RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1) 2009

Your score out of **100** marks		
	Class	Level
Highest score		
Average score		
Parent's signature		

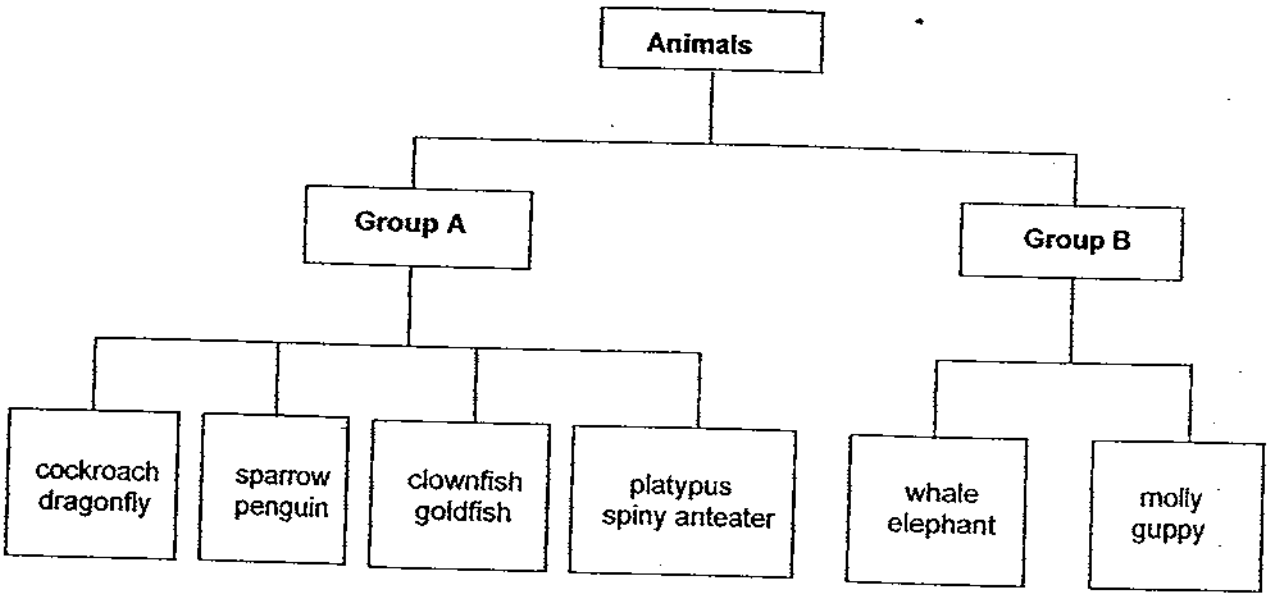
Name: _____ **Index No:** ____ **Class: P 5** ___

7th May 2009 **SCIENCE** **Att: 1 h 45 min**

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 on the Optical Answer Sheet (OAS) provided.

1. The animals below are classified into two groups, A and B.



Wrong! Based on the information above, the animals in Groups A and B have been classified according to _____.

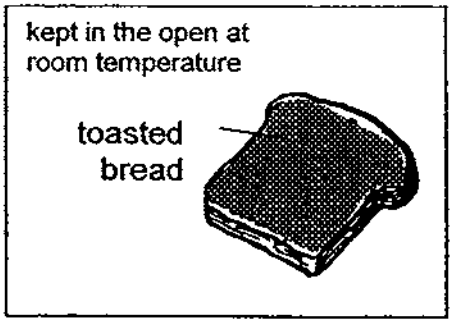
(1) where they live

(2) their body coverings

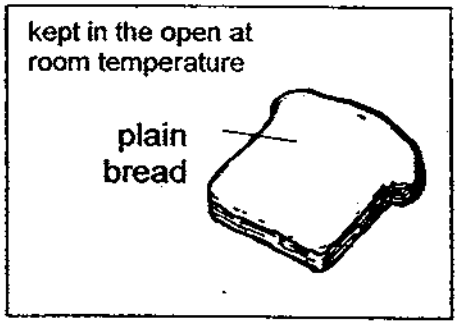
(3) the way they reproduce

(4) their method of breathing

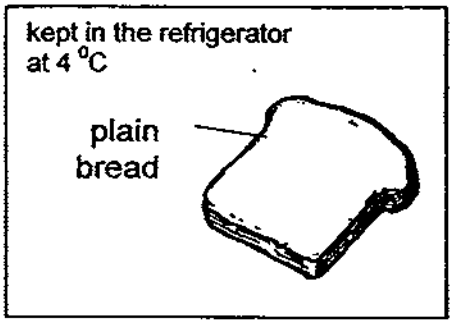
2. In which one of the following situations will mould **MOST** likely be found after 4 days?



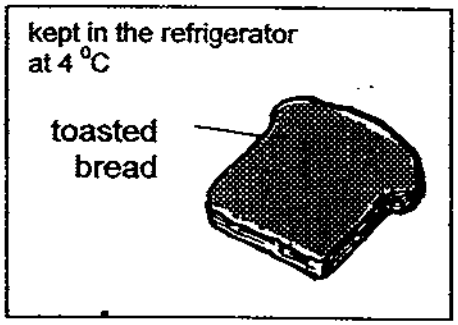
(1)



(2)



(3)



(4)

3. Which of the following characteristics can be passed on from the parents to their young?

A dimples

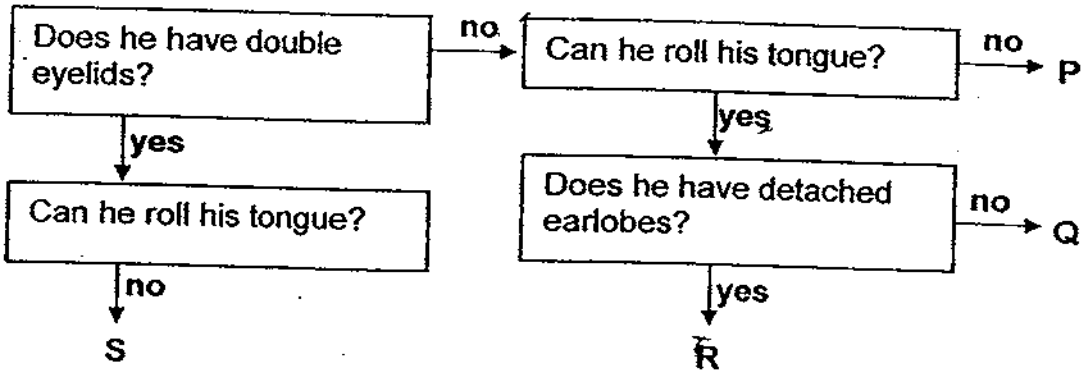
B short hair

C length of fingernails

D widow's peak hairline shape

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

4. The flow chart below is used to identify the 4 children, Ian, Ali, Wei Jie and Devi, based on their inherited characteristics.



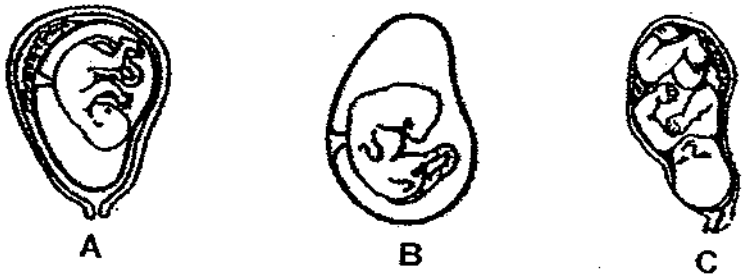
Wei Jie is described as follows:

- has single eyelids
- can roll his tongue
- has detached earlobes

Which one of these letters best represents Wei Jie?

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

5. The diagrams below show the different developmental stages of a foetus after the fusion of the male and female sex cells.

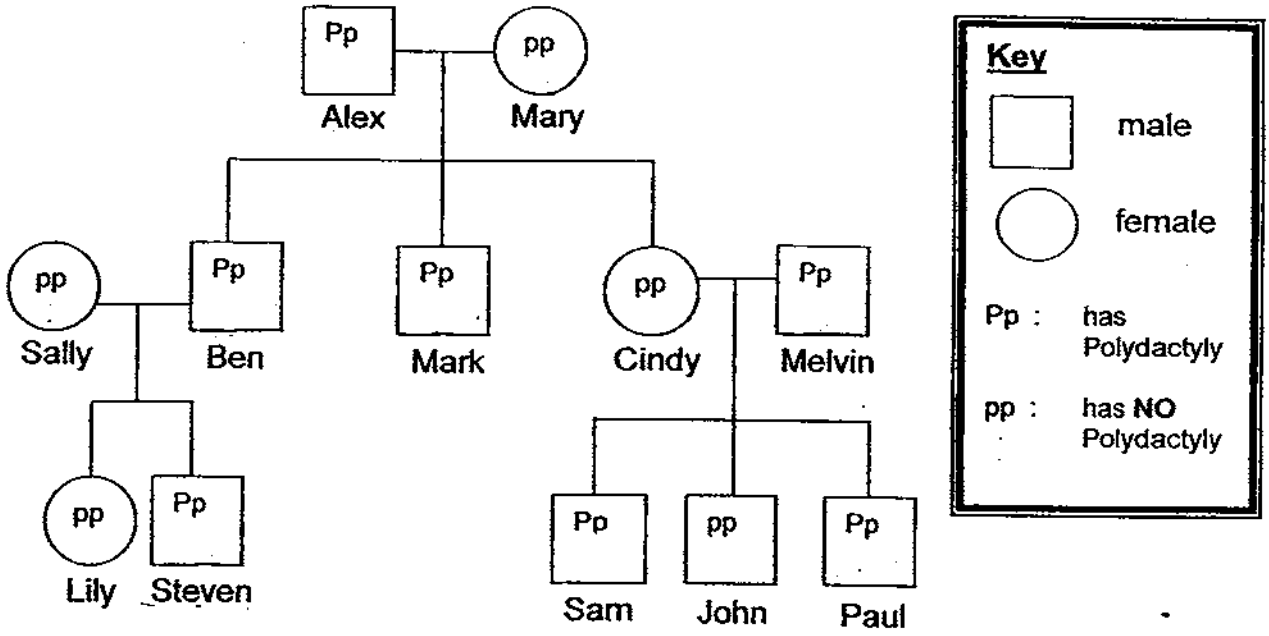


Which one of the following shows the correct developmental stages of the foetus?

	earliest stage ⟶		latest stage
(1)	A	B	C
(2)	B	A	C
(3)	B	C	A
(4)	C	A	B

6. The family tree below shows members of a family who have Polydactyly and those who do **NOT**. Anyone who carrries the genetic material that causes Polydactyly will grow an extra finger or toe.

The family tree shows that Alex has Polydactyly but Mary does **NOT**.



Which of Ben's children has Poyldactyly?

(1) Lily
(2) Sam
(3) Mark
(4) Steven

7. The table below shows the male and female parts in the reproductive systems of plants and animals.

	reproductive system of plant	**reproductive system of animal**
female part	A	B
male part	C	D

Which one of the following shows correctly what A, B, C and D represent?

	A	B	C	D
(1)	ovule	womb	penis	filament
(2)	style	vagina	testis	sperm
(3)	stigma	vagina	anther	testis
(4)	ovary	womb	filament	ovule

8. Tom has a papaya tree in his backyard that can only bears flowers but **NOT** fruits. His neighbour's papaya tree produces fruits.

Which one of the following could be the most likely reason that explains why Tom's papaya tree does **NOT** bear fruits?

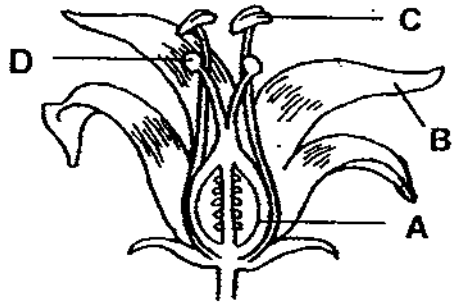
(1) Tom's papaya tree has male flowers only.

(2) Tom's papaya tree has female flowers only.

(3) Tom's papaya tree has both male and female flowers.

(4) Tom's papaya tree has flowers which have been fertilised already.

9. The picture below shows parts of a flower.

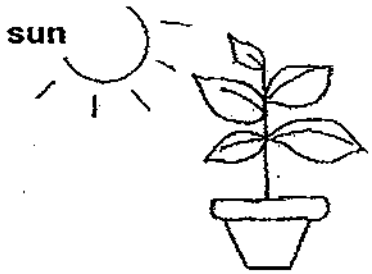


Where do pollination and fertilisation occur in the flower?

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

10. Michelle wanted to find out if plants need sunlight for healthy growth.

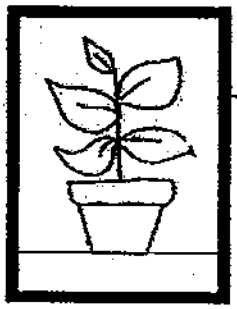
She placed a plant in the sun as shown in the diagram below.



Michelle watered the pot of plant everyday.

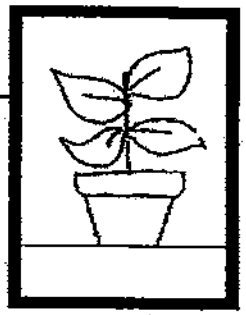
Which one of the following plants should Michelle use to compare with the plant above for her experiment?

(1)



nutrients added to the pot of plant

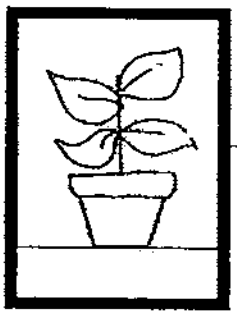
(2)



pot of plant watered everyday

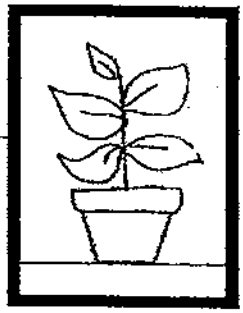
pots of plants in black boxes

(3)



nutrients added to the pot of plant

(4)

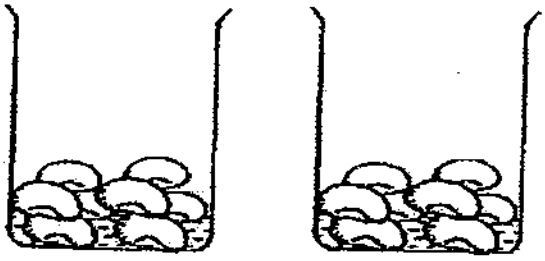


pot of plant watered everyday

pots of plants in black boxes

11. Ali carried out an experiment using some bean seeds and 2 identical beakers.

He put an equal amount of cotton wool and 10 mℓ of water into each beaker. Next, Ali placed eight similar bean seeds in each of these beakers, Beaker A and Beaker B. He placed Beaker A near the window and Beaker B in a dark room.



Beaker A Beaker B

What was the aim of Ali's experiment?

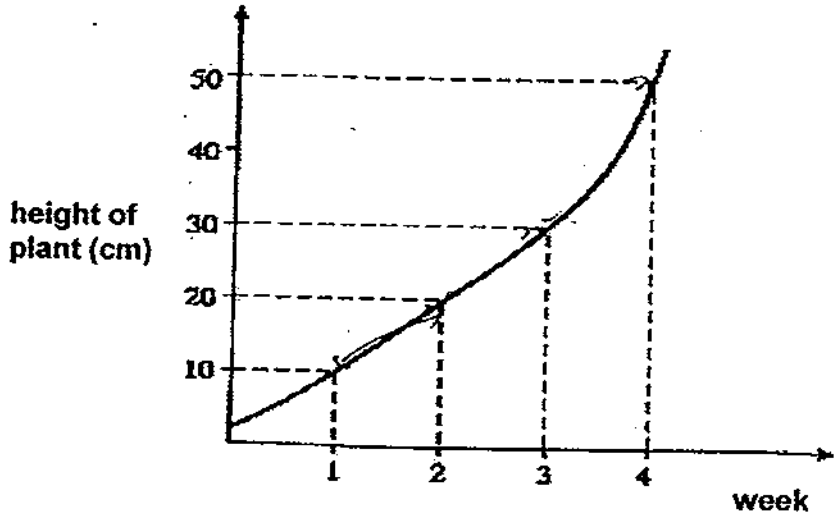
(1) To find out if the type of seeds affects the rate of germination

(2) To find out if the amount of water affects the rate of germination

(3) To find out if the presence of light affects the rate of germination

(4) To find out if the number of seeds affects the rate of germination

12. The graph below shows the growth of a plant.



From the graph above, we can conclude that the fastest rate of growth of the plant was in / during _____.

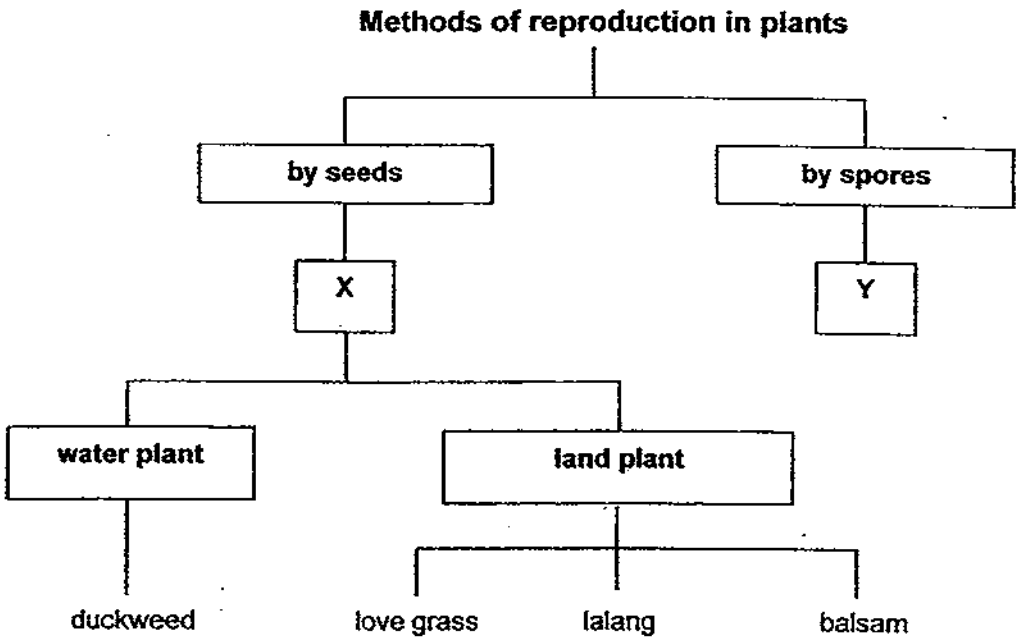
(1) week 1

(2) weeks 1 - 2

(3) week 3

(4) weeks 3 - 4

Some plants are classified as shown in the diagram below.



Based on the information above, answer **questions 13 and 14.**

13. Which of the following statements are true?

A Moss belongs to Y.

B Y is a group of non-flowering plants.

C X and Y are a group of flowering plants.

D Plants in X inherit their characteristics from their parent plants.

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

14. Which of the following descriptions best describe the balsam plant shown in the diagram above?

A It is a land plant.

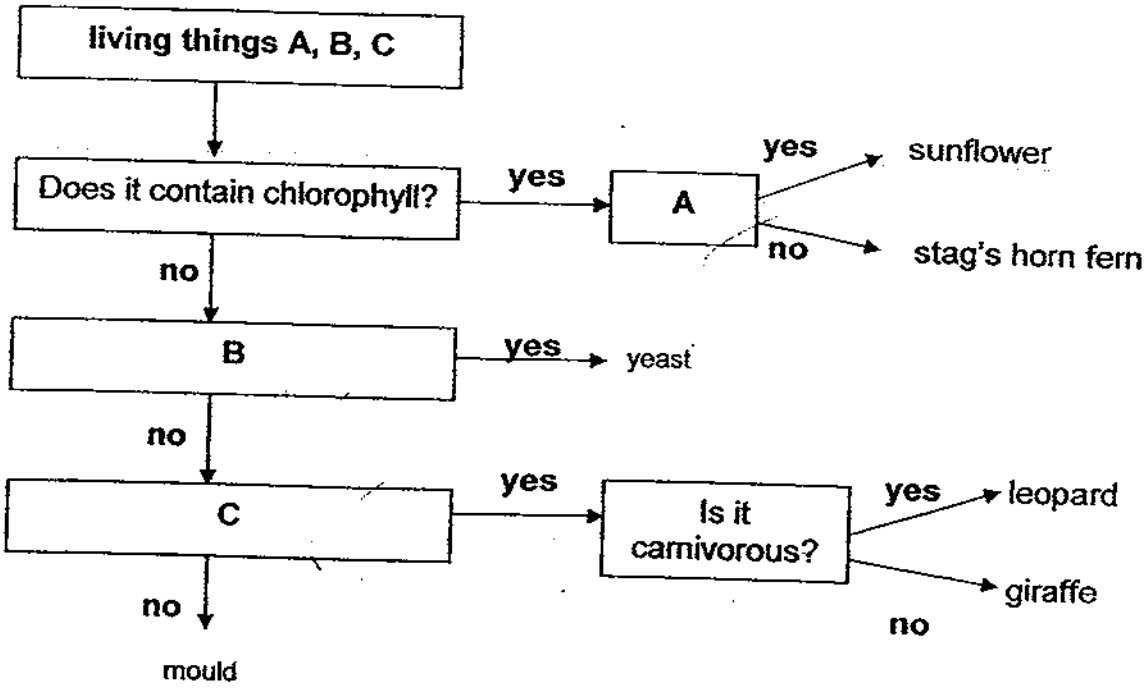
B It grows in water.

C It is reproduced by seeds.

D It is reproduced by spores.

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

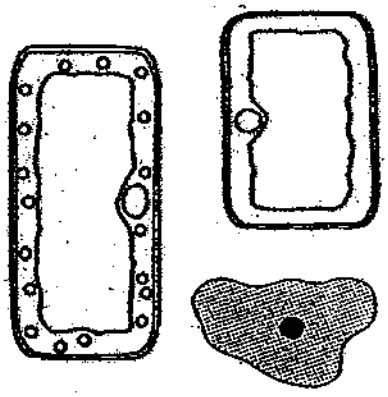
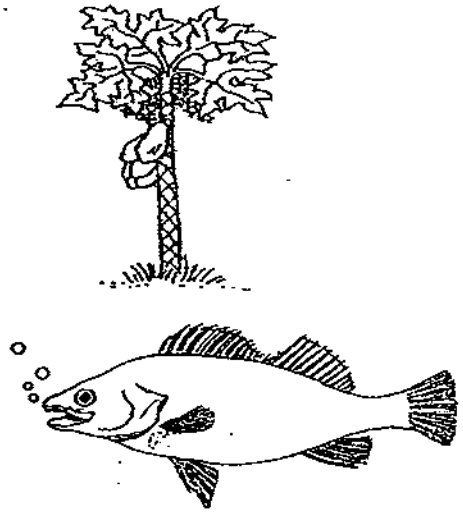
15. The diagram below shows how some living things are differentiated.



Which one of the following shows the correct questions for A, B and C?

	A	B	C
(1)	Does it get its energy from the sun?	Is it a micro-organism?	Does it get its energy from plants or animals?
(2)	Is it a flowering plant?	Is it a micro-organism?	Does it get its energy from plants or animals?
(3)	Does it photosynthesise ?	Is it a fungus?	Does it feed on dead and decaying matter?
(4)	Is it a plant?	Is it an algae?	Does it feed on dead and decaying matter?

16. The table below shows two groups of living things (**NOT** drawn to scale).

X	Y
	

Which one of the following statements about the groups of things in X and Y is correct?

(1) Groups of things in X and Y can reproduce.

(2) Groups of things in X and Y grow towards sunlight.

(3) Things in Y make their own food while those in X do **NOT**.

(4) Things in X are cells while those in Y are single-celled organisms.

17. If some cell walls of a plant were damaged, which of the following would likely to occur?

A The damaged cells would continue to grow.

B The plant would be able to replace the damaged cells.

C The damaged cells would pass on genetic information to the new cells.

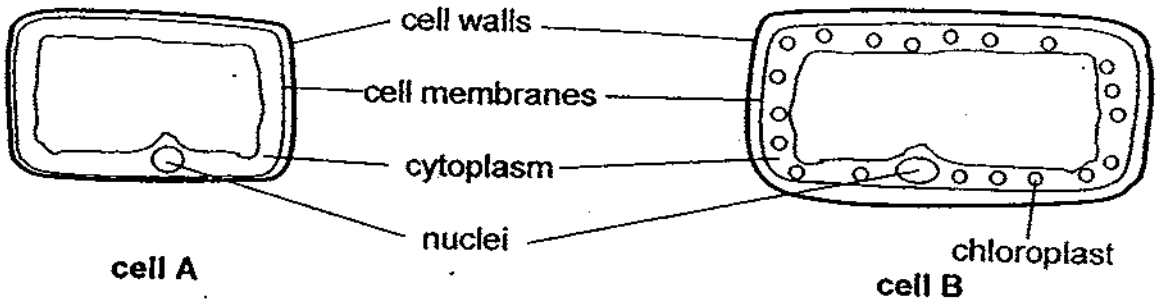
(1) A only

(2) B only

(3) A and C only

(4) A, B and C

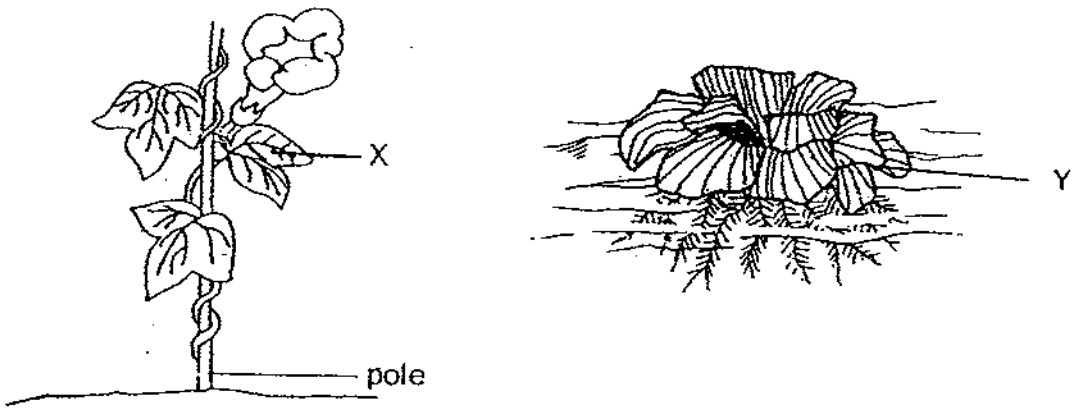
18. Jamie observed two different types of cells, A and B, taken from the same plant.



In which parts of the plant are these cells, A and B, found?

	cell A	cell B
(1)	flower	root
(2)	fruit	flower
(3)	root	leaf
(4)	leaf	fruit

19. The pictures below show two green plants, X and Y, growing in a garden.

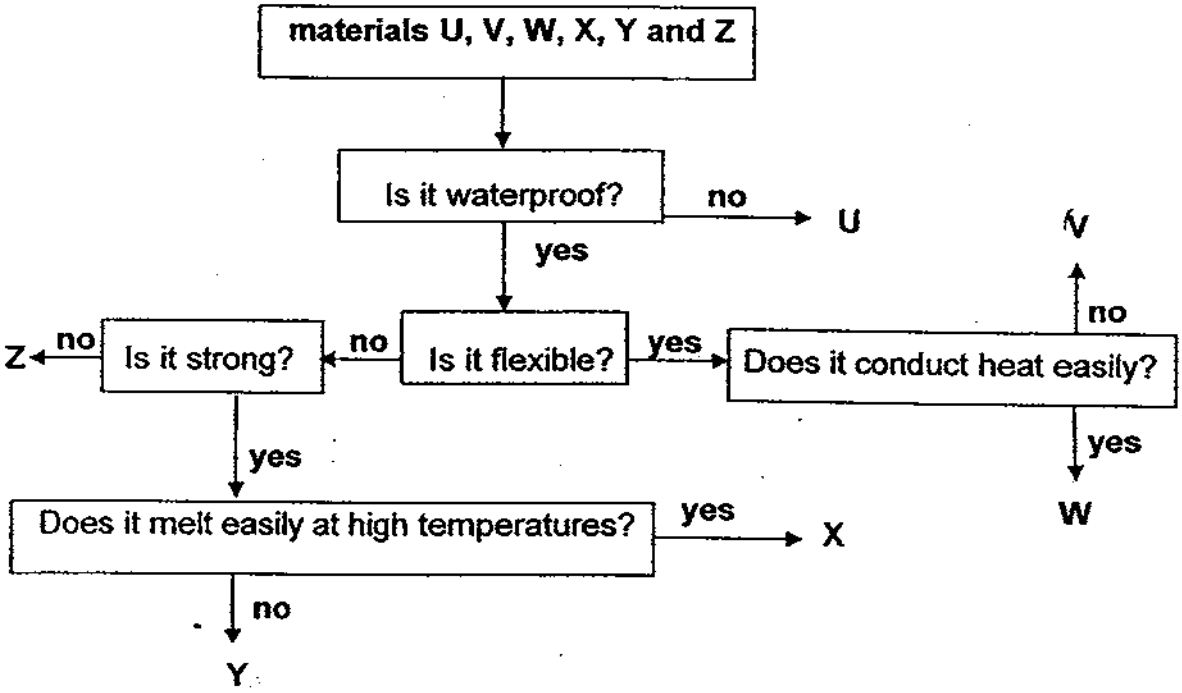


Which one of the following statements describes correctly the similarity and difference between plants X and Y?

	similarity	difference
(1)	Both are non-flowering plants.	X is a land plant while Y is a water plant.
(2)	Both reproduce by spores.	X is a flowering plant while Y is a non-flowering plant.
(3)	Both need a support to grow.	X is a flowering plant while Y is a non-flowering plant.
(4)	Both need light to make food.	X is a land plant while Y is a water plant.

20. A company has to choose the most suitable material for making the helmets and gloves for firemen.

Below is a diagram which classifies some materials, U, V, W, X, Y and Z.



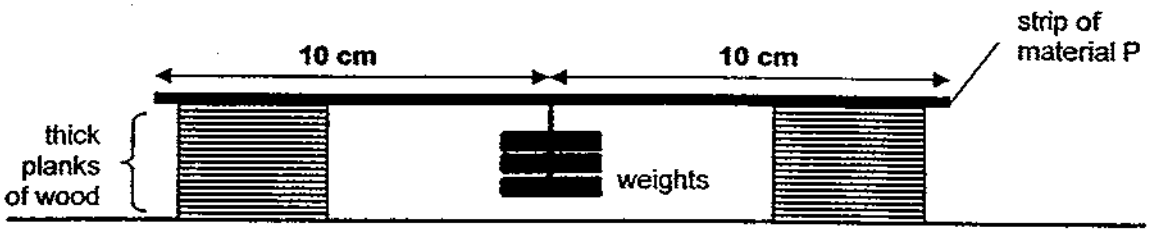
Based on the information above, which one of the following is the most suitable set of materials for making helmets and gloves for the firemen?

	helmets	gloves
(1)	W	U
(2)	X	V
(3)	Y	V
(4)	Z	W

21. Mr Lim wanted to use a suitable material to make ladders.

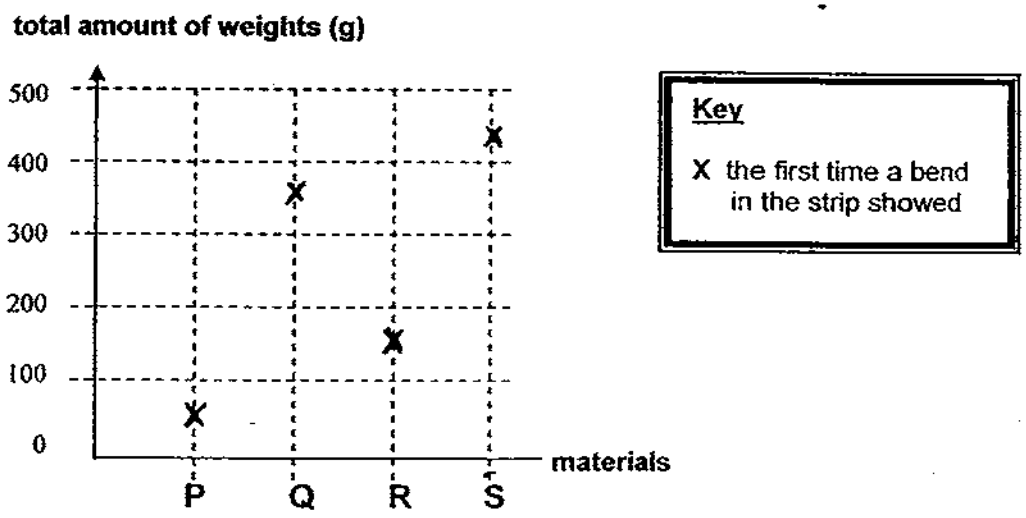
He was given 4 different types of materials, P, Q, R and S, of length 20 cm and of the same thickness.

He set up an experiment as shown below to test the strength of each of these materials, **ONE** at a time.



Mr Lim hung a weight at the centre of the strip made of material P. He continued to add weights until the strip started to bend.

He repeated his experiment using other strips of material Q, R and S, **ONE** at a time, and recorded his observations in the graph as shown below:



Based on the information above, which one of these materials, P, Q, R or S, should Mr Lim use to make ladders?

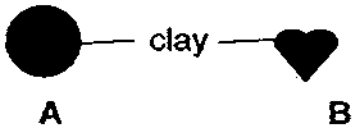
(1) P

(2) Q

(3) R

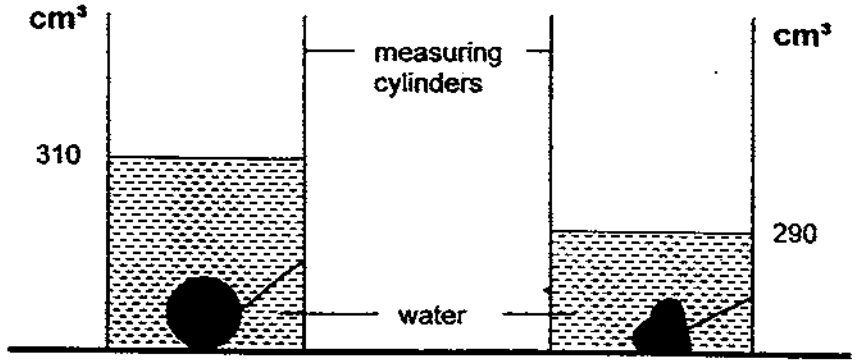
(4) S

22. Smita was told that clay, which was heavier than water, would sink in water. She decided to carry out an investigation using a lump of clay, which she made into two different shapes, A and B, as shown below.



Smita placed each of these shapes of clay into a measuring cylinder with 200 cm^3 of water.

The diagrams below (**NOT** drawn to scale) show Smita's observations of the clay and the increase in water levels.



What was the total volume of clay which Smita used to make both of these shapes?

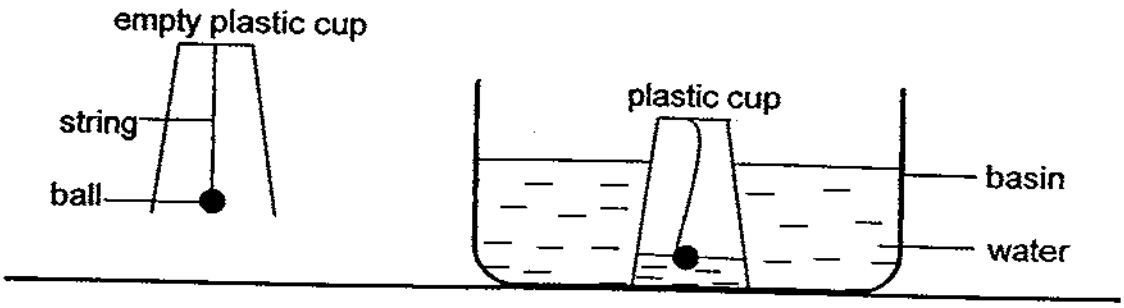
(1) 110 cm^3 (2) 200 cm^3

(3) 220 cm^3 (4) 310 cm^3

23. Jasmine attached a small ball to the base of an empty plastic cup.

She inverted the plastic cup with the attached small ball and pushed the plastic cup into a basin of water until it touched the base of the basin. She noticed that the water level inside the plastic cup was lower than the water level in the basin.

The ball remained floated on the water in the plastic cup as shown in the diagram below.



Which one of the following statements best explains the difference in the water level inside the plastic cup and the water level in the basin?

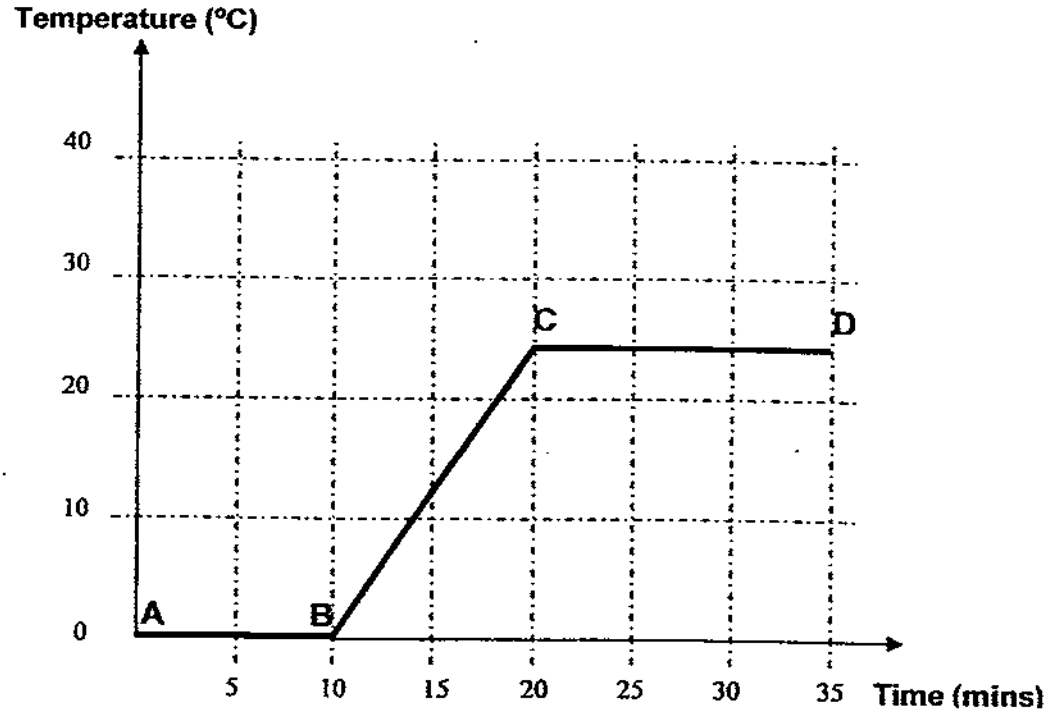
(1) The ball took up space in the plastic cup.

(2) The ball got the water out of the plastic cup and into the basin.

(3) Some air was trapped in the plastic cup and could not escape out of it.

(4) The plastic cup took up space in the basin and caused the water in it to rise.

Ravi took some ice cubes from the freezer and put them into a beaker. He measured the temperature of the contents in the beaker every 5 minutes and plotted a graph to show his results.



Based on the graph above, answer **questions 24 and 25.**

24. Which one of the following shows correctly the change of state of water from point A to point B?

(1) solid ⟶ liquid

(2) liquid ⟶ solid

(3) gas ⟶ liquid

(4) gas ⟶ solid

25. What caused the temperature of the contents in the beaker to change between point B and C?

(1) Water gained heat to become ice.

(2) Water in the beaker gained heat from the surroundings.

(3) Air in the beaker increased the temperature of the beaker.

(4) Water in the beaker evaporated to become water droplets.

26. Beng Lee had 3 similar containers, each of a different colour as shown below.

black

white

silver

He put an equal amount of cold water into each container and left them in the sun for an hour.

He recorded the change in the temperature of the water in each container every 10 minutes.

container / time	temperature of the water in each container (°C)						
	0 min	10 min	20 min	30 min	40 min	50 min	60 min
black	4.0	6.0	9.6	11.5	17.3	22.5	28.0
white	4.0	4.5	5.8	7.4	8.7	12.5	19.2
silver	4.0	4.0	4.6	4.9	5.6	6.3	7.6

Based on the information above, what could Beng Lee conclude from his experiment?

A The water in each container gained heat at different rates.

B The water in each container gained heat from its surroundings.

C The colour of the container affected the amount of heat gained by the water in the container.

D The white container gained heat from its surroundings at a faster rate than the black and silver containers.

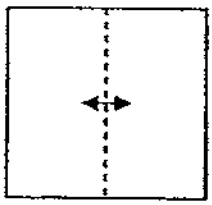
(1) A and B only

(2) B and C only

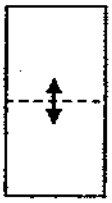
(3) A, B and C only

(4) A, C and D only

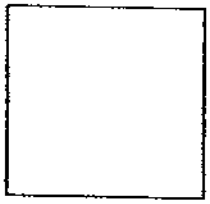
27. Linda had 3 identical pieces of towel, X, Y and Z. She folded each piece of towel as shown below.



X
folded into halves



Y
folded into quarters



Z
NOT folded at all

Next, Linda poured an equal amount of water onto each piece of towel and left them to dry in the same place under the sun.

She recorded the time taken for each of these towels to dry completely on the same day. Her results are shown in the table below.

towel	time taken for the towel to dry completely (min)
X	48
Y	96
Z	28

Which one of these factors affected the time taken for the wet towels to dry completely on the same day?

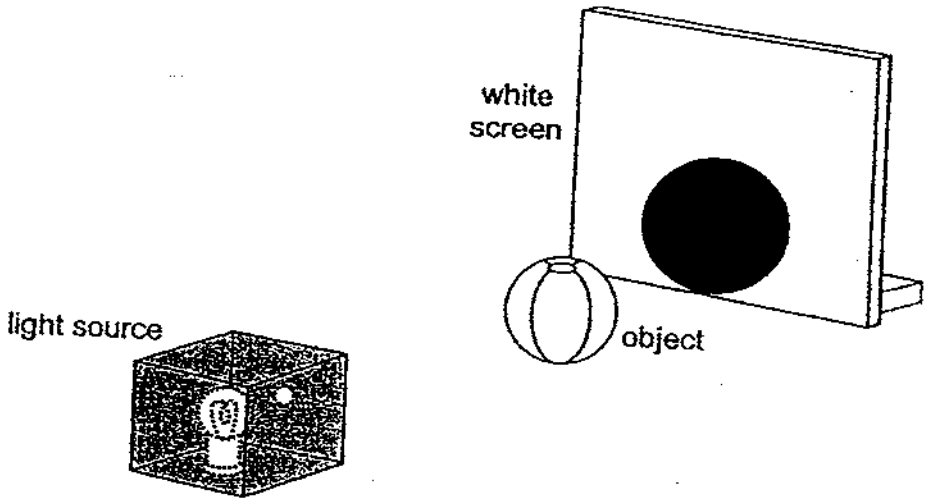
(1) the amount of water on each towel

(2) the total exposed surface area of the wet towels

(3) the speed of the wind moving round the wet towels

(4) temperature of the surroundings where the towels were

When Adam placed an object between a light source and a white screen, a shadow of the object was cast on the white screen as shown below.



Based on the information above, answer **questions 28 and 29**.

28. What would happen to the shadow of the object on the white screen when Adam moved the light source nearer to the object?

A The shadow became darker.

B The shadow became lighter.

C The shadow increased its size.

D The shadow decreased its size.

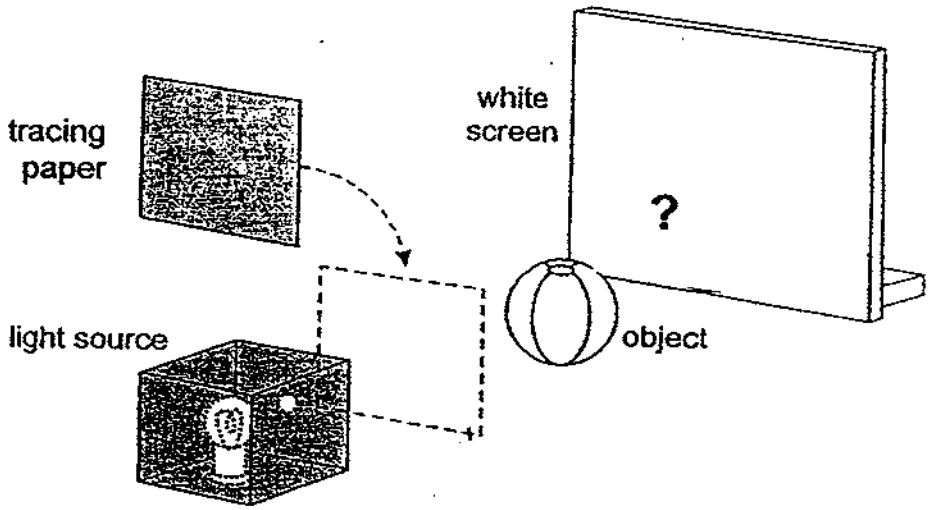
(1) A and C only

(2) A and D only

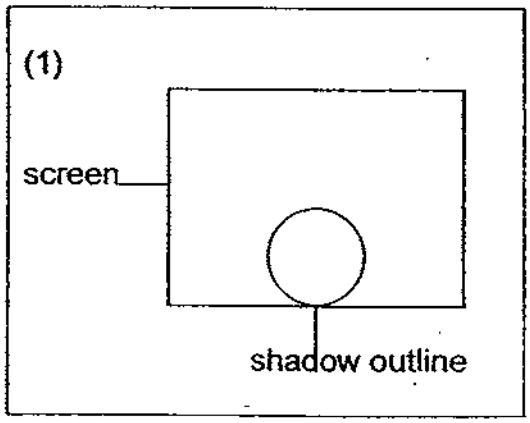
(3) B and C only

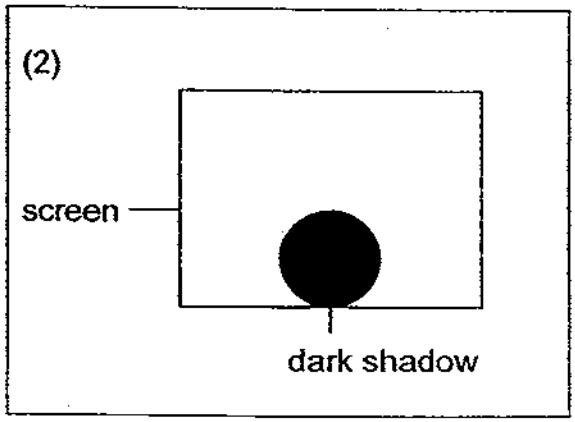
(4) B and D only

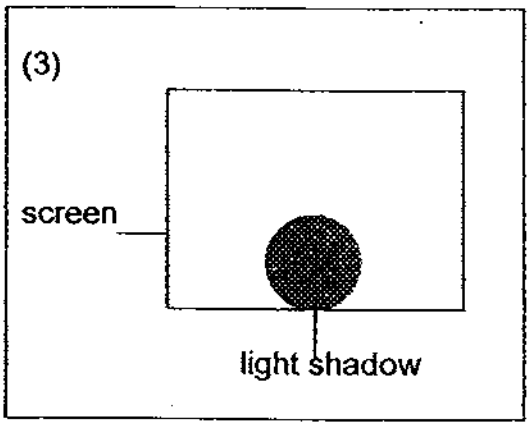
29. Next, Adam placed a piece of tracing paper between the object and the light source as shown in the diagram below.

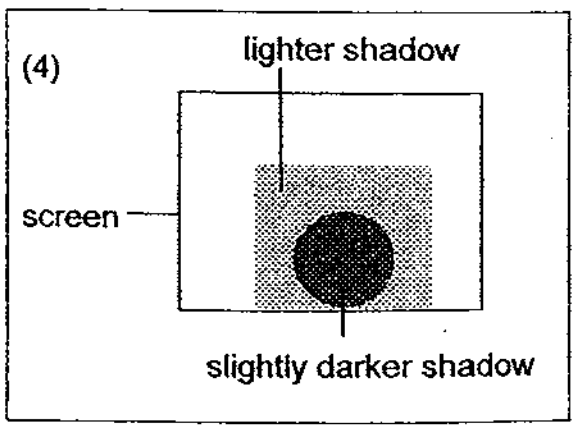


Which one of the following diagrams shows correctly what Adam saw on the white screen?





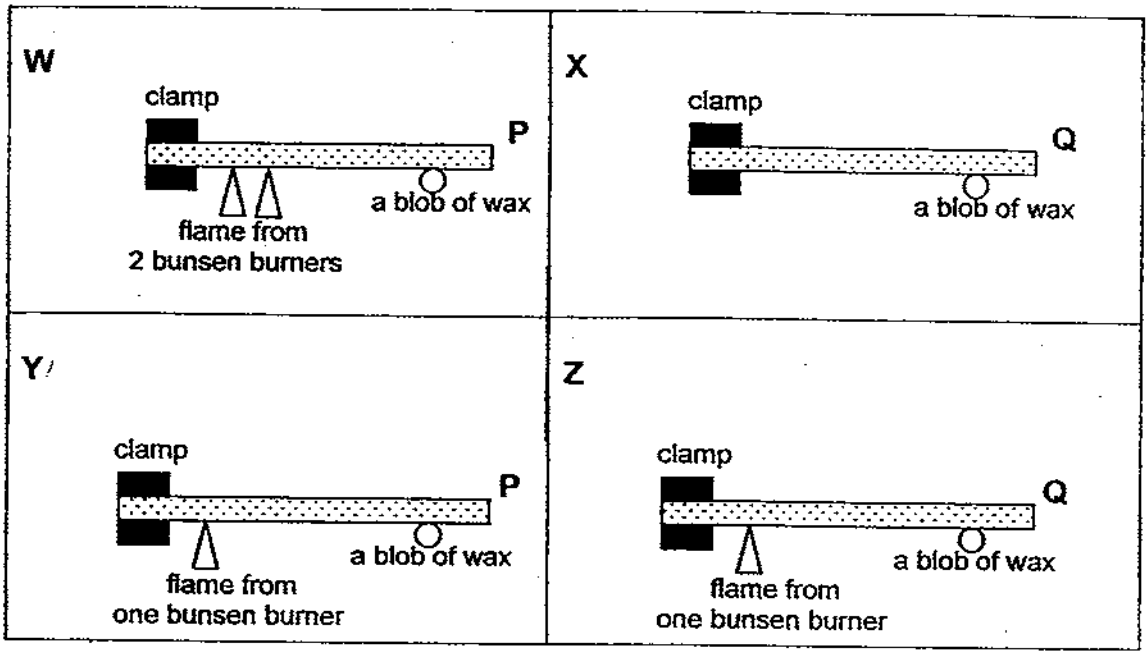




30. Zarra was given 2 types of metal rods, P and Q.

She wanted to conduct an experiment to find out which one of these two rods, P or Q, is a better conductor of heat.

The diagram below shows four possible set-ups, W, X, Y and Z.



Which two set-ups should Zarra use to conduct her experiment so that she could conclude which one of these two rods, P or Q, is a better conductor of heat?

(1) W and X

(2) X and Y

(3) X and Z

(4) Y and Z

Name : _____ Index No : _____ Class : P5 ___

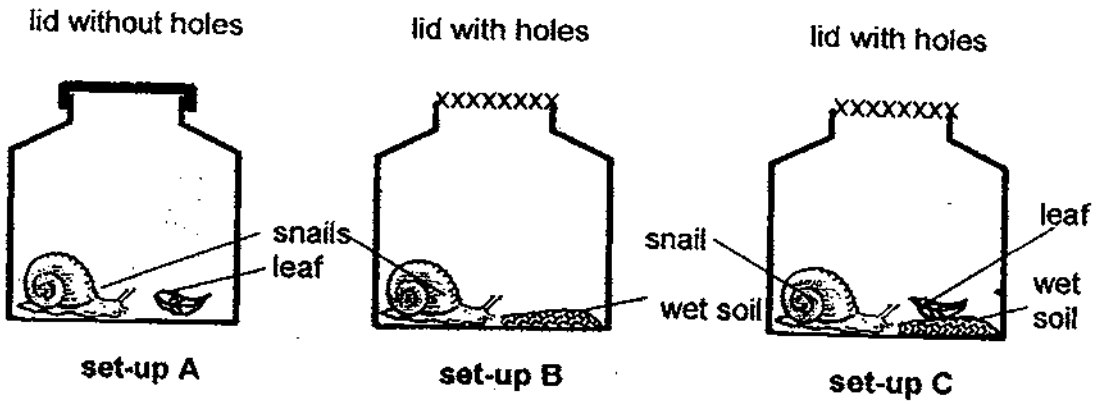
40

SECTION B (40 marks)

For questions 31 to 44, write your answers clearly in the spaces provided.

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

31. Betty kept 3 snails of similar size and type in set-ups A, B and C as shown below.



In which one of these set-ups, A, B or C, would the snail be able to live the longest?

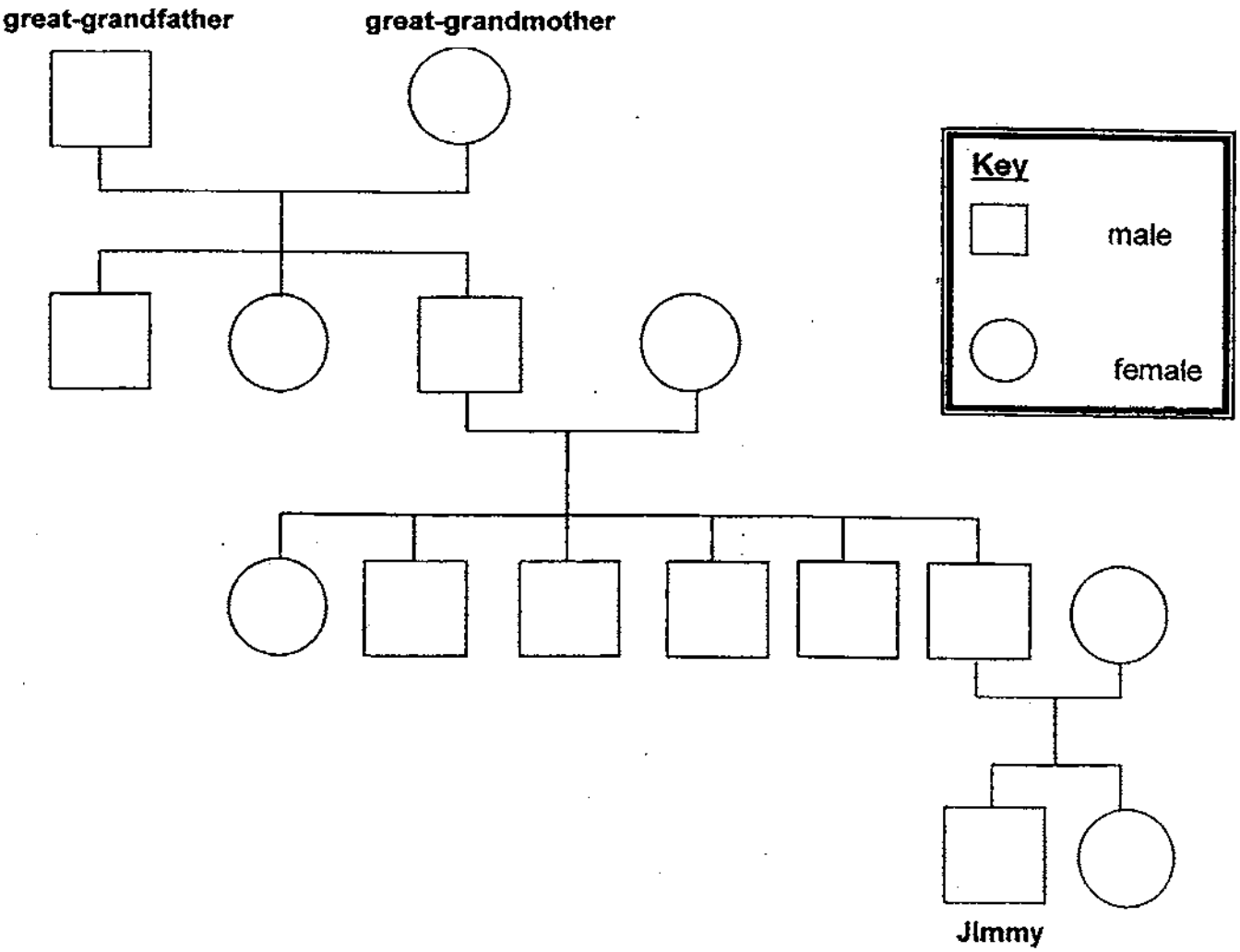
Explain your answer. [2]

_____

_____

_____

32. The diagram below shows Jimmy's family tree.



Based on the diagram above, answer the following questions:

(a) How many siblings does Jimmy's grandfather have? [1]

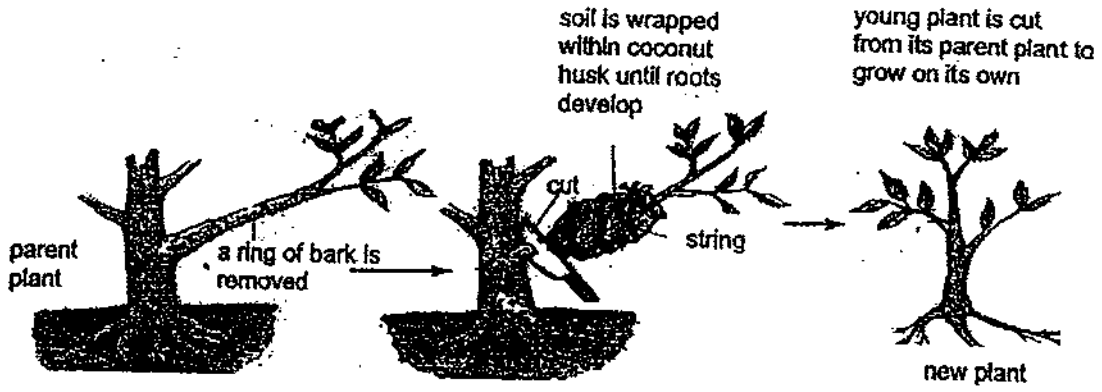
_____

(b) How many uncles does Jimmy have? [1]

_____

(c) **MARK** with a letter '**X**' to show who Jimmy's aunt is in the family tree above. [1]

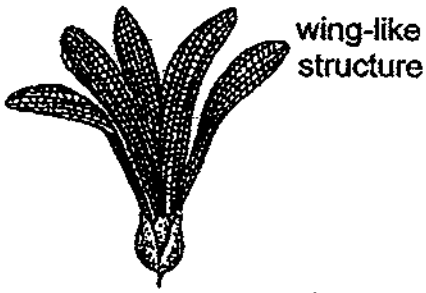
33. The pictures below show how some fruit trees are reproduced from an artificial method called branch cutting.



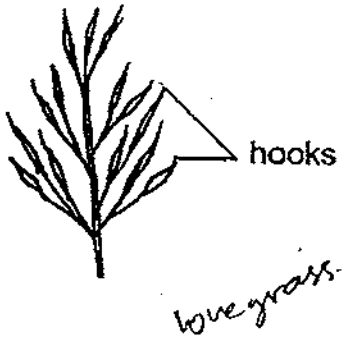
Explain why the new plant looks exactly like its parent plant. [1]

_____

34. Mr Tan found these two types of seeds/ fruits in the school garden.



A



B

Based on your observations of these seeds/ fruits, answer the following questions:

(a) State the dispersal method of each of these seeds/ fruits. [2]

A	
B	

(b) Explain why the dispersal methods for A and B are different. [2]

35. Ali planted an equal number of seeds of type X in 3 identical pots. Each pot of seeds was kept in a place at a specific temperature.

Ali watered the seeds in the pots daily with the same amount of water and recorded his results in the table as shown below.

temperature in °C	total number of seeds of type X germinated					
	day 1	day 2	day 3	day 4	day 5	day 6
0	0	0	?	0	0	0
15	0	0	0	0	0	0
28	0	2	5	8	12	15

Based on the information above, answer the following questions:

(a) How many seeds of type X had germinated at 0 °C by day 3?

Explain your answer. [2]

_____

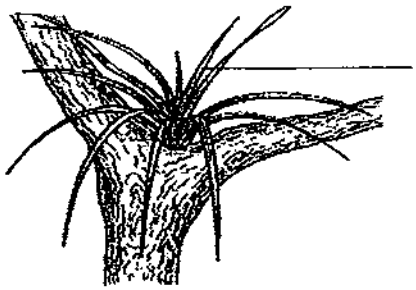
_____

(b) What was Ali trying to investigate in his experiment? [1]

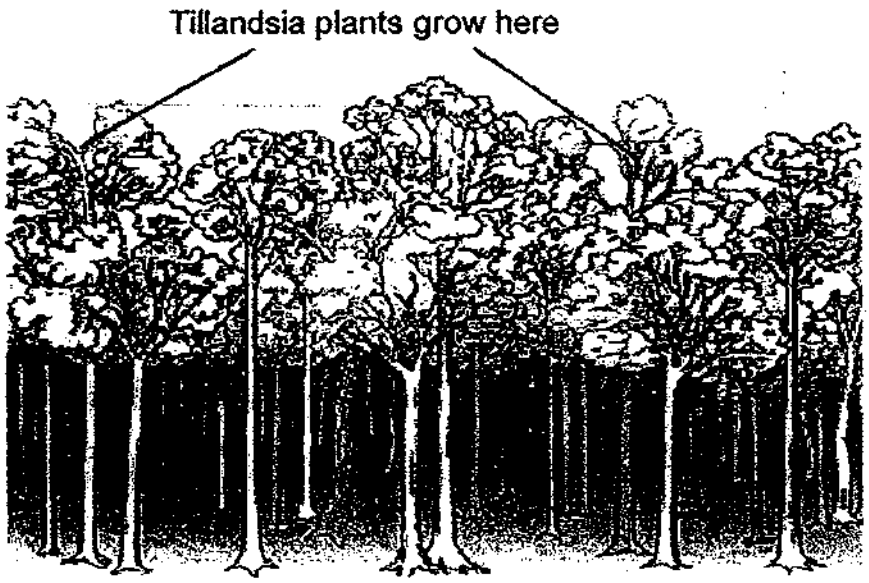
_____

_____

36. The picture below shows a plant called Tillandsia.

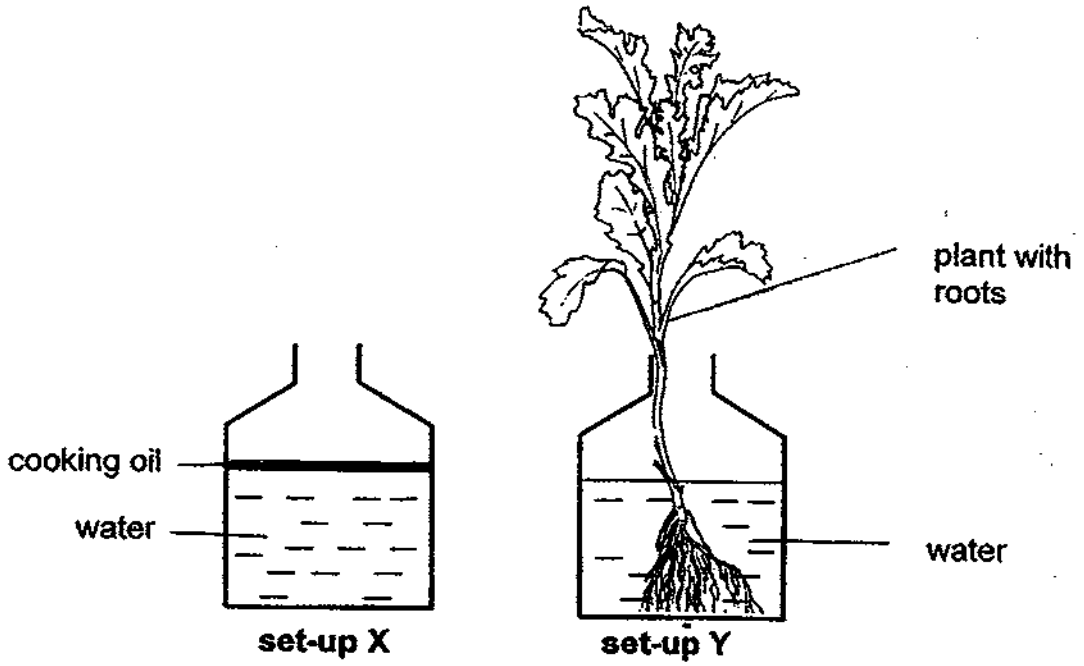


Tillandsia plants grow on the high branches of trees in the rainforest.



Explain why these plants thrive well on the high branches of trees instead of on the ground. [2]

37. Andrew set up the following experiment to find out if plants take in water through their roots.



Andrew had 2 identical containers. He poured an equal volume of water into each container. He took the reading of the water level in each container every 2 days for 1 week. He found that the water level decreased in set-up Y only.

Based on the information above, answer the following questions:

(a) Why was Andrew **NOT** able to conclude that plants take in water through their roots? [1]

_____

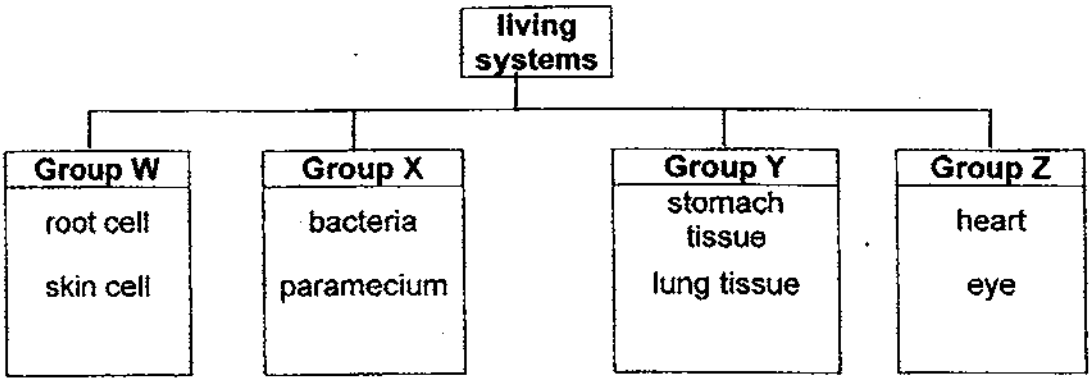
_____

(b) How could Andrew improve his set-ups to conduct a fair test? [1]

_____

_____

38. Some living systems are placed into different groups, W, X, Y and Z, as shown below.



Based on the information above, answer the following questions:

(a) Write a suitable sub-heading for each group of living things to indicate how they are classified. [1]

Complete the table below.
Two of these sub-headings have been done for you.

Group	sub-heading
W	cell
X	
Y	tissue
Z	

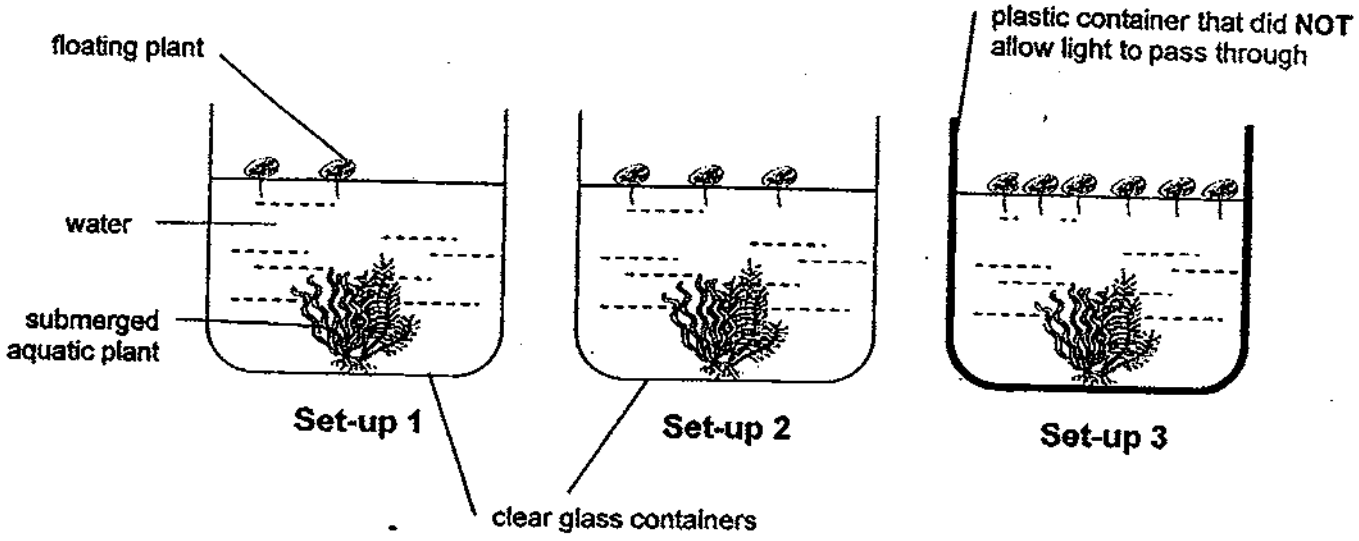
(b) Yeast should be classified under **Group** _____
Write letter W, X, Y or Z only. [1]

(c) Name **ANOTHER** example of a living system which can be classified under Group Z. [1]

_____

39. Using containers of the same size, Thomas carried out an experiment to find out if the growth of a submerged plant would be affected by the number of floating plants.

The diagram below shows his set-ups that were placed near a window.



After 2 weeks, Thomas noticed that the submerged plant in Set-up 3 was turning yellow and some of its leaves were starting to decay.

(a) Explain Thomas' observations of the submerged plant in Set-up 3. [2]

_____

_____

(b) Thomas' teacher commented that Thomas did **NOT** conduct a fair test.

Give a reason for Thomas' teacher comment. [1]

_____

_____

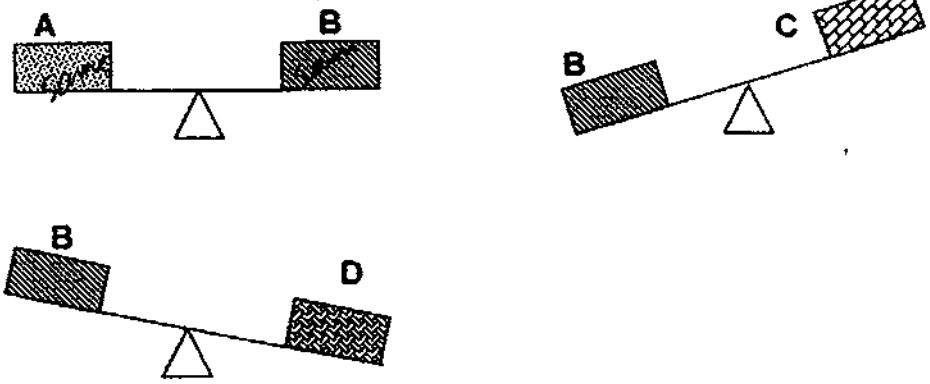
(c) Suggest **ONE** way in which Thomas could do to conduct a fair test for his experiment. [1]

_____

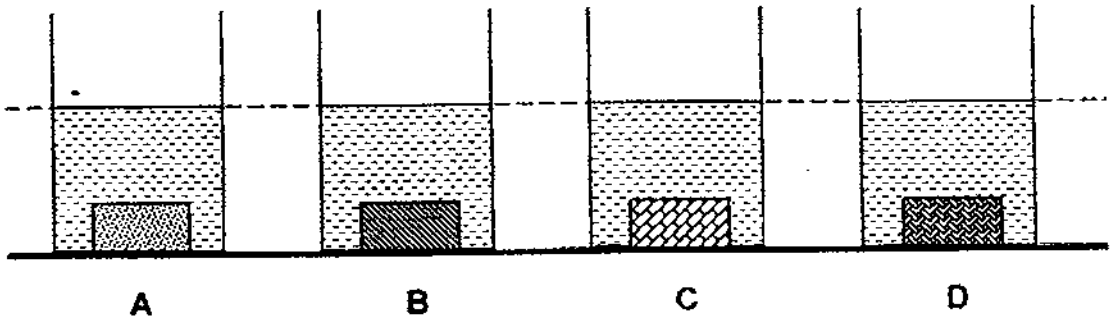
_____

40. Peter found 4 blocks, A, B, C and D, of similar size. Each of them was made of a different metal. He weighed them to make a comparison of their masses.

The following diagrams show Peter's observations.



Next, Peter immersed each one of these blocks, A, B, C and D, **ONE** at a time, into the same container of water and made the following observations:



Based on the information above, answer the following questions:

(a) Arrange the mass of these blocks accordingly, from the heaviest to the lightest.

Write letters B, C and D only. [1]

heaviest

(b) What could Peter conclude about the mass of both blocks A and B? [1]

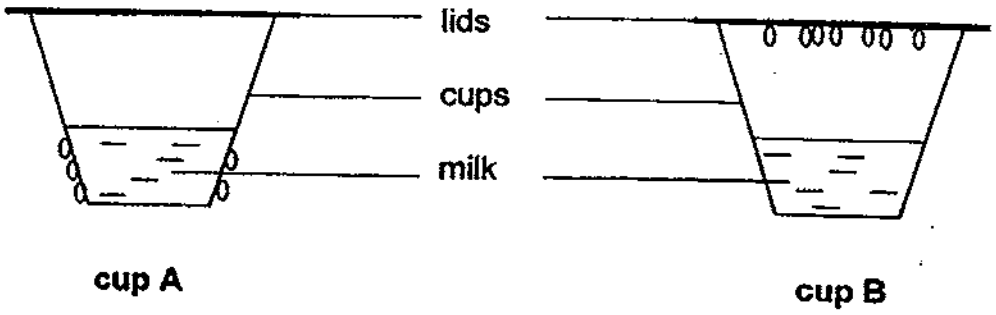
_____

(c) Name one similarity among the 4 blocks, A, B, C and D. [1]

_____

41. Mrs Liew had 2 identical cups. She poured cold milk into one and hot milk in the other. She covered the mouth of each cup and left both cups to stand for a while.

She noticed that water droplets were found in different parts of the cups as shown in the diagrams below.



cup A **cup B**

Based on the information above, answer the following questions:

(a) Which one of these cups, A or B, contained the cold milk? [1]

cup _____

(b) Explain how the water droplets were formed in cup B. [2]

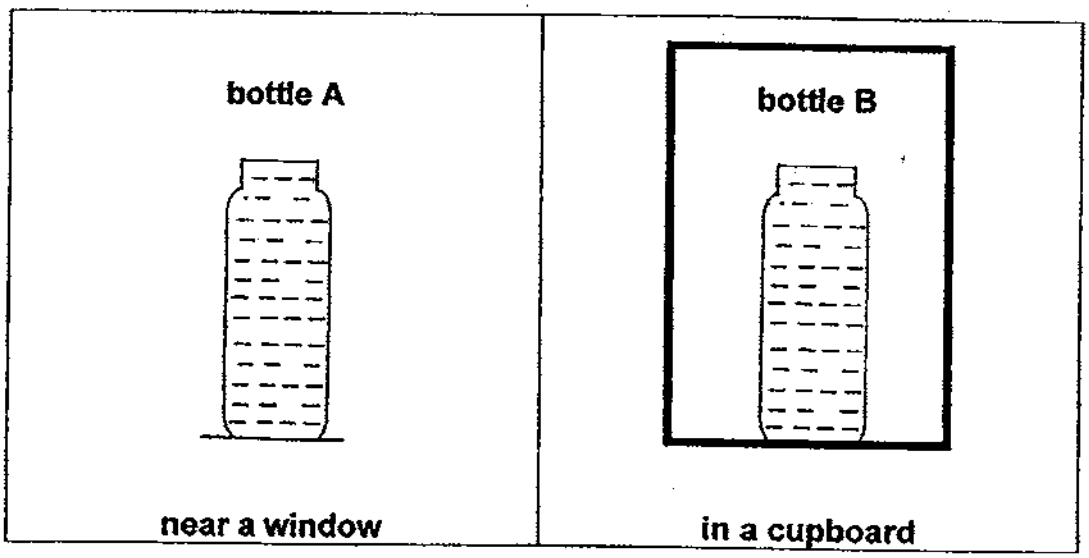
_____

_____

_____

42. Mdm Siti had 2 identical bottles, A and B. She filled each of them completely with liquid X.

Next, she left one of the bottles, A, near a window and the other remaining bottle, B, in a cupboard as shown in the diagrams below.



The next day, Mdm Siti noticed that the two bottles were **NO** longer full. Bottle A which was near the window had a lower liquid level in it than bottle B which was in the cupboard.

Based on the information above, answer the following questions:

(a) What could have caused the liquid level to be lower in bottle A? [1]

_____

(b) What is the process which caused both bottles, A and B, to become **NO** longer full? [1]

_____

(c) What was Mdm Siti trying to compare in her experiment? [1]

_____

_____

43. Everyday, Mr Ahmad drives home from work late in the evening just before the sun sets. While he is driving home, he is able to see the sun just directly before him.

Based on the information above, answer the following questions:

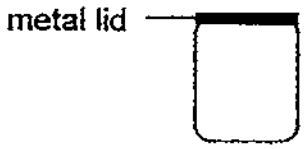
(a) State the direction, North, South, East or West, in which Mr Ahmad is heading for home every evening. [1]

_____

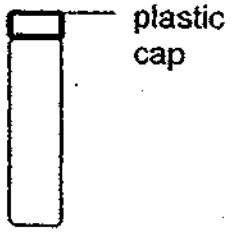
(b) State the property of light that enables Mr Ahmad to see the sun. [1]

_____

44. John had a tightly screwed glass jar with a metal lid and a tightly screwed metal container with a plastic cap as shown in the diagrams below.



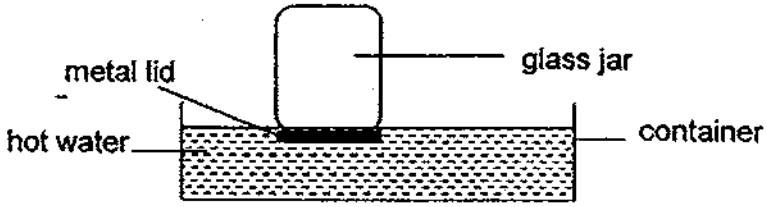
glass jar



metal container

John could **NOT** unscrew both the metal lid and the plastic cap despite using much of his strength to do so.

John's mother advised him to immerse the metal lid of the jar into a container of hot water for a while as shown in the diagram below.



Based on the information above, answer the following questions:

(a) Explain why John's mother advised him to immerse the metal lid of the jar into hot water. [2]

_____

_____

(b) What could John do to remove the plastic cap of the metal container? [1]

_____

(c) What could John conclude about metals in his experiment? [2]

_____

_____

- END OF PAPER -

Setters : Miss Lee S. K., Mrs S M Seet, Mr R. Lee

ANSWER SHEET

EXAM PAPER 2009

SCHOOL : RAFFLES GIRLS' PRIMARY
SUBJECT : PRIMARY 5 SCIENCE

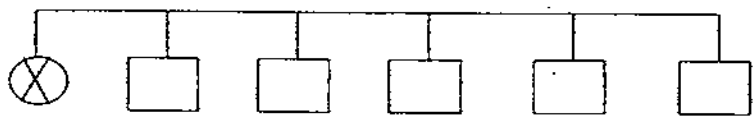
TERM : SA1

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

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

31)C. It is because the snail in set-up C has air food and water, the air comes in from the lid with holes, the food is from the leaf while the water from the wet soil. However the snail in A is lacking in air and water while the snail in B is lacking in food, thus the snailin C can live longer than the rest.

32)a)2 siblings.
b)4 uncles.
c)



33)It is because the branch is from the plant , hence it has the same genetic information in the parent in the plant as it is inherited to the new plant.

34)a)A: Wind B: Animals
b)It is because A has a wing-like structure allows the seed to glide through the air, away from the parent plant to be dispersed, but B has hooks which allow it to hook on animals which brush against them to be dispersed in another area when the seed falls off the animal. Hence the dispersed method of A and B are different .

35)a)Zero. It is because the seed needs water, warmth and oxygen to germinate. In this case although the seed has water and oxygen, it does not have warmth in the temperature of 0℃, thus the seed cannot germinate.

b)Ali was trying to investigate if warmth is needed for germination for seed X.

36)They receive sufficient which is needed for their growth and photosynthesis, the trees will block the sunlight if they grow on the ground.

37)a)It is because the water in set-up Y does not have a layer of oil to prevent the water from evaporating, thus Andrew is not able to conclude that plants take in water through their roots.

b)Andrew could add a layer of oil and mark the initially water level at the start of the experiment.

38)a)X: Micro-organism Z: organs

b)X.

c)biceps.

39)a)The plastic container and floating plants blocked out the sunlight so the submerged plants cannot photosynthesis.

b)It is because light can still pass through the clear glass container of set-up 1 and 2, while the light cannot pass through in set-up 3, hence Thomas did not conduct a fair test.

c)He could use plastic containers which do not allow light to pass through in all of the set-ups.

40)a)D, B, C

b)The mass of both blocks A and B are the same.

c)The volume of A, B, C and D are the same.

41)a)A.

b)Water from the hot milk evaporated to from water which condensed on the cool surface of the lid, to from tiny water droplets.

42)a)There is more heat the sun, allowing the liquid in A to evaporate faster.

b)The process is evaporation.

c)To compare the rate of evaporation of liquid X at different temperature.

43)a)West.

b)Light travels in a straight line.

44)a)It is because when metal gains heat it expands, thus, when the metal lid is immersed in the hot water, the lid will gains heat from the hot water, causing it to expand, this will then allow John to unscrew the glass jar.

b)He could immerse the lid of the metal container into a container of hot water to allow it to expand.

c)John can conclude that metal expands when it gains heat.