Name : _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5
Semestral Assessment 2 – 2012
SCIENCE

BOOKLET A

24th October 2012

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.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This paper consists of 20 printed pages.

5048

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.

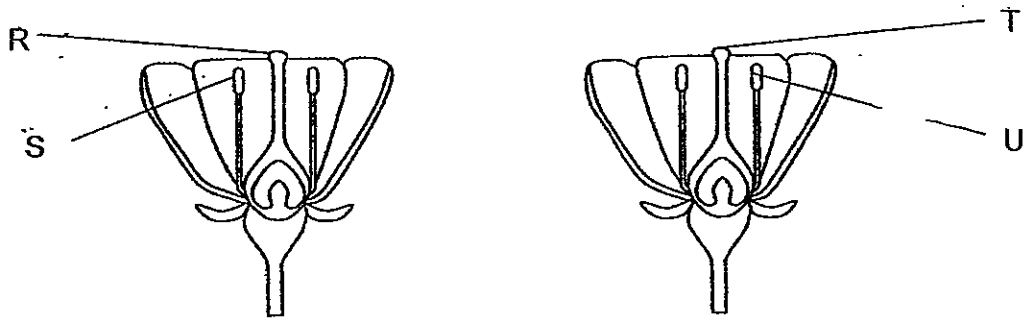
1. The table below shows the conditions that were present in 4 different set-ups.

Set-up W	Set-up X	Set-up Y	Set-up Z
3 beans	3 beans	3 boiled beans	3 beans
Wet cotton wool	Wet cotton wool	Wet cotton wool	Dry cotton wool
Placed in a dark room	Placed in a room	Placed near a window	Placed near a window

The beans were placed on the cotton wool, and left at the various locations specified above. Based on the table above, which set-up(s) will allow the seeds to germinate?

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

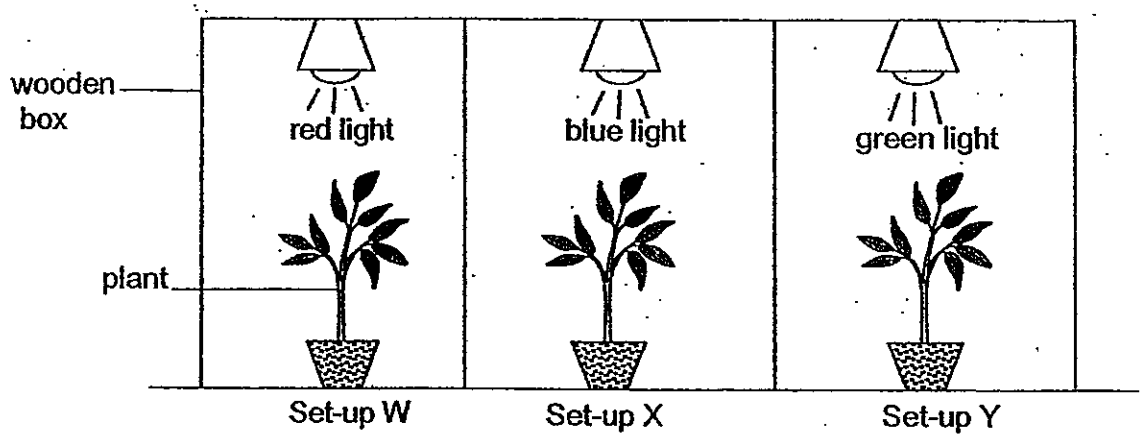
2. The diagram below shows two flowers from the same plant.



Pollination occurs when the pollen grains are transferred from _____.

(1) R to T
(2) R to U
(3) S to U
(4) S to T

3. Danny places three similar plants, W, X and Y, in three boxes as shown below. The colour of the lights in each box is different.



If all other conditions were kept constant, which one of the following is a possible aim of Danny's experiment?

(1) To find out if the presence of light affects the growth of the plant.
(2) To find out if the colour of the light affects the growth of the plant.
(3) To find out if the presence of water affects the growth of the plant.
(4) To find out if the presence of fertiliser affects the growth of the plant.

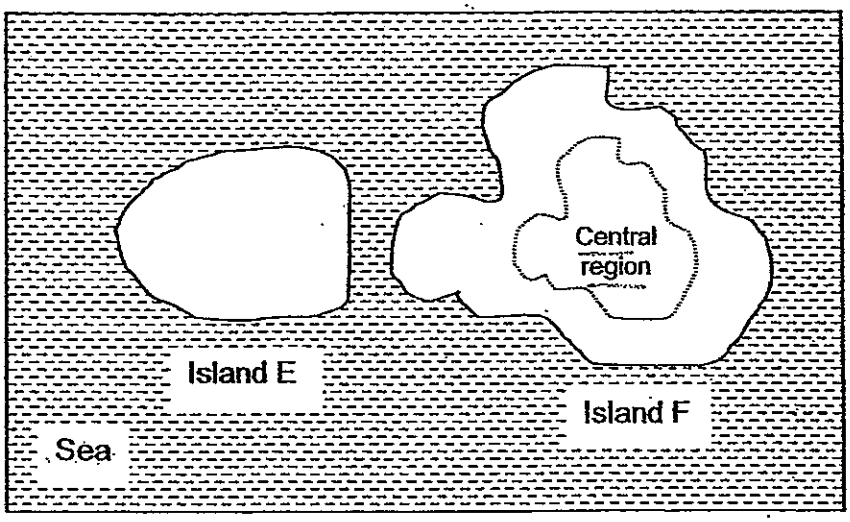
4. The diagram below shows the cross-section of a flower.

Which of the following can you infer about the flower above?

A The petals are brightly- coloured.
B The wind carries the pollen grains.
C The feathery stigma catches the pollen grains.
D The fruit has many seeds and are dispersed by wind.

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

5. The diagram below shows two islands, E and F. Island F was newly formed as a result of a volcanic eruption underwater.



The table below shows some characteristics of the plants found on island E.

Plant	Features
R	Fruit is fleshy and juicy with small seeds and has brightly-coloured outer covering.
S	Fruit has fibrous husk that helps it float on water.
T	Fruit has parachute-like structure.
U	Fruit is pod-like and splits open when it is ripe

In the later part of the year, a few plants which were believed to have originated from island E were found growing in the central region of island F. Which of the plants could these be?

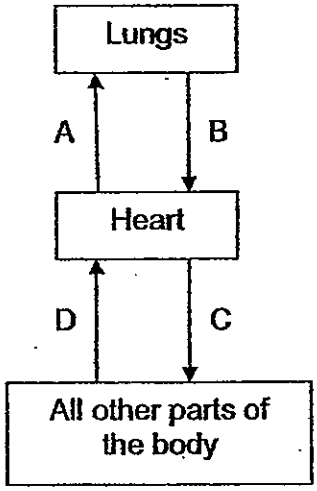
(1) S only
(2) S and T only
(3) R and T only
(4) R, S, T and U

6. Which of the following characteristics of a child are only acquired through heredity?

A Habits
B Dimples
C Blood Type
D Type of ear lobes
E Shortsightedness

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

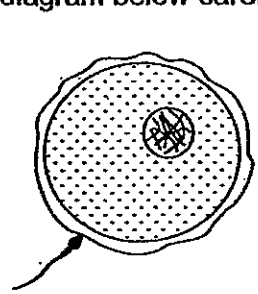
7. The arrows, A, B, C and D, represent blood vessels carrying blood to and from the lungs, heart and other parts of our body.



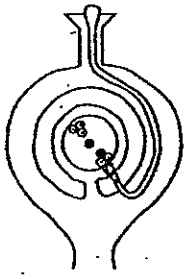
Based on the above diagram, which one of the following statements is true about the blood flowing in A, B, C and D?

(1) Blood flowing in A has more oxygen than the blood flowing in D.
(2) Blood flowing in B has less oxygen than the blood flowing in C.
(3) Blood flowing in A has less carbon dioxide than the blood flowing in B.
(4) Blood flowing in D has more carbon dioxide than the blood flowing in C.

8. Study the diagram below carefully.



Human Reproduction



Plant Reproduction

Which of the following statements about the above diagram are true?

A Both processes take place after pollination.
B The female reproductive cell is produced by the ovaries.
C Both processes take place in the female reproductive organ.
D A young that resembles the parents would be produced as a result of this process.

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

9. An experiment was set up using 4 groups of identical wind-pollinated flowers in a field. The table below shows the different parts of the flowers that have been removed. A tick (√) indicates the presence of the parts while a cross (X) indicates the parts that have been removed.

Group of flowers	Anthers	Stigma	Petals
A	x	√	x
B	√	x	x
C	x	√	√
D	√	x	√

Which groups of flowers are able to develop into fruits?

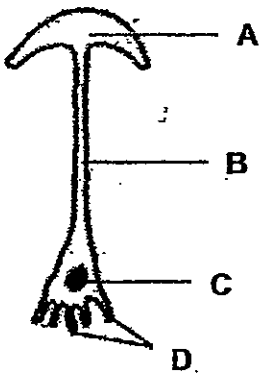
(1) A and C only

(2) B and D only

(3) C and D only

(4) A, B, C and D

10. The diagram below shows a single-celled organism M.

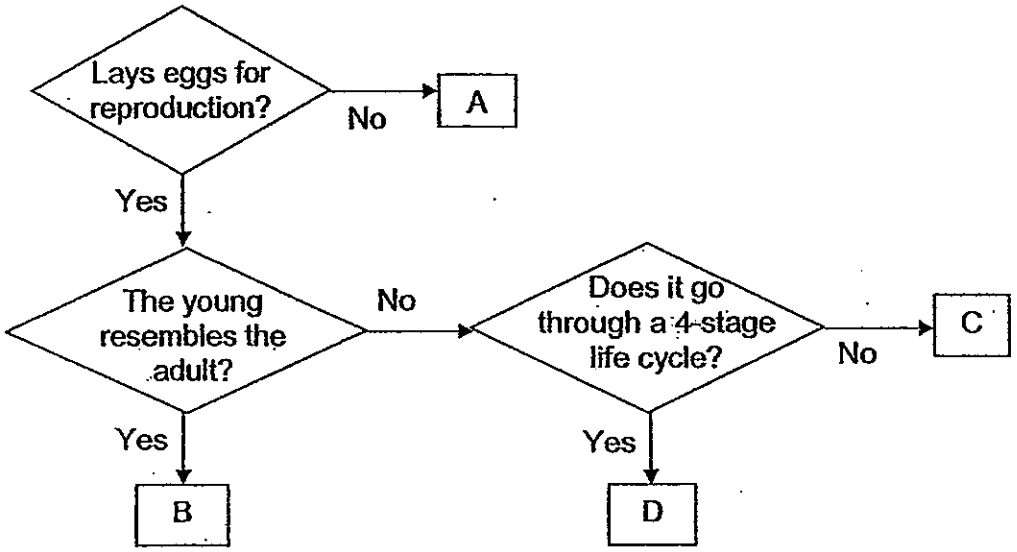


Which one of the above labelled parts must be removed from Organism M so that it is unable to reproduce?

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

5

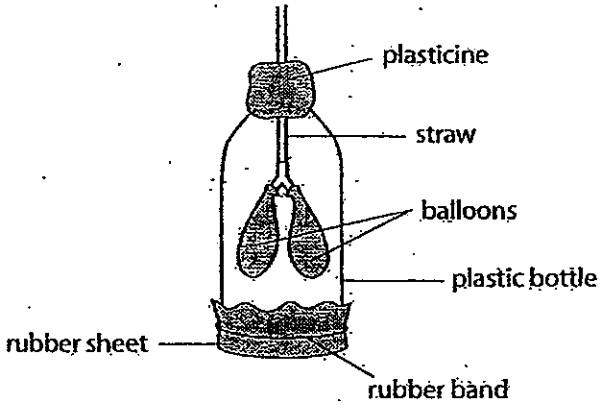
11. Study the flowchart below carefully.



Which one of the following best represents A, B, C and D respectively?

	A	B	C	D
(1)	Guppy	Frog	Butterfly	Frog
(2)	Whale	Chicken	Mosquito	Toad
(3)	Platypus	Bat	Toad	Mosquito
(4)	Seal	Platypus	Frog	Butterfly

12. Celine built a model of the human respiratory system as shown in the figure below.

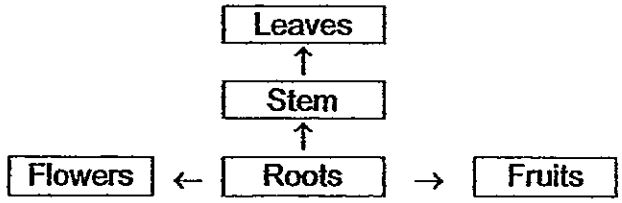


Which of the above parts represent the organs of the human respiratory system?

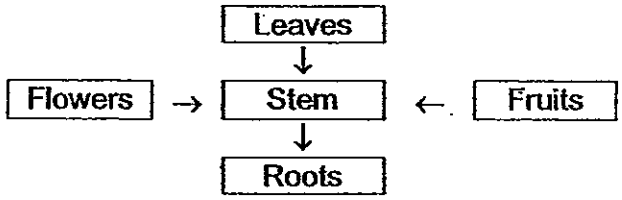
	Windpipe	Lungs	Rib cage	Diaphragm
(1)	straw	balloons	rubber sheet	rubber band
(2)	straw	balloons	plastic bottle	rubber sheet
(3)	plasticine	straw	balloons	rubber band
(4)	plasticine	rubber sheet	plastic bottle	rubber band

13. Study the flowcharts below carefully. Which one of the following correctly shows the direction of the flow of water in plants?

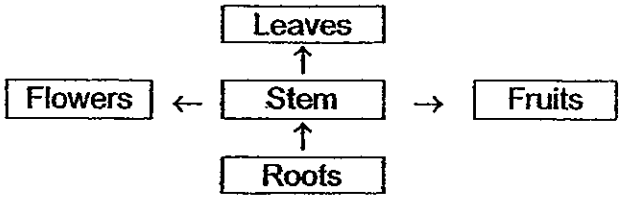
(1)



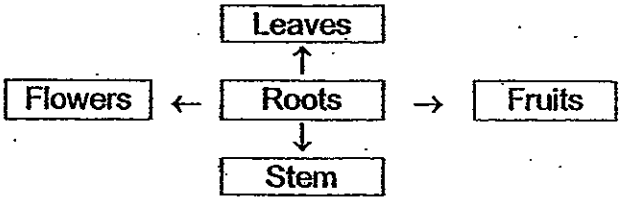
(2)



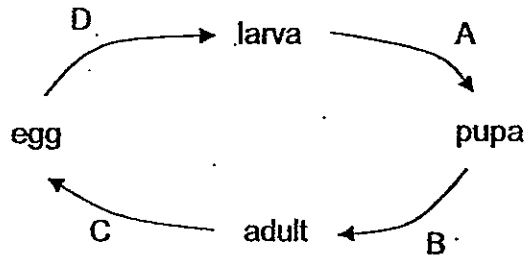
(3)



(4)



14. The diagram below shows the life cycle of an insect.



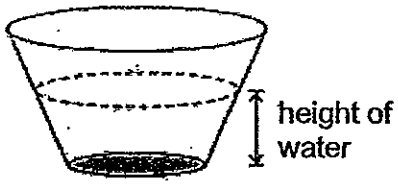
At which point, A, B, C or D, of the life cycle would fertilization occur?

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

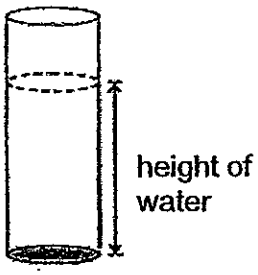
15. Shilah poured 250cm^3 of water into each of the four containers which were made of the same material as shown below. The containers were then left in the sun.

Which one of the containers would have the least amount of water left after a few hours?

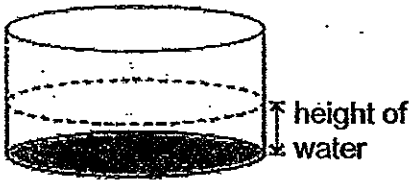
(1)



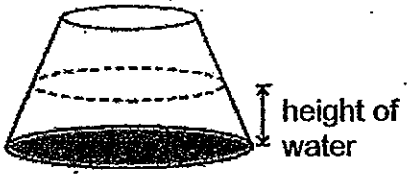
(2)



(3)

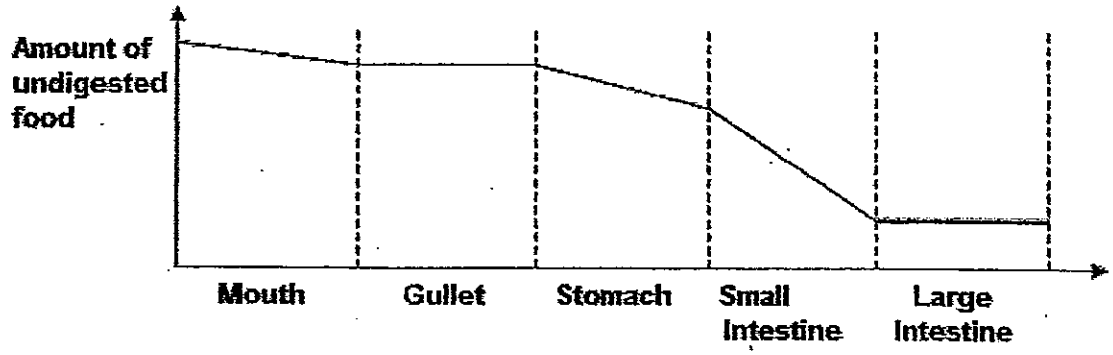


(4)

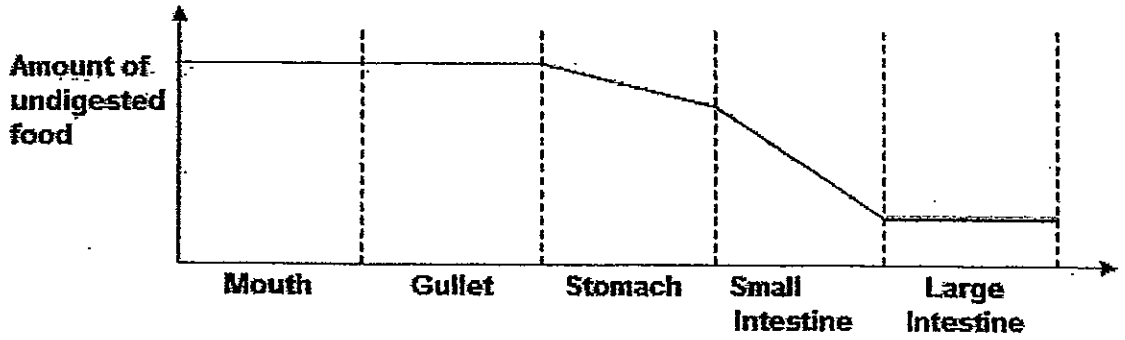


16. Which one of the graphs below correctly shows the amount of undigested food as it passes through the digestive system?

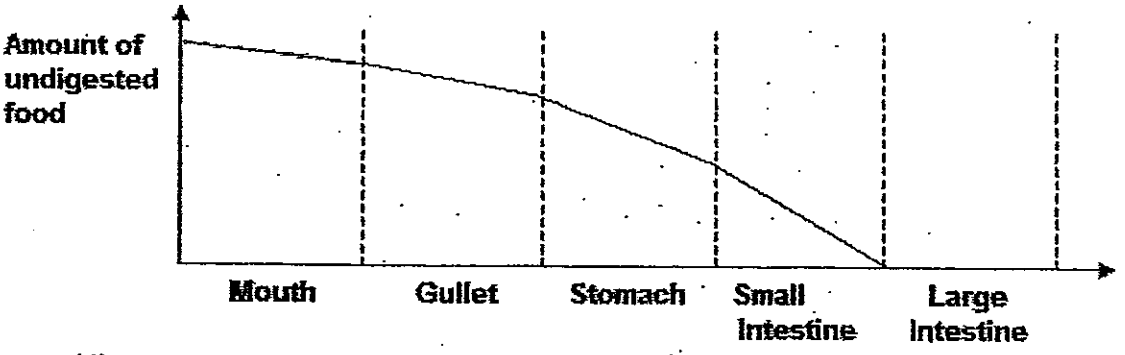
(1)



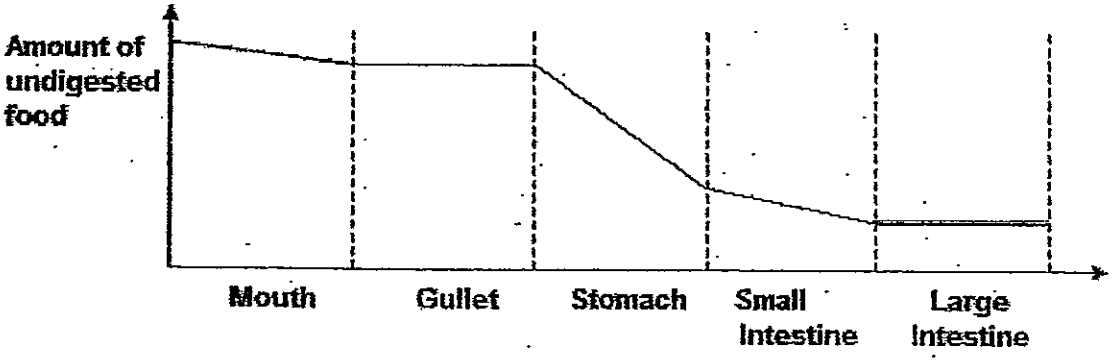
(2)



(3)



(4)



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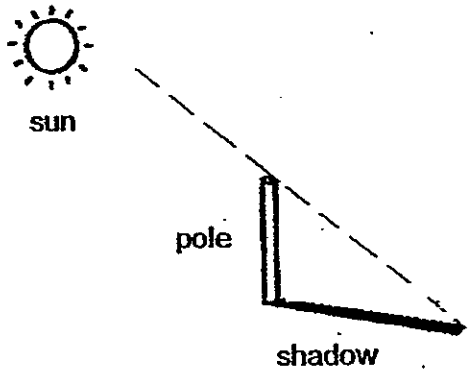
17. Joseph measured the length of the shadow of a pole at various times of the day.



Which one of the following tables shows data that are likely to be those recorded by Joseph?

1)

Time	Length of shadow
8.00am	1.25m
10.00am	1.90m
12.30pm	0.50m
4.00pm	2.55m

2)

Time	Length of shadow
8.00am	2.55m
10.00am	1.25m
12.30pm	0.50m
4.00pm	1.90m

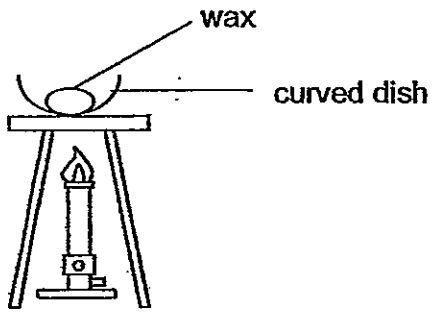
3)

Time	Length of shadow
8.00am	1.90m
10.00am	2.55m
12.30pm	1.25m
4.00pm	0.50m

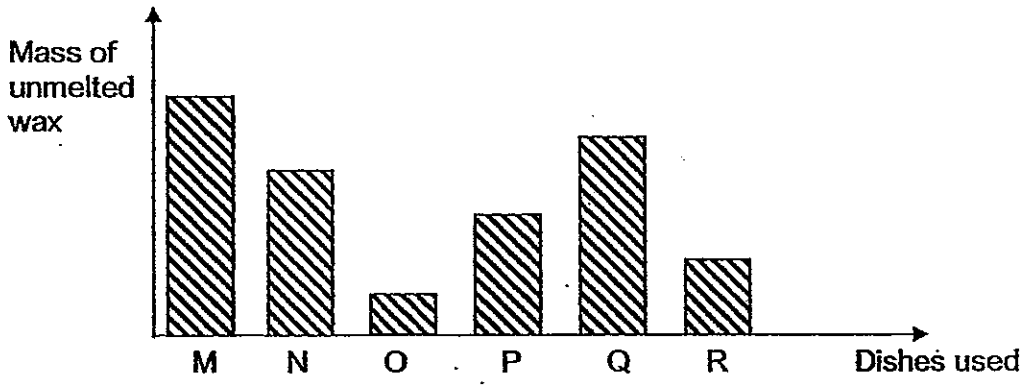
4)

Time	Length of shadow
8.00am	2.55m
10.00am	1.90m
12.30pm	1.25m
4.00pm	0.50m

18. Six pieces of wax of the same mass are heated in curved dishes made of different materials M, N, O, P, Q and R as shown below.



After 5 minutes, any unmelted wax is removed and weighed. The graph below shows the mass of the unmelted wax for the different dishes used.

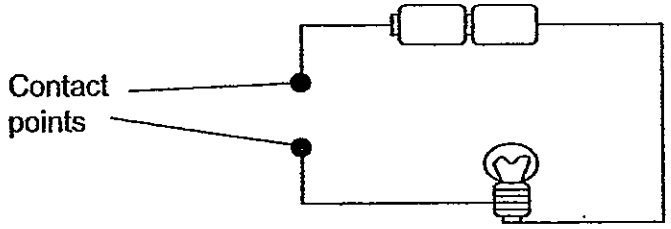


Based on the above results, which of the following statements about the materials of the dishes used are true?

A Materials O and R are metals.
B Material M is the poorest conductor of heat.
C Material R is a poorer conductor of heat than material N.
D Material P is a better conductor of heat than material Q.

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

19. Lois created a circuit tester as shown below.

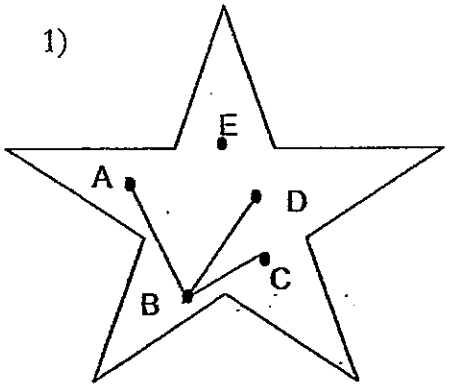


She then tested a circuit card by connecting the contact points of the circuit tester to different points on the card. The results are recorded in the table below.

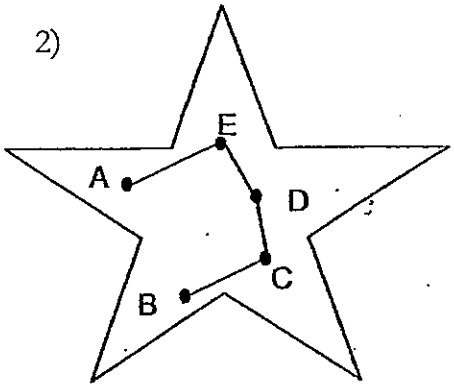
Wires connected to	Does the bulb light up?
A and E	Yes
A and B	Yes
B and C	Yes
A and D	No
B and D	No
C and D	No
D and E	No

Based on the above results, which one of the following circuit cards was tested?

1)



2)



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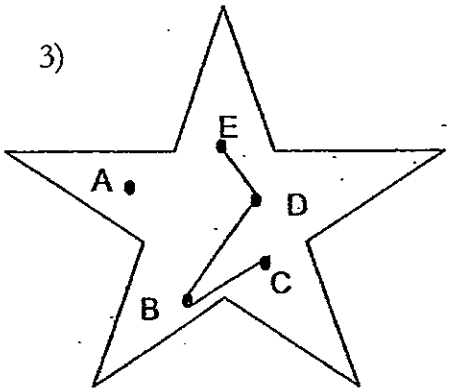
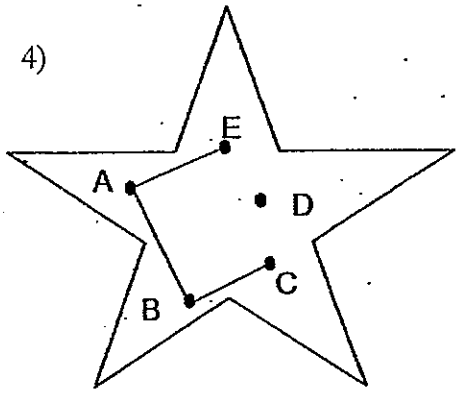
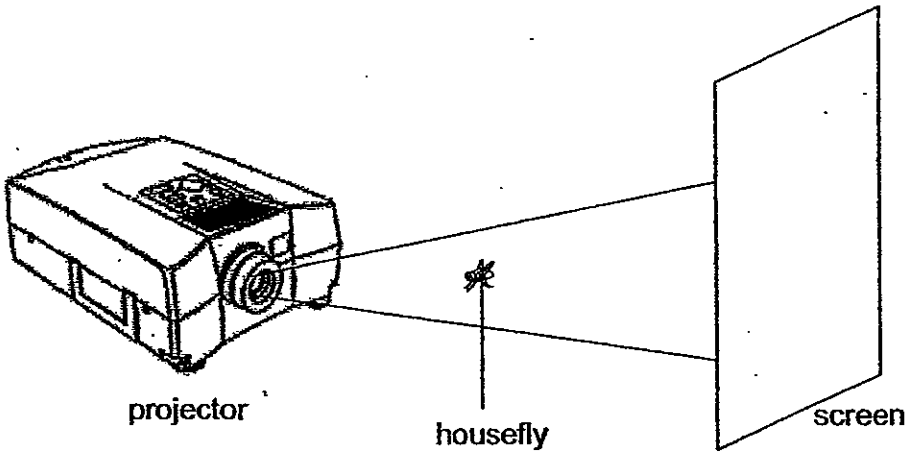


4)



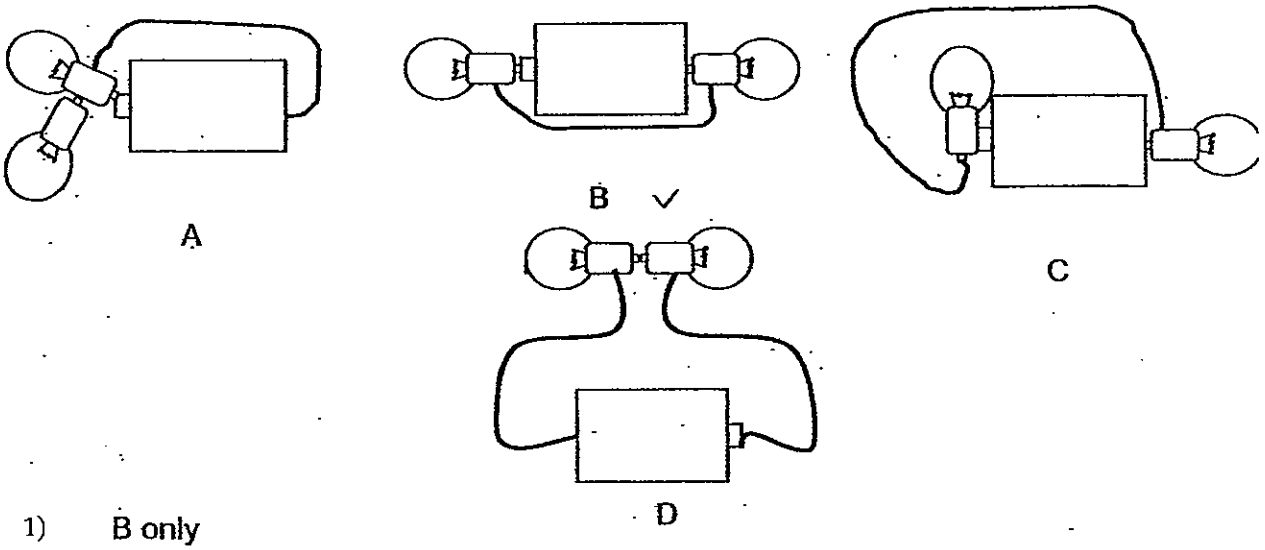
20. While watching a cartoon, Leonard got irritated when the shadow of a flying housefly appeared on his screen. The shadow appeared to be smaller at times and larger at other times.



Which one of the following statements correctly explains the changes in the shadow of the housefly that Leonard had observed?

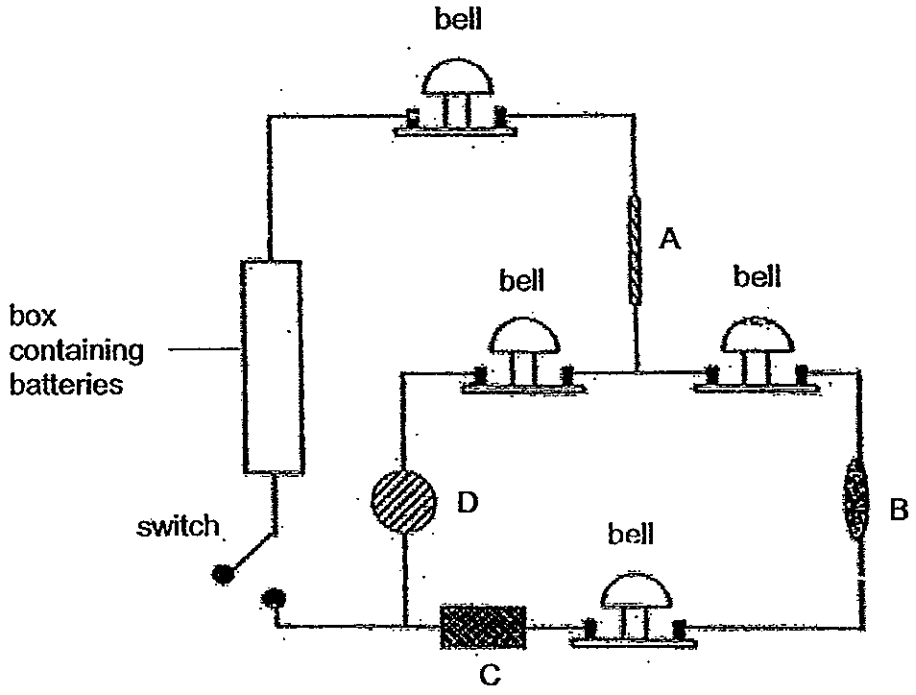
1) The shadow appeared small when the fly was nearer the projector.
2) The shadow appeared large when the fly was nearer to the screen.
3) The shadow appeared large when the fly was nearer to the projector.
4) The shadow appeared small when the fly was further from the screen.

21. Which of the following arrangement(s) will enable **both** bulbs to light up?



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

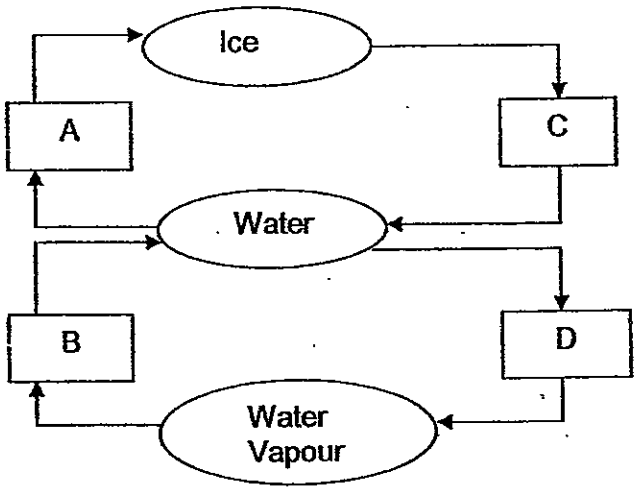
22. Ali set up a circuit as shown below. He was told that one of the objects, A, B, C or D, in the circuit was an electrical insulator.



When he closed the switch, he observed that only three bells in the circuit rang. Which one of the following represents the electrical conductivity of the four objects?

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

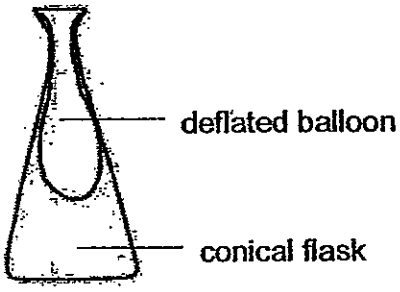
23. Water changes from one state to another as shown below.



Which of the above processes A, B, C or D involve the loss of heat to the environment?

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

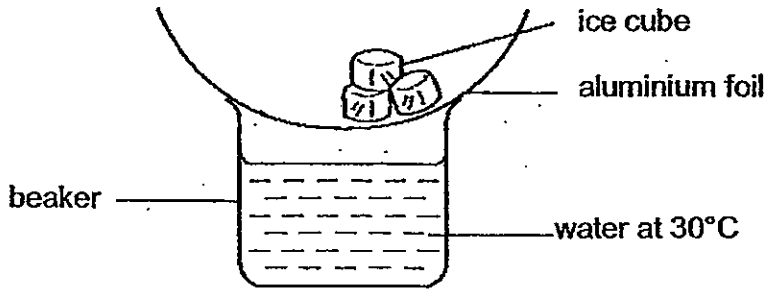
24. Elena placed a deflated balloon into a conical flask with the opening of the balloon stretched over the mouth of the flask as shown below.



Which one of the following is likely to happen when she tries to pump some air into the balloon?

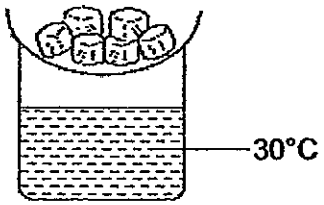
(1) The flask will expand.
(2) The flask will break because of the expanding balloon.
(3) The balloon will be occupying most of the space of the conical flask.
(4) The balloon will not be easily inflated as there is air in the conical flask.

25. Swee Keng set up a model of the water cycle as shown in the diagram below to demonstrate the formation of rain.

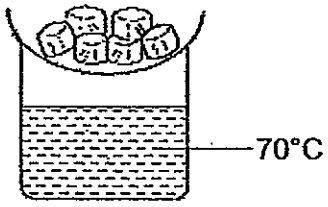


If Swee Keng wants a model that can create the most amount of "rain" in the shortest time, which one of the following set-ups should he use instead?

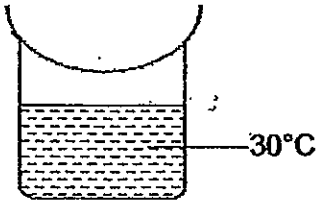
(1)



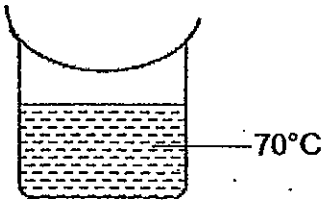
(2)



(3)



(4)

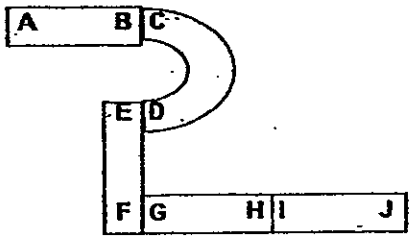


26. Which of the following are ways of conserving water?

A Using water hose to water plants
B Collecting rainwater to wash corridors
C Washing dishes under a running tap
D Brushing teeth and rinsing mouth with a mug

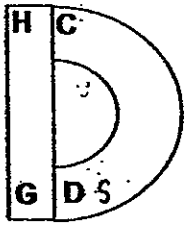
(1) A and B only
(2) B and D only
(3) C and D only
(4) A, B and D only

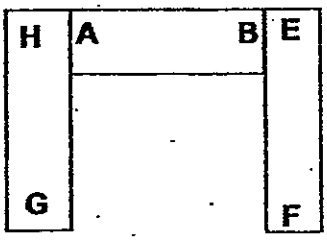
27. Five magnets with their ends labelled are arranged as shown below.

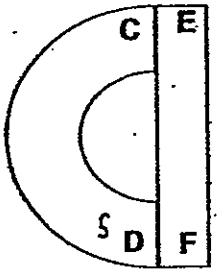


Which one of the following arrangements of the above magnets is **not possible**?

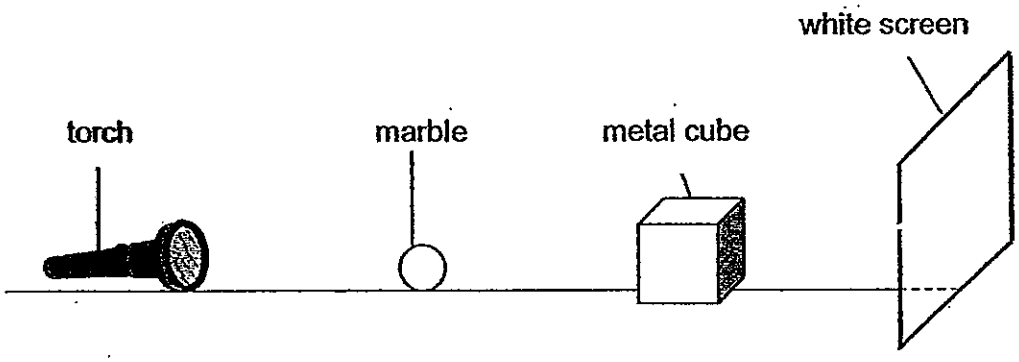
1)


2)


3)


4)


28. A marble, a metal cube and a torch are placed in a straight line on a table as shown in the set-up below.



When the torchlight is switched on, a dark shadow is formed on the white screen. Which one of the following shows correctly what is seen on the white screen?

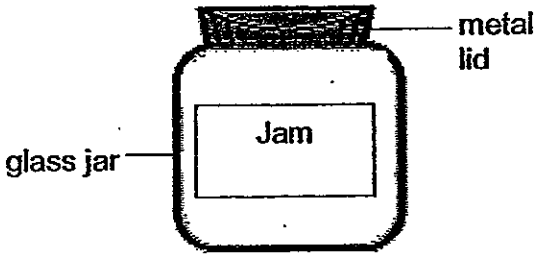
(1) 

(2) 

(3) 

(4) 

29. Ali tried to open the metal lid of a jar of jam which he had just removed from the refrigerator. He found it hard to open the lid.



Which one of the following explains why this is so?

(1) The metal lid expanded more than the glass jar.
(2) The metal lid contracted more than the glass jar.
(3) The glass jar expanded more than the metal lid.
(4) The glass jar contracted more than the metal lid.

30 Paul placed some ice on a metal tray. After a while, he observed that the ice had melted and the metal tray felt cold to his touch. He made some conclusions. Which one of his conclusions is **incorrect**?

(1) The ice gained heat from the metal tray and melted.
(2) The ice gained heat from the surrounding air and melted.
(3) The metal tray felt cold because heat was conducted away from Paul's hands.
(4) The metal tray felt cold because the coldness from the ice was conducted to the metal tray.

End of section A

Name : _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

穆 纯 义 学

Primary 5

Semestral Assessment 2 – 2012

SCIENCE

BOOKLET B

24th October 2012

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 paper consists of 15 printed pages.

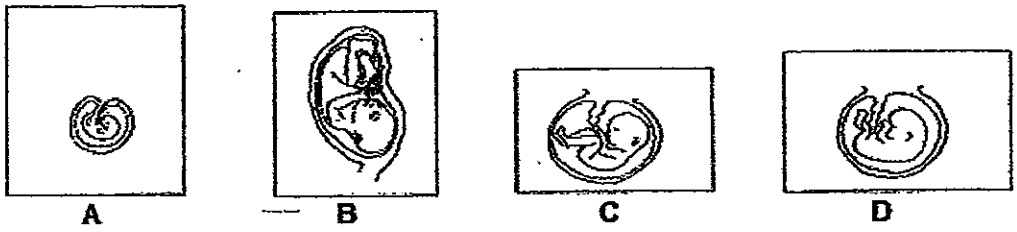
_____
Parent's Signature/Date

Section B: 40 marks

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

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

31. The diagram below shows the stages in the development of a foetus.



(a) Based on the diagram above, arrange the stages of the development of the foetus in the correct order. [1]

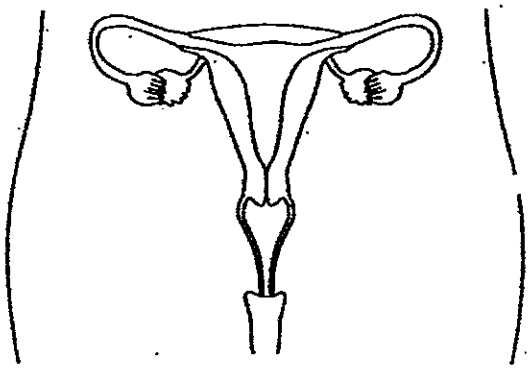
_____

(b) During fertilization, what must happen to the male and female reproductive cells to ensure that genetic materials are passed on to the off-spring? [1]

_____

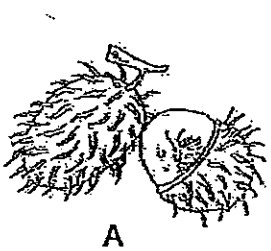
_____

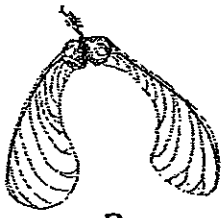
(c) In the diagram below, indicate with an "X" the part of the female reproductive system where the foetus develops. [1]

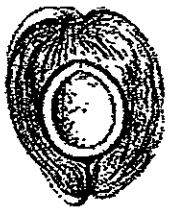


21

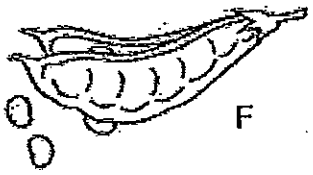
32. The diagram below shows a few fruits with different methods of dispersal.


A


B


C

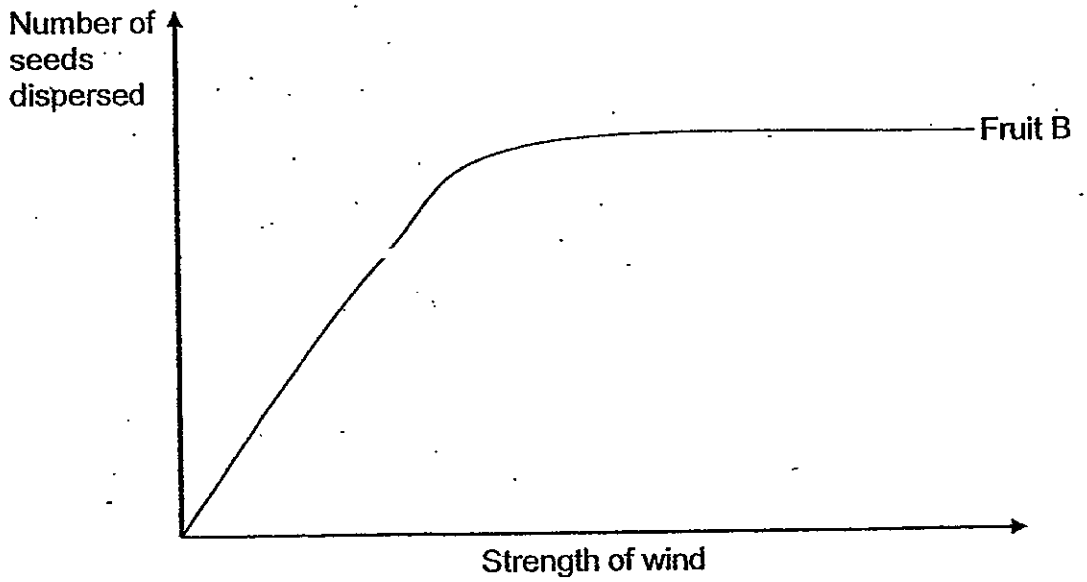

E


F

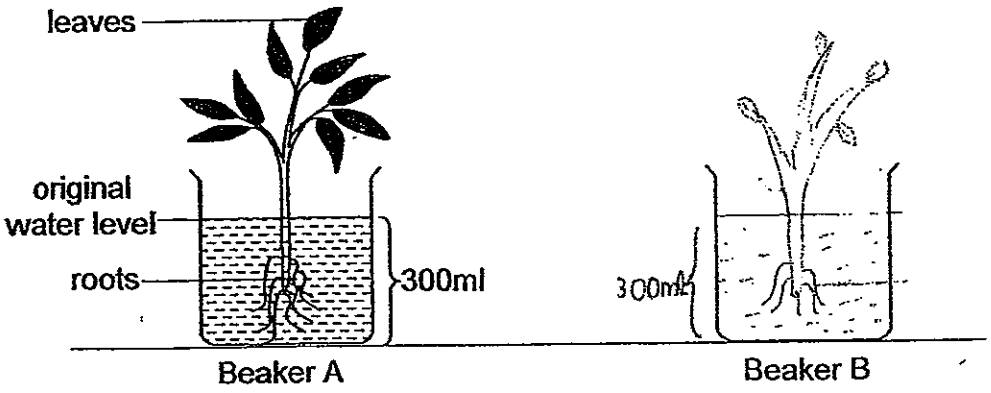
(a) Based on the diagram above, classify the fruits by writing the letters A, B, C, D, E and F in the classification table below correctly. [2]

Methods of dispersal			
Wind	**Water**	**Animals**	**Splitting**

(b) The graph below shows the relationship between the number of seeds dispersed by fruit B and the strength of the wind. In the same graph, draw and label clearly a line graph for **Fruit A** to show this relationship. [1]



33. Patricia wanted to find out if the number of leaves affects the amount of water a plant absorbs. She set up an experiment with two beakers A and B. In beaker A, a plant and water were added.



(a) Complete the drawing for the set-up for beaker B above so that the test is a fair one. Label clearly. [2]

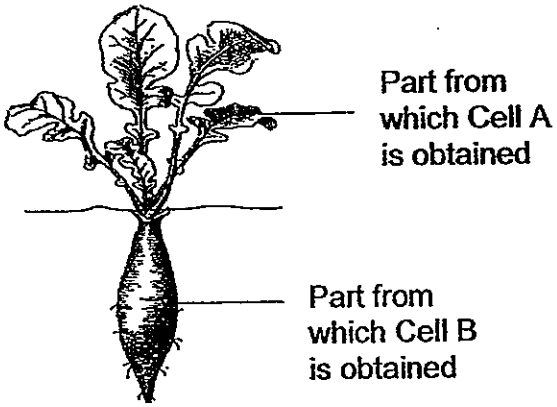
(b) State one property of the beakers not shown above that Patricia needs to keep constant in order for this experiment to be a fair one. [1]

_____

(c) A third beaker, C, was also set up as a control for the experiment. In the space below, draw and label clearly the control set-up. [1]

23

34. Pooja obtained cells, A and B, from two parts of a radish plant for observation under the microscope. The diagram below shows the parts of the radish plant from which she obtained cells A and B from.



Pooja then prepared both cells on two separate slides and observed each cell under a microscope.

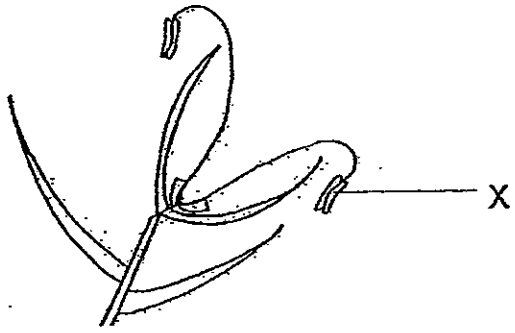
(a) In the boxes provided below, draw to show how Cells A and B would look like under the microscope. Label the parts clearly. [2]

Cell A

Cell B

(b) State one function of Cell A that Cell B would not be able to carry out. Explain why. [1]

35. The diagram below shows flower P.



Flower P

(a) Which organ of the human reproductive system has similar function as part X of flower P? [1]

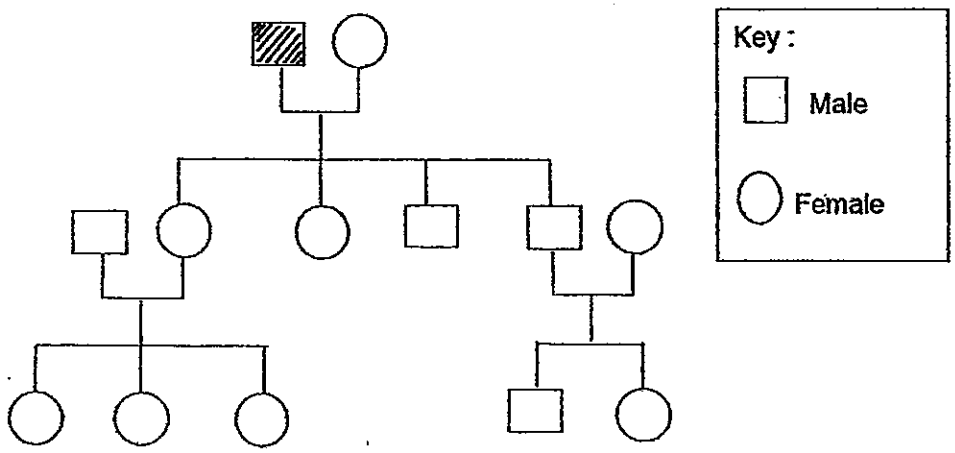
_____

(b) Based on the above diagram, will flower P be able to develop into a fruit? Explain your answer. [1]

_____

25

36. The diagram below shows Harry's family tree.

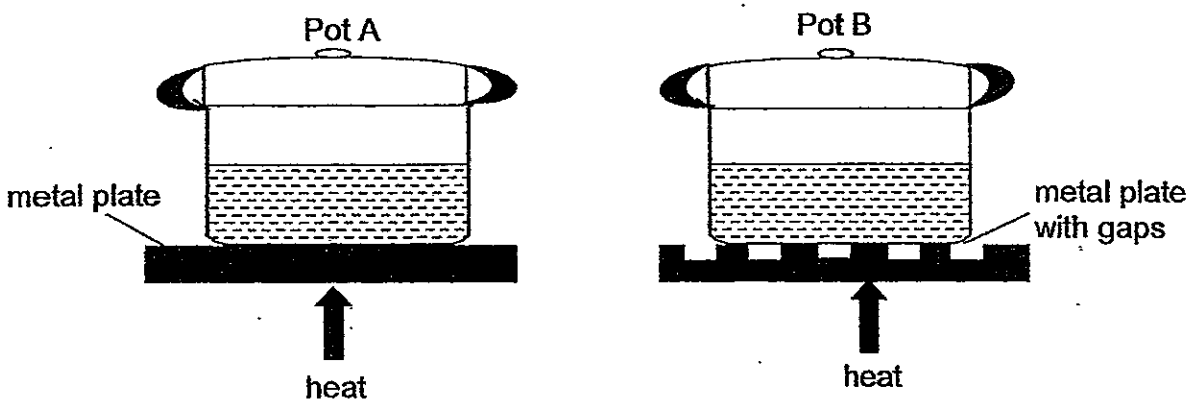


(a) Harry is part of the second generation in the family. He has a son and 3 nieces. Mark with the letter 'X' to show where Harry is in the family tree. [1]

(b) Harry's daughter got married and gave birth to a pair of twin boys. Complete the family tree above to show the new addition to the family. [1]

(c) In the family tree above, identify the grandfather of Harry's children by shading the correct symbol. [1]

37. Juliana placed two identical pots on two metal plates of the same material with different surfaces. The pots contained the same amount of soup at room temperature. The metal plates were heated from below.



(a) In which pot, A or B, would the soup boil first? Explain your answer. [1]

_____

_____

On a hot day at the beach, we tend to tiptoe quickly across the hot sand rather than walk flat on our feet as shown in the diagram below.

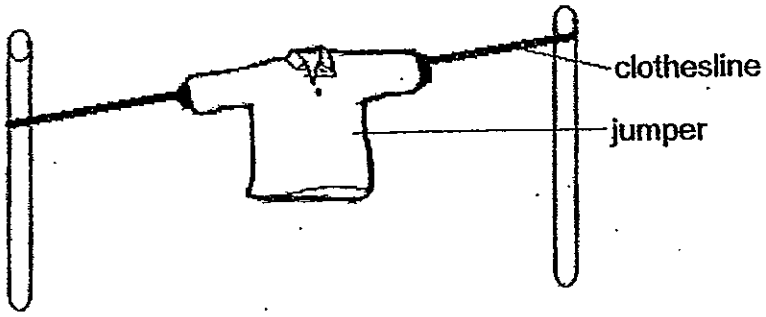
(b) How does tiptoeing help us to move over the hot sand? [1]

_____

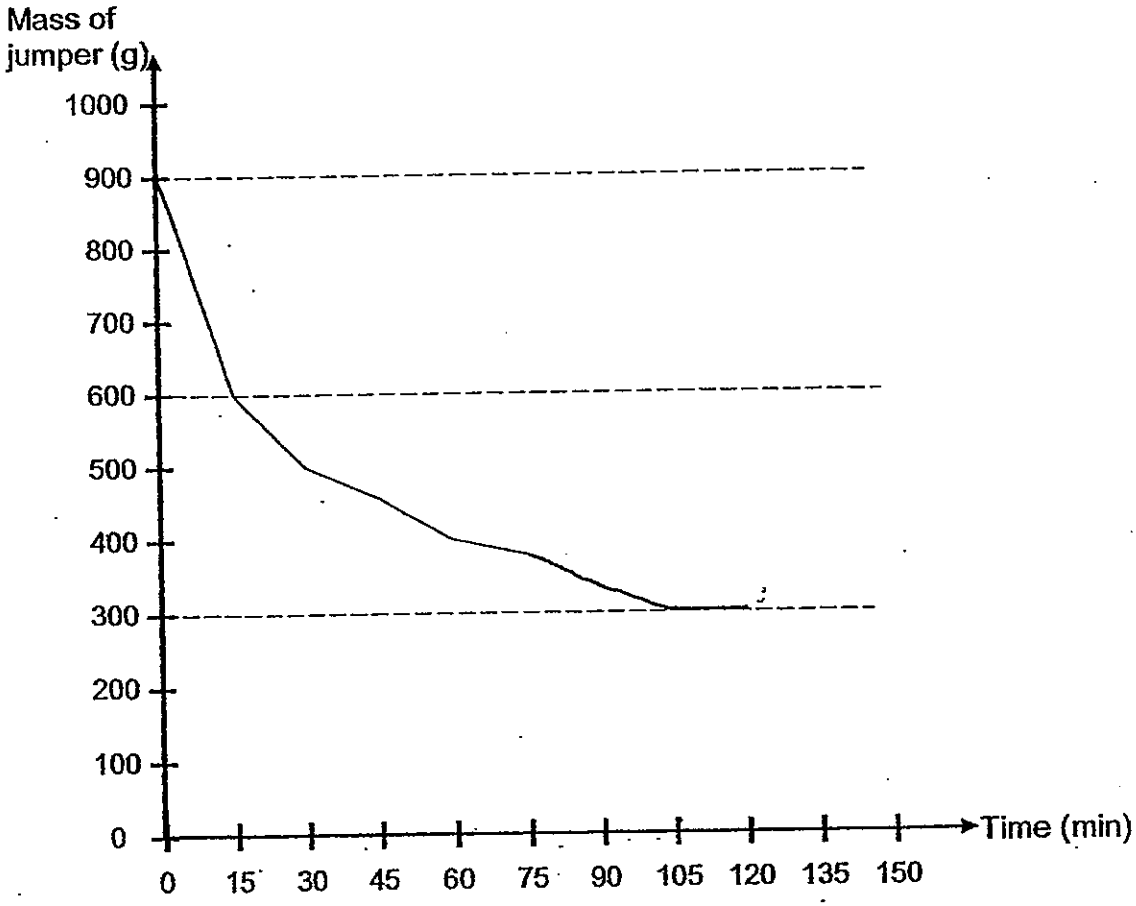
_____

07

38. A jumper weighing 300g was soaked in water and then weighed again. The jumper was then hung on a clothesline as shown in the diagram below.



At 15 minutes intervals, the jumper was weighed and the results are shown in the graph below.

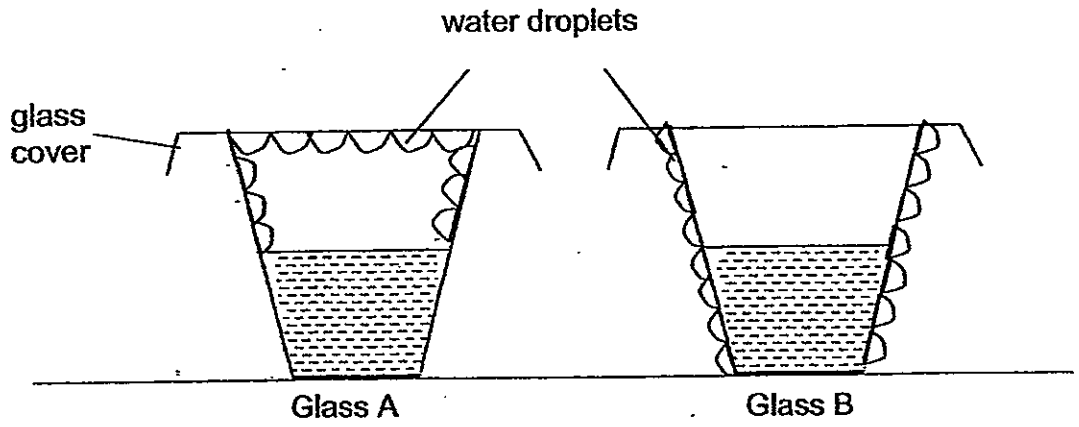


(a) If the jumper takes 105 minutes to dry, complete the graph above to show its mass up to the 120th minute. [2]

(b) What pattern can be observed between the time taken and the mass of the wet jumper? [1]

_____

39. Two glasses, filled with water of different temperatures, were left in a room. The diagram below shows the water droplets observed after 5 minutes.



(a) Based on the diagram above, indicate whether the temperature of the water in the glasses is **'higher'** than **'lower'** than or **'same as'** the room temperature by putting a tick (√) in the respective boxes provided below. [1]

Glass	Temperature of water in the glass as compared to room temperature		
	Higher	Same as	Lower
A			
B			

(b) Explain how water droplets are formed in glass B. [2]

_____

_____

_____

40. Edward used a magnet to attract iron filings. He recorded the mass of the iron filings attracted. The magnet was then dropped 5 times from a height of 1.5m before being used to attract iron filings again. He recorded the mass of the iron filings attracted and the process was repeated a few times. The results are shown in the table shown below.

Number of times a magnet is dropped from a height of 1.5m	Mass of iron filings attracted to the magnet (g)
0	40
5	32
10	27
15	22
20	16
30	5

(a) Based on the table above, what is the relationship between the number of times the magnet is dropped and the mass of the iron filings attracted? [1]

_____

(b) What is the variable changed in the experiment? [1]

_____

Edward used a magnet to stroke a copper rod in the same direction as shown in diagram 1. He then placed the copper rod next to some paper clips as shown in diagram 2.

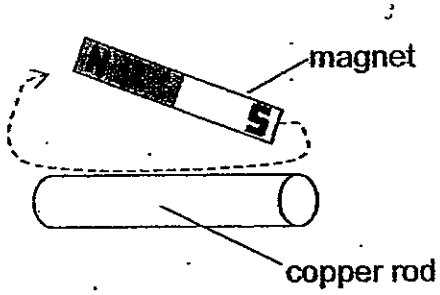


Diagram 1

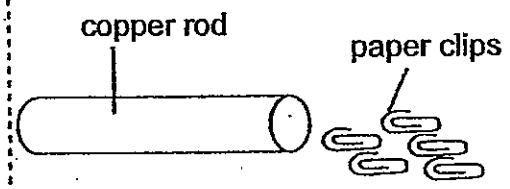
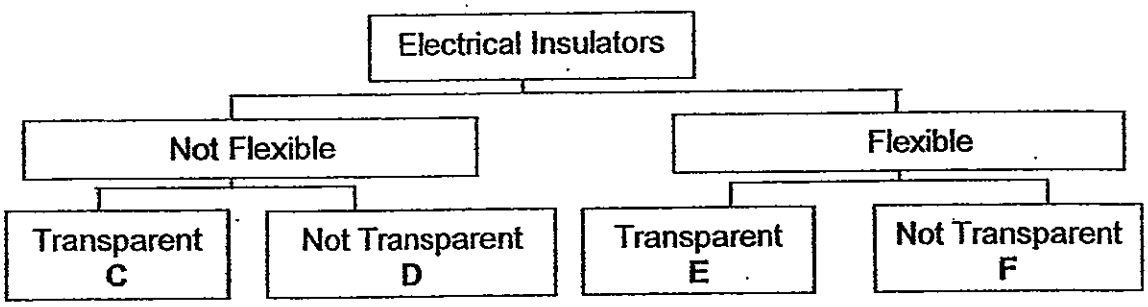


Diagram 2

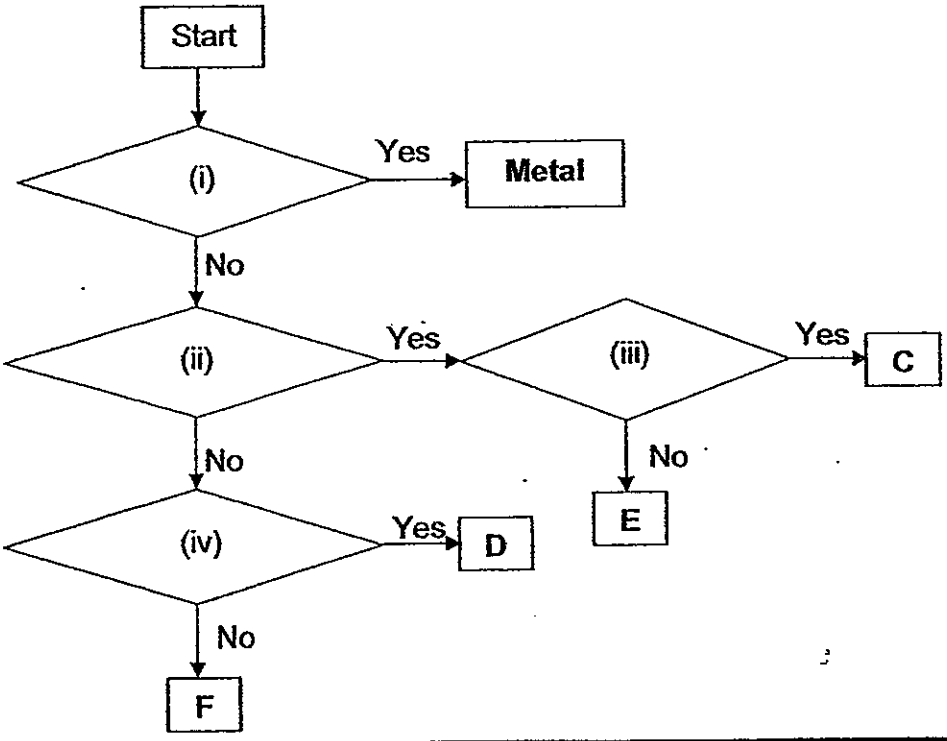
(c) Will the paper clips be attracted to the copper rod? Explain your answer. [1]

_____

41. Four materials, C, D, E and F, are classified in the classification chart below.



(a) The materials have been regrouped using the following flowchart. Based on the classification chart above, write down suitable questions for (i) to (iv) below. [2]



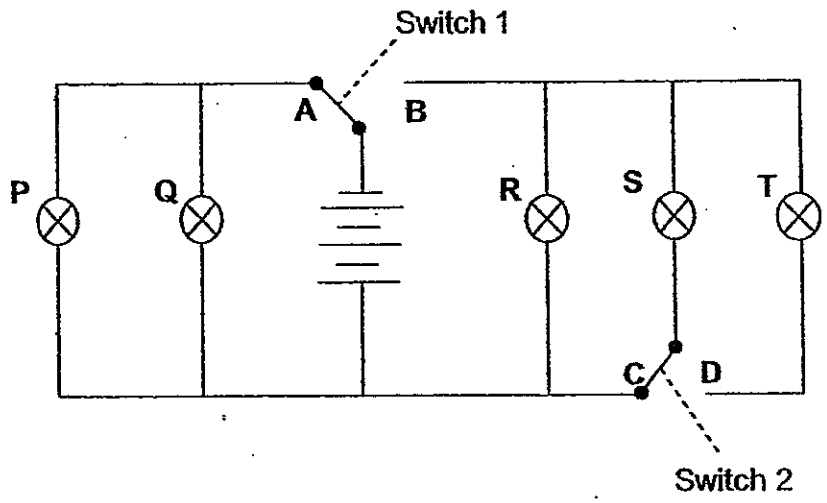
(i)	
(ii)	
(iii)	
(iv)	

(b) In which group, C, D, E and F, would you put rubber and wood?[1]

Rubber : _____

Wood : _____

42. In the circuit below, Switch 1 can be flipped from position A to B and Switch 2 can be flipped from position C to D.



(a) If Switch 1 is at A and Switch 2 is at D, which bulb(s) will light up?[1]

_____

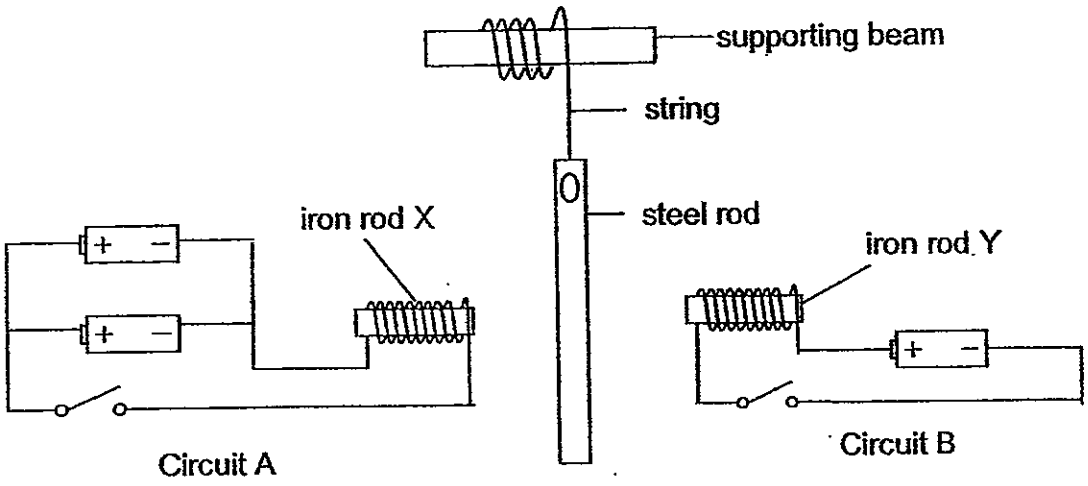
(b) If Switch 1 is at B and Switch 2 remains at D, which bulb(s) will light up? [1]

_____

(c) Which bulb will not light up no matter where the switches are positioned? [1]

_____

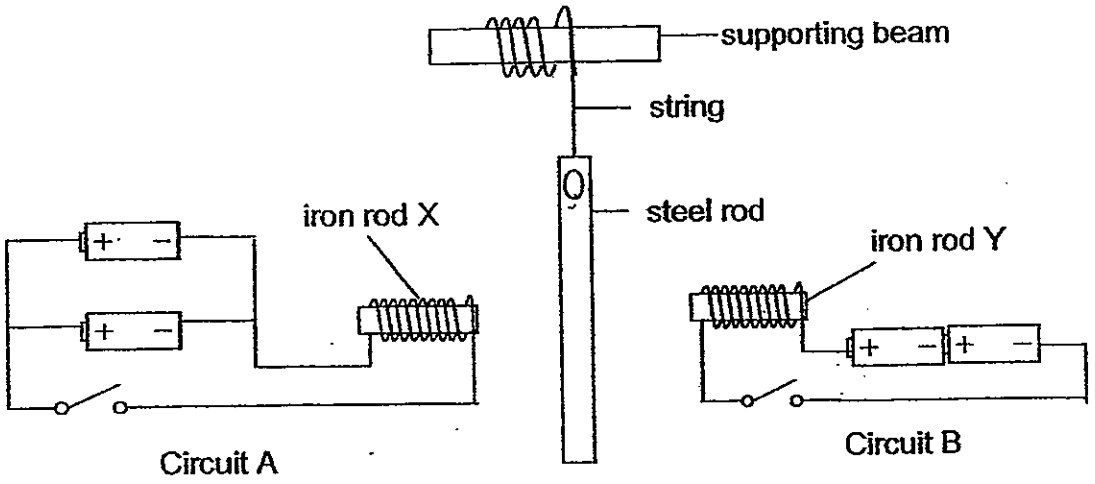
43. Janna set up the circuit shown below. When only the switch in circuit A was closed, she noticed that the steel rod was attracted to iron rod X. When only the switch in circuit B was closed, she noticed that the steel rod was attracted to iron rod Y. However, when both switches are closed, the steel rod remained at its position.



(a) Why did the steel rod remain at its position when both switches were closed? [1]

_____

Janna then added one battery to circuit B as shown in the diagram below.



(b) What will she observe when both the switches are closed. [1]

_____

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

_____

33

44. Shahirah filled a test tube with some water. She placed the test tube in a beaker of water. The test tube floated as shown below in Diagram 1.

When she filled the test tube with more water and placed it in the beaker of water, the test tube sank as shown in Diagram 2.

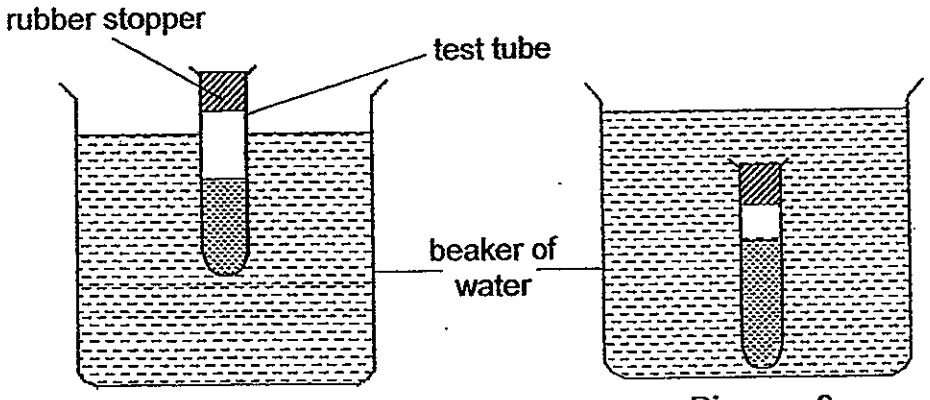
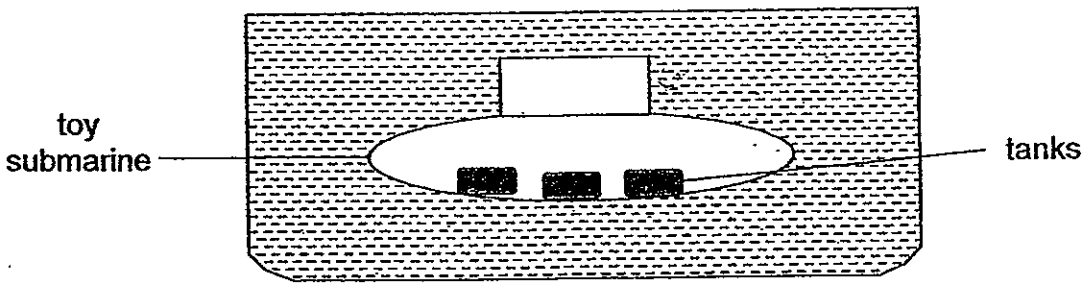


Diagram 1 Diagram 2

(a) Explain why the test tube sank when it was filled with more water. [1]

(b) Shahirah then built a toy submarine with tanks that were filled with water. These tanks were fixed in the toy submarine as shown below. She noticed that the toy submarine sank in the water.



What can she do in order to raise the toy submarine up to the surface of the water? [1]

End of Paper

ANSWER SHEET

EXAM PAPER 2012

SCHOOL : CHIJ
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA2

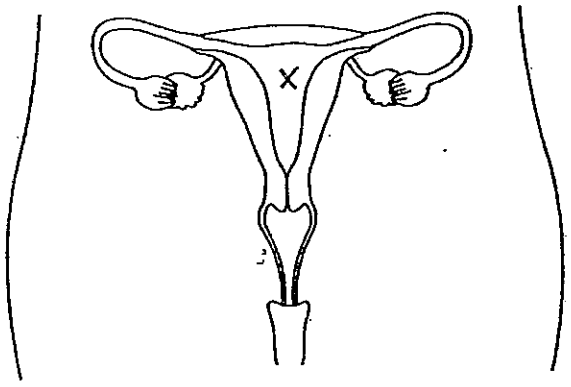
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	4	2	2	3	2	4	4	1	3	4	2	3	3	3	1	2

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

31)a)A, D, C, B

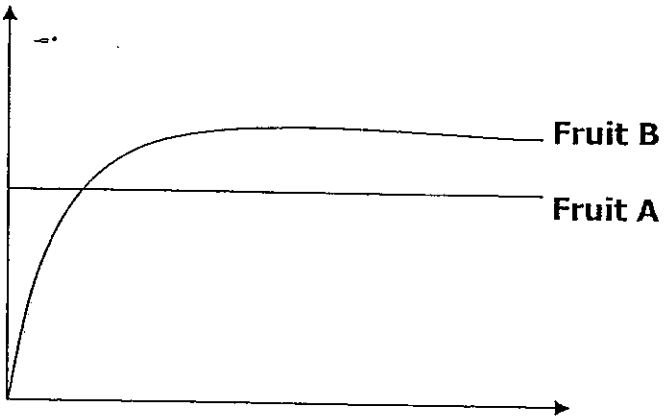
b)The nucleus of the sperm/male sex cell fuses with the nucleus of the egg/female sex cell.

c)

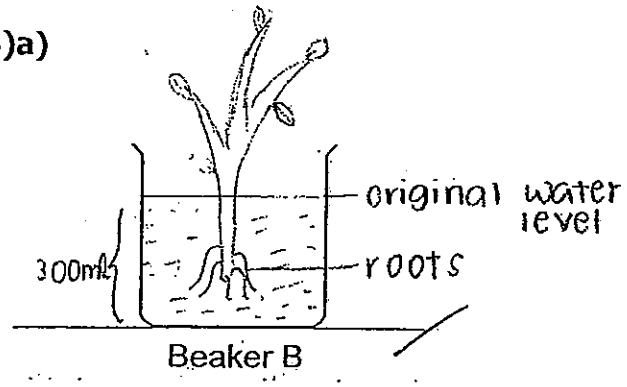


32)a)B, C, AE, F

b)

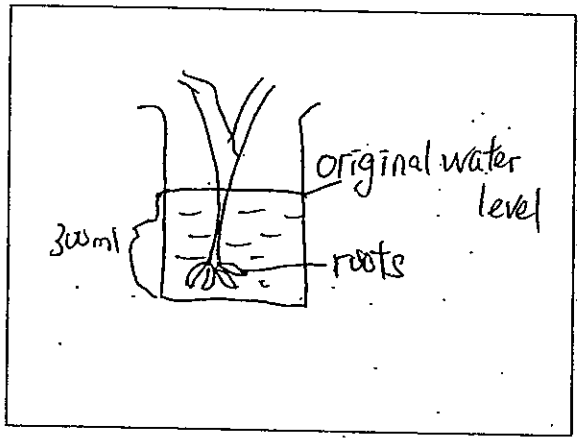


33)a)

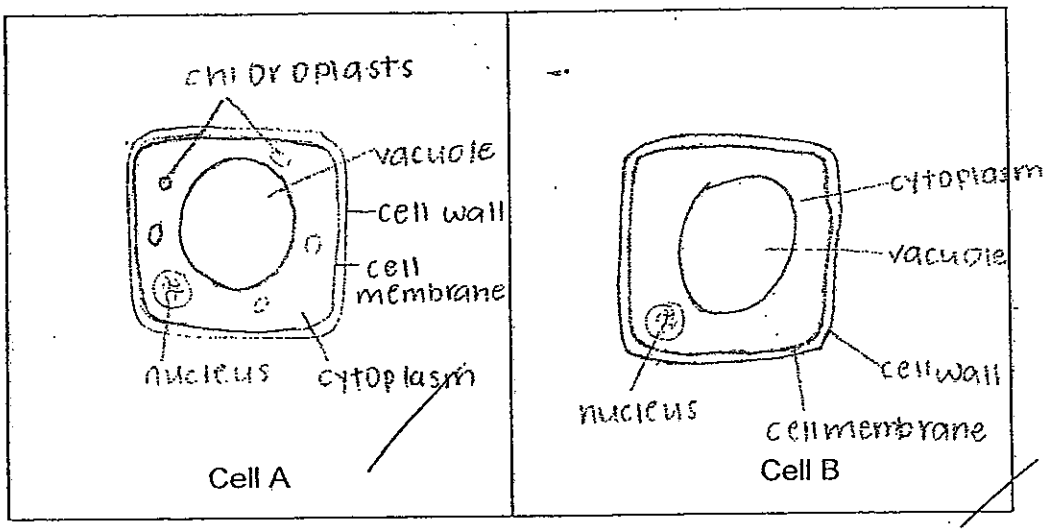


b)The material of the beakers.

c)



34)a)

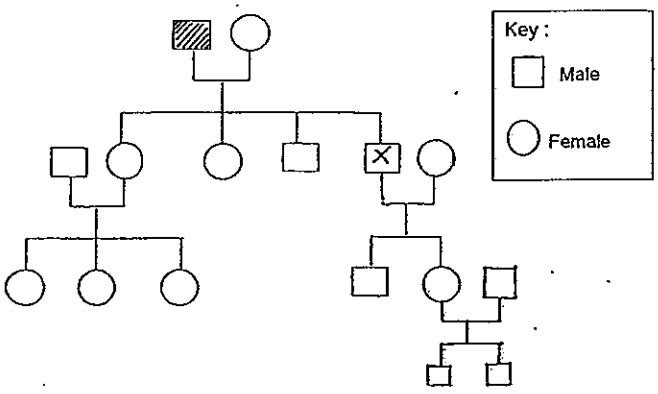


b)Cell A is able to make food for the plant while cell B is not able to cell B does not have chloroplasts, which contain chlorophyll, thus not able to make food in the presence of sunlight.

35)a)Testis.

b)No. It does not have the stigma to catch pollen grains, thus fertilization cannot occur.

36)a)b)c)

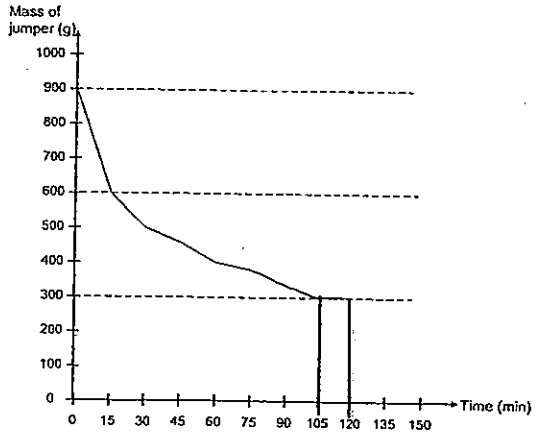


37)a)Pot A. It has a larger surface area in contact with the hot metal plate and therefore gains more heat.

b)Tiptoeing decreases the surface area in contact with the hot sand. Thus tiptoeing allows us to conduct lesser heat from the hot sand and we would not get burned easily, compared to walk without tiptoeing.

37

38)a)



b)The longer the time, the lighter the mass of the wet jumper, until the 105th minute onwards, the mass stayed at 300g.

39)a) A: Higher B: Lower

b)Water vapour fro the surrounding air touches the cool outer surface of glass B. It loses heat and condenses, forming water droplets on glass B.

40)a)The greater the number of times a magnet is dropped, the lesser the mass of the iron filings attracted. b) No. of times a magnet is dropped from a height of 1.5m.

c)No. copper rod is a non-magnetic material, so it cannot become a temporary magnet cannot be magnetised.

41)a)i)It is an electrical conductor?

ii)It is transparent?

iii)It is not flexible?

iv)It is not flexible?

b)F D

42)a)Bulbs P and Q.

b)Bulb R.

c)Bulb T.

43)a)Both circuit provide the same amount of current/electrical energy. Hence both electromagnets has the same attractive are equally strong.

b)The steel rod will be attracted to iron rod Y.

c)2 batteries in circuit B in series has more electric current/energy power than 2 batteries in parallel in circuit A. Therefore the electromagnet in circuit B is stronger.

44)a)More water increased the mass of the test tube.

b)Empty out the water in the tanks.