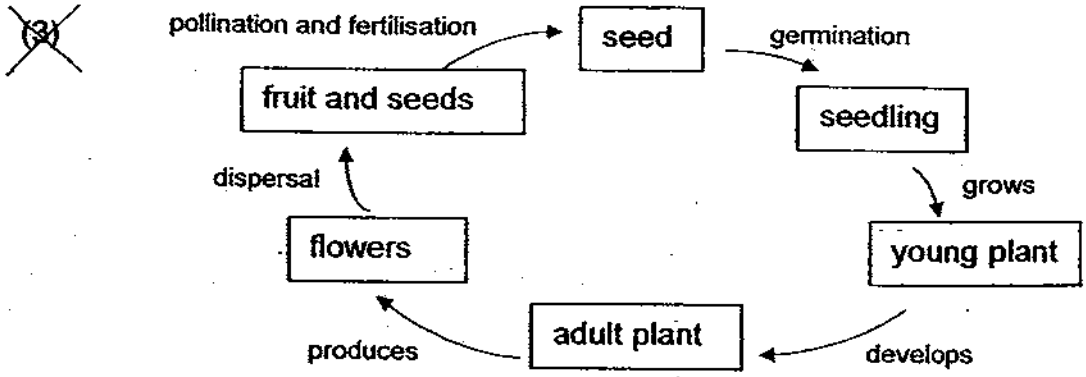
(1)



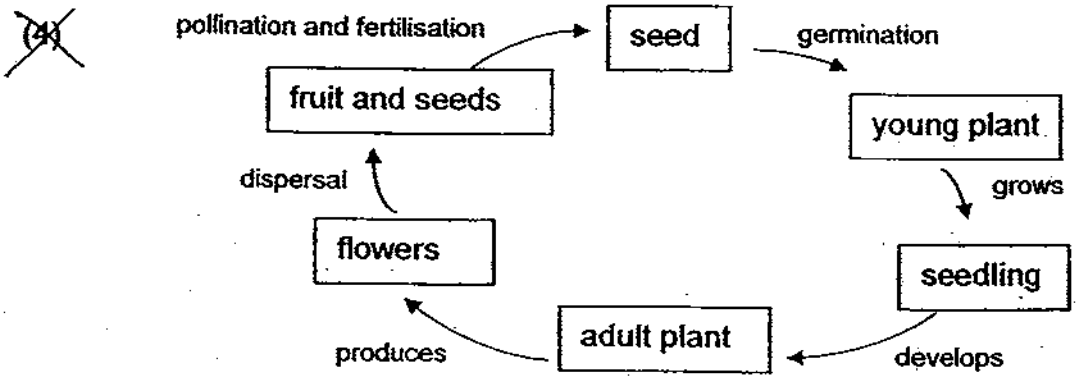
(2)



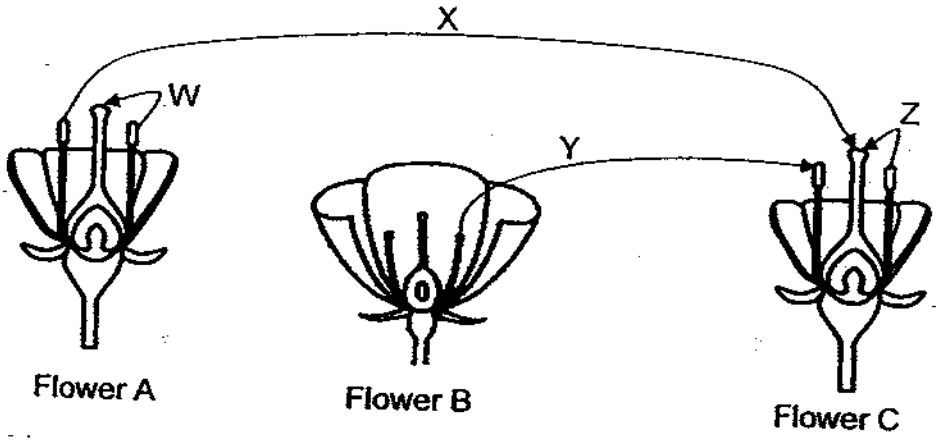
(3)



(4)



10. The diagram below shows the cross-section of 3 flowers. The arrows show the movement of the pollen grains during pollination.



Which of the following arrow(s) show(s) how the wind could have pollinated Flower C?

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

11. The table below shows three fruits and their characteristics.

	Dispersed by explosive action?	Dispersed by animal?	Fleshy fruit?
Fruit D	No	Yes	Yes
Fruit E	Yes	No	No
Fruit F	No	Yes	No

Which one of the following can Fruits D, E and F be ?

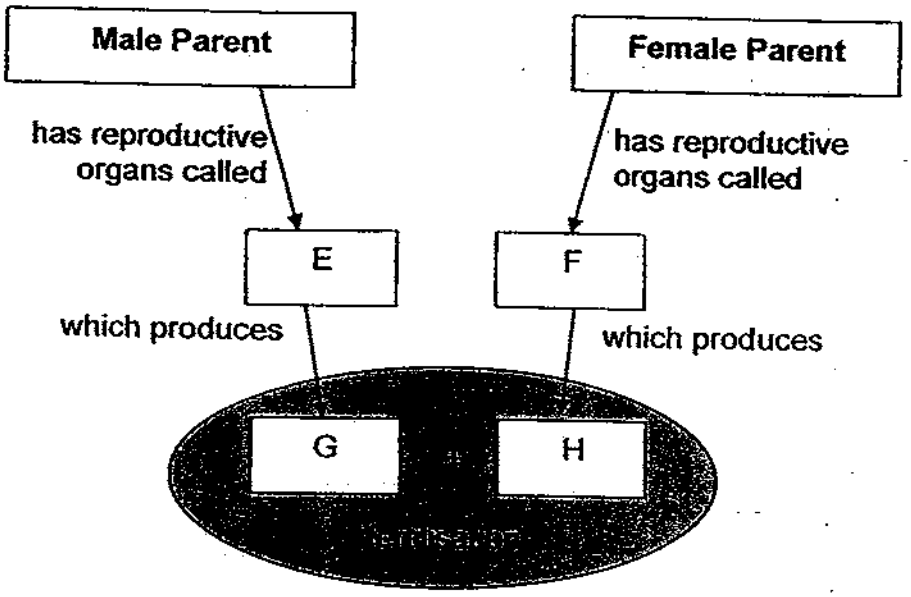
	Fruit D	Fruit E	Fruit F
(1)	Rambutan	Mimosa	Love grass
(2)	Mangrove	Rubber	Shorea
(3)	Papaya	Saga	Mimosa
(4)	Guava	Balsam	Saga

12. Which of the following statements are true about sexual reproduction in both plants and animals?

A The male and female reproductive cells have to fuse for fertilisation to take place.
B Pollination takes place before fertilisation.
C The male reproductive cells are called sperms.
D The female reproductive cells are stored in the ovary.

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

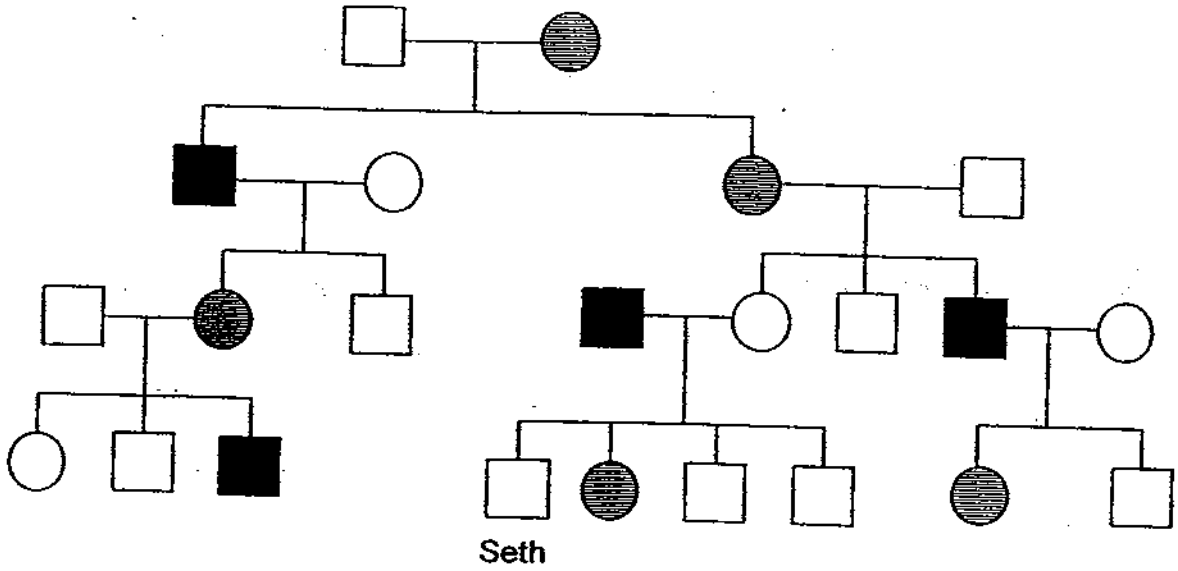
13. The concept map below shows how fertilisation takes place between the male and female parents in animal reproduction.

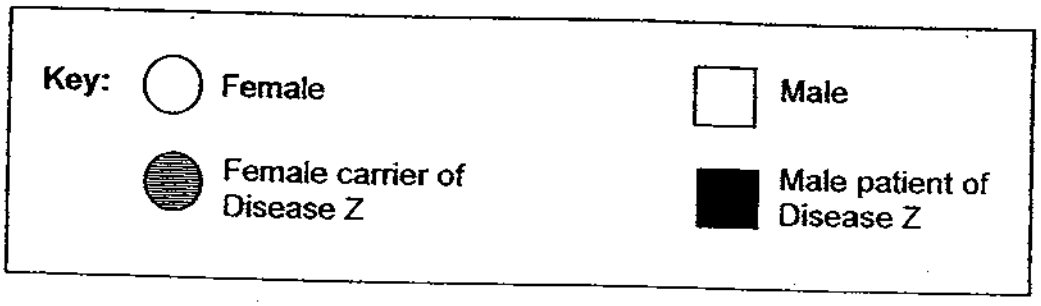


Based on the concept map above, what are E, F, G and H?

	E	F	G	H
(1)	Ovaries	Testes	Egg	Sperm
(2)	Testes	Ovaries	Sperm	Egg
(3)	Penis	Womb	Sperm	Egg
(4)	Womb	Penis	Egg	Sperm

14. The diagram below shows Seth's family tree of 4 generations that carry the genetic trait for Disease Z. A carrier of Disease Z will not have the symptoms of the disease but will pass on the genes of the disease to the next generation.



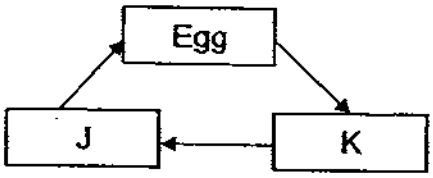


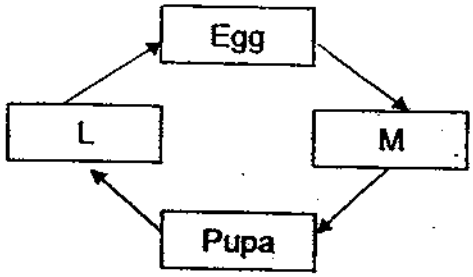
Which of the following statements can you conclude with the above family tree?

A Disease Z only affects the male members of the family.
B There is a possibility of Seth's sister bearing a son with Disease Z.
C The daughter of a male patient with Disease Z will be a carrier of the disease.
D Seth's mother inherited the genes of Disease Z from her maternal grandmother.

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

15. The diagram below shows the incomplete life cycles of 2 different organisms.

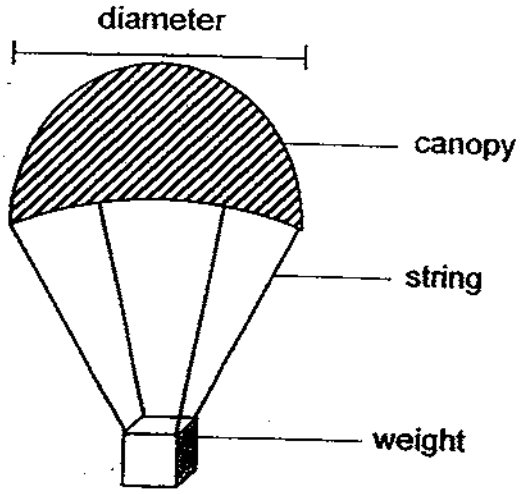




Which one of the following correctly matches J, K, L and M in the 2 life cycles of organisms?

	J	K	L	M
(1)	Grasshopper	Nymph	Mosquito	Wriggler
(2)	Frog	Tadpole	Caterpillar	Butterfly
(3)	Tadpole	Toad	Dragonfly	Nymph
(4)	Cockroach	Nymph	Mealworm Beetle	Maggot

16. Hassan wanted to find out which materials, W, X or Y, is the best for making the canopy of a parachute.



He carried out the following experiments by dropping parachutes with canopy made from the various materials, W, X and Y, from a height of 15m and recorded the results of the experiment in the table as shown below.

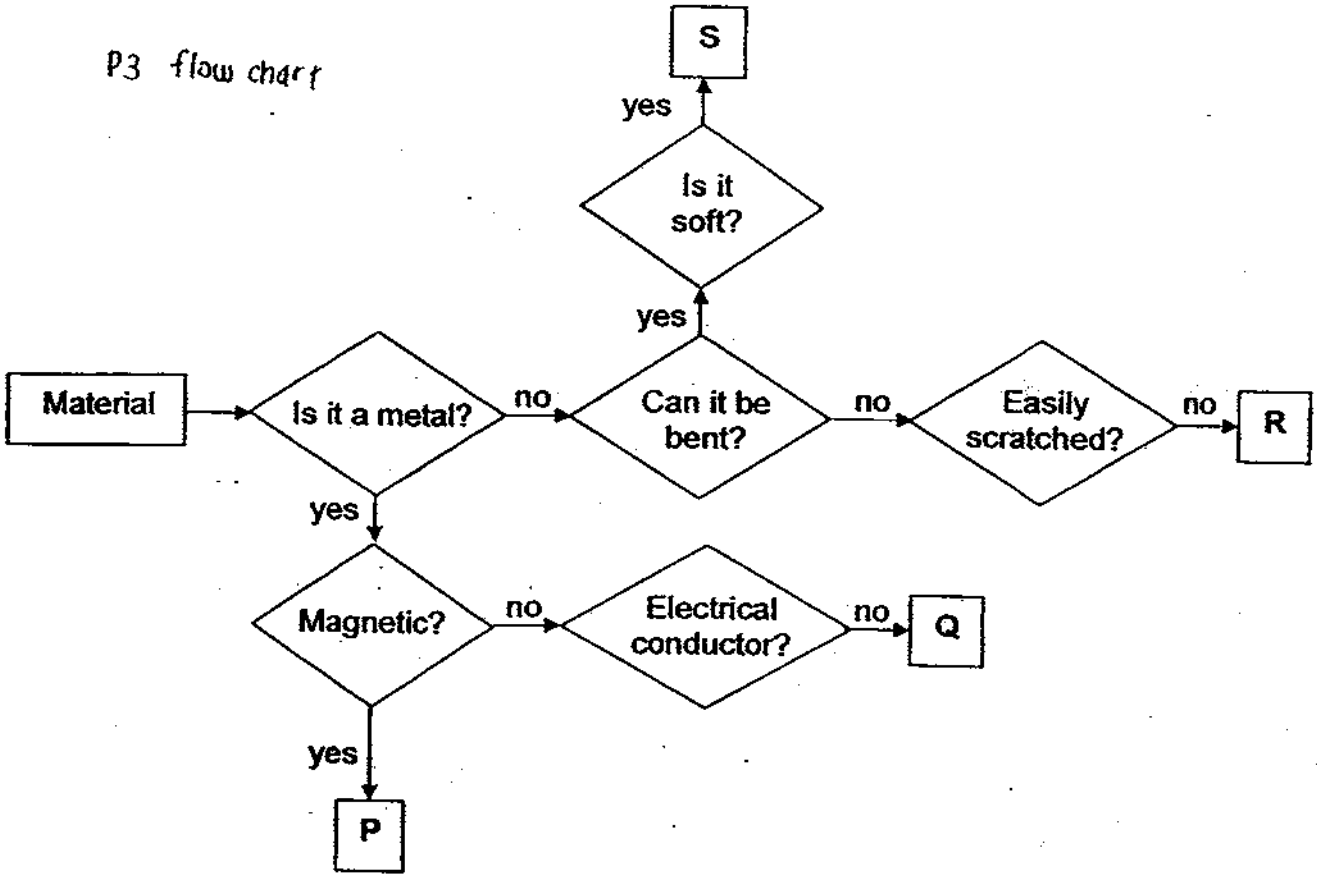
Experiment	Material used for canopy	Diameter of canopy (cm)	Length of string (cm)	Time taken to reach the ground (s)
1	W	40	50	38
2	W	40	40	40
3	W	30	40	35
4	X	40	40	38
5	X	30	40	28
6	X	30	40	35
7	Y	40	40	40
8	Y	40	50	33
9	Y	30	50	35

Which of the above experimental results should Hassan use to make a fair comparision?

(1) Experiment 1, 5 and 8
(2) Experiment 2, 4 and 7
(3) Experiment 2, 6 and 9
(4) Experiment 3, 6 and 7

17. The flowchart below shows how materials, P, Q, R and S, are classified.

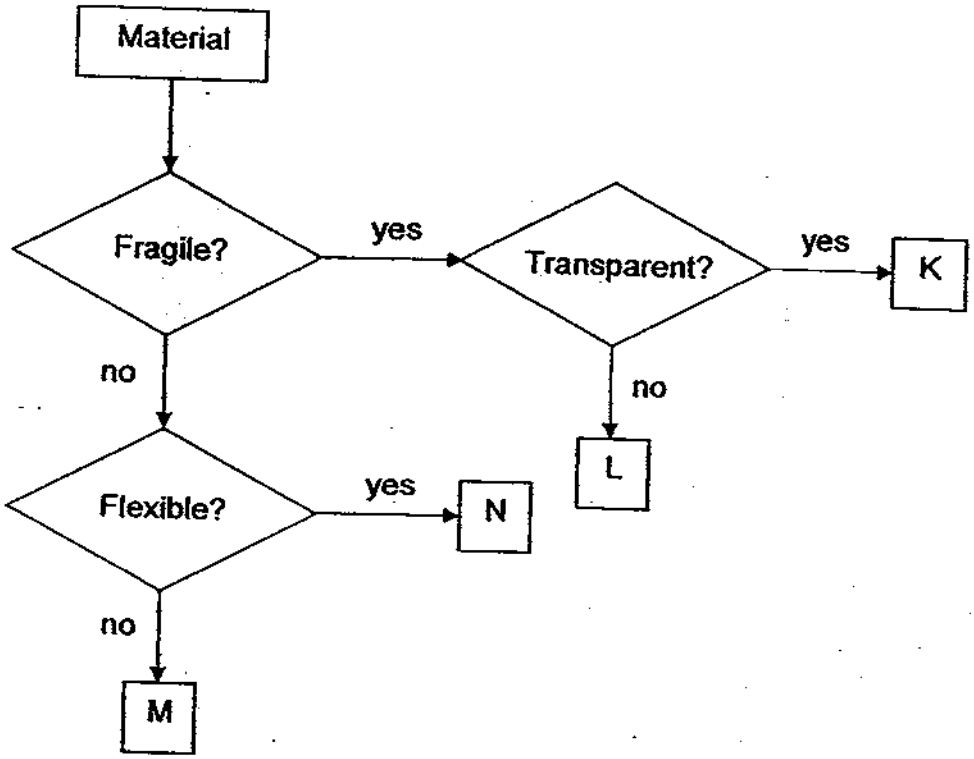
P3 flow chart



Which one of the following statements about, P, Q, R and S, is definitely true?

(1) P is iron.
(2) S is flexible.
(3) R is a hard metal.
(4) Q is an electrical conductor.

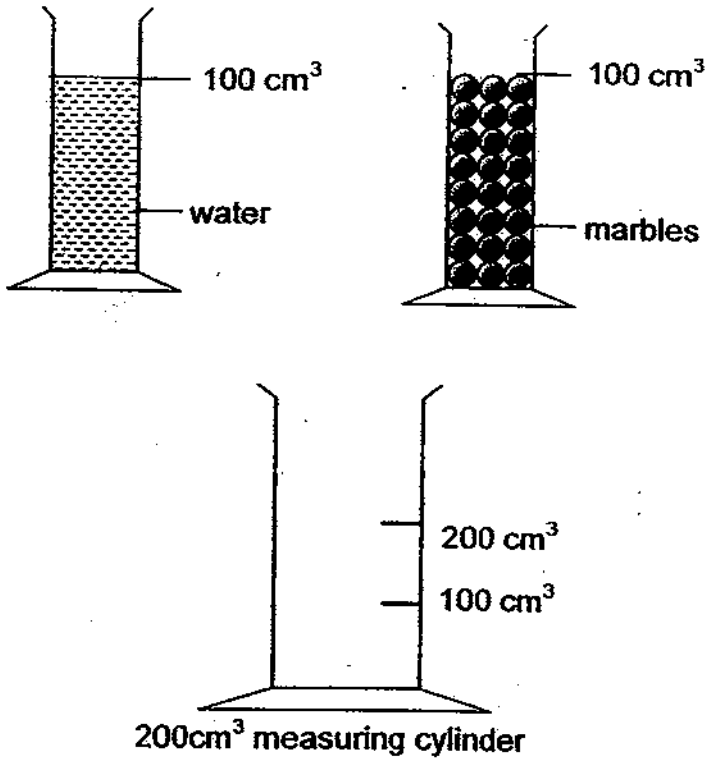
18. The flowchart below shows the properties of 4 different materials, K, L, M and N.



Based on the flowchart above, which materials, K, L, M or N, would be suitable for making the objects shown in the table below.

	Material			
	K	L	M	N
(1)	Plasma TV screen	Tinted window panes	Helmet	Plastic spoon
(2)	Spectacles lens	Clay figurine	Grocery bag	Metal fork
(3)	Wine glass	Porcelain spoon	Window grille	Thermal jacket
(4)	Tinted window panes	Porcelain plate	School bag	Cotton socks

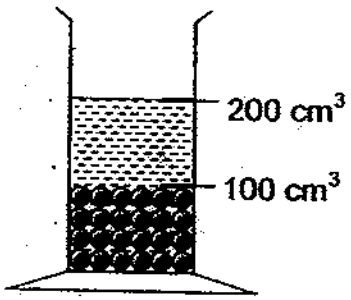
19. Nadia filled a measuring cylinder with 100cm^3 of water. She filled up another similar 100cm^3 measuring cylinder with marbles. Next, she transferred both the water and the marbles into a 200cm^3 measuring cylinder.



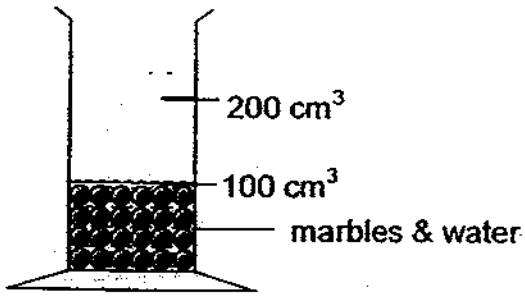
200cm^3 measuring cylinder

Which one of the following diagrams shows the possible volume occupied by the water and the marbles in the 200 cm^3 measuring cylinder?

(1)



(2)



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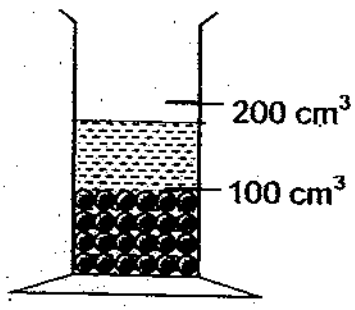
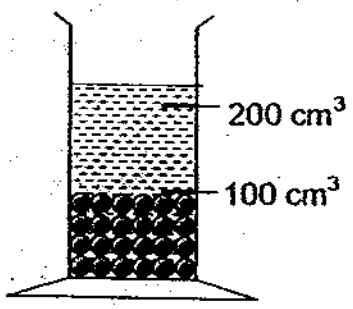


(4)



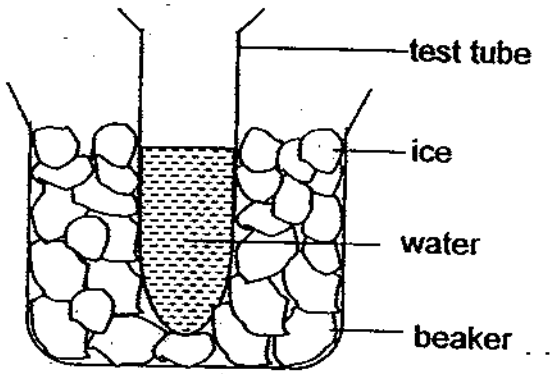
20. The table below shows the freezing and boiling points of substances, A, B, C and D, respectively.

Substance	Freezing point	Boiling point
A	-4 °C	60 °C
B	5 °C	75°C
C	-2 °C	45 °C
D	20 °C	87 °C

At which one of the following temperatures are the 4 substances, A, B, C and D, in the same state?

(1) 18 °C
(2) 32 °C
(3) 47 °C
(4) 63 °C

21. Edward set up an experiment as shown below in the laboratory.

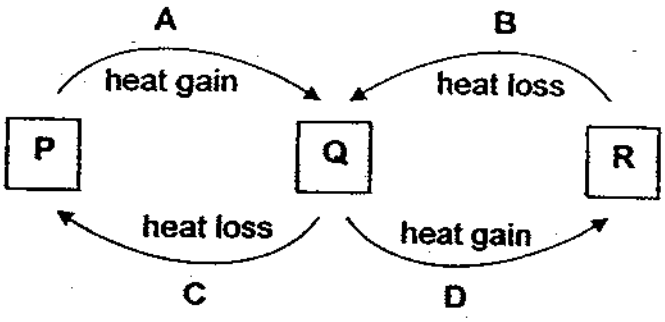


After two minutes, which of the following are **not likely** to have changed?

A State of ice in the beaker
B State of water in the test tube
C Temperature of ice in the beaker
D Temperature of water in the test tube

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

22. P, Q and R represent the three states of water. Which 2 arrows indicate processes, melting and freezing, respectively?



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

23. Jaelin dissolved 50g of sugar into a bowl which had 150g of water in it. Two days later, the mass of the solution left in the bowl was 150g. The remaining solution contained _____.

(1) 150g of water
(2) 100g of water and 50g of sugar
(3) 125g of water and 25g of sugar
(4) 110g of water and 40g of sugar

24. Ericia carried out an experiment to compare the amount of water in 4 different vegetables. Firstly, she weighed the vegetables. Then she placed the vegetables out in the sun for a few days to dry them before weighing them again. She then recorded her results in the table below.

Vegetable	Initial weight (g)	Weight after drying (g)	Difference in weight (g)
W	120	60	60
X	160	100	60
Y	120	54	66
Z	80	24	

Based on the above results, which of the following statement(s) is/are true of her experiment?

A W has less water than Y.
B X has as much water as W.
C Z has the least amount of water.
D Y has the greatest amount of water.

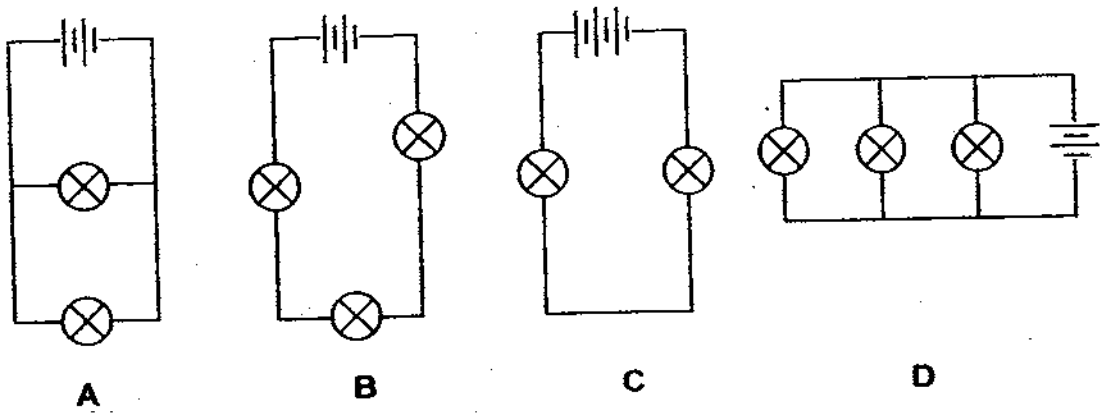
(1) A only
(2) B and C only
(3) A and D only
(4) A, B, C and D

25. The rate of evaporation is affected by _____.

A the size of the container
B the temperature of the surroundings
C the amount of water in the container
D the temperature of the water in the container

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

26. Bee Eng was told to investigate if the arrangement of the bulbs in a circuit affects their brightness. She then set up 4 circuits as shown in the diagrams below.

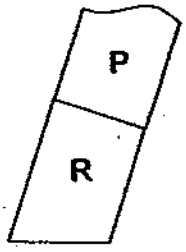


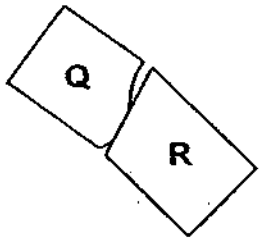
Which of the 2 circuits above should she use to ensure a fair test?

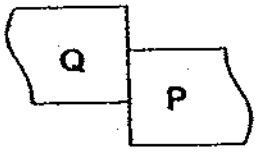
(1) A and C only
(2) B and D only
(3) A and D only
(4) B and C only

27. Becky broke a magnet into 3 pieces, P, Q and R, as shown below.

Which one of the following is **not possible** when 2 broken pieces of the magnet are brought together?

(1)


(2)


(3)


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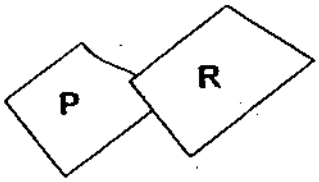
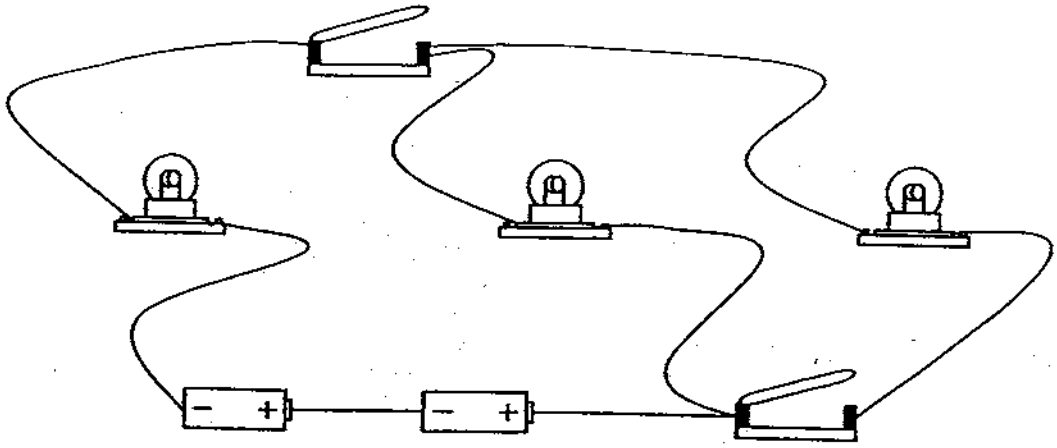
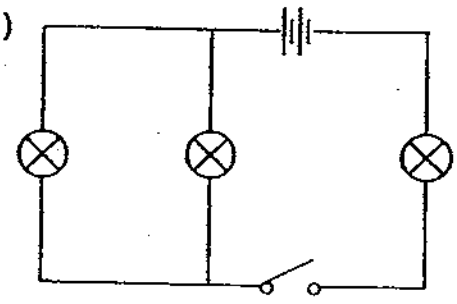


28. Ethan set up a circuit as shown below.

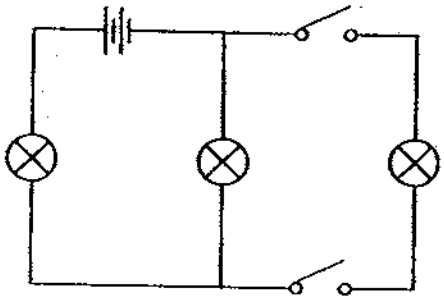


Which one of the following circuit diagrams represents the circuit above?

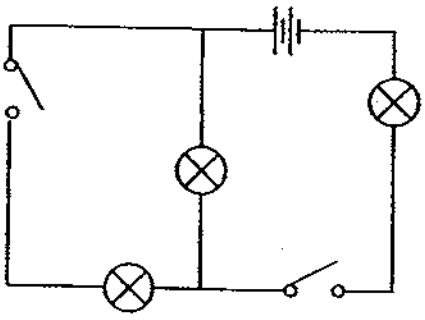
(1)



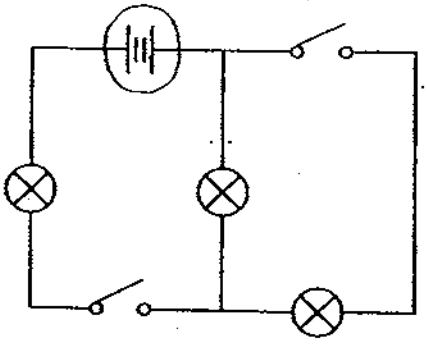
(2)



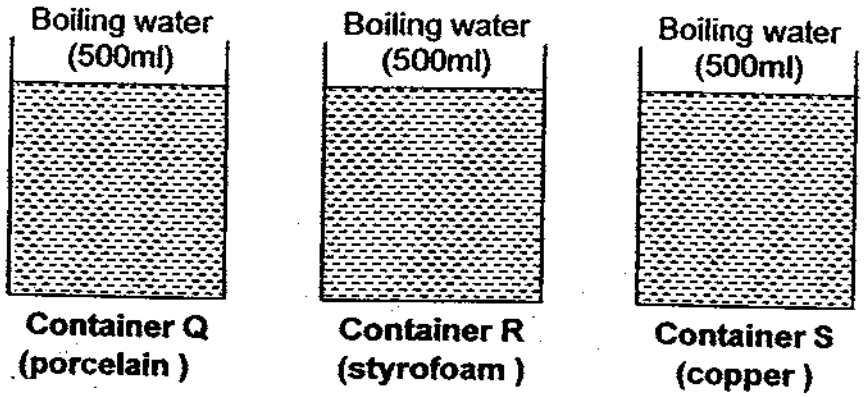
(3)



(4)

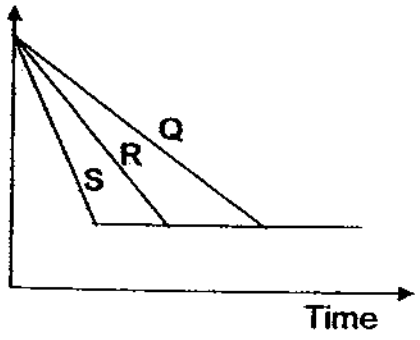


29. Three containers, Q, R and S, of the same size and equal thickness are filled with 500ml of boiling water. Each container is made of a different material. The containers are left on a table for three hours.

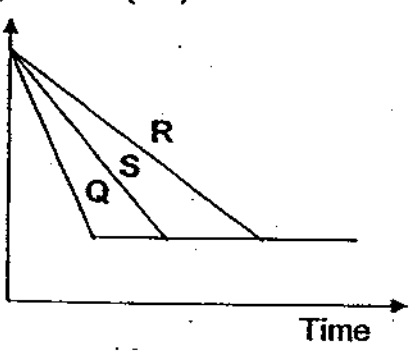


Which one of the following graphs best shows the changes in the temperature of the water in each container?

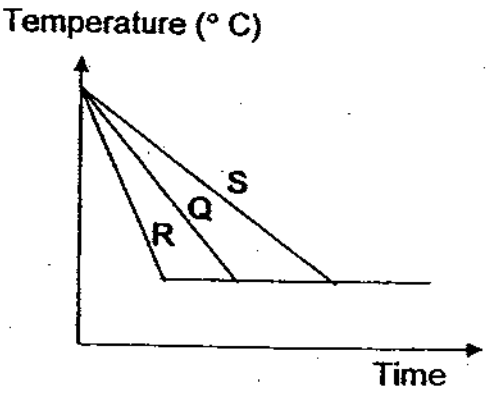
(1)



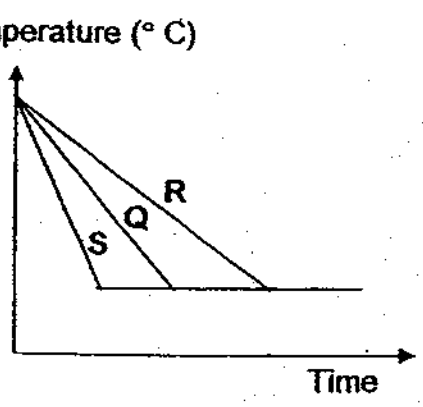
(2)



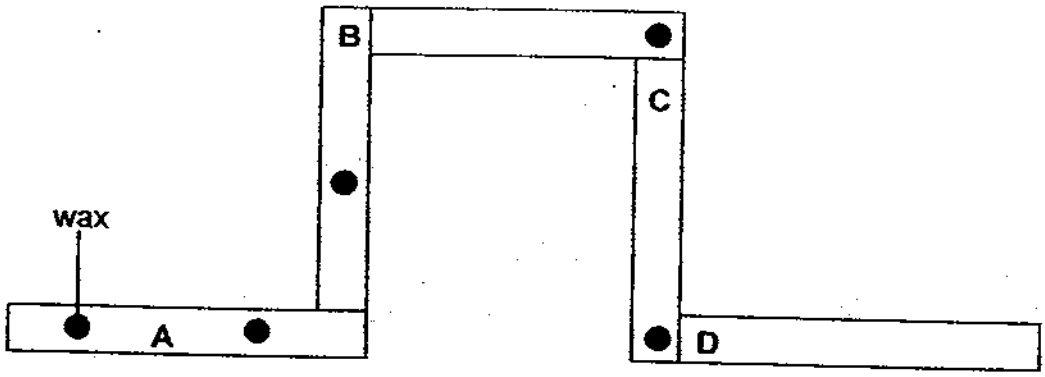
(3)



(4)



30. 5 pieces of iron rods of the same size are joined together to form a structure. 5 blobs of wax are then stuck to different parts of the structure as shown below.



At which point, A, B, C or D, should the flame be placed so that all the blobs of wax will melt in the shortest time?

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

~ End of Section A ~

Name : _____( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

德 纯 义 坚

Primary 5

Second Semestral Assessment – 2009

SCIENCE

BOOKLET B

2 October 2009

Booklet A	60
Booklet B	40
Total	100

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

14 questions
40 marks

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

This booklet consists of 17 printed pages.

_____

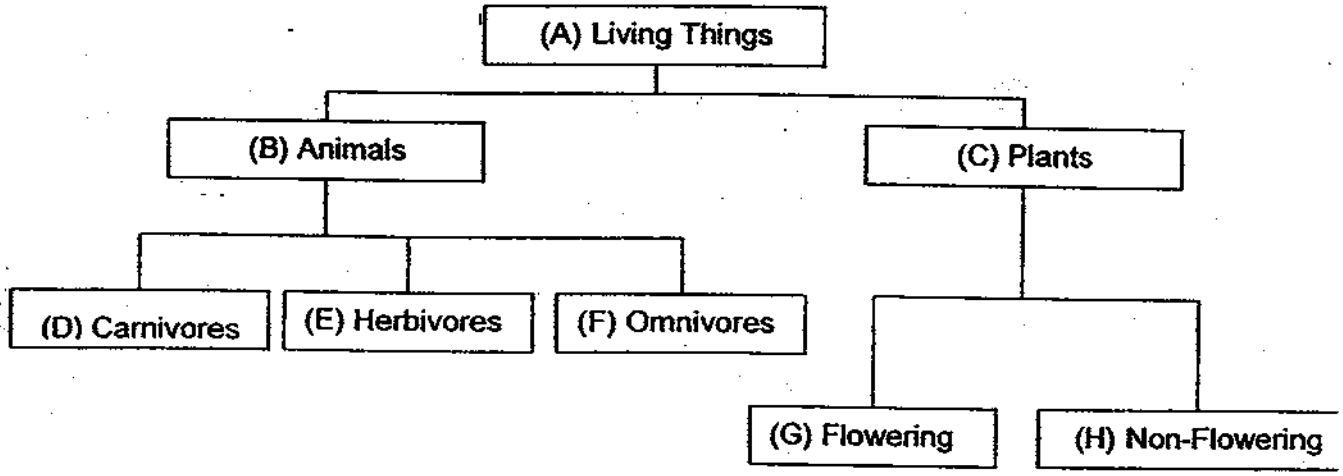
Parent's Signature/Date

Section B : (40 marks)

For questions 31 to 44, write your answers in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question.

31. Study the classification chart below.



Write the letter, A, B, C, D, E, F, G or H, beside the statement which best describes an organism in the respective groups in the classification chart above. [2]

(a) Contains chlorophyll to make food _____

(b) Releases spores from spore bags _____

(c) Obtains energy only from other organisms _____

(d) Undergoes sexual reproduction which involves the fusion of ovum and pollen grain _____

32. A group of pupils collected 5 identical ripe fruits, A, B, C, D and E, as shown below. They placed each fruit at different temperatures because they wanted to find out the effect of temperature on the splitting of the fruit.

The results are recorded in the table below.

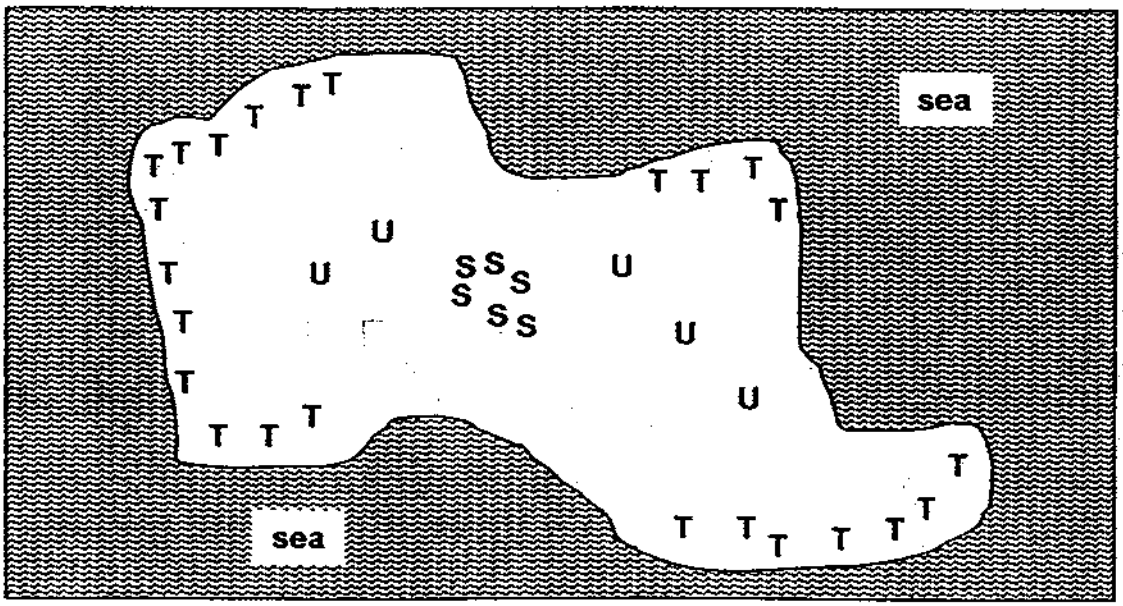
Fruit	A	B	C	D	E
Temperature	20°C	25°C	30°C	35°C	40°C
How far the seeds are scattered	0m	0.5m	1m	2m	4m
Duration taken by the fruit to split	Did not split at all	Split after 1 day	Split after 4h	Split after 2h	Split after 30 min

(a) From the table above, what can you conclude about the effect of temperature on the time taken for the fruit to split? [1]

(b) Which fruit, B, C, D and E, splits with the greatest force? Explain your answer. [1]

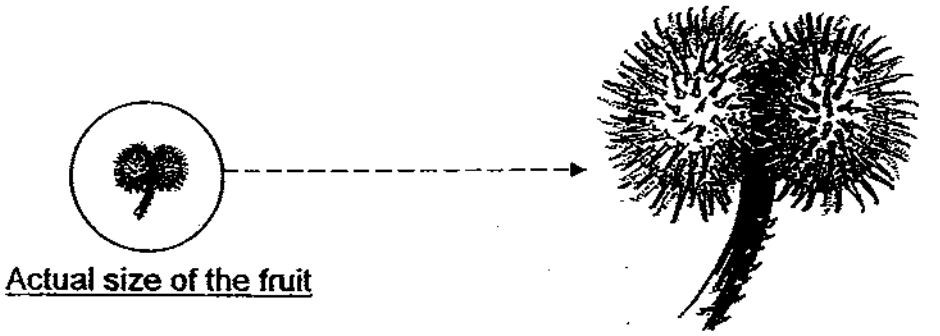
(c) Explain why it is important for plants to disperse their fruits or seeds. [2]

33. The diagram below shows a picture of a deserted island. Wild animals and plants of different kinds, S, T and U, are found on the island.



(a) From the diagram above, which type of plants, S, T or U, is most likely to be dispersed by splitting of its fruits? [1]

(b) Study the picture of the fruit below.

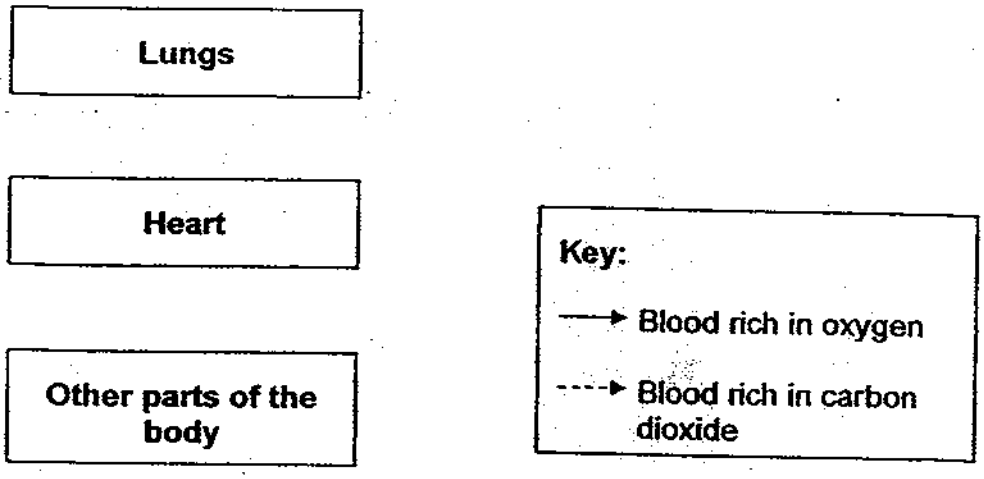


Actual size of the fruit

Magnified view of the fruit

Which type of plants, S, T or U, is it from? Explain how it is being dispersed on the island based on the characteristics of the fruit. [2]

34. A diagram of the circulatory system is shown below.

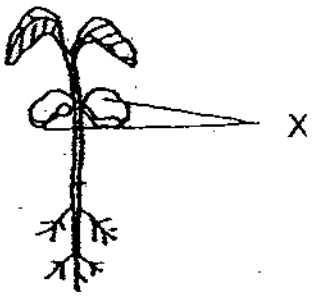


(a) In the diagram above, refer to the key and draw the appropriate lines with arrows to connect the heart, the lungs and the other parts of the body. Your arrows must indicate the flow of the blood in the circulatory system. [2]

(b) Explain why our heart beats faster when we are exercising. [2]

35. Suzie had some green bean seeds. She measured the mass of a seed at stage A. Then she sowed all the seeds in a pot with moist soil and placed the pot near a window.

After a certain interval, she took a seedling at stage B and measured its mass. She repeated the step for Stages C to E. The results were recorded as shown below.

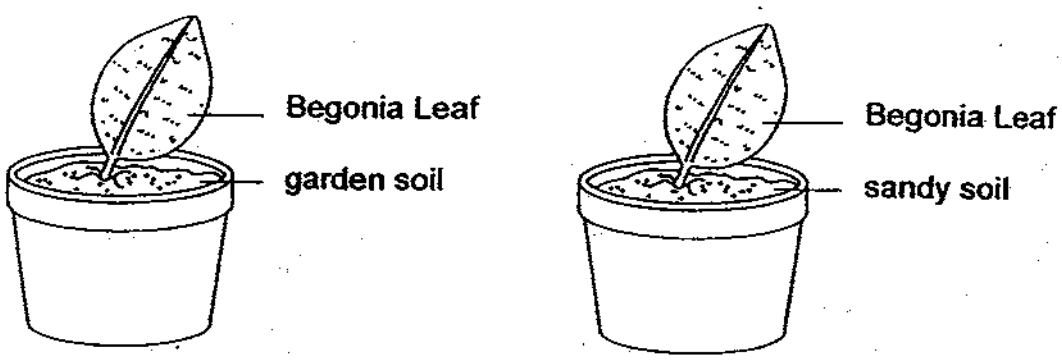
Stages	Mass of seedling
 A	2.0 g
 B	3.0 g
 C	4.5 g
 D	9.0 g
 X E	12.0 g

(a) Why was there an increase in the mass of seedling from Stage A to Stage B? [1]

(b) At Stage E, the parts X were removed. What would most likely happen to the mass of the seedling a few days later? Explain your answer. [1]

(c) Suzie's teacher asked her to repeat the experiment by measuring the mass of a few green bean seedlings at the same intervals before finding the average mass of the seedlings. Why do you think Suzie's teacher asks her to find the average mass of the seedlings? [1]

36. Sam placed the leaf of a begonia plant in two pots of soil as shown in the diagram below. The pots were of the same size with the same amount of soil. He left both pots in the sun and watered them daily.



(a) What was the aim of Sam's experiment? [1]

(b) Name one other variable that should be kept constant in his experiment. [1]

37. The diagram below shows the cross-sections of two flowers from different plants.

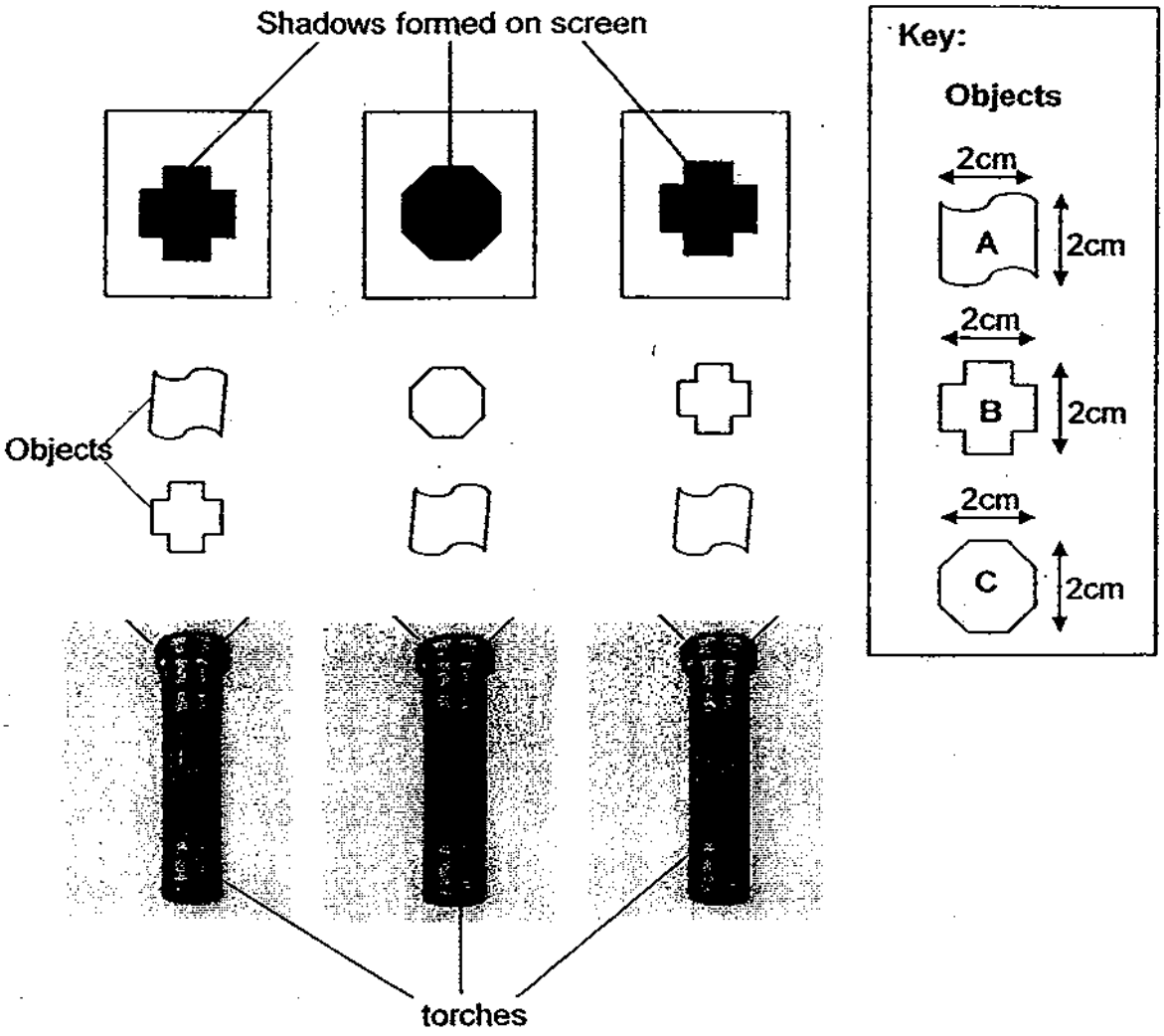
Flower A

Flower B

Based on your observation of Flower A and Flower B, state whether each statement is **'True'**, **'False'**, or **'Not Possible To Tell'**. Put a tick (✓) in the appropriate column. [2]

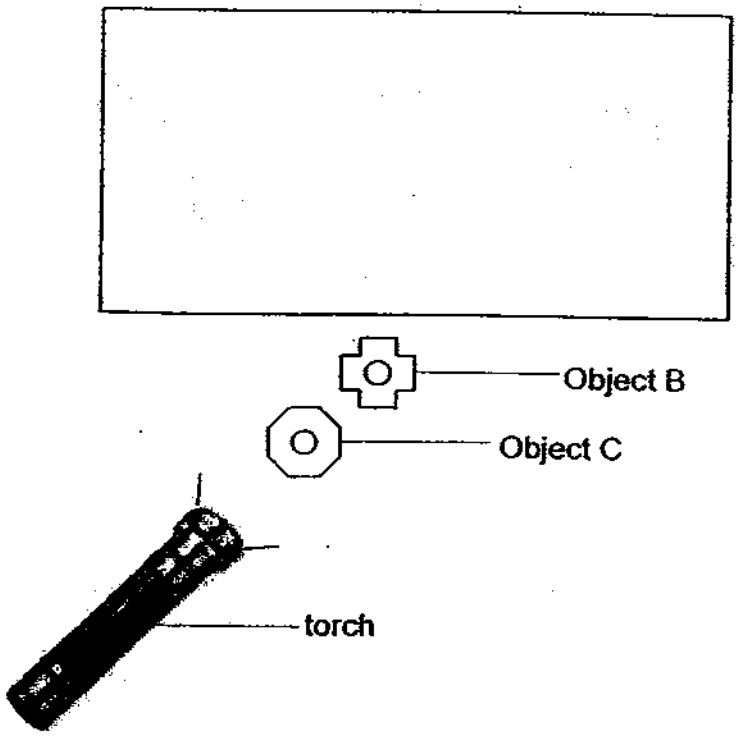
	Statement	True	False	Not Possible to Tell
(a)	Both flowers are pollinated by bees which are attracted to the large colourful petals.			
(b)	After fertilisation, Flower A will develop into a fruit with one seed and Flower B will develop into a fruit with two seeds.			
(c)	Both flowers have female parts but the male parts are absent in flower B.			
(d)	Flower A is pollinated by wind but Flower B is pollinated by insects.			

38. The diagram below shows the shapes of the shadows produced when two different objects were placed between a screen and a torch. The dimensions of the objects are shown in the box.



(a) What would you conclude about the degree of transparency of object A? [1]

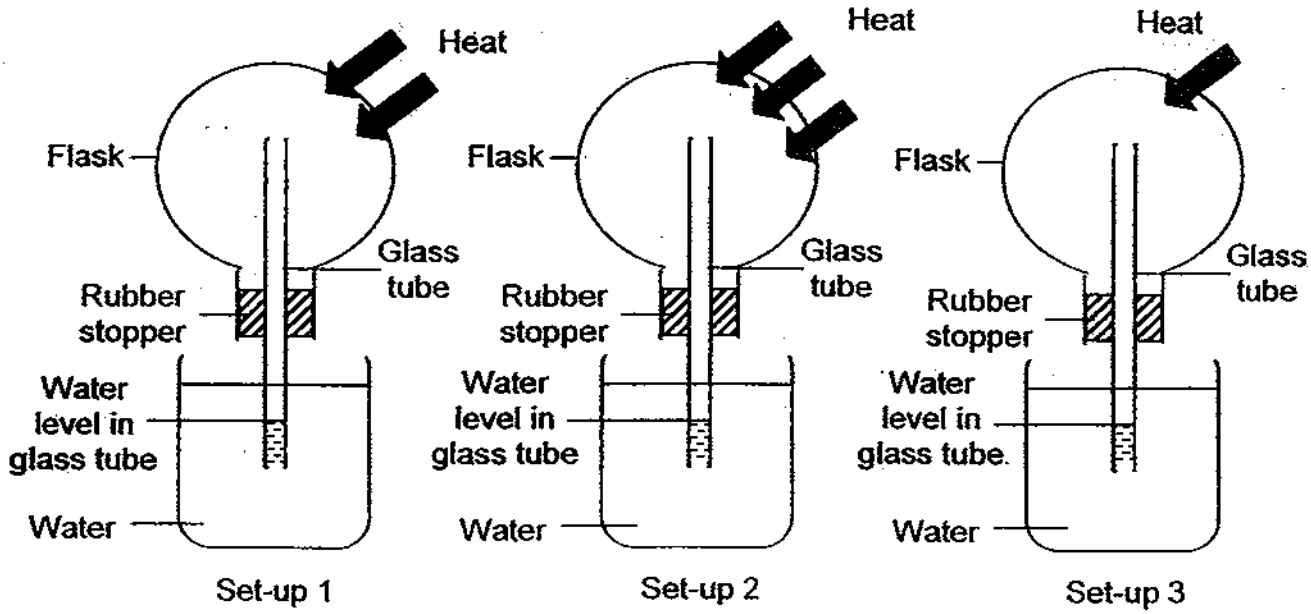
(b) A hole was then made in the centre of objects B and C. Next, object B was placed in front of the screen together with object C as shown below.
Draw the shadow produced on the screen when the torch was switched on.
[1]



(c) Suggest a way in which the above shadow could be cast bigger on the screen.
[1]

39. Esme inserted a glass tube into a flask and secured the glass tube with a rubber stopper. She then inverted the flask with the glass tube and place one end of the glass tube into a beaker of water. She then prepared another 2 similar set-ups using the same type of apparatus. She noticed that the water level in the 3 glass tubes were the same at the start of the experiment.

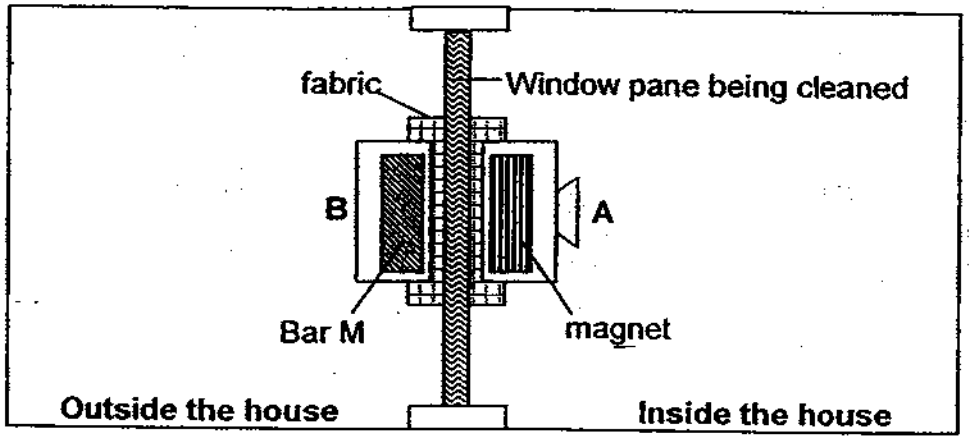
She then heated each of the flasks with different amount of heat for 1 minute. (*The amount of heat used is indicated by number of arrows.*) After which, she let the flasks cool down. At the end of the cooling process, she noticed that the water level in the glass tube was higher than the water level at the start of the experiment.



(a) Explain why the water level in the glass tubes would increase after the flasks have cooled down. [2]

(b) In which set-up would the water level in the glass tube be the highest after the flasks have cooled down to room temperature? Explain why. [2]

40. A salesman was selling a two-piece device, as shown in the diagram below, that had been designed for cleaning both sides of glass window panes at the same time. He explained that when part A was moved over the glass surface inside the house, part B would follow, moving over exactly the same area outside the house.



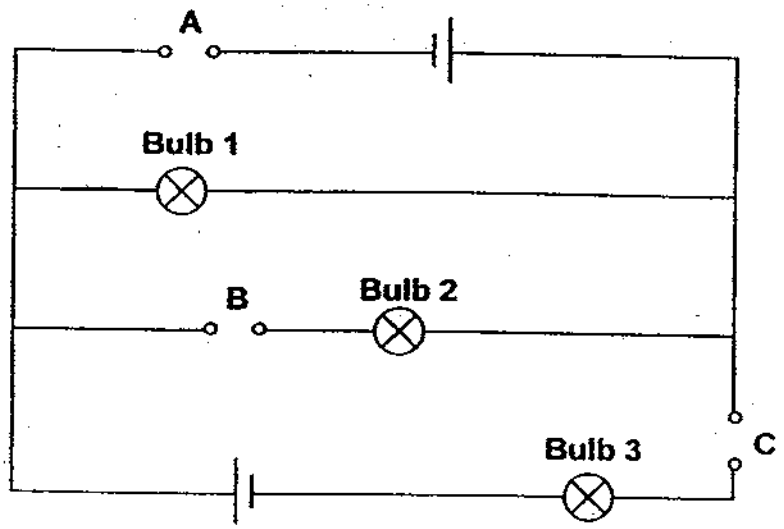
(a) What type of material could bar M be made of? [1]

(b) Explain why the above device would enable both sides of glass window panes to be cleaned at the same time. [1]

(c) If Mui Fong wanted to use this device to enable her to clean her wooden cupboard (of same thickness as window pane) quickly, would the device work? Explain your answer. [1]

41. Jihu set up the circuit below to test if objects, H, I, J, K and L, are conductors of electricity. He connected different objects to the circuit at testing positions A, B and C and recorded his findings in the table below.

Objects placed at			Does the bulb light up?		
A	B	C	Bulb 1	Bulb 2	Bulb 3
H	I	J	✓	✓	✓
I	K	H	✓	✓	
J	K	L	✓	✓	
L	H	I	✓		✓
I	J	K	✓	✓	✓

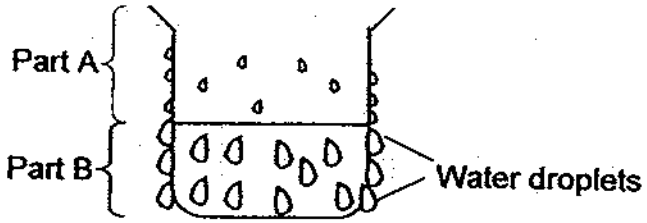


Jihu's teacher told him that the testing position A that he had chosen was unsuitable for determining if all 3 objects tested at the same time were conductors of electricity.

(a) Mark an "X" on the circuit diagram above to indicate where the testing position A should have been to determine if all 3 objects tested at the same time are electrical conductors. [1]

(b) Which of the object(s), H, I, J, K, L, is/are made of materials that are electrical insulators? [1]

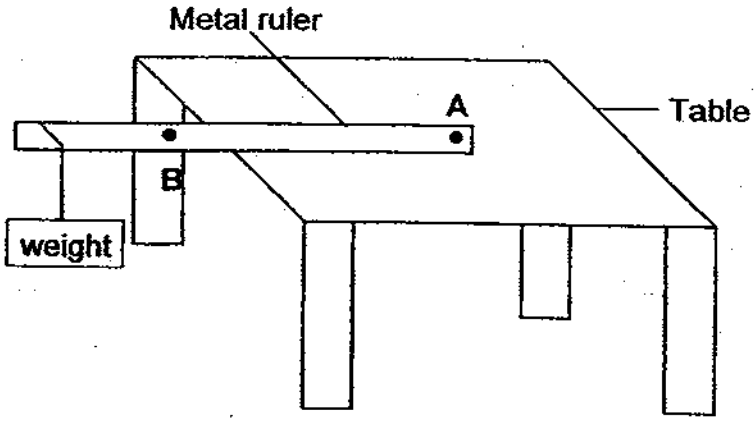
42. Fatimah poured some cold water into a container and left it on the table. After a while, she noticed that more water droplets were formed on part B of the container than on part A.



(a) Explain how and why more and bigger water droplets were formed on part B than on part A of the container. [1]

(b) After a while, Fatimah noticed that the water droplets formed at part B started getting lesser. Give a reason for her observation. [1]

43. Kok Meng used the set-up below to investigate the flexibility of 2 different types of metal ruler, P and Q. He secured one end of each metal ruler at point A on the table top and put a weight at the other end.

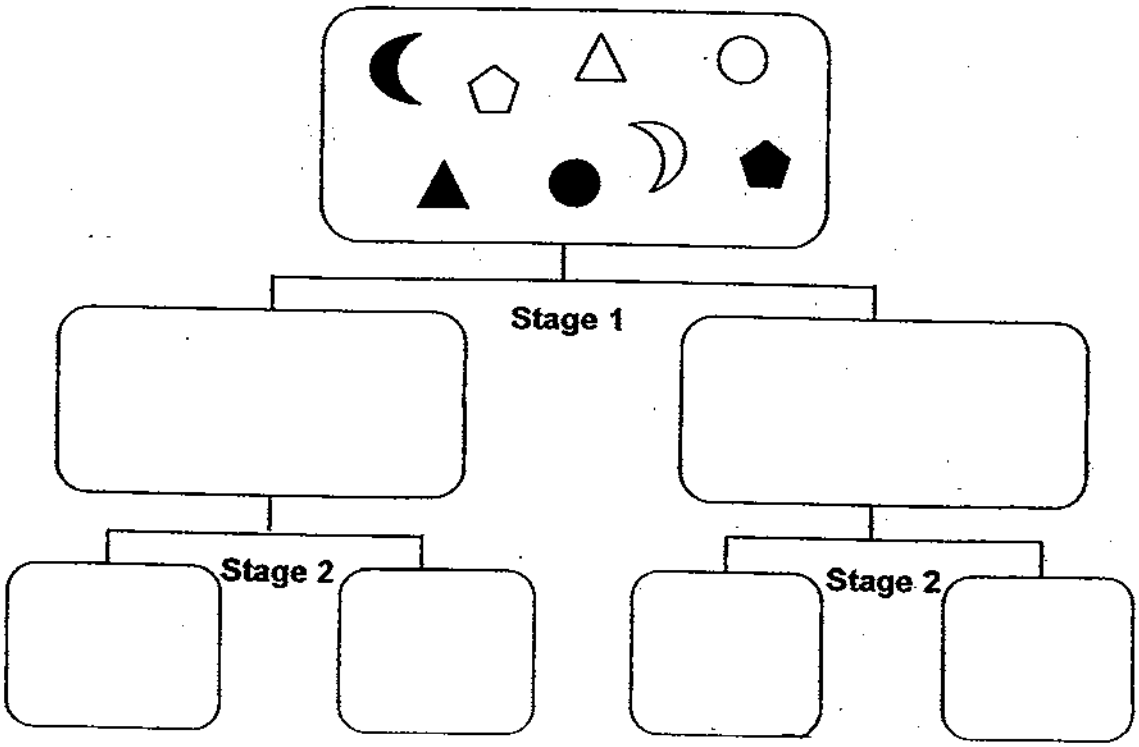


(a) At the end of his experiment, Kok Meng concluded that metal ruler P was more flexible than metal ruler Q. What observation enabled him to reach this conclusion? [1]

(b) How would Kok Meng's results be different if he moved the weight to point B? [1]

44. Martha was asked to classify 8 objects using a classification chart as shown below. First, she classified the 8 objects into two groups of 4. Then she further classified each group into 2 smaller groups of 2 objects each.

(a) Help Martha to complete the classification chart by **drawing** the objects in in the boxes provided. [2]



(b) State the properties that she has used for stages 1 and 2 classifications.

Stage 1: _____ [1]

Stage 2: _____ [1]

~ End of Paper ~

ANSWER SHEET

EXAM PAPER 2009

SCHOOL : CHIJ PRIMARY
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA2

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

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

31)a)C b)H c)B d)G

32)a)The higher the temperature is the shorter the time take for the fruit to split.

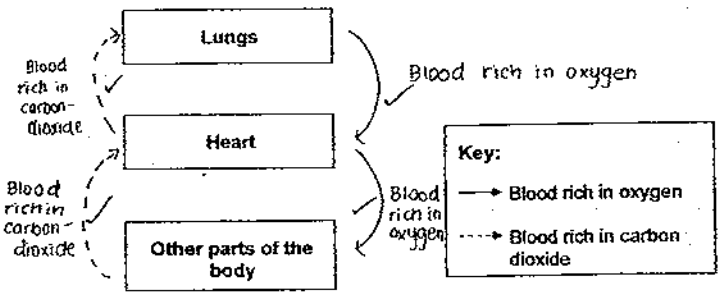
b)E. The distance travelled by the seeds is the furthest.

c)They will not suffer from overcrowding and do hot have to compete for water, sunlight and minerals so that they grow healthily.

33)a)S is the one.

b)It is from U. The fruit have stiff-hair, so when a animal walk pass, it will cling on it.

34)a)



b)Our heart beat faster during exercise so that more materials and dissolved oxygen can be transported by the blood to the various parts of the body to support processes. At the same time, unwanted materials, are transported to organs for removal.

35)a)The seed has absorb the water.
b)It would increase. It has leaves to make its own food.
c)To ensure that the result is fair and reliable.

36)a)The aim of the experiment is to find out whether the Begonia Leaf will grow into a plant better in garden soil or in sandy soil.
b)Same amount of water.

37)a)Not b)F c)T d)F

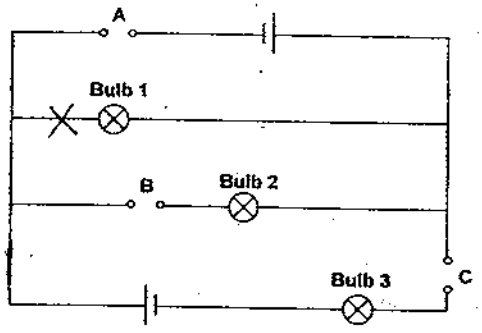
38)a)It is transparent.
b) 

c)Move torch nearer to the screen.

39)a)On cooling, the remaining air in the flask contract leaving more space in the flask for the water to enter thus, enable the water level to rise in the glass tube.
b)Set-up 2. The amount of heat used in the greatest causing the air inside the flask to expand the most. As a result, greatest amount of air escaped from flask in Set-up 2, leaving greatest amount of space for water to enter.

40)a)Magnetic material.
b)The bar magnet in Part A attracted bar M in part B, thus enabling both parts to move together to clean both sides of window panes.
c)Yes. Magnetism is able to pass through wood and non-magnetic material.

41)a)



b)Materials H and L.

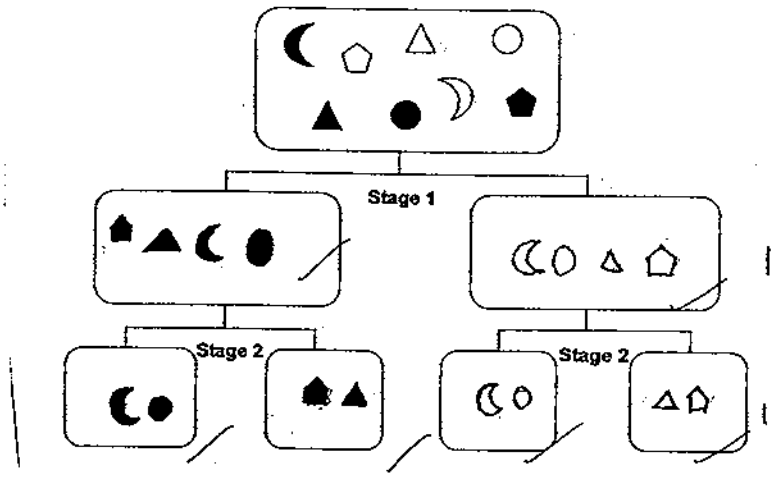
42)a)Part B is cooler than the water vapour in the surrounding air compared to part A, thus enabling the warm water vapour to condense on the cooler surface to form bigger water droplets.

b)Part B gains heat slowly from the surrounding air so condensation starts slowing down resulting in lesser water droplets being formed.

43)a)Ruler P bent more on the side where the weight was place than ruler Q.

b)The ruler will bend lesser.

44)a)



b)1: Shaded and not shaded.

2: Curry and non-curry.