



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1) 2010

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

Name : _____ Index No.: _____ Class: P4

7th May 2010

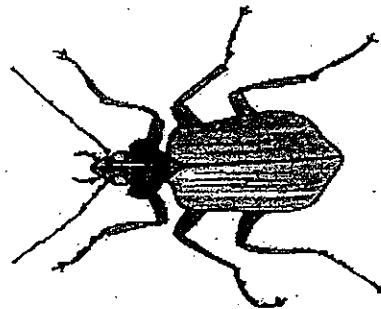
SCIENCE

ATT: 1 h 30 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.

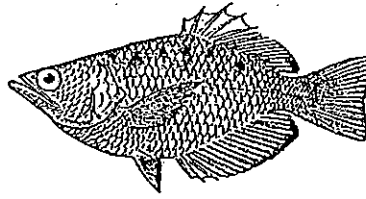
- Which one of the following situations does **NOT** show that a living thing responds to changes in its surroundings?
 - The cat died of old age.
 - The frightened boy screamed loudly for help.
 - The zebra runs away when it spots a cheetah.
 - The mimosa plant folds up its leaves when touched.
- The diagram below shows an animal.



Based on your observations, which one of the following describes the animal correctly?

	number of body parts	number of legs
(1)	two	six
(2)	two	eight
(3)	three	six
(4)	three	eight

3. Jane, Joanne and Josh each gave a statement about the animal shown below.



- Jane : It has fins.
Joanne : It eats plants only.
Josh : It is covered with scales.

Based on their observations of the fish, which of these children made the correct statement(s) about the fish?

- (1) Jane only
- (2) Josh only
- (3) Jane and Josh only
- (4) Joanne and Josh only

4. Ali was given 4 different types of leaves as shown below.



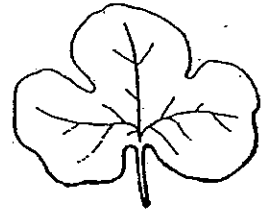
W



X



Y



Z

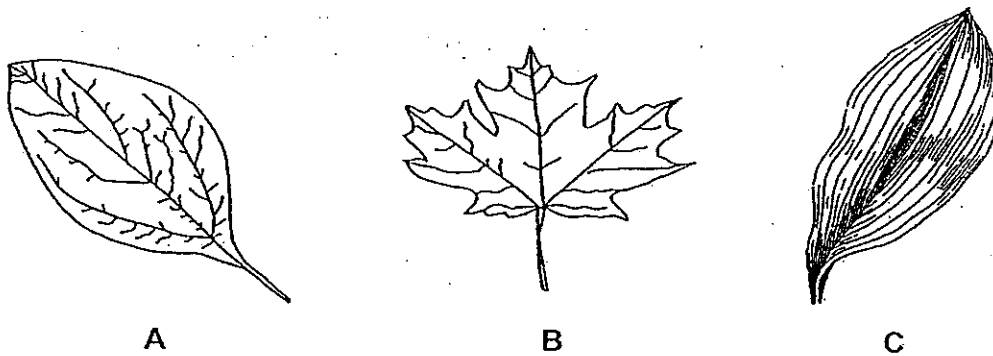
The leaf was described as follows:

~~is oval-shaped~~
has entire edge
has parallel veins

Which of these leaves, W, X, Y and/ or Z match(es) the descriptions above?

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

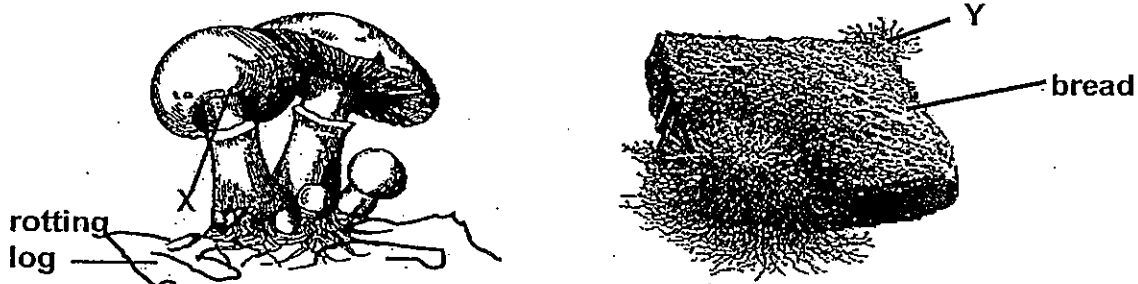
5. Three different types of leaves, A, B and C, are shown below.



Which one of the following shows the correct classification of these leaves?

	How are the leaves classified?	Group 1	Group 2
(1)	according to their shapes	A, B	C
(2)	according to their edges	B, C	A
(3)	according to their vein patterns	A, B	C
(4)	according to their textures	B, C	A

6. Two different types of living things are shown below.

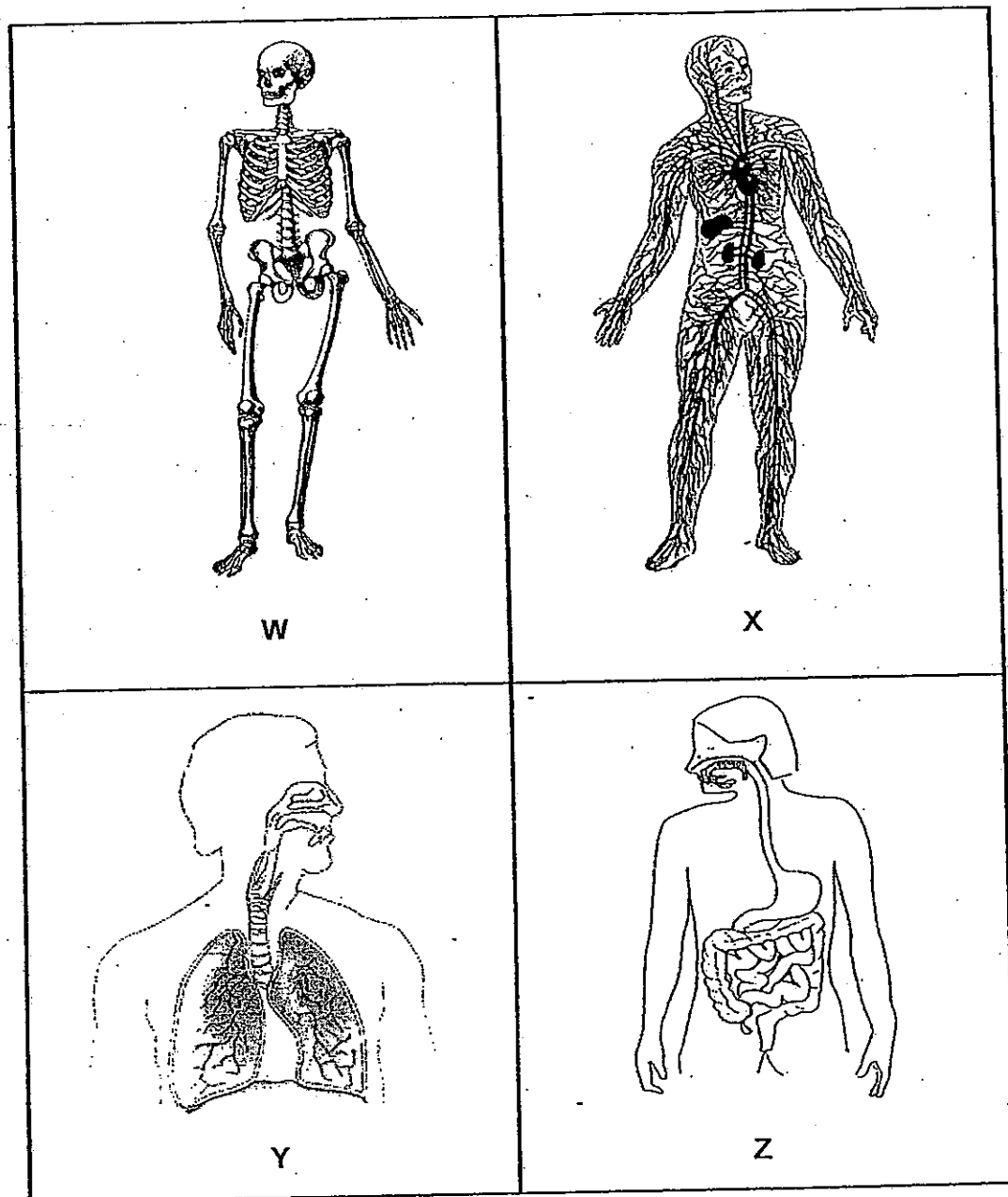


Both types of living things, X and Y, share some characteristics.

Which of the following characteristics describe both living things X and Y correctly?

- A Both feed on dead matter.
 - B Both reproduce from spores.
 - C Both cannot make their own food.
 - D Both respond to changes in their surroundings.
- (1) A and B only (2) A and D only
 (3) B and C only (4) A, B, C and D

Four different body systems found in a human body are shown below.



Based on the systems shown above, answer questions 7, 8 and 9.

7. Which system enables the body to move?

(1) W

(2) X

(3) Y

(4) Z

8. Ravi described one of the human body's systems as follows:

- It cannot move body parts.
- It does not support the body.
- Wastes can be found in this system.
- Absorption of nutrients takes place in this system.

Which one of these body systems matches Ravi's descriptions?

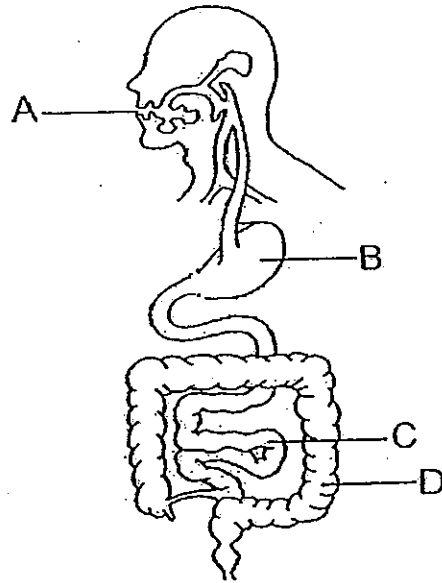
- | | |
|-------|-------|
| (1) W | (2) X |
| (3) Y | (4) Z |

9. Which of the following statements about the system, Y, is/ are true?

- A It takes in air.
- B It allows gaseous exchange to take place.
- C Part of the air is passed to the blood of system X.

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

A human body system consists of the parts shown in the diagram below.



Based on the diagram above, answer questions 10 and 11.

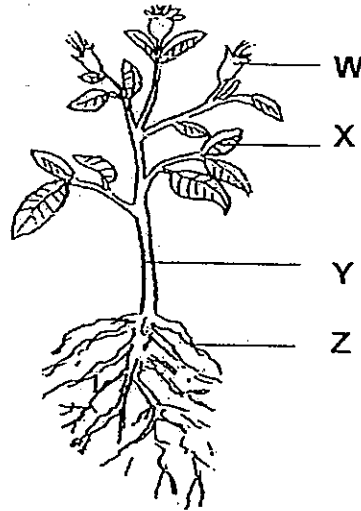
10. Which one of the following statements about the system is **incorrect**?

- (1) Digestive juices in part B help to digest the food.
- (2) Digested food in part C is absorbed by the body.
- (3) Part D removes water from the undigested food.
- (4) Saliva found in part A does not help to digest the food.

11. Which one of the following statements about part C is **correct**?

- (1) Digestion of food ends here.
- (2) Digestive juices are absent here.
- (3) Partial digestion of food takes place here.
- (4) Water in the undigested food is removed here.

The parts of a plant, W, X, Y and Z, are labelled as shown in the diagram below.



Based on the diagram above, answer questions 12 and 13.

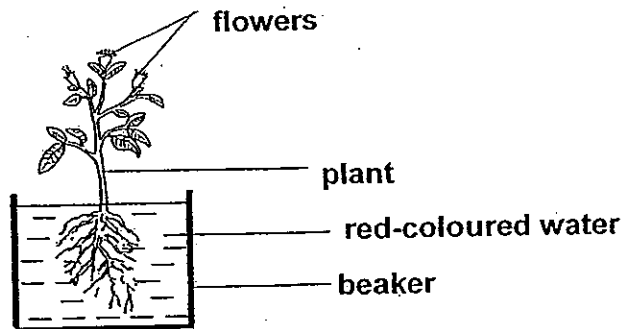
12. Which one of these parts keeps the plant upright?

- | | |
|-------|-------|
| (1) W | (2) X |
| (3) Y | (4) Z |

13. Which one of the following gives the functions of these parts, X and Z, correctly?

	X	Z
(1)	to make food for us	to hold the plant firmly to the ground
(2)	to hold the plant firmly to the ground	to provide food for us
(3)	to make food for the plant	to hold the plant firmly to the ground
(4)	to store food for its young	to provide food for us

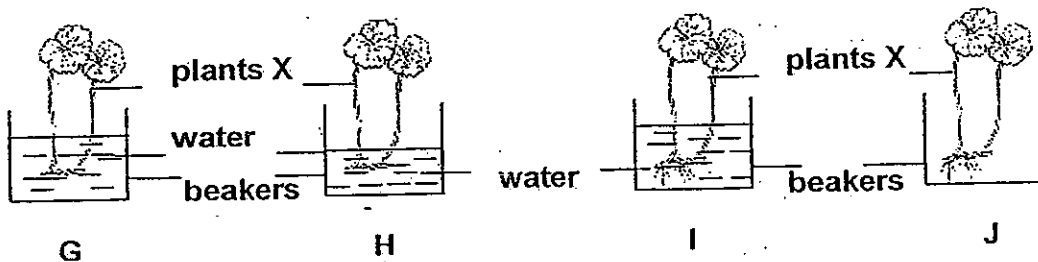
14. Sarah put a plant with flowers into a beaker of red-coloured water.



Sarah noticed that the flowers of the plant turned red after a day.

Which one of the following statements Sarah made of the plant is correct?

- (1) The roots need sunlight to make food for the plant.
 - (2) The roots transport food made by the leaves to the flowers.
 - (3) The roots carry water and minerals from the plant to the flowers.
 - (4) The roots absorb the coloured water which is transported to the flowers.
15. Sam prepared 4 set-ups (as shown below) to conduct an experiment to find out if plant X can survive without its roots.



Which pair of these set-ups shown above should Sam choose to conduct a fair test for his experiment?

- (1) G and H
- (2) G and I
- (3) H and J
- (4) I and J

Kumar wanted to compare the growth of shoot of two different types of seeds, X and Y.

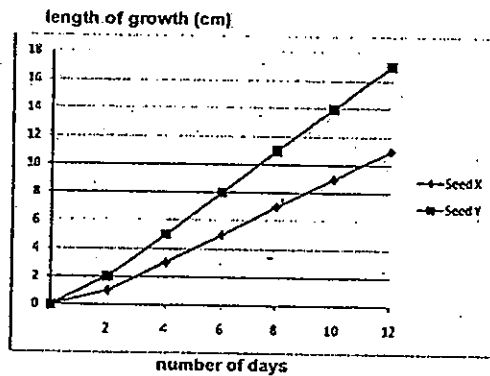
He planted 10 of each type of seeds in 2 identical pots and tabulated his findings as shown below.

	average length of shoot of germinating seeds (cm)						
number of days	0	2	4	6	8	10	12
seed X	0	1	3	5	7	9	11
seed Y	0	2	5	8	11	14	17

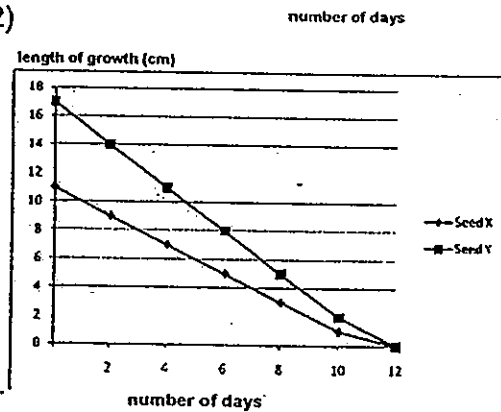
Based on the information above, answer questions 16 and 17.

16. Which one of the following graphs shows correctly Kumar's findings?

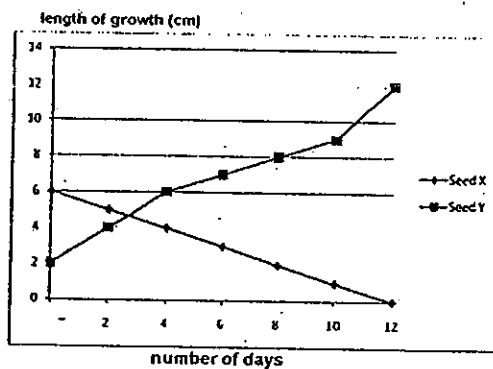
(1)



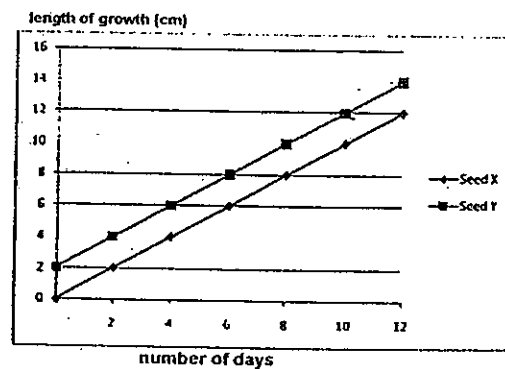
(2)



(3)



(4)

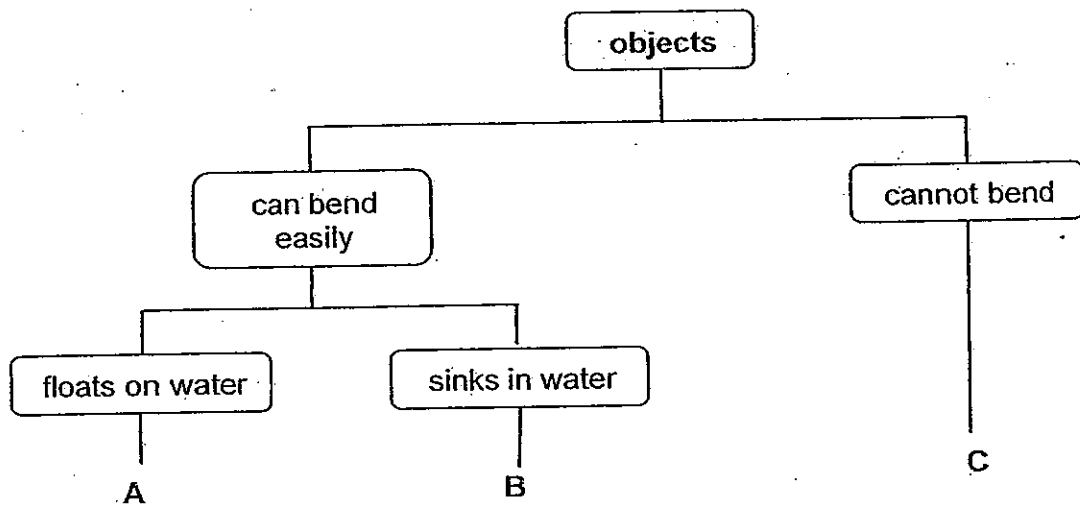


17. Which of the following conclusions Kumar made about his experiment is / are correct?

- A Seeds X and Y germinated after day 0.
- B Seedlings Y grew faster than seedlings X.
- C Seedlings X grew more healthily than seedlings Y.
- D Seeds X took a longer time to germinate than seeds Y.

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

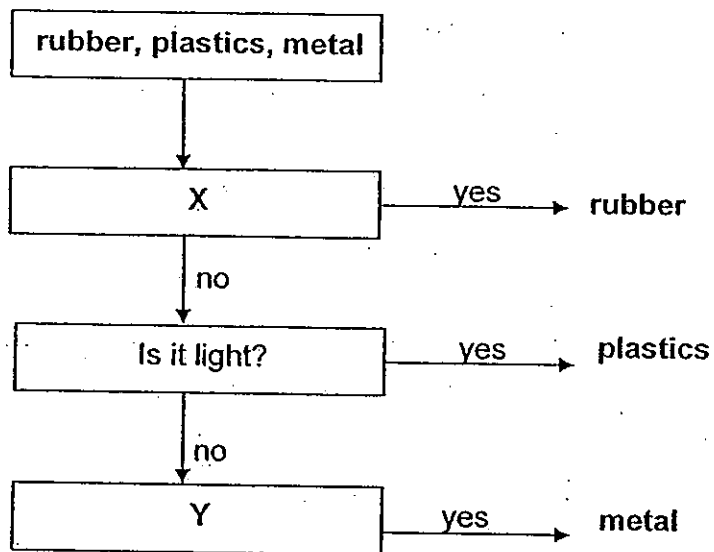
18. Darren classified some objects into two groups as shown in the diagram below.



Which one of the following gives the correct examples of objects A, B and C correctly?

	A	B	C
(1)	ice cube	rubber band	nail
(2)	nail	ice cube	plastic straw
(3)	rubber band	leather belt	stone
(4)	ice cube	stone	rubber band

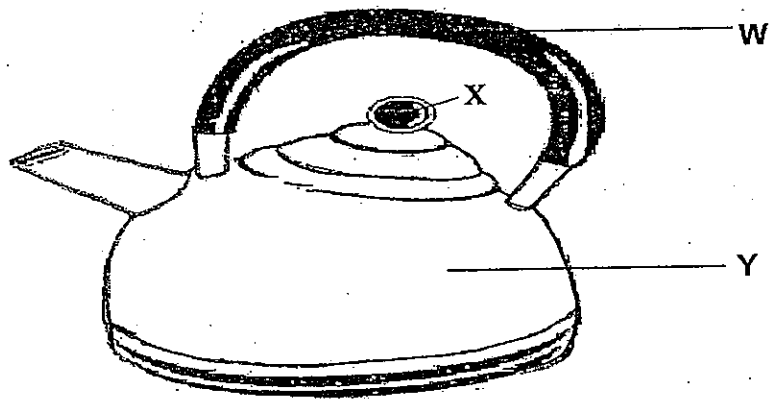
19. The flow chart below shows how some materials are differentiated.



Which one of the following identifies correctly the questions in boxes X and Y?

	X	Y
(1)	Does it come from animals?	Is it a man-made material?
(2)	Does it come from plants?	Is it hard?
(3)	Is it hard?	Does it come from plants?
(4)	Does it sink in water?	Does it come from plants?

20. Johnson had a kettle with its parts labelled: W, X and Y. W, X and Y are made of a different material.



Which one of the following shows the most suitable materials used for W, X and Y?

	W	X	Y
(1)	glass	plastics	metal
(2)	plastics	rubber	plastics
(3)	plastics	plastics	metal
(4)	metal	plastics	metal

22. Estelle used a piece of glass to scratch on 3 different types of materials, A, B and C, **ONE** at a time.

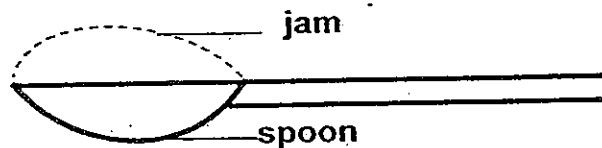
She recorded her observations in the table below.

material	observation(s)
A	Faint scratch marks were seen.
B	Deep scratch marks were seen.
C	No scratch marks were seen.

Which one of the following shows the correct order of hardness in which these materials were arranged?

	increasing hardness →		
(1)	A	B	C
(2)	A	C	B
(3)	B	A	C
(4)	C	B	A

23. Jing Xuan had a spoonful of jam on a spoon as shown below.



Jing Xuan spread all the jam on a piece of bread.

Which one of the following properties of the jam did Jing Xuan change?

- | | |
|-----------------|----------------|
| (1) its mass | (2) its shape |
| (3) its texture | (4) its volume |

24. The table below shows three different types of matter and their properties at room temperature.

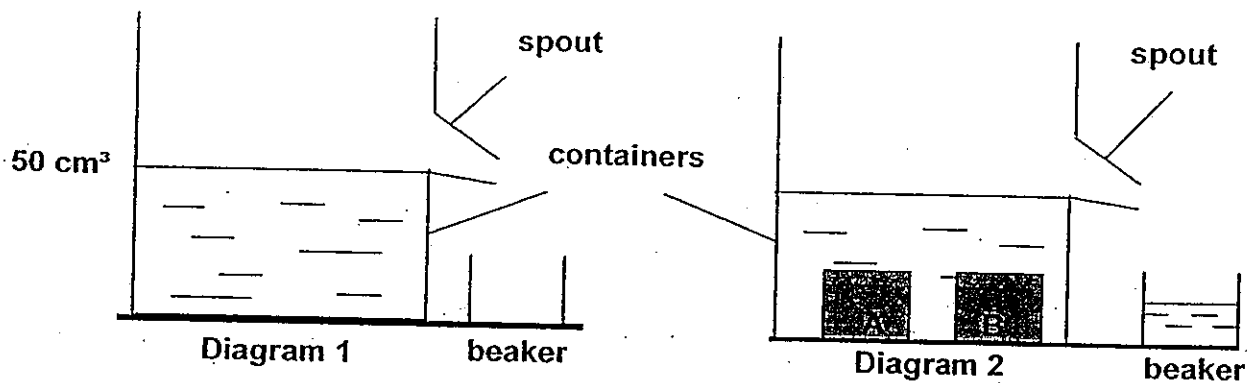
A tick (✓) in the box shows the presence of the property stated at room temperature.

type of matter	properties			
	takes up space	has a definite shape	does not have a definite volume	can be compressed
A	✓			
B	✓	✓		
C	✓		✓	✓

Which one of the following identifies the states of matter A, B and C correctly?

	A	B	C
(1)	solid	liquid	gas
(2)	solid	gas	liquid
(3)	liquid	solid	gas
(4)	gas	liquid	solid

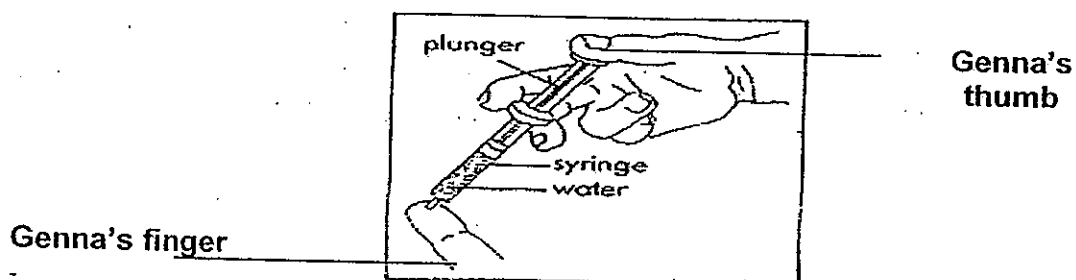
27. Ravi filled a container to its spout with 50 cm^3 of water. An empty beaker, which collected the overflowing water from the container, was placed directly below the sprout of the container as shown in Diagram 1.



Two identical objects, A and B, each with a volume of 8 cm^3 , were dropped gently into the container of water. The beaker collected the overflowed water from the spout of the container as shown in Diagram 2.

What was the volume of water collected in the beaker?

- (1) 8 cm^3 (2) 16 cm^3
 (3) 34 cm^3 (4) 50 cm^3
28. Genna put some water into a syringe and placed her finger at one end of it as shown in the diagram below.

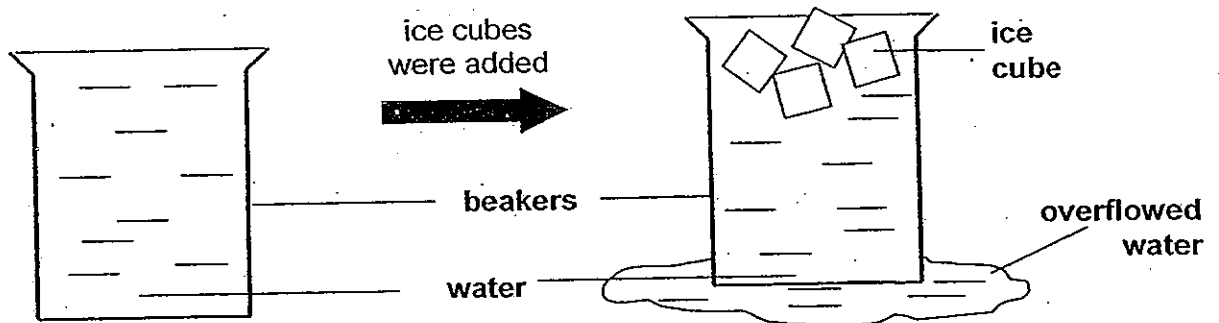


She tried to push in the plunger with her thumb but she found that she could NOT do so.

Which one of the following explains correctly why Genna could NOT push in the plunger?

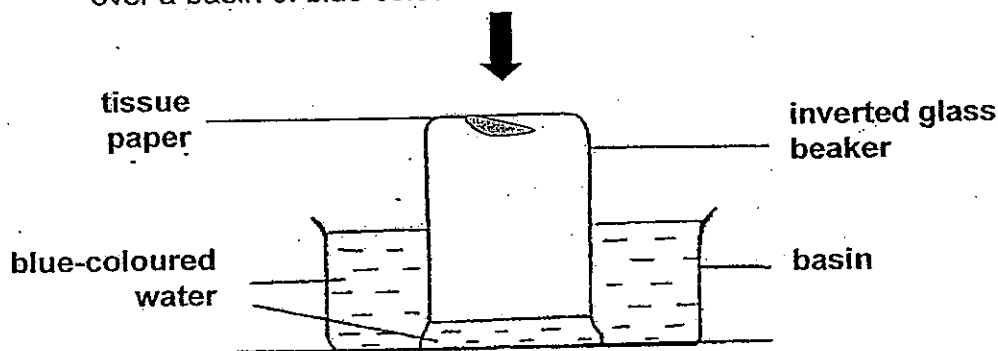
- (1) Water has no definite volume.
 (2) Water cannot be compressed.
 (3) Water cannot change its shape.
 (4) The plunger cannot change its volume.

29. A beaker was filled to the brim with water. Some ice-cubes were added to the beaker of water as shown in the diagram below.



Why did the water overflow when some ice cubes were added?

- (1) The volume of water in the beaker decreased.
 - (2) The ice cubes took up space in the beaker of water.
 - (3) The ice cubes added mass to the water in the beaker.
 - (4) The water and ice cubes in the beaker could be compressed.
30. A piece of tissue paper was stuck at the base of a glass beaker. The glass beaker was inverted and pushed directly downwards (indicated by the arrow) over a basin of blue-coloured water as shown below.

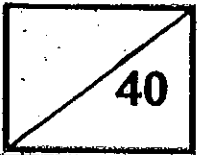


The piece of tissue paper remained dry when the inverted glass beaker was pushed directly into the basin of blue-coloured water.

Which one of the following statements explains why the piece of tissue paper remained dry?

- (1) The inverted glass beaker occupied space in the basin.
- (2) Compressed air took up space in the inverted glass beaker.
- (3) The tissue paper took up space in the inverted glass beaker.
- (4) Water could not be compressed to fill the inverted glass beaker.

Name : _____ Index No: _____ Class: P4 _____



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 brackets [] at the end of each question or part question.

31. The table below lists the characteristics of four different living things A, B, C and D.

A tick (✓) in each box indicates the characteristic which the living thing has.

characteristic of living thing	living thing			
	A	B	C	D
needs water to survive	✓	✓	✓	✓
has hair			✓	
takes in dissolved oxygen through its gills		✓		
can trap sunlight	✓			
has 6 legs and 3 body parts				✓
can move about from place to place		✓	✓	✓
reproduces by spores.	✓			

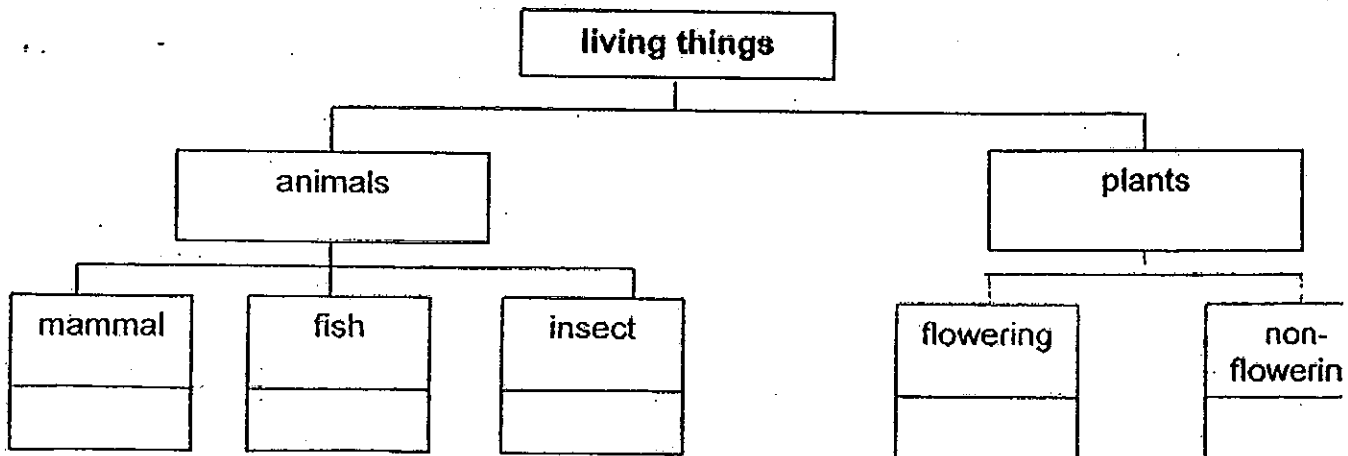
Based on the information above, answer the following questions:

(a) Classify the four living things, A, B, C and D, using the diagram below.

Write the letters, A, B, C and D, **ONCE** only in the appropriate boxes below.

You do **NOT** need to fill in all the boxes.

[2]



Question 31 to be continued on the next pag

- (b) C lays eggs.
Give an example of C. [1]

- (c) Other than those characteristics mentioned in the table on page 20, state **ANOTHER COMMON** characteristic of both living things A and C. [1]

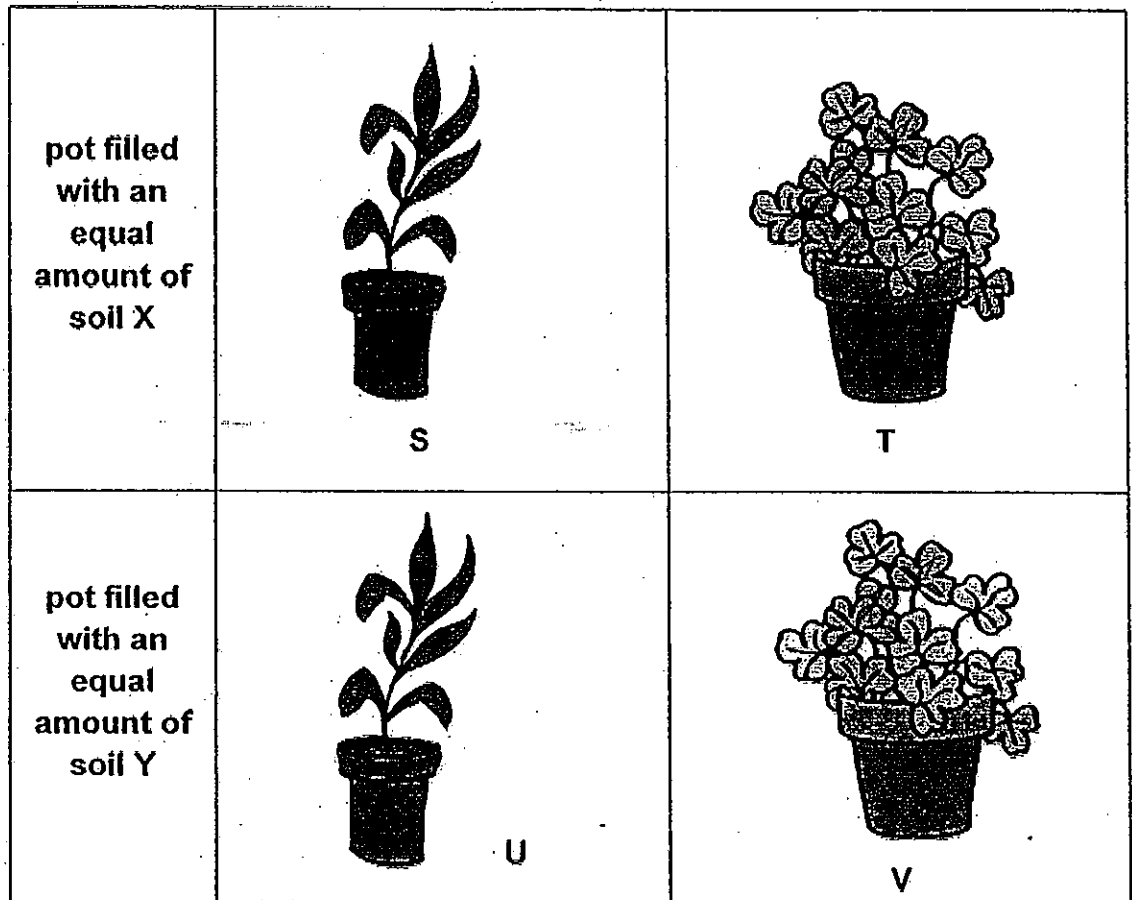
- (d) An animal, as shown below, is grouped together with D.



Give **TWO** reasons why the animal shown above cannot be grouped together with D. [2]

REASON 1	
REASON 2	

32. Mrs Sim wanted to find out if the type of soil affects the growth of a plant. She prepared 4 different pots as shown below.



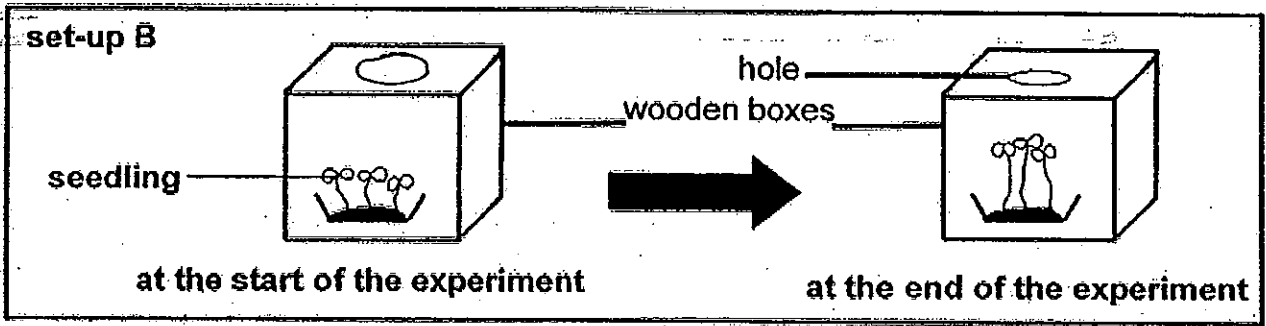
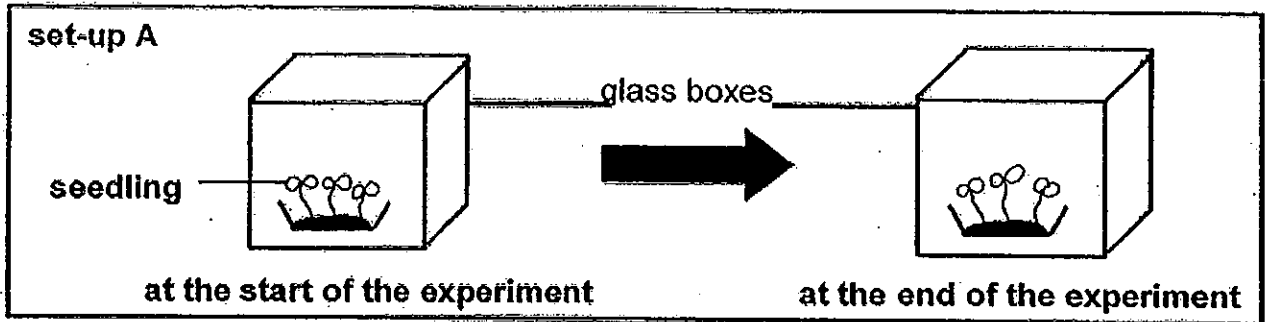
- (a) Which two of these pots should Mrs Sim use to conduct a fair experiment? [1]

Pots _____

- (b) State TWO OTHER variables which Mrs Sim needed to keep the same to conduct a fair test for her experiment. [2]

<p>1ST VARIABLE</p>	
<p>2ND VARIABLE</p>	

33. Joseph wanted to know whether seedlings can respond to changes in their environment. He set up an experiment using the apparatus as shown below.



Joseph noticed that at the end of his experiment, the seedlings in set-up B grew taller than those seedlings in set-up A.

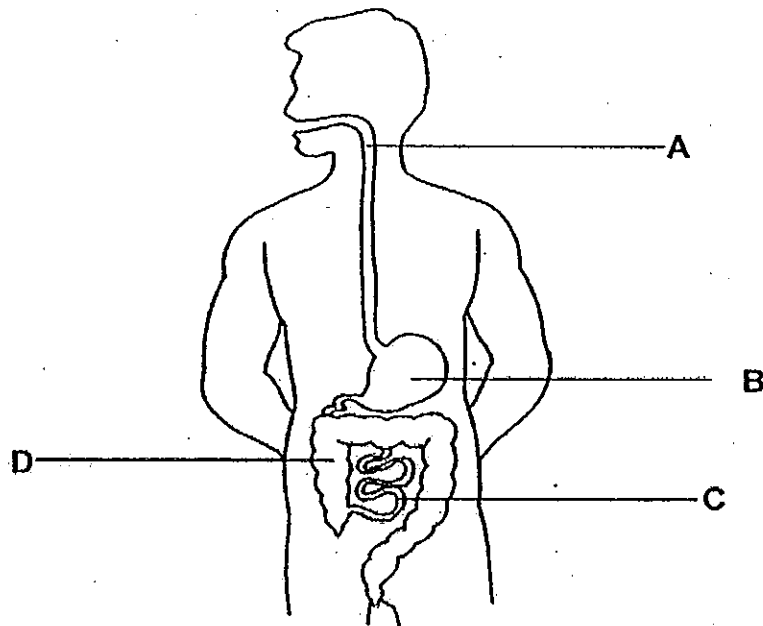
Based on the information above, answer the following questions:

(a) Name one **OTHER** difference observed between the seedlings in set-ups A and B. [1]

(b) Would the seedlings in set-up A grow in the same way as those seedlings in set-up B if there was a similar hole in set-up A?

Explain your answer. [2]

34. The diagram below shows parts of a body system.



Based on the diagram above, answer the following questions:

(a) Name the part(s) where digestive juices are produced.

Write letter(s) A, B, C and/ or D only.

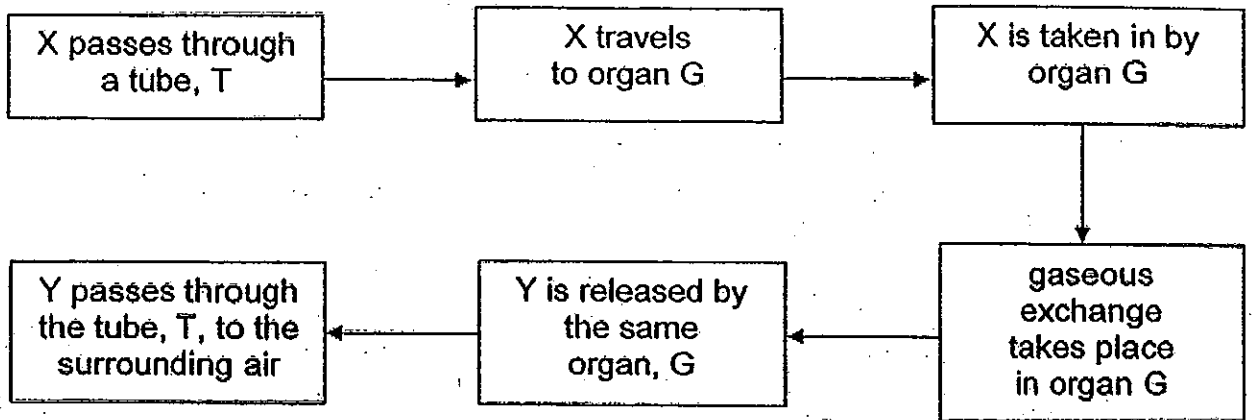
[1]

(b) Tricia's mother told her to have rice instead of porridge for dinner. Eating porridge would make her go hungry earlier.

Explain why Tricia's mother advised her to have rice for dinner.

[2]

35. The flow chart below shows how gaseous exchange between X and Y takes place in a body system.

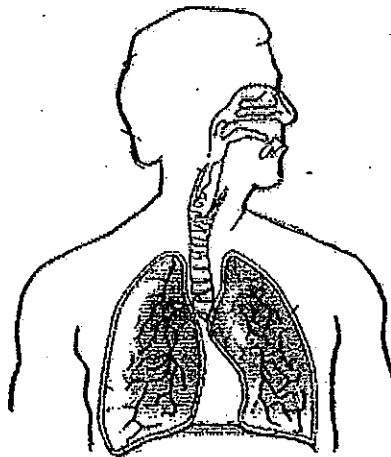


Based on the diagram above, answer the following questions:

- (a) Identify G and T and label them in the diagram below.

Write letters G and T only.

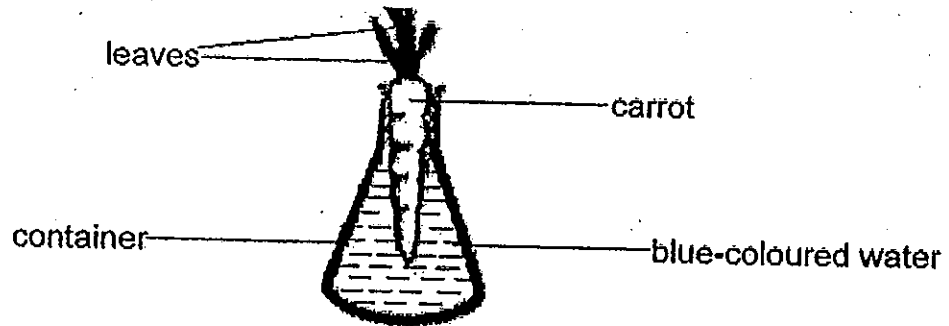
[2]



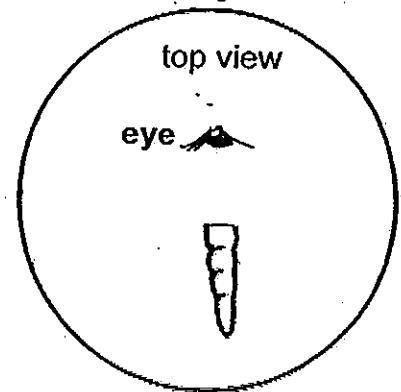
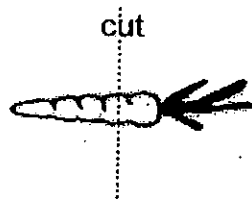
- (b) What happens to organ G when the person breathes in?

[1]

36. The diagram below shows a carrot growing in a container filled with blue-coloured water.



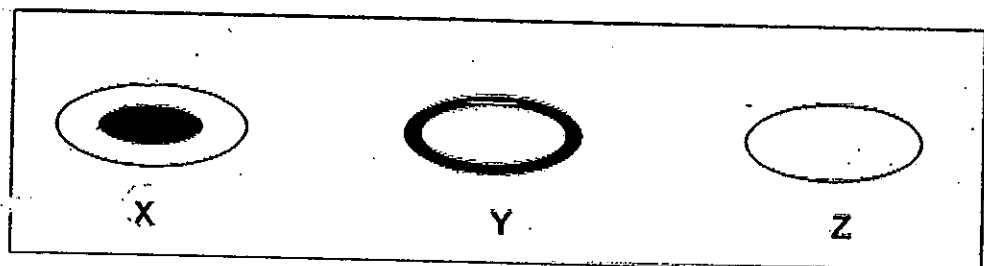
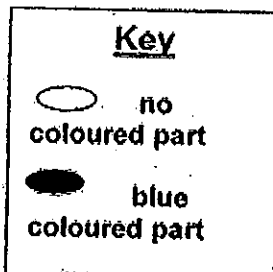
After a day, the carrot was removed and cut as shown in the diagram shown below.



- (a) Which one of the following diagrams, X, Y or Z, shows the correct cross-section of the cut carrot from the top view?

CIRCLE the letter X, Y or Z in the box below.

[1]

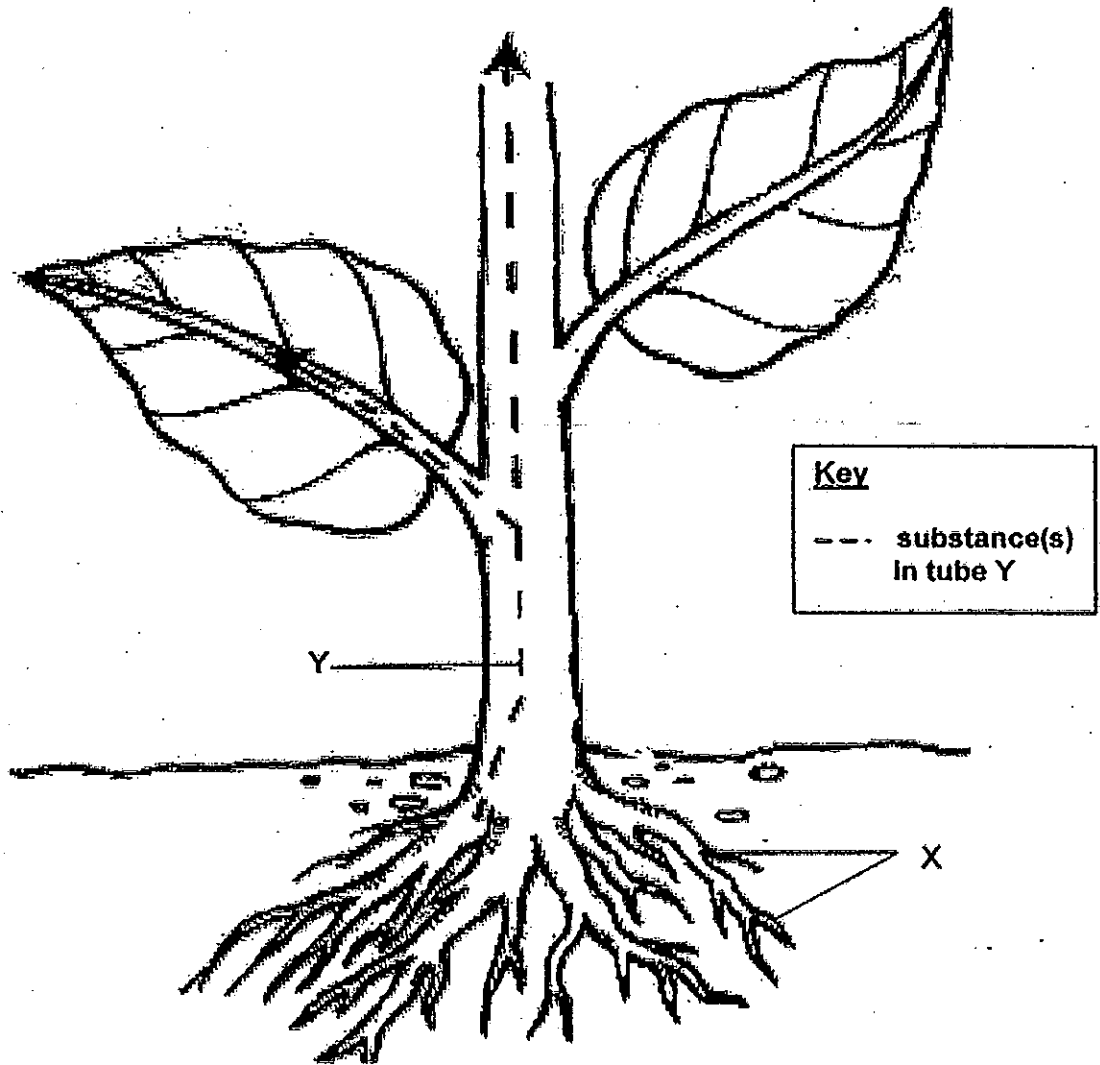


- (b) Did the leaves of the carrot turn blue?

Explain your answer.

[1]

37. The diagram below shows the tube, Y, found within a plant. --



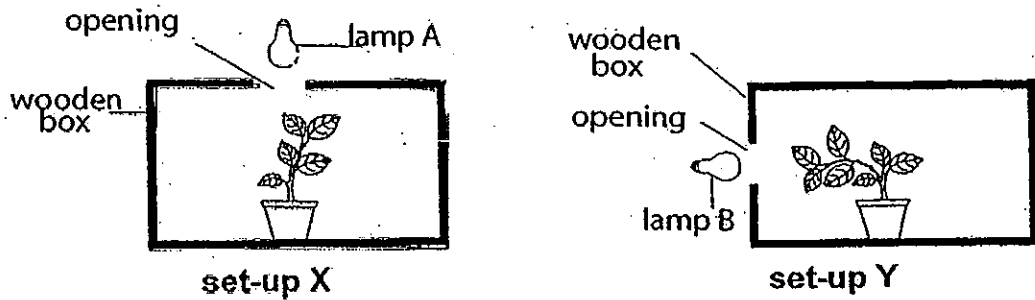
Based on the information above, answer the following questions:

(a) What is carried in tube Y of the plant? [1]

(b) What is another function of X? [1]

(c) OTHER than water and air, state one condition which the plant needs to produce food. [1]

38. Peter set up an experiment using the following set-ups, X and Y.



Each set-up consisted of a wooden box with an opening at one of its sides. A brightly-lit lamp was placed at the opening. A similar pot of plant was placed at the centre of the wooden box. Identical wooden boxes and lamps were used.

Based on the information above, answer the following questions:

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

Peter had another similar pot of plant in set-up Z as shown below.

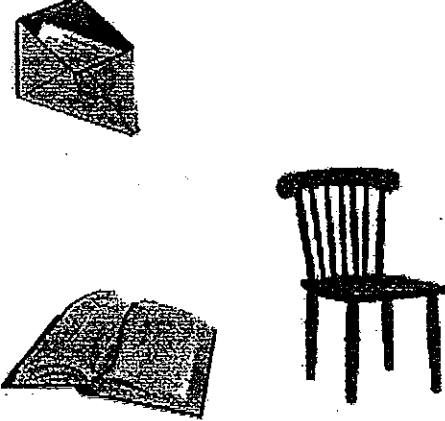
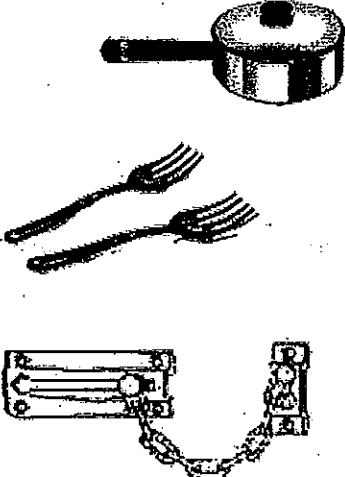


set-up Z

(b) Predict the growth of the pot of plant in set-up Z.
DRAW in the diagram above the growth of the plant in set-up Z after a week. [1]

(c) Explain why the plant would grow in such a manner. [1]

39. Ralph grouped some of the non-living things into 2 main groups, S and T, as shown below.

non-living things	
group S	group T
	

Based on your observations of the non-living things shown above, answer the following questions:

- (a) How did Ralph group these non-living things?

Give a suitable sub-heading for each of these groups of non-living things: [2]

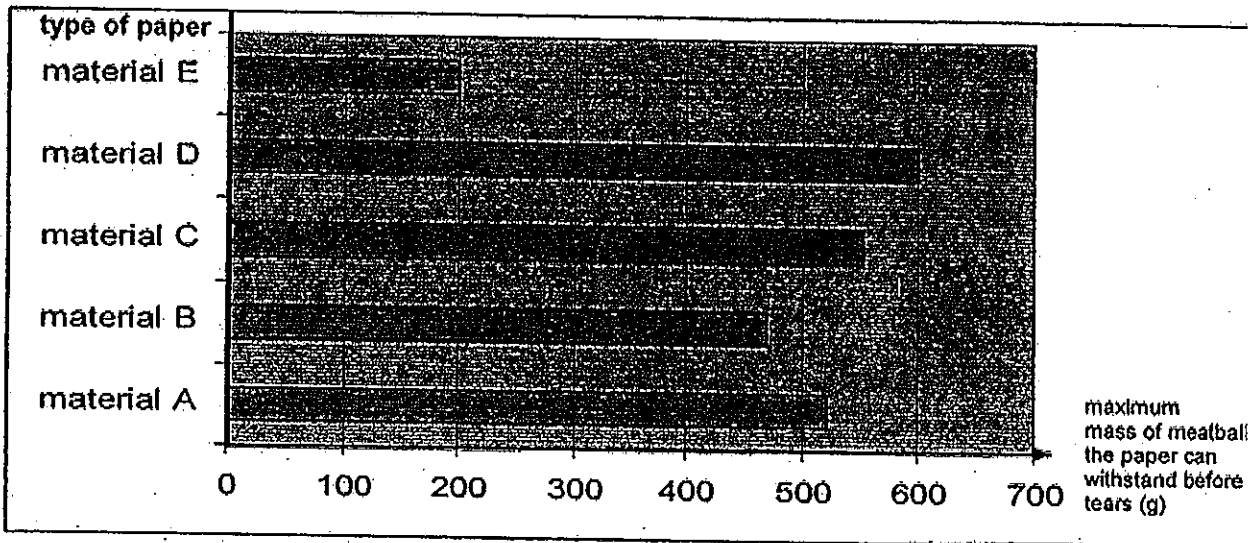
S	
T	

- (b) Which group would Ralph put a padlock in?

Give a reason for your answer. [2]

40. Mandy wanted to find out which type of paper is most suitable to make bags to carry at least 500 g of the meat balls **WITHOUT** tearing.

Mandy had a graph which shows the maximum mass of meatballs each type of paper, A, B, C, D and E, can withstand just before it tears as shown below.



Based on the information above, answer the following questions:

- (a) Arrange these papers in order of their strength.

Write letters A, B, C, D and E **ONCE** only.

[1]

→
increasing strength

- (b) Which type(s) of paper(s) is/ are **NOT** suitable to make paper bags to carry 500 g of meatballs?

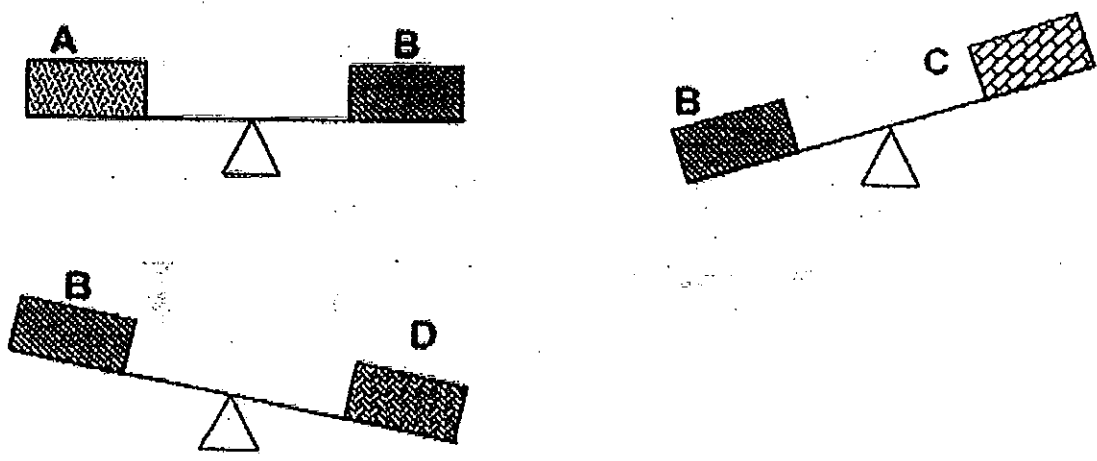
Give a reason for your answer.

[1]

41. Jaime had 4 similar blocks, A, B, C and D, of the same size. Each of these blocks was made of a different material.

Using the same balance, Jamie compared two of these blocks at a time.

The diagrams below show Jaime's observations.

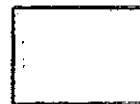


Based on the information above, answer the following questions:

- (a) Arrange these blocks accordingly to their masses, from the lightest to the heaviest.

Write letters B, C and D **ONCE** only.

[1]



lightest

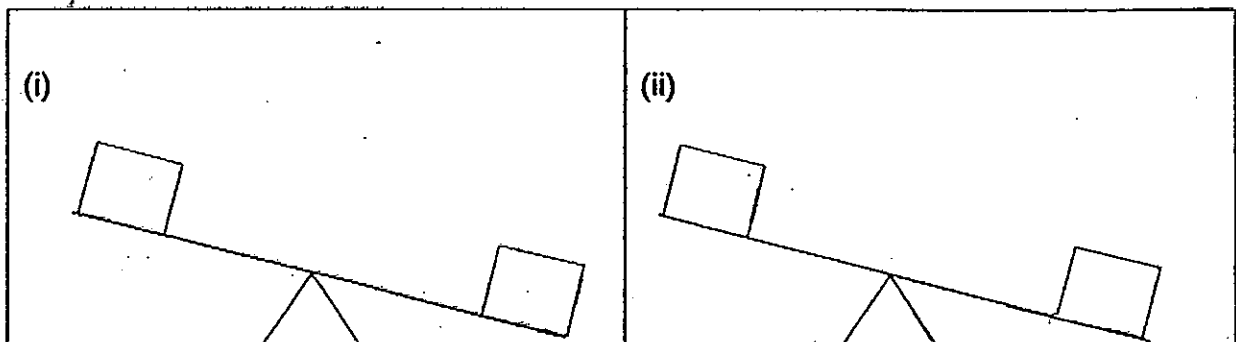
Jaime found another object, X, which was heavier than C but lighter than B.

- (b) Write letter B, C or X in each appropriate box in the two diagrams below to show clearly the comparison of masses between

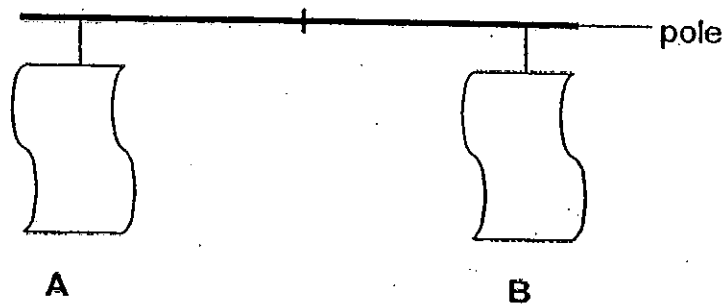
(i) X and B

(ii) X and C

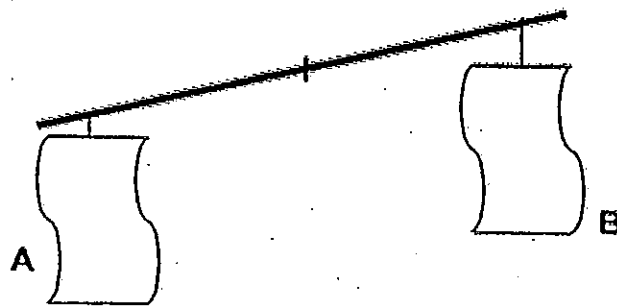
[2]



42. Two identical towels balanced on a pole are shown in the diagram below.



50 cm³ of water was sprayed on one of the towels and the pole tilted at an angle as shown below.



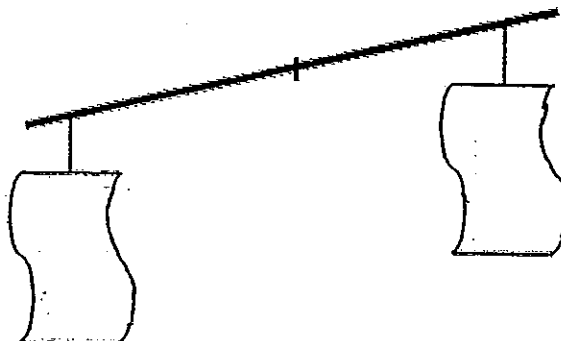
Based on the information above, answer the following questions:

- (a) Which one of these towels, A or B, had 50 cm³ of water sprayed on it? Give a reason for your answer. [1]

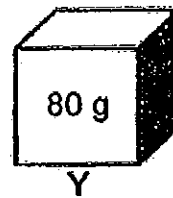
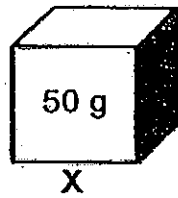
- (b) Immediately after, **ANOTHER** 100 cm³ of water was sprayed on the **OTHER** towel.

Predict the direction in which the pole would tilt.

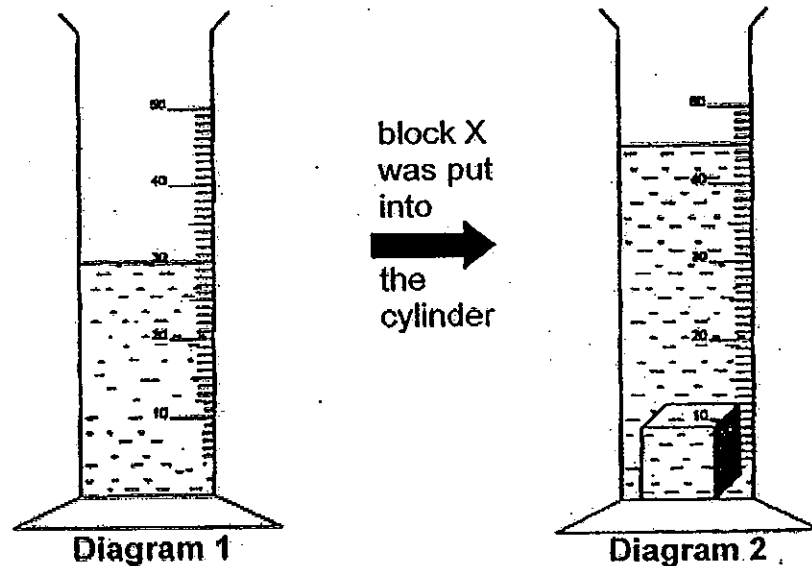
LABEL A and B on the correct towels in the diagram below. [1]



43. Amita had 2 solid metal blocks, X and Y, of the same shape and size. Each of the block was of a different mass as shown in the diagrams below.



Amita lowered block X gently into a measuring cylinder containing 30 cm^3 of water. The water level in the cylinder rose as shown in the Diagram 2 below.



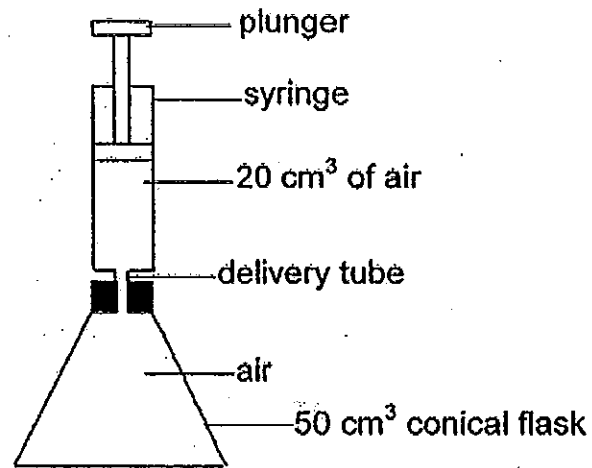
Based on the information above, answer the following questions:

- (a) What was the volume of block X? [1]

- (b) Amita removed block X. Making sure that the water level in the cylinder remained at 30 cm^3 , she then put block Y into it.

Predict the new water level in the measuring cylinder.
Give a reason for your answer. [1]

44. A syringe containing 20 cm^3 of air was inserted into a delivery tube as shown in the diagram below.



The plunger was pushed in completely.

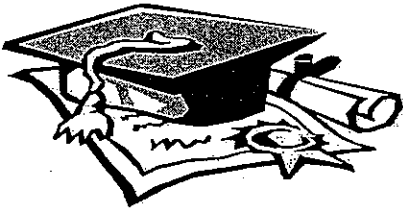
What was the total volume of air in the conical flask after the plunger was pushed in completely?

Give a reason for your answer.

[1]

- END OF PAPER -

Setters: Mrs Elaine Lim, Mr Johnson Ong, Ms Chong

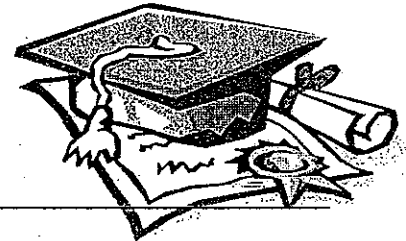


ANSWER SHEET

EXAM PAPER 2010

SCHOOL : RAFFLES GIRLS' PRIMARY
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1



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

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

31)a) mammal fish insect flowering non-flowering
 C B D A

b) A platypus.

c) They can respond to changes.

d) 1) It has only 2 body parts. 2) It has 8 legs.

32)a) S and U

b) 1) The amount of water given to the 2 plants.

2) The amount of sunlight given to the 2 plants.

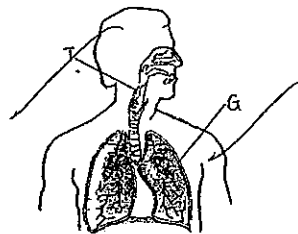
33)a) In set-up B, the plants grew in one direction while in set-up A, they grew in different directions.

b) No. As the glass is transparent, it allows light to pass through it, so the plant will remain the same, growing in different directions.

34)a) B, C

b) Porridge is watery, as it will get digested faster.

35)a)



b) It enlarges, like a balloon.

36)a)X

b)Yes. When the blue coloured water is absorbed the stem transports the blue water to the leaves.

37)a)Water and mineral salts.

b)It firmly roots the plant to the ground.

c)Sunlight.

38)a)It was to find out if plants respond to light.

b)



c)Plants grow towards light to make food.

39)a)S: Made from things which were once alive.

T: Made from things which were never alive.

b)Group T. As a padlock is made out of metal, and metal is never alive, it should be placed under Group T.

40)a)E, B, A, C, D

b)E and B. It is not strong enough to carry the weight of 500g.

41)a)C, B, D

b)i)X, B ii)C, X

42)a)A. Water has mass. So, towel A tilted down.

b)B A

43)a)15cm³.

b)45cm³. As block Y is the same shape and size as block X, it should have the same volume.

44)Air can be compressed. Therefore the volume is still the same.