

SEMESTRAL ASSESSMENT (1) 2017

Name : _____ Index No: _____ Class: P4 _____

9 May 2017

SCIENCE

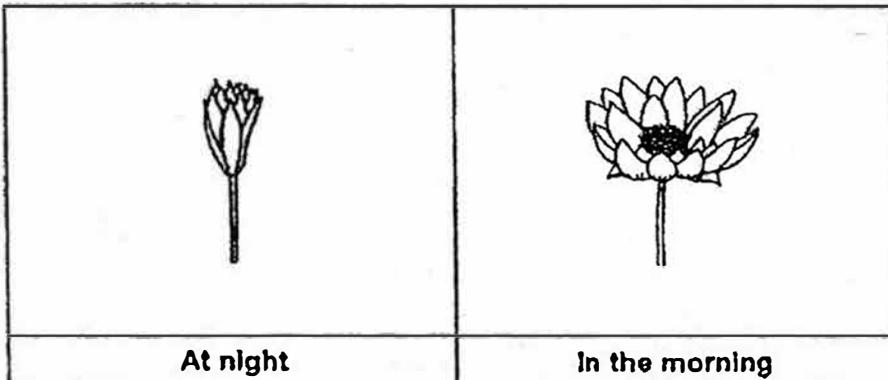
Att: 1 h 45 min

| | |
|--------------------------|----|
| Section A | 58 |
| Section B | 44 |
| Your score out of 100 | |
| Parent's signature | |

SECTION A (28 x 2 marks)

For each question from 1 to 28, 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 (OAS) provided.

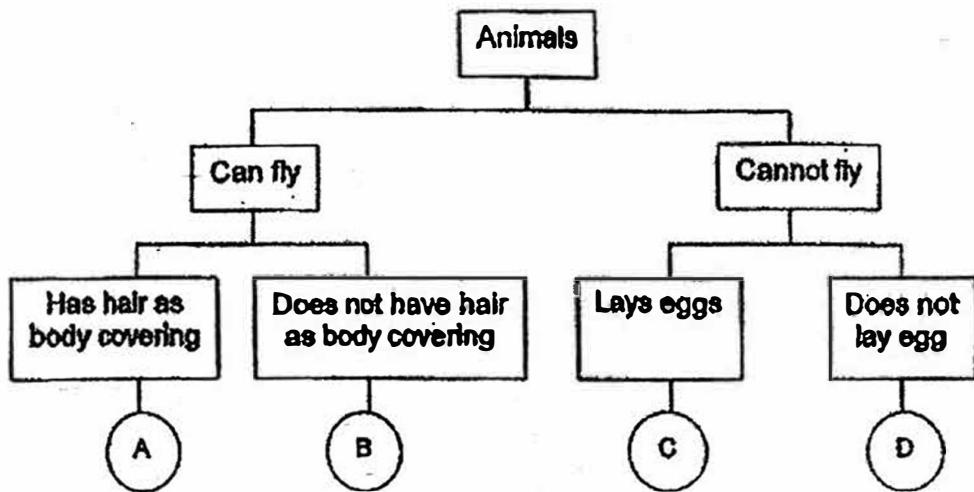
1. The flower shown below closes at night and only opens in the early morning.



Which one of the following characteristics of living things does the above flower show?

- (1) Living things die.
- (2) Living things reproduce.
- (3) Living things need air, food and water to survive.
- (4) Living things respond to changes in its surroundings.

2. The flow chart below shows how some animals are classified into groups A, B, C and D.



The diagram below shows a bat.

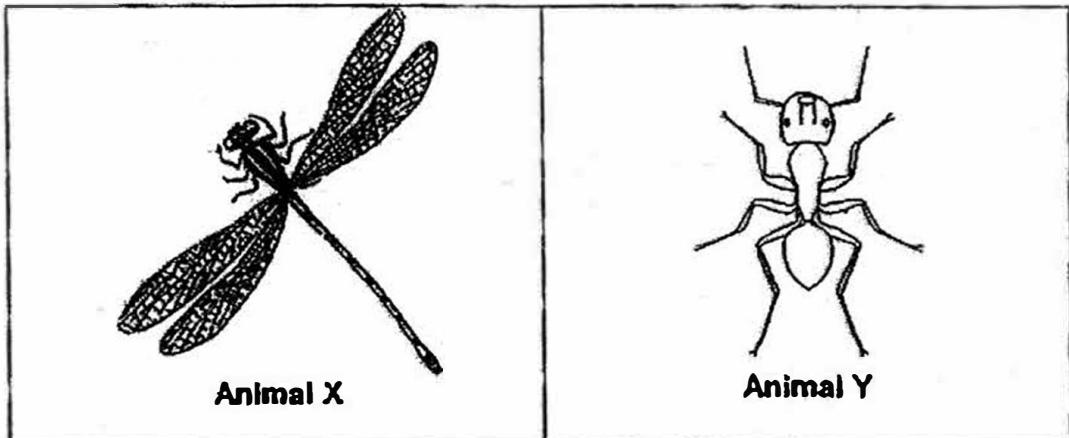


Bat

Which of the groups, A, B, C or D does the bat belong to?

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

3. The diagrams below show animals X and Y.



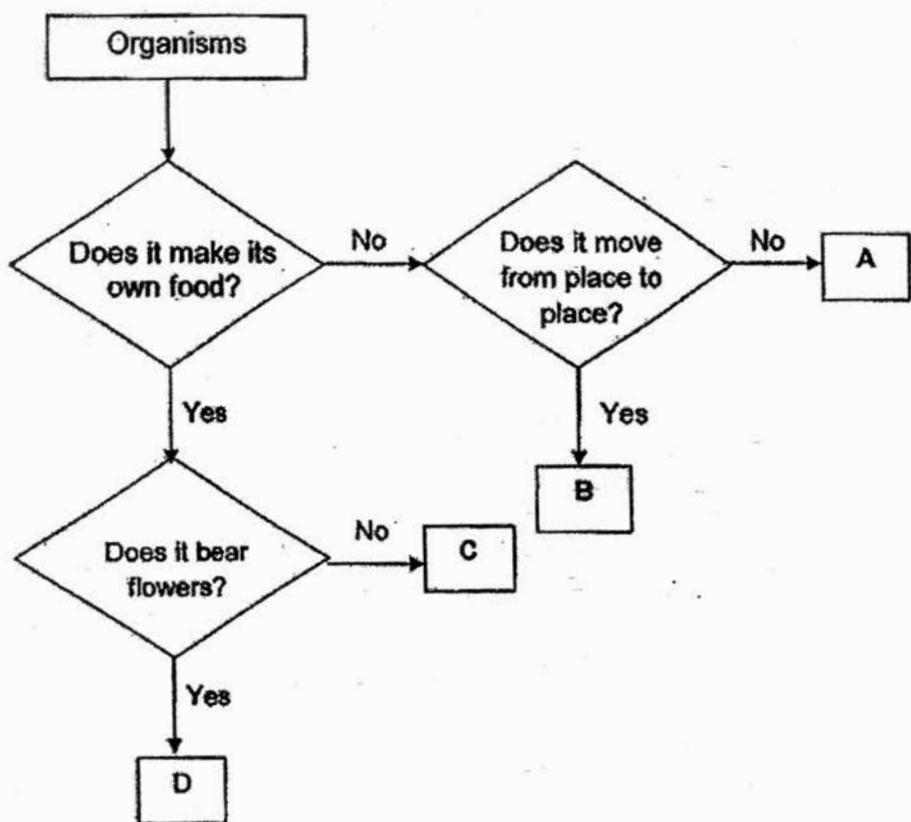
Based on the above diagrams, which one of the following statements is correct?

- (1) Both animals X and Y are insects because they have six legs.
- (2) Both animals X and Y are not insects because they do not have three body parts.
- (3) Only animal Y is an insect because it has feelers but animal X does not have feelers.
- (4) Only animal X is an insect because animal X has wings but animal Y does not have wings.

4. Which one of the following is a characteristic of all fungi?

- (1) All fungi can be eaten.
- (2) All fungi reproduce by seeds.
- (3) All fungi cannot make their own food.
- (4) All fungi cannot be seen with our naked eyes.

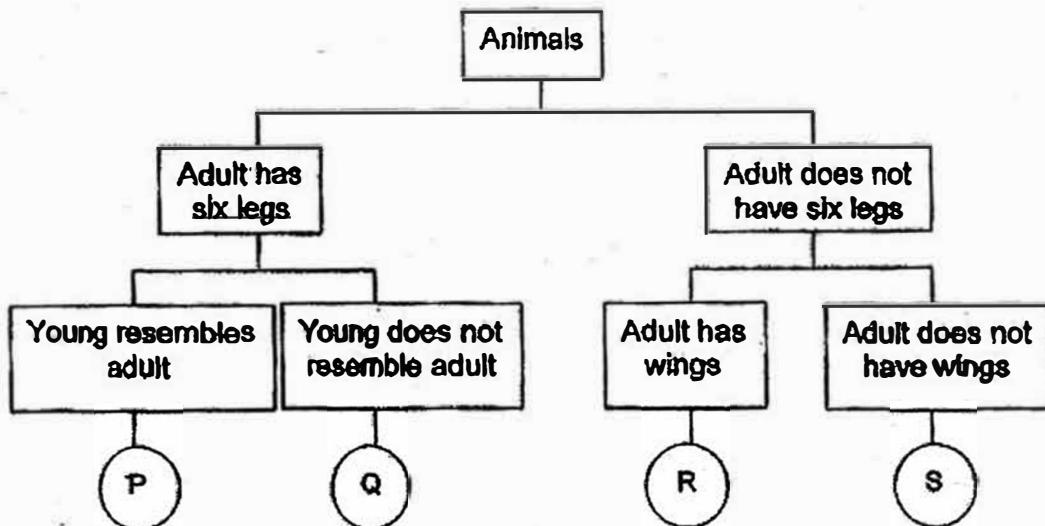
5. The flow chart below shows how some organisms are classified.



Which one of the following organisms are likely to be mushroom and bird's nest fern?

| | Mushroom | Bird's nest fern |
|-----|----------|------------------|
| (1) | A | C |
| (2) | B | A |
| (3) | C | D |
| (4) | D | B |

6. The flow chart below shows how some animals are classified into groups P, Q, R and S.



The diagrams below show the young and adult of animal X.



Young

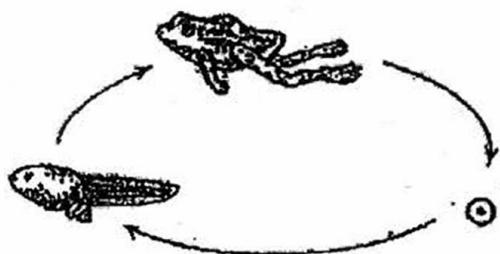


Adult

Which one of the following groups does animal X belong to?

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

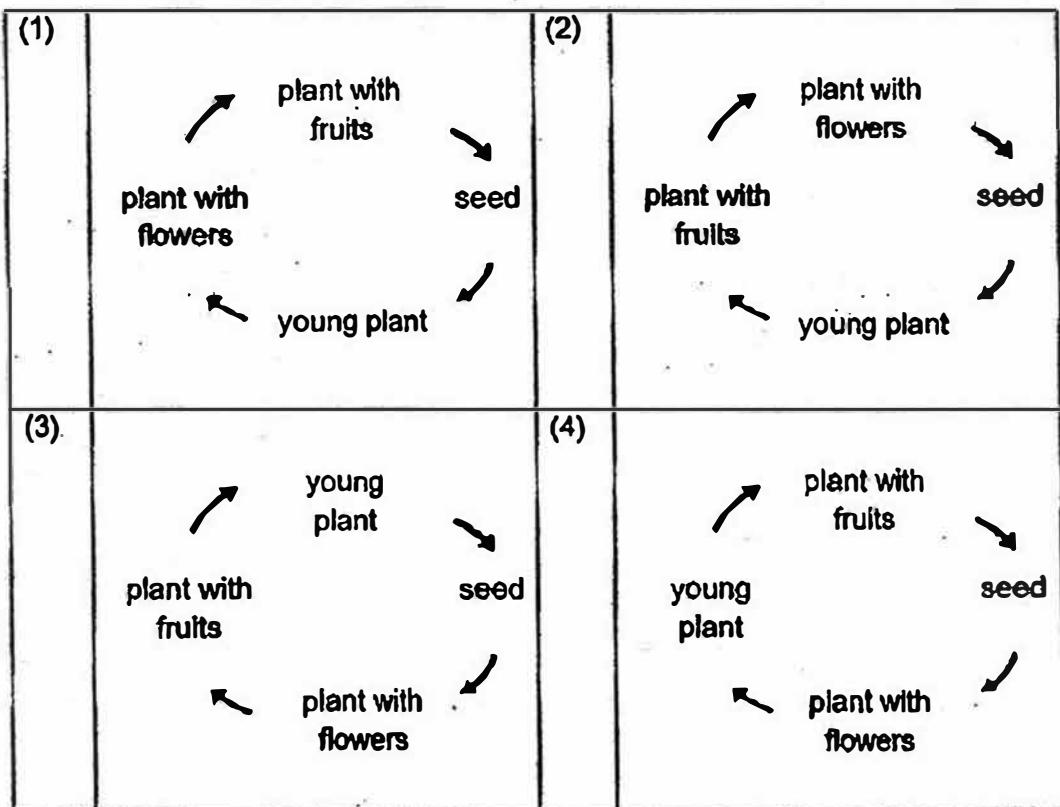
7. The diagram below shows the life cycle of a frog.



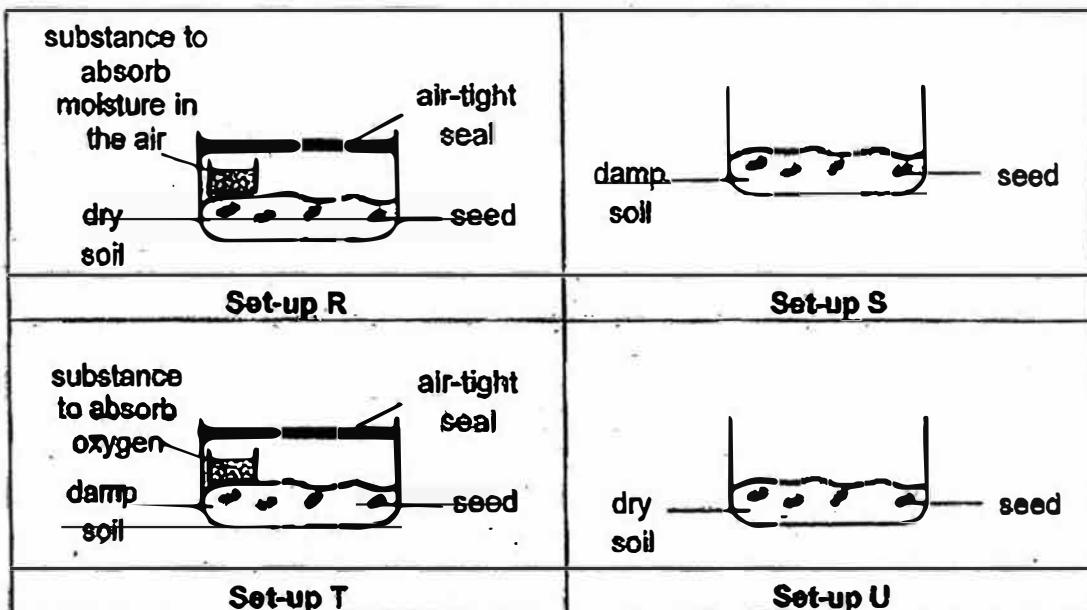
Which one of the following is true about the life cycle of the frog?

- (1) It has an egg stage.
- (2) It has a pupal stage.
- (3) The young does not feed.
- (4) It has a four-stage life cycle.

8. Which one of the following shows the correct stages of development of a flowering plant?



9. The diagrams below show four set-ups with equal number of green bean seeds placed in different conditions.



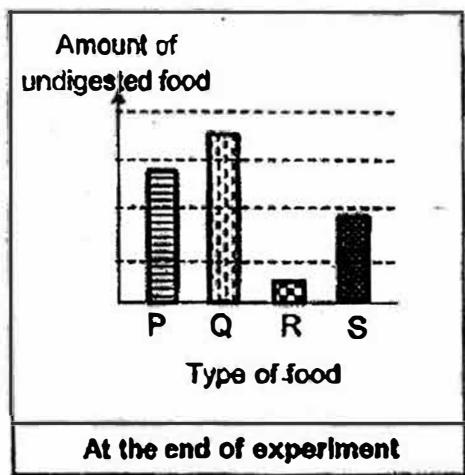
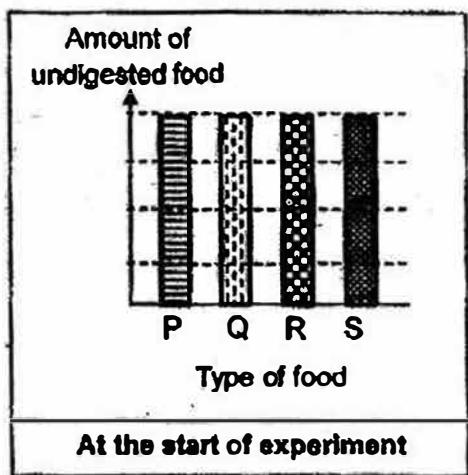
In which one of the following set-ups will the seeds germinate?

- (1) R
 - (2) S
 - (3) T
 - (4) U
10. Which one of the following shows the organs in the human respiratory system?
- (1) gullet, lungs, nose
 - (2) gullet, lungs, mouth
 - (3) nose, heart, windpipe
 - (4) lungs, nose, windpipe
11. Which one of the following correctly matches the system to its function?

| | System | Function |
|-----|--------------------|--|
| (1) | Skeletal system | Removes excess water from our body |
| (2) | Muscular system | Allows us to move different parts of our body |
| (3) | Respiratory system | Carries useful substances to all parts of our body |
| (4) | Circulatory system | Takes air into our body |

12. Four different types of food, P, Q, R and S, were mixed with some digestive juices and left on the table in the science lab for two hours.

The graphs below show the amount of undigested food left at the start and at the end of two hours.



Based on the above graphs, which type of food, P, Q, R or S, took the longest time to digest?

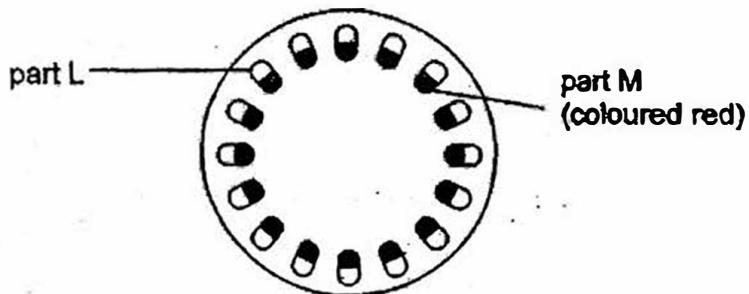
- (1) P
- (2) Q
- (3) R
- (4) S

13. Amy wanted to find out how the amount of digestive juice affects the rate of digestion of food.

Which of the following variables should be kept constant in order to ensure a fair test?

- A Type of food
 - B Amount of food
 - C Amount of digestive juice
 - D Time taken for the food to be broken down completely
-
- (1) A only
 - (2) A and B only
 - (3) C and D only
 - (4) B, C and D only

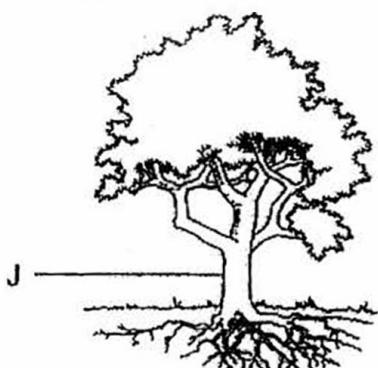
14. Jenny placed a plant in a beaker of red coloured water for three hours. After three hours, she cut a section of the stem of the plant and observed that some parts were coloured red as shown in the diagram below.



Which one of the following correctly identifies parts L and M?

| | Part L | Part M |
|-----|---------------------|---------------------|
| (1) | Food-carrying tube | Food-carrying tube |
| (2) | Food-carrying tube | Water-carrying tube |
| (3) | Water-carrying tube | Water-carrying tube |
| (4) | Water-carrying tube | Food-carrying tube |

15. The diagram below shows a tree with part J.



Three pupils made the following statements about part J :

Amy: Part J holds the plant upright.

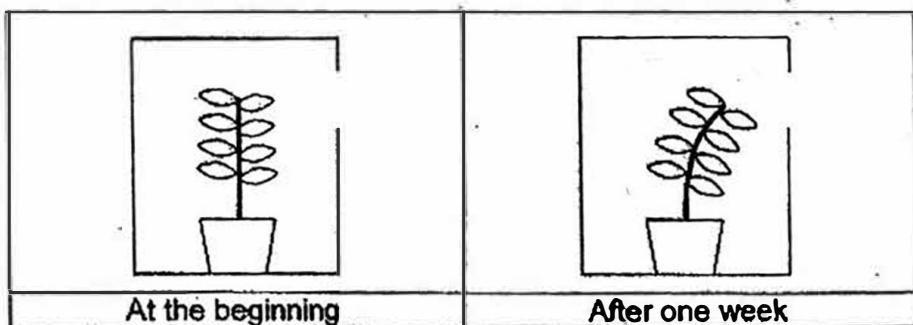
Caleb: Part J takes in water from the ground.

Dennis: Part J transports water from the leaves to all parts of the plant.

Which of the following pupils made the correct statements about part J?

- (1) Amy only
- (2) Amy and Dennis only
- (3) Caleb and Dennis only
- (4) Amy, Caleb and Dennis

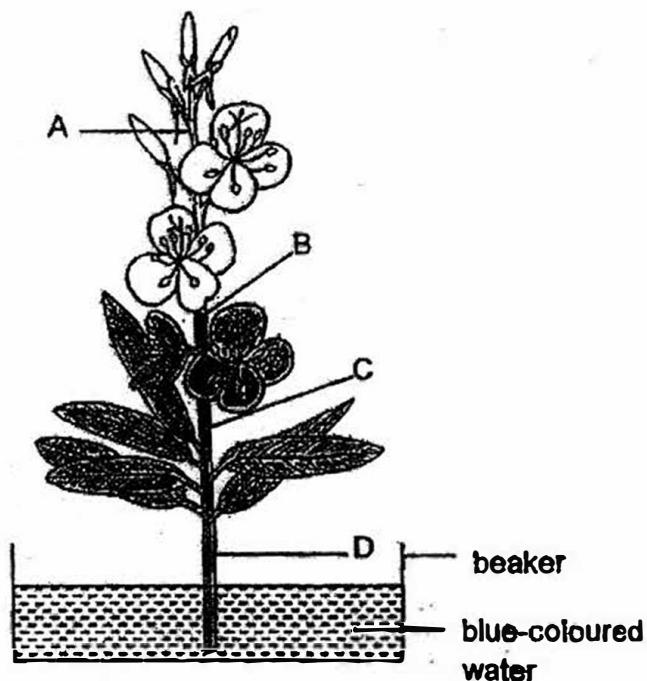
16. A plant was placed in a black box with a hole. The diagrams below show the plant at the beginning of the experiment and at the end of one week, respectively.



Which one of the following best explains the above observation after one week?

- (1) The plant has a weak stem.
- (2) The stem could not support the leaves of the plant.
- (3) The roots are not receiving enough water for the plant.
- (4) The leaves grew towards the opening to obtain more sunlight to make food.

17. A plant with damaged stem was placed in a beaker of blue-coloured water and left near a window for twenty-four hours. The diagram below shows the plant after twenty-four hours. The parts of the plant that had been stained blue were indicated by the shaded parts as shown below.



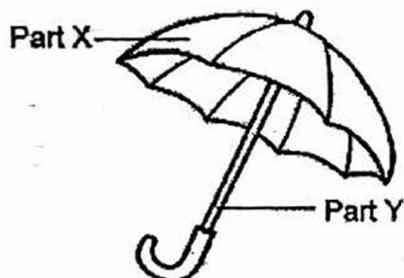
Based on the diagram above, at which one of the following parts, A, B, C, or D, was the stem damaged?

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

18. The table below shows some information on the properties of materials J, K, L, and M. A tick (✓) indicates the presence of the property.

| Material | Flexible | Waterproof | Breaks easily | Does not allow light to pass through |
|----------|----------|------------|---------------|--------------------------------------|
| J | ✓ | | ✓ | ✓ |
| K | ✓ | ✓ | | ✓ |
| L | | ✓ | ✓ | |
| M | | ✓ | | ✓ |

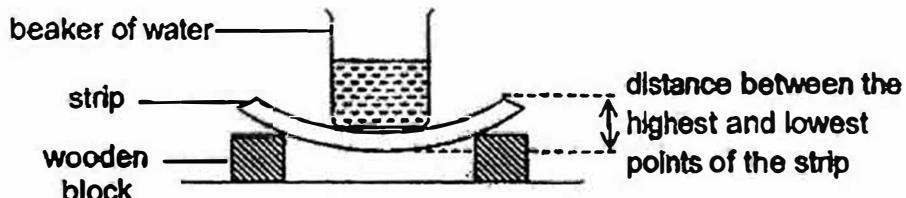
The umbrella shown below is used to shelter the user from the rain and sunlight.



Which one of the following shows the most suitable materials for making parts X and Y of the umbrella?

| | Part X | Part Y |
|-----|--------|--------|
| (1) | J | L |
| (2) | K | M |
| (3) | L | K |
| (4) | M | J |

19. Ling Ling set up an experiment as shown below to investigate a property of three strips, P, Q and R, which were made of different materials.



She added different amounts of water into the beaker rested on each strip until the distance between the highest and lowest points of the strip reached 2 cm.

Based on her results, she concluded that strip P was the most flexible and strip Q was the least flexible.

Which of the following results did she observe in order to draw the conclusion above?

| Amount of water in beaker (ml) | | | |
|--------------------------------|----|----|----|
| | P | Q | R |
| (1) | 30 | 90 | 60 |
| (2) | 30 | 60 | 90 |
| (3) | 60 | 90 | 30 |
| (4) | 90 | 30 | 60 |

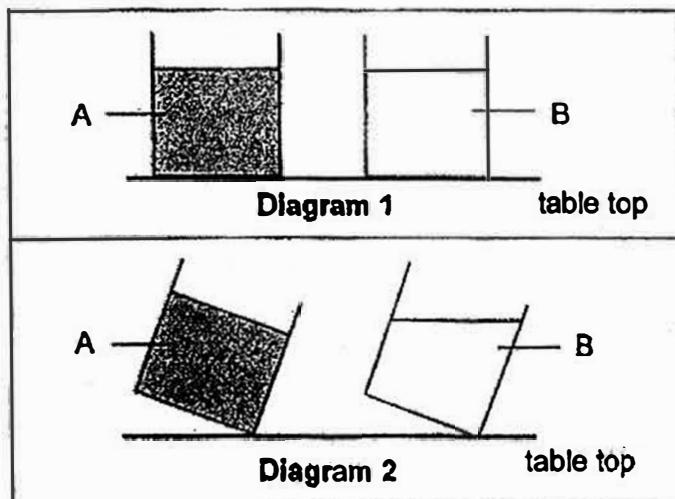
20. The table below shows some properties of substances X, Y and Z. A tick (✓) indicates the presence of the property.

| Property | Substance X | Substance Y | Substance Z |
|---|-------------|-------------|-------------|
| Has mass | ✓ | ✓ | |
| Has a definite volume | | ✓ | |
| Takes the shape of the container that it is placed in | ✓ | | |

Which one of the following correctly represents substances X, Y and Z?

| | Substance X | Substance Y | Substance Z |
|-----|-------------|-------------|-------------|
| (1) | air | rock | shadow |
| (2) | oil | rock | heat |
| (3) | oxygen | water | air |
| (4) | water | light | oxygen |

21. Diagrams 1 and 2 below show two identical beakers containing substances A and B when placed on a table top and when tilted at an angle, respectively.

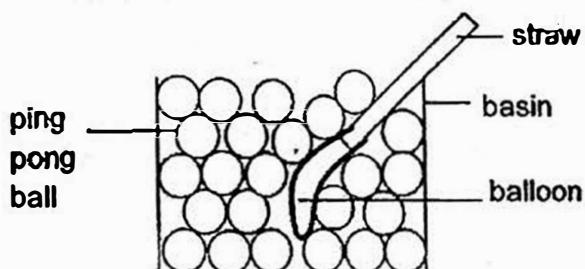


Based on the observation above, which one of the following statements about substances A and B is correct?

- (1) Substance A has a greater mass than substance B.
- (2) Substance A is a liquid while substance B is a solid.
- (3) Substance A has a definite shape but substance B does not.
- (4) Substance A cannot be compressed but substance B can be compressed.

22. Meimei placed a balloon attached to a straw into a basin and then filled the beaker with ping pong balls to the brim, as shown in the diagram below.

basin

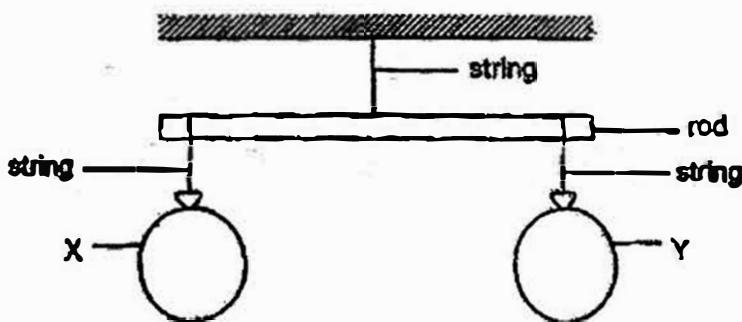


When Meimei blew into the straw, she observed that some of the ping pong balls spilled out of the basin.

Which one of the following best explains her observation?

- (1) Each ping pong ball has a definite shape.
- (2) The air in the balloon has no definite shape.
- (3) The inflated balloon occupied more space in the beaker.
- (4) The air in between the ping pong balls has no definite volume.

23. Two identical balloons, X and Y, were filled with equal amounts of air and then attached to a rod, as shown in the diagram below.

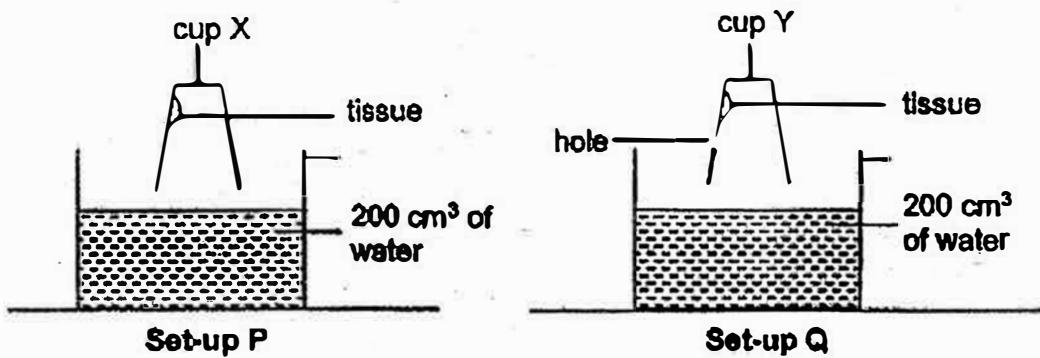


An additional 20 cm^3 of air was pumped into balloon X.

Which of the following observations is/are correct after additional 20 cm^3 of air was pumped into balloon X?

- A Balloon Y decreased in size.
 - B The rod remained horizontal.
 - C The rod tilted downwards at balloon X.
 - D Balloon X was bigger in size than balloon Y.
-
- (1) A and B only
 - (2) B and D only
 - (3) C and D only
 - (4) A, C and D only

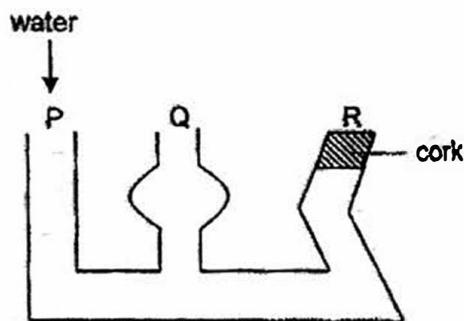
24. Susan conducted an experiment using set-ups, P and Q, as shown below. She attached a piece of dry tissue in each cup at the same position. She made a hole in cup Y. Then she inverted and pushed each cup into a basin of water.



Which one of the following shows the correct observation?

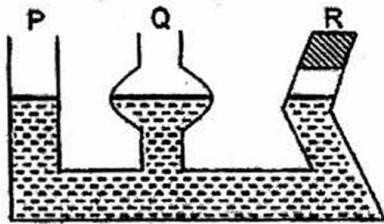
- (1) Water entered cup X but not cup Y.
- (2) More water entered cup X than cup Y.
- (3) The tissue in both cups, X and Y, remained dry.
- (4) The water levels in both basins, P and Q, dropped.

25. The diagram below shows a vessel with openings P, Q and R. Opening R was sealed with a piece of cork.

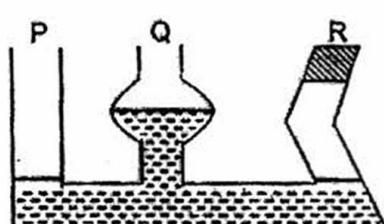


When water was poured into the vessel through opening P, which of the following shows the correct water levels in each opening of the vessel?

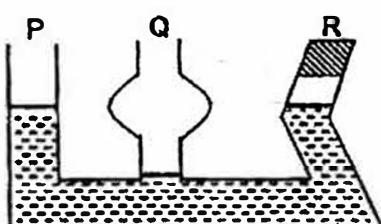
(1)



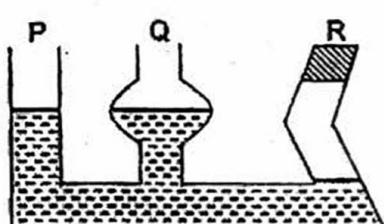
(2)



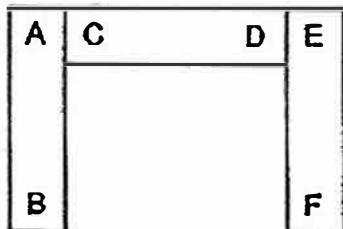
(3)



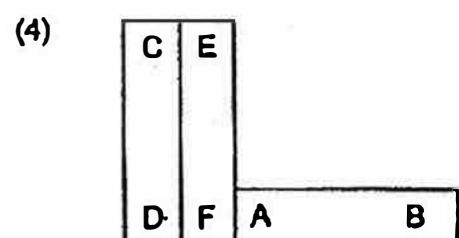
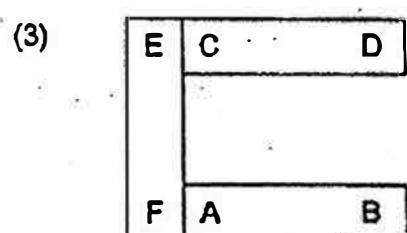
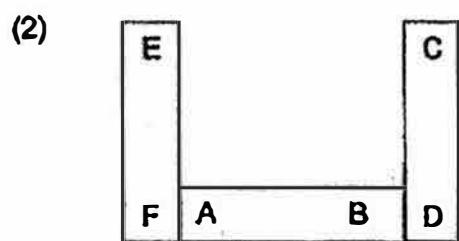
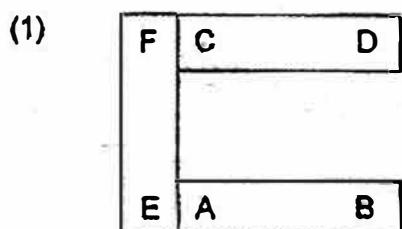
(4)



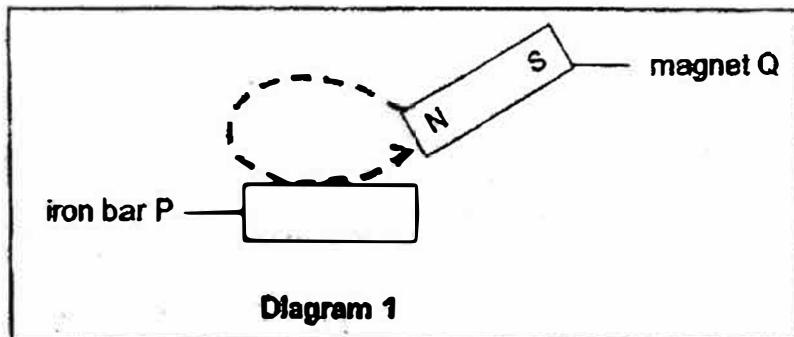
26. The diagram below shows an arrangement of four magnets. The poles of the magnets are labelled A, B, C, D, E and F respectively.



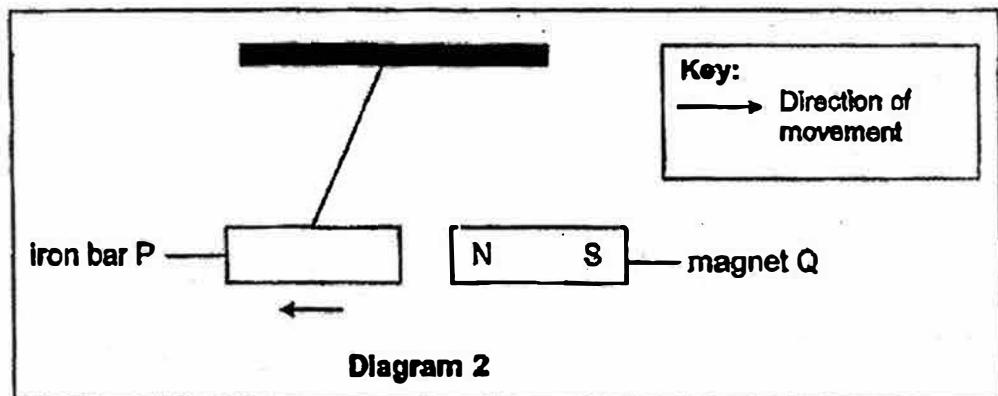
Which one of the following arrangements of the four magnets is possible?



27. Lily magnetised an iron bar P using the stroking method as shown in Diagram 1 below.



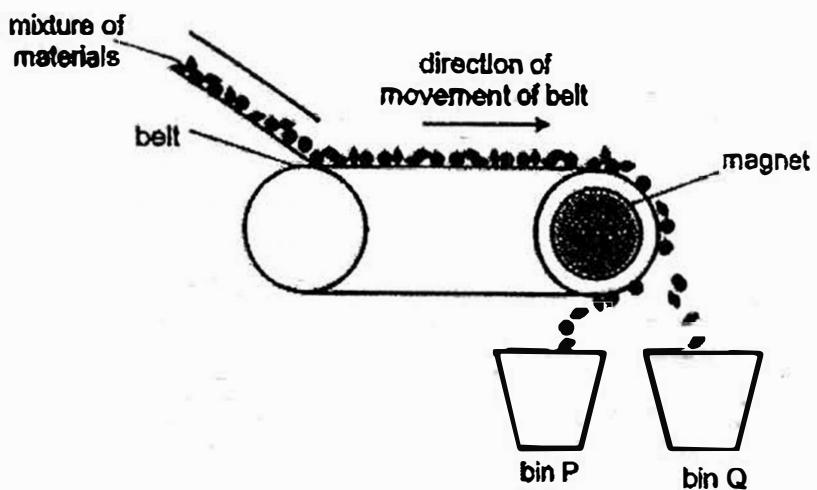
Then she attached the magnetised iron bar P to a string and placed magnet Q near to it. She observed that iron bar P moved in the direction as shown in Diagram 2 below.



Which of the following actions would cause iron bar P to move further away from magnet Q?

- A Heat iron bar P over a flame.
 - B Drop iron bar P onto the ground for a few times.
 - C Stroke iron bar P with the magnet for a greater number of times.
-
- (1) B only
 - (2) C only
 - (3) A and B only
 - (4) A, B and C

28. The diagram below shows a way to separate a mixture of materials.



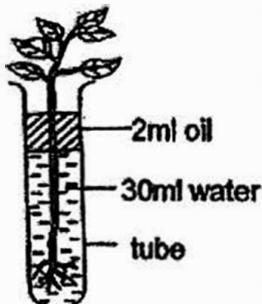
Which of the following shows the materials that can be found in bins P and Q?

| | Bin P | Bin Q |
|-----|--------------------|--------------------|
| (1) | iron, nickel | aluminium, plastic |
| (2) | cobalt, plastic | copper, steel |
| (3) | nickel, cobalt | iron, plastic |
| (4) | plastic, aluminium | cobalt, nickel |

SECTION B (44 marks)

For questions 29 to 41, 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.

29. Susan placed different types of plants in three identical tubes of water, P, Q and R. One of the plants was a plastic plant. The diagram below shows one of the set-ups.



The three set-ups were left near the window for three days.

The table below shows the amount of water left in each set-up at the start and end of the experiment.

| Set-ups | Amount of water left in the tube (ml) | |
|---------|---------------------------------------|-------|
| | Day 1 | Day 3 |
| P | 30 | 15 |
| Q | 30 | 30 |
| R | 30 | 20 |

- (a) Which one of the set-ups, P, Q or R, contained the plastic plant? Give a reason for your answer. [1]

- (b) Susan repeated the experiment with set-up P but wrapped the roots of the plant with a plastic bag.

Would the amount of water left in the tube be less than 15ml, greater than 15ml or remain the same at 30ml at the end of the experiment? Give a reason for your answer. [1]

Continue on next page

Continue from previous page

Susan prepared four more similar set-ups. The table below shows the information on the four set-ups, W, X, Y and Z.

| Set-up | Type of plant | Location where set-up is placed | Number of leaves | Amount of water in the tube at the start of the experiment (ml) |
|---------------|----------------------|--|-------------------------|--|
| W | Plant M | open field | 20 | 30 |
| X | Plant M | open field | 40 | 30 |
| Y | Plant N | open field | 40 | 30 |
| Z | Plant N | classroom | 20 | 20 |

(c) Which set-ups, W, X, Y and Z, should Susan compare if she wants to investigate :

(i) if the type of plant affects the amount of water taken in by the plant? [1]

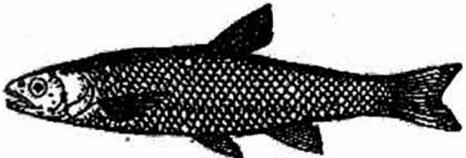
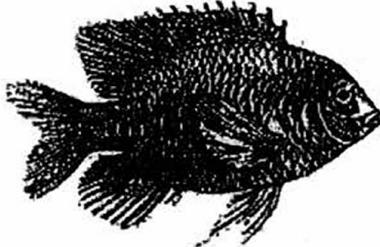
Set-up _____ and set-up _____

(ii) if the number of leaves affects the amount of water taken in by the plant? [1]

Set-up _____ and set-up _____

| | |
|-------|---|
| Score | 2 |
|-------|---|

30. Melissa classified four animals, which are not drawn to scale, into two groups as shown below.

| Fish | Mammal |
|--|---|
|  |  |
|  |  |

- (a) Based on the above diagrams, describe clearly one observable difference between the fish and mammal. [1]

| Fish | Mammal |
|------|--------|
| | |

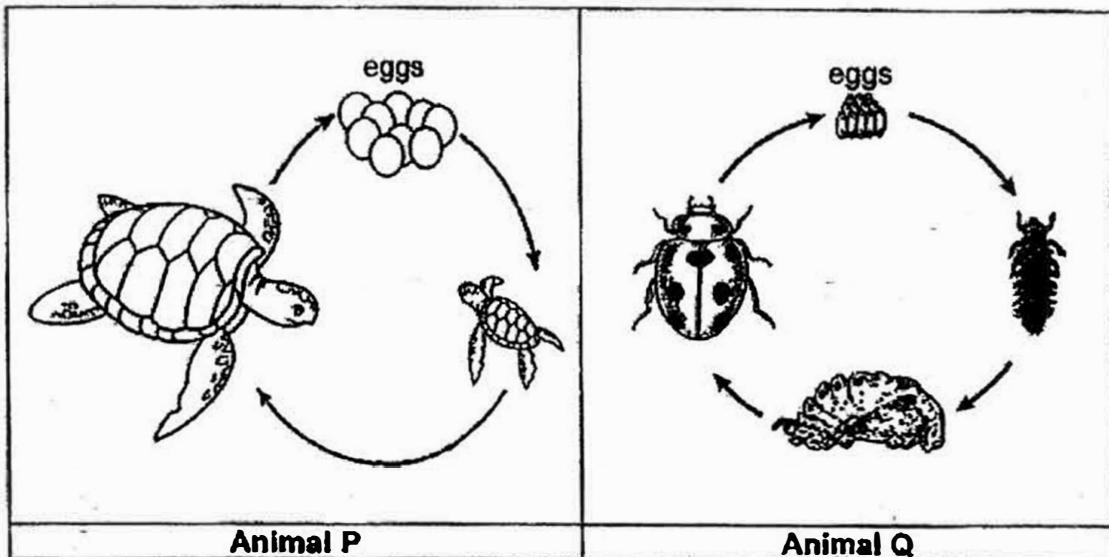
Melissa made the following observations on animal K:

- Lives in water
- Has short hair
- Breathes through lungs

- (b) Based on the information above, in which group, 'Fish' or 'Mammal', does animal K belong to? Explain your answer clearly. [2]

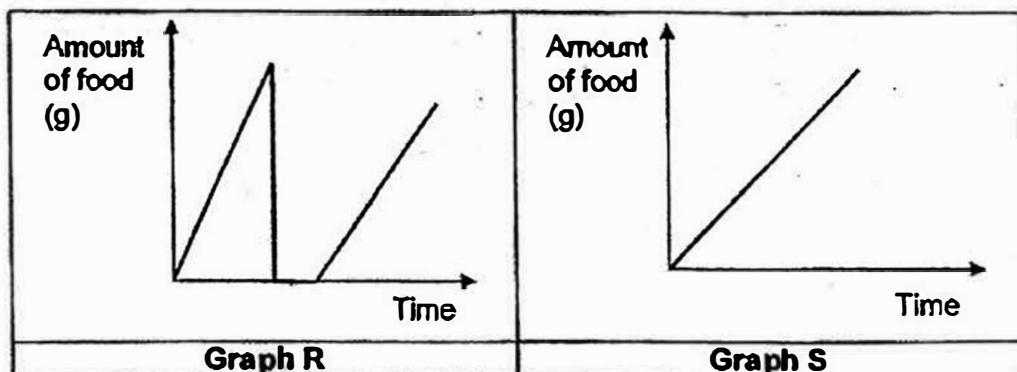
| | |
|-------|---|
| Score | 3 |
|-------|---|

31. The diagrams below show the life cycles of animals P and Q.



- (a) Based on your observations on the above diagrams, state one difference between the two life cycles. [1]
(Note: Do not compare shape, size and number of stages.)

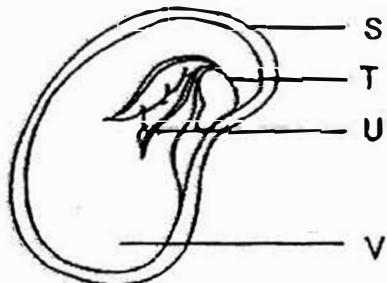
The graphs below show the amount of food taken in by animals P and Q in one life cycle.



- (b) Which one of the graphs, R or S, represents the amount of food taken in by Animal Q as it grows? Explain your answer. [2]

| | |
|-------|---|
| Score | 3 |
|-------|---|

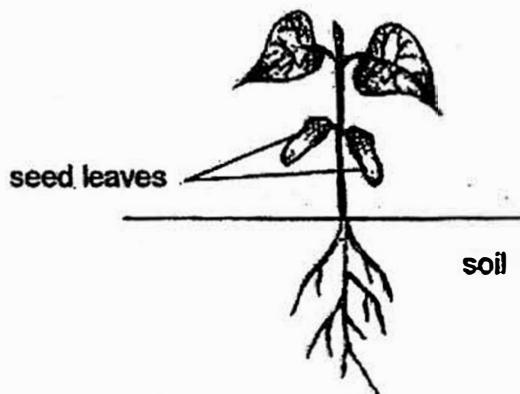
32. The diagram below shows the cross-section of a seed.



(a) Which part, S, T, U or V, represents the 'seed leaf'? [1]

(b) State one function of the seed leaf. [1]

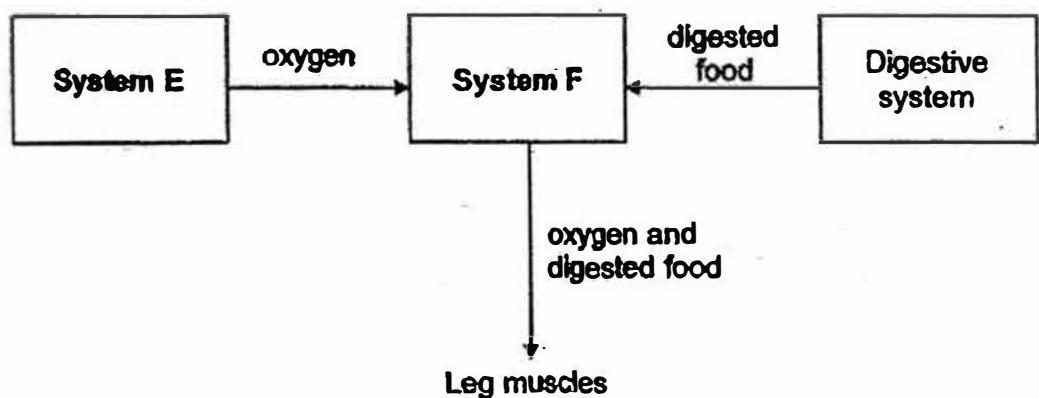
The diagram below shows a young plant which has just germinated from a seed.



(c) The two seed leaves were removed and the plant was left in the garden for one week. After one week, it was observed that the plant continued to grow and increase in height. Explain the observations clearly. [2]

| | |
|-------|---|
| Score | 4 |
|-------|---|

33. The flow chart below shows how some substances are transported in the human body to provide energy for the legs to bend.



(a) Based on the above information, identify systems E and F. [2]

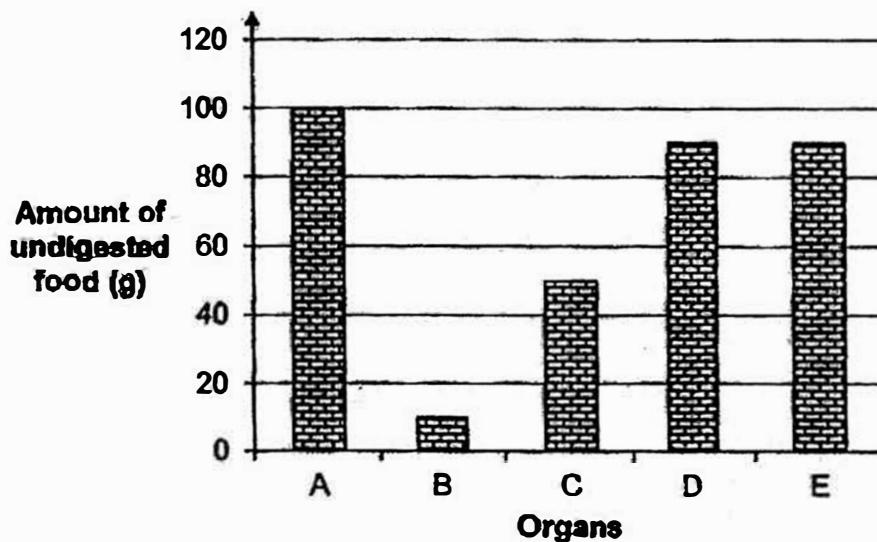
(i) System E : _____ system

(ii) System F : _____ system

(b) Name the organ in the digestive system where the digested food leave the digestive system and enter system F. [1]

| | |
|-------|---|
| Score | 3 |
|-------|---|

34. The graph below shows the amount of undigested food that has just entered the different organs in the human digestive system.



- (a) Based on the information above, which organ, A, B, C, D or E, represents the large intestine? Explain your answer. [2]

- (b) In the graph above, the amount of undigested food that just entered organs D and E are the same.

What could organs D and E possibly be? [1]

Organ D: _____

Organ E: _____

| | |
|-------|---|
| Score | 3 |
|-------|---|

35. Neela planted a seed in a pot of soil and placed near the window. She observed the development of the seed into seedling over a period of time.

- (a) Neela recorded her observations as shown below (not in order). Fill in the correct boxes with "2", "3" and "4" to show the correct order of the development of seed. Stages '1' and '5' have been indicated for you. [1]

5

The seed leaves shrink in size and drop off.

The shoot emerges from the seed.

The roots emerge from the seed.

The leaves appear.

1

The seed coat ruptures.

- (b) Neela planted another seed of the same type in another pot of soil and placed it in a dark cupboard instead of near the window.

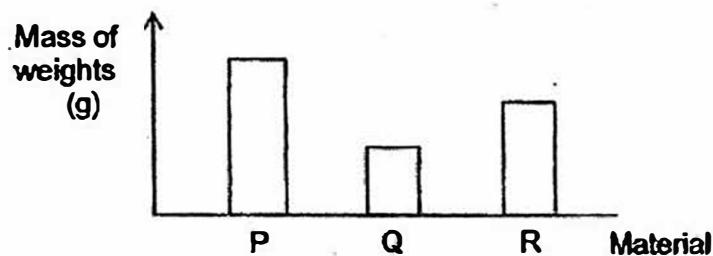
Would the seed be able to germinate? Explain your answer clearly. [2]

| | |
|-------|---|
| Score | 3 |
|-------|---|

36. Sophie set up the experiment below to investigate a property of three different materials, P, Q and R. All the materials were of the same length.



For each material, weights are added onto the material until it started to break. Her results are shown in the graph below. The mass of the weights that cause each material to start to break are recorded in the graph below.



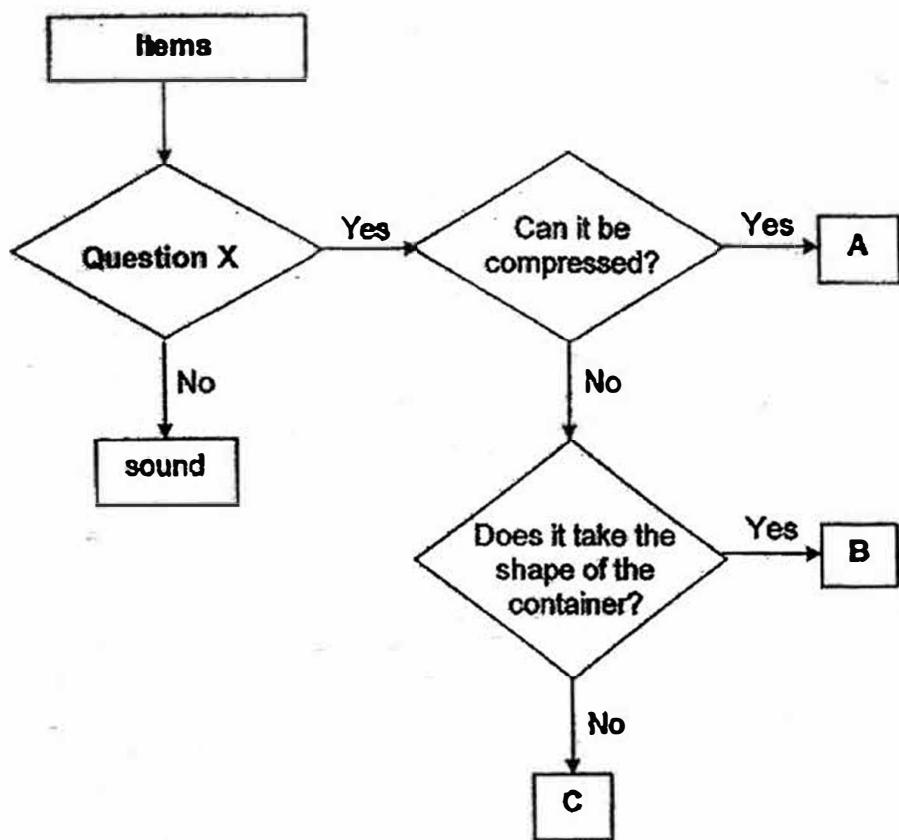
- (a) Identify the property of the materials that Sophie was testing in the above experiment. [1]

- (b) Based on the above results, Sophie chose material P to make a book shelf to store her books. Give a reason for her choice of material. [1]

- (c) Besides the length of materials, name another variable that should be kept constant in order to ensure a fair test. [1]

| | |
|-------|---|
| Score | 3 |
|-------|---|

37. The flow chart below shows how some items are classified.



Answer the following questions based on the information above.

- (a) State one similarity and one difference between B and C. [2]

Similarity : _____

Difference : _____

- (b) Suggest a possible question X. [1]

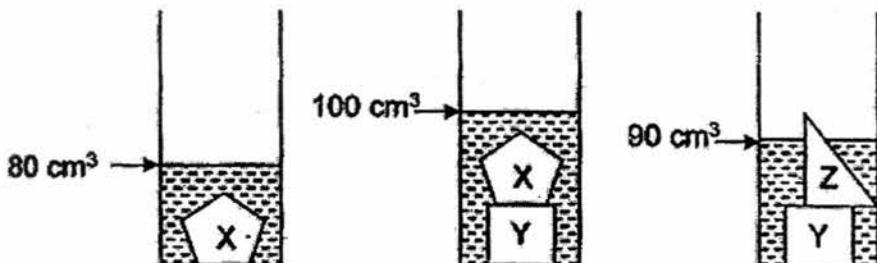
- (c) Which item, A, B or C, would represent the following correctly? [1]

(i) Oil : _____

(ii) Plasticine : _____

| | |
|-------|---|
| Score | 4 |
|-------|---|

38. Sue placed different objects, X, Y and Z, in measuring cylinders each containing 50cm^3 of water, as shown in the diagrams below.



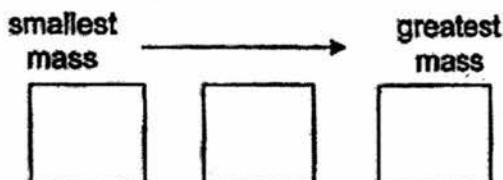
Sue also compared the mass of the objects, X, Y and Z, using a balance as shown in the diagrams below.



- (a) Based on the above information, put a tick (\checkmark) in the correct box to indicate if it is "True", "False" or "Not possible to tell" for each statement. [2]

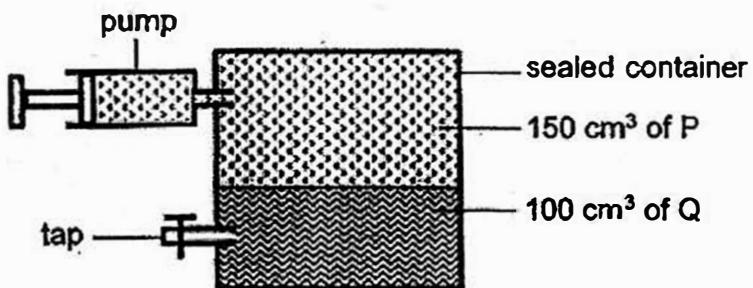
| | Statements | True | False | Not possible to tell |
|-------|---|------|-------|----------------------|
| (i) | Z has the greatest volume. | | | |
| (ii) | All the objects have definite shape. | | | |
| (iii) | All the objects occupy space in the measuring cylinder. | | | |
| (iv) | The greater the volume of the object, the greater the mass of the object. | | | |

- (b) Arrange the objects in increasing order of mass by writing 'X', 'Y' and 'Z' in the correct boxes below. [1]



| | |
|-------|--------------------------------|
| Score | <input type="text" value="3"/> |
|-------|--------------------------------|

39. Alice conducted an experiment using the set-up as shown below.



- (a) After Alice used the tap to remove 20 cm³ of Q from the container, she observed that the volume of P in the container was 170 cm³.

Identify the states (solid, liquid or gas) of substances P, Q and R. [2]

(i) Substance P : _____

(ii) Substance Q : _____

- (b) Which property of substance P did you use to obtain your answer in (a)(i)? [1]

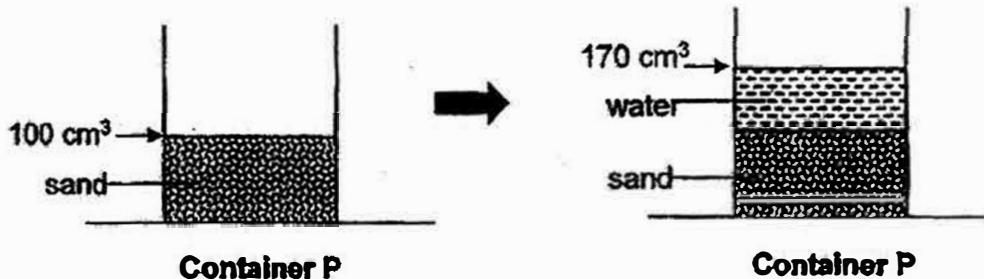
- (c) After removing 20 cm³ of Q from the container in part (a), she used the pump to add 10 cm³ of P into the container.

What is the final volume of substance P in the container? [1]

_____ cm³

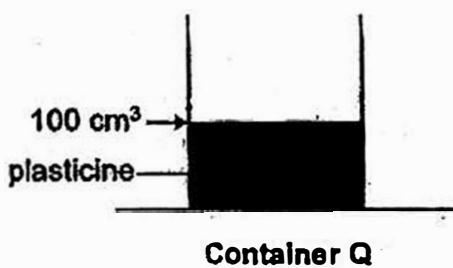
| | |
|-------|---|
| Score | 4 |
|-------|---|

40. Jessie filled container P with 100 cm^3 sand and then added 100 cm^3 of water into it, as shown in the diagrams below.



- (a) Explain why the final volume of the content in container P was less than 200 cm^3 . [2]

Jessie filled another identical container Q with plasticine, as shown in diagram below.



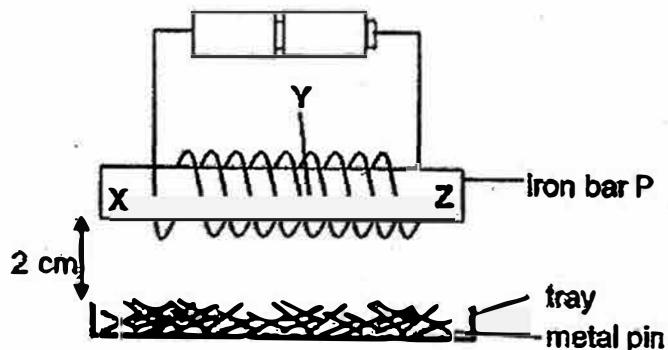
Then she poured in 100 cm^3 of water.

- (b) What would the final volume of the content in container Q be after pouring in 100 cm^3 of water? Put a tick (\checkmark) in the correct box. [1]

- 170 cm^3
 More than 170 cm^3
 Less than 170 cm^3

| | |
|-------|---|
| Score | 3 |
|-------|---|

41. Carol constructed an electromagnet using an iron bar P, as shown in the diagram below. The different parts of iron bar P were labelled X, Y and Z.



She placed a tray of pins 2 cm below the iron bar and recorded her observations for part X in the table below.

| Parts of iron bar | X | Y | Z |
|--|----|---|---|
| Number of metal pins attracted to the iron bar | 10 | | |

- (a) Predict the number of metal pins attracted to parts Y and Z of the iron bar and write your answers in the above table. [1]

- (b) Using the same iron bar and same type of batteries, suggest two ways to increase the total number of pins attracted to the iron bar. [2]

(i) _____

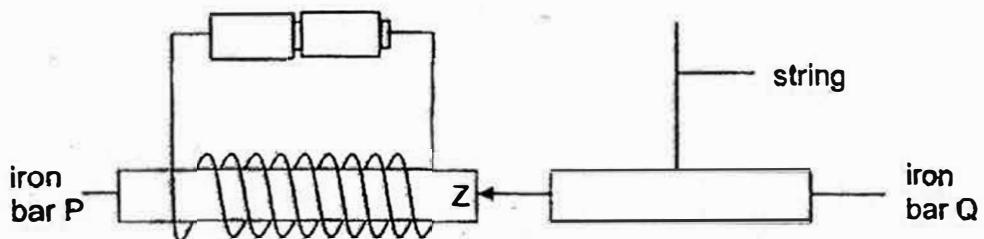
(ii) _____

Continue on next page

| | |
|-------|---|
| Score | 3 |
|-------|---|

Continue from previous page

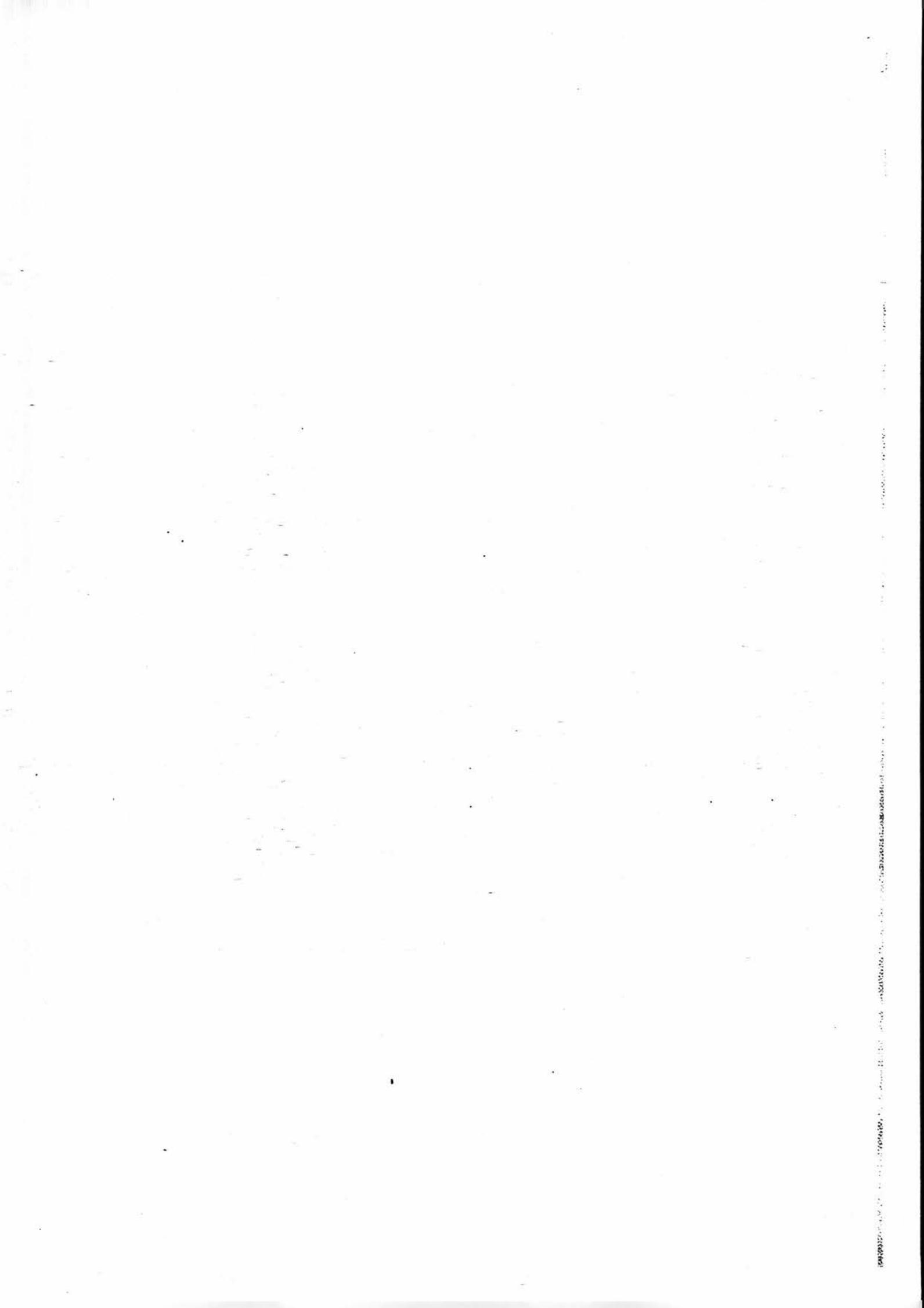
- (c) Carol placed iron bar Q, near end Z of the iron bar P, as shown in the diagram below.



Carol observed that the iron bar Q moved towards iron bar P, as indicated by the arrow in the above diagram. She concluded that iron bar Q is a magnet.

Do you agree with her? Explain your answer clearly.

[1]



EXAM PAPER 2017 (P4)

SCHOOL : RAFFLES GIRLS'

SUBJECT : SCIENCE

TERM : SA1

ORDER CALL :

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4 | 1 | 1 | 3 | 1 | 3 | 1 | 1 | 2 | 4 |
| Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Q20 |
| 2 | 2 | 2 | 2 | 1 | 4 | 2 | 2 | 1 | 1 |
| Q21 | Q22 | Q23 | Q24 | Q25 | Q26 | Q27 | Q28 | | |
| 3 | 3 | 3 | 3 | 4 | 1 | 2 | 1 | | |

29)a)Q. It did not absorb any water and plants need water to survive so it is a plastic plant.

b)It would remain the same at 30ml at the end of the experiment. The plastic bag prevents the roots from absorbing water. Therefore, it will remain in the same.

c)i)X , Y ii)W , X

30)a)Fish **Mammal**

Has scales Has hair

b)It belongs to the group mammals. As it breathe through lungs but fish breathe through gills and it has hair but fish body covering is scales.

31)a)Animal P young resembles its adult but animal Q young does not resemble its adult.

b)Graph R. When it is at Larval stage it eats a lot but when it is a pupal stage it does not feed and when it is an adult it eats normally it begins to eat again.

32)a)V.

b)It has food stored at the seed leaf so when it is growing it will the food. Since it does not have true leaves yet.

c)Since it has its true leaves it can make its own food, so it does eat need the seed leaves.

33)a)i)Respiratory ii)circulatory

b)Small intestine.

34)a)B. It has the least amount of undigested food as most of the food is digested and absorbed at the small intestine so it is B.

b)D: stomach E: Gullet

35)a)3 , 2 , 4

b)The seed will still be able to germinate. It does not need light to germinated. It still can receive air, water and warmth.

36)a)The strength of the material.

b)P is the strongest material as it can hold the greatest mass of weights placed on P until it broke.

c)The thickness of the materials.

37)a)Similarity : Both B and C cannot be compressed .

Difference : B takes the shape of the container but C does not take the shape of the container.

b)Does it occupies space.

c)i)B ii)C

38)a)i)Not ii)True iii)True iv)False

b)X , Y , Z

39)a)i) P: Gas ii)Liquid

b)P has no definite volume.

c)170cm³

40)a)S and has small spaces in between each particle of sand so the water will fill up the spaces in between. Therefore, the water level has lesser than 200cm³.

b)More than 170cm³

41)a)Y : 0 Z: 10

b)i)She could coil more times around the iron bar.

ii)She could add more batteries.

c)No. She did not observe repulsion between the two bars. Q was only attracted to P.



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (2)

2017

Name : _____ Index No: _____ Class: P4 _____

30 October 2017 SCIENCE Att: 1 h 30 min

| | |
|----------------------|----|
| Section A | 50 |
| Section B | 40 |
| Your score out of 90 | |
| Parent's signature | |

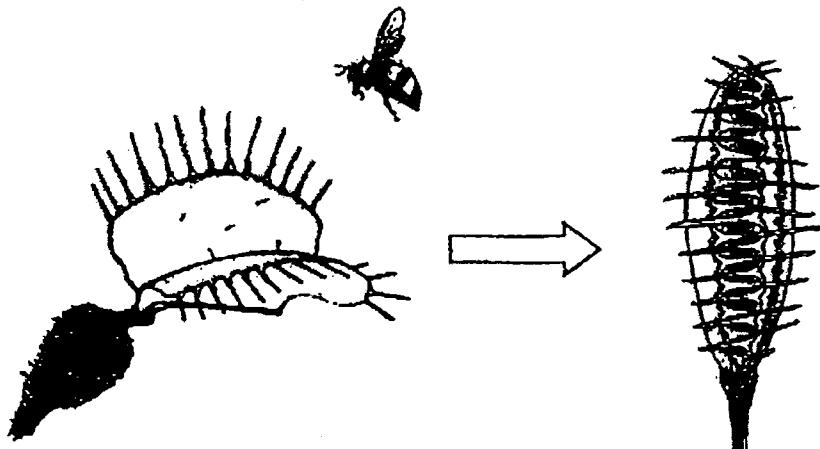
SECTION A (25 x 2 marks)

For each question from 1 to 25, 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 (OAS) provided.

1. The Venus flytrap closes its leaf when an insect lands on it.



This shows that the Venus flytrap is a living thing because it can _____.

- (1) grow
- (2) breathe
- (3) respond
- (4) reproduce

2. Which one of the following is a living thing?



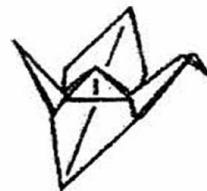
(1)



(2)

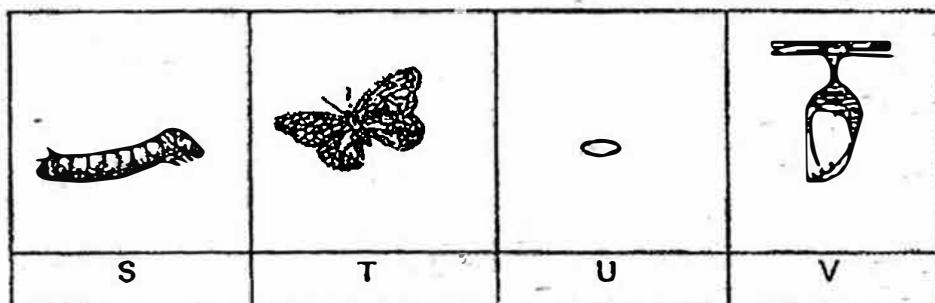


(3)

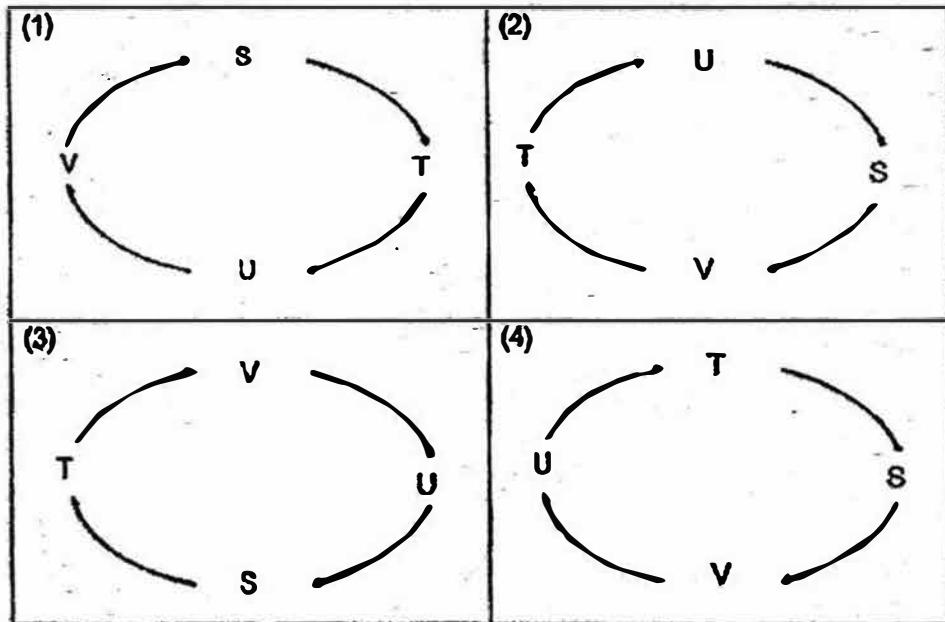


(4)

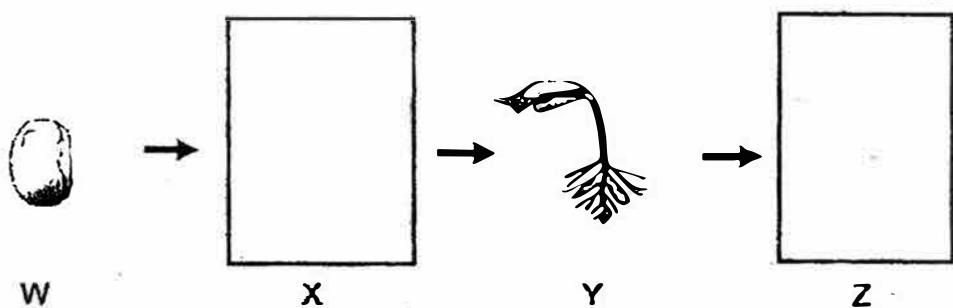
3. S, T, U and V are the various stages in the life cycle of a butterfly.



Which one of the following diagrams correctly shows the life cycle of a butterfly?



4. The diagram below shows the growth of a plant with two missing stages, X and Z.



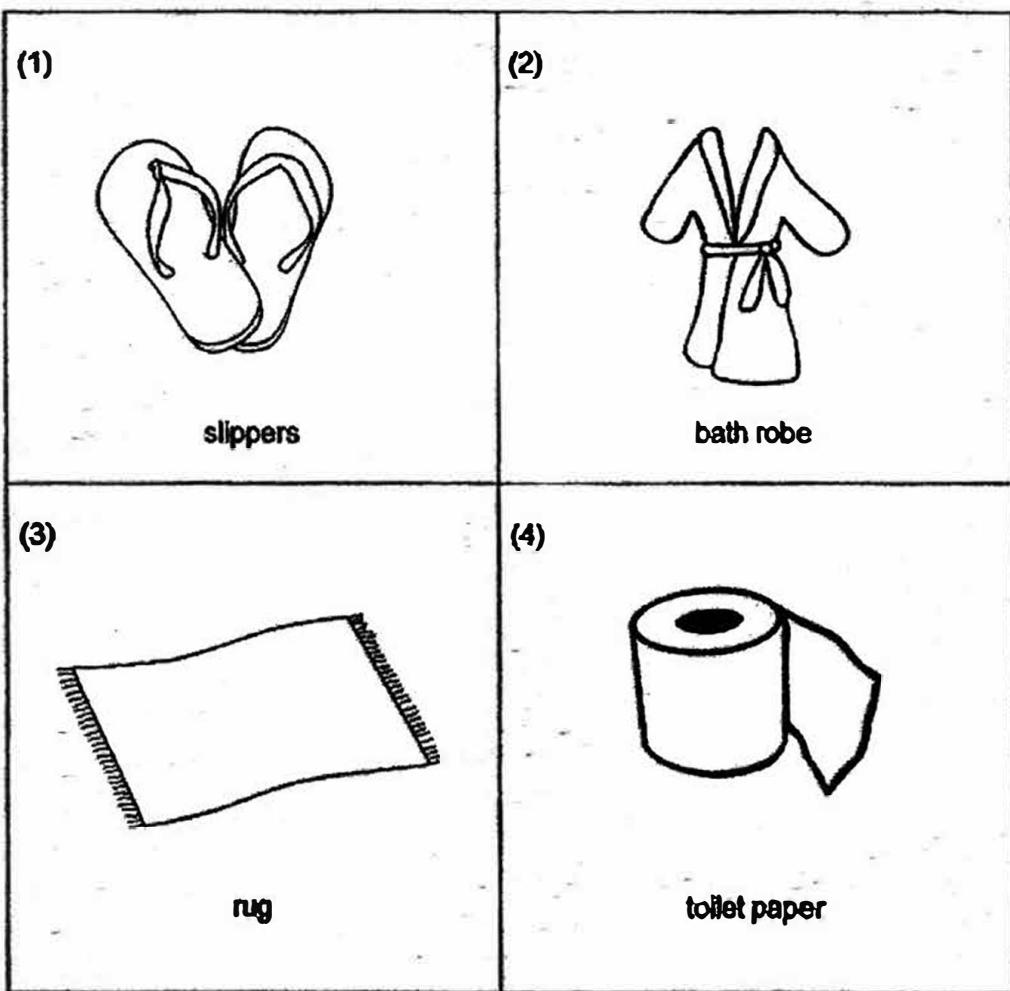
Which one of the following shows the correct stages for X and Z?

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

5. In which part of the digestive system is water being absorbed?

- (1) gullet
- (2) mouth
- (3) stomach
- (4) large intestine

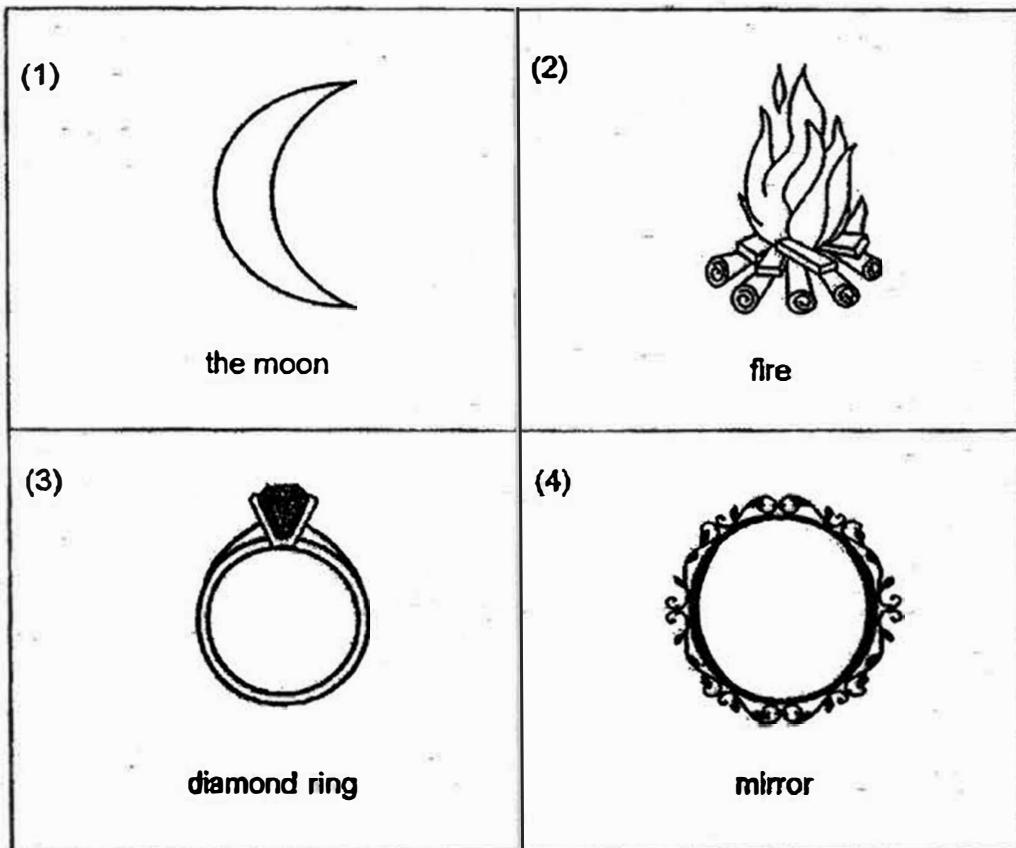
6. Which one of the following objects is made of waterproof materials?



7. Which one of the following properties is true for both air and a flower pot?

- (1) They can be seen.
- (2) They take up space.
- (3) They have fixed shape.
- (4) They have fixed volume.

8. Which one of the following is a source of light?



9. Jessica adds some ice cubes to a glass of orange juice.

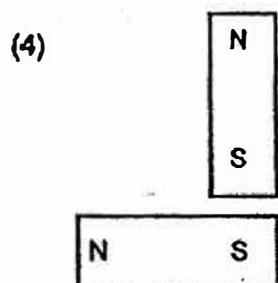
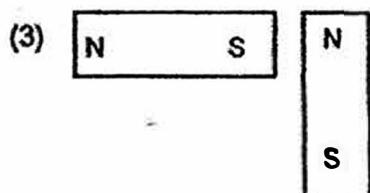
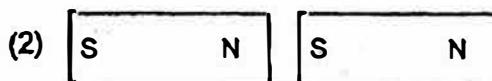
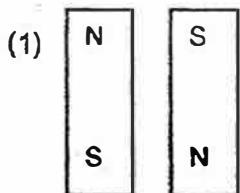


The orange juice becomes cold after a while.

Which one of the following sentences explains this?

- (1) The straw loses heat to the ice cubes.
- (2) The glass gains heat from the ice cubes.
- (3) The ice cubes loses heat to the orange juice.
- (4) The ice cubes gains heat from the orange juice.

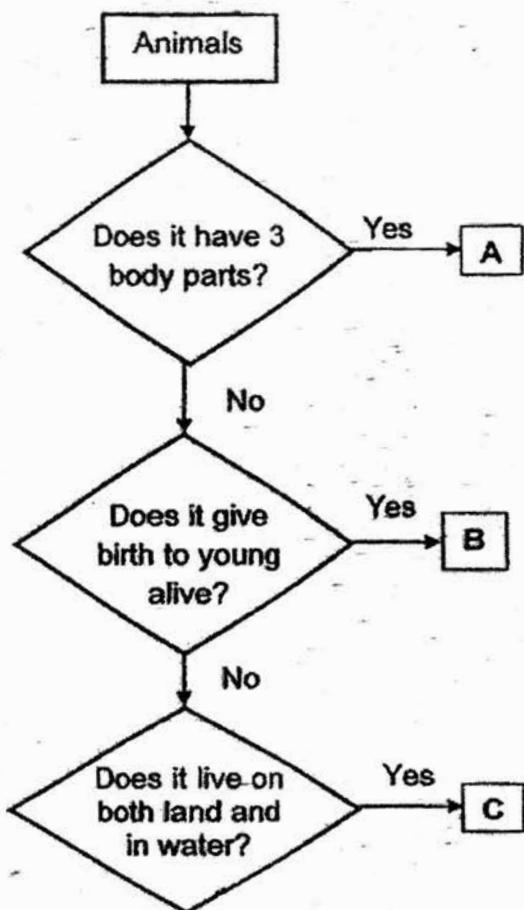
10. In which one of the following will the two magnets push each other away?



11. A tick (✓) in the table below indicates the condition which a seed is exposed to. Which of the following correctly states the conditions needed for seed germination?

| | Air | Food | Sunlight | Water | Warmth |
|-----|-----|------|----------|-------|--------|
| (1) | ✓ | ✓ | ✓ | ✓ | ✓ |
| (2) | ✓ | ✓ | | ✓ | |
| (3) | ✓ | | | ✓ | ✓ |
| (4) | ✓ | | ✓ | ✓ | ✓ |

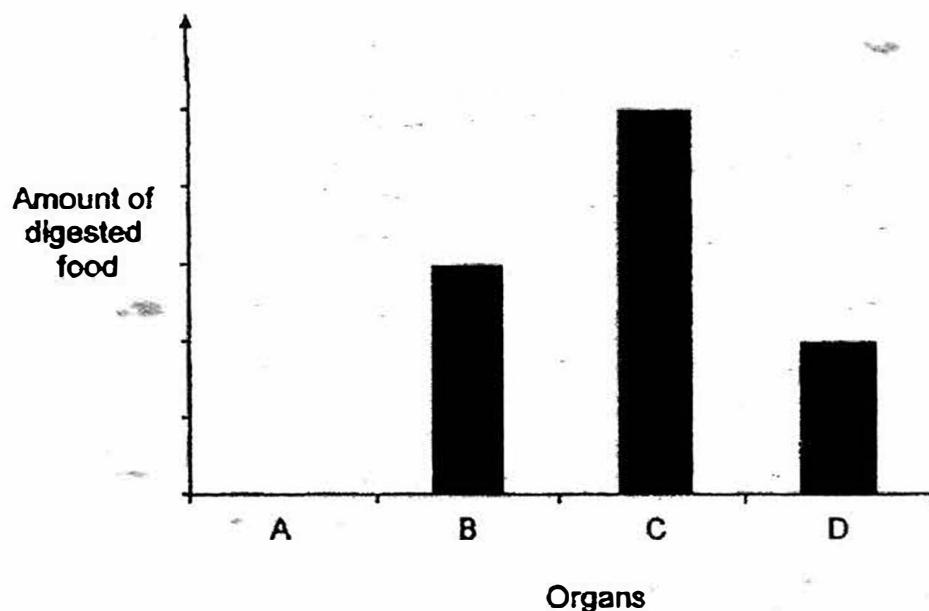
12. Study the flow chart below. A, B and C are animals.



Based on the information given in the flowchart, which one of the following correctly represents animals A, B and C?

| | A | B | C |
|-----|----------|------------|------------|
| (1) | birds | amphibians | insects |
| (2) | insects | mammals | amphibians |
| (3) | insects | birds | amphibians |
| (4) | reptiles | mammals | insects |

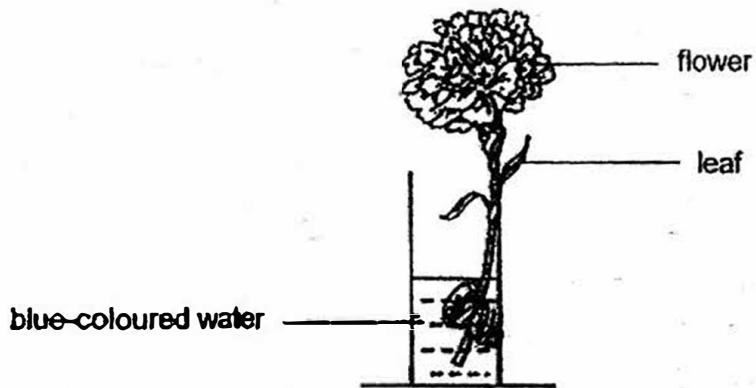
13. The graph below shows the amount of digested food found in four different organs, A, B, C and D, of the human digestive system.



Which organ, A, B, C or D, is the large intestine?

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

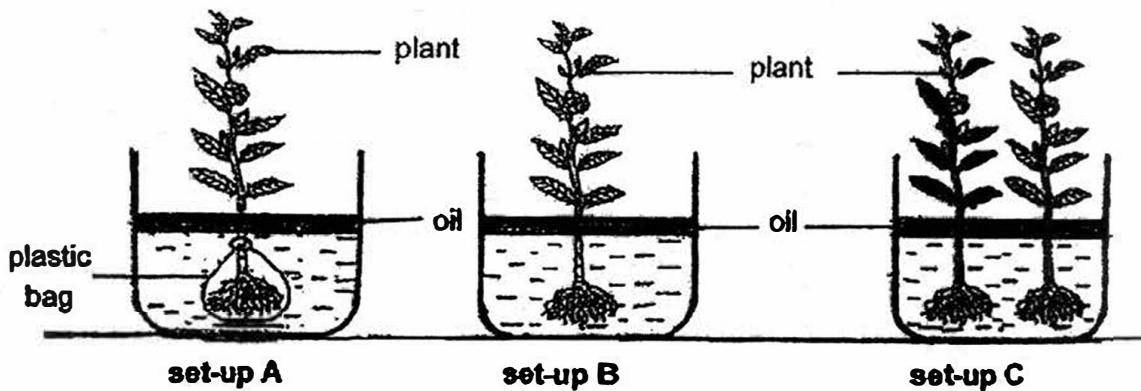
14. Jack placed a stalk of white flower into a beaker of blue-coloured water. A few hours later, he observed that the flower and leaves turned blue.



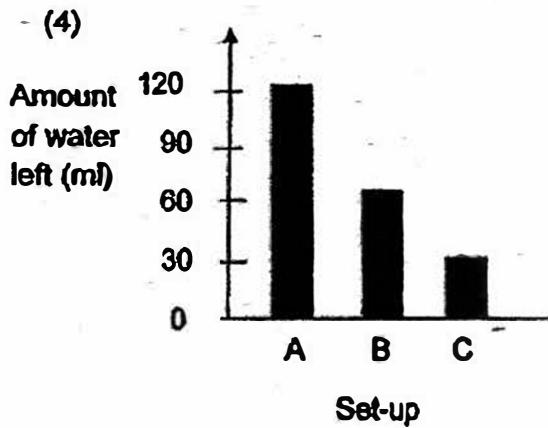
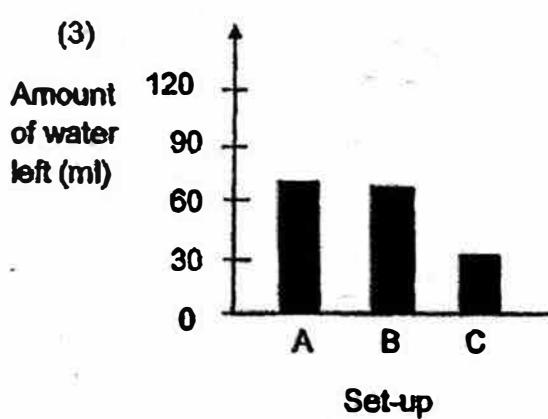
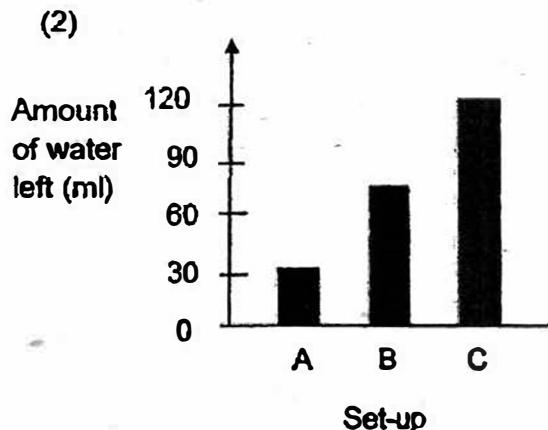
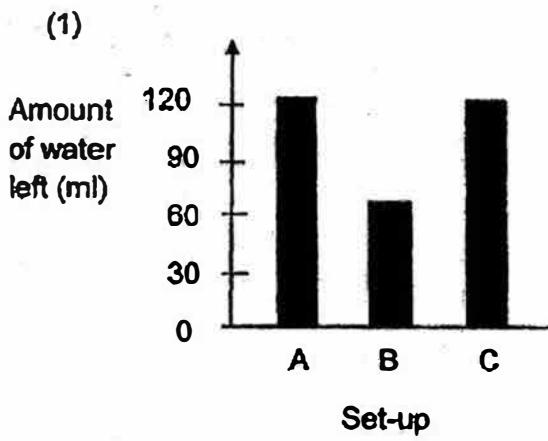
Which one of the following explains Jack's observation correctly?

- (1) Water was transported by the food-carrying tubes to the leaves only.
- (2) Water was transported by the water-carrying tubes to the flowers only.
- (3) Water was transported by the food-carrying tubes to the flower and leaves.
- (4) Water was transported by the water-carrying tubes to the flower and leaves.

15. Kelly prepared three set-ups, A, B and C, using identical plants as shown in the diagram below. Each beaker contained 120ml of water and a layer of oil. Kelly placed the three set-ups near a window and observed the amount of water left in the beaker after four days.



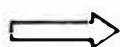
Which one of the following likely shows the amount of water left in each beaker at the end of four days?



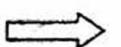
16. The mass of an inflated ball was 450g at first. Next, the air in the ball was released completely and the mass of the deflated ball was shown in the diagram 2 was recorded. Finally, air was pumped into the deflated ball until it was much harder than it was at first, as shown in the diagram 3 below.



Inflated ball
at first



Deflated ball



Inflated ball
in the end

Diagram 1

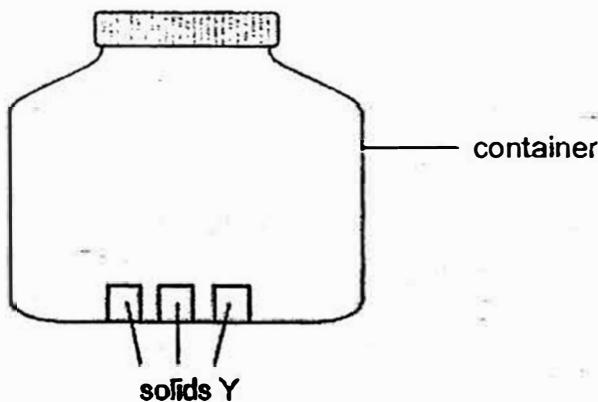
Diagram 2

Diagram 3

Which one of the following is most likely to be the set of results that was recorded?

| Mass of inflated ball at first (g) | Mass of deflated ball (g) | Mass of inflated ball in the end (g) |
|---------------------------------------|---------------------------|---|
| (1) 450 | 456 | 461 |
| (2) 450 | 446 | 450 |
| (3) 450 | 446 | 454 |
| (4) 450 | 456 | 448 |

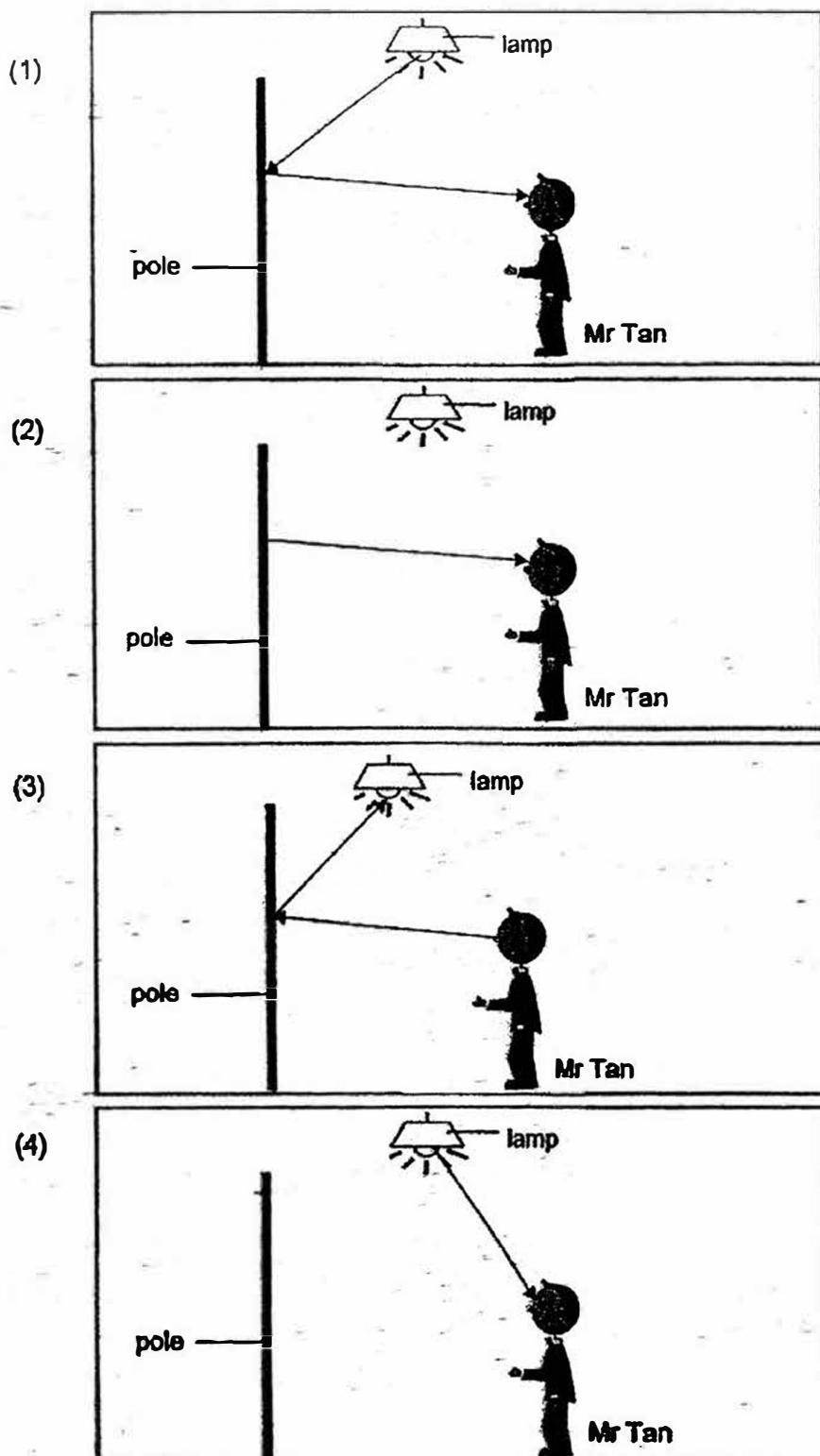
17. Kayla conducted an experiment by placing three identical pieces of 50-cm^3 solid Y in a tightly-sealed 1500-cm^3 container. Solids Y turned directly into gas after some time.



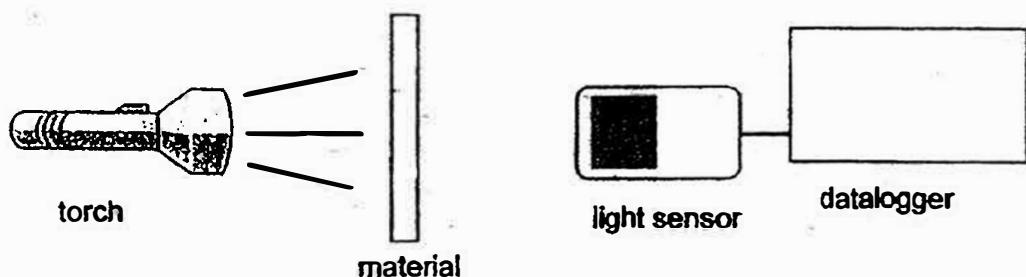
Which of the following statements about the gas in the container at the end of the experiment are likely to be correct?

- A The final volume of the gases in the container was 1350 cm^3 .
 - B The final volume of the gases in the container was 1650 cm^3 .
 - C The final volume of the gases in the container was 1500 cm^3 .
 - D The gases in the container had a definite volume because gases could be compressed.
-
- (1) A only
 - (2) C only
 - (3) B and C only
 - (4) A and D only

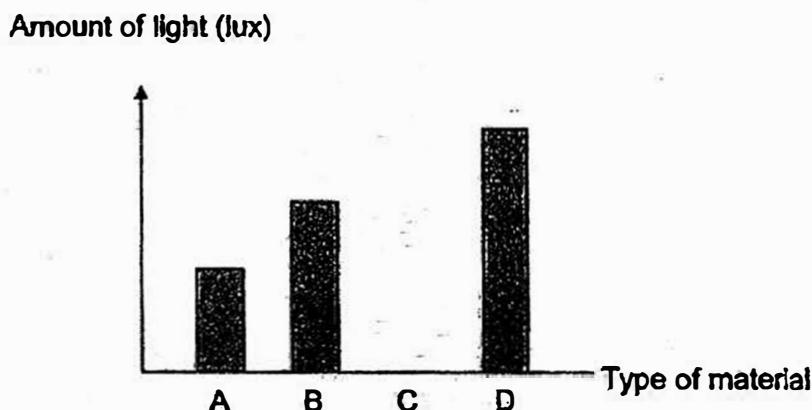
18. Which of the following diagram correctly shows the path of light that allows Mr Tan to see the pole when the lamp is switched on?



19. Sarah wanted to make a set of curtains for bedroom windows to block out most of the light from entering her bedroom. She prepared the following set-up to measure the amount of light that passed through four different materials, A, B, C and D, using a light sensor connected to a datalogger.



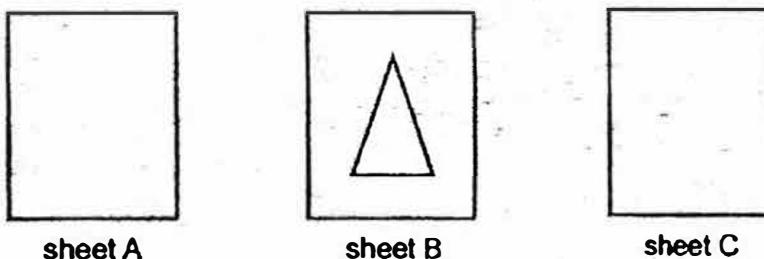
The graph below shows the amount of light that passed through each type of material.



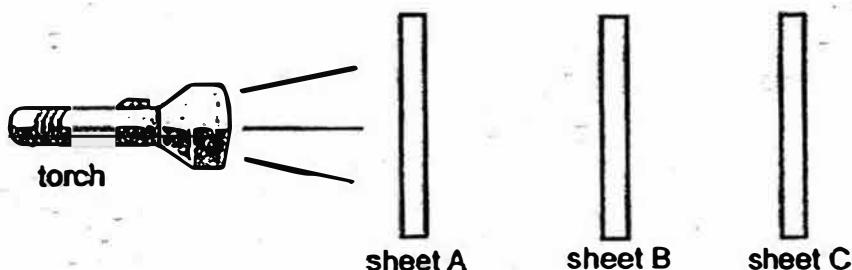
Based on the above results, which one of the following materials, A, B, C or D, should Sarah choose to make the curtains to block out most of the light?

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

20. Ahmad carried out an experiment in a dark room as shown below. Three sheets of equal size and thickness made of different materials were used. Ahmad made a hole in sheet B as shown in the diagram below.



He arranged the three sheets in the order and shone a torch as shown below.



When the torch was switched on, a bright and clear triangular patch of light was seen on sheet C as shown below.



Which one of the following most likely shows the materials of sheets A, B and C?

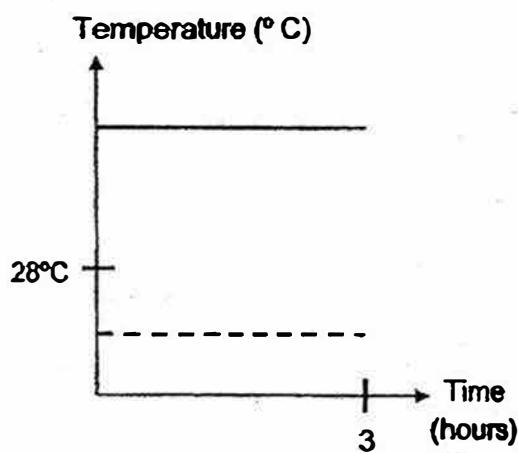
| | A | B | C |
|-----|---------------|-------------|---------------|
| (1) | styrofoam | aluminum | clear plastic |
| (2) | wood | styrofoam | cloth |
| (3) | clear glass | wood | cloth |
| (4) | clear plastic | clear glass | aluminium |

21. Sulin placed a glass of hot tea in a basin of cold water in a room with a constant temperature of 28°C .

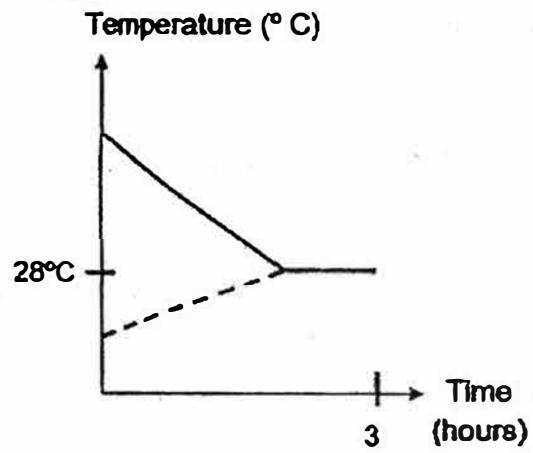
Key:
hot tea ———
cold water - - - -

Which one of the graphs below shows the temperature of the hot tea and the cold water over a period of three hours?

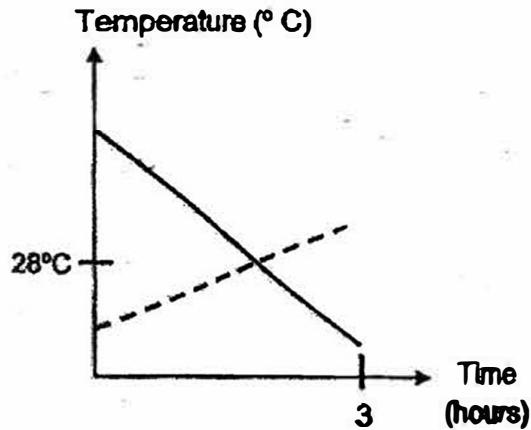
(1)



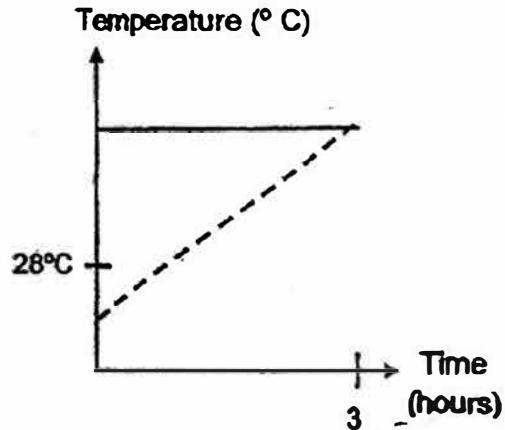
(2)



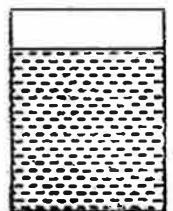
3)



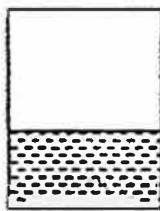
4)



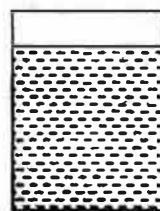
22. Evelyn wanted to find out if the amount of water would affect the time taken for it to boil. She prepared four beakers, A, B, C and D, filled with water of different temperatures as shown in the diagrams below.



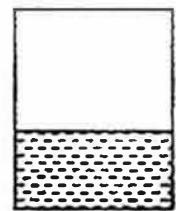
Beaker A



Beaker B



Beaker C

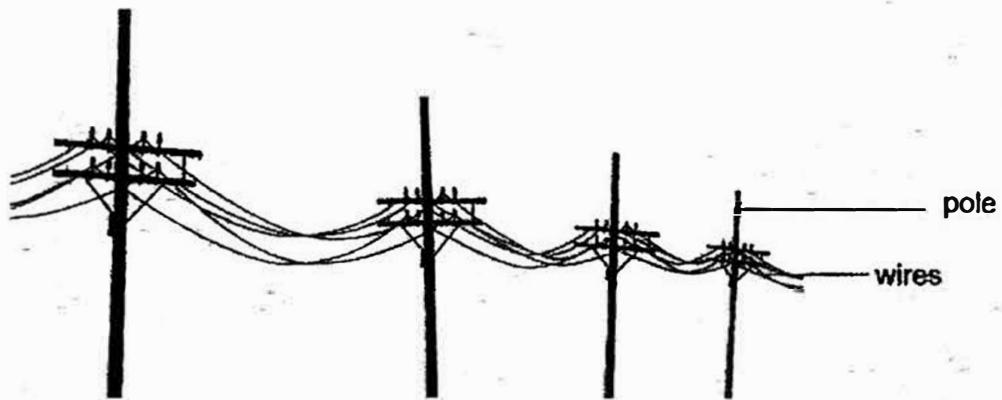


Beaker D

Which two beakers should Evelyn choose for her experiment?

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

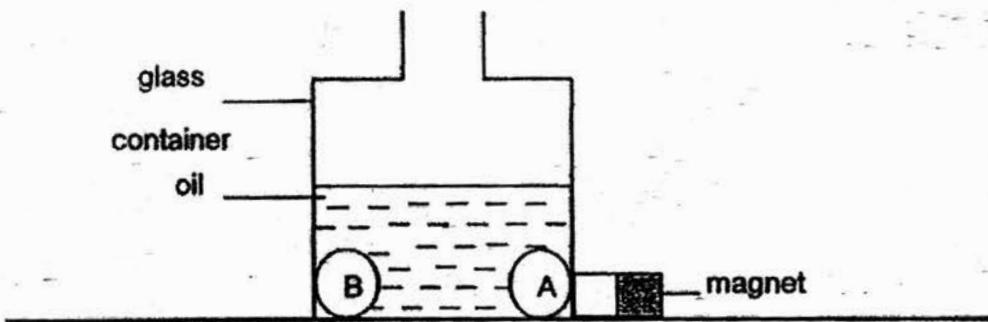
23. In some countries, telephone wires are hung on poles above the ground as shown below.



The telephone wires are hung loosely between the poles to allow for

- (1) expansion of the poles on hot days
- (2) contraction of wires on cold days
- (3) expansion of wires on cold days
- (4) contraction of poles on hot days

24. George tried to remove two metal balls, A and B, from a container of oil using a magnet. He placed the magnet at the outer side of the container next to metal ball A and managed to slide it out of the container. He repeated the steps with metal ball B but he did not manage to remove it from the container.



Which of the following could possibly be the reason(s) for both observations made by George above?

- A Metal ball B was non-magnetic.
 - B Metal ball A was able to attract the magnet.
 - C Magnetic force could pass through glass and oil and attracted metal ball A.
 - D Magnetic force could not pass through glass and oil to attract metal ball B.
-
- (1) A only
 - (2) C only
 - (3) A and C only
 - (4) B and D only

25. Karine placed both the N-pole and S-pole of a bar magnet near four objects, A, B, C and D, and observed the interactions between them. She recorded her observations in the table below:

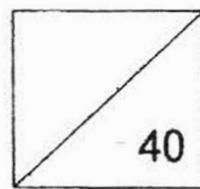
| | objects | | | |
|----------------------------------|-----------|----------------|-----------|-----------|
| | A | B | C | D |
| North-seeking pole of bar magnet | Repelled | No interaction | Attracted | Attracted |
| South-seeking pole of bar magnet | Attracted | No interaction | Attracted | Repelled |

From the observations above, which one of the following is the correct grouping of the four objects, A, B, C and D?

| | Magnets | Magnetic objects | Non-magnetic objects |
|-----|---------|------------------|----------------------|
| (1) | A | B | C and D |
| (2) | A and B | C | D |
| (3) | C and D | A | B |
| (4) | A and D | C | B |



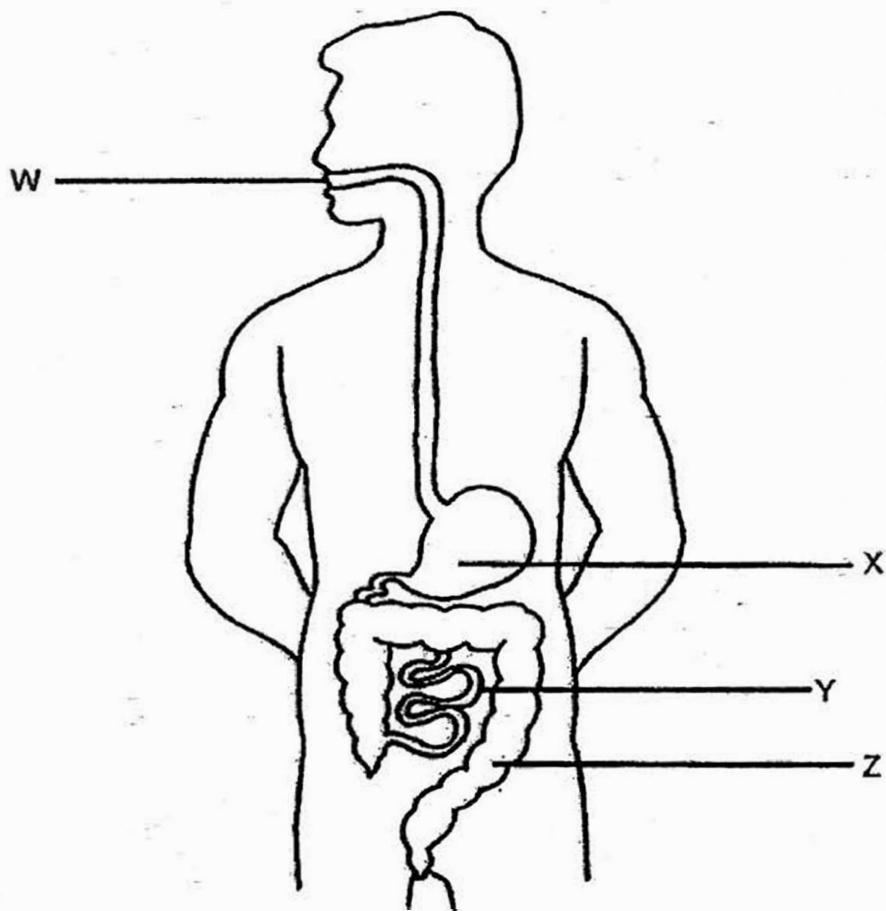
Name: _____ Index No: _____ Class: P4 _____



SECTION B (40 marks)

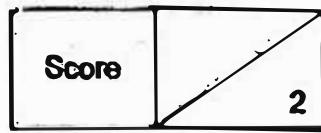
For questions 26 to 37, write your answers clearly in the spaces provided. The number of marks available is shown in brackets [] at the end of each question or part question.

26. The diagram below shows the human digestive system.



Based on the diagram above, identify the part where

- (a) digestion first takes place: _____ [1]
- (b) digestion ends: _____ [1]



27. (a) Fill in the correct parts of a plant in the table below.

[2]

| Functions of plant parts | Plant parts |
|------------------------------|-------------|
| It holds the plant upright. | |
| It makes food for the plant. | |

Judy and Annie want to find out if the type of soil will affect the growth of a plant.

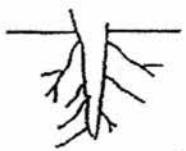
(b) Fill in the blanks in boxes (i) and (ii) to ensure that the test is fair. [1]

| Variables | Judy | Annie |
|-----------------|--------------|--------------|
| Type of plant | Chilli plant | Chilli plant |
| Type of soil | Garden soil | Sandy soil |
| Amount of water | 200ml | (i) _____ ml |
| Location | Garden | (ii) _____ |

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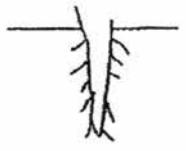
- (c) The pictures below show the roots of three different plants.



Plant A



Plant B



Plant C

- (i) Which one of the three plants, A, B or C, has roots that will absorb the most water from the ground? [1]

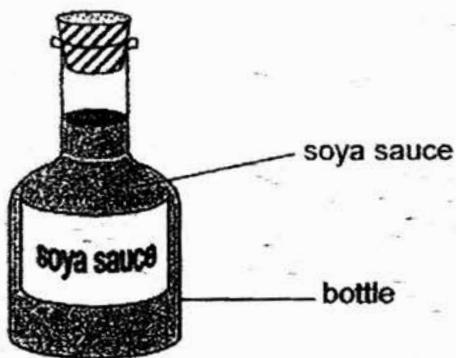
Plant: _____

- (ii) Give a reason for your answer in part (c)(i). [1]

| | |
|-------|--|
| Score | |
| 2 | |

2017 P4 Science SA2

28. The diagram below shows a bottle containing some soya sauce.



Complete the sentences to state if the parts are solid, liquid or gas.

(a) The bottle is a _____ [1]

(b) Soya sauce is a _____ [1]

29. The diagram below shows a barbecue skewer.

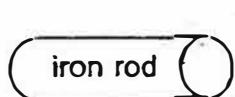


(a) The handle is made of wood because it is _____ conductor of heat. [1]

(b) The rod is made of metal because it is a _____ conductor of heat. [1]

| | |
|-------|---|
| Score | |
| | 4 |

30. Sharon places a magnet near an iron rod. The iron rod moves towards the magnet.



- (a) The magnet exerts a _____ on the iron rod. [1]

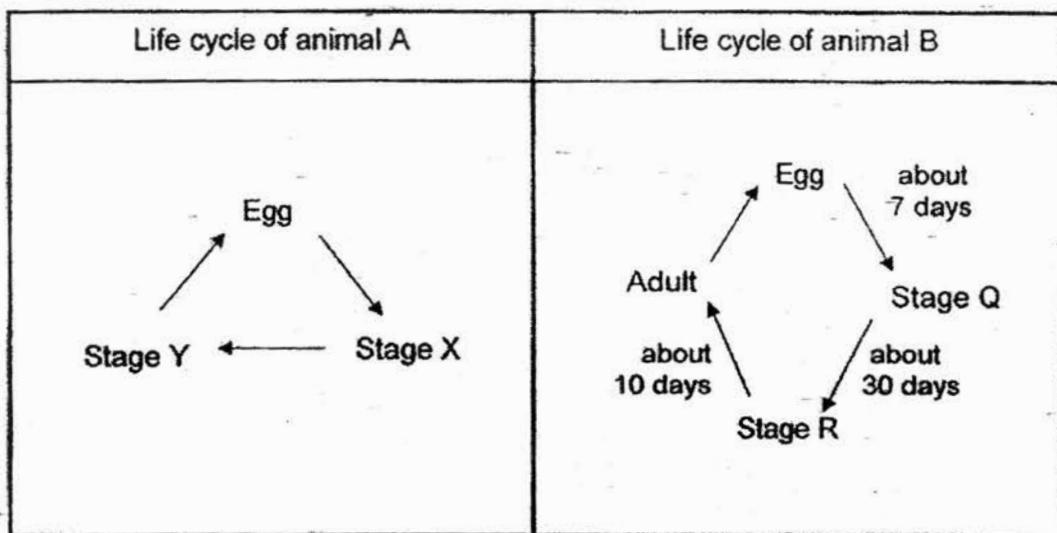
Choose the correct word from the box to answer the question below.

| | | |
|----------|----------|--------|
| flexible | magnetic | strong |
|----------|----------|--------|

- (b) Sharon's observation shows that iron is a _____ material. [1]

| | |
|-------|---|
| Score | |
| | 2 |

31. The diagram below shows the stages in the life cycles of animal A and animal B.



Based on the information provided above, answer the following questions.

- (a) (i) What is the least possible number of days animal B takes in order to develop from stage Q to an adult? [1]

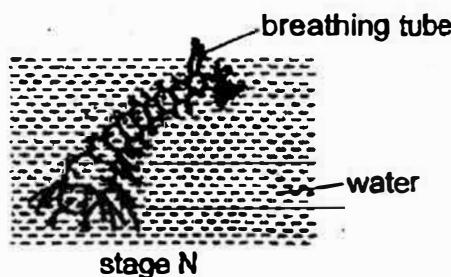
- (ii) What is the difference between the life cycles of animal A and animal B? [1]

| | |
|-------|---|
| Score | |
| | 2 |

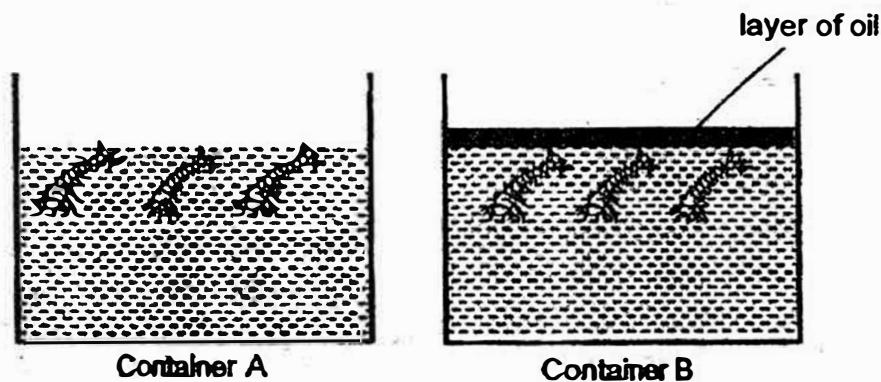
Continued on next page

Continued from previous page

31. (b) Ryan managed to catch some young of the mosquito when they are in Stage N. The young of the mosquito breathes through its breathing tube as shown below.



He placed several young of the mosquito into Container A and Container B as shown below. Three days later, all the young of the mosquito in one of the containers died.



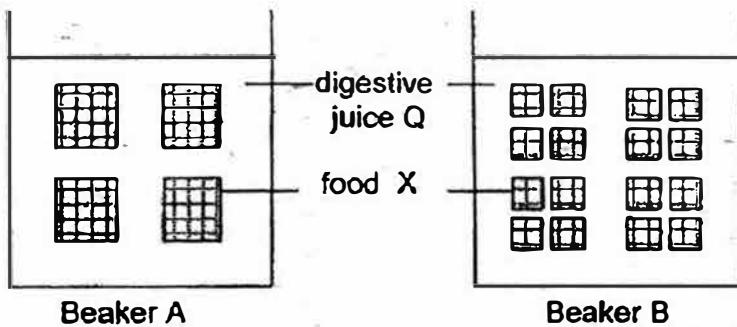
- (i) Name the young of the mosquito at stage N.

- (ii) In which container did Ryan find all the young of the mosquito dead? Explain your answer.

[1]

| | |
|-------|---|
| Score | 2 |
|-------|---|

32. Jane carried out an experiment as shown in the diagram below. She set up two beakers, A and B, containing the same amount of food X. Each piece of food was cut into smaller pieces. She then poured the same amount of digestive juice Q into each beaker.



She recorded the time taken for the food X in each beaker to be digested as shown below.

| Food X in | Time taken for the food X to be digested (min) |
|-----------|--|
| Beaker A | 38 |
| Beaker B | 16 |

- (a) Based on the results above, what is the relationship between the size of food and the time taken for the food to be digested? [1]

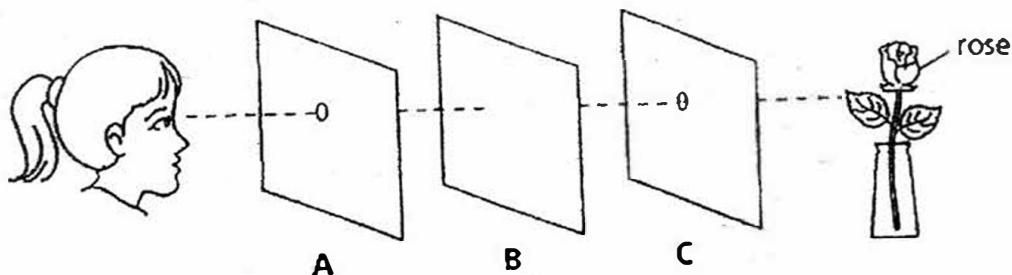
Jane's grandfather, Mr Tan, needs to put on his dentures (false teeth) before he eats. The diagram below shows how the dentures look like.



- (b) Explain clearly how the use of dentures help Mr Tan in the process of digestion. [2]

| | |
|-------|---|
| Score | |
| | 3 |

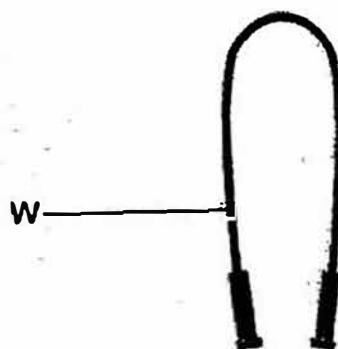
33. Jenny set up the following experiment using three sheets of different materials, A, B and C, in a brightly-lit room. Sheets A and C had a hole in them but not sheet B. Jenny could see the rose in the set-up below.



- (a) (i) Name a suitable material for Sheet B. [1]
-

- (ii) State the property of the suitable material stated in (i) that enables Jenny to see the rose very clearly. [1]
-

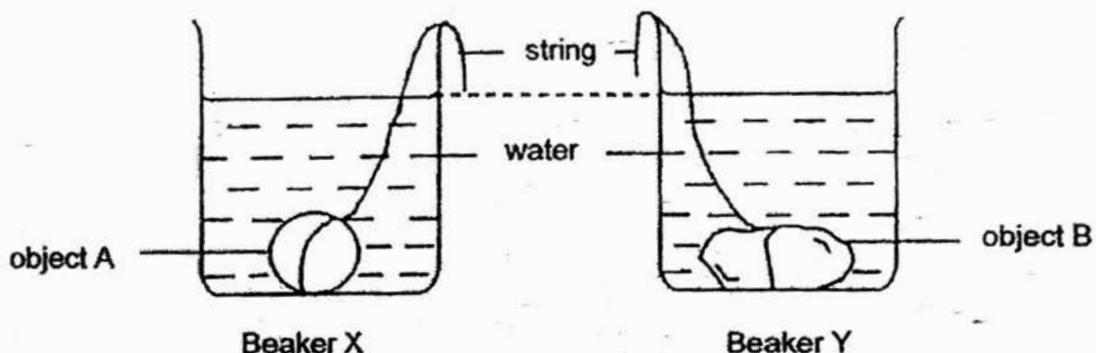
The diagram below shows a skipping rope. The material used to make part W does not break easily.



- (b) Suggest ANOTHER property of the material used to make part W. Give a reason for your answer. [2]
-
-

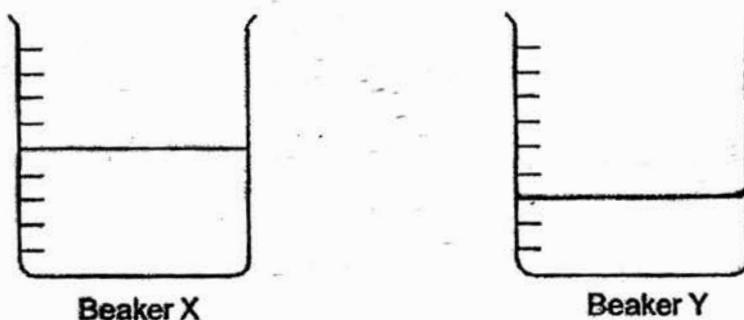
| | |
|-------|---|
| Score | |
| | 4 |

34. Lauren wanted to find out if object A or object B has a greater volume. First, she placed the two objects in identical beakers, X and Y. Then she poured water into the beakers until the water levels in both beakers were the same.



- (a) Lauren removed objects A and B from the beakers and she found out that object B had a greater volume. The water level in beaker X after object A had been removed had been drawn for you.

Draw the water level in beaker Y after object B had been removed from it [1]
in the diagram below.



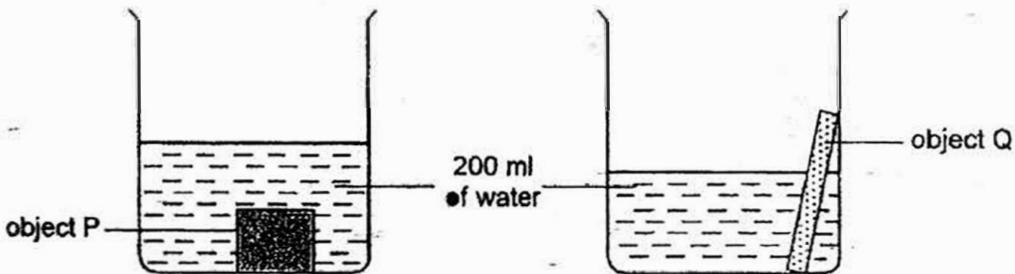
- (b) State the property of solids that is shown in the experiment above. [1]

Continued on next page

| | |
|-------|---|
| Score | |
| | 2 |

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Lauren conducted another experiment. This time, she filled two identical beakers each with 200 ml of water before lowering objects P and Q into the beakers as shown below.



Lauren concluded that object P had a greater volume than object Q but her teacher told her that her conclusion was wrong because her experiment was not conducted correctly.

- (C) (i) Explain why Lauren's conclusion was wrong.

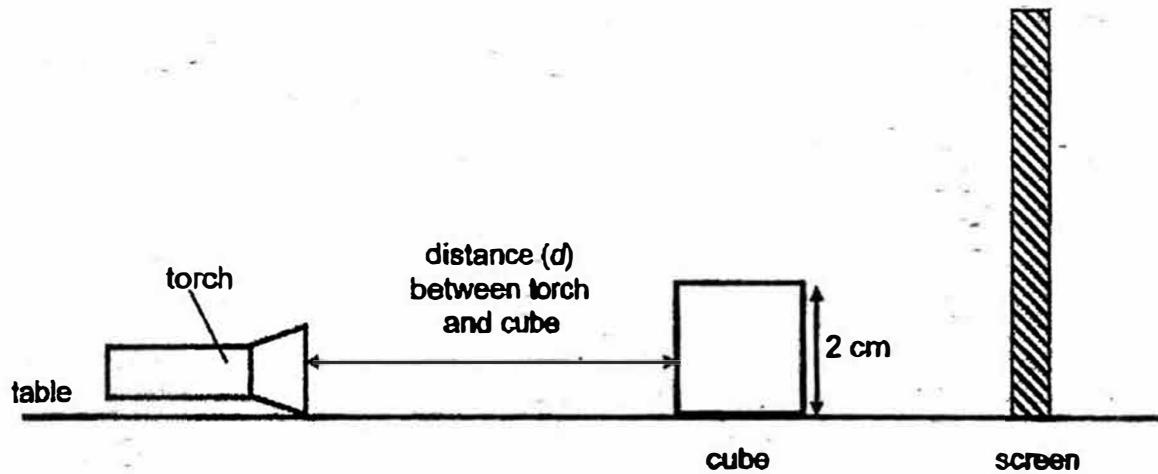
[1]

- (ii) Suggest what Lauren could have done to find out if object P or Q had a greater volume using the set-up above without removing any of the apparatus.

[1]

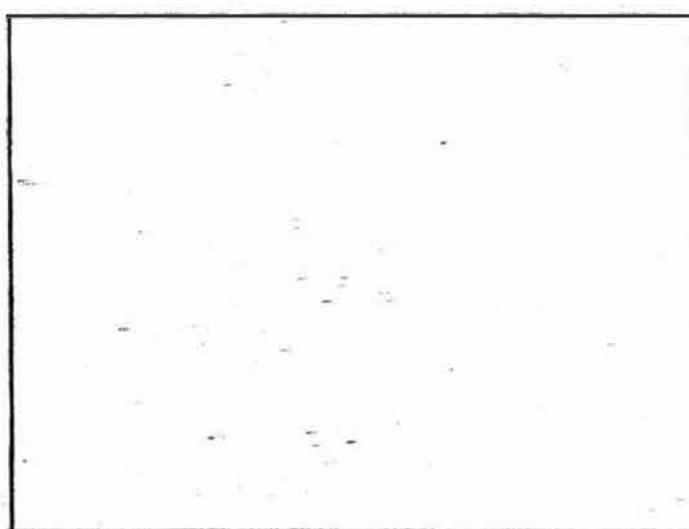
| | |
|-------|--|
| Score | |
| 2 | |

35. James used a torch to shine on a wooden cube as shown below. A shadow of the cube was formed on the screen.



(a) Draw the shadow that was formed on the screen in the box below.

[1]



Continued on next page

Continued from previous page

James measured the height of the shadow formed on the screen as he moved the torch towards the wooden cube. He recorded the results in the table as shown below.

| Distance (d) between torch and cube (cm) | Height of the shadow formed on the screen (cm) |
|--|---|
| 10 | 2.5 |
| 8 | 4 |
| 6 | 5.5 |

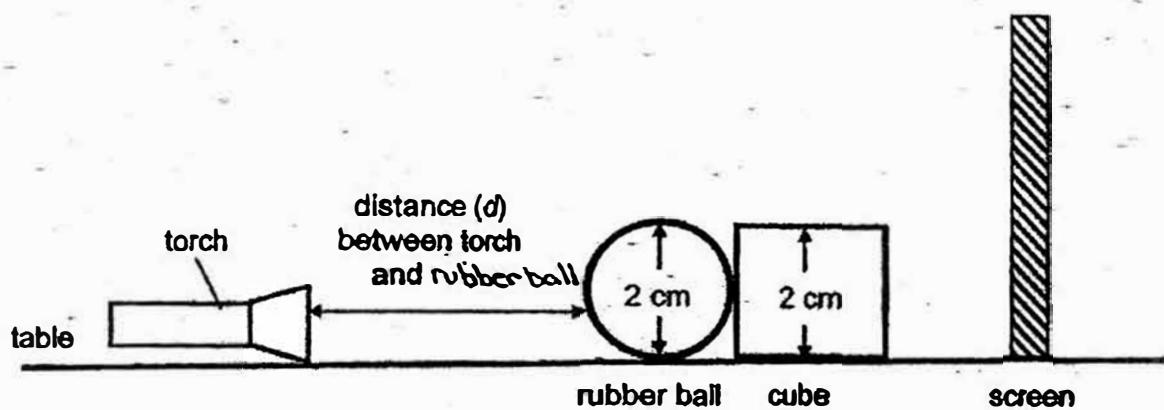
- (b) Without moving the screen or torch, suggest one way that James could do to make the height of the shadow formed on the screen less than 2.5 cm. [1]

- (c) How does the distance (d) between the torch and wooden cube affect the height of the shadow formed on the screen? [1]

| | |
|-------|---|
| Score | |
| | 2 |

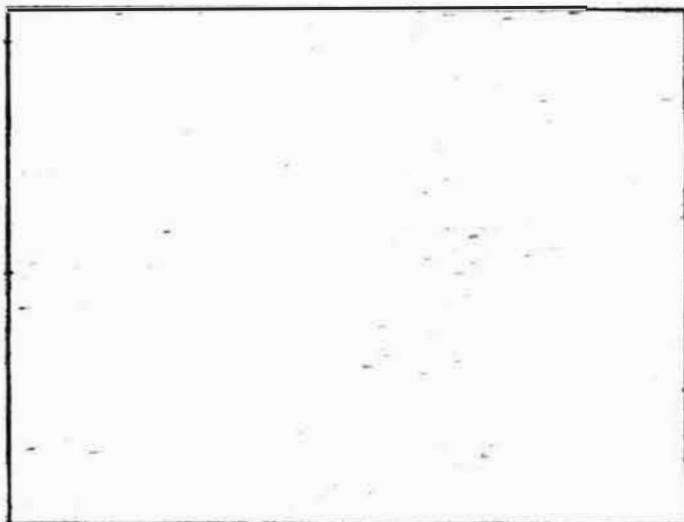
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James placed a rubber ball in front of the wooden cube as shown in the diagram below.



(d) Draw the shadow that would form on the screen in the box below.

[1]



| | |
|-------|---|
| Score | |
| | 1 |

36. Sally poured an equal amount of coffee into four cups made of different materials P, Q, R and S, as shown below.



material P



material Q



material R



material S

She recorded the change in the temperature of coffee in the four cups after thirty minutes in the table below.

| Material | Temperature of coffee (°C) | |
|----------|----------------------------|------------------|
| | At first | After 30 minutes |
| P | 95 | 40 |
| Q | 95 | 25 |
| R | 95 | 75 |
| S | 95 | 50 |

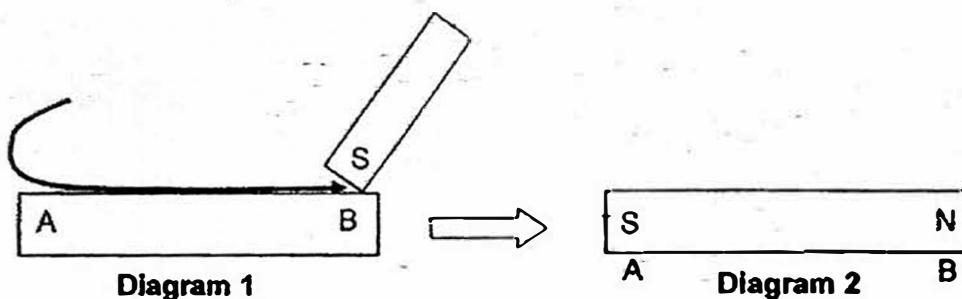
- (a) Based on the results above, which one of the materials, P, Q, R or S, is most suitable for making a container that can keep food warm for the longest time? Give a reason for your answer. [2]

- (b) Name 2 other variables that Sally must keep the same to ensure a fair experiment [2]

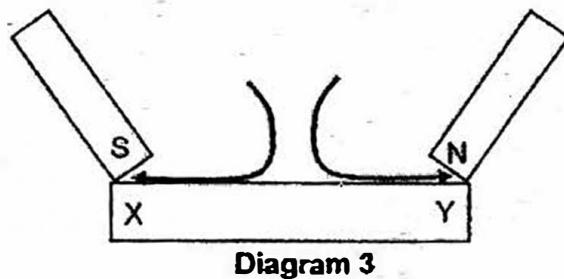
| | |
|------------|--|
| Variable 1 | |
| Variable 2 | |

| | |
|-------|---|
| Score | |
| | 4 |

37. Kaylene stroked a steel bar many times as shown in diagram Diagram 2 shows the poles of the magnetised steel bar.



Kaylene then used two magnets to stroke another steel bar as shown in diagram 3 below.



(a) Name the poles of the magnetised steel bar at X and Y.

[2]

(i) At X : _____ - pole

(ii) At Y : _____ - pole

| | |
|-------|---|
| Score | 2 |
|-------|---|

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Kaylene prepared a set-up using the magnetised steel bar as shown below.

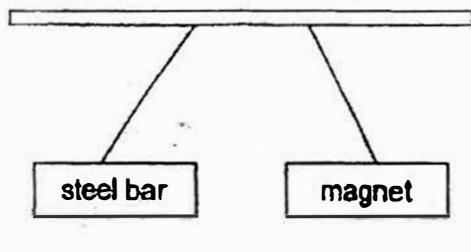


Diagram A

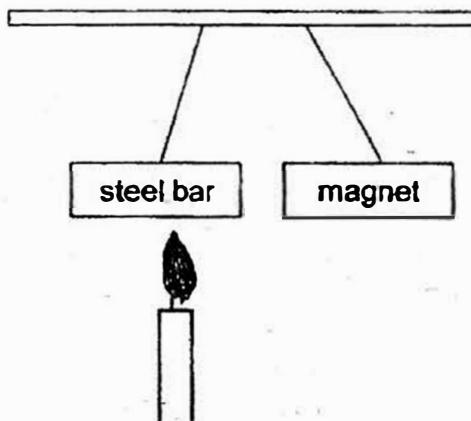


Diagram B

- (b) When she placed a magnet near the magnetised steel bar, she observed that the magnetised steel bar and the magnet moved away from each other as shown in Diagram A. Explain her observation. [1]

- (c) When a flame is placed near the magnetised steel bar as shown in Diagram B, the magnetised steel bar moved closer to the magnet after some time. Explain why this happened. [1]

End of paper

| | |
|-------|--|
| Score | |
| 2 | |



EXAM PAPER 2017 (P4)

SCHOOL : RAFFLES GIRLS'

SUBJECT : SCIENCE

TERM : SA2

ORDER CALL :

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 3 | 1 | 2 | 3 | 4 | 1 | 2 | 2 | 4 | 4 |
| Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Q20 |
| 3 | 2 | 1 | 4 | 4 | 3 | 2 | 1 | 3 | 3 |
| Q21 | Q22 | Q23 | Q24 | Q25 | | | | | |
| 2 | 4 | 2 | 3 | 4 | | | | | |

26)a)W b)Y

27)a)stem

Leaves

b)i)200 ml

ii)Garden

c)i)B

ii)B has the most number of roots compared to A and C.

28)a)solid

b)liquid

29)a)poor

b)good

30)a)magnetic force

b)magnetic

31)a)i)40 days.

ii)A has three stages but B has four stages in the life cycle.

b)i)Larvae.

ii)The larvae cannot get air from the surrounding because the layer of oil blocked the breathing to be.

32)a)The smaller the size of the food the shorter the time needed for the food to be digested.

b)It helps to chew the food down into smaller pieces and the saliva softens the food.

33)a)i)clear. (plastic)

ii)Transparent

b)It must be flexible so it can be swing over the person who skips.

34)a)

b)Solids have a definite volume.

c)i)Part of object Q is not covered by the water so the increase in water level only showed part of the volume of object Q.

ii)She should make sure object Q is fully covered in water.

35)a)



b)Move the cube closer to the screen.

c)The greater the distance between the torch and the cube, the shorter the height of the shadow formed on the screen.

d)



36)a)The temperature of the water in it was the highest after 30 minutes shows that R is the poorest conductor of heat. A container made of R will reduce the most heat loss from the food the surrounding.

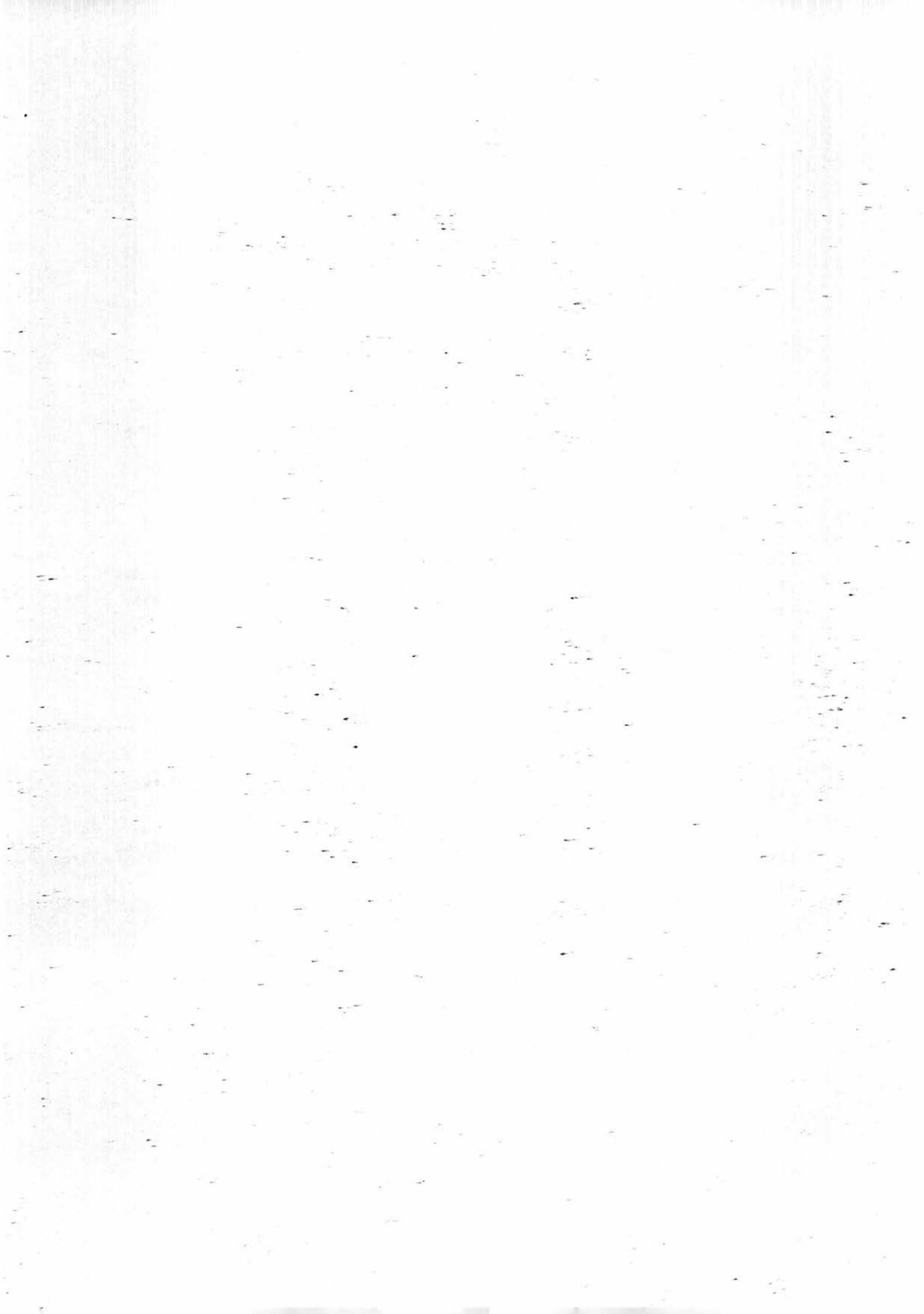
b)1) The size of the cups.

2)Thickness of cups.

37)a)i)N ii)S

b)The like pols of the steel bar and magnet were facing each other causing them to repel.

c)Heating the steel bar caused the steel bar to lose some of its magnetism, so the steel bar moved closer to the magnet the distance between them decreased.





RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (2) 2015

Name: _____ Index No: _____ Class: P4 _____

27 October 2015 SCIENCE Att: 1 h 30 min

| | |
|----------------------|----|
| Section A | 50 |
| Section B | 40 |
| Your score out of 90 | |
| Parent's signature | |

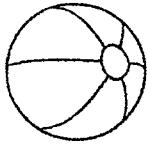
SECTION A (25 x 2 marks)

For each question from 1 to 25, four options are given.

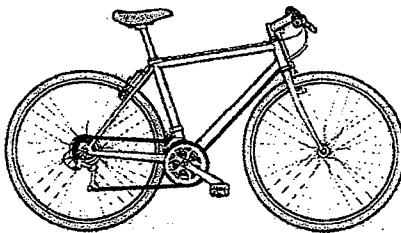
One of them is the correct answer. Make your choice (1, 2, 3 or 4).

Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

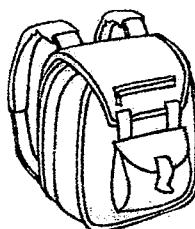
1. Which one of the following is a living thing?



(1)



(2)



(3)

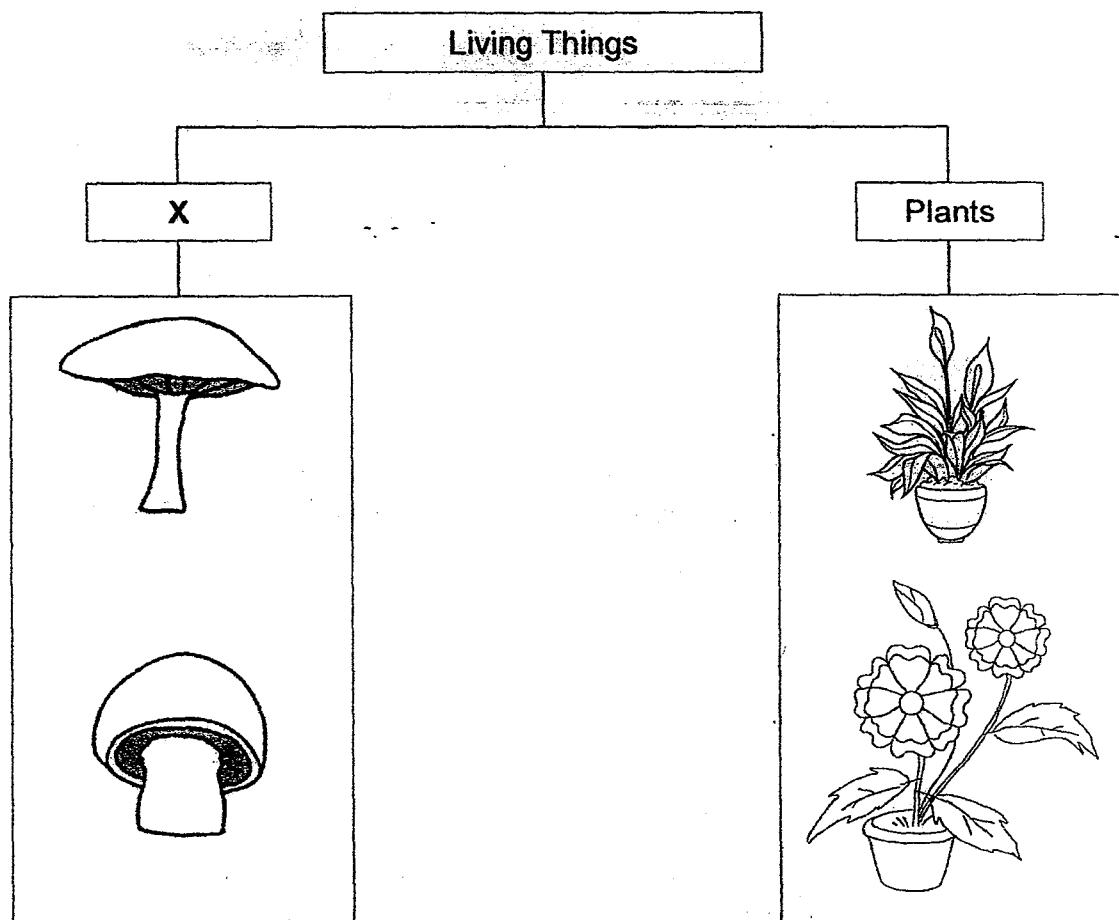


(4)

2. Which statement is true about most mammals?

- (1) They can swim.
- (2) They have wings.
- (3) They produce milk.
- (4) They have four legs.

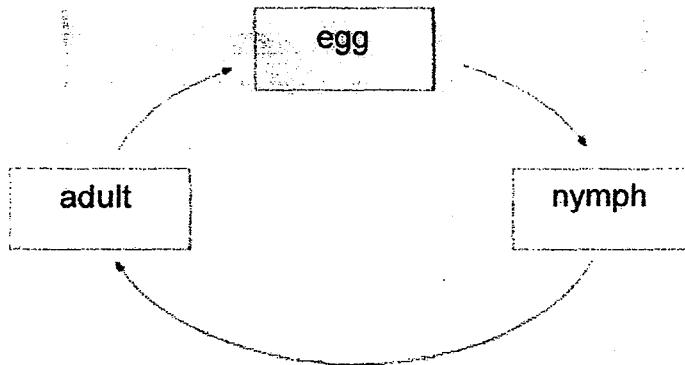
3. The table below shows how some living things can be grouped.



Which one of the following is the most suitable heading for group X?

- (1) fish
- (2) fungi
- (3) insects
- (4) bacteria

4. The diagram below shows the life cycle of an animal.



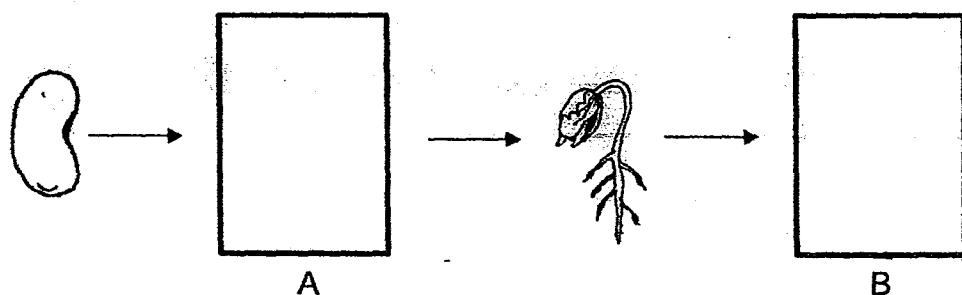
Which animal is likely to have the life cycle as shown above?

- (1) chicken
- (2) butterfly
- (3) mosquito
- (4) cockroach

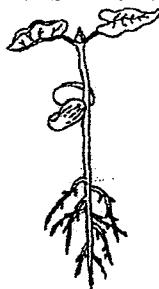
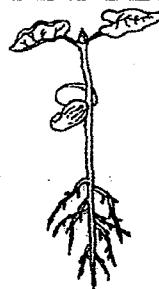
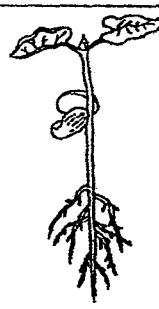
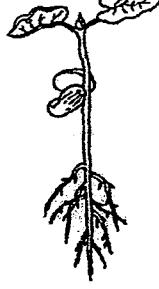
5. In which part of the digestive system is food completely digested?

- (1) gullet
- (2) stomach
- (3) small intestine
- (4) large intestine

6. The diagram below shows the growth of a young plant with two missing stages A and B.

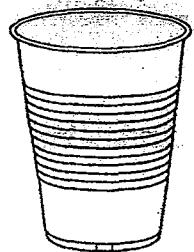


Which one of the following shows the correct stages for A and B?

| | A | B |
|-----|---|---|
| (1) |  |  |
| (2) |  |  |
| (3) |  |  |
| (4) |  |  |

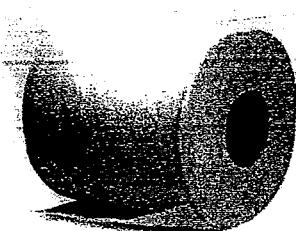
7. Which of the following objects is **not** made of waterproof material?

(1)



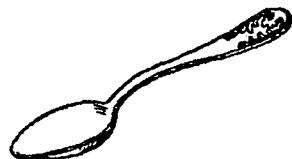
plastic cup

(2)



toilet paper

(3)



metal spoon

(4)

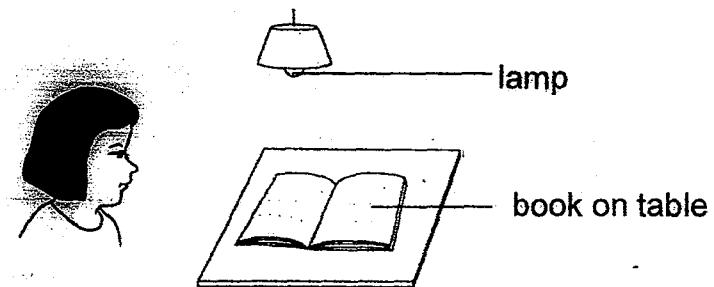


rubber boots

8. Which one of the following properties is true for both oxygen and a ruler?

- (1) They can be seen.
- (2) They take up space.
- (3) They have fixed shapes.
- (4) They have fixed volumes

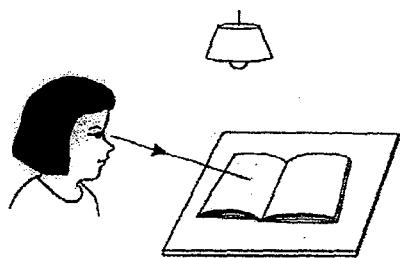
9. Look at the picture below.



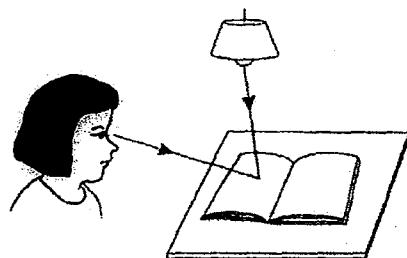
Which one of the following explains why Sue can see the book on the table?

→ Direction of light

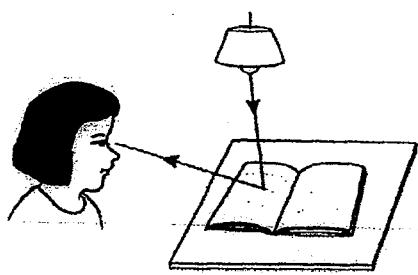
(1)



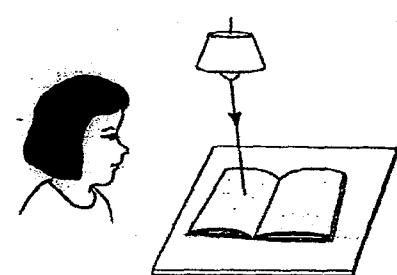
(2)



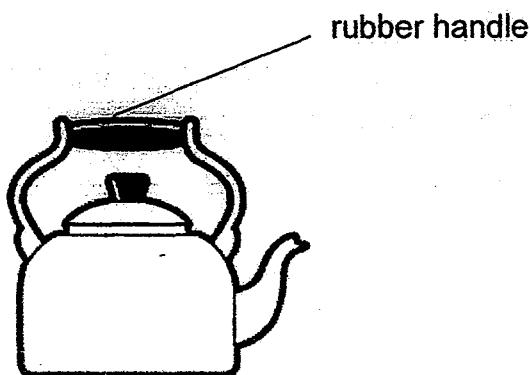
(3)



(4)



10. Hashim boiled some water in the pot shown below.



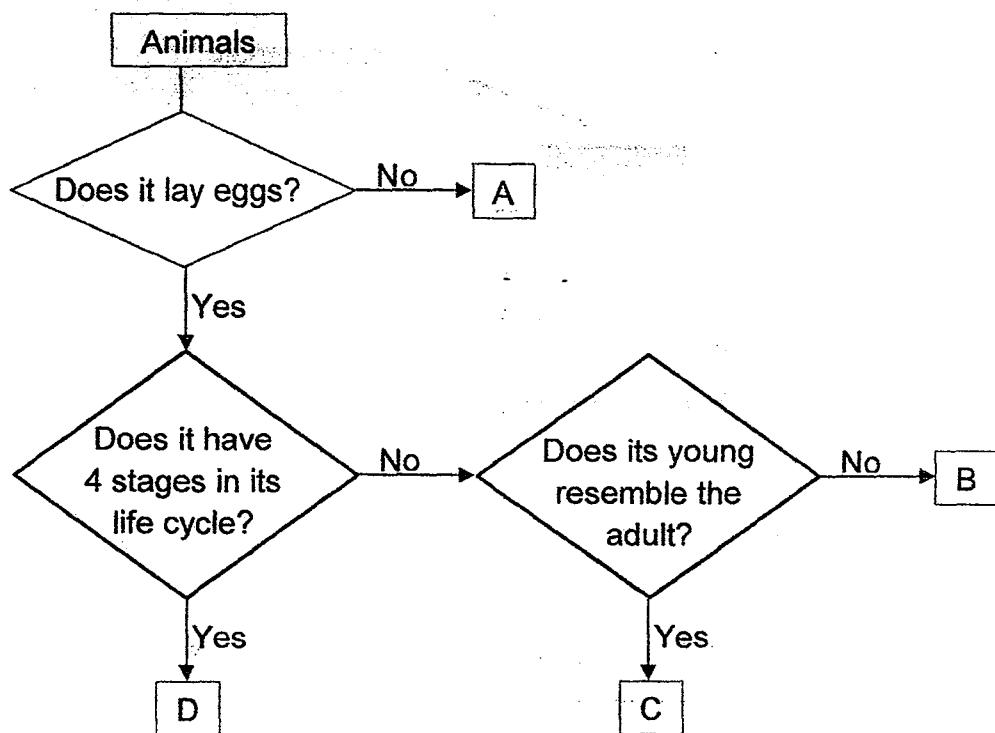
He is able to hold the pot of boiling water using the rubber handle. This is because rubber is a _____.

- (1) light material
- (2) flexible material
- (3) good conductor of heat
- (4) poor conductor of heat

11. Which one of the following statements about seeds is true?

- (1) Seeds can germinate without air.
- (2) Seeds need fertiliser to germinate.
- (3) Seeds need moisture to germinate.
- (4) Seeds which are exposed to sunlight will not germinate.

12. The flow chart below shows how animals A, B, C and D are grouped.



Based on the information above, which one of these animals will represent a frog?

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

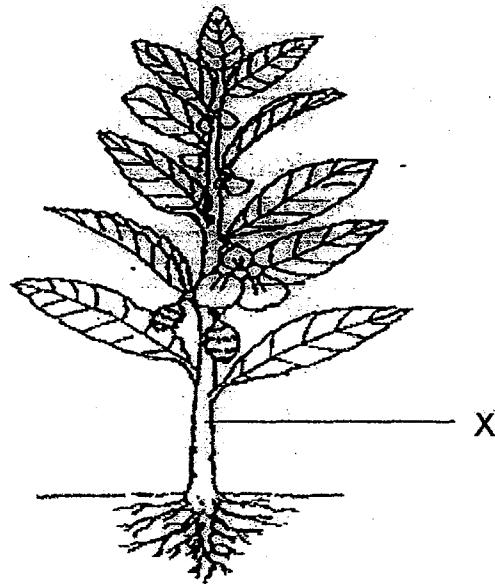
13. Kai Jin wanted to conduct an experiment to find out if the change in the amount of digestive juice would affect the digestion of cooked rice. He prepared the following set-ups for this experiment.

| Dish | Amount of digestive juice (ml) | Amount of cooked rice (g) | Temperature of cooked rice (°C) | Duration of experiment (min) |
|------|--------------------------------|---------------------------|---------------------------------|------------------------------|
| A | 5 | 20 | 28 | 20 |
| B | 5 | 40 | 28 | 20 |
| C | 10 | 20 | 28 | 20 |
| D | 10 | 40 | 25 | 30 |

Which of these set-ups should Kai Jin use to conduct a fair test for his experiment?

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

14. The diagram below shows a plant.

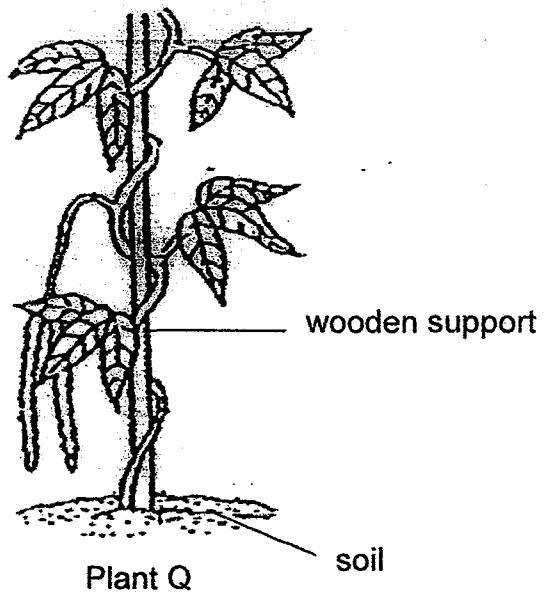


Which of the following statements state the function(s) of the part labelled X?

| | |
|---|--|
| A | It makes food for the plant. |
| B | It supports the leaves and branches. |
| C | It takes in water and mineral salts from the soil. |

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

15. The diagram below shows Plant Q

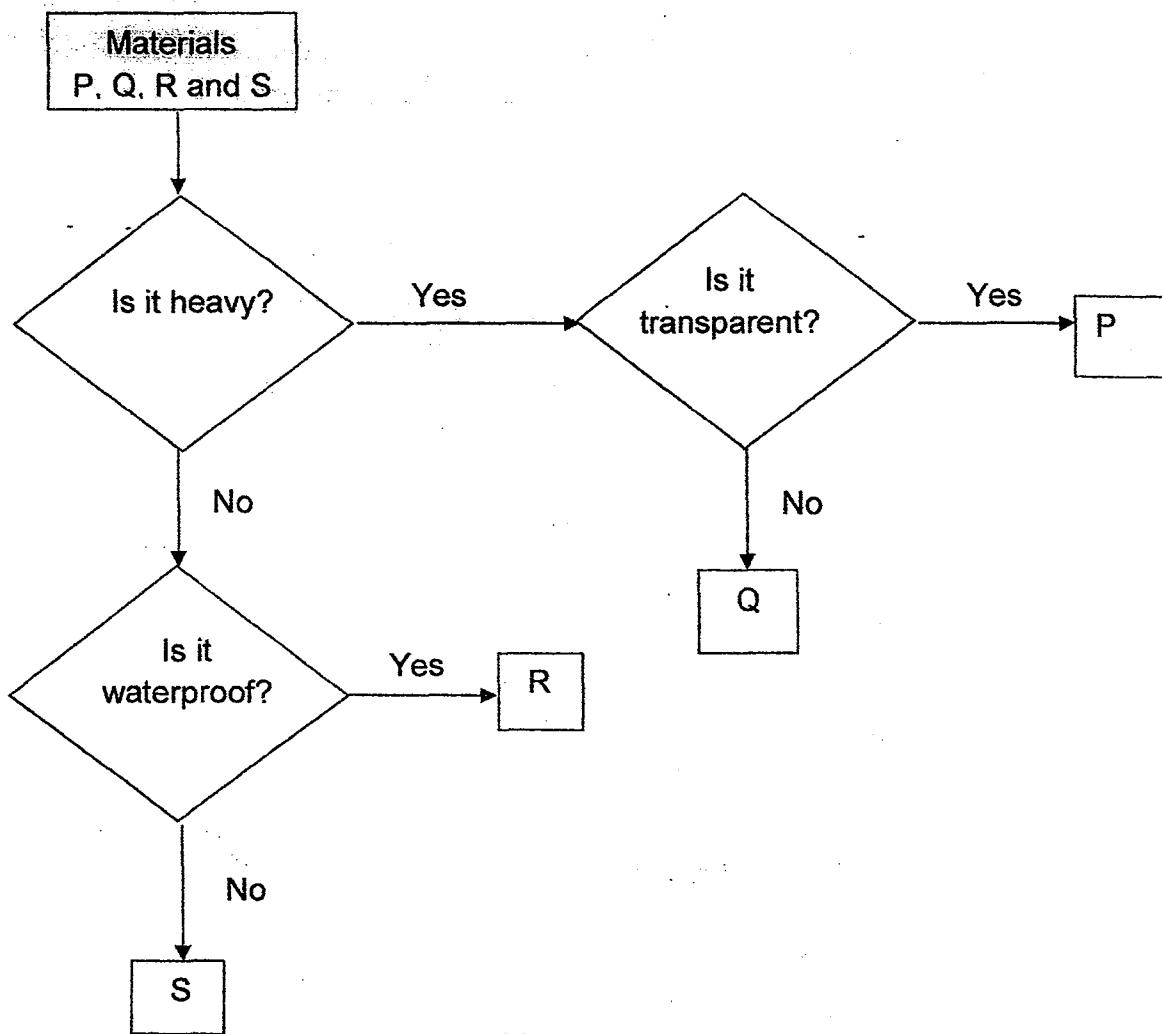


Based on the above observation, which of the following statement(s) about Plant Q is/are correct?

| | |
|---|---|
| A | Plant Q has a weak stem. |
| B | Plant Q is a non-flowering plant. |
| C | Plant Q uses its leaves to cling onto the wooden support to reach for sunlight. |

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

16. The flow chart below shows how 4 materials, P, Q, R and S, are being grouped.

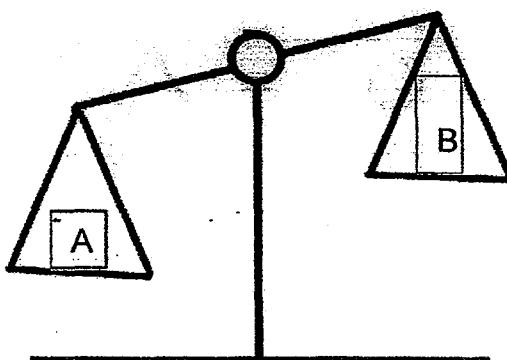


Roy is going for a hike. He wants to wear a pair of boots which is light and keeps his feet dry on rainy days.

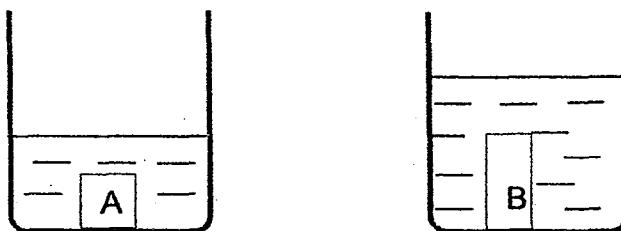
Which material is best suited to make his boots?

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

17. Two cubes A and B were placed on a balance as shown below.



Next, the cubes were put into two beakers containing the same amount of water as shown below.



Based on the observations above, which boys made the correct observations.

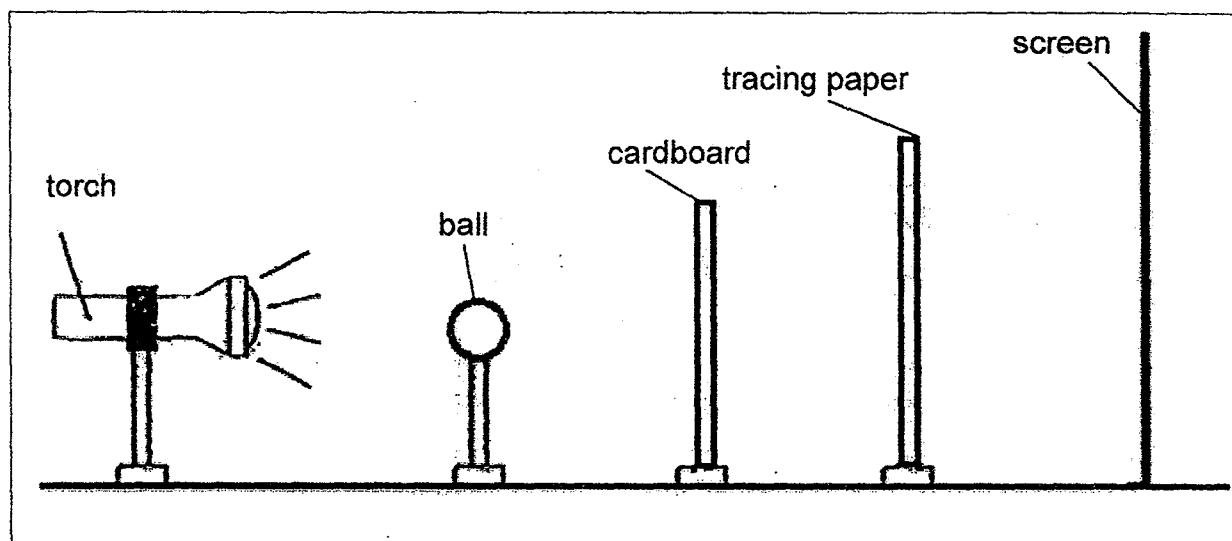
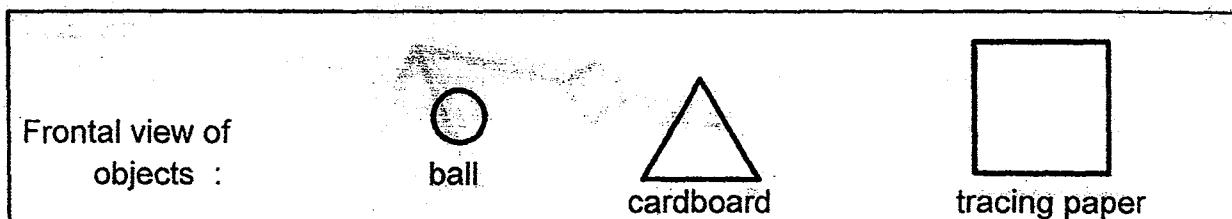
Andy : Cube A has greater mass than Cube B

Bob : Cube B occupied more space than Cube A

Calvin : The greater the mass of the cube, the greater the amount of space it occupies.

- (1) Andy and Bob only
- (2) Bob and Calvin only
- (3) Andy and Calvin only
- (4) Andy, Bob and Calvin

- 18 Jamie placed a rubber ball, a triangle cardboard and a square tracing paper as shown below between a lighted torch and a screen as shown below.



Which one of the following most likely shows the shadow cast on the screen?

(1)



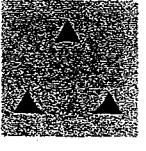
(2)



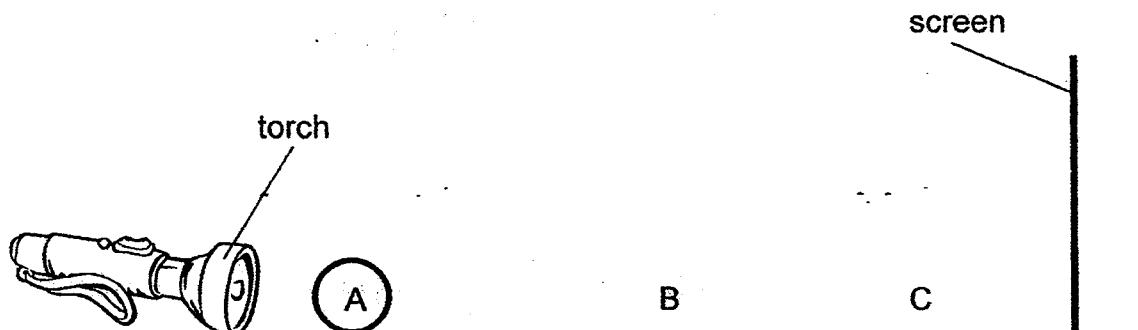
(3)



(4)



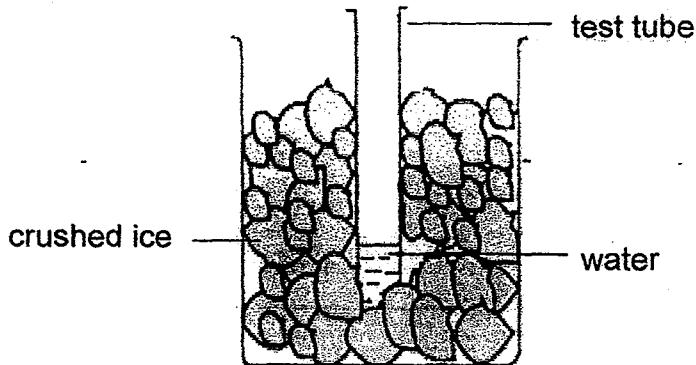
19. A ball was placed on position A as shown below. The torch was then turned on and a shadow was cast on the screen. The ball was then moved to positions B and C.



Which one of the following shows the shadow cast by the ball at the different positions?

| | A | B | C |
|-----|---------------|---------------|-------------------|
| (1) | Small dot | Large circle | Very large circle |
| (2) | Large circle | Medium circle | Small dot |
| (3) | Medium circle | Large circle | Small dot |
| (4) | Large circle | Small dot | Medium circle |

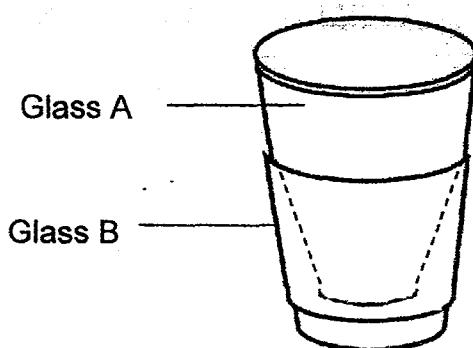
20. Minah put a test tube of water with a temperature of 60°C in a beaker of crushed ice in the living room as shown below.



Which one of the following did Minah identify correctly?

| | water in test tube | crushed ice |
|-----|--------------------|-------------|
| (1) | lost heat | lost heat |
| (2) | lost heat | gained heat |
| (3) | gained heat | lost heat |
| (4) | gained heat | gained heat |

21. The diagram below shows two glasses, A and B, which are stuck together.

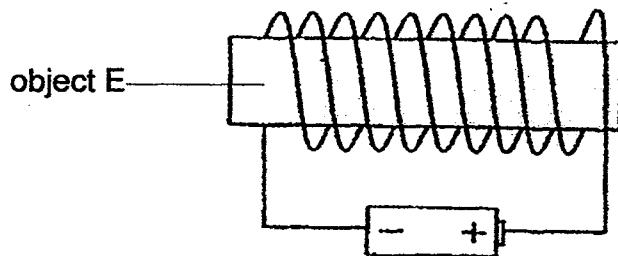


Bill tries to separate the two glasses but finds it difficult to do so.

What should Bill do in order to separate the two glasses?

- (1) Pour iced water into Glass A and put Glass B in iced water.
- (2) Pour iced water into Glass A and put Glass B in warm water.
- (3) Pour warm water into Glass A and put Glass B in iced water.
- (4) Pour warm water into Glass A and put Glass B in warm water.

22. The diagram below shows an electromagnet.



Which of these object could replace object E to make into an electromagnet?

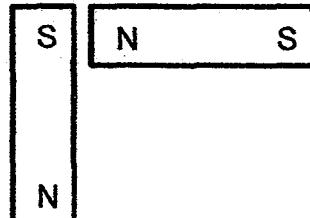
- (1) nickel rod
- (2) plastic ruler
- (3) rubber eraser
- (4) wooden chopstick

23. In which one of the following will the two magnets push each other away?

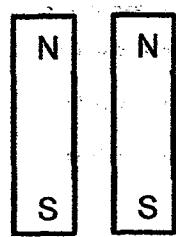
(1)



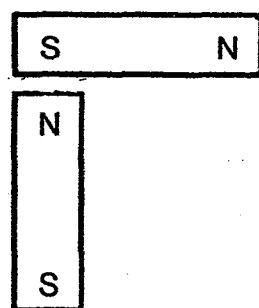
(2)



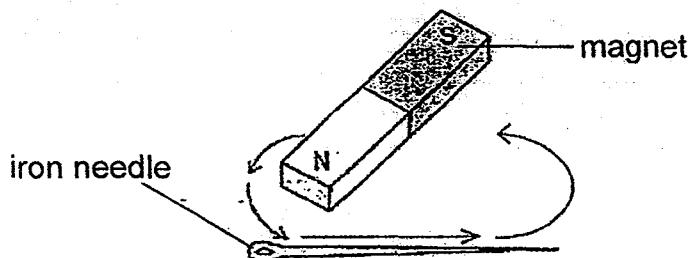
(3)



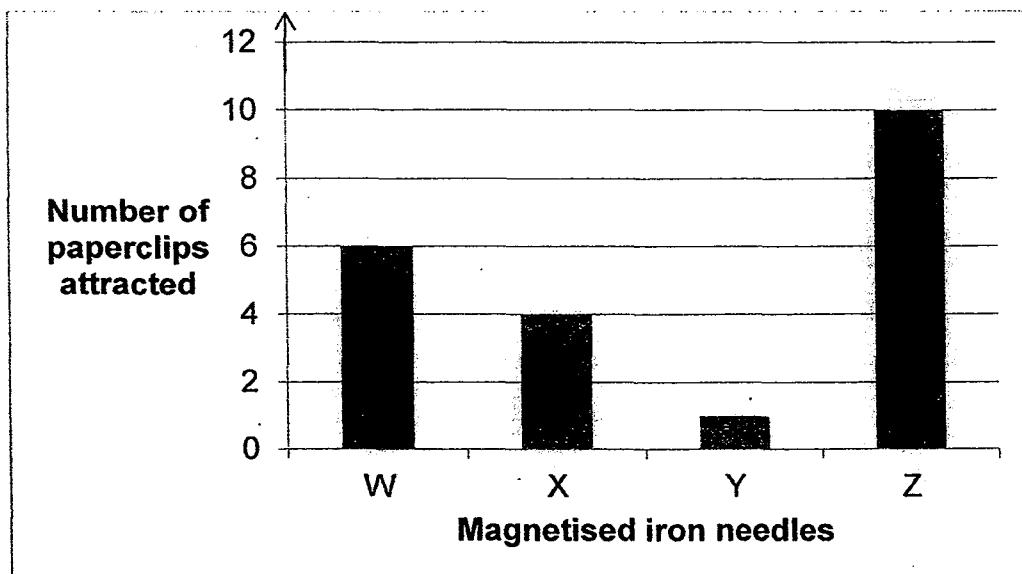
(4)



24. Four identical iron needles, W, X, Y and Z, were made into temporary magnets using the stroke method as shown below.



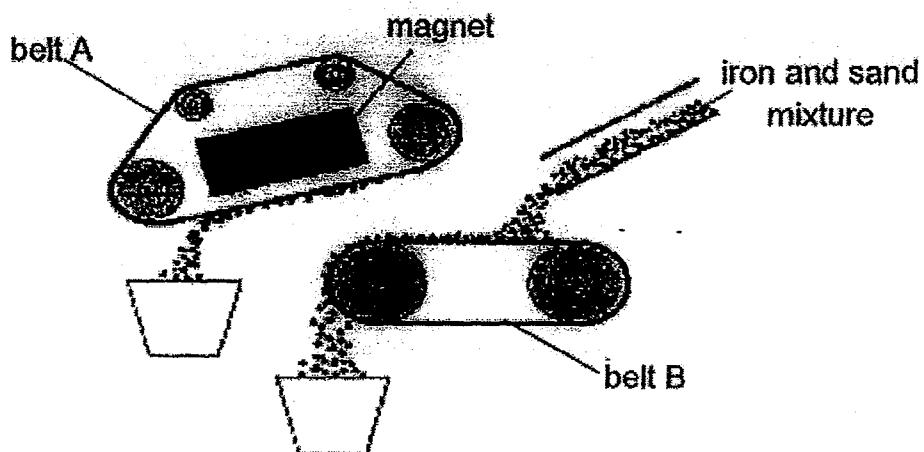
The graph below shows the number of paper clips attracted by each of the magnetised iron needles.



Which one of the following magnetised iron needles would have been stroked the most number of times?

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

25. The diagram below shows a machine used to separate iron from sand.



Mr Tan bought the machine above to separate iron from sand.

He wanted to separate more mixture in a shorter period of time.

What can Mr Tan do to separate the mixture in a shorter period of time?

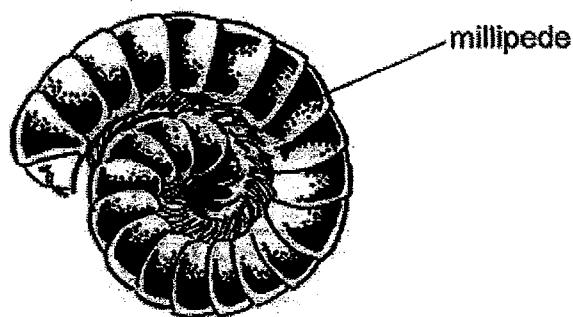
- (1) Use a bigger magnet.
- (2) Move belt A nearer to belt B.
- (3) Pour the mixture nearer to belt B.
- (4) Move belt B further away from belt A.

| |
|----|
| 40 |
|----|

SECTION B (40 marks)

For questions 26 to 39, write your answers clearly in the spaces provided.
The number of marks available is shown in the brackets [] at the end of the question or part question.

26.



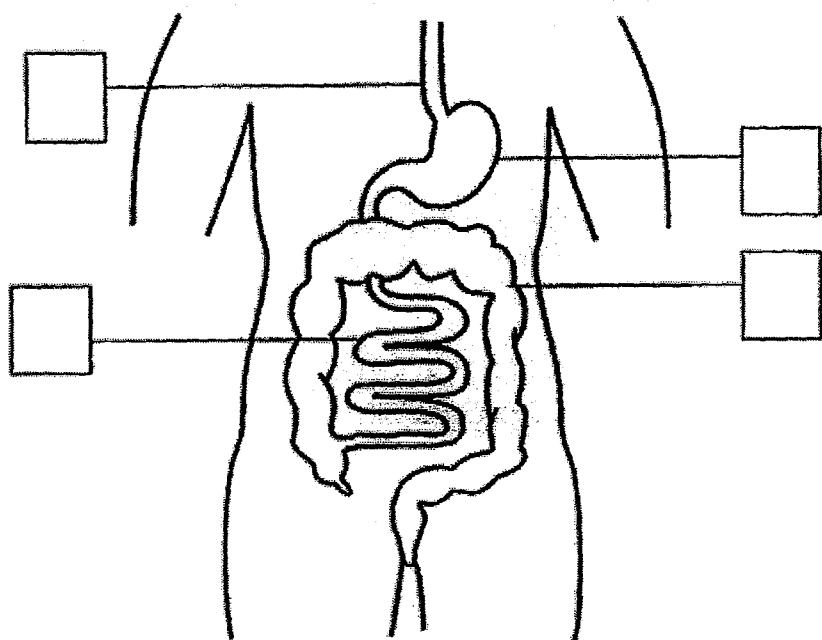
(a) The millipede needs food, air and _____ to stay alive. [1]

(b) The millipede rolls its body as shown above when touched. [1]

This shows that it can _____.

| | |
|-------|---|
| Score | 2 |
|-------|---|

27. (a) The diagram shows part of the human digestive system. [1]
Tick (✓) one box to show where the stomach is.



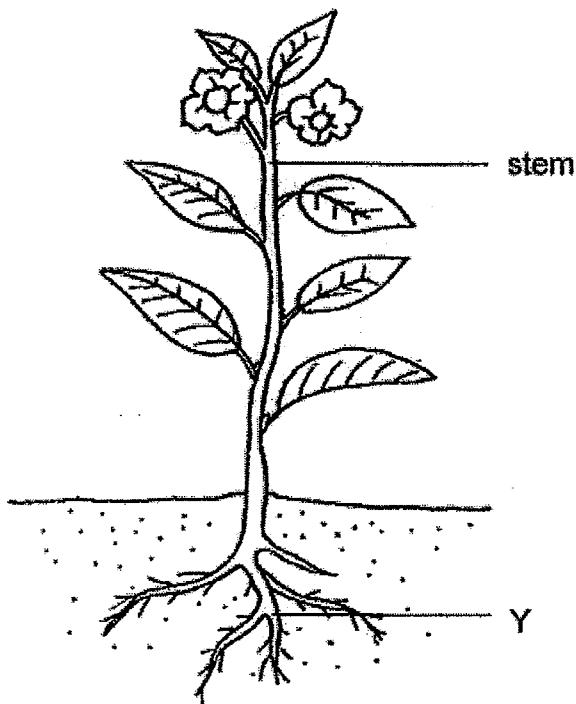
- (b) Fill in the blank using the following helping words. [1]

large intestine gullet small intestine mouth

Food from the stomach is next passed on to the _____.

| | |
|-------|--|
| Score | |
| 2 | |

28. The diagram below shows a plant.



(a) (i) Name plant part Y. [1]

Y : _____

(ii) One substance that the stem of plant transports from the leaves to [1]

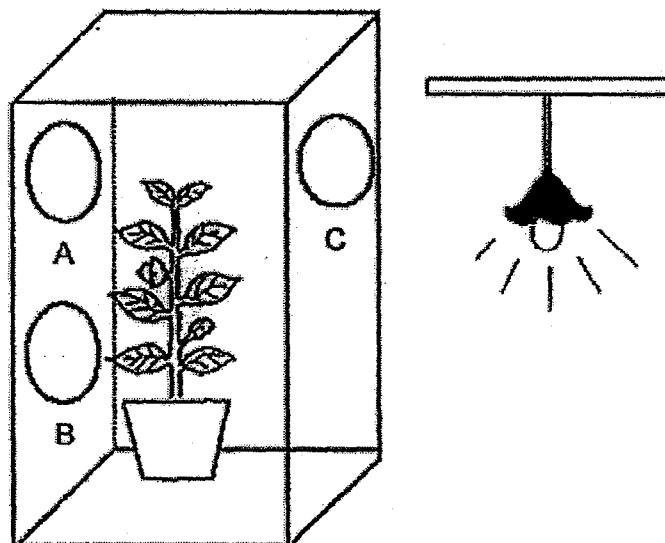
the other parts of the plant is _____

Continue on Pg 24

| | |
|-------|--|
| Score | |
| 2 | |

Continue from Pg 23

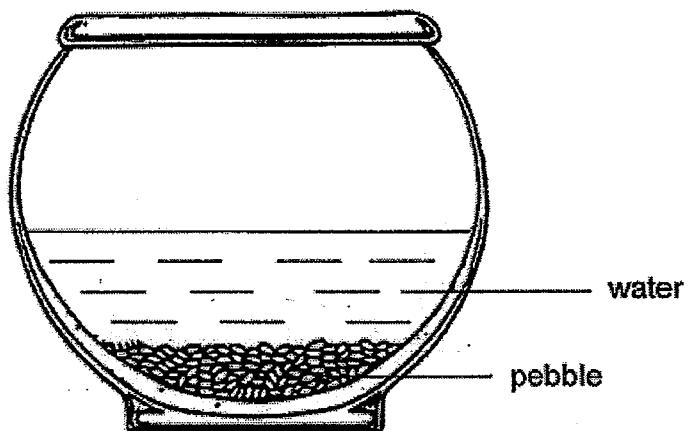
28. (b) Three holes were cut out from a thick cardboard box and a potted plant was placed in it. The box was placed in a dark room. A lamp was lit as shown in the diagram below.



- (i) The plant was watered every day. After one week, which one of the holes, [1]
A, B or C, would the plant most likely grow towards? Explain your answer
clearly.

| | |
|-------|--|
| Score | |
| 1 | |

29. The diagram below shows a tank with some water and pebbles.

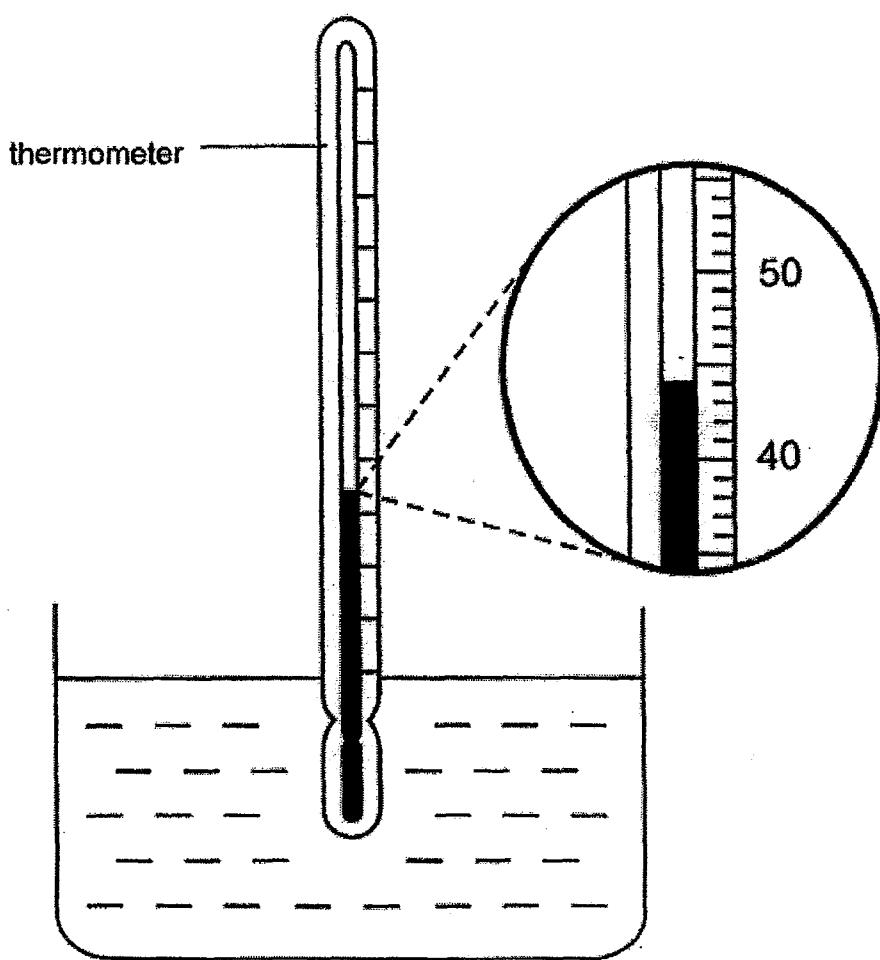


Complete the sentences to state if the parts are solid, liquid or gas.

- (a) The pebble is a _____ [1]
- (b) Water is a _____ [1]

| | |
|-------|--|
| Score | |
| 2 | |

30. Jane placed a thermometer in a beaker of water.



(a) The thermometer is used to measure the _____ of water. [1]

(b) What is the temperature of the water in the glass? [1]

_____ °C

| | |
|-------|--|
| Score | |
| 2 | |

31. Ann planted a seed and measured the mass of the seed leaf over a period of 8 days. She recorded her findings in the table below.

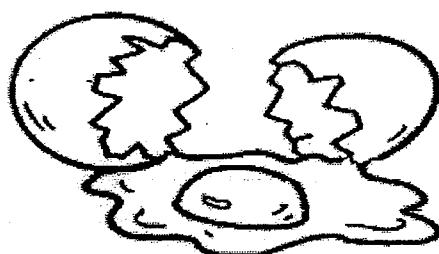
| Day | Mass of seed leaf (g) | Height of seedling (cm) |
|-----|-----------------------|-------------------------|
| 0 | 2 | 0 |
| 2 | 1.7 | 1 |
| 3 | 1.4 | 1.5 |
| 6 | | 4 |
| 8 | 0.5 | 5.8 |

- (a) Name all the conditions needed for a seed to germinate. [1]

- (b) In the table above, write the mass of the seed leaf likely to be observed on Day 6. [1]

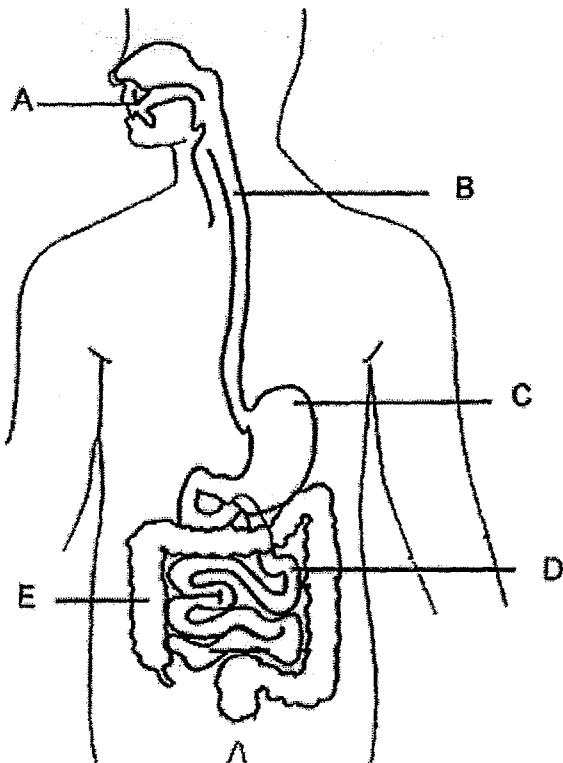
- (c) Based on the Amy's findings, what can she conclude about the mass of the seed leaf in relation to the height of the seedling? [1]

- (d) The diagram below shows an egg. Name and label the part of the egg that has a similar function to the seed leaf. [1]



| | |
|-------|---|
| Score | 4 |
|-------|---|

32. The diagram below shows the digestive system of a human body.



(a) In which part, A, B, C, D or E of the digestive system does digestion first [1] begin?

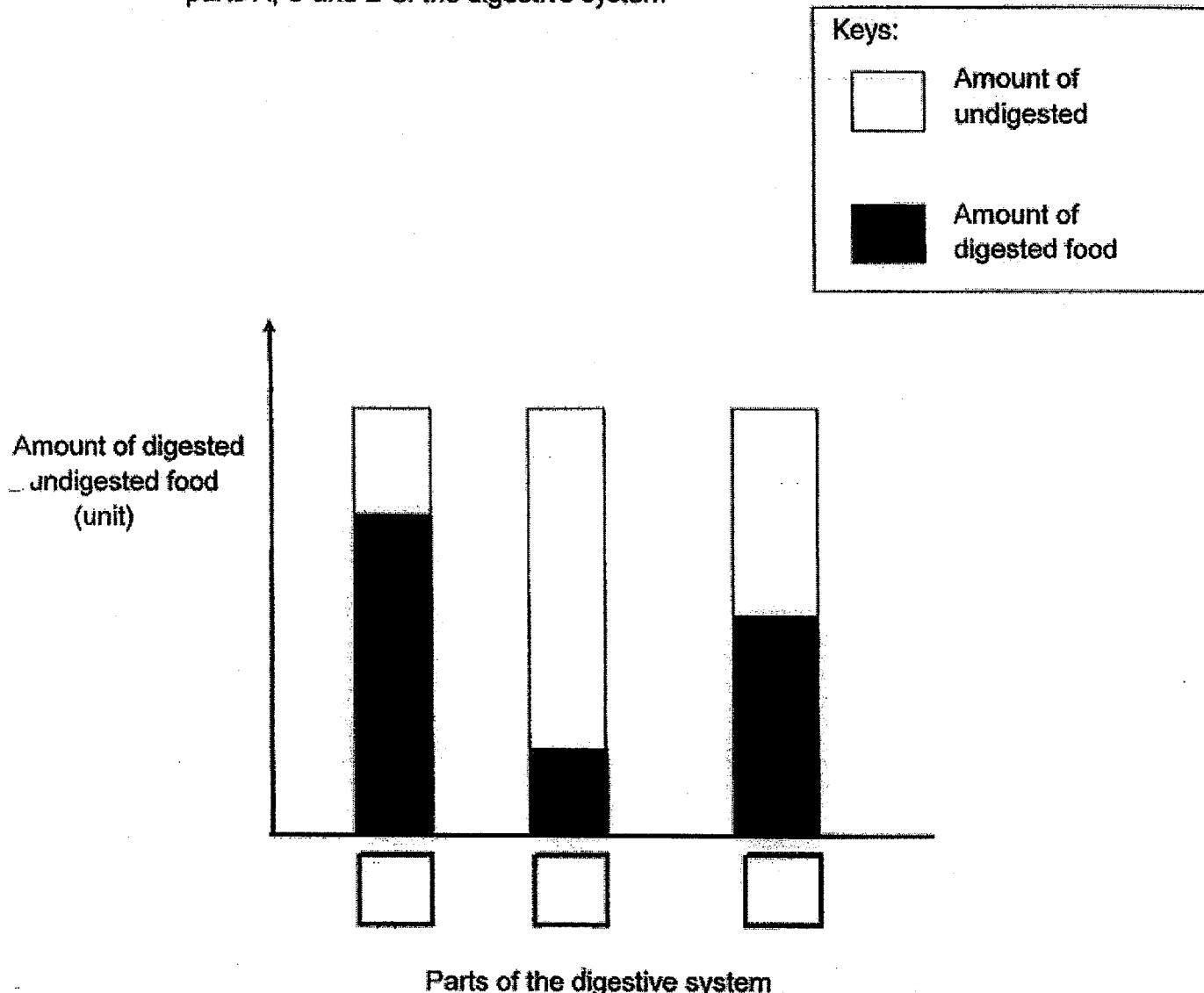
(b) What is the substance found in the part mentioned in (a) that helps to break [1] down the food in the first stage of digestion?

| | |
|-------|---|
| Score | 2 |
|-------|---|

Continue on Pg 29

Continue from Pg 28

- (c) The graph below shows the amount of digested and undigested food in the parts A, C and D of the digestive system

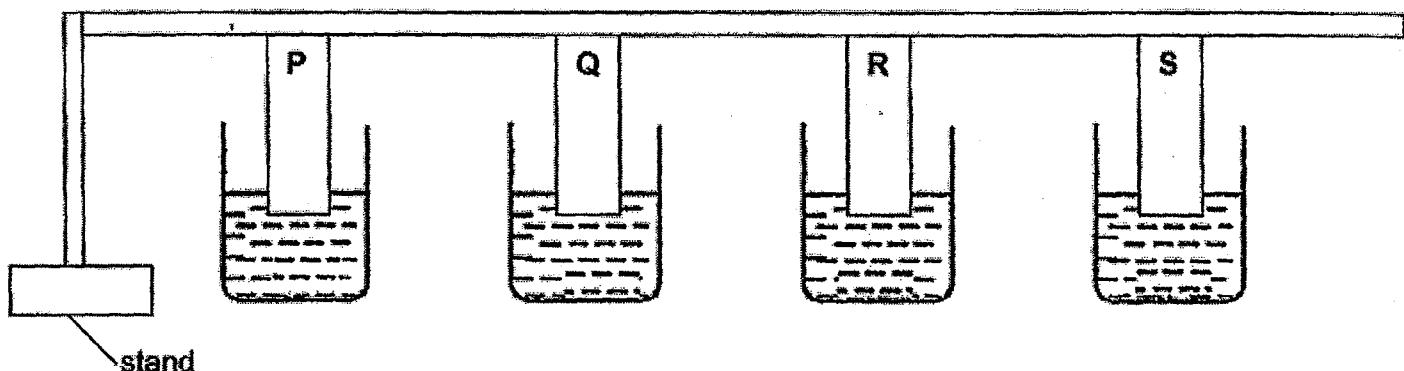


Write the letters, A, C and D in the respective boxes above.

[1]

| | |
|-------|----------------------|
| Score | <input type="text"/> |
| | 1 |

33. Linda wanted to find out how absorbent the four different strips of material, P, Q, R and S, were. She dipped the strips into four beakers each containing 300ml of water as shown below.



Linda left the beakers on the table in the living room. After half an hour, Linda removed the strips and the amount of water left in each beaker was recorded in the table below.

| Materials | P | Q | R | S |
|--|-----|-----|-----|-----|
| Amount of water left in the container (ml) | 230 | 125 | 280 | 170 |

- (a) Based on the readings above, arrange the strips in order, starting with the strip which is the most absorbent. [1]

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

most absorbent

least absorbent

- (b) Which material is most suited to make a bath towel? Explain your answer clearly.

| | |
|-------|---|
| Score | |
| | 2 |

Continue on Pg 31

Continue from Pg 30

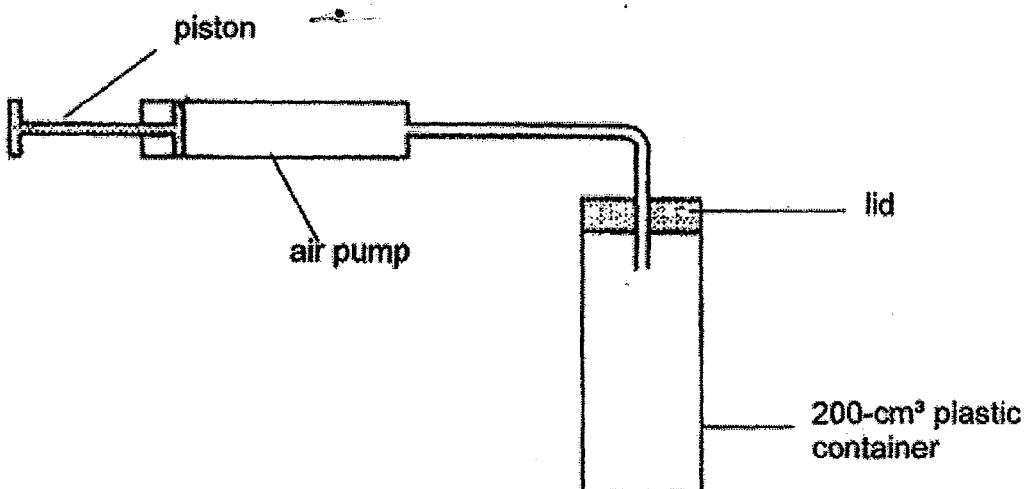
- (c) Tick (✓) the variable(s) which must be kept the same to ensure that the experiment conducted is a fair test. [2]

| | Variables | Tick (✓) |
|-------|---|----------|
| (i) | Amount of water in each beaker | |
| (ii) | Location where the beakers are placed | |
| (iii) | Materials used to make the four strips of material | |
| (iv) | Duration for the water to be absorbed by each strip of material | |

| | |
|-------|---|
| Score | 2 |
|-------|---|

34

Gary attached an air pump into a 200-cm³ plastic container as shown below.

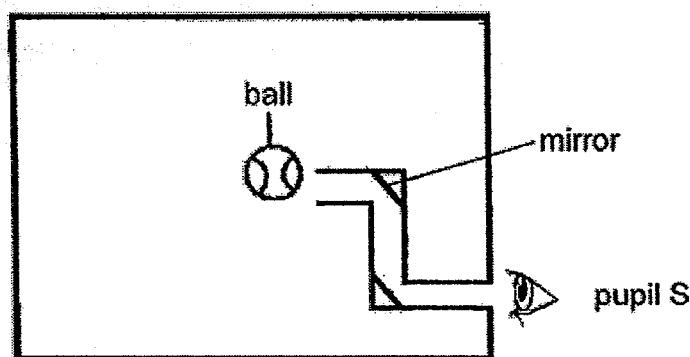


- (a) Gary pumped in another 100 cm³ of air into the plastic container. What is [2]
the volume of air in the container now? Explain your answer clearly.

- (b) Gary filled the plastic container with 200cm³ of water. Then he tried to [1]
pump in 100 cm³ of air into the plastic container. Would he be able to do
so? Explain your answer clearly.

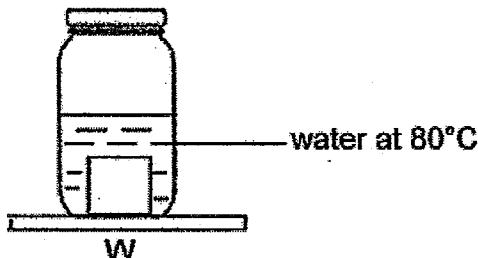
| | |
|-------|---|
| Score | 3 |
|-------|---|

35. A ball was placed in the middle of a metal box with tubes. Two mirrors were also placed at the corners of the tube as shown below.



- (a) In the diagram above, draw the direction of the path of light with lines and arrows to show how pupil S is able to see the ball. [1]
- (b) Explain how the mirrors helped pupil S to see the ball. [2]
-
-

36. Ali filled a jar with some water with a temperature of 80°C and placed an ice cube into it as shown in the diagram below.



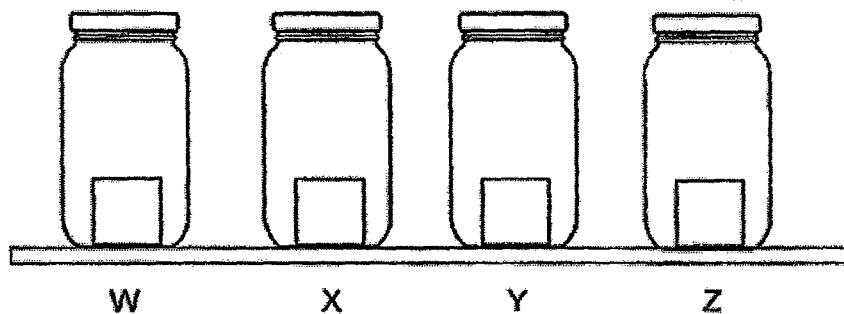
- (a) What will be the temperature of the water after 2 minutes? Tick (\checkmark) the correct box. [1]

| Temperature of water | Tick(\checkmark) |
|--------------------------------|----------------------|
| more than 80°C | |
| 80°C | |
| less than 80°C | |

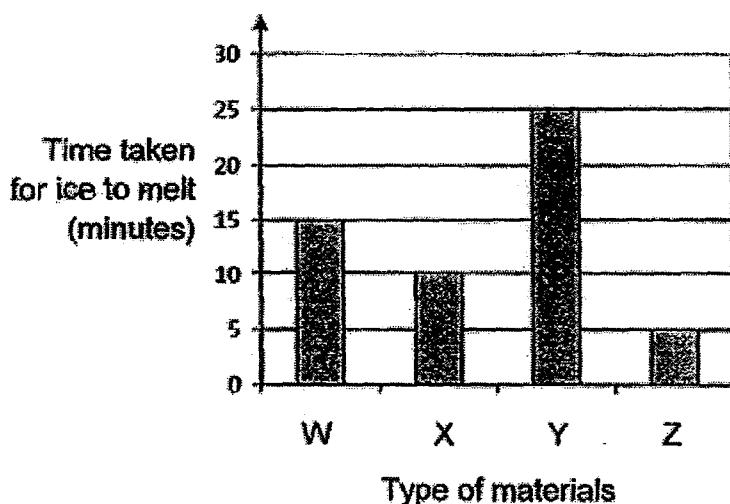
| | |
|---------------------|----------------------|
| Score | <input type="text"/> |
| | 4 |
| 2015 P4 Science SA2 | |

Continue from Pg 33

All placed 4 similar ice cubes in four jars, W, X, Y and Z. The jars are of similar thickness and size but made of different materials. He left the jars on a table in a living room with a constant room temperature as shown below.



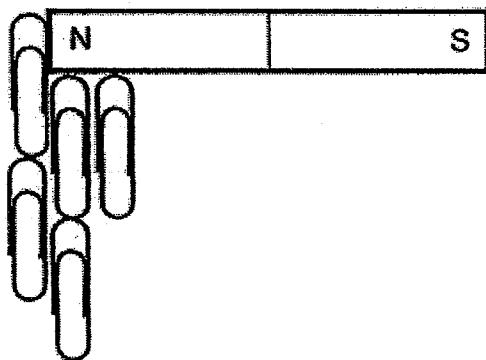
All recorded the time taken for the ice to melt completely and plotted the readings in the graph below.



- (b) Which material is most suitable to make into an ice cream container so that the ice cream will not melt so quickly? Explain your answer clearly. [2]

| | |
|-------|---|
| Score | |
| | 2 |

37. John placed a magnet 30cm above a tray of paper clips and it was observed that 5 paper clips were attracted to the magnet as shown in the diagram below.



He repeated the experiment by heating the N-pole of the same magnet for 5 minutes and then placed it 30 cm above a tray of paper clips. After that, he observed the number of paper clips attracted to magnet P.

Would John observe more than 5, less than 5 or same number of paper clips attracted to magnet P? Explain your answer clearly.

[2]

| | |
|-------|--|
| Score | |
| 2 | |

38. Four bars, A, B, C and D were brought close to each other to see how they interacted with one another. The table below shows the interactions between the rods.

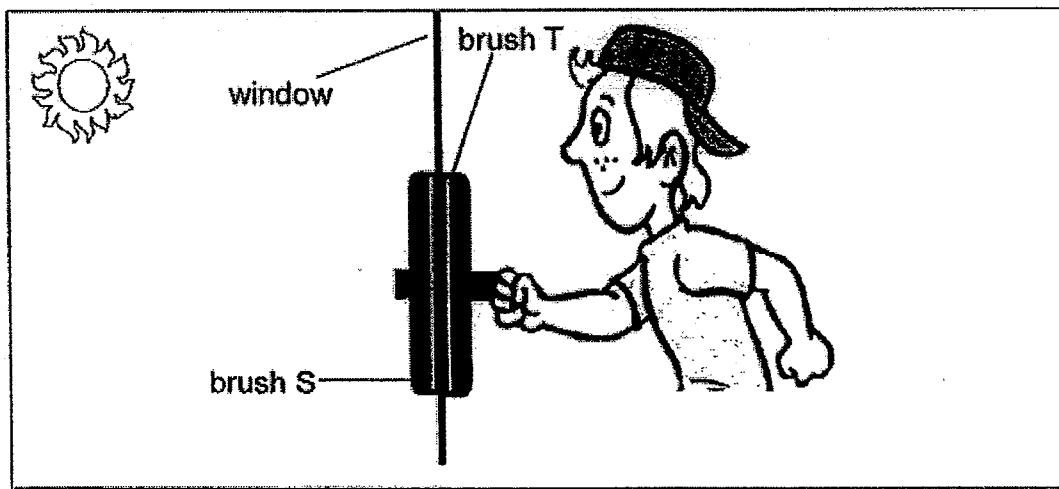
| Rods | Observation |
|------|---------------------------|
| | Move towards each other |
| | Move away from each other |
| | No reaction |
| | No reaction |

- (a) Which of the rod(s) is/are definitely magnet(s)? Explain your answer [2] clearly.

- (b) If rod C was made of silver, what would you observe when A and C are [1] brought near each other?

| | |
|-------|--|
| Score | |
| 3 | |

- 39 The diagram below shows a magnetic window cleaner.



The magnetic window cleaner consists of two brushes, S and T, with a magnet attached to each of them, which can be used to clean both sides of a window at the same time. When brush T is moved, brush S would move in the same direction as brush T.

- (a) Explain clearly why was brush S able to stay on the window instead of falling off? [2]

- (b) Jack tried to clean his steel cupboard door using the cleaner above. He placed brush T on the outside of the steel cupboard and brush S on the inside. When Jack moved brush T, he noticed that brush S did not move.

Explain why brush S did not move with brush T. [2]



EXAM PAPER 2015

SCHOOL : RAFFLES GIRLS' PRIMARY SCHOOL

SUBJECT : P4 SCIENCE

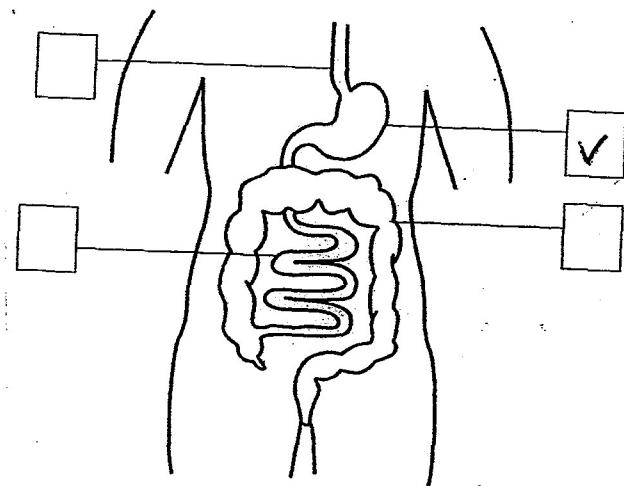
TERM : SA2

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4 | 3 | 2 | 4 | 3 | 3 | 2 | 2 | 3 | 4 |
| Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Q20 |
| 3 | 2 | 2 | 1 | 1 | 3 | 1 | 3 | 2 | 2 |
| Q21 | Q22 | Q23 | Q24 | Q25 | | | | | |
| 2 | 1 | 3 | 4 | 2 | | | | | |

26)a)water

b)respond to the changes

27)



28)a)small intestine

28)i)roots

ii)food

b) hole C. The light came from hole C, the plant needed the light to make food. Hence the plant grew towards hole C.

29)a) solid

b)liquid

30)a) temperature

b)44

31) a)There has to be water,oxygen ans warmth. **b)0.9**

c)The taller the seeding grows, the mass of the seeds leafs decrease.

d) egg yolk.

32)a)A

b) digestive juices

32)c) D , A , C

33)a) Q , S , P , R

33)b) Q . It absorbed the most water since a bath towel is supposed to dry the user, Q is the most suitable to make the bath towel.

c) i, ii ,iv **34)a) 200cm³.** Air cannot be compressed.

b) No. Water cannot be compressed.

35)a)

b) The mirror in the box reflects the light from the ball into pupils's eyes.

36)a) less than 80°c.

36)b) Y is the poorest conductor of heat and will reduce most heat gain by the ice cream.

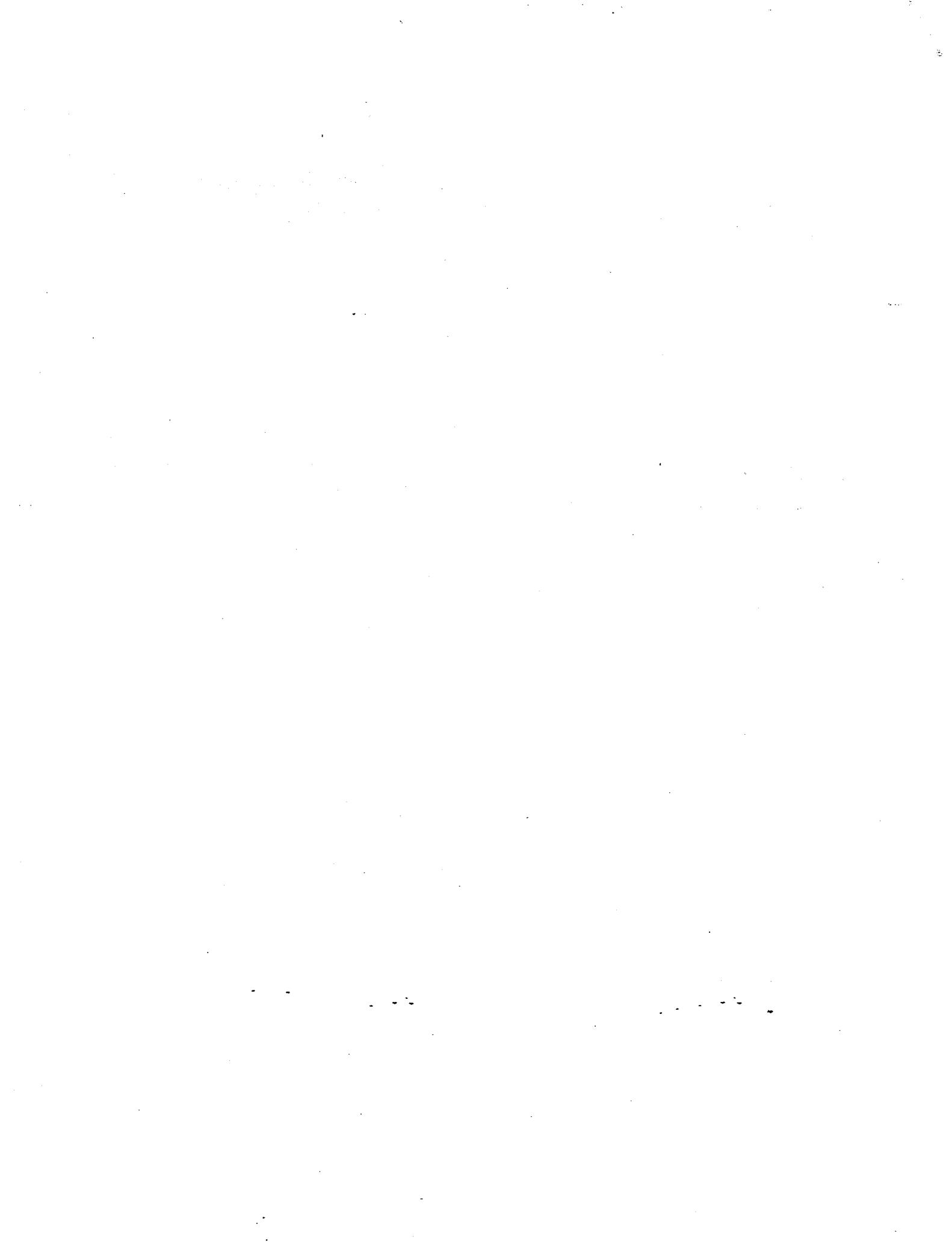
37) Magnet P attracted less than 5 paper clips as heating weakens the magnetism of the magnet.

38)a) A and D. Only magnets repel when their like poles are facing each other .

b) There would be no reaction as silver is not a magnetic material.

39)a) Magnetic force can pass through the window as the window is made of a non-magnetic material.

b) steel is a magnetic material the magnetism cannot pass through the steel cupboard, the magnet attached to brush T attracted the steel cupboard.





RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1)

2014

Name: _____ Index No: _____ Class: P4 _____

6 May 2014

SCIENCE

Att: 1 h 45 min

| | |
|--------------------------------------|----|
| Section A | 60 |
| Section B | 40 |
| Your score out of 100 marks | |
| Parent's signature | |

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 (OAS) provided.

1. Rina had some guppies.
Without adding more fish into the tank, she observed that the number of guppies in the tank had increased after one month.

Based on the information above, what can Rina conclude about one characteristic of living things?

The table below shows the characteristics of animals X, Y and Z.

| Animal | With fur | With wings | With 2 pairs of legs | With 3 pairs of legs |
|--------|----------|------------|-------------------------|-------------------------|
| X | ✓ | | ✓ | |
| Y | | ✓ | | ✓ |
| Z | ✓ | | ✓ | |

Based on the information above, answer Questions 2 and 3.

2. In what way(s) is/are animals X and Z similar?

- A Both have fur
- B Both have wings
- C Both have 2 pairs of legs only

(1) A only

(2) B only

(3) A and C only

(4) A, B and C

3. Which animal(s) is/are likely to be an insect?

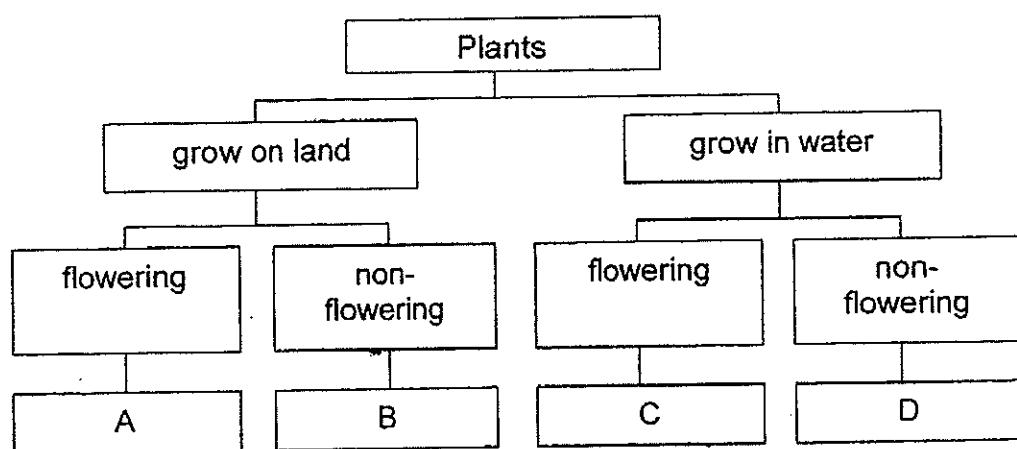
(1) X only

(2) Y only

(3) Y and Z only

(4) X, Y and Z

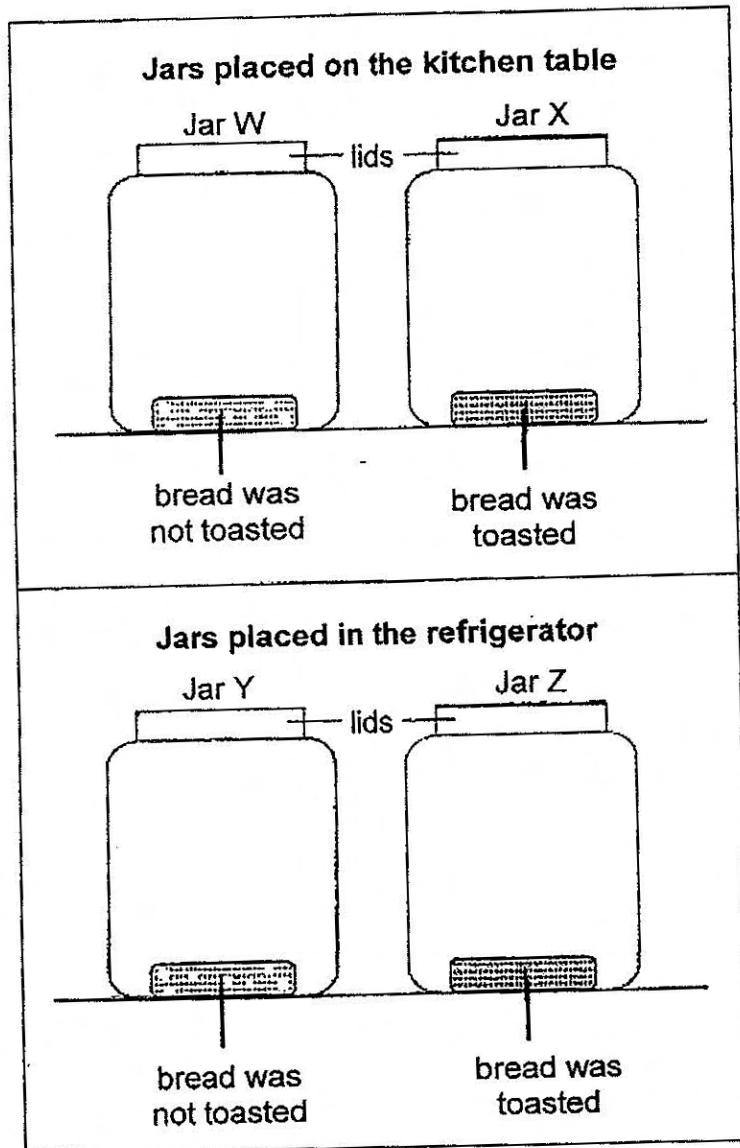
4. The chart below shows how some plants can be grouped.



Which one of the following best represents rose and water lily?

| | rose | water lily |
|-----|------|------------|
| (1) | A | C |
| (2) | B | C |
| (3) | C | A |
| (4) | C | B |

5. Ahmad placed 4 similar pieces of bread in four identical jars, W, X, Y and Z. The pieces of bread in jars X and Z were toasted. He then covered the jars to make them air-tight. He left jars W and X on the kitchen table and jars Y and Z in the refrigerator.

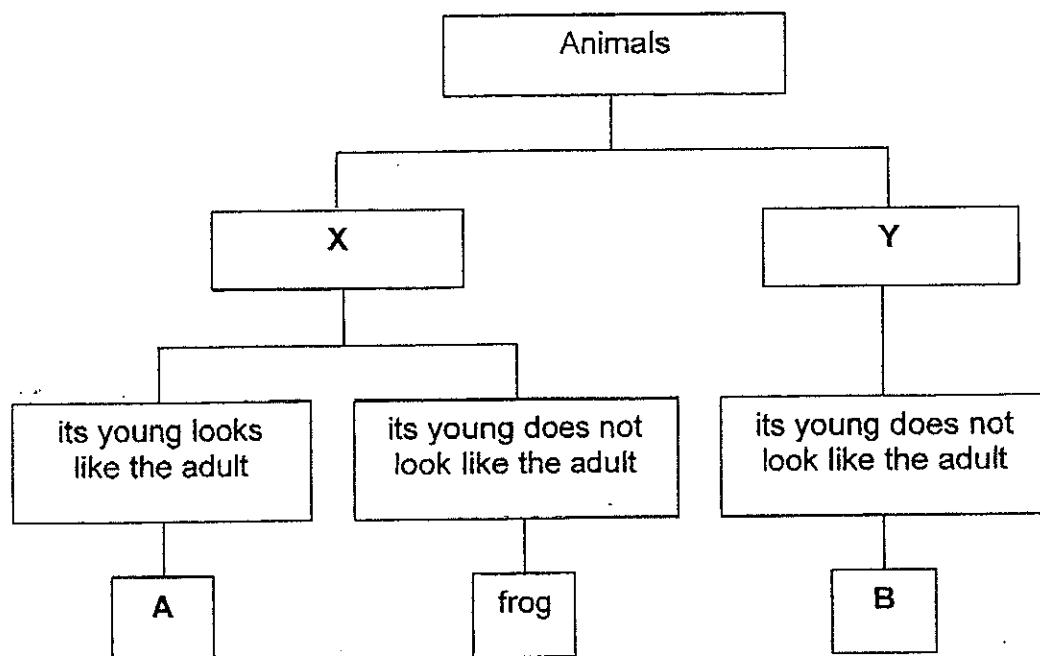


In which one of the jars would the piece of bread most likely turn mouldy the fastest?

- (1) Jar W
(3) Jar Y

- (2) Jar X
(4) Jar Z

6. The diagram below shows the classification of some animals.



Which one of the following represents X, Y, A and B respectively?

| | X | Y | A | B |
|-----|--------------------|--------------------|-------------|-------------|
| (1) | 3-stage life cycle | 4-stage life cycle | cockroach | grasshopper |
| (2) | 3-stage life cycle | 4-stage life cycle | grasshopper | beetle |
| (3) | 4-stage life cycle | 3-stage life cycle | mosquito | chicken |
| (4) | 4-stage life cycle | 3-stage life cycle | butterfly | cockroach |

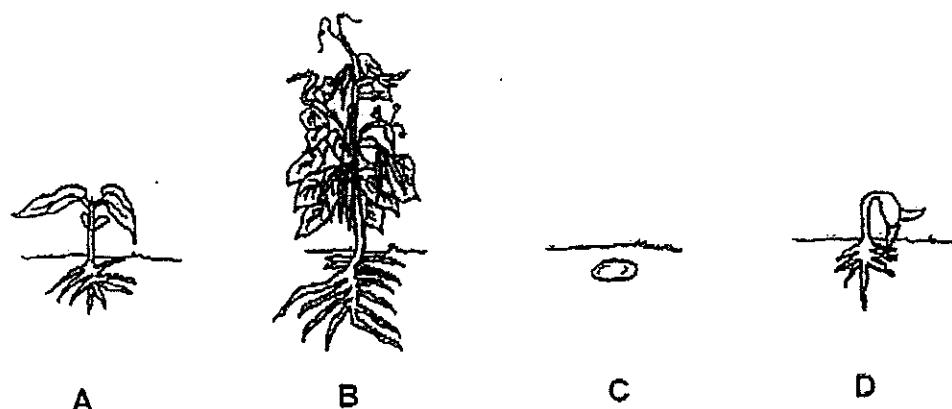
7. Dion carried out an experiment to find out how the surrounding temperature affects the life cycle of animal X. She prepared 4 set-ups, A, B, C and D, and observed the length of time animal X was in each stage of its life cycle. She recorded the results in the table below.

| Set-up | Surrounding temperature (°C) | Number of days at each stage | | |
|--------|------------------------------|------------------------------|-------|------|
| | | Egg | Larva | Pupa |
| A | 23 | 2 | 8 | 3 |
| B | 28 | 2 | 7 | 2 |
| C | 32 | 1 | 6 | 2 |
| D | 36 | 1 | 5 | 2 |

Based on the information above, which one of the following statements is correct?

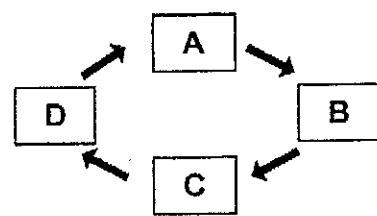
- (1) The animal X in set-up A survived the longest.
- (2) Animal X will die faster when the surrounding temperature gets higher.
- (3) The higher the surrounding temperature, the shorter the time needed for animal X to develop from the egg stage to the adult stage.
- (4) The higher the surrounding temperature, the longer the time needed for animal X to develop from the egg stage to the adult stage.

8. The diagrams below show the different stages of development of a plant.

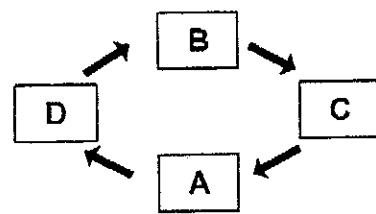


Which one of the following shows the correct sequence of the development of the plant above?

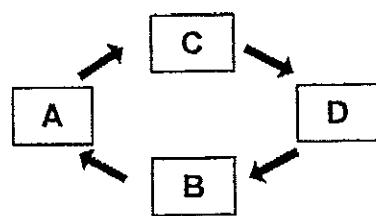
(1)



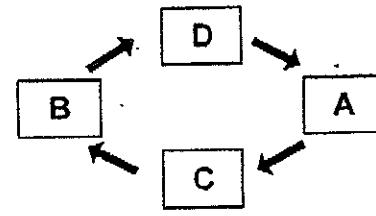
(2)



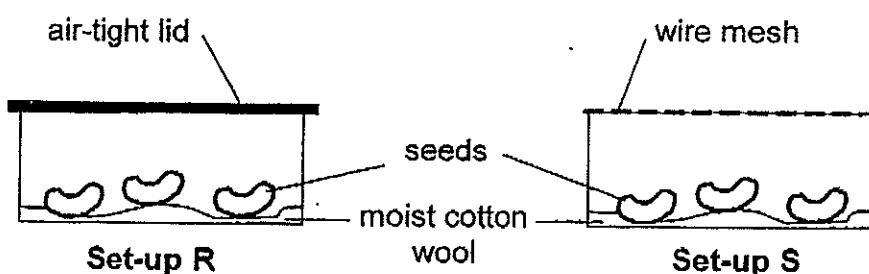
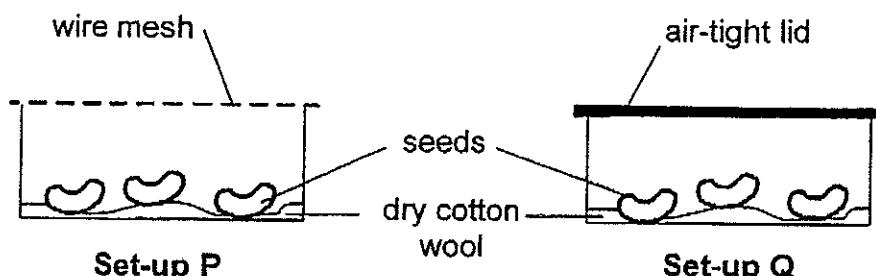
(3)



(4)



9. Nicole prepared four set-ups, P, Q, R and S, using identical containers and similar seeds as shown in the diagrams below.
She placed all the set-ups in a room near the window.



At the end of the experiment, she observed that the seeds grew into seedlings in some of the set-ups.

What was Nicole trying to find out from her experiment?

- (1) Whether seeds can grow on cotton wool
- (2) Whether containers allow seedlings to grow well
- (3) Whether seeds need water and air to grow into seedlings
- (4) Whether seeds need warmth, water and air to grow into seedlings

10. Which part in the human digestive system helps to break food into smaller pieces?

(1) Gullet

(2) Teeth

(3) Tongue

(4) Large intestine

11. Which one of the following statements about the human digestive system is true?

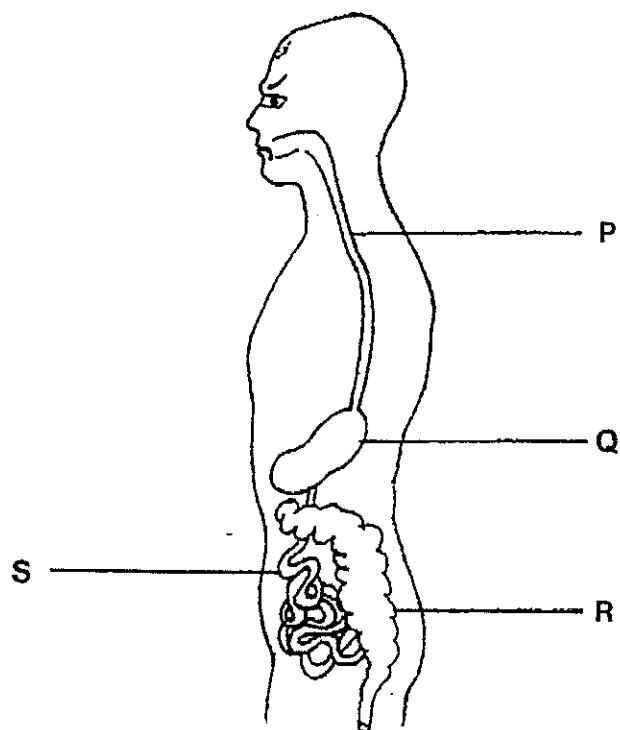
(1) Digested food is absorbed through the walls of the small intestine.

(2) Digested food travels from the small intestine to the large intestine.

(3) Digestion ends in the small intestine and no digestion will take place there.

(4) The muscular walls of the gullet help to push the undigested food to the large intestine.

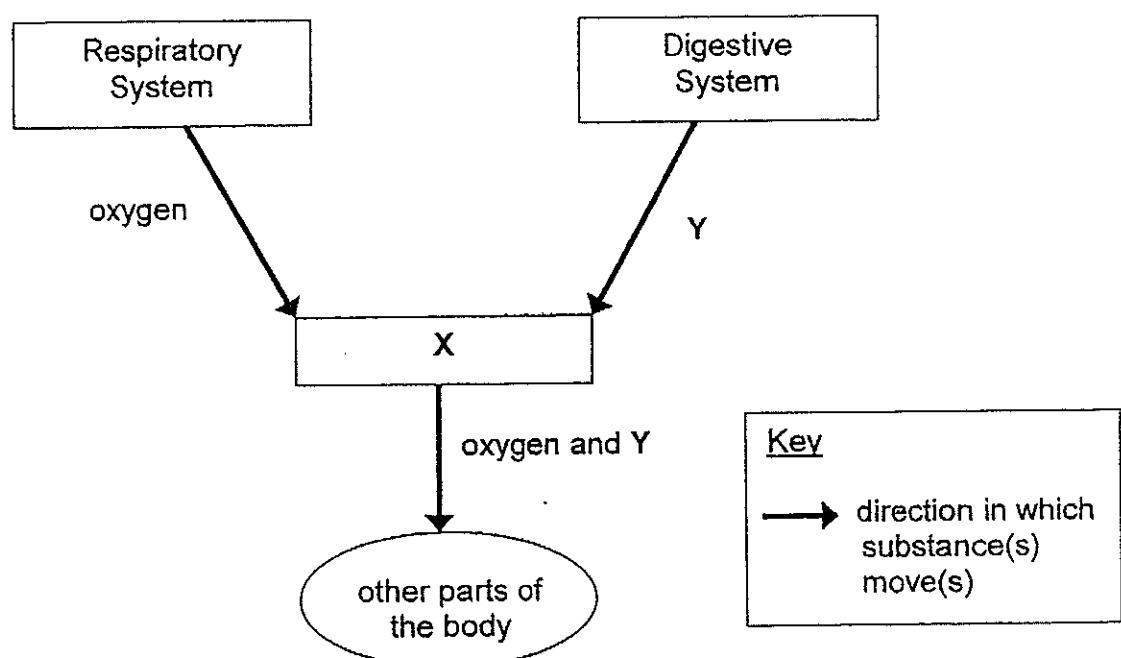
12. The diagram below shows some parts of the human digestive system.



In which of these parts are digestive juices produced?

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

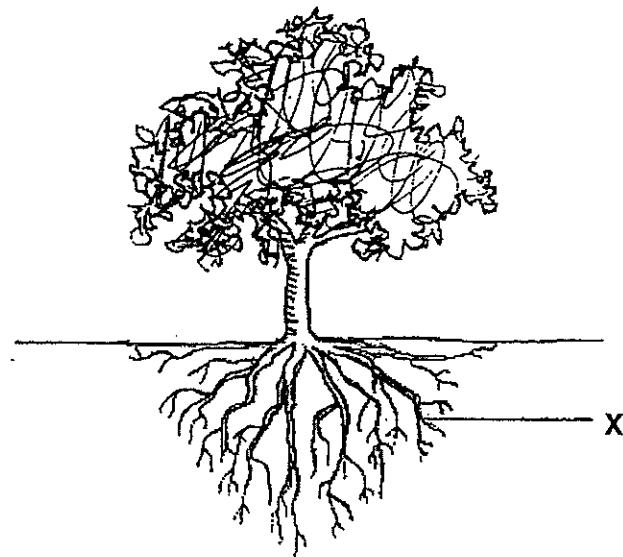
13. The diagram below shows how a substance is moved from one system to another.



Which one of the following best represents X and substance Y?

| | X | Substance Y |
|----|--------------------|-----------------|
| 1) | Skeletal System | undigested food |
| 2) | Muscular System | digested food |
| 3) | Circulatory System | digested food |
| 4) | Circulatory System | undigested food |

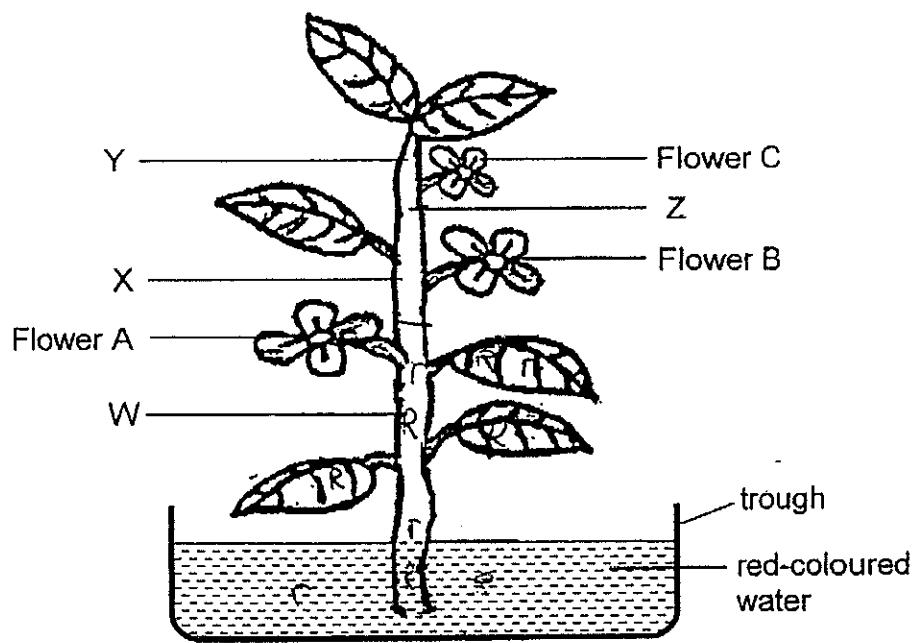
14. The diagram below shows a tree with one part labelled X.



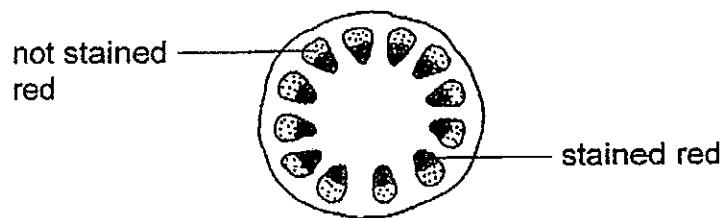
What is/are the function(s) of the part labelled X?

- A To hold the tree upright.
 - B To anchor the tree to the ground.
 - C To help the tree make food during the day.
 - D To take in water and mineral salts from the ground.
-
- (1) D only
 - (2) A and C only
 - (3) B and D only
 - (4) A, B and C only

15. Mary placed a plant bearing white Flowers, A, B and C, in a trough of red-coloured water. The roots of the plant were removed.
After some time, Mary observed that Flower A had turned red while Flowers B and C remained white.



Mary cut one part of the stem and observed that its cross-section was stained red as shown below.



Cross-section of stem

At which part of the stem, W, X, Y or Z, did Mary most likely make the cut?

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

Ali used 4 identical pots of seedlings, A, B, C and D, for his experiment. Each pot contained the same amount of soil of the same type. He watered each pot of seedlings daily.

After 9 days, he measured and recorded the height of the seedlings in each pot as shown in the table below.

| Pot | Height of seedlings after 9 days (cm) | Amount of water given each day (ml) |
|-----|---------------------------------------|-------------------------------------|
| A | 5 | 20 |
| B | 8 | 30 |
| C | 10 | 35 |
| D | 13 | 45 |

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

The seedlings have to grow to a height of at least 8 cm in 9 days to be considered as growing well.

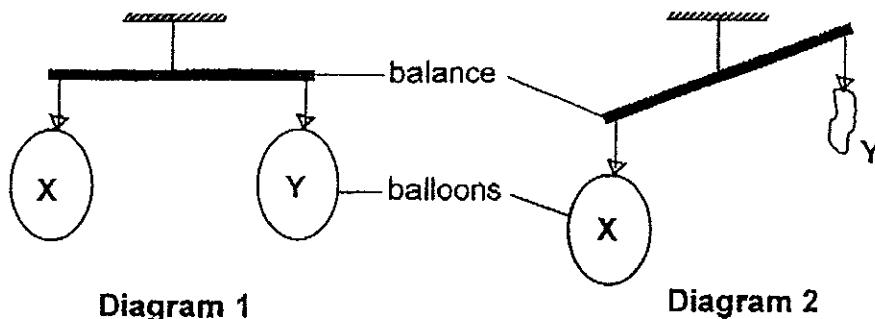
16. What is the **least** amount of water Ali had to give to the seedlings each day to ensure that they grow well?
- (1) 20 ml
(2) 30 ml
(3) 35 ml
(4) 45 ml
17. What can Ali conclude from his experiment?
- (1) The seedlings grew more quickly when they were given more water daily.
(2) The seedlings died more quickly when they were given less water daily.
(3) The seedlings grew more slowly when they were given more water daily.
(4) The seedlings died more quickly when they were given more water daily.

18. Eric carried out an experiment using 4 rods which were made of different metals, P, Q, R and S, of the same thickness and length.
He scratched one rod against another, one at a time.

He recorded his observations in the table below. A tick (✓) in the box indicates scratch marks on the rod.

| Types of metals | scratch marks observed on the materials | | | |
|-----------------|---|-------|-------|-------|
| | P | Q | R | S |
| P | ■■■■■ | ✓ | ✓ | ✓ |
| Q | | ■■■■■ | | |
| R | | ✓ | ■■■■■ | |
| S | | ✓ | ✓ | ■■■■■ |

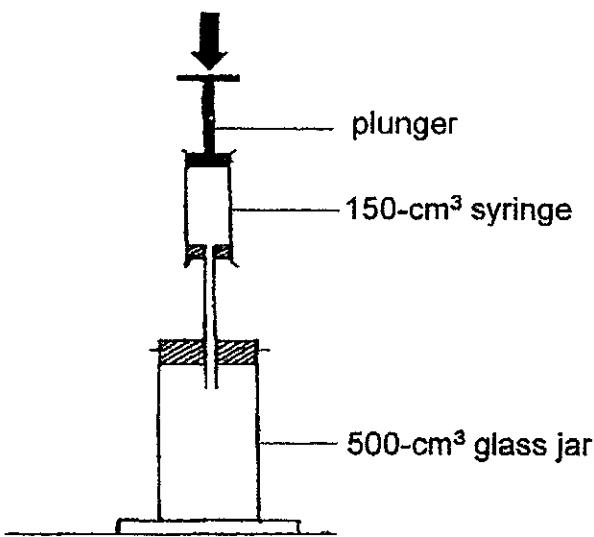
20. John placed two identical balloons, X and Y, on each end of a rod of a balance as shown in diagram 1.
John released the air in balloon Y. The rod came to rest in a new position as shown in diagram 2.



John's experiment showed that air

- | | | |
|-----------------------|---|----------------------------|
| (1) has mass | - | (2) has a definite volume |
| (3) can be compressed | - | (4) has no definite volume |

21. Jane set up an experiment using the apparatus as shown below.



Jane was able to push in the plunger completely.
What would be the total volume of air in the glass jar now?

- (1) 150 cm^3 (2) 350 cm^3
 (3) 500 cm^3 (4) 650 cm^3

22. Four pupils made the following statements about matter.

Pupil A Bacteria are matter.

Pupil B Solids and liquids have mass.

Pupil C The bigger the object, the greater its mass.

Pupil D Solids of the same shape and size occupy the same amount of space.

Which of these pupils made the correct statements?

(1) A and B only

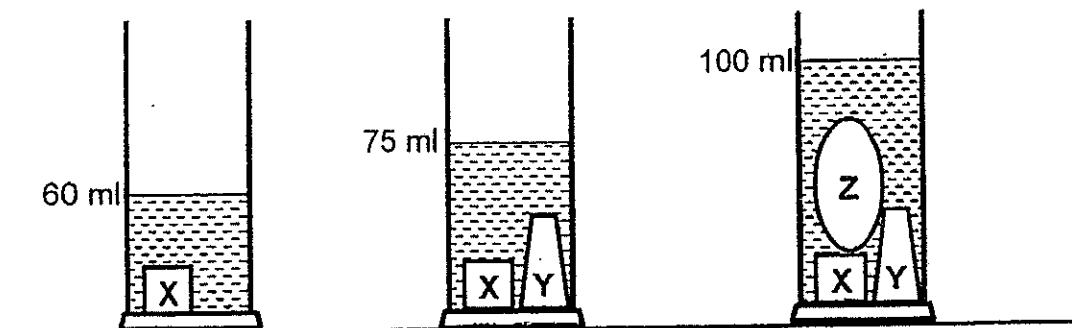
(2) C and D only

(3) A, B and D only

(4) A, B, C and D

23. David poured 50 ml of water into a measuring cylinder. He then placed object X into the cylinder, followed by object Y and finally object Z.

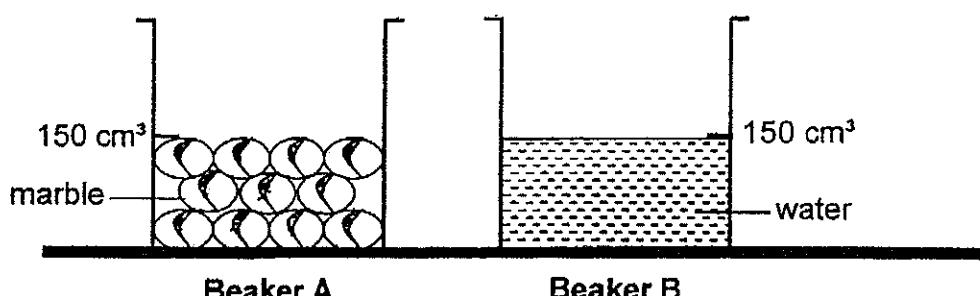
David drew his observations as shown below.



Based on the information above, which one of the following statements is correct?

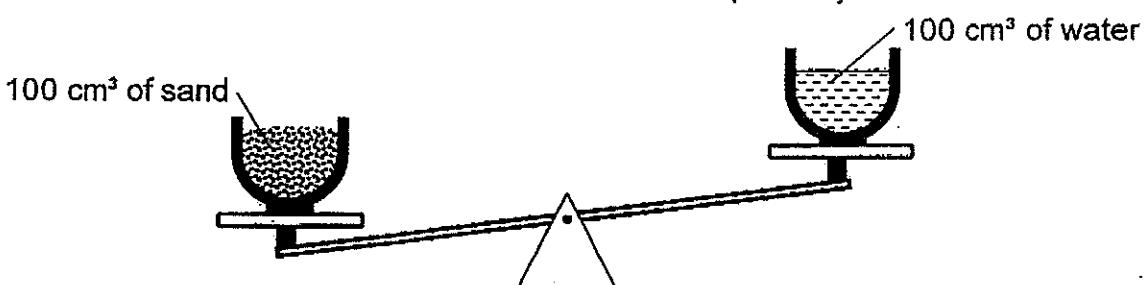
- (1) Object X has a greater mass than object Y.
(2) Object Y has a greater mass than object X.
(3) Object Y has a greater volume than object Z.
(4) Object Z has a greater volume than object Y.

24. There are 2 identical beakers, A and B, as shown below. Beaker A is filled with marbles to the 150-cm^3 mark. Beaker B is filled with water to the same level.



The water in beaker B is poured into beaker A. Which one of the following is most likely to be the water level mark in beaker A?

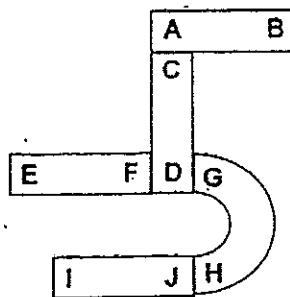
- (1) 150-cm^3
 - (2) 300-cm^3
 - (3) more than 300-cm^3
 - (4) between 150-cm^3 and 300-cm^3
25. The diagrams below show 2 identical bowls placed on a balance lever. The bowls were filled with 100 cm^3 of sand and water respectively.



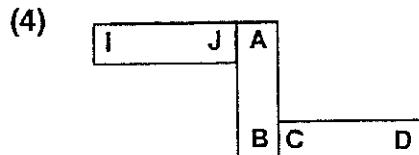
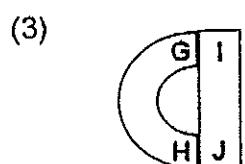
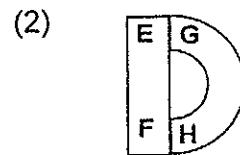
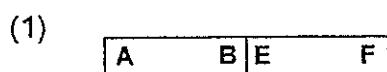
Based on the information above, which of the following statements are correct?

- P The bowls of sand and water have the same mass.
 - Q The bowls of sand and water have the same volume.
 - R The bowl of sand has a greater mass than the bowl of water.
 - S The bowl of sand has a greater volume than the bowl of water.
- (1) P and R only
 - (2) P and S only
 - (3) Q and R only
 - (4) Q and S only

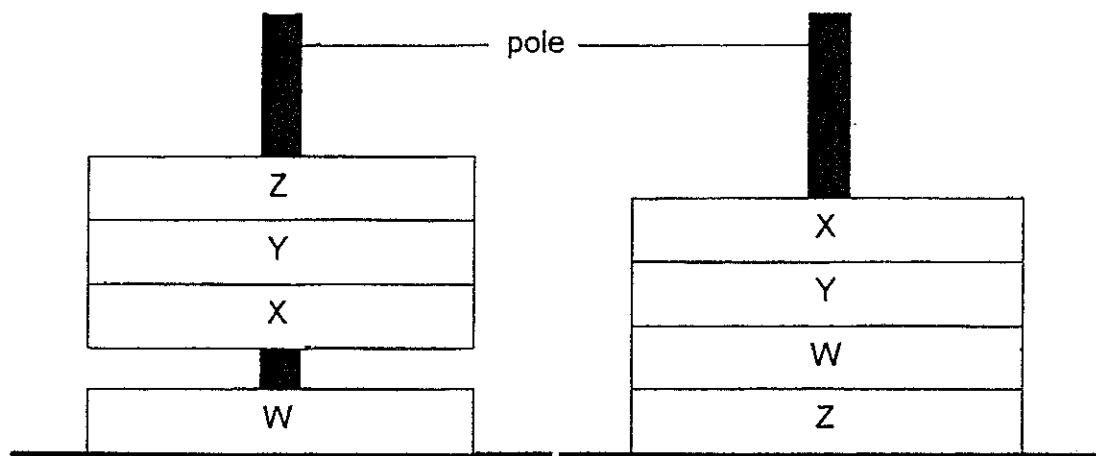
26. Five magnets with their poles labelled are arranged as shown in the diagram below.



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



27. Jeff placed 4 rings, W, X, Y, and Z, through a pole. His observations are shown in the diagrams below.



Jeff wrote some statements based on his observations.

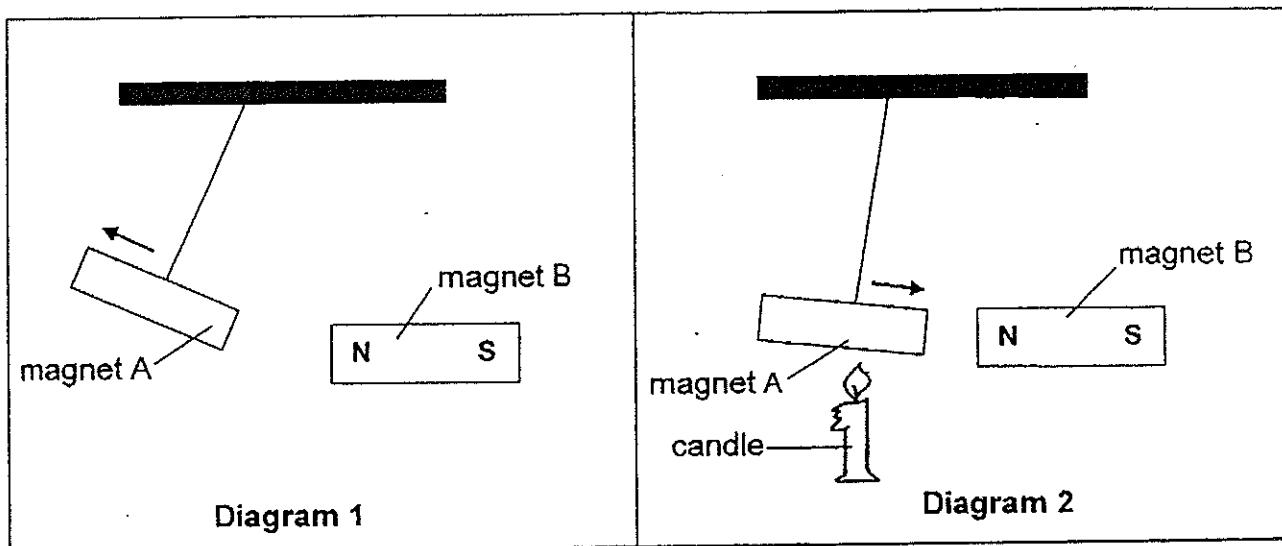
- A Both rings W and X are magnets.
- B Unlike poles of X and Y are facing each other.
- C Unlike poles of W and Z are facing each other.

Which of Jeff's statement(s) is/are **definitely** true?

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

28. Tom suspended magnet A using a string. He brought magnet B near magnet A. He observed that magnet A moved away from magnet B as shown in Diagram 1.

Without moving magnet B, Tom placed a lit candle directly below magnet A. After some time, he observed that magnet A moved a little towards magnet B as shown in Diagram 2.



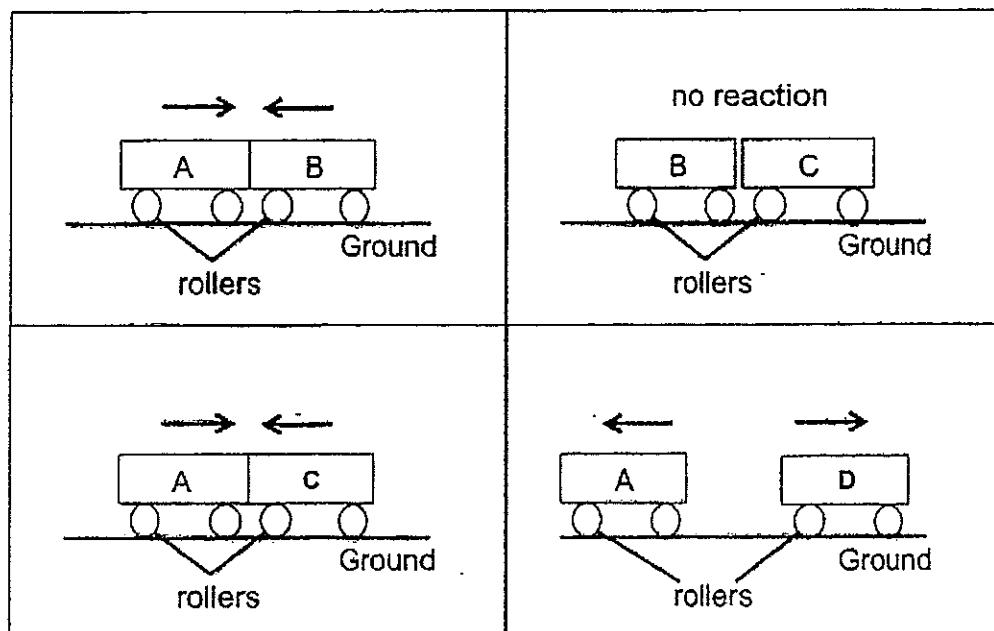
Key:
→ Direction of movement of magnet

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

- W Heating magnet A reduces its magnetic strength.
- X Like poles of magnets A and B are facing each other.
- Y Suspending magnet A increases its magnetic strength.
- Z The force of attraction of magnets is greatest only at one of its poles.

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

29. Yiming placed four bars, A, B, C and D, of the same size on rollers. He put them near each other and recorded the direction of movement of the bars as shown in the diagrams below.



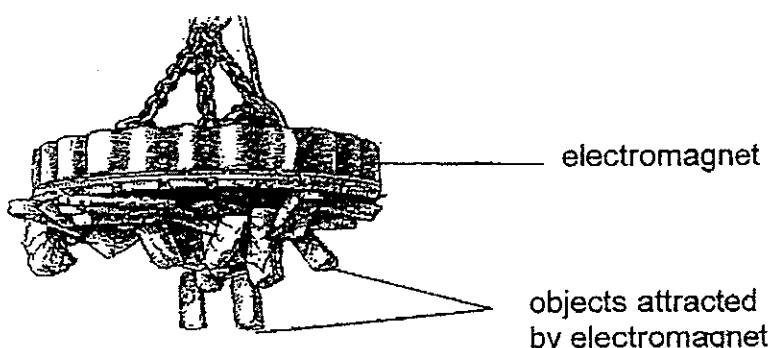
Key:

→ Direction of movement of bars

Which of the following identifies the four bars correctly?

| | Bar A | Bar B | Bar C | Bar D |
|-----|---------------------|-----------------|---------------------|-----------------|
| (1) | magnet | magnetic object | magnet | magnet |
| (2) | magnet | magnetic object | magnetic object | magnet |
| (3) | magnetic object | magnet | non-magnetic object | magnet |
| (4) | non-magnetic object | magnet | non-magnetic object | magnetic object |

30. The diagram below shows an electromagnet that is used in scrapyards to separate magnetic materials from non-magnetic materials.



Which set of materials would the electromagnet be able to separate?

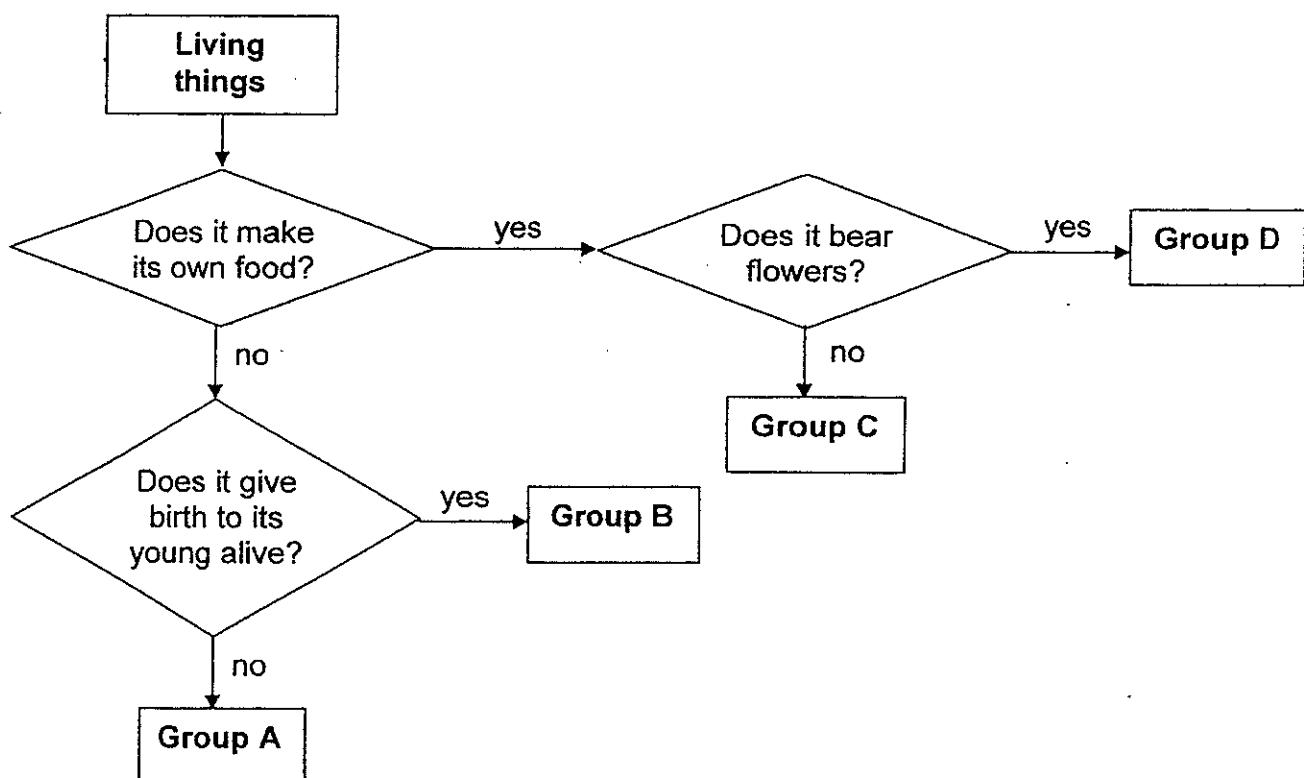
- (1) steel and nickel
- (2) plastic and glass
- (3) silver and copper
- (4) iron and aluminum

End of Section A

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 classification chart below shows how some living things are being classified into groups A, B, C and D.



- (a) State a common characteristic between the living things in groups C and D. [1]

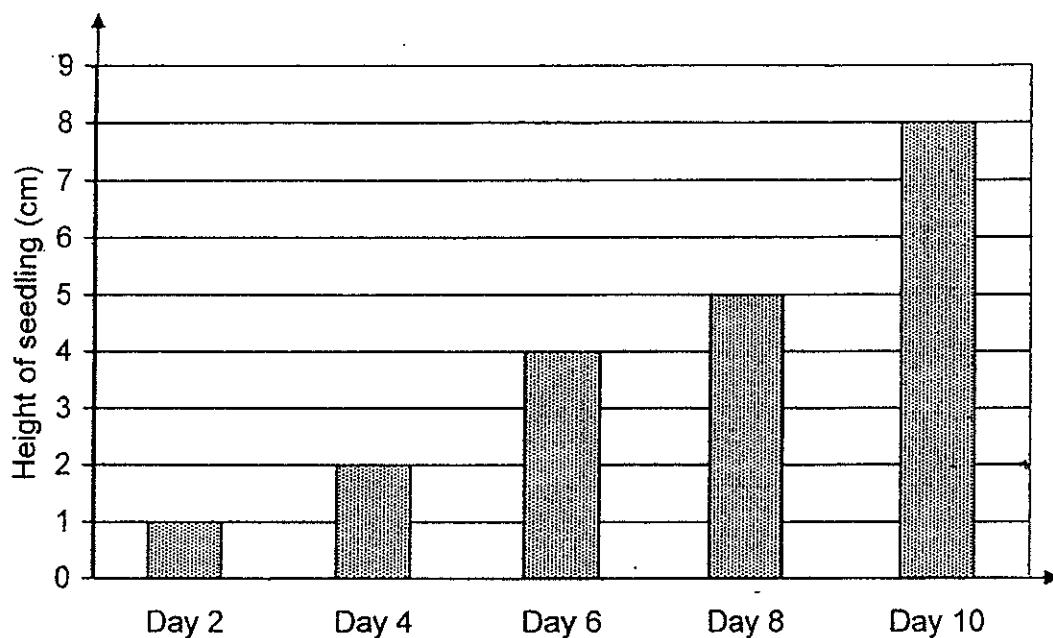
- (b) In which group, A, B, C or D, does the bird's nest fern belong to? [1]

Group _____

- (c) The spiny anteater is an animal that reproduce by laying eggs. Which group, A, B, C or D, does the spiny anteater belong to? [1]

Group _____

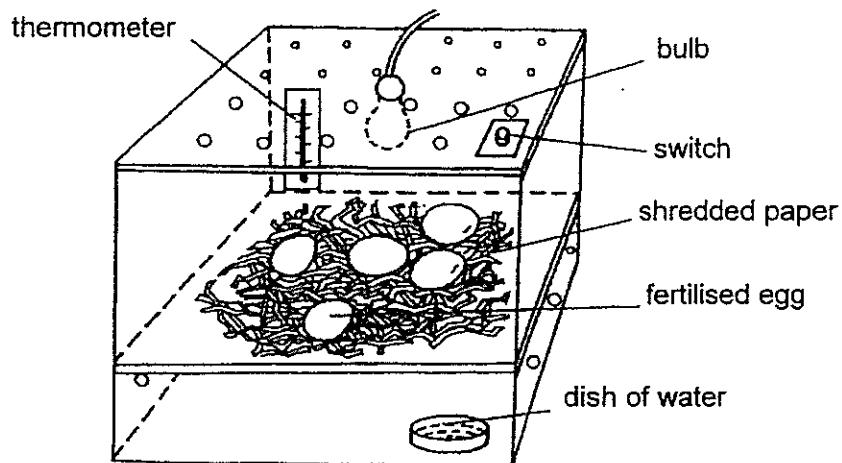
32. James planted a seedling in a pot. He recorded the height of the seedling every two days and plotted a graph as shown below.



- (a) What characteristic of living things does the data from the graph show? [1]

- (b) How much did the seedling grow from the 4th day to the 10th day? [1]

33. Pat wanted to find out if the temperature in an incubator will affect the length of time taken for an egg to hatch. She set up two incubators for her experiment. One of them is shown below.



(a) Name the changed variable in Pat's experiment.

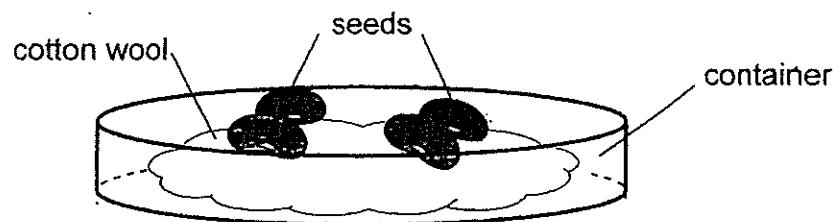
[1]

(b) Name 2 variables that Pat should keep the same for both her set-ups to ensure a fair test.

[2]

| | |
|-------------------|--|
| Variable 1 | |
| Variable 2 | |

34. John set up an experiment to find out the conditions needed for seeds to germinate. The diagram below shows one of his set-ups.



The table below shows the conditions of each of his set-ups.

| Set-up | Moist cotton wool | Dry cotton wool | Placed near the window | Placed in a cupboard |
|--------|-------------------|-----------------|------------------------|----------------------|
| P | ✓ | | | ✓ |
| Q | | ✓ | ✓ | |
| R | | ✓ | | ✓ |
| S | ✓ | | ✓ | |

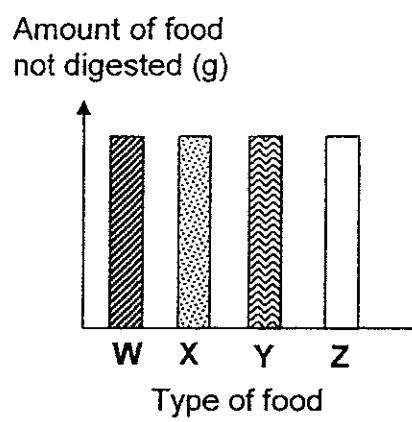
- (a) To find out whether seeds need water to germinate, which two set-ups should John use? [1]

- (b) After a few days, John observed that some seeds germinated.

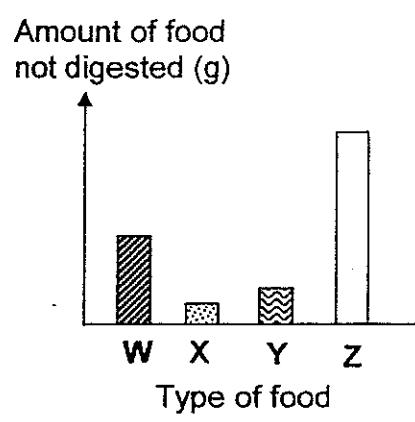
Name the set-up(s) the seeds would most likely germinate. [1]

35. Graph 1 shows the types of food, W, X, Y and Z, taken into the body's digestive system at the start.

Graph 2 shows the amount of food that remained undigested in the system 5 hours later.



Graph 1



Graph 2

Based on the information above, answer the questions below:

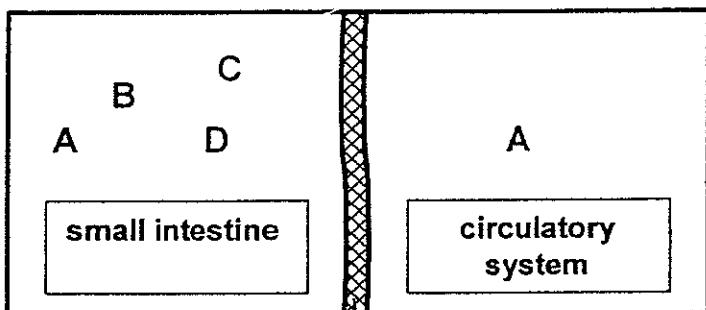
- (a) Which type of food, W, X, Y or Z, is NOT digested at all? [1]

- (b) Which type of food, W, X, Y or Z, is the easiest to digest?
Give a reason for your answer. [1]

- (c) Food that is high in fibre takes a longer time to digest than other types of food.

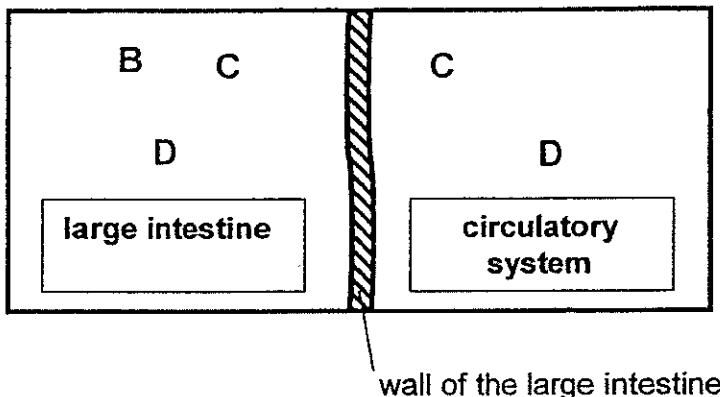
Which type of food, W, X or Y, most likely contains the highest amount of fibre? [1]

36. Substances A, B, C and D are found in the small intestine. Only substance A is absorbed through the walls of the small intestine as shown in the diagram below.



wall of the small intestine

When the substances travelled further in the digestive system, only substances C and D are absorbed through the walls of the large intestine as shown in the diagram below.



wall of the large intestine

- (a) Based on the information above, write a letter, A, B, C or D, that best represents each of the substances below. [2]

Water : _____

Mineral salts : _____

Digested food : _____

Undigested food : _____

(continue to the next page)

Q36 (continue from previous page)

- (b) Fill in the blanks using the words in the box below.

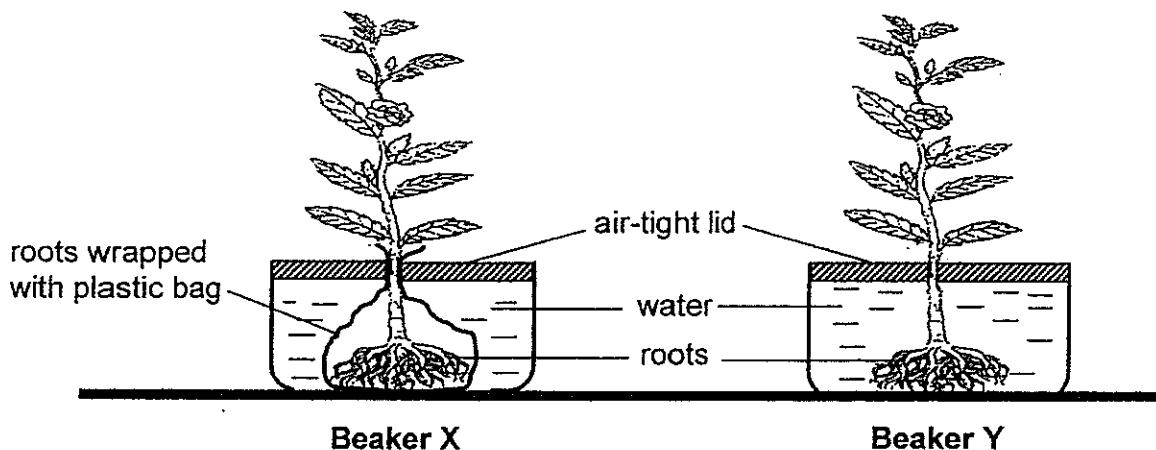
[2]

| | |
|----------------|--------|
| carbon dioxide | oxygen |
|----------------|--------|

- (i) The circulatory system transports _____ to all parts of the human body.
- (ii) The circulatory system transports _____ away from all parts of the human body.
- (c) Name the body system that works with the circulatory system to perform the functions stated in part (b).

[1]

37. Peiling poured 500 ml of water into each of the two identical beakers, X and Y. Next, she placed two similar plants into the beakers before covering each beaker with an air-tight lid as shown in the diagrams below.



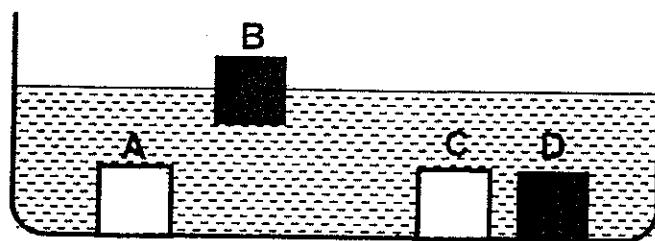
Three days later, she recorded the volume of water left in the two beakers. Her results are shown in the table below.

| | volume of water on the first day (ml) | volume of water on the third day (ml) | volume of water on the fourth day (ml) |
|----------|---|---|--|
| beaker X | 500 | 500 | i) |
| beaker Y | 500 | 380 | ii) |

- (a) In the table above, fill in the amount of water left in beakers X and Y on the fourth day. [1]
- (b) Based on the information above, give a reason for the volume of water left in beakers X and Y on the third day? [2]

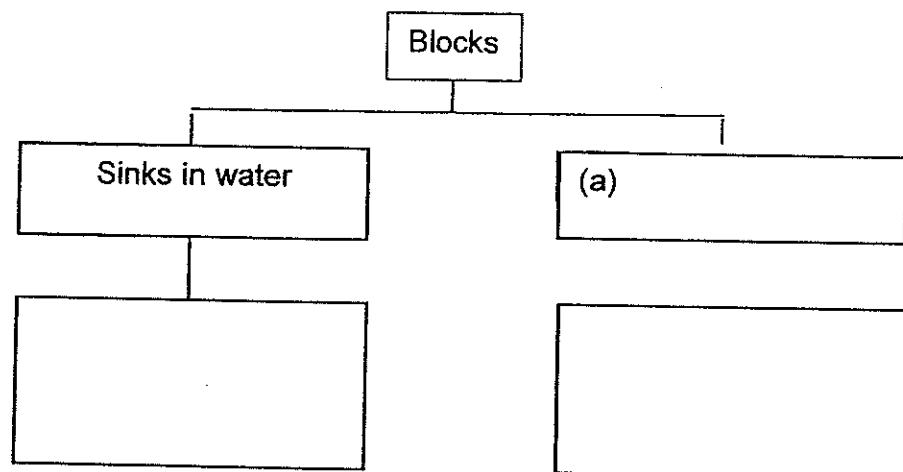
| | Reason |
|----------|--------|
| Beaker X | |
| Beaker Y | |

38. Fatimah conducted an experiment using four different blocks, A, B, C and D, of similar shape and size. She placed them into a tank filled with water as shown in the diagram below.



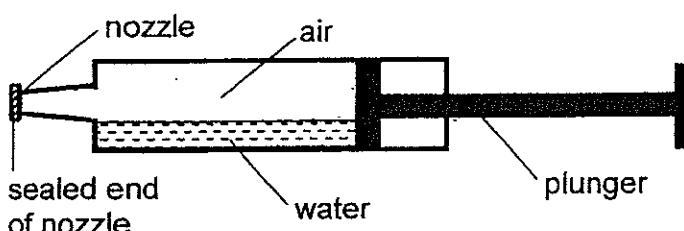
In the classification chart below,

- (a) write a suitable sub-heading. [1]
- (b) classify the blocks by writing the letters, A, B, C and D, in the correct box. [1]



- (c) Name one other possible way that Fatimah can classify the blocks that sunk. [1]

39. The diagram below shows a syringe filled with some water and air. The nozzle of the syringe is tightly sealed.

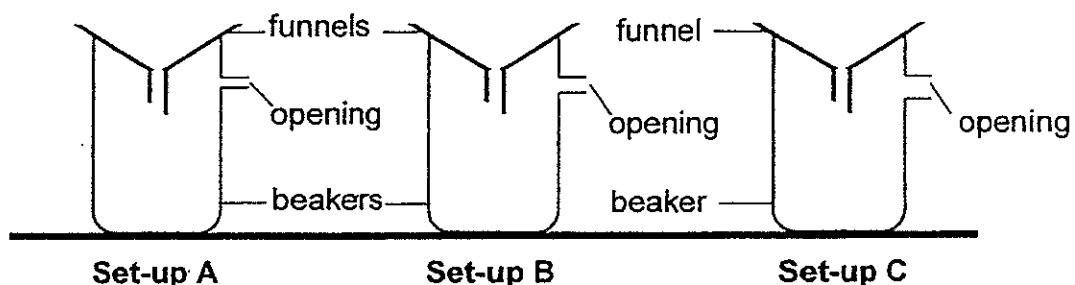


Siti pushed the plunger and discovered that the plunger could be pushed in slightly.

- (a) Explain why the plunger could be pushed in slightly. [1]

- (b) Did the volume of the water in the syringe change after the plunger was pushed in slightly? Give a reason for your answer. [1]

40. The diagrams below show three set-ups, A, B and C, each with a beaker of similar volume and shape. Each of the beakers had an opening of different size at its side. Sam placed an identical funnel over the mouth of each beaker.



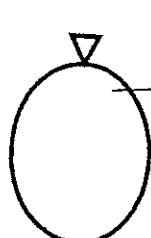
Next, Sam poured 100 ml of water into the funnel and measured the time taken for all the water to flow into the beaker.
He recorded the results in the table below.

| Set-up | Size of opening (mm) | Time taken for all the water to flow into the beaker (seconds) |
|--------|----------------------|--|
| A | 4 | 34 |
| B | 5 | 30 |
| C | 8 | 19 |

- (a) How did the size of the opening at the side of the beaker affect the time taken for all the water to flow into the beaker? [1]

- (b) In which set-up, A or C, did the water take a shorter time to flow into the beaker? Explain your answer. [2]

41. Magdalene fully filled a balloon with 500ml of water. She then squeezed the balloon and tied rubber bands around its middle as shown in the diagrams below.



Before

balloon fully
filled with
500 ml of water



After

rubber bands

- (a) What was the volume of water in the balloon after it had been tied in the middle by rubber bands? [1]

- (b) What does the change in the shape of the balloon tell you about the property of water? [1]

42. Peter placed two identical woollen towels, P and Q, on a balance lever as shown in Diagram 1 below.

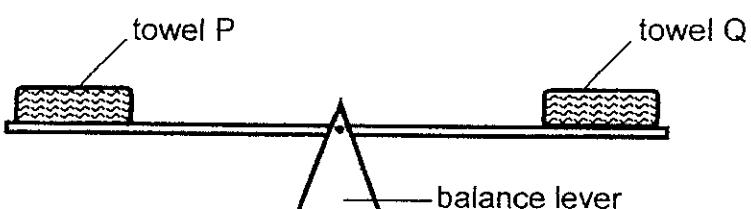


Diagram 1

Peter then poured some water on towel Q and the balance lever tilted as shown in Diagram 2 below.

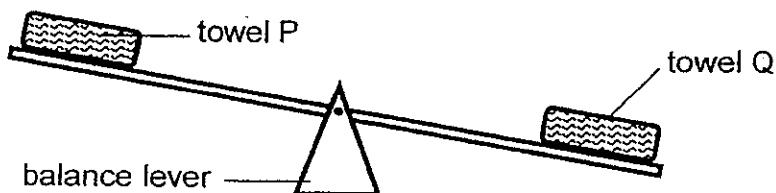


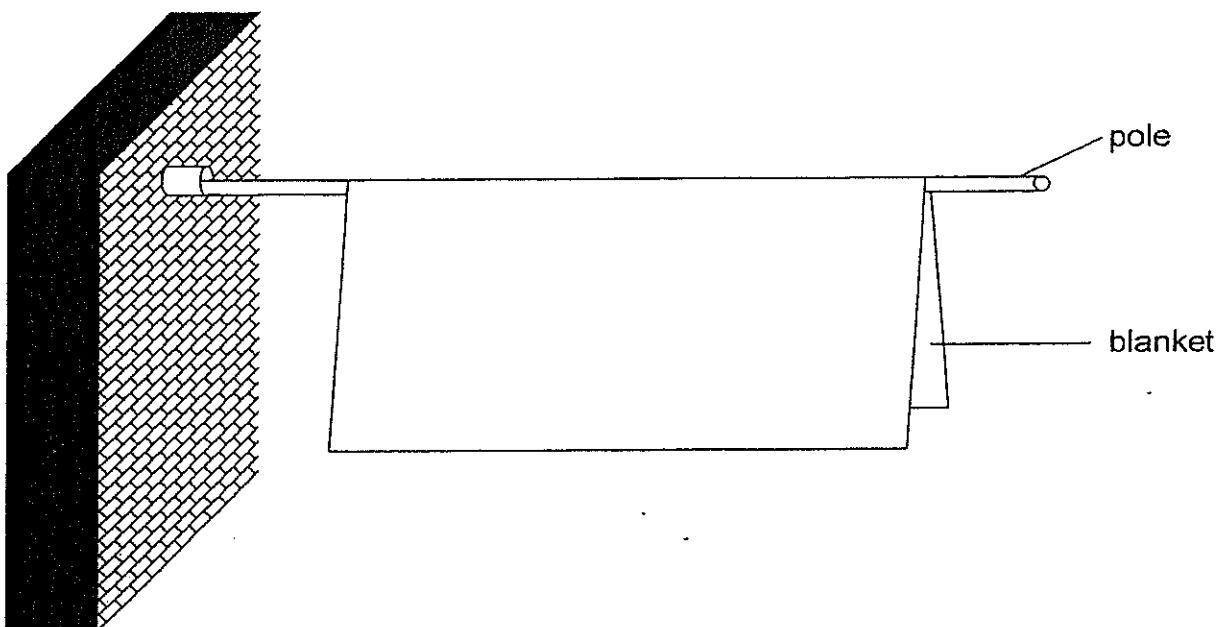
Diagram 2

- (a) Based on the information above, what could Peter conclude about the property of water? [1]

(continue to the next page)

Q42 (continued from previous page)

The diagram below shows a pole that is used to hang a blanket to let it dry.



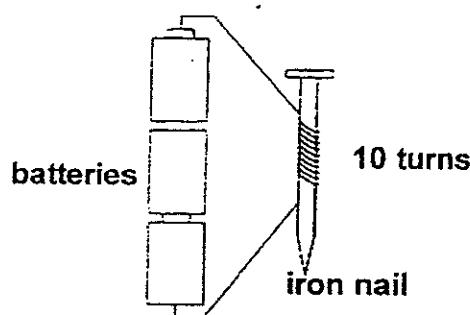
Mrs Tan has two poles, X and Y, of equal length, each made of a different material. The table below shows the information of the two poles.

| Pole | Maximum mass the pole can hold just before it breaks (kg) |
|------|---|
| X | 3 |
| Y | 6 |

Mrs Tan has a piece of dry woollen blanket of mass 3 kg.

- (b) Which pole, X or Y, should Mrs Tan use to hang the blanket after washing it? Explain your answer. [2]

43. Meiling made an electromagnet by coiling an iron nail with wire and then connecting the ends of the wire to the batteries as shown below.



Meiling tested the magnetic strength of the electromagnet by counting the number of steel paper clips that the iron nail could attract.

She repeated the experiment by increasing the number of turns of wire around the iron nail. She recorded her observations in the table below.

| Number of turns of wire around the iron nail | Number of paper clips the magnetised iron nail attracted |
|--|--|
| 10 | 2 |
| 20 | 7 |
| 30 | (a) |
| 40 | 12 |

- (a) In the table above, fill in the number of paper clips the magnetised iron nail would most likely attract when there were 30 turns of wire around the iron nail. [1]

- (b) Based on her observations, how would the number of turns of the wire around an iron nail affect the magnetic strength of the electromagnet? [1]

- (c) Name **ANOTHER** way Meiling could increase the magnetic strength of the electromagnet. [1]

44. Junwei attached magnets P and Q, which had strong magnetic strength, to a balance as shown in Diagram 1 below. The masses of magnets P and Q were 100 g and 80 g respectively.

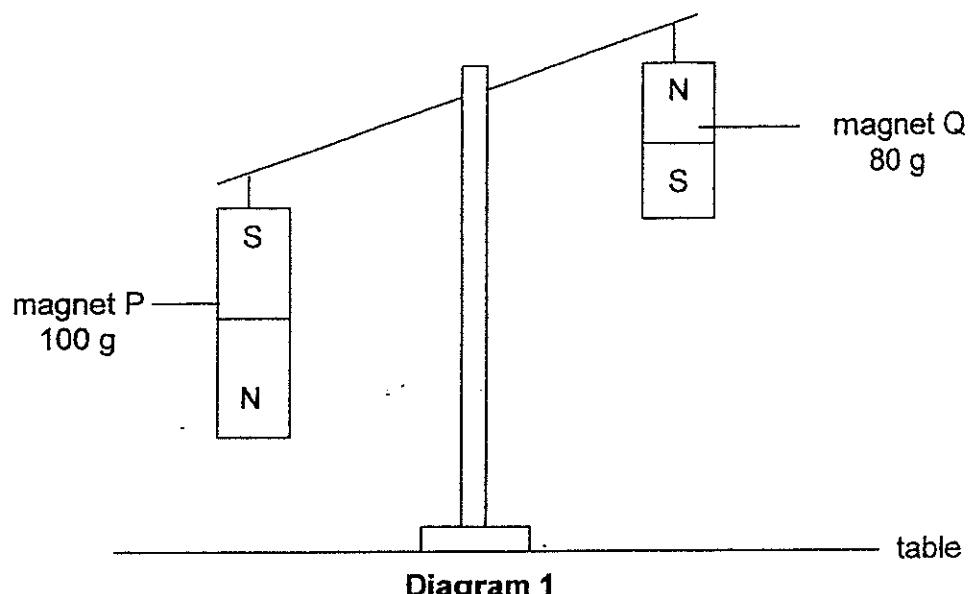


Diagram 1

Junwei placed another magnet, A, which had strong magnetic strength, directly under magnet Q. He attached magnet A to the table such that it could not move. He observed that magnet P moved upwards and both magnets P and Q balanced as shown in Diagram 2.

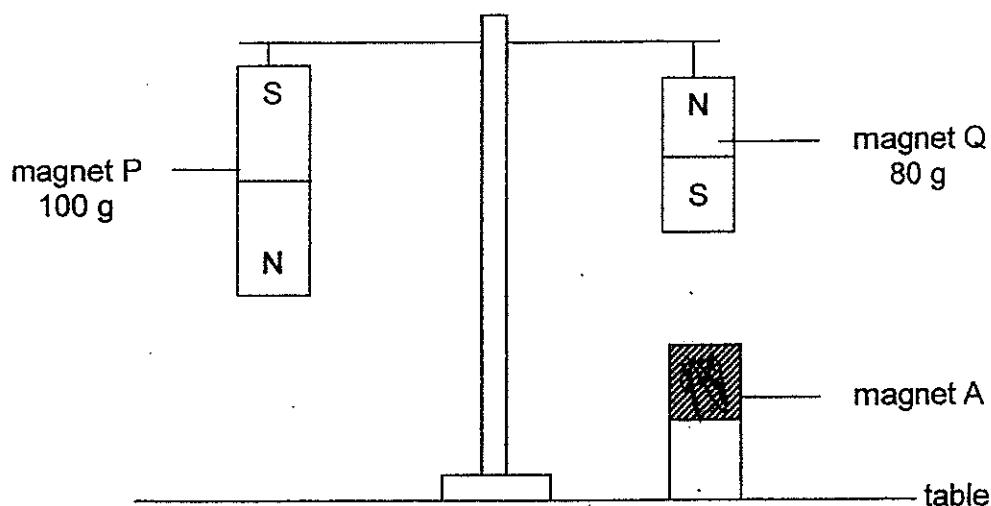


Diagram 2

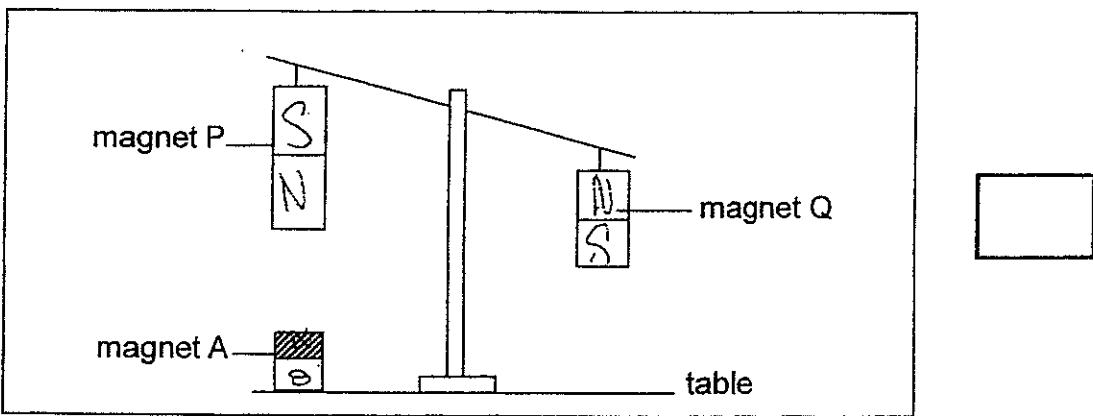
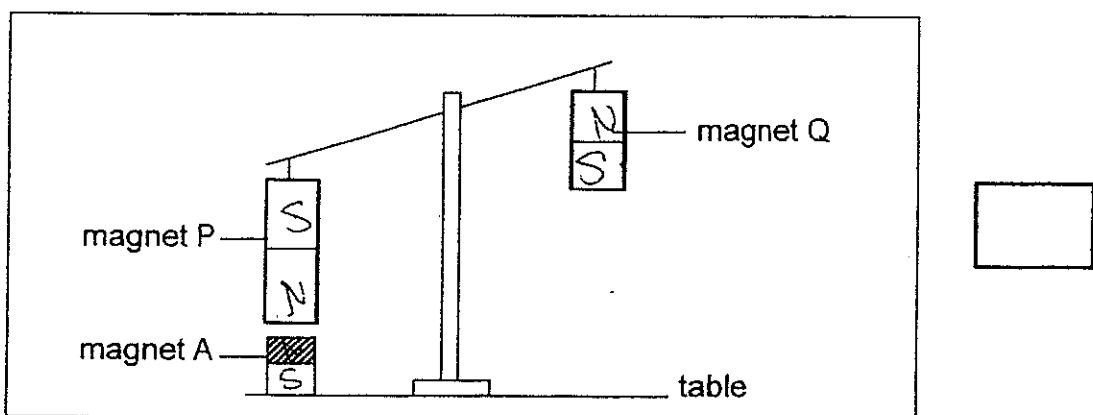
- (a) Explain Junwei's observations in Diagram 2.

[2]

(continue to the next page)

Q44 (continued from previous page)

Using the same apparatus in Diagram 2, Junwei moved magnet A and placed it directly below magnet P.



- (b) Which one of the diagrams above shows the correct observation made by Junwei?
- (i) Put a tick (\checkmark) in the box next to the correct diagram above.
(ii) Give a reason for your answer.

[1]

**End-of-paper
~ Check your work carefully ~**

Setters:
M.Y.; Cheng K.H

Exam Paper 2014 Answer Sheet

School: RAFFLES GIRLS' PRIMARY SCHOOL

Subject: PRIMARY 4 SCIENCE

Term: SA1

| | | | | | |
|------|-------|-------|-------|-------|-------|
| 1) 2 | 6) 2 | 11) 1 | 16) 2 | 21) 4 | 26) 4 |
| 2) 3 | 7) 3 | 12) 3 | 17) 1 | 22) 3 | 27) 1 |
| 3) 2 | 8) 1 | 13) 3 | 18) 1 | 23) 4 | 28) 2 |
| 4) 1 | 9) 3 | 14) 3 | 19) 2 | 24) 4 | 29) 2 |
| 5) 1 | 10) 2 | 15) 1 | 20) 1 | 25) 3 | 30) 4 |

31. (a) They both make their own food.

(b) C

(c) A

32. (a) Living things grow.

(b) 6cm

33. (a) The temperature of the incubator.

(b) 1: The type of egg used. ; 2: The size of the incubator.

34. (a) P and R

(b) P and S

35. (a) Z

(b) X. The amount of food left undigested was at least after 5 hours.

(c) W

36. (a) C, D, A, B

(b) i. oxygen

ii. carbon dioxide

(c) Respiratory system

37. (a) i. 500

ii. 260

(b) X: The plastic bag wrapping around the roots prevented the roots to take in water.

Y: The roots absorbed water.

38. (a) Floats on water.

(b) Sinks: A, C, D; Floats: B

(c) According to colour.

39. (a) The syringe was partly occupied by air. As the air in the syringe can be compressed, the plunger can be pushed in slightly.

(b) No. Water has a definite volume.

19. 10. 1980

1. 10. 1980

2. 10. 1980

3. 10. 1980

4. 10. 1980

5. 10. 1980

6. 10. 1980

7. 10. 1980

8. 10. 1980

9. 10. 1980

10. 10. 1980

11. 10. 1980

12. 10. 1980

40. (a) The bigger the opening at the side of the beaker, the shorter time taken for all the water to flow into the beaker.
(b) C. It has a bigger opening than beaker A. Therefore, more air is able to escape to allow water to flow.
41. (a) 500ml
(b) Water has no definite shape.
42. (a) Water has mass.
(b) Y. Pole Y is stronger than pole X. The mass of blanket will be more than 3kg after washing because the blanket had absorbed some water.
43. (a) 10
(b) The more the number of turns around the iron nail, the greater the strength of the electromagnet.
(c) Add batteries to the circuit.
44. (a) Magnet Q and A attracted because their unlike poles were facing each other. Therefore, magnet Q moved downwards.
(b) The North pole of magnet A was facing the North pole of magnet P.

କାନ୍ତିର ପଦମୁଖ ହେଲା ଏହାର ପଦମୁଖ
କାନ୍ତିର ପଦମୁଖ ହେଲା ଏହାର ପଦମୁଖ
କାନ୍ତିର ପଦମୁଖ ହେଲା ଏହାର ପଦମୁଖ

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କାନ୍ତିର ପଦମୁଖ ହେଲା ଏହାର ପଦମୁଖ



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1)

Name : _____ Index No: _____ Class: P4

7 May 2015 SCIENCE Att: 1 h 45 min

SECTION A (30 x 2 marks)

For each question from 1 to 30, four options are given.

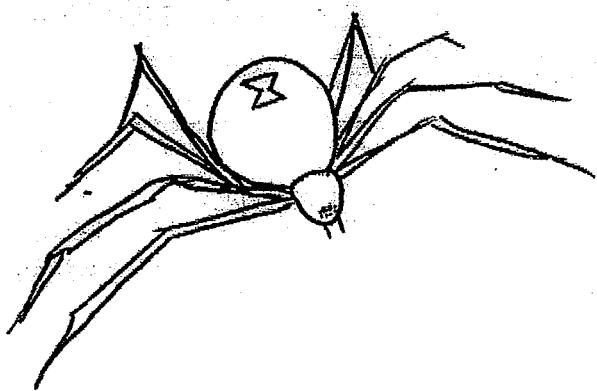
One of them is the correct answer. Make your choice (1, 2, 3 or 4).

Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

| | |
|--|----|
| Section A | |
| Section B | |
| Your score out of 100 marks | 40 |
| Parent's signature | |

1. What is the common characteristic(s) of all animals?

2. John observed the animal below and said that it is not an insect.



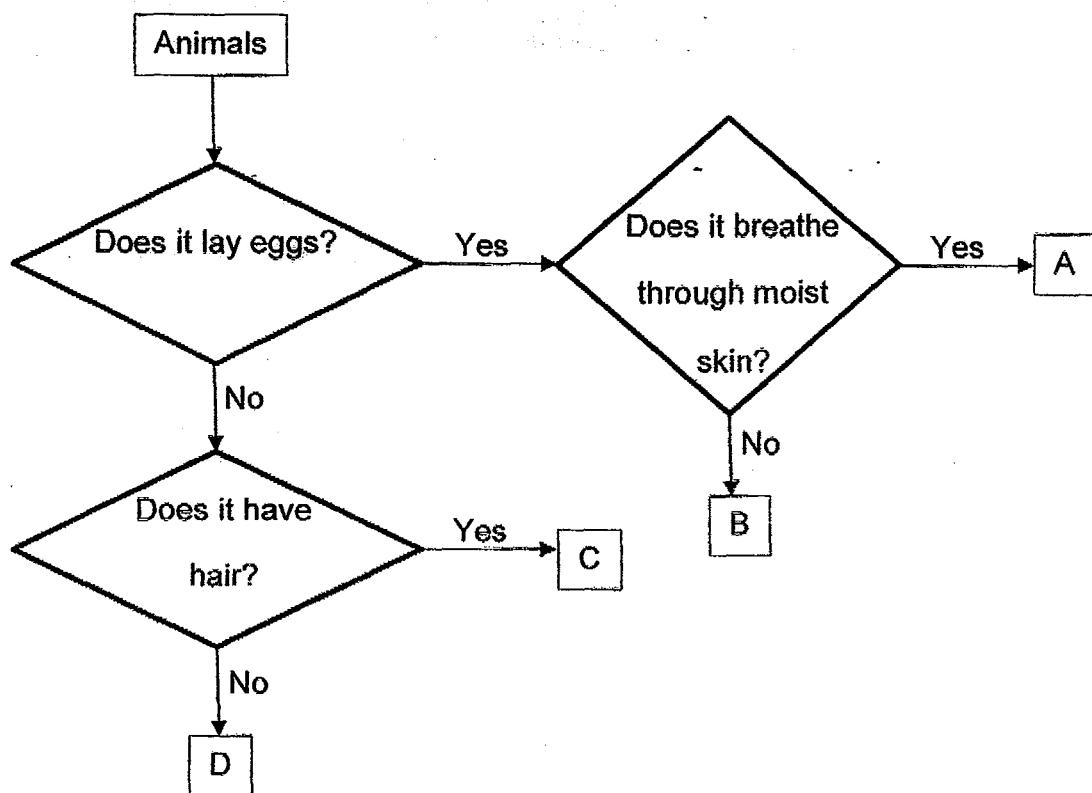
Which of the following statement(s) show(s) why it is not an insect?

The animal _____.

- A has 2 feelers.
- B has 2 body parts
- C more than 6 legs.
- D is too big to be an insect.

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

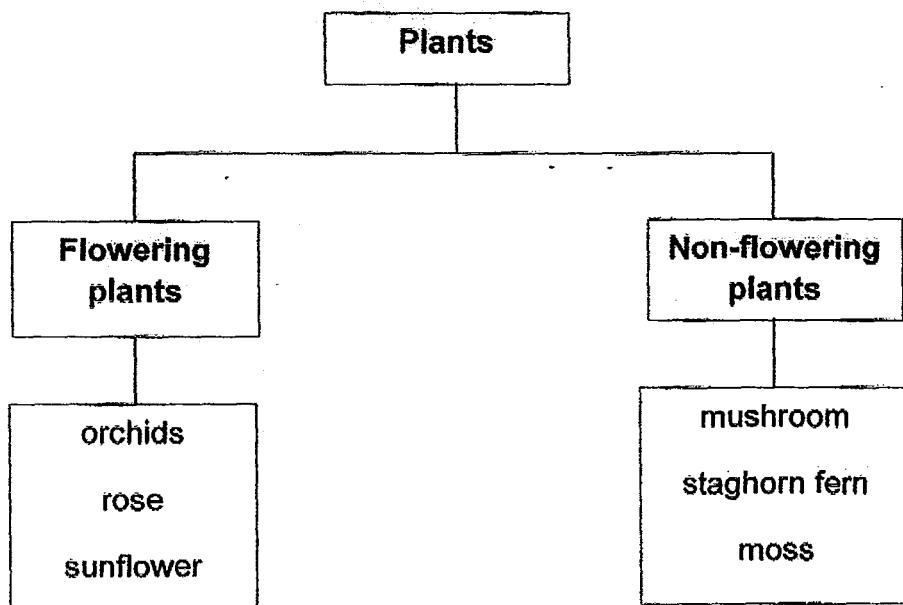
3. The flowchart below shows how some animals are classified.



Based on the flow chart above, which one of the options shows the correct identification of animals A, B, C and D?

| | A | B | C | D |
|-----|--------|--------|-------|--------|
| (1) | dog | turtle | guppy | frog |
| (2) | frog | turtle | dog | guppy |
| (3) | guppy | dog | frog | turtle |
| (4) | turtle | guppy | dog | frog |

4. Jamie found some organisms in the garden and classified them in the table shown below.



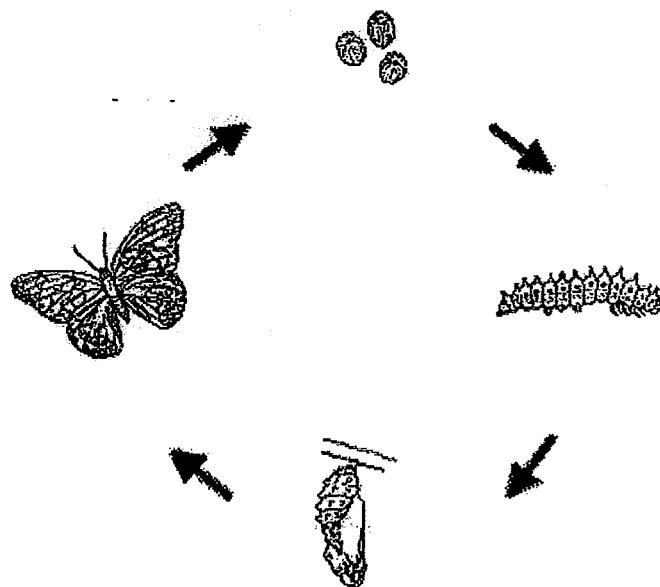
Which one of the above organisms is classified wrongly?

- (1) rose
- (2) moss
- (3) sunflower
- (4) mushroom

5. Which one of the following statements is true about fungi?

- (1) Fungi produce flowers.
- (2) Fungi reproduce by seeds.
- (3) Fungi do not respond to changes.
- (4) Fungi cannot make their own food.

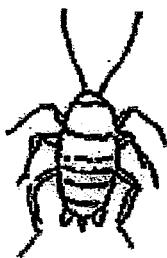
6. The diagram below shows the life cycle of a butterfly.



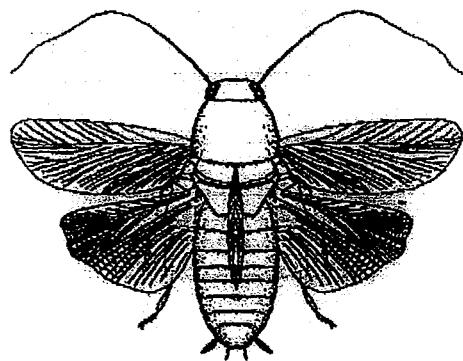
The life cycle of a butterfly shows the _____.

- (1) food the butterfly eats.
- (2) different body parts of the butterfly.
- (3) various stages of development of the butterfly.
- (4) different types of animals in that animal group.

7. The diagram below shows the nymph and adult of a cockroach.



Nymph



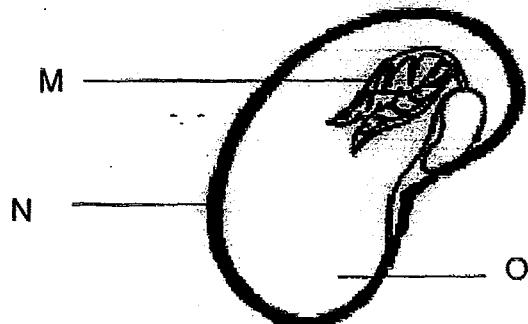
Adult

Study the diagrams above and compare the nymph and adult of the cockroach.

Which of the following statement(s) below is/are correct about the nymph and the adult?

- A Both have feelers.
 - B The nymph resembles the adult.
 - C The nymph does not have wings but the adult has fully developed wings.
-
- (1) C only
 - (2) A and B only
 - (3) B and C only
 - (4) A, B and C

8. The picture below shows the cross section of a seed with its parts labelled M, N and O.



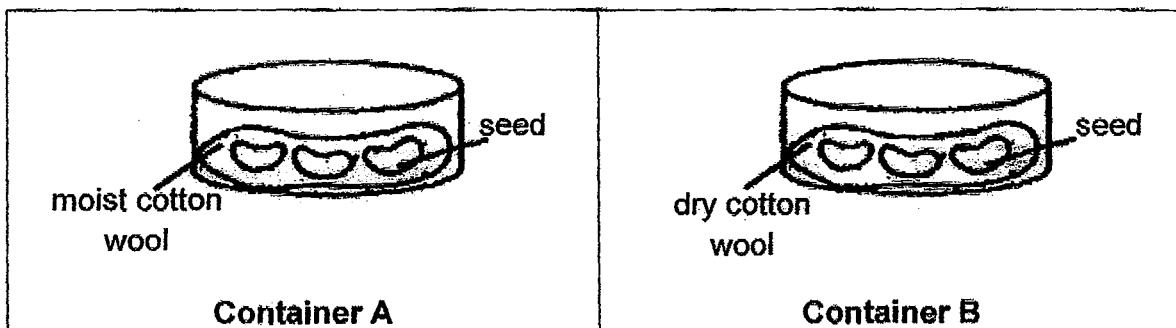
Which part(s) protect(s) the seed?

- (1) N only
- (2) O only
- (3) M and O only
- (4) N and M only

9. Amy placed 3 similar seeds each on a moist cotton wool in Container A and on a dry cotton wool in Container B as shown below.

She then placed the two containers near a window where there is sunlight.

After two days, the seeds on the moist cotton wool germinated but not the seeds on the dry cotton wool.



What can she conclude from the experiment?

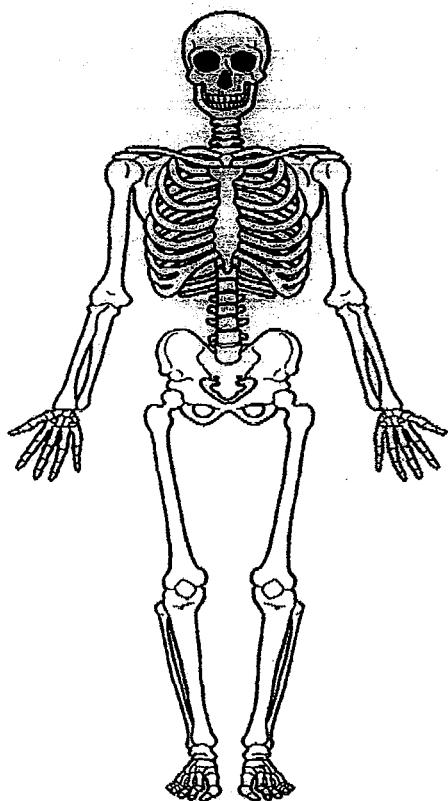
Seeds need _____ to germinate.

- (1) air
- (2) water
- (3) sunlight
- (4) cotton wool

10. Which one of these statements is true about the large intestine?

- (1) Digestion ends in the large intestine.
- (2) Water is absorbed by the body in the large intestine.
- (3) The large intestine has muscular walls which churns and breaks down food into simpler substances.
- (4) Most of the nutrients from the digested food are absorbed by the body in the large intestine.

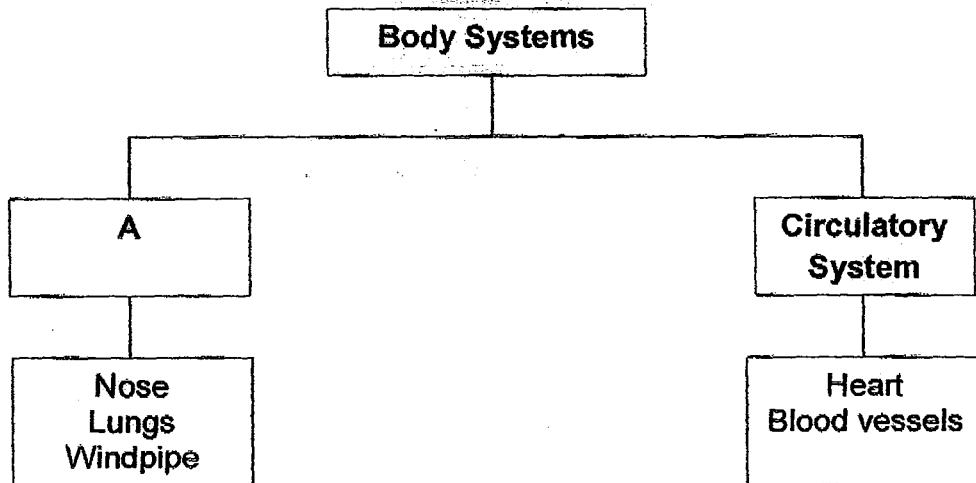
11. The diagram below shows the skeletal system of a human body.



Which of these is/are the function(s) of the skeletal system?

- A It supports the body.
 - B It gives the body its shape.
 - C It helps in the exchange of gases.
 - D It helps to transport water and nutrients to all part of the body.
-
- (1) A and B only
 - (2) C and D only
 - (3) A, C and D only
 - (4) A, B, C and D

12. Julia classified some organs as shown in the table below.

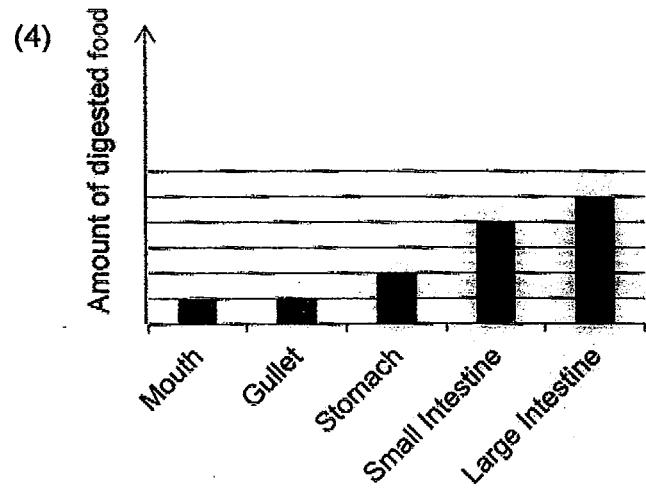
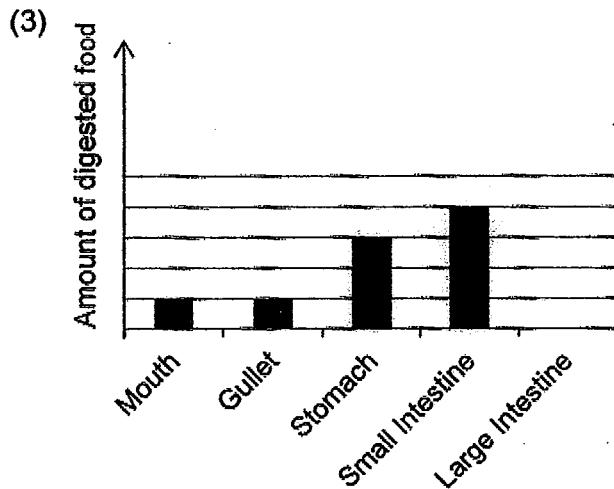
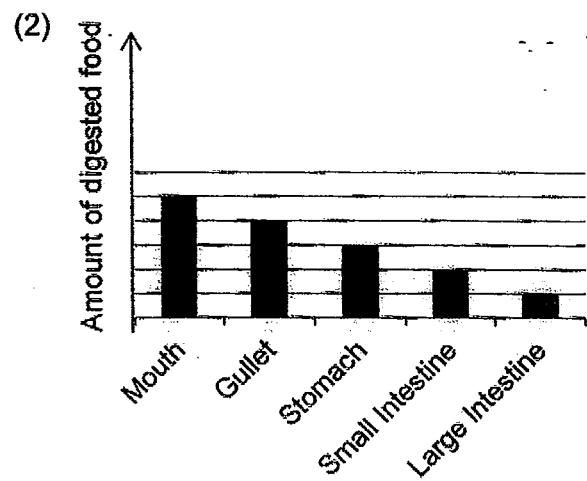
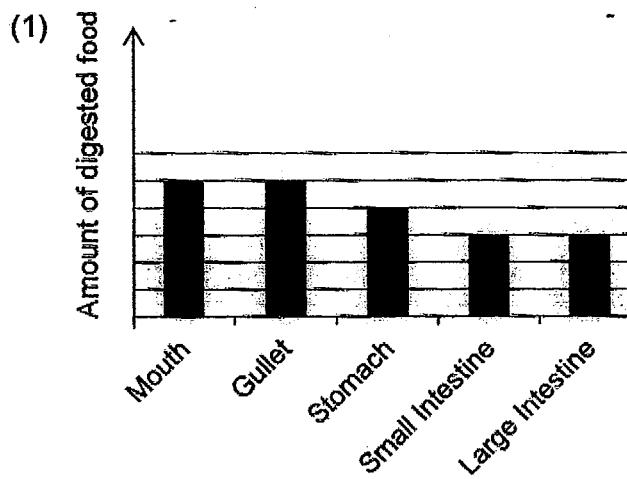


Which one of the following best represents "A"?

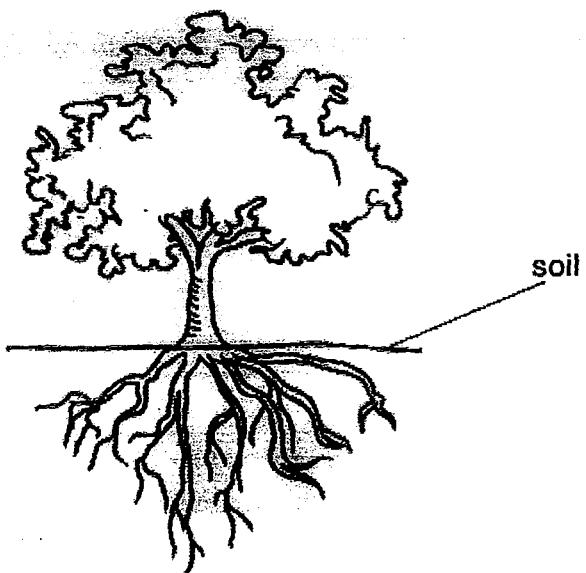
- (1) Skeletal system
- (2) Muscular system
- (3) Digestive system
- (4) Respiratory system

13. Jane had a burger for lunch. She plotted a bar graph to show the amount of digested food in the different organs.

Which one of the following shows the correct amount of digested food in each organ?



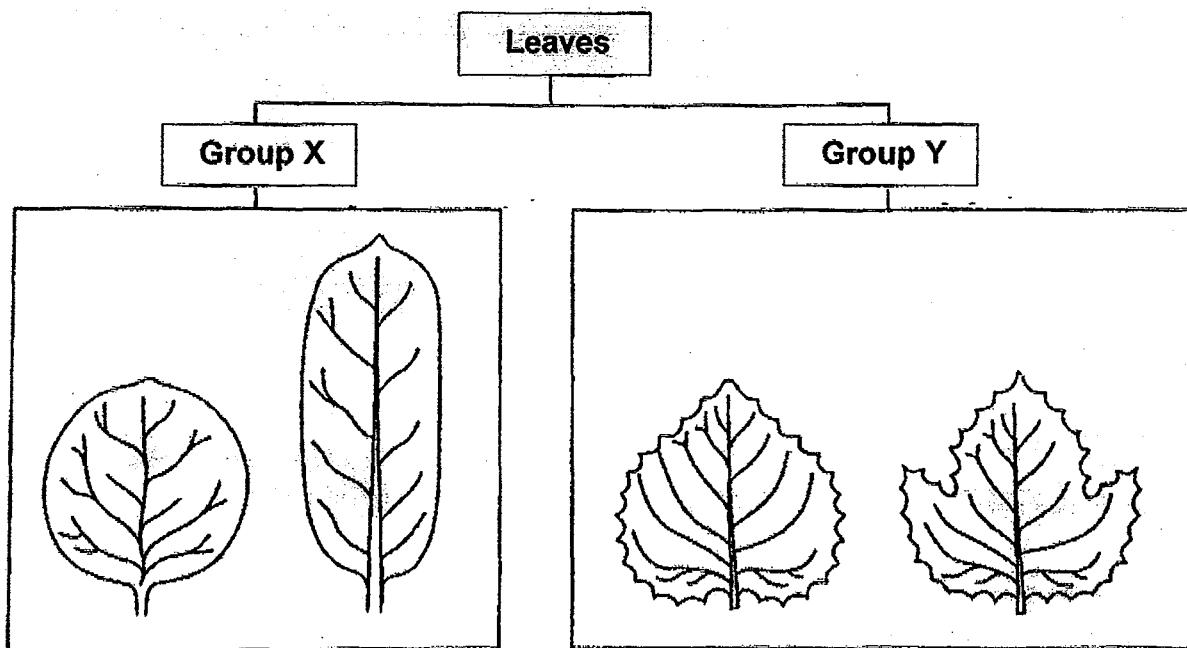
14. The diagram below shows a tree.



Which one of the following statements best explains why the tree will not fall easily when there is strong wind?

- (1) The tree is tall.
- (2) The tree has many leaves.
- (3) The stem of the tree is thick and woody.
- (4) The roots of the tree anchor the tree to the ground.

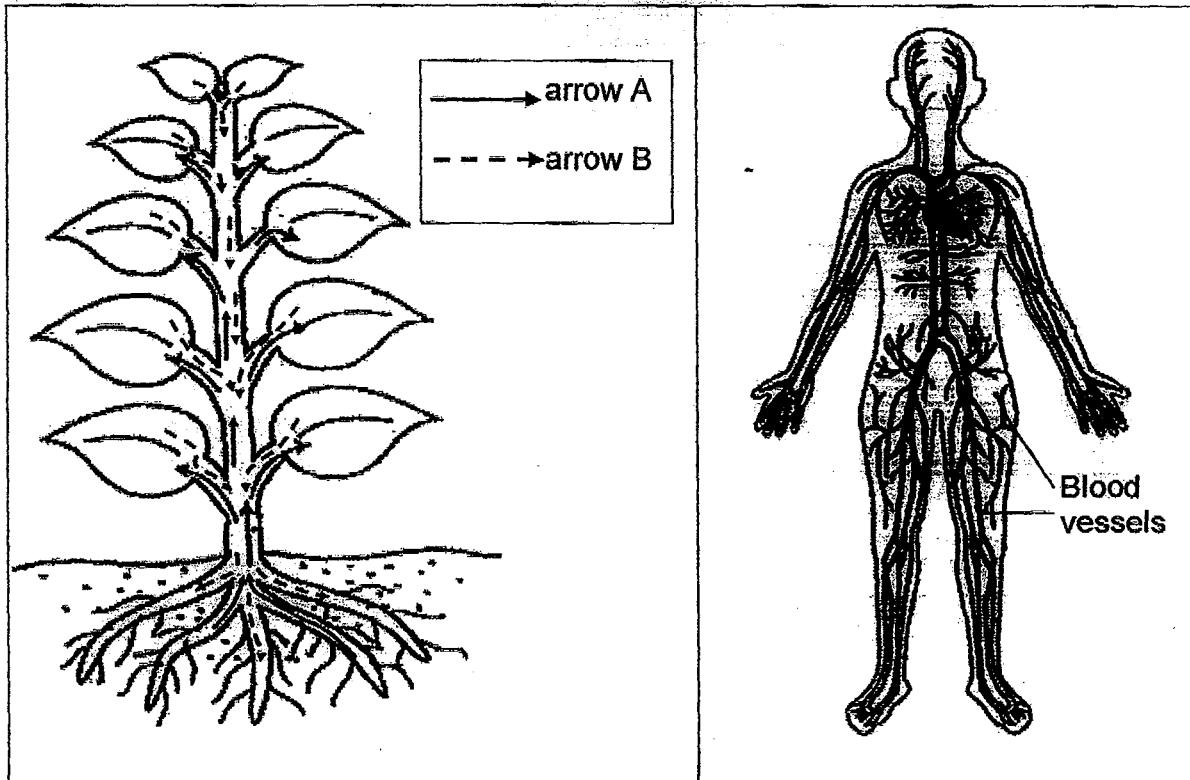
15. Amy compared 4 leaves and classified them into 2 groups, X and Y.



Which one of the following characteristics did Amy use to classify the leaves?

- (1) edge
- (2) shape
- (3) size
- (4) texture

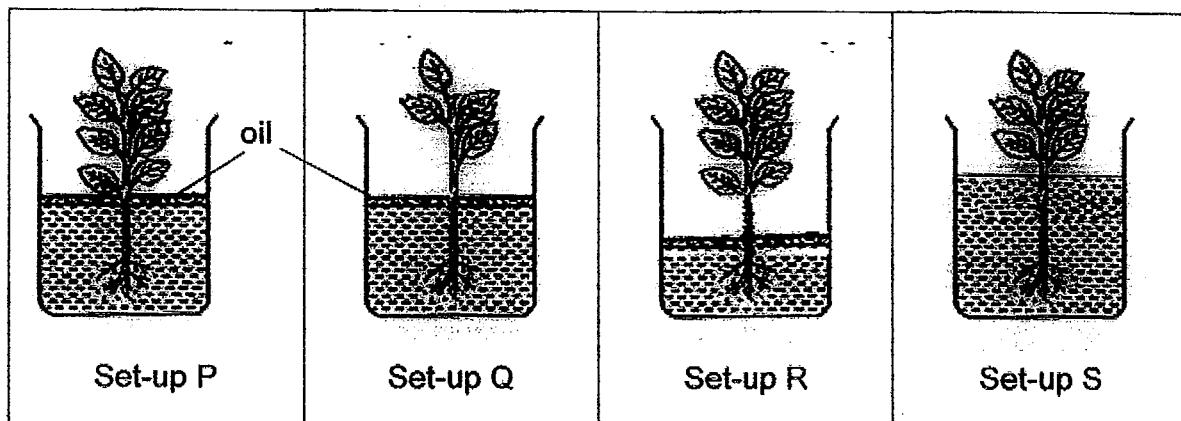
16. The diagrams below show a plant transport system and the human circulatory system.



Which one of the following statements is correct?

| | Plant Transport System | Human Circulatory System |
|-----|--|---|
| (1) | Arrow A shows the transportation of water and mineral salts. | Blood vessel carry blood that transports water only |
| (2) | Arrow A shows the transportation of food. | Blood vessels carry blood that transport water only. |
| (3) | Arrow B shows the transportation of water and mineral salts. | Blood vessels carry blood that transport digested food only. |
| (4) | Arrow B shows the transportation of food. | Blood vessels carry blood that transport digested food, water and waste products. |

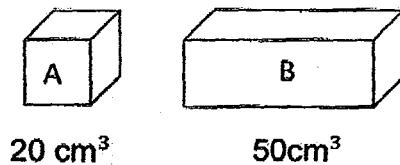
17. Jack wanted to find out if the number of leaves affects the amount of water taken in by the plant. He set up the experiment using similar types of plants and beakers as shown in the diagram below. He left the beakers of plants near an open window where there was sunlight.



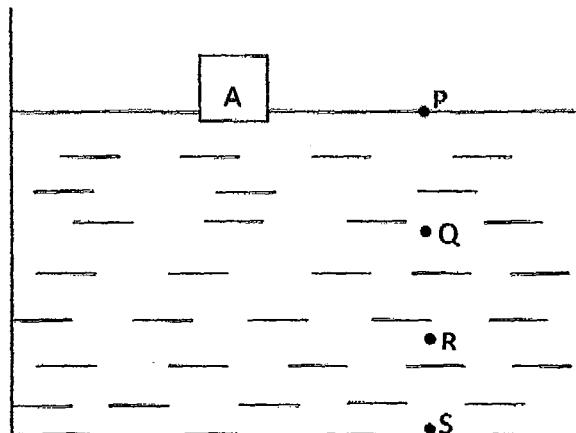
Which two set-ups should Jack use to ensure that it is a fair test?

- (1) Set-ups P and Q
- (2) Set-ups P and S
- (3) Set-ups Q and R
- (4) Set-ups Q and S

18. Two solid blocks A and B shown below were of different sizes but made of the same material.



Block A was dropped into a tank of water and floated to the same height as position P as shown below.



In which position, P, Q, R or S would block B be after it was dropped into the tank of water?

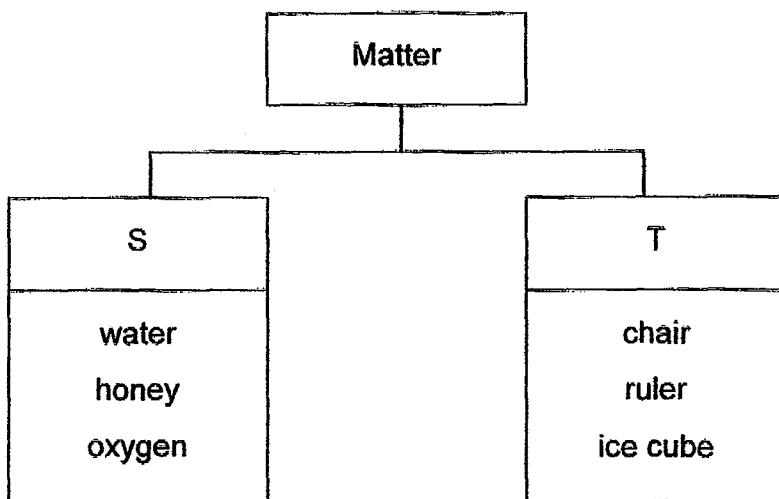
- (1) P
- (2) Q
- (3) R
- (4) S

19. Which of the following properties do solids, liquids and gases have in common?

- A They have mass.
- B They take up space.
- C They have definite volume.
- D They have definite shapes.

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

20. Six items are classified in the chart below.



Which one of the following could be the headings for S and T?

| S | T |
|--------------------|----------------------|
| No mass | Has mass |
| No definite shape | Has definite shape |
| No definite volume | Has definite volume |
| Can be compressed | Cannot be compressed |

21. Sam investigated the properties of three substances, A, B and C and recorded his findings in the table below.

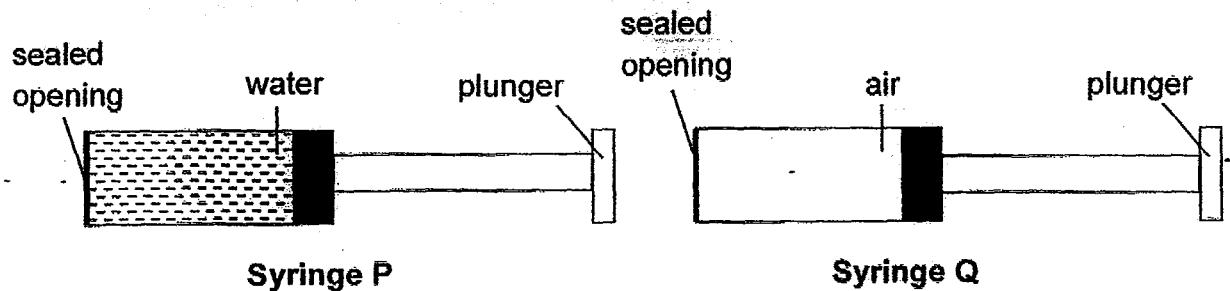
A tick (✓) indicates the presence of the property in the substance.

| | A | B | C |
|---------------------|---|---|---|
| Has mass | ✓ | ✓ | ✓ |
| Has definite shape | | | ✓ |
| Has definite volume | ✓ | | ✓ |

Which one of the following shows the correct state of each substance?

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

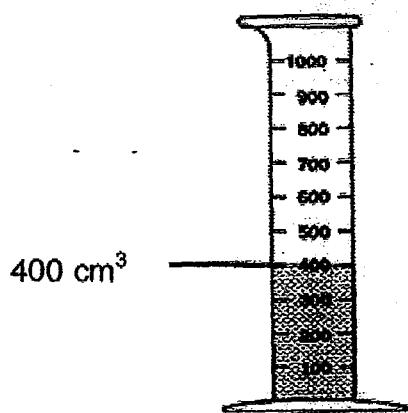
22. Two identical syringes, P and Q, were completely filled with water and air respectively. The openings of both syringes were sealed as shown in the diagram below.



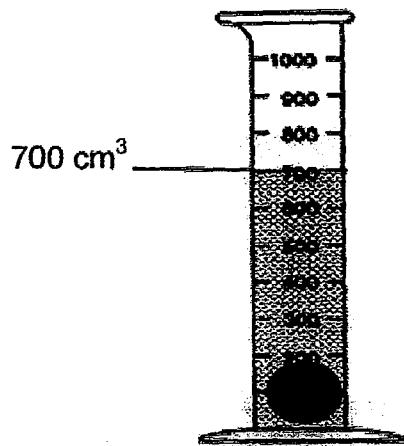
Which one of the following could be Syringe P and Q when the plungers were pushed in?

| | Syringe P | Syringe Q |
|-----|-----------|-----------|
| (1) | | |
| (2) | | |
| (3) | | |
| (4) | | |

23. Jamie filled a measuring cylinder with some water.



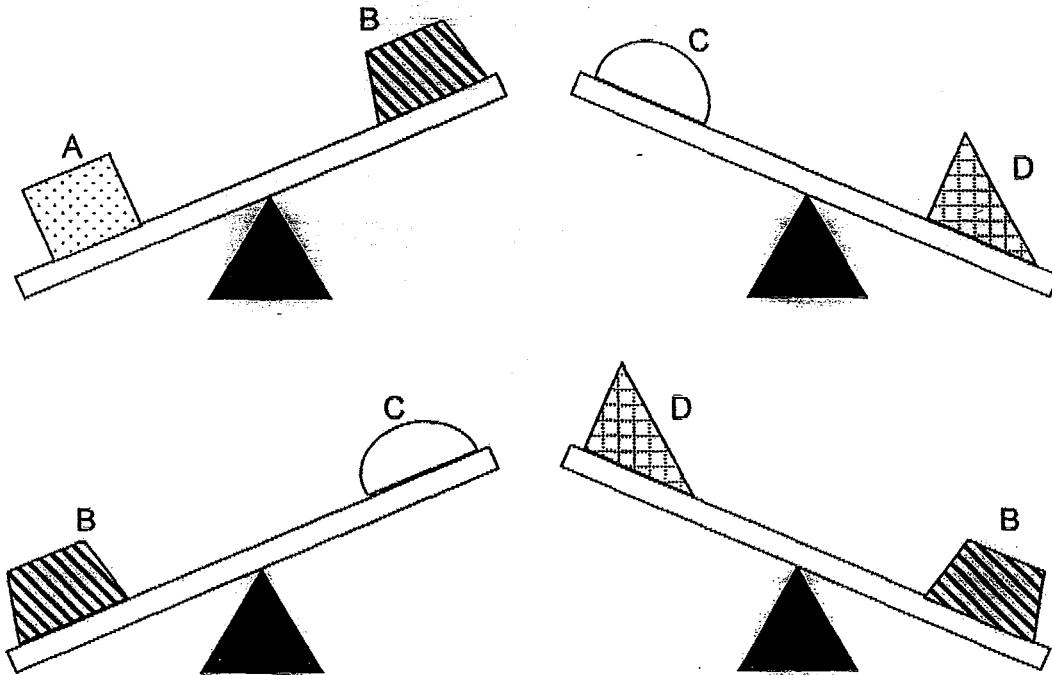
She then placed a metal ball into the same measuring cylinder as shown below.



What is the volume of the metal ball?

- (1) 300 cm³
- (2) 400 cm³
- (3) 700 cm³
- (4) 1100 cm³

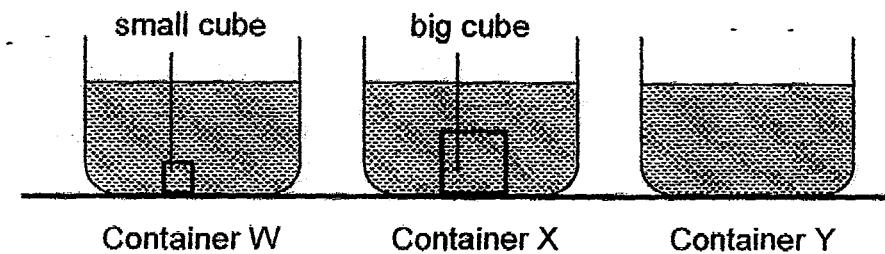
24. Alan wanted to compare the mass of objects A, B, C and D. He placed two objects on a balance each time. The diagrams below show his observation.



Which one of the following arranges the objects A, B, C and D from the greatest mass to the least mass?

| | Greatest → Least | | | |
|-----|------------------|---|---|---|
| (1) | A | B | D | C |
| (2) | A | C | B | D |
| (3) | D | B | C | A |
| (4) | D | B | A | C |

25. Ken had three identical containers, W, X and Y. He placed two cubes of different sizes in containers, W and X. He then poured water into each container until the water levels in the three containers were of the same height as shown below.



Which one of the following could possibly be the amount of water Ken poured into container W, X and Y respectively?

| Amount of water (ml) in container | | |
|-----------------------------------|-----|-----|
| | W | X |
| (1) | 500 | 500 |
| (2) | 500 | 700 |
| (3) | 700 | 500 |
| (4) | 700 | 900 |

26. Shane placed the N-pole of a magnet near one end of object H as shown in the diagram below.



- He observed that object H moved towards the magnet. He then flipped the magnet and placed the S-pole of the magnet near the same end of object H.



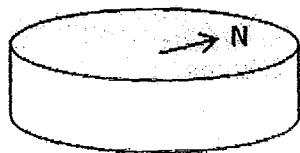
He observed that object H again moved towards the magnet. He repeated the experiment with three other objects, object I, J and K and recorded his observations in the table below.

| Object | Movement of object when N-pole of magnet was placed near the object | Movement of object when S-pole of magnet was placed near the object |
|--------|---|---|
| H | moved towards magnet | moved towards magnet |
| I | moved towards magnet | moved away from magnet |
| J | did not move | did not move |
| K | moved towards magnet | moved towards magnet |

Based on Shane's observations, which object(s) is/are made of magnetic material?

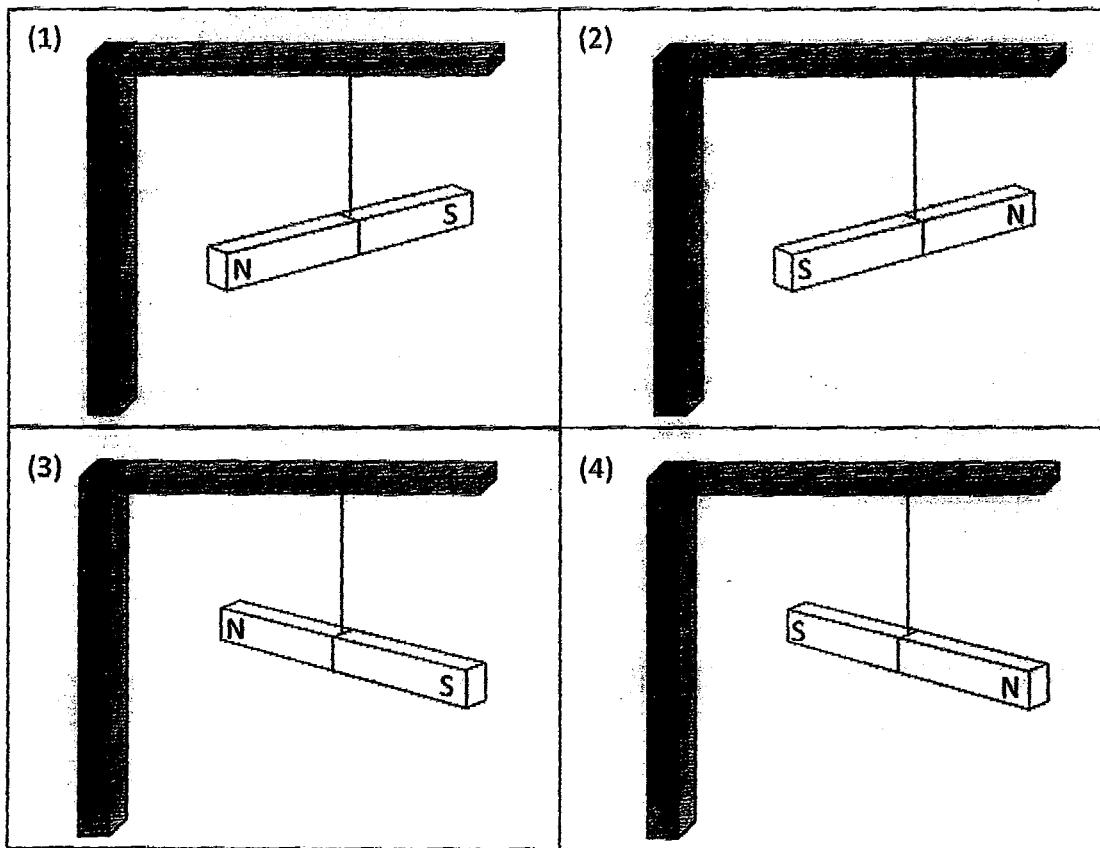
- (1) I only
- (2) J only
- (3) H and K only
- (4) H, I and K only

27. The compass below shows the direction of the needle at rest.

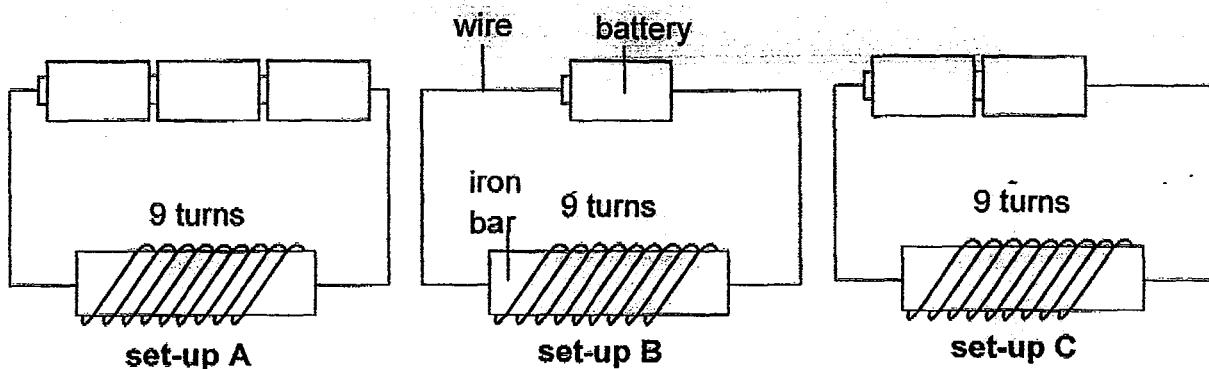


A bar magnet was hung such that it could turn freely.

Which one of the following diagrams below shows the direction of the bar magnet when it comes to rest?



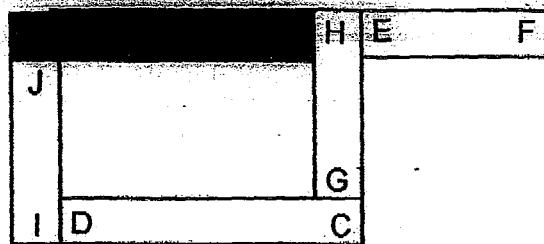
28. Mina set up the following electromagnets using identical iron bars, batteries and wires.



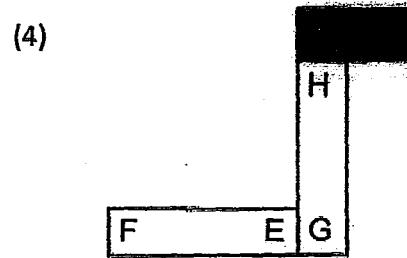
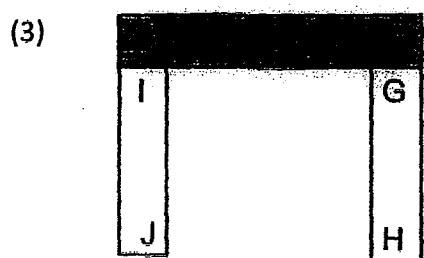
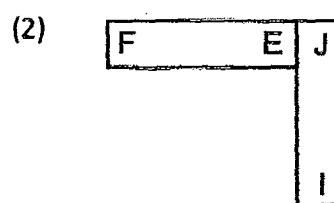
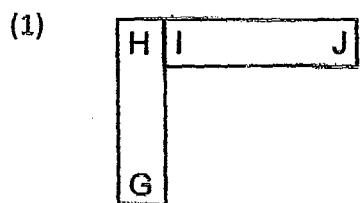
Arrange the set-ups according to the strength of the electromagnet, starting with the one with the greatest magnetic strength.

| magnetic strength | | | |
|-------------------|-----------|---------|---|
| | strongest | weakest | |
| (1) | C | B | A |
| (2) | C | A | B |
| (3) | A | C | B |
| (4) | A | B | C |

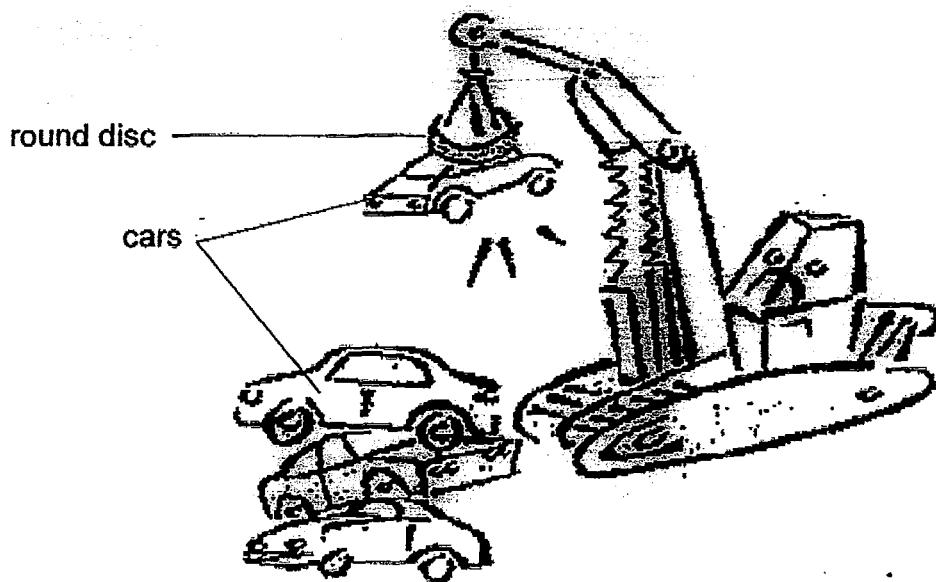
29. An iron bar with ends marked A and B and four magnets with ends marked from C to J can be arranged as shown below.



Which one of the following diagrams shows a possible arrangement of two of the bars?



30. The picture below shows a crane using electromagnet to move cars.



When the electromagnet was activated, the car was attracted to the disc. The crane then moved the car to another position.

When the electromagnet was not activated, the car was not attracted by the disc and it dropped into the new position.

Which one of the following identified the correct materials that were used to make the disc and cars?

| | Disc | Cars |
|-----|-----------|-----------|
| (1) | iron | steel |
| (2) | steel | aluminium |
| (3) | copper | steel |
| (4) | aluminium | aluminium |



SECTION B (40 marks)

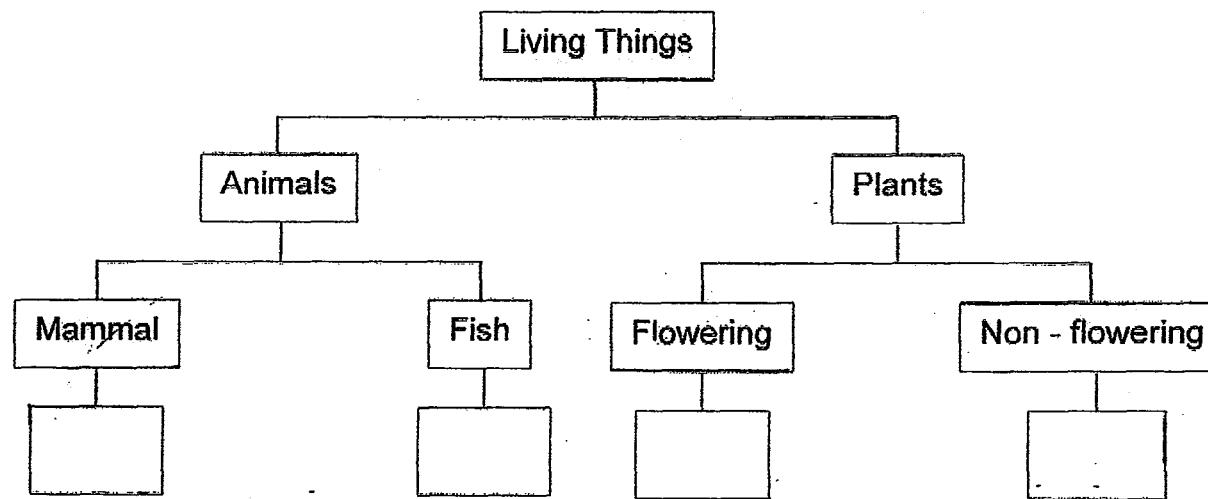
For questions 31 to 44, write your answers clearly in the spaces provided.

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

31. The table below shows some characteristics of 4 living things, A, B, C and D. A tick (✓) indicates the presence of the characteristic.

| Characteristics | A | B | C | D |
|-----------------------------------|---|---|---|---|
| Does it have hair? | ✓ | | | |
| Can it make its own food? | | | ✓ | ✓ |
| Does it reproduce by spores? | | | ✓ | |
| Does it breathe through gills? | | ✓ | | |
| Does it give birth to live young? | ✓ | | | |
| Can it move from place to place? | ✓ | ✓ | | |

- (a) In the classification chart below, classify the living things by writing [2]
A, B, C and D in the correct groups.

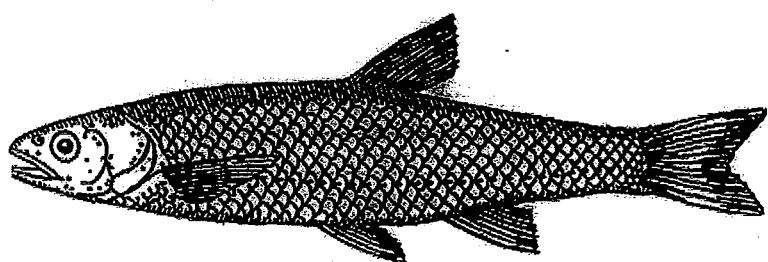
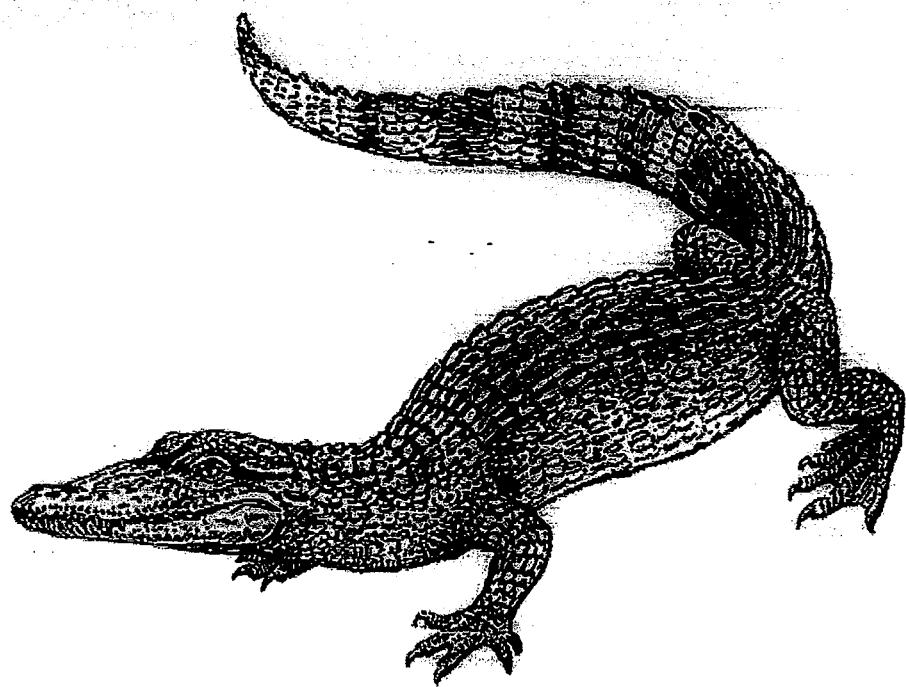


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| | |
|-------|---|
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|-------|---|

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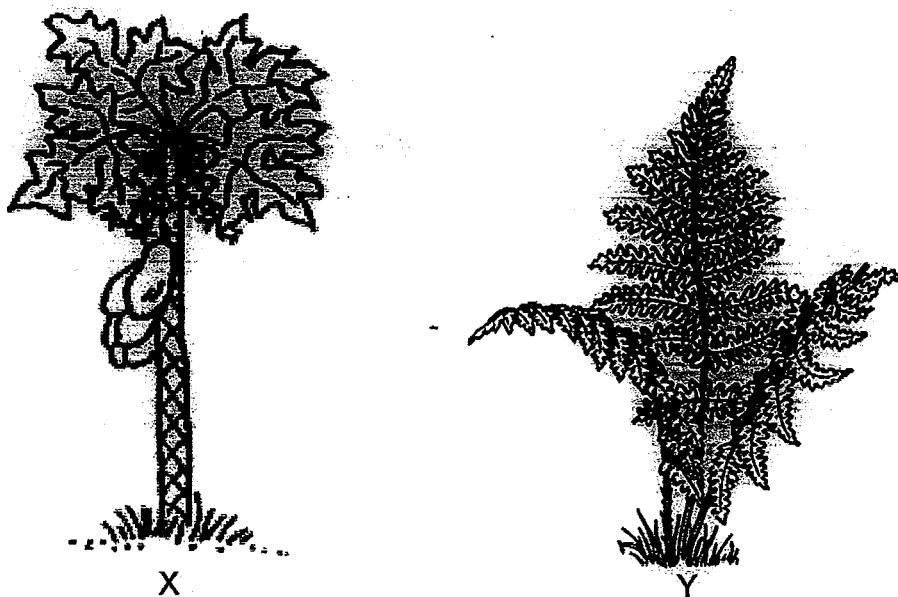
- (b) The diagrams below show a crocodile and a fish, not drawn to scale. David said that a crocodile is a fish because it has scales.



Based on your observation of the crocodile and fish above, do you agree with David? State one reason for your answer. [1]

| | |
|-------|---|
| Score | 1 |
|-------|---|

32. The diagrams below show two organisms, X and Y, not drawn to scale.



Based on your observation only, state 1 similarity and 1 difference [2] between organisms X and Y.

(Do **NOT** compare shape, size and colour.)

| | |
|-------------------|--|
| Similarity | |
| | |
| | |
| Difference | |
| | |

| | |
|-------|----------------------|
| Score | <input type="text"/> |
|-------|----------------------|

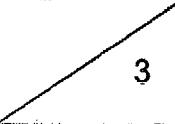
33. The table below shows the time taken for an animal to develop from egg to adult at different temperatures.

| Temperature (°C) | 15 | 21 | 25 | 30 | 33 | 35 |
|--|----|----|----|----|----|----|
| Time taken for egg to develop into adults (days) | 30 | 14 | 10 | 15 | 20 | 25 |

- (a) What is the most ideal temperature for the animal to grow? Give a reason for [1] your answer.

- (b) What is the relationship between the temperature and the number of days [2] taken for the animal to develop into an adult?

| | |
|---------------------|--|
| From 15 °C to 25 °C | |
| | |
| | |
| From 30 °C to 35 °C | |
| | |
| | |

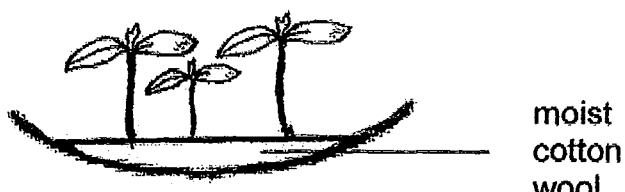
| | |
|-------|---|
| Score |  |
| 3 | |

34. (a) The dish below shows some seeds on a moist cotton wool. Amy left the flask shown below in an enclosed cupboard. She watered the seeds every day. After a week, Amy observed that the seeds have germinated.



- (i) Explain clearly why the seeds germinated in Amy's cupboard. [1]

Amy observed the seedlings shown below after 10 days. Even though Amy kept the cotton wool moist, she found that the seedling had wilted and died in the cupboard.



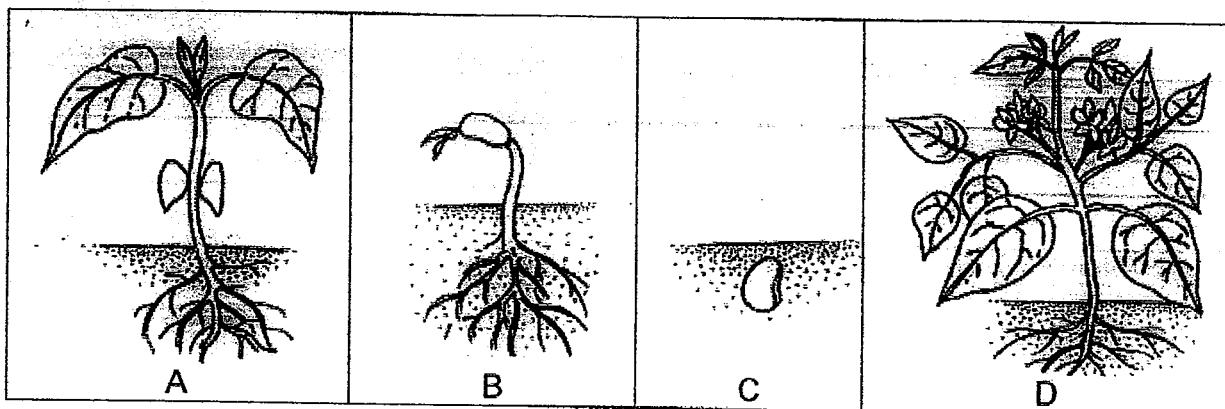
- (ii) Explain why the seedling wilted and died. [1]

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| | |
|-------|---|
| Score | 2 |
|-------|---|

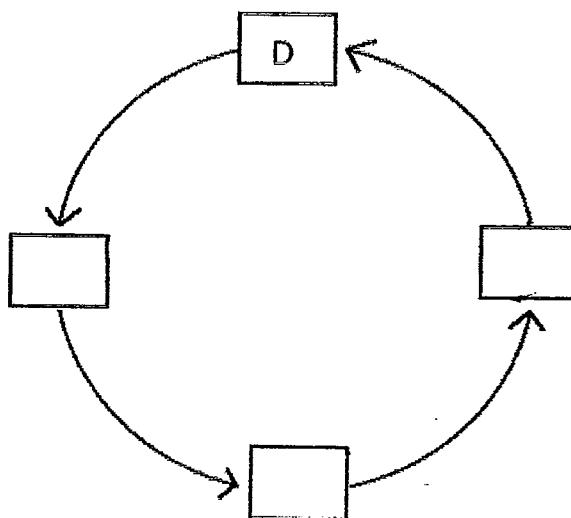
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The pictures below show the different stages of development of a plant.



- (b) Complete the diagram below, with the letters A, B, C and D, to show the correct order of the development stages.

[1]



| | |
|-------|---|
| Score | 1 |
|-------|---|

35. During PE lesson, Julie had to run around the field.

- (a) Name four other systems that work with muscular system to enable Julie to run. [2]

(i) _____

(ii) _____

(iii) _____

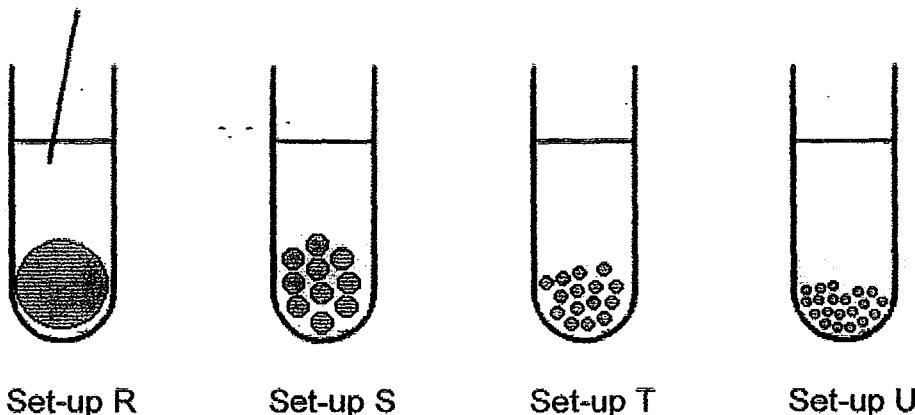
(iv) _____

- (b) Which body system helps to transport digested food to different part of the body? [1]

| | |
|-------|---|
| Score | 3 |
|-------|---|

36. Sam would like to find out if breaking undigested food into smaller pieces helps in digestion. He set up 4 set-ups with the same amount of identical biscuit and equal amount of digestive juice. Each test tube contained the biscuit broken into smaller pieces as shown in the diagram below.

digestive juice



The results are shown in the table below.

| Set-up | R | S | T | U |
|---|----|----|----|----|
| Number of pieces biscuit is broken into | 1 | 10 | 15 | 20 |
| Time taken for the biscuit to be digested (min) | 25 | 20 | 16 | 8 |

- (a) How is the time taken for the biscuit to be digested affected by the number of pieces the biscuit is broken into? [1]

Continue on next page.

| | |
|-------|---|
| Score | 1 |
|-------|---|

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- (b) Based on Sam's experiment, how does chewing food helps in the digestion process? [2]

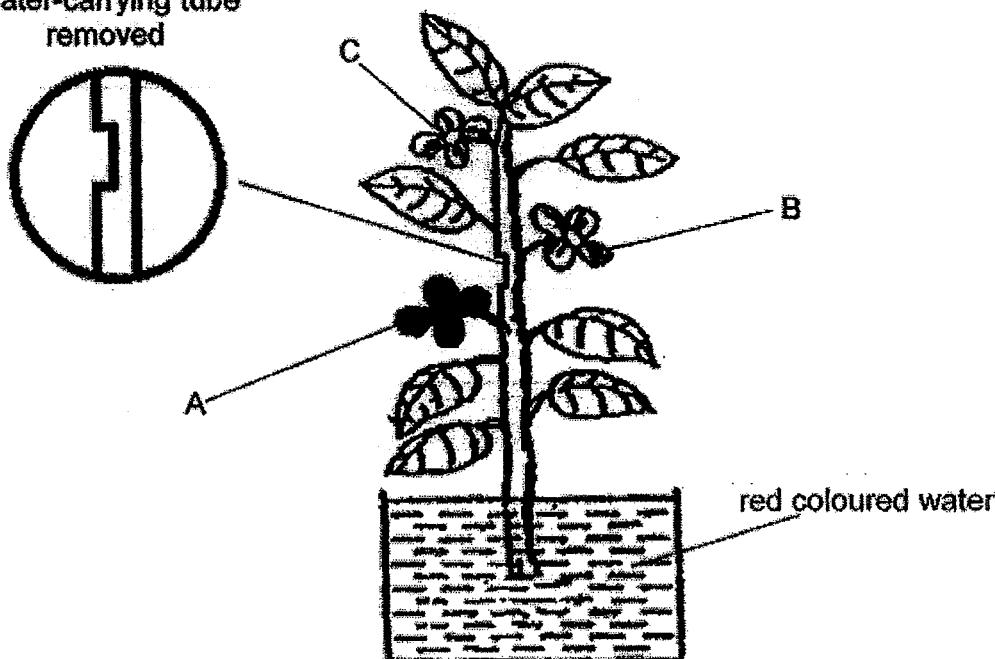
- (c) List all the parts in the digestive system which produce digestive juices. [1]

| | |
|-------|---|
| Score | 3 |
|-------|---|

37.

May placed a plant with white flowers in red coloured water as shown below. She made a cut in the stem and removed the water-carrying tube in the part shown below.

Water-carrying tube removed

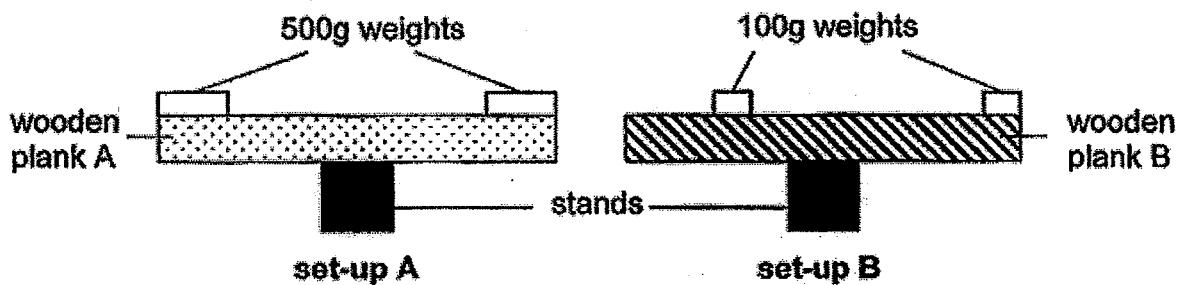


- (a) What is the function of the water-carrying tube? [1]

- (b) After 12 hours, May observed that flower A has become completely red while flowers B and C have streaks of red. Explain May's observation clearly. [2]

| | |
|-------|---|
| Score | 3 |
|-------|---|

38. Ali wanted to find out if wooden plank A is stronger than wooden plank B. He prepared set-ups, A and B, using plank A and B. He placed each plank on a stand and added two identical weights on each plank as shown in the diagram below.



Ali's teacher commented that Ali's experimental set-up is not a fair test.

- (a) Describe two changes that Ali should make to set-up B, in order to make the experiment a fair test. [2]

(i) _____

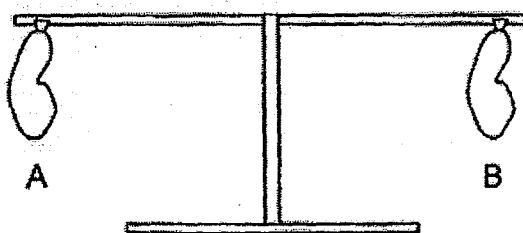
(ii) _____

- (b) After making the changes in his set-up, Ali added another two identical weights on each end for each plank. He continued to add identical weights to each plank.

How can Ali determine which plank, A or B, is stronger? [1]

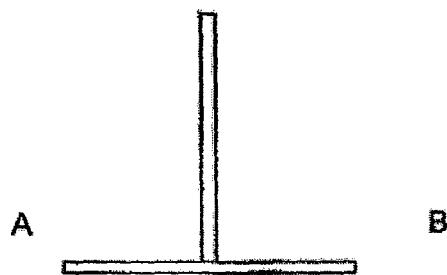
| | |
|-------|---|
| Score | 3 |
|-------|---|

39. Jenny hung two identical deflated balloons on a balance as shown below.



Then she inflated balloon B.

- (a) In the diagram below, draw how the balance will look like when balloon B is inflated. [1]



- (b) State a property of air that is shown in your answer in (a). [1]

| | |
|-------|---|
| Score | 2 |
|-------|---|

40. Tom filled a basin with some water. An empty inverted plastic cup was pushed into the basin of water as shown in the set-up below.



- (a) Explain why only some water was able to enter the plastic cup.

[1]

- (b) Tom then made a hole at the bottom of the plastic cup and pushed the cup into the basin of water again.



He observed that more water could enter the plastic cup.

Explain clearly for this observation.

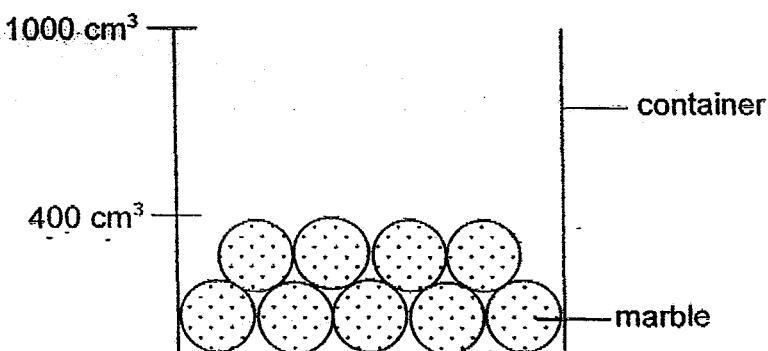
[1]

- (c) Tom predicts that the mass of the water in (b) is smaller. Do you agree? Give a reason for your answer.

[1]

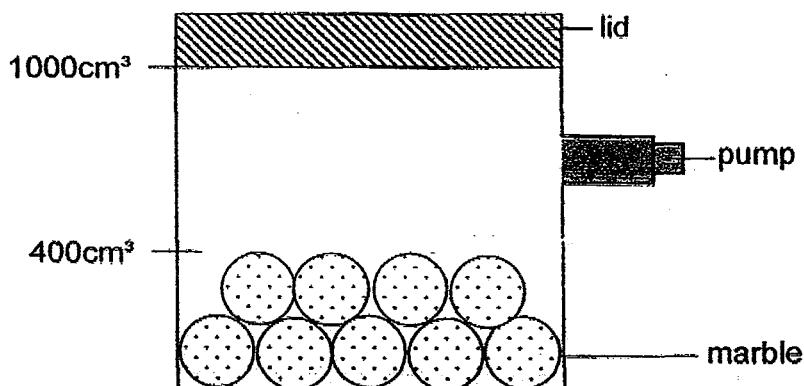
| | |
|-------|---|
| Score | 3 |
|-------|---|

41. John had an empty container with a capacity of 1000 cm^3 . He placed some marbles into the container until the marbles reached the 400 cm^3 mark as shown below.



- (a) John poured water into the container until the container is full. He noticed that he could pour in 700 cm^3 of water into the container. Explain why. [1]

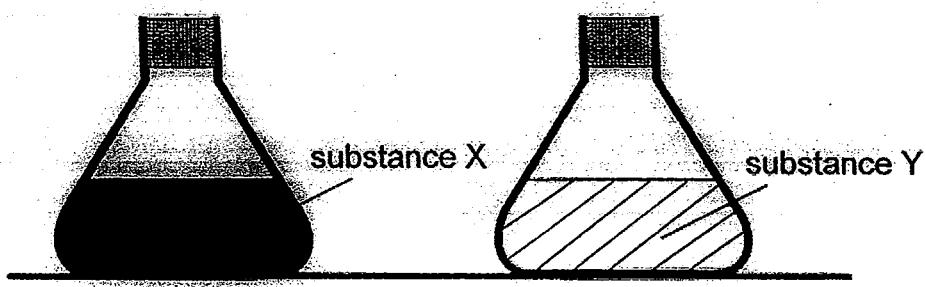
- (b) Using another identical set-up, John sealed the container and inserted a pump. He wanted to pump air, instead of water into the container.



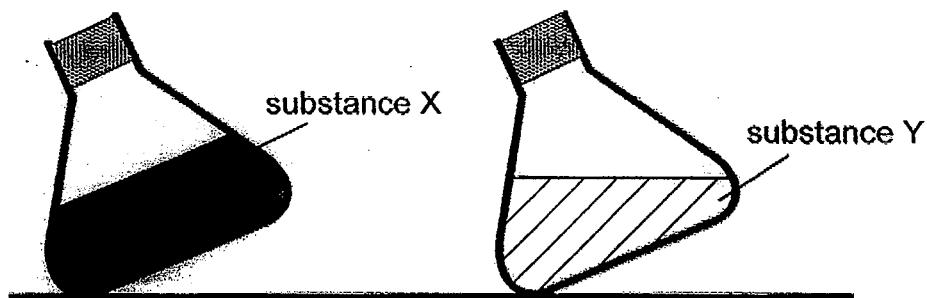
Would John be able to pump in 750 cm^3 of air into the container? Explain your answer. [1]

| | |
|-------|---|
| Score | 2 |
|-------|---|

42. Fred placed 500 ml of substance X and Y respectively into two identical flasks.



Fred then tilted the flasks.



- (a) What is the state of substance X and Y?

[1]

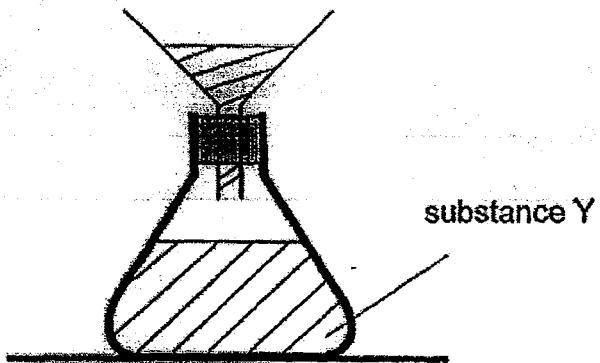
X: _____ Y: _____

- (b) Explain your answer in (a).

[1]

| | |
|-------|---|
| Score | 2 |
|-------|---|

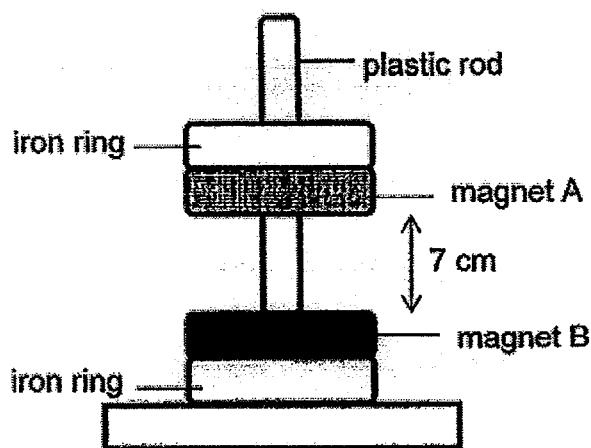
- (c) Fred added more substance Y into the sealed flask as shown below.



He realized that he was unable to put in additional amount of substance Y into the sealed flask to fill it up completely. Explain why. [1]

| | |
|-------|---|
| Score | 1 |
|-------|---|

43. Jenny had four rings, A, B, C and D. Only two rings were magnets and the other two rings were made of iron. She placed the four rings through a plastic rod as shown below.



The distance between magnet A and magnet B is 7 cm.

- (a) Explain why there was a distance of 7 cm between magnets A and B. [1]

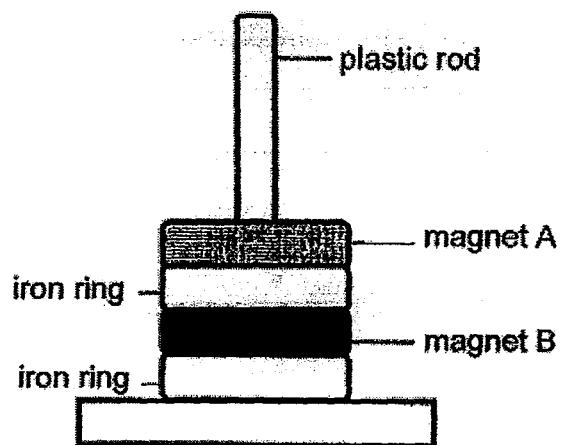
- (b) Jenny heated magnet B and placed the rings back in the same order. She noticed that the distance between magnets A and B decreased to 4 cm. Explain her observation clearly. [1]

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| | |
|-------|---|
| Score | 2 |
|-------|---|

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- (c) Jenny changed the position of magnet A and the iron ring as shown below.

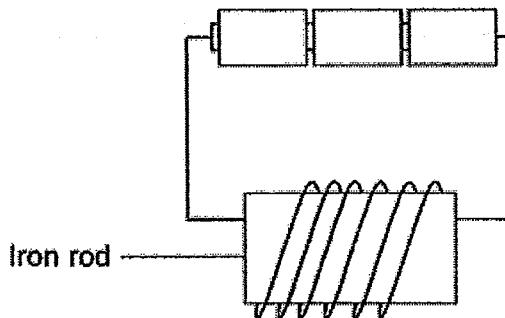


Explain why no space was observed between the four rings.

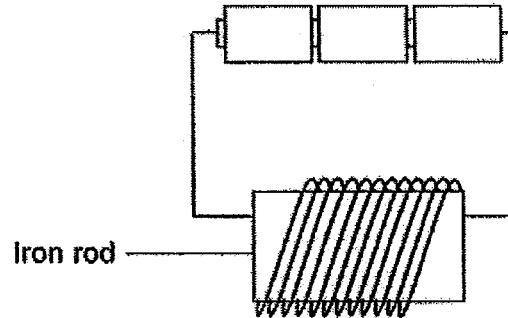
[1]

| | |
|-------|---|
| Score | 1 |
|-------|---|

44. Steven had 2 identical iron rods. He wound different number of turns of wire around each iron rod. The ends of the wires were connected to identical batteries as shown in set-ups X and Y below.



Set-up X



Set-up Y

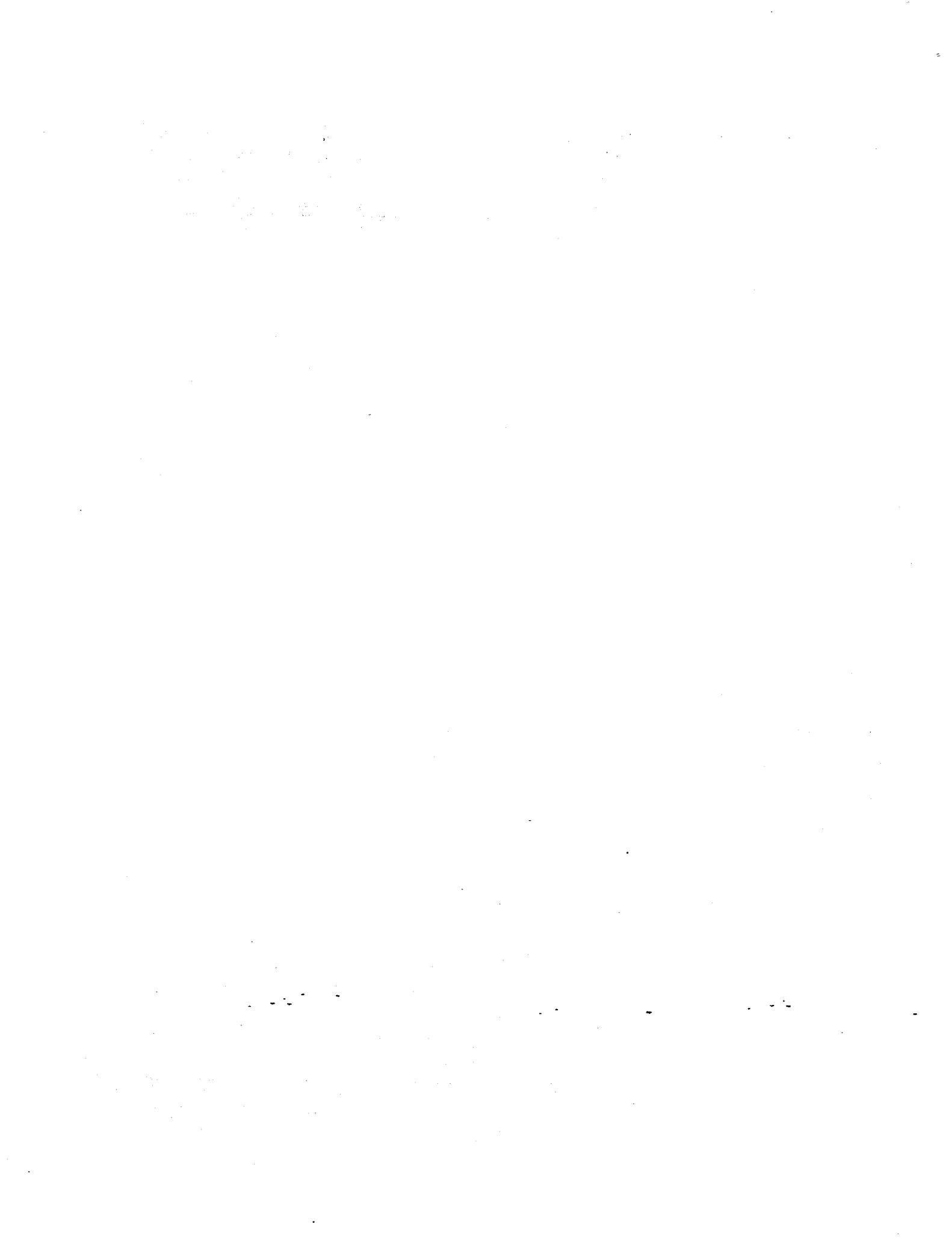
For each set-up, Steven tested the strength of the electromagnet by counting the number of steel paper clips that each could attract. He recorded his results in the table as shown below.

| Set-up | Number of turns of wire round the iron rod | Number of paper clips attracted to magnetised iron rod |
|--------|--|--|
| X | 6 | 7 |
| Y | 12 | 16 |

- (a) What is the relationship between the number of turns of the wire round an iron rod and its magnetic strength? [1]

- (b) Name ANOTHER variable that Steven must keep the same to ensure that he carried out a fair test. [1]

- (c) If the iron rod was replaced with an aluminium rod in Set-up Y, predict how many paper clips will be attracted by the aluminium rod when the number of coils around it was increased to 25? Give a reason for your answer. [1]



Answer Key

EXAM PAPER 2015

SCHOOL : RAFFLES GIRLS' PRIMARY SCHOOL

SUBJECT : P4 SCIENCE

TERM : SA1

ORDER CALL : MR GAN @ 92998971 92475053 86065443

| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2 | 3 | 2 | 4 | 4 | 3 | 4 | 1 | 2 | 2 |
| Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Q20 |
| 1 | 4 | 3 | 4 | 1 | 4 | 1 | 1 | 1 | 2 |
| Q21 | Q22 | Q23 | Q24 | Q25 | Q26 | Q27 | Q28 | Q29 | Q30 |
| 2 | 4 | 1 | 1 | 3 | 4 | 2 | 3 | 3 | 1 |

31) a)A , B , D , C b)No, Crocodile has legs but fish has fins.

32) Similarity= Both have leaves

Difference=X has fruits while Y does not have

33)a)25_oc. As it took the least time taken for egg to develop into adult.

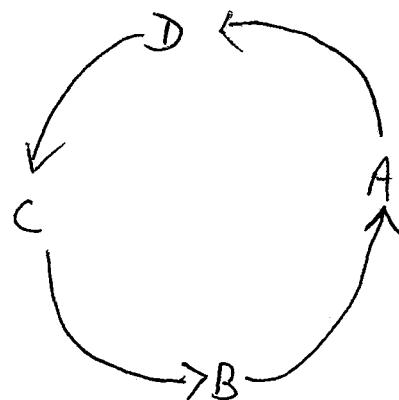
b) From 15_oc to 25_oc= The higher the temperature ,the less time it takes for egg to develop into adults

from 30_oc to 35_oc= The higher the temperature, the more time it take for egg to develop into adults.

34)a)i) The seeds had air, water and warmth.

ii) The plant needed light to make food.

b)



35)a)i) Skeletal system

ii) Respiratory system

iii) Digestive system

iv) Circulatory system

b) Circulatory system

36)a) The smaller the pieces are, the less time it takes for the biscuit to be digested.

b) Chewing helps to increase the surface area of the food, so the digestive juices act on it and digest it faster.

c) Mouth, stomach and small intestine.

37)a) It is to carry from the roots to all parts of the plant.

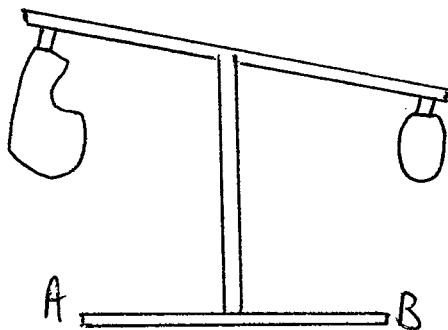
b) The water-carrying tubes to flowers B and C had been damaged. Hence, little water was able to go up to the flowers. The water-carrying tubes leading to flower A is intact and could transport water to flower.

38)a)i) Put the weights at the end of wooden plank B

ii) The mass of the weight on wooden plank B should be the same as the weights on wooden plank B.

b) The stronger plank will be the one which can hold a greater amount of weight before it breaks.

39)a)



b) Air has mass.

40)a) Air that is trapped occupies space un the plastic cup. Since air can be compressed, water could enter the cup to occupy space.

b) Air which occupied space in the plastic cup could scape through the hole, so more water could enter the cup to occupy space.

c) There will be no change in the mass as the volume of water remain in the basin remained the same.

41)a) There were space between the marble which allow water to flow in to occupy the space.

b) The rest of the space in the container was occupied by the marbles and air can be compressed.

42)a) X: Solid Y: Liquid

b) X has a definite shape while Y does not.

c) The air which occupied space in the sealed flask could not escape so there was no space for substance Y to occupy.

43)a) The magnets repelled as like poles were facing each other.

b) Heating causes magnet B to lose some of the magnetism.

c) Iron is magnetic material so the iron rings did not allow magnetism to pass through.

44)a) The greater the number of turns of wire around the iron, the greater its magnetic strength.

b) the type of wire.

c) O. As aluminium is a non-magnetic material, therefore cannot be magnetized.



RAFFLES GIRLS' PRIMARY SCHOOL
SEMESTRAL ASSESSMENT (2)
2009

Name : _____ Index No.: _____ Class: P4 _____

| | | |
|----------------------------|-------|-------|
| Your score out of 90 marks | | |
| Highest score | Class | Level |
| Average score | | |
| Parent's signature | | |

30th October 2009

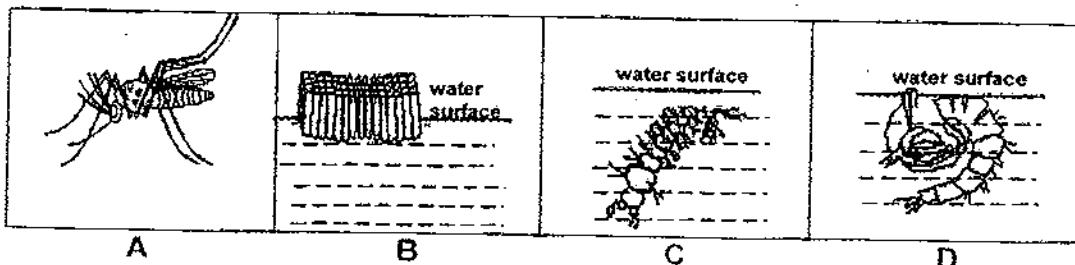
SCIENCE

ATT: 1 h 20 min

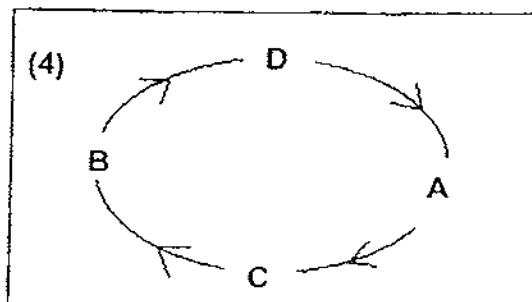
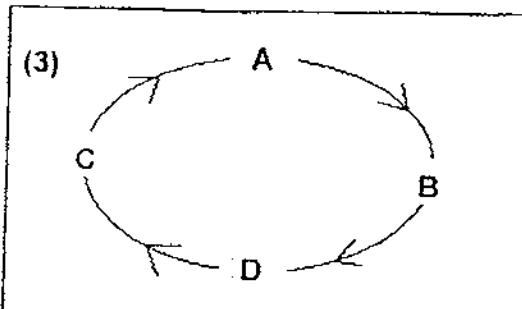
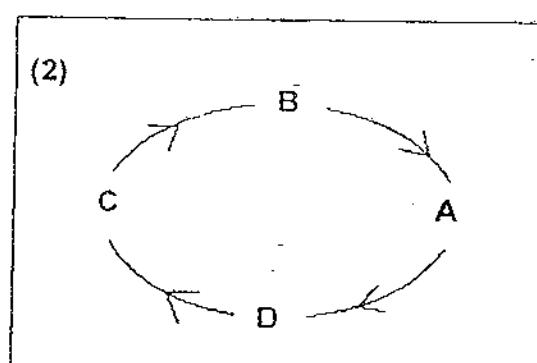
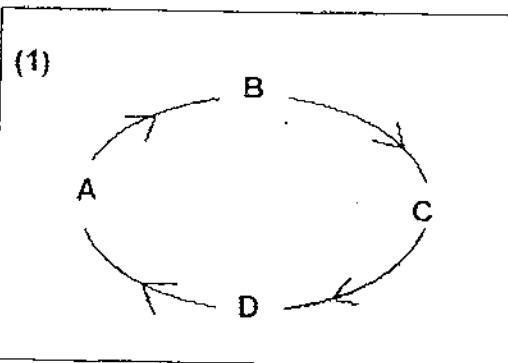
SECTION A (25 x 2 marks)

For each question from 1 to 25, 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 stages in the life cycle of a mosquito are shown below.
 [Stages A, B, C and D are NOT arranged in order.]



Which one of the following diagrams shows the correct order of the stages in the life cycle of a mosquito?



2. Fandi did a study on two animals, X and Y.

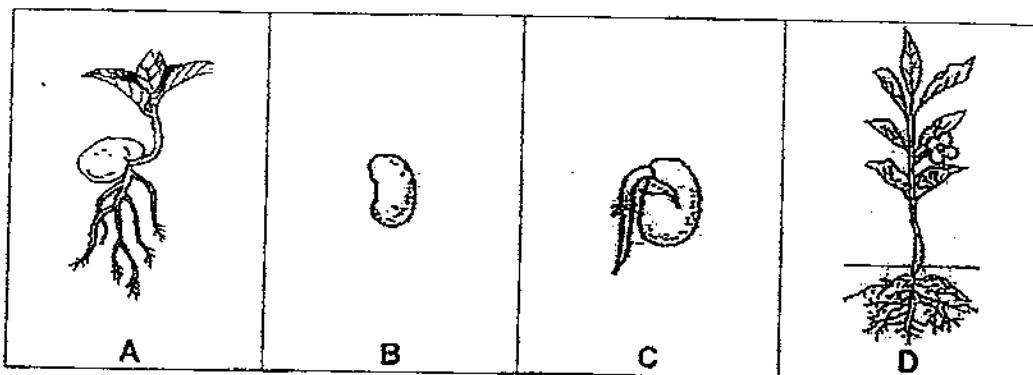
He recorded his observations in the table below.
A tick (✓) in the box indicates the observation made of the animal.

| observation | animal X | animal Y |
|---------------------------------------|----------|----------|
| There are 3 stages in its life cycle. | ✓ | |
| Its eggs are laid on land. | ✓ | ✓ |
| Its young do NOT have wings. | ✓ | ✓ |

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

| | animal X | animal Y |
|-----|-----------|-----------|
| (1) | chicken | mosquito |
| (2) | butterfly | chicken |
| (3) | cockroach | butterfly |
| (4) | mosquito | cockroach |

In the diagrams below, A, B, C and D, represent the different stages in the life cycle of a flowering plant.



Based on the diagrams above, answer questions 3 and 4.

3. Which one of the following shows the correct order of stages in the life cycle of a flowering plant?

| | 1st stage | | | → | last stage |
|-----|-----------|---|---|---|------------|
| (1) | A | B | C | | D |
| (2) | B | C | A | | D |
| (3) | C | D | B | | A |
| (4) | D | A | C | | B |

4. Which of the following does the flowering plant need at stage A to carry out photosynthesis?

- A light
- B heat
- C water
- D oxygen

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

5. Four pupils, Alison, Bakar, Chris and Devi, made the following statements about a plant.

Alison : Flowers develop from the buds.

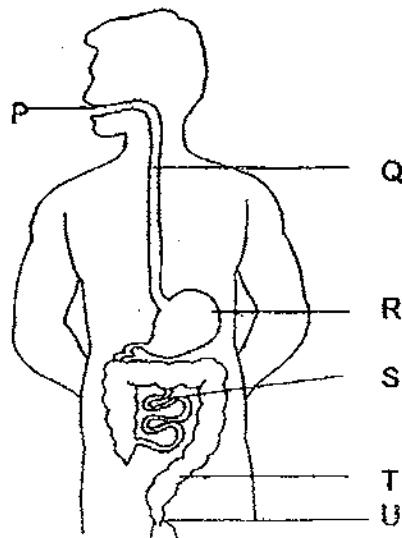
Bakar : A seed cannot grow without light.

Chris : The seedling makes its own food when its first shoot appears.

Devi : Seeds need air, water, warmth and carbon dioxide to germinate.

Who made the correct statements?

The diagram below shows parts of the digestive system of a human.



Based on the diagram above, answer questions 6, 7, 8, 9 and 10.

6. Which of the sentences below best describe(s) the teeth present in P?

- A They speed up digestion.
 - B They grind the food in P into smaller pieces.
 - C They produce saliva to moisten the food in P.
 - D They break down the food so that it can be digested easily.

7. Which of the following statements describe(s) correctly the function(s) of the digestive juices in P?

- A It softens the food in P.
 - B It helps to digest the food in P.
 - C It removes water from the food in P.
- | | |
|------------------|------------------|
| (1) A only | (2) C only |
| (3) A and B only | (4) B and C only |

8. Which one of the following sets best describes what take place at Q, R and S correctly?

| | Q | R | S |
|-----|-----------------------------|-----------------------------|-----------------------------|
| (1) | allows food to flow through | digestion takes place | digested food is absorbed |
| (2) | digestion takes place | allows food to flow through | digested food is absorbed |
| (3) | water is being removed | digestion takes place | allows food to flow through |
| (4) | allows food to flow through | digested food is absorbed | digestion takes place |

9. In which one of these organs, Q, R, S or T, is water being removed?

- | | |
|-------|-------|
| (1) Q | (2) R |
| (3) S | (4) T |

10. The table below shows a comparison between what happen at S and T.

| | at S | at T |
|---|---|--|
| A | Food is being digested. | Food is completely digested. |
| B | It passes digested food to T for further digestion. | Undigested food is absorbed into the blood stream. |
| C | Food is digested completely. | Undigested food is passed to U for removal. |

Which one of the following sets of comparisons is/ are correct for both S and T?

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

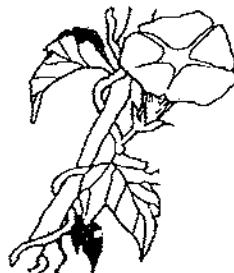
11. The following box shows a list of different functions of the various parts of a land plant.

- | | |
|---|--|
| A | makes food for the plant |
| B | takes in water and mineral salts |
| C | contains and protects the seeds |
| D | holds the plant firmly to the ground |
| E | supports and spreads out the branches and leaves |
| F | transports food, water and mineral salts to all parts of the plant |

Which one of the following parts of the plant is matched correctly to its functions?

| | part of a plant | functions |
|-----|-----------------|-----------|
| (1) | leaf | A and D |
| (2) | stem | E and F |
| (3) | fruit | A and B |
| (4) | root | C and E |

12. The diagrams below show plant X and plant Y.



plant X



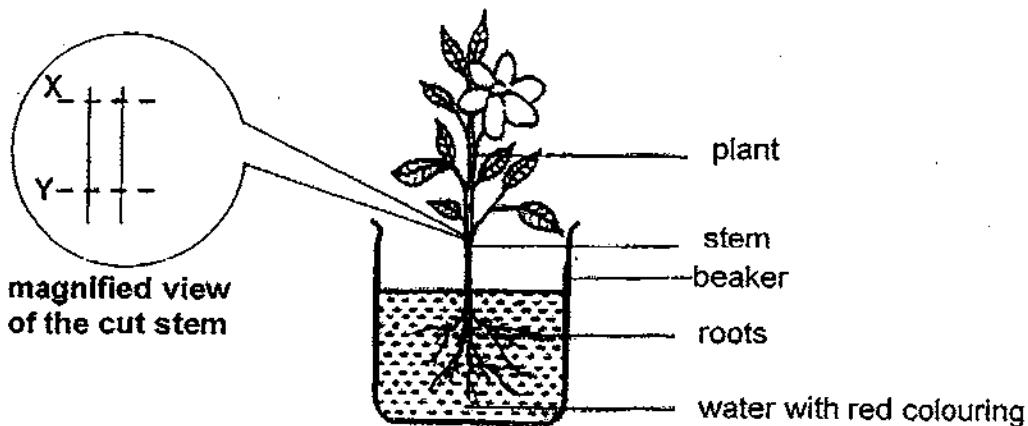
plant Y

Which one of the statements below is true about both plants X and Y?

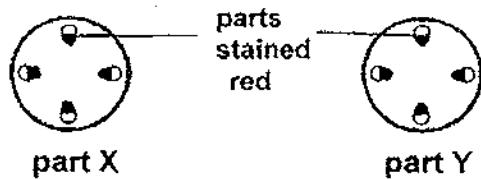
- (1) Both plants have weak stems.
- (2) Both plants do not have fruits.
- (3) Both plants use their roots to cling onto supports.
- (4) Both plants need to cling onto supports to reach out for food.

13. Bethany placed a plant in a beaker filled with red-coloured water.

After a day, she observed that some parts of the stem, leaves and flower of the plant turned red. She cut the stem of the plant at two parts, X and Y, as shown in the diagram below.

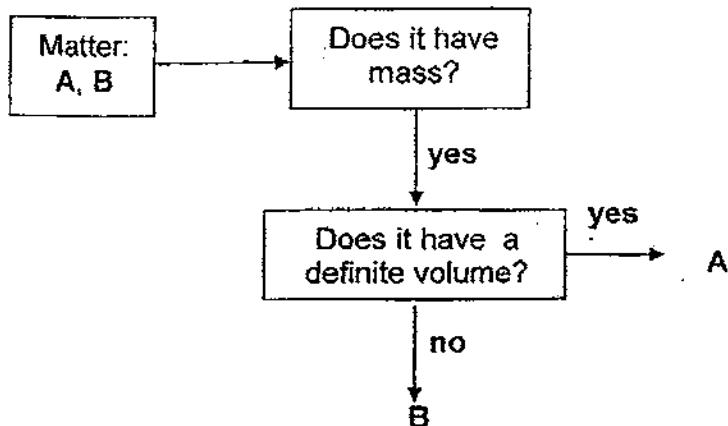


Bethany observed that the cross-sections of parts X and Y look like these:



What could Bethany conclude from her experiment?

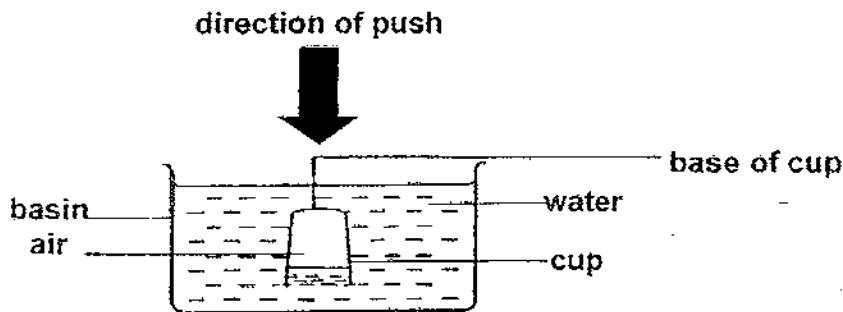
14. The flow chart below is used to differentiate matter A and matter B.



Which one of the following pairs identifies A and B correctly?

| | A | B |
|-----|-------|--------|
| (1) | gas | liquid |
| (2) | solid | gas |
| (3) | gas | solid |
| (4) | solid | liquid |

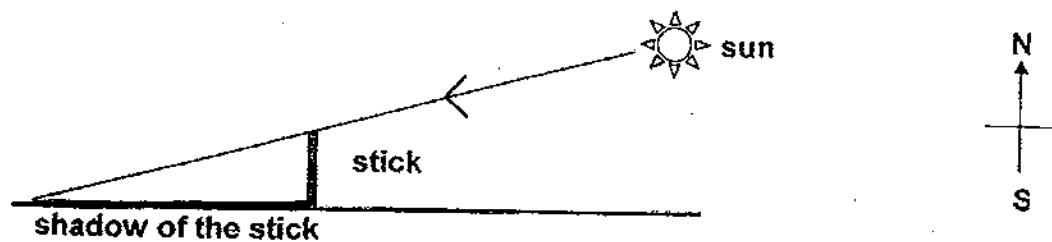
15. John pushed an inverted plastic cup into a basin of water as shown in the diagram below.



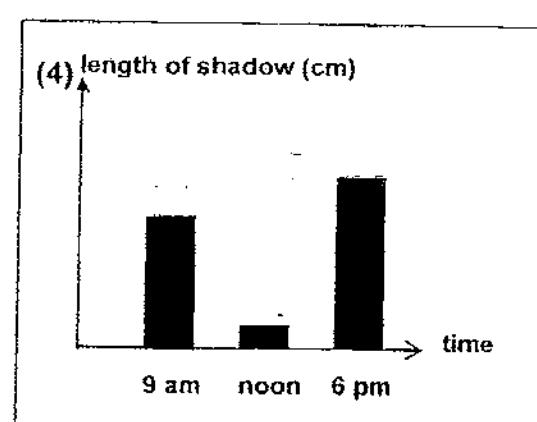
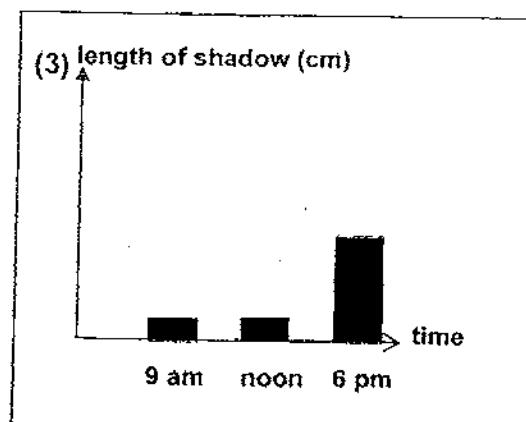
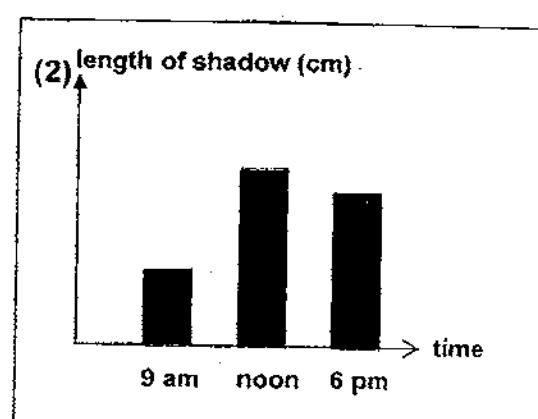
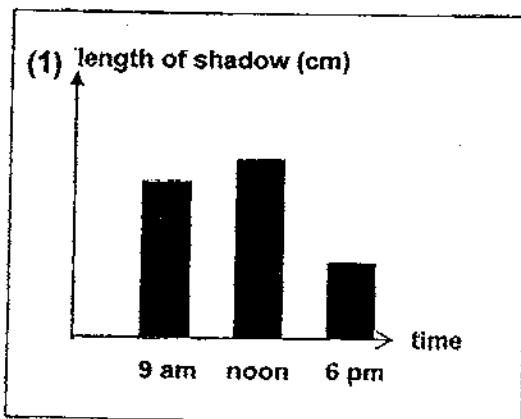
John noticed that the cup was NOT filled completely with water.
How could John fill the cup completely with water?

- A Add more water into the basin
 - B Tilt the cup slightly at an angle
 - C Make a hole at the base of the cup
 - D Push the cup straight down directly to the bottom of the basin
- | | |
|------------------|------------------|
| (1) A only | (2) C only |
| (3) A and D only | (4) B and C only |

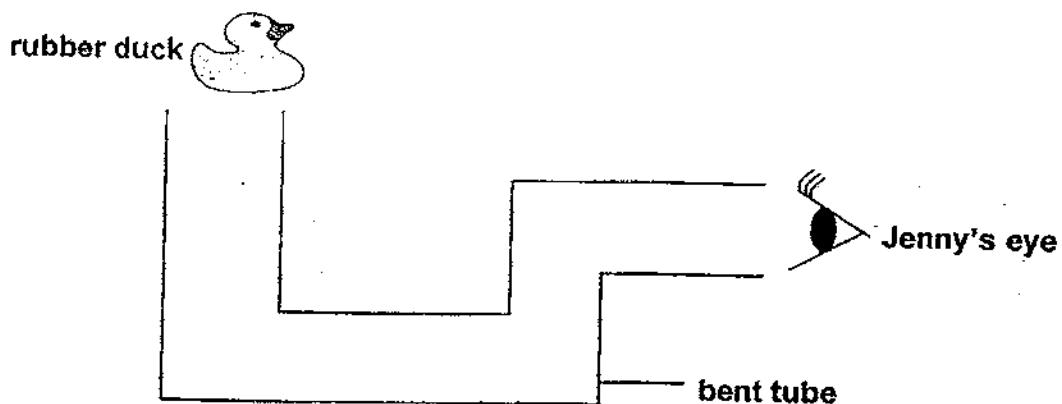
16. A stick is stuck to the ground. The rays from the sun fall on the stick as shown in the diagram below.



Which one of the following diagrams shows correctly the length of the shadow of the stick from 9 a.m. to 6 p.m.?

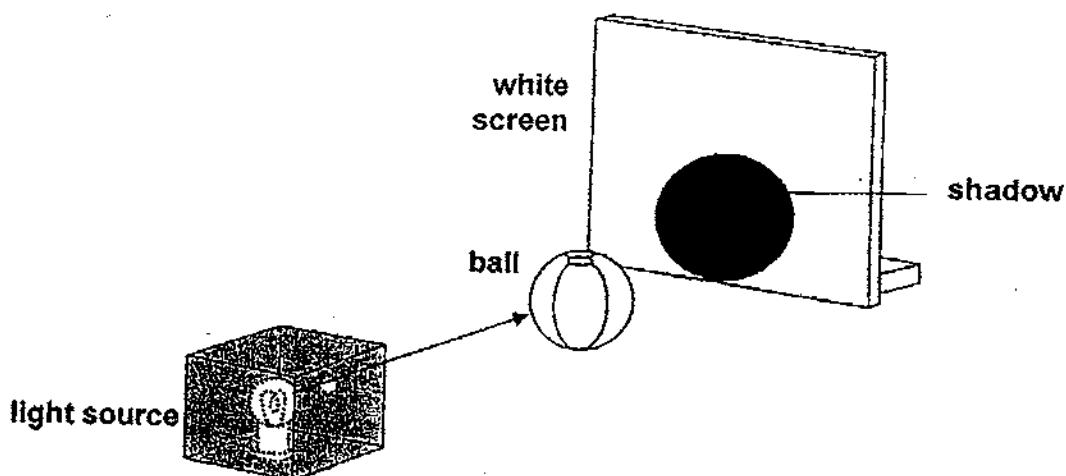


17. Jenny used the following apparatus to see a rubber duck at one end of a bent tube.



What was the least number of mirrors that Jenny would need to put into the bent tube to see the rubber duck?

18. When Ali switched on the light source, a dark shadow of the ball was cast on the screen as shown below.

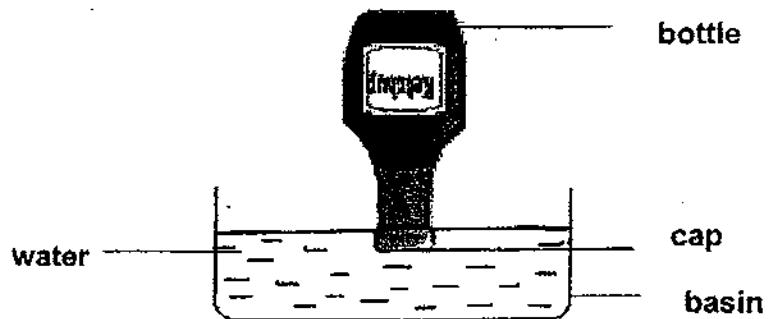


What would happen to the shadow of the ball when the ball was moved nearer to the screen?

[NOTE: The ball moved along the path of light.]

- A The shadow of the ball became larger.
 - B The shadow of the ball became smaller.
 - C The shape of the shadow remained the same.
-
- (1) A only
 - (2) C only
 - (3) A and C only
 - (4) B and C only

19. Dalia could NOT open the cap of a bottle. Her mother told her to place the cap of the bottle into a basin of hot water as shown in the diagram below.

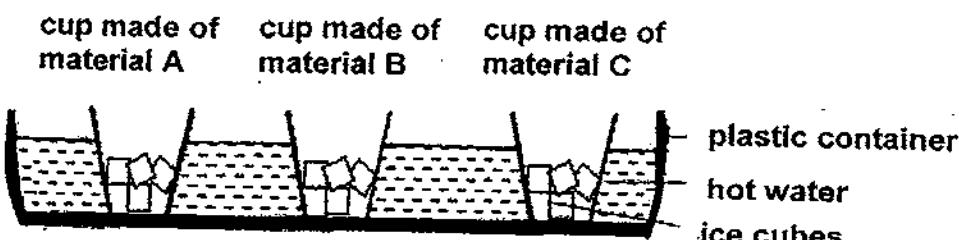


Which one of the following statements explains how the bottle cap could be removed?

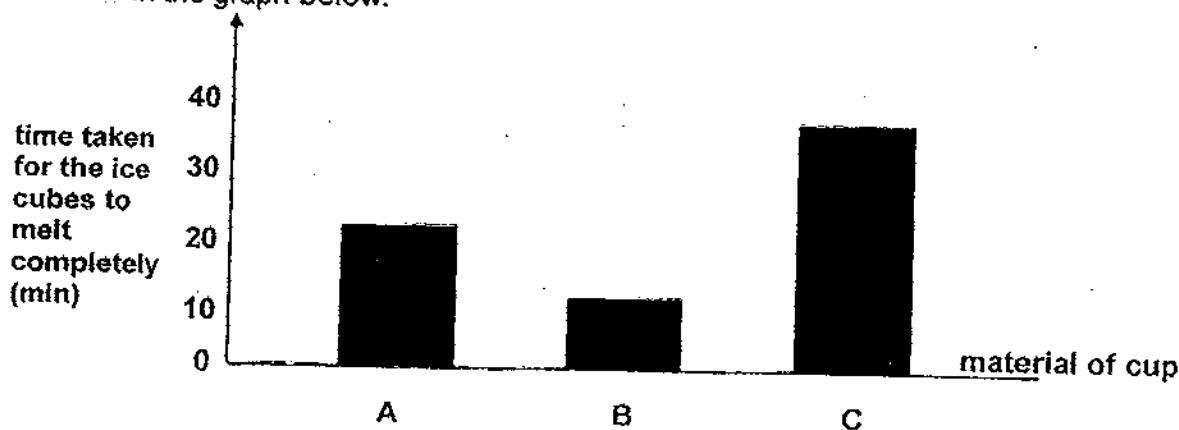
- (1) The hot water caused the cap to expand.
- (2) The hot water caused the cap to contract.
- (3) The hot water caused the bottle to contract.
- (4) The hot water caused the air in the bottle to expand.

Wendy had 3 cups of the same size. Each cup was made of a different material, A, B and C, of the same thickness. She put an equal amount of ice cubes into each cup.

Then, Wendy placed all the cups into a plastic container of hot water as shown below.



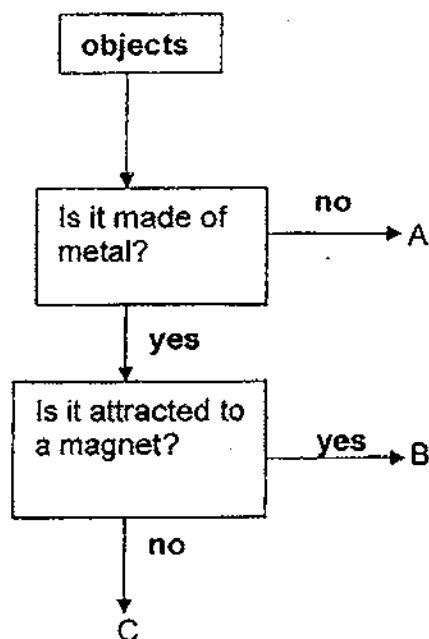
Wendy recorded the time taken for the ice cubes to melt completely in each cup in the graph below.



Based on the information above, answer questions 20 and 21.

20. What was the aim of Wendy's experiment?
- To find out how ice cubes melt
 - To show the different states of water
 - To find out if water is a good conductor of heat
 - To show that different materials conduct heat at different rates
21. Which of the following statements explain(s) correctly why the ice cubes take the longest time to melt in the cup made of material C?
- A Material C is the poorest conductor of heat.
 B Heat could not pass through the cup made of material C easily.
 C Heat in the cup made of material C was transferred to the water in the plastic container.
- C only
 - A and B only
 - B and C only
 - A, B and C

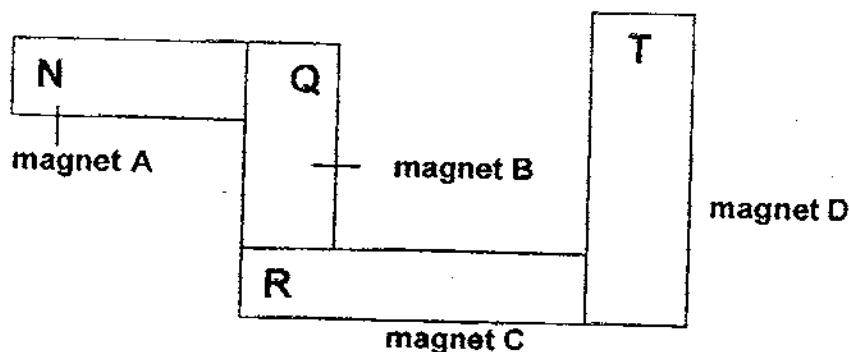
22. Qingru made use of the flow chart below to classify 4 objects: an eraser, a piece of aluminium foil, a copper coin and a steel can.



Which one of the following sets identifies correctly objects A, B and C?

| | A | B | C |
|-----|----------------|----------------|-----------------------------|
| (1) | eraser | steel can | aluminium foil, copper coin |
| (2) | copper coin | aluminium foil | steel can, eraser |
| (3) | eraser | copper coin | steel can, aluminium foil |
| (4) | aluminium foil | steel can | copper coin, eraser |

23. Sandra arranged 4 bar magnets, A, B, C and D, in the manner as shown below.

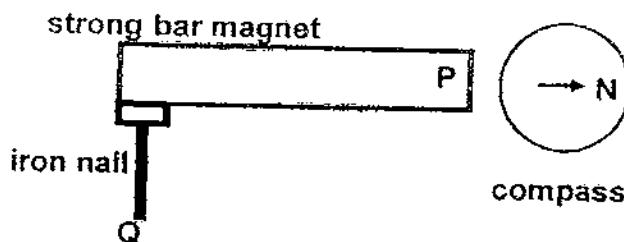


The magnets were attracted to one another.
The letter N on magnet A indicates its North pole.

What are the poles of magnets B, C and D as indicated by the letters, Q, R and T respectively?

| | Q | R | T |
|-----|-------|-------|-------|
| (1) | South | North | North |
| (2) | South | South | North |
| (3) | North | North | South |
| (4) | North | South | South |

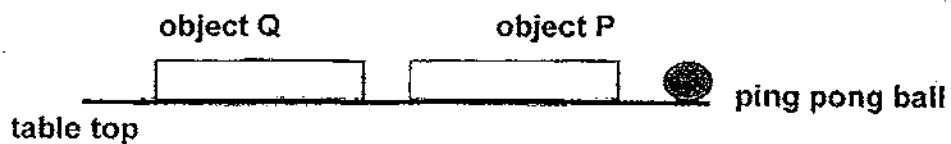
24. Charmaine placed a compass near end P of a strong bar magnet as shown in the diagram below.



Which one of the following represents correctly the poles at P and Q?

| | P | Q |
|-----|-------|-------|
| (1) | South | South |
| (2) | North | North |
| (3) | North | South |
| (4) | South | North |

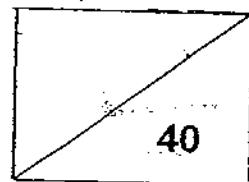
25. Jaemie placed a ping pong ball at the edge of a table.



When she put object Q near to object P as shown in the diagram above, the ping pong ball was pushed off the table by object P.

Which one of the following statements best describes object P and object Q?

- (1) Object P is a magnet and object Q is made of a magnetic material.
- (2) Object Q is a magnet and object P is made of a magnetic material.
- (3) Both P and Q are magnets with their like poles facing each other.
- (4) Both P and Q are magnets with their unlike poles facing each other.



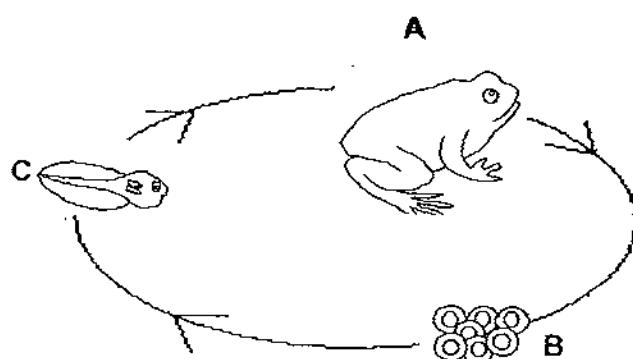
Name: _____ Index No : _____ Class: P4 _____

SECTION B (40 marks)

For questions 26 to 38, 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.

26. The diagram below shows the different stages involved in the life cycle of animal X.



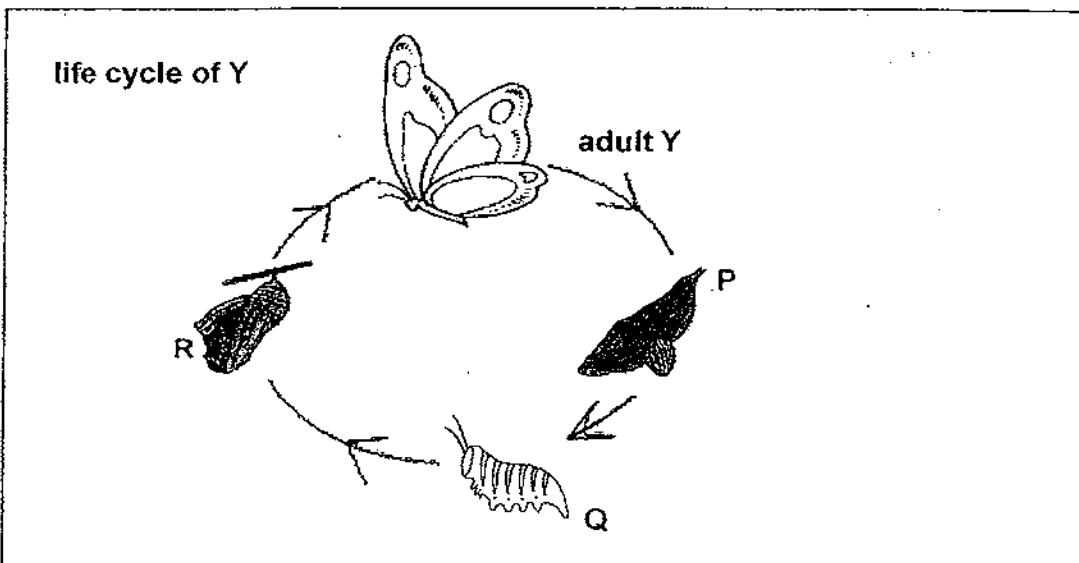
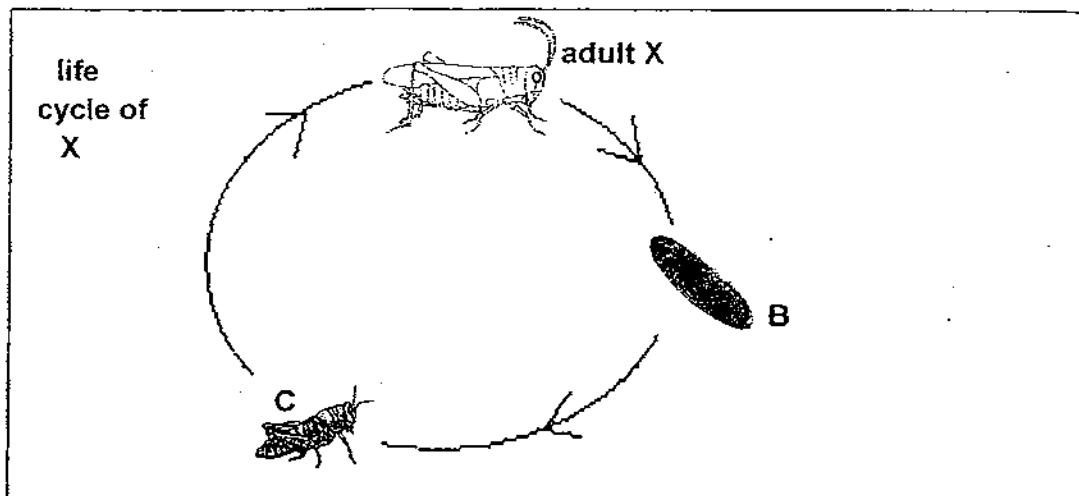
Based on the diagram above, answer the following questions:

- (a) What is the young of animal X known as at stage C? [1]

- (b) List **TWO** differences between stages A and C.
[Do NOT compare size.] [2]

| | |
|--------------------------------------|--|
| 1st DIFFERENCE | |
| 2nd DIFFERENCE | |

27. The diagrams below show the different stages in the life cycles of animals X and Y.



Based on the diagrams above, answer the following questions:

- (a) What is Y known as at stage P? [1]

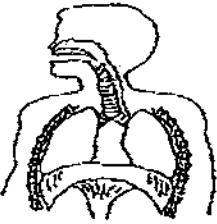
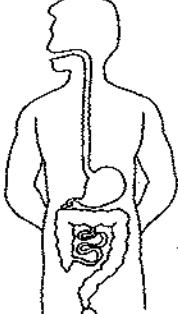
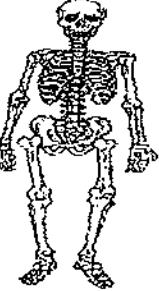
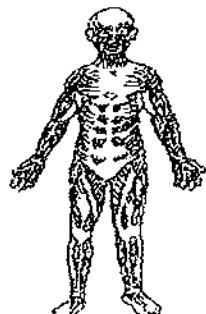
- (b) Compare the life cycles of X and Y.
(i) State one difference. [1]

- (ii) State one similarity. [1]

28. The diagrams below show the different body systems found in man.
Match each system correctly to its function.

Each system can be matched to **ONE** function only.

[2]

| <u>body system</u> | <u>function</u> |
|---|---|
|  | breaks down food into simple substances |
|  | helps in body movements |
|  | protects vital organs |
|  | allows gaseous exchange to take place |

29. The following processes, A, B, C and D, take place in the various parts of the digestive system.

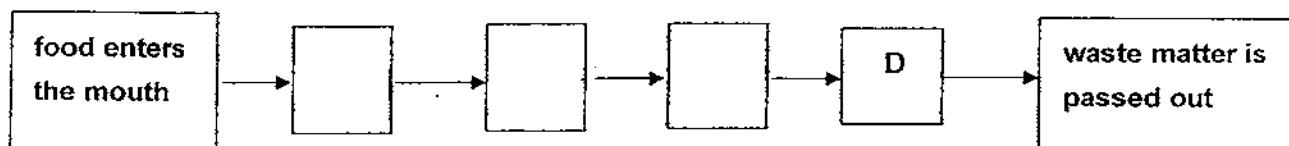
- A food is digested and absorbed into the blood stream
- B saliva is produced to break down food
- C partially digested food is pushed down the tube
- D undigested food is stored here to be passed out

(a) Arrange the processes A, B, C and D according to the order that each takes place in the different parts of the human digestive system.

Write the letters A, B and C in the correct boxes below.

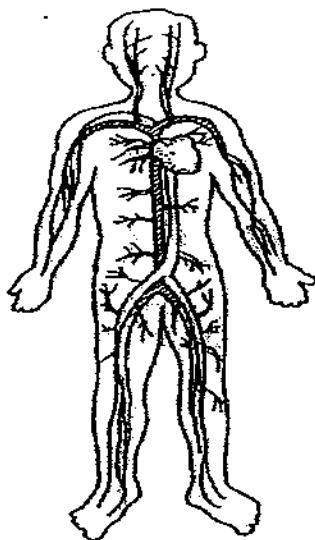
D has been written for you.

[1]



(b) Name the parts of the digestive system where digestive juices are produced. [3]

30. The diagram below shows a body system found in man.



Based on the diagram above, answer the following questions:

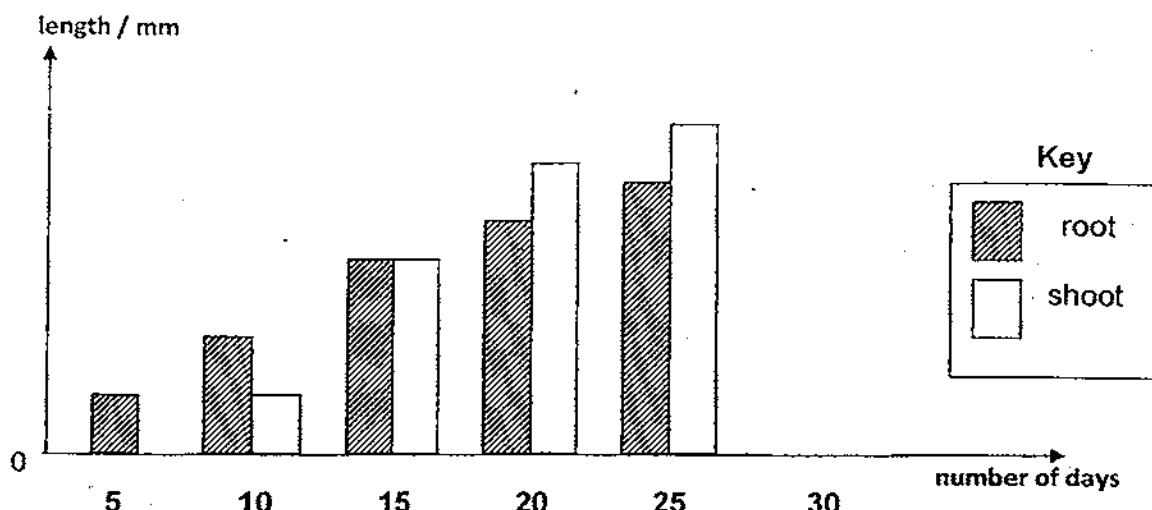
- (a) Name the system. [1]

- (b) Name TWO parts of the system. [2]

(i) _____

(ii) _____

31. The graph below shows the length of the root and shoot of a germinating seed.



Based on the graph above, answer the following questions:

- (a) Which part of the seed grows out first? [1]
-

- (b) State ONE similarity between the length of the root and shoot of the germinating seed from Day 5 to Day 25. [1]
-

- (c) Predict the new length of the root and shoot of the germinating seed on the 30th day.

DRAW and SHADE appropriately on the graph given above. [1]

32. Diagram Y shows a measuring cylinder filled with some water and stone B in it.

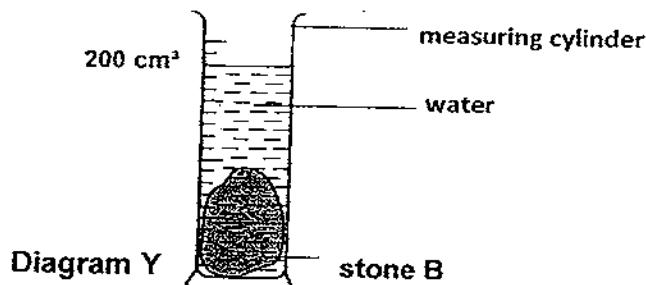
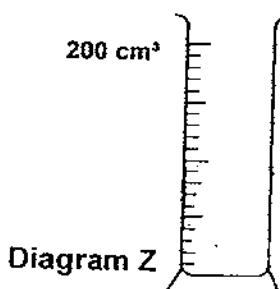


Diagram Z below shows the same measuring cylinder WITHOUT stone B.
The volume of stone B is 120 cm³.

- (a) DRAW the water level on Diagram Z WITHOUT stone B. [1]



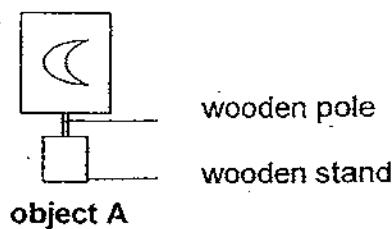
- (b) Give ONE conclusion about stone B based on the above observations.
(Do NOT mention the volume of stone B.) [1]

- (c) When stone B is dropped into the SAME measuring cylinder filled with liquid M, the stone is totally covered by the liquid.

Will the volume of stone B remain as 120 cm³?

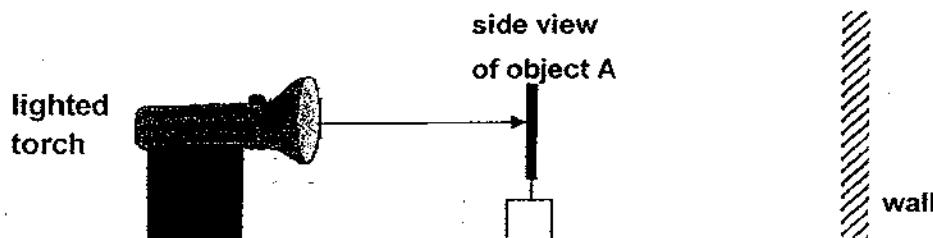
Give a reason for your answer. [1]

33. Alex had an object A as shown below.



Object A is a hard cardboard with a crescent cut out in its centre. It stands upright on a wooden stand held up by a wooden pole.

Alex placed object A, with its cut-out crescent facing the torch, between a lighted torch and the wall in a straight line as shown below.



Alex saw a dark shadow of object A cast on the wall.

- (a) DRAW the shadow of object A that Alex saw on the wall in the box given below. [2]

A large, empty rectangular box intended for the student to draw the shadow of object A onto.

- (b) Why was object A able to cast its shadow on the wall? [1]

34. Cathy cooked some soup in a pot on a hot stove.

She switched off the stove and poured out the soup into two identical bowls. She used a metal spoon to stir the soup in one bowl and another similar spoon made of plastics in the other bowl.

Next, Cathy left both spoons in the bowls as shown in **Diagram 1** and **Diagram 2** below.

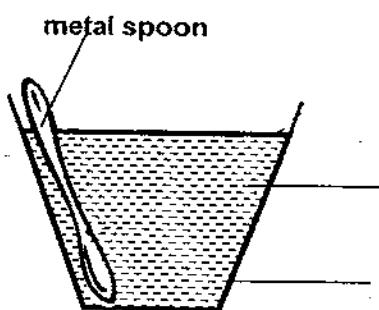


Diagram 1

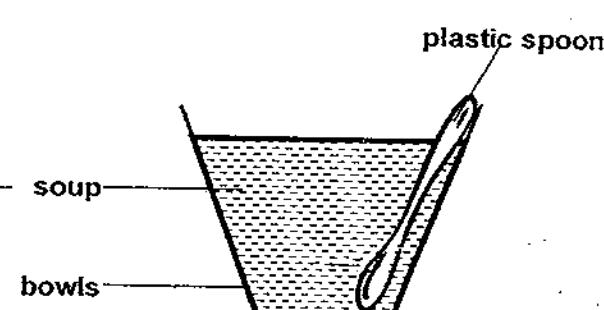


Diagram 2

- (a) A few minutes later, Cathy lifted both spoons and found that the metal spoon was hotter than the plastic spoon.

Explain why the metal spoon was hotter than the plastic spoon. [1]

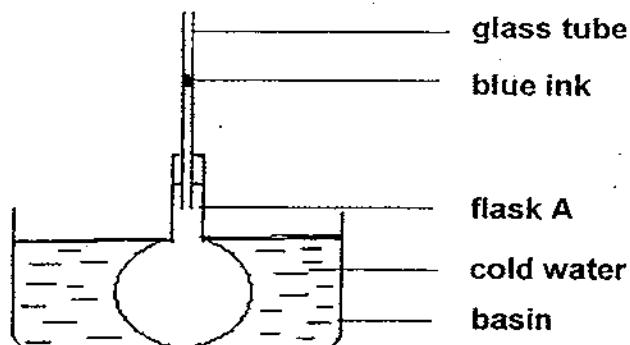
- (b) Half an hour later, Cathy measured the temperatures of the soup in the bowl and of the metal spoon. Both the temperatures were the same.

Give a reason why it was so. [2]

- (c) **DRAW** an arrow (→) in each diagram to show the direction in which heat travelled in each bowl on **Diagram 1** and **Diagram 2** above. [1]

35. Ben placed a drop of blue ink in a glass tube connected to flask A.

Next, Ben immersed the flask in a basin of cold water as shown below.



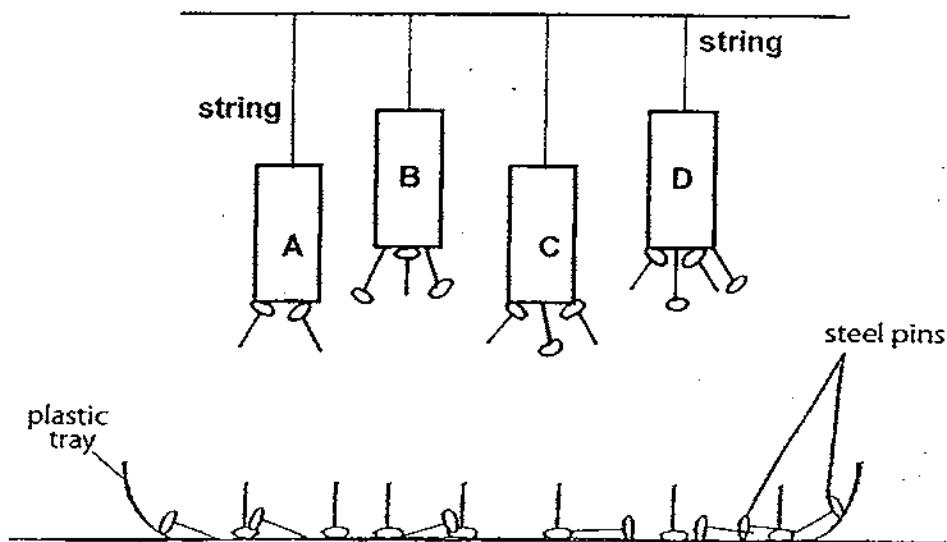
Based on the information above, answer the following question:

Ben noticed that the drop of blue ink in the glass tube rose first and then fell.

Explain how this could have happened.

[2]

36. A, B, C and D are magnets hanging from strings of two different lengths as shown in the diagram below.



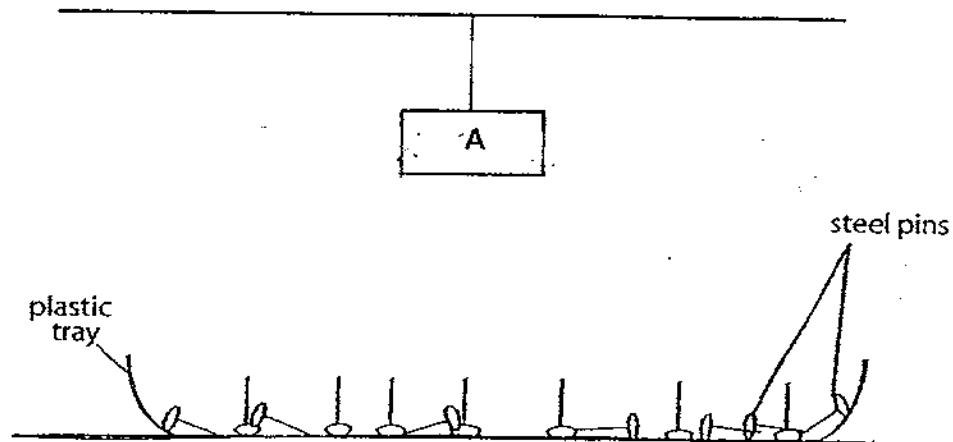
A plastic tray of steel pins is placed directly below the magnets and different numbers of pins are attracted to the magnets.

- (a) Based on the diagram above, arrange the magnets, A, B, C and D, according to their magnetic strength in ascending order.

Fill in the correct boxes with the letters A, B, C and D **ONLY**. [1]

strongest

Magnet A is re-tied and hung over the **SAME** tray of pins as shown below.

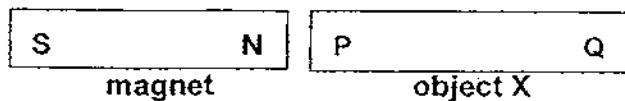


- (b) **MARK** a cross / crosses (X) on the part (s) of magnet A that attract(s) the most number of pins.

Give a reason for your answer.

[3]

37. Samantha brought the N-pole of a magnet near end P of object X as shown below.



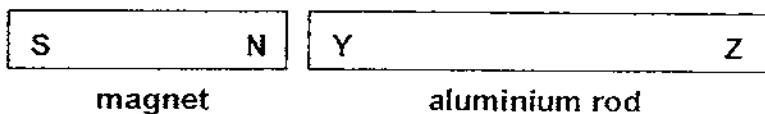
Next, she brought the N-pole of the same magnet to part Q of object X. She recorded her observations below.

| part of object X | observation |
|------------------|--------------------------------|
| P | P was attracted to the magnet. |
| Q | Q was repelled by the magnet. |

Based on the information above, answer the following questions:

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

Samantha replaced object X with an aluminium rod. Its ends were marked Y and Z.

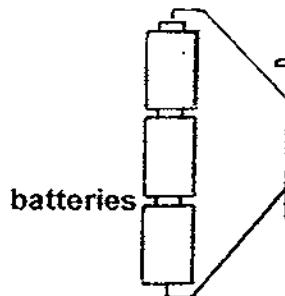


- (b) Using the **SAME** magnet, Samantha brought each end of the aluminium rod, Y and Z, **ONE** at a time, near the S-pole of the magnet. Record what Samantha would observe in the table below. [2]

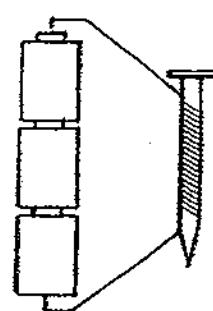
| part of aluminium rod | observation |
|-----------------------|-------------|
| Y | |
| Z | |

- (c) What could Samantha conclude about the property of the aluminium rod? [1]

38. Trisha's teacher told her that an iron nail can become an electromagnet when it is placed in a coil of wire with its ends joined to batteries as shown in set-ups W and X below.



set-up W



set-up X

For each set-up, Trisha tested the strength of the electromagnet by counting the number of steel paper clips that each could attract. Trisha wound 10 more turns round the iron nail in set-up X and then recorded her observations in the table as shown below.

| number of turns of wire round the iron nail | number of paper clips magnetised iron nail attracted |
|---|--|
| 10 | 2 |
| 20 | 5 |
| 30 | 11 |

- (a) Based on Trisha's observations, what could she conclude about the number of turns of the wire round an iron nail and its magnetic strength? [1]

- (b) Name ONE variable that Trisha must keep the same to ensure that she carried out a fair test. [1]

- END OF PAPER -

Answer Ke

EXAM PAPER 2009

**SCHOOL : RAFFLES GIRLS' PRIMARY
SUBJECT : PRIMARY 4 SCIENCE**

TERM : SA2

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

| | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Q18 | Q19 | Q20 | Q21 | Q22 | Q23 | Q24 | Q25 |
| 4 | 1 | 4 | 2 | 1 | 3 | 3 | 3 |

26)a)It is a tadpole.

b)1st : A does not have a tail but C has a tail.

2nd : A has legs but C does not have legs.

27)a)It is known as the egg adult.

b)i)The life cycle of X has 3 stages while the life cycle of Y has 4 stages.

ii)Both life cycle have an egg stage.

28)



29)a)B→C→A→D

b)Mouth, stomach and small intestine.

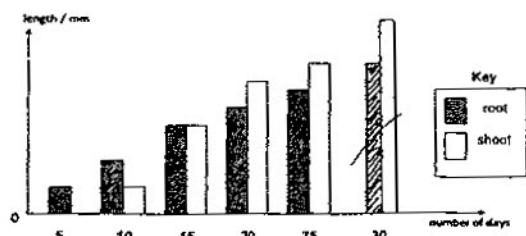
30)a)Circulatory system.

b)i)Heart ii)blood vessels.

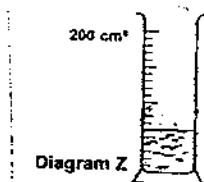
31)a)The roots grows out first.

b)The height increases day by day.

c)



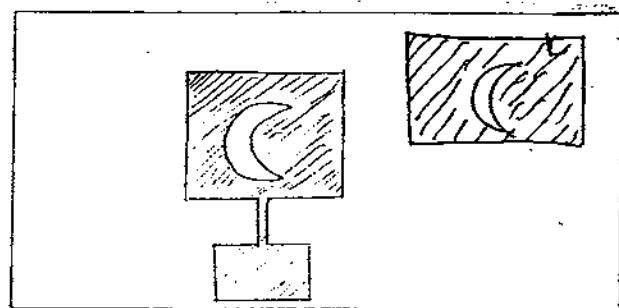
32)a)



b) Stone B is a solid . Solid occupies space.

c) Yes. Stone B is a solid and solid has a definite volume.

33)a)

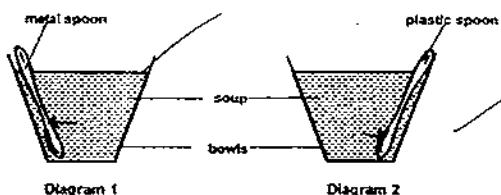


b) The light source was being blocked by object A, casting a shadow on the wall.

34)a) Metal spoon is a better conductor of heat than the plastic spoon.

b) The soup lost heat and the metal spoon gained heat until both reached the same temperature.

c)



35) The flask contacted first then the air in the flask contracted. When the flask contracted, the air in the flask enters the glass tube, causing the blue ink to rise. When the air inside the flask contracted, the ink then drop to take up the space previously taken up by the air.

36)a) A, C, B, D

b) The poles of the magnet are strongest in attraction and to repel.

37)a)Samantha was trying to find out if object X is a magnet.

b)Y: The magnet did not move.

Z: The magnet did not move.

c)Aluminium is not a magnetic material.

38)a)The more number of turns wire round the iron nail, the more number of paper clips will be attracted.

b)The number of batteries.



RAFFLES GIRLS' PRIMARY SCHOOL
SEMESTRAL ASSESSMENT (1)
2009

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

Name : _____ Index No.: _____ Class: P4 _____

7th May 2009

SCIENCE

ATT: 1 h 30 min

SECTION A (30 x 2 marks)

For each question from 1 to 30, four options are given.

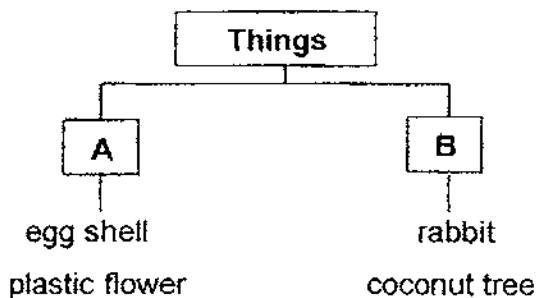
One of them is the correct answer. Make your choice (1, 2, 3 or 4).

Shade the correct oval on the Optical Answer Sheet (OAS) provided.

1 All living things _____.

- (1) reproduce
- (2) can be eaten
- (3) move from place to place
- (4) respond slowly to changes

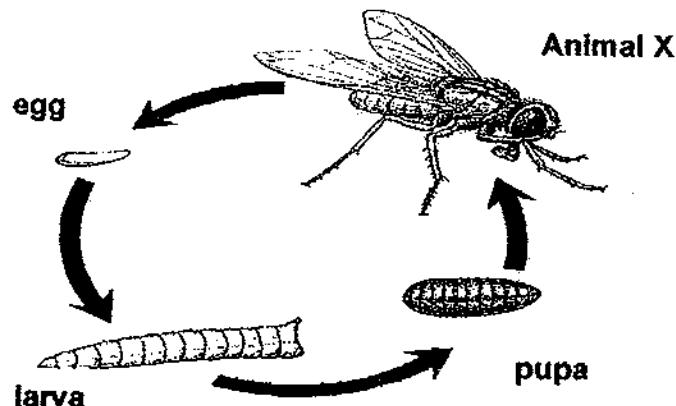
2 The diagram below shows how some things are grouped.



Which one of the following is correctly grouped in groups A and B?

| | A | B |
|-----|---------------|------------------|
| (1) | water | rock |
| (2) | metal bowl | fried fish |
| (3) | Venus flytrap | bracket fungus |
| (4) | dried leaf | bird's nest fern |

- 3 The diagram below shows the life cycle of Animal X.



Which of the following statements describe Animal X correctly?

- A Its young looks like its adult.
 - B It has 4 stages in its life cycle.
 - C Its young does not have wings.
 - D It gives birth to its young alive.
- | | |
|------------------|------------------|
| (1) A and B only | (2) A and D only |
| (3) B and C only | (4) C and D only |

- 4 John did a study on two animals, X and Y.

He observed the animals and recorded his observations in the table below.

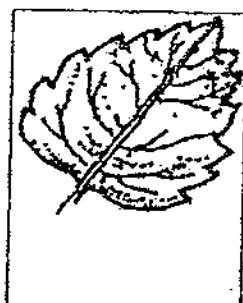
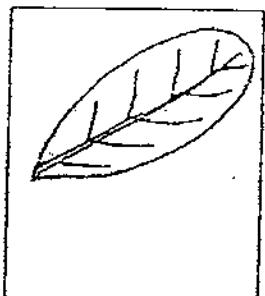
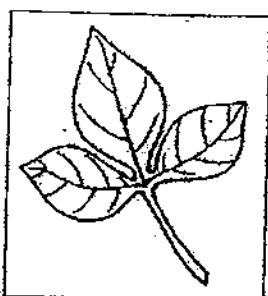
| observation | animal X | animal Y |
|-------------|----------|----------|
| lays eggs | ✓ | ✓ |
| has feelers | ✓ | |
| has wings | | ✓ |

Key
✓ indicates the characteristic which the animal has

Which one of the following pairs of animals are possibly animals X and Y?

| | animal X | animal Y |
|-----|-------------|-----------|
| (1) | butterfly | chicken |
| (2) | penguin | kiwi |
| (3) | grasshopper | butterfly |
| (4) | termite | penguin |

5. The diagram below shows the edges of different types of leaves.



leaf with lobed edge

leaf with entire edge

leaf with jagged edge

Which one of the following identifies correctly the type of edge(s) for the leaf shown below?



A lobed

B entire

C jagged

(1) B only

(2) C only

(3) A and B only

(4) A and C only

6. Cathy put a balsam plant into a beaker of water in which some blue ink had been added. A day later, she observed that the flowers turned from white to blue.

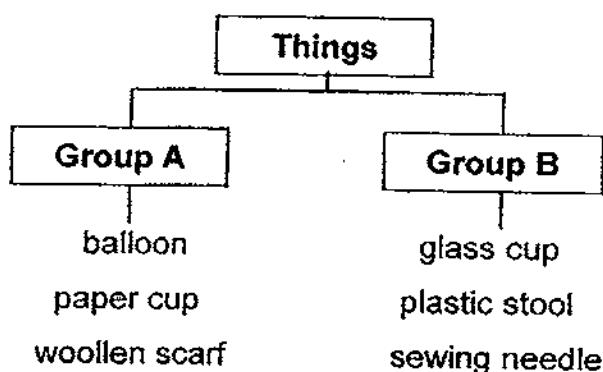
What did Cathy's experiment show?

- (1) The stem of the plant joined its flowers to its leaves.
- (2) Water was taken in by the plant only through its stem.
- (3) Water was lost to the surroundings from every part of the plant.
- (4) The stem of the plant carried water from its roots to the rest of its parts.

7. Which of the following statements about fungi is true?

- (1) They reproduce by spores.
- (2) They can make their own food.
- (3) They cannot respond to changes.
- (4) They are classified as a type of plants.

8. Four objects are classified into two groups as shown below.



The objects are grouped according to _____.

- (1) how hard or soft they are
- (2) whether they are waterproof or not
- (3) whether they can be recycled or not
- (4) the type of material which they are made of

9. Mary compared the hardness of four objects, A, B, C and D, by scratching them, ONE at a time, with 3 different types of discs. Each disc was made of a different material.

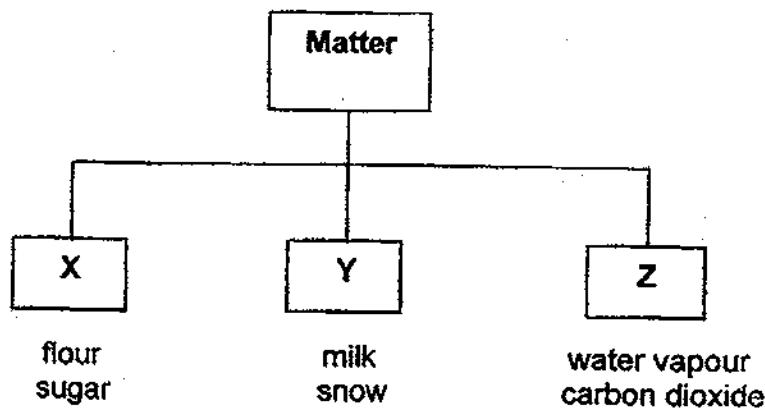
She recorded her observations in the table below, using a tick (✓) to indicate the presence of scratch marks on each object made by each disc.

| object | presence of scratch marks made by | | |
|--------|-----------------------------------|-------------|-----------|
| | plastic disc | wooden disc | iron disc |
| A | | | |
| B | ✓ | ✓ | ✓ |
| C | | | ✓ |
| D | | ✓ | ✓ |

Which one of the following shows correctly the arrangement of the four objects according to their hardness?

- | hard | hardest |
|------|---------|
| → | |
| A | D |
| B | C |
| A | C |
| B | C |
- (1) A D C B
 (2) B D C A
 (3) A C D B
 (4) B C D A

- 10 The classification chart below shows how different states of matter are grouped.



Which of the following is / are wrongly grouped?

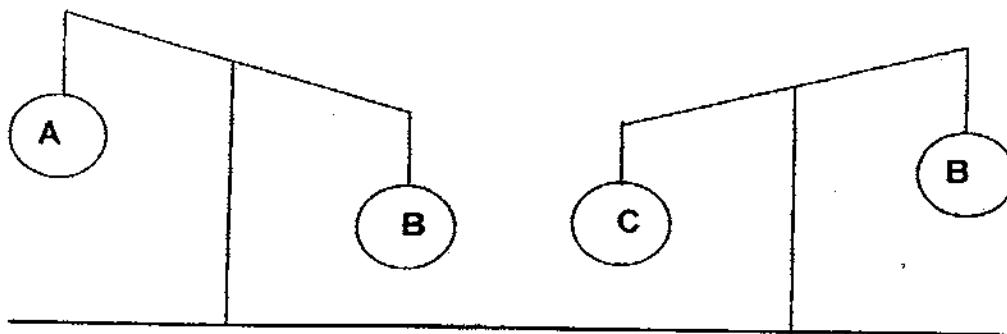
- | | |
|---------------------|------------------------|
| A snow | B flour |
| C water vapour | D carbon dioxide |
| (1) A only | (2) B only |
| (3) C and D only | (4) A, B and C only |

- 11 The table below shows the properties which different matter at room temperature possesses.

Which one of the following describes the matter correctly?

| | type of matter | properties | | |
|-----|----------------|----------------------|-----------------------|----------------|
| | | has a definite shape | has a definite volume | occupies space |
| (1) | wind | no | yes | yes |
| (2) | salt | no | yes | yes |
| (3) | oxygen | no | no | no |
| (4) | oil | no | yes | yes |

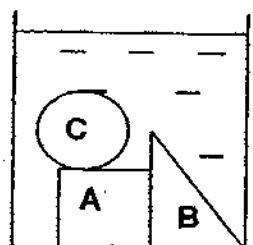
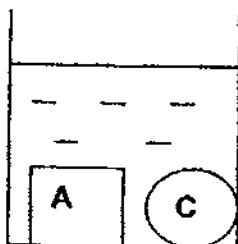
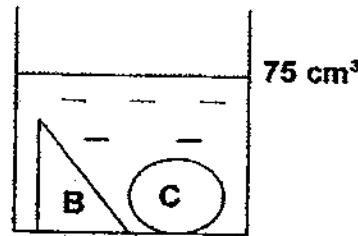
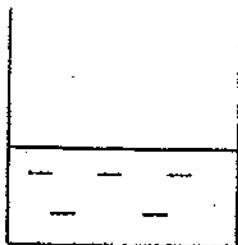
12. Annette compared the mass of three plastic balls, A, B and C, **TWO** at a time, using the same balance. They come to rest on the balance as shown below.



Which one of the following shows the correct order in which the balls are arranged according to their masses?

| | lightest | → | heaviest |
|-----|----------|---|----------|
| (1) | A | B | C |
| (2) | A | C | B |
| (3) | B | C | A |
| (4) | C | B | A |

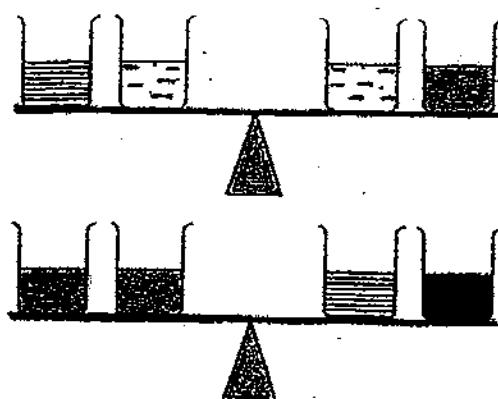
- 13 A container holds 40 cm^3 of water.
Different objects are put into the container and the water level rises.



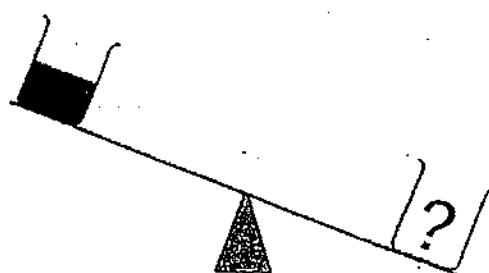
Based on the diagrams, which of the following statements is/ are correct?

- A The volume of object B is 20 cm^3 .
 - B The volume of object C is 15 cm^3 .
 - C The volume of objects A and B is 15 cm^3 .
 - D The volume of all the three objects, A, B and C, is 100 cm^3 .
-
- (1) D only
 - (2) A and B only
 - (3) A and D only
 - (4) B and C only

- 14 Amanda balanced a ruler by placing beakers containing different substances on each of its ends. The diagrams below are Amanda's observations.



When Amanda placed 2 beakers on the ruler, it became unbalanced.



Which one of the beakers did Amanda place on the other end of the ruler?

(1)



(2)



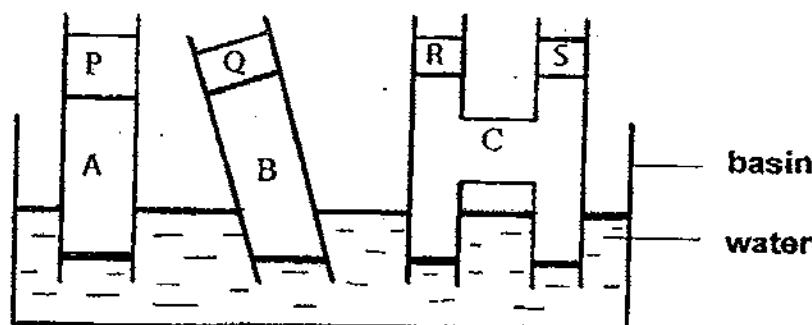
(3)



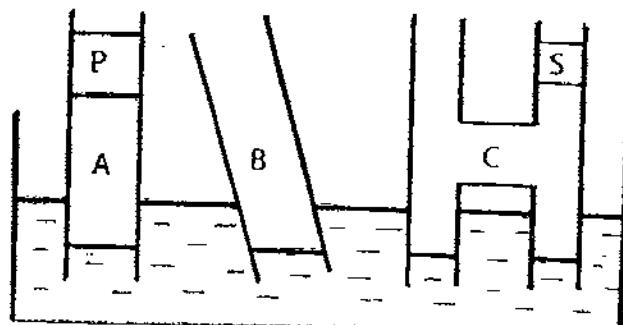
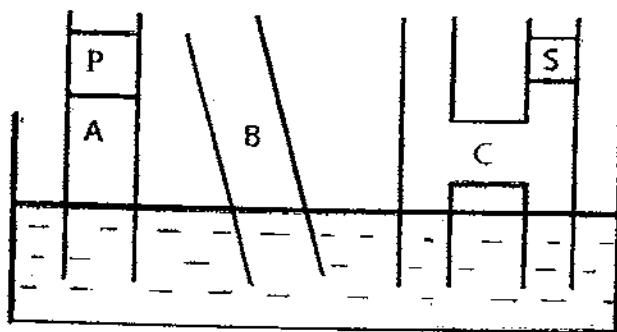
(4)



- 15 The tubes A, B and C, with stoppers P, Q, R and S in placed, were lowered into a basin of water.

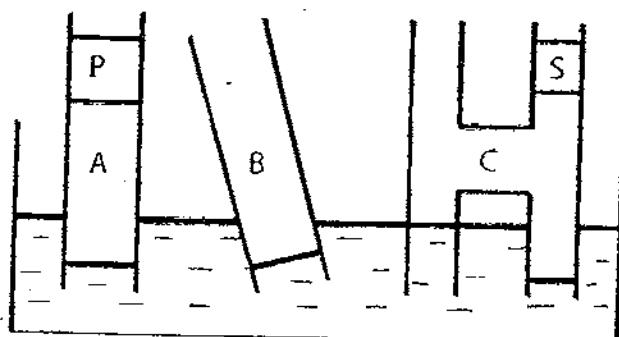
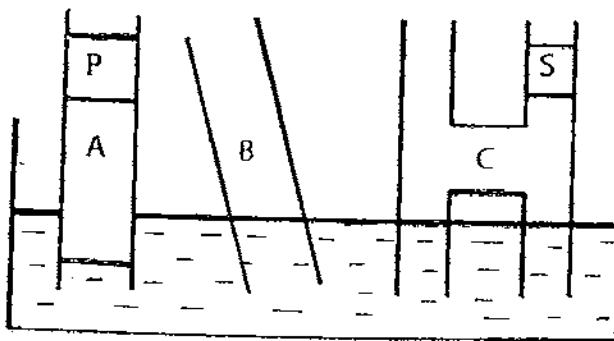


Which one of the following diagrams shows the correct water levels in the tubes after stoppers Q and R were removed?



(1)

(2)



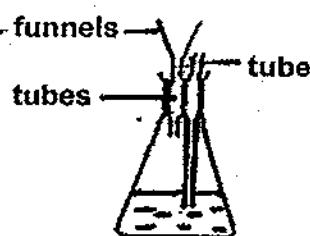
(3)

(4)

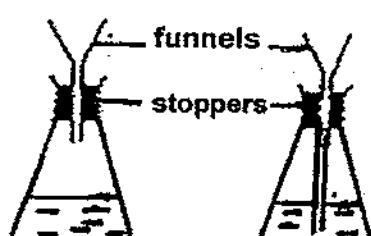
16. The 4 set-ups, A, B, C and D, below were used in an experiment.



set-up A



set-up B



set-up C

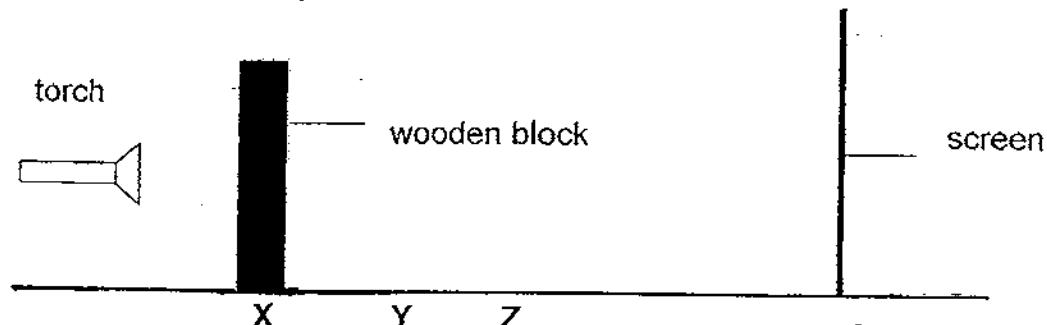


set-up D

If water was poured into each one of the containers through the funnel, which one of these set-ups would allow water to flow in most quickly?

- | | |
|--------------|--------------|
| (1) Set-up A | (2) Set-up B |
| (3) Set-up C | (4) Set-up D |

17. Rachel set up the experiment as shown below.

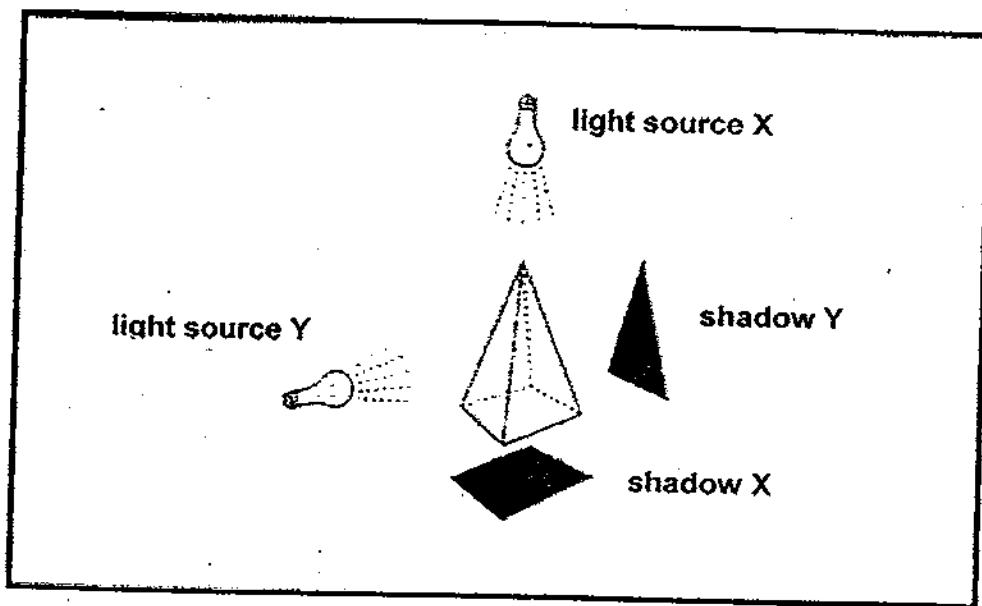


Rachel placed a wooden block at position X. She measured the length of the shadow cast on the screen. Next, she repeated the experiment with the wooden block at Y and finally at Z.

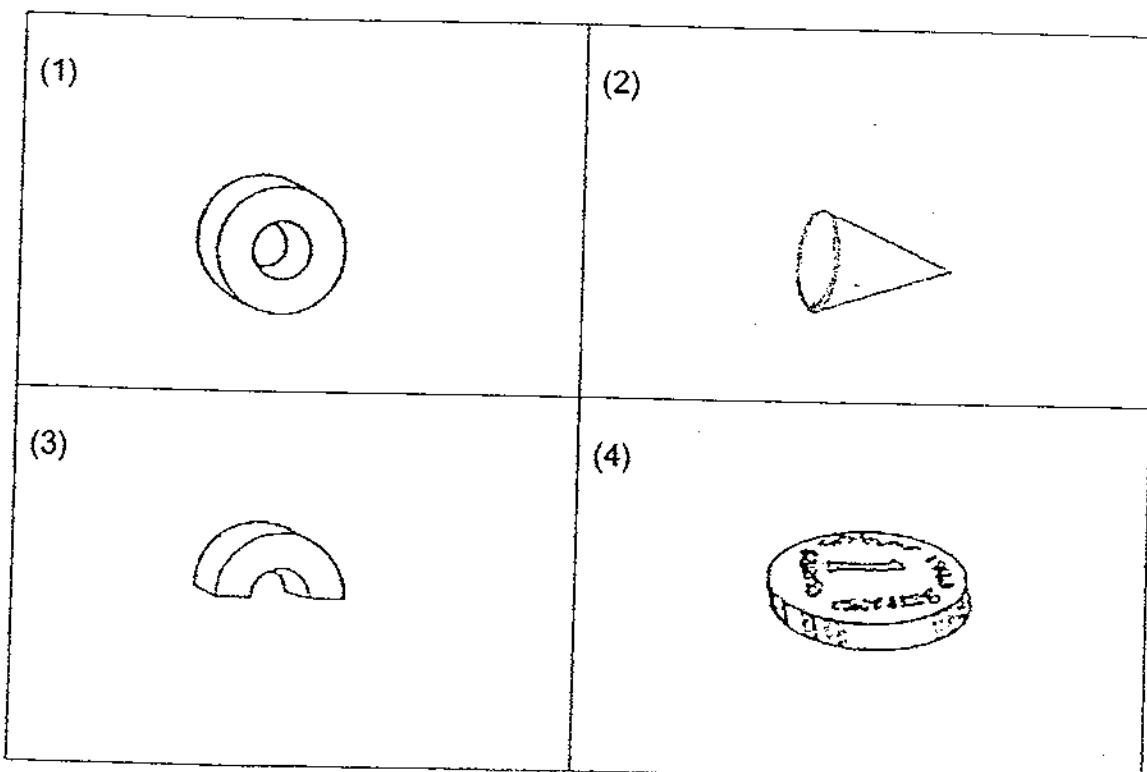
Which one of the following shows correctly the length of the shadows of the wooden block formed on the screen when Rachel placed the wooden block at positions X, Y and Z?

| length of shadow of wooden block (cm) | | | |
|--|------|------|------|
| | at X | at Y | at Z |
| (1) | 10 | 15 | 20 |
| (2) | 15 | 20 | 10 |
| (3) | 20 | 15 | 10 |
| (4) | 10 | 15 | 10 |

18. Phoebe noticed that the object below could cast different shadows depending on the position of the light source.

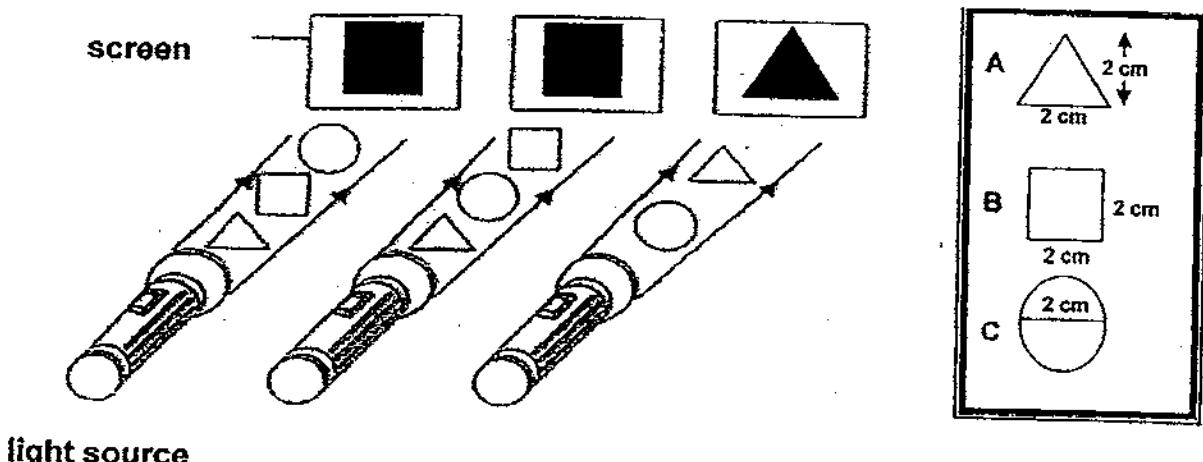


Which one of the following objects did Phoebe use to produce the shadows (NOT drawn to scale) as shown below?



19. Two or three of these objects, A, B and/ or C, were placed in a straight line in front of the light source as shown in the diagrams below.

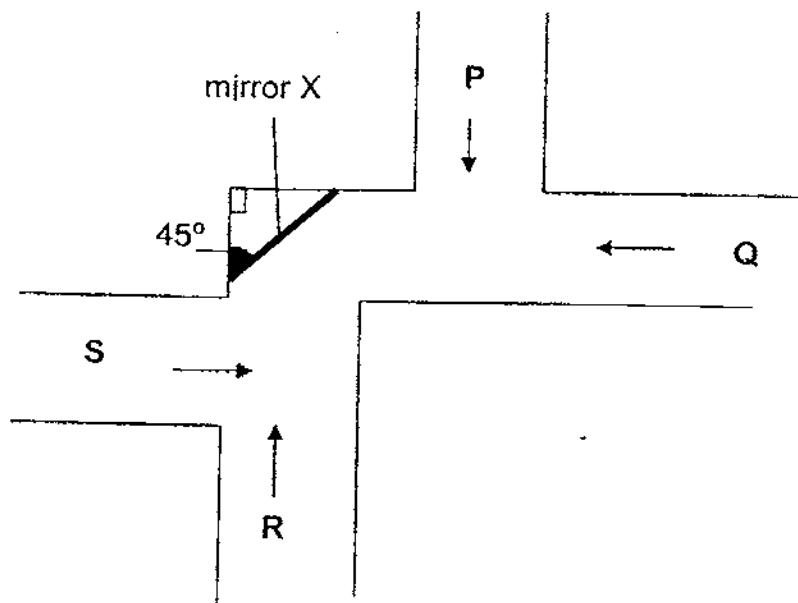
Size of the objects:



light source

Based on the shadows formed on the screens, which one of the following statements is correct?

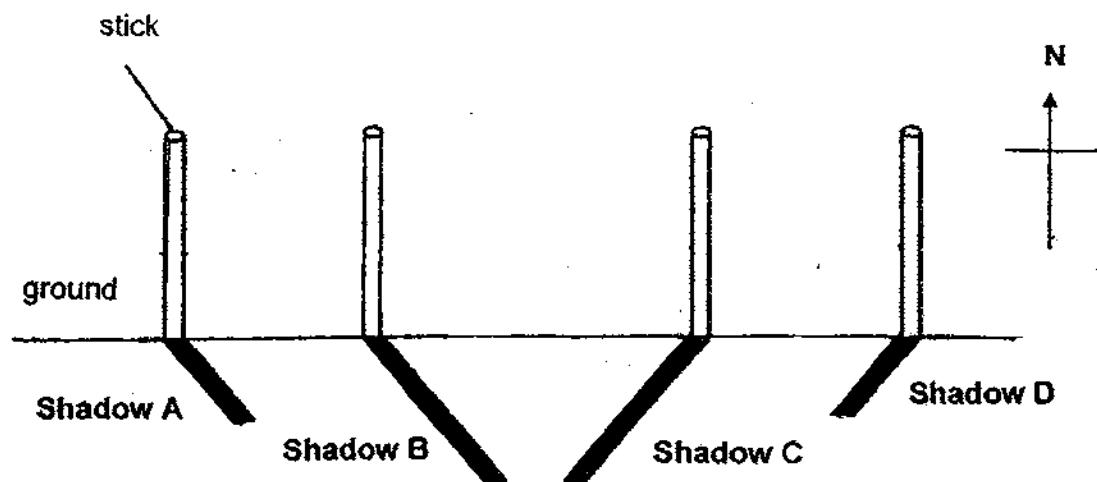
- (1) Object A is transparent.
 - (2) Object B is transparent.
 - (3) Object C is opaque.
 - (4) Objects A and B are opaque.
20. The diagram below shows four boys, P, Q, R and S, travelling in the directions shown by the arrows.



Which two boys can see each other in mirror X?

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

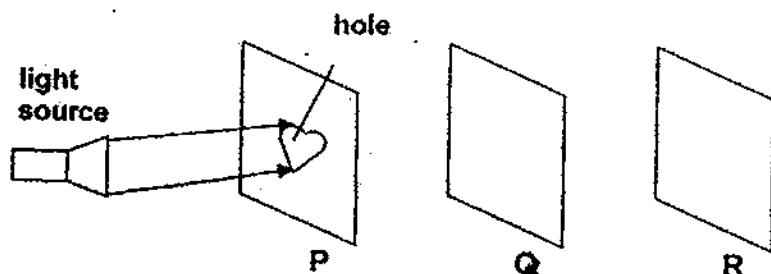
- 21 Li Yi observed the various positions of the shadow cast by a stick at different times of the day.



Which one of the following shows correctly the time at which Li Yi observed the shadows?

| | Shadow A | Shadow B | Shadow C | Shadow D |
|-----|----------|----------|----------|----------|
| (1) | 9 am | 11 am | 2 pm | 5 pm |
| (2) | 11 pm | 9 am | 5 pm | 2 pm |
| (3) | 2 pm | 5 pm | 9 am | 11 am |
| (4) | 5 pm | 9 am | 2 pm | 11 am |

- 22 The diagram below shows three thin square sheets P, Q and R arranged in a straight line.



When the light source is turned on, a bright heart-shaped patch of light is seen on sheet Q only.

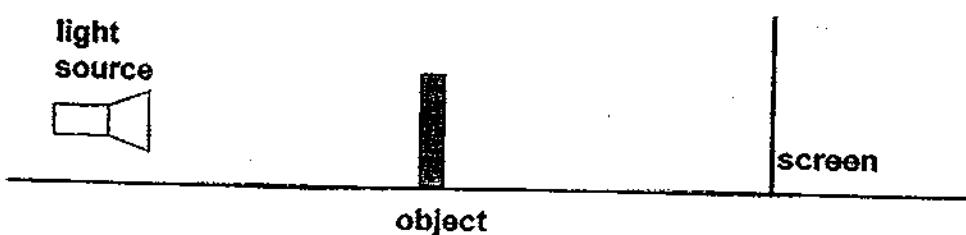
Which one of the following describes correctly the properties of the materials which P, Q and R are made of?

| | allows light to pass through | does not allow light to pass through | not possible to tell |
|-----|-------------------------------------|---|-----------------------------|
| (1) | P | Q | R |
| (2) | P | R | Q |
| (3) | Q | P | R |
| (4) | R | Q | P |

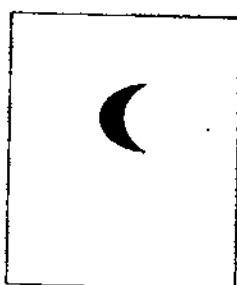
- 23 The diagram below shows an object made of a thick cardboard. A crescent shape was drawn on the cardboard.



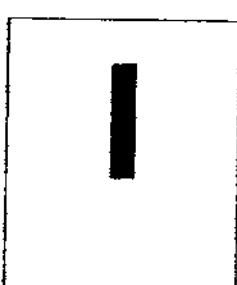
The set-up below shows the object placed between a light source and a screen.



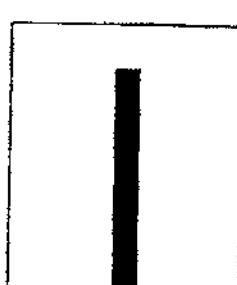
Which of the following shadows of the object were cast on the screen?



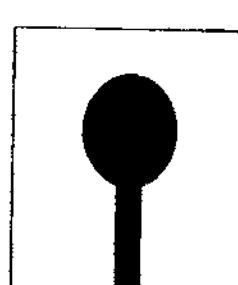
A



B



C

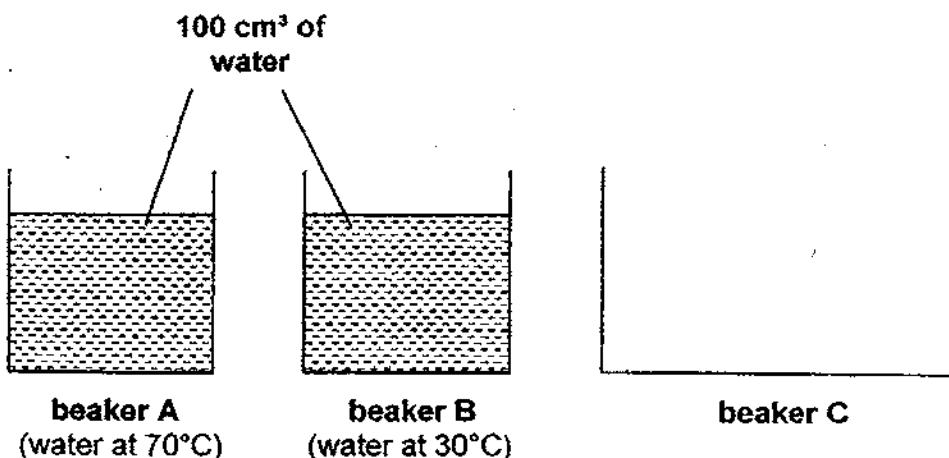


D

- (1) A only
(3) B and C only

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

- 24 Mary filled two identical beakers, A and B, with the same amount of water. The temperature of the water in each beaker, A and B, was 70°C and 30°C respectively.

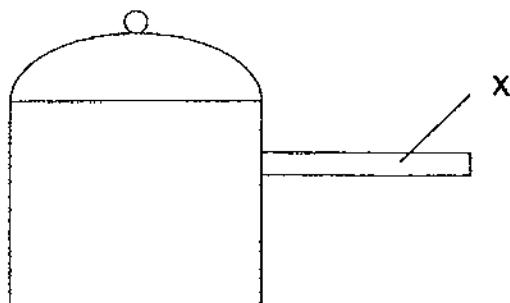


Mary poured the water in beakers A and B into beaker C and measured the temperature of water in beaker C.

What could the temperature of water in beaker C be?

- | | |
|----------|-----------|
| (1) 30°C | (2) 50°C |
| (3) 70°C | (4) 100°C |

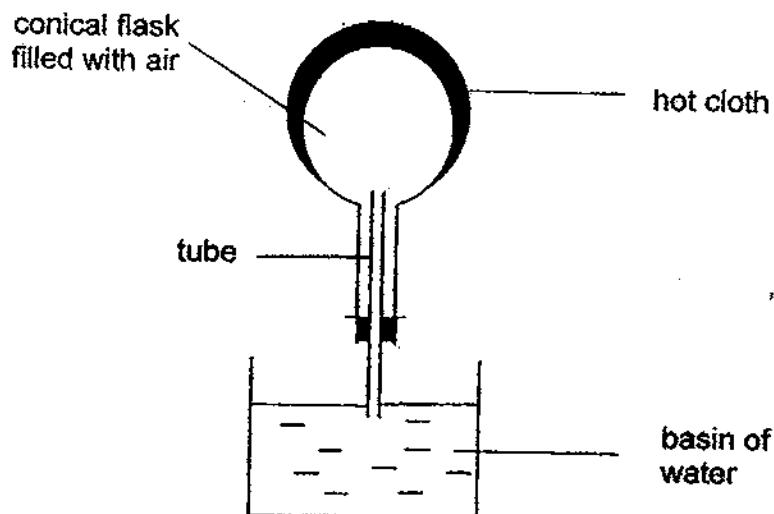
- 25 The diagram below shows a cooking pot.



What material and its property should be taken into consideration to make part X of the cooking pot?

| | material | property |
|-----|-----------------|---------------------------------|
| (1) | plastics | It is lighter than metal. |
| (2) | plastics | It is a poor conductor of heat. |
| (3) | metal | It is stronger than plastics. |
| (4) | metal | It is a good conductor of heat. |

- 26 Peter set up the following apparatus. He wrapped a piece of hot cloth around the bottom of the conical flask as shown in the diagram below.

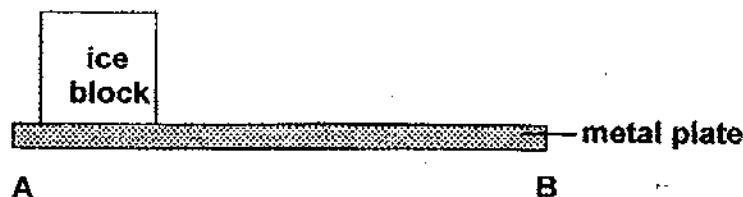


Peter noticed that bubbles could be seen appearing at the mouth of the tube in the water. When he removed the hot cloth, NO more bubbles appeared at the mouth of the tube in the water.

He concluded that after removing the hot cloth, _____.

- (1) the air in the flask had expanded
- (2) the air in the flask had contracted
- (3) there was no more air left in the flask
- (4) the tube was blocked by the water which had gotten into it

- 27 Linda placed a huge block of ice on end A of a metal plate as shown in the diagram below.

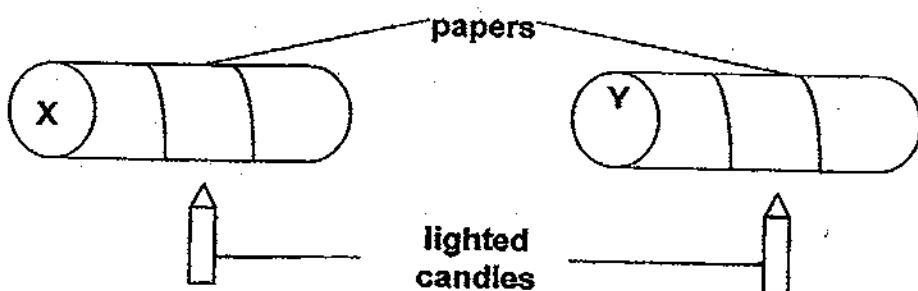


After some time, Linda saw that the block of ice was melting and felt that end B of the metal plate was cold.

Which one of the following explains correctly Linda's observations?

| | ice block | metal plate |
|-----|--------------------------------------|--|
| (1) | gained its heat from the metal plate | lost its heat to the ice block |
| (2) | gained its heat from the metal plate | gained its coldness from the ice block |
| (3) | lost its heat to its surroundings | gained its coldness from the ice block |
| (4) | lost its heat to its surroundings | gained its heat from its surroundings |

- 28 Sarah wrapped two identical pieces of paper tightly around two rods, X and Y, separately as shown in the diagram below.



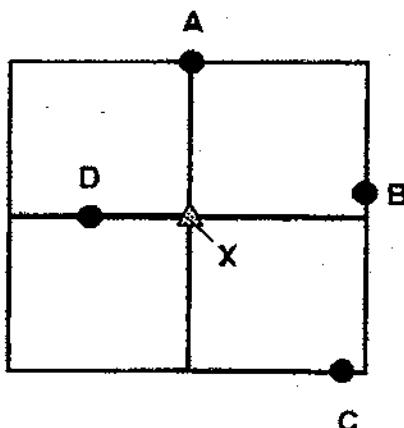
Sarah placed each rod an equal distance over a lighted candle, ONE at a time, for 5 seconds.

She noticed that the paper on X had scorched marks on it while the paper on Y had caught fire and was burnt.

Based on Sarah's observations, which one of the following conclusions is/ are correct?

- A X is a good conductor of heat.
 - B Y is a poor conductor of heat.
 - C X is able to retain heat better than Y.
-
- (1) A and B only
 - (2) A and C only
 - (3) B and C only
 - (4) A, B and C

- 29 The copper frame shown below is in the shape of four squares.



Susan attached some thumbtacks, A, B, C and D, to the underside of the copper frame with equal amounts of wax.

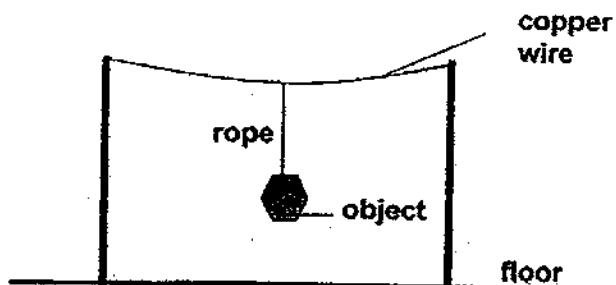
She heated point 'X' with a lighted candle and observed the order in which the thumbtacks would drop off from the copper frame.

Susan noticed that the thumbtack at D dropped off from the copper frame first.

Which one of the following shows the correct order in which the other thumbtacks would drop off from the copper frame?

| | 2nd to drop off | → | last to drop off |
|-----|-----------------------------------|----------|-------------------------|
| (1) | A | B | C |
| (2) | A | C | B |
| (3) | B | A | C |
| (4) | C | B | A |

- 30 An object hangs from a copper wire by a rope as shown in the diagram below.



What happens when the copper wire is heated?

- (1) The wire will expand and break. The object will fall to the floor.
- (2) The wire will contract and break. The object will fall to the floor.
- (3) The wire will expand. The object will move down nearer to the floor.
- (4) The wire will contract. The object will move up further from the floor.

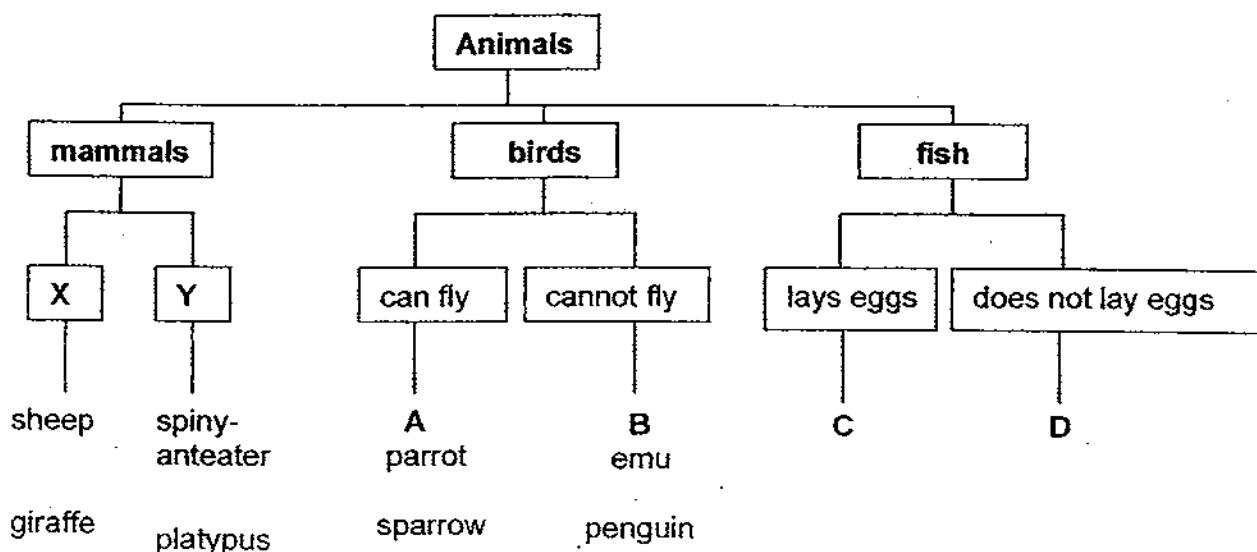
Name : _____ Index No.: _____ Class: P4 _____ Marks: _____

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

- 31 The diagram below shows how some animals, A, B, C and D, are classified.



Based on the diagram above, answer the following questions:

- (a) Write a suitable sub-heading for each of the following: [2]

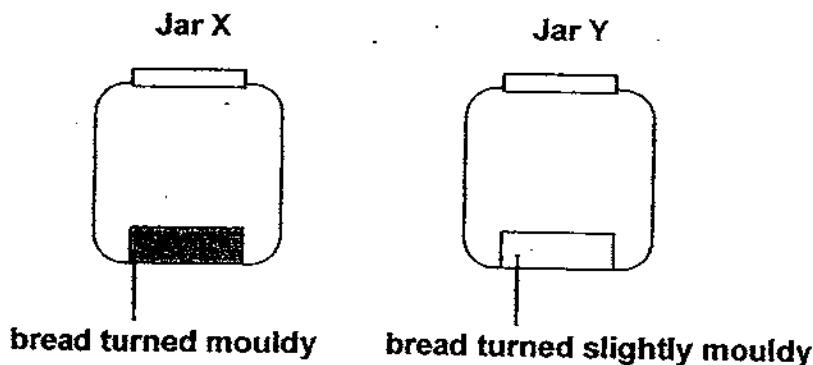
| | |
|---|--|
| X | |
| Y | |

- (b) Name one OTHER animal for B. [1]

- (c) Which animal, A, B, C or D, could be a "guppy"? [½]

- 32 John had two similar pieces of bread. He placed each of these pieces of bread in two identical jars, X and Y. He added a few drops of water to the bread in Jar X only. He covered the jars to make them airtight.

The following diagrams show the results of John's experiment after three days.



Based on the information above, answer the following questions:

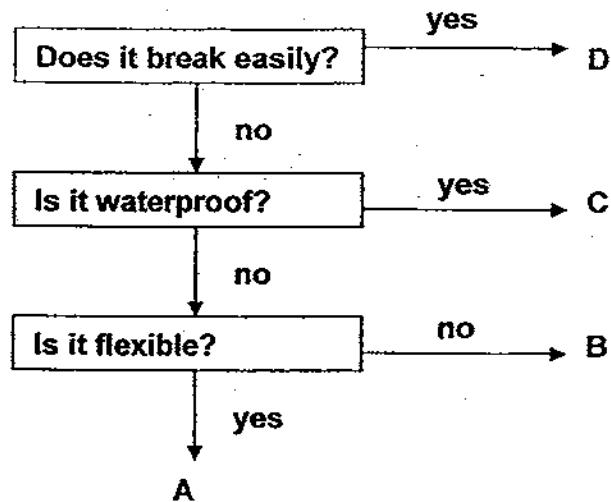
- (a) Why did John make the jars airtight? [1]

- (b) A third piece of bread was heated in the oven.

If this piece of bread was put in another airtight jar, what would John expect to see after 3 days?

- Give a reason for your answer. [2]

- 33 The diagram below shows how the property of each object, A, B, C and D, is described.



Based on the diagram above and using the helping words given in the box below, identify the objects B, C and D based on the property given.

Each object can be written down **ONCE** only.

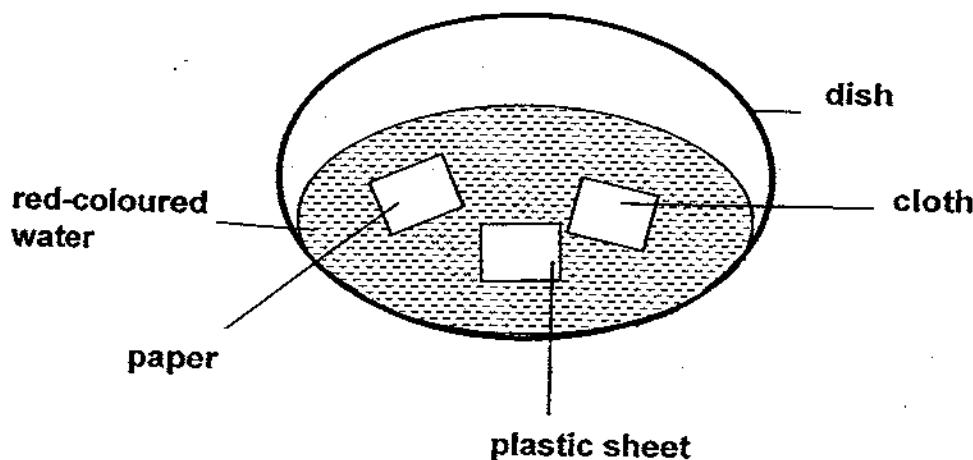
[3]

The object made of material A has been identified for you.

| | |
|--------------|--------------|
| window pane | wooden ladle |
| handkerchief | metal spoon |

| material | object |
|----------|--------------|
| A | handkerchief |
| B | |
| C | |
| D | |

34. Siti placed a piece of white cloth, a piece of white plastic sheet and a piece of white paper, all of equal size, into a dish of red-coloured water.



- (a) What would Siti observe about each of the three pieces of materials when she removed them from the water after a while?

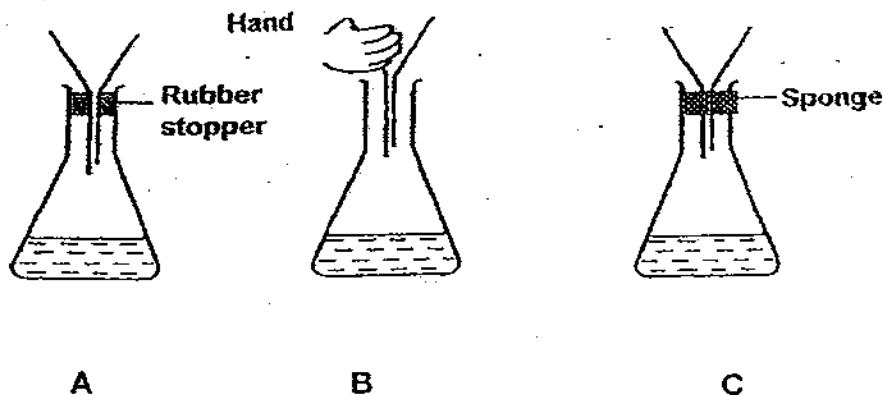
Explain the difference(s) in her observations.

[2]

- (b) Which one of these three materials is most suitable for making raincoats?

[1]

- 35 Natalie prepared 3 set-ups, A, B and C, as shown in the diagrams below.



She wanted to find out which set-up would allow water to flow through the funnel in the shortest period of time.

- (a) Arrange in ascending order the rate at which the water would flow through the funnel in the boxes below.

Write letters A, B and C only.

[1]

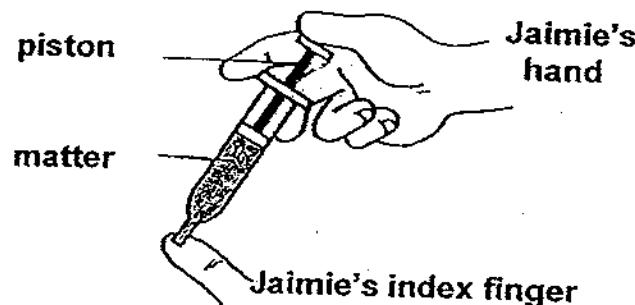
| slowest | → | fastest |
|---------|---|---------|
| | | |

- (b) State the TWO properties of air that could be deduced from Natalie's experiment. [2]

| | |
|--------------------------|--|
| 1 ST PROPERTY | |
| 2 ND PROPERTY | |

36. Jaimie prepared three identical syringes and filled each of them with a different type of matter, A, B and C.

She then placed her index finger to cover each syringe, ONE at a time, and pushed the piston in as shown below.



She recorded the distance moved by the piston for each syringe in the table below.

| distance moved by piston (cm) | | |
|-------------------------------|-----|-----|
| A | B | C |
| 0 | 0.1 | 0.5 |

- (a) If Jaimie had used air, carbonated drink (e.g. Coca Cola) and sand in her experiment, what were A, B and C?

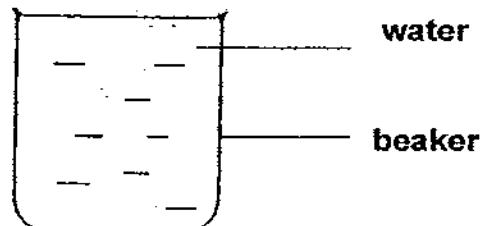
Complete the table below with the words given in bold above. [1½]

| matter | |
|--------|--|
| A | |
| B | |
| C | |

- (b) Predict the distance moved by the piston when water is used. [1]
-

- 37 Daphne filled a beaker of water to the brim as shown below.

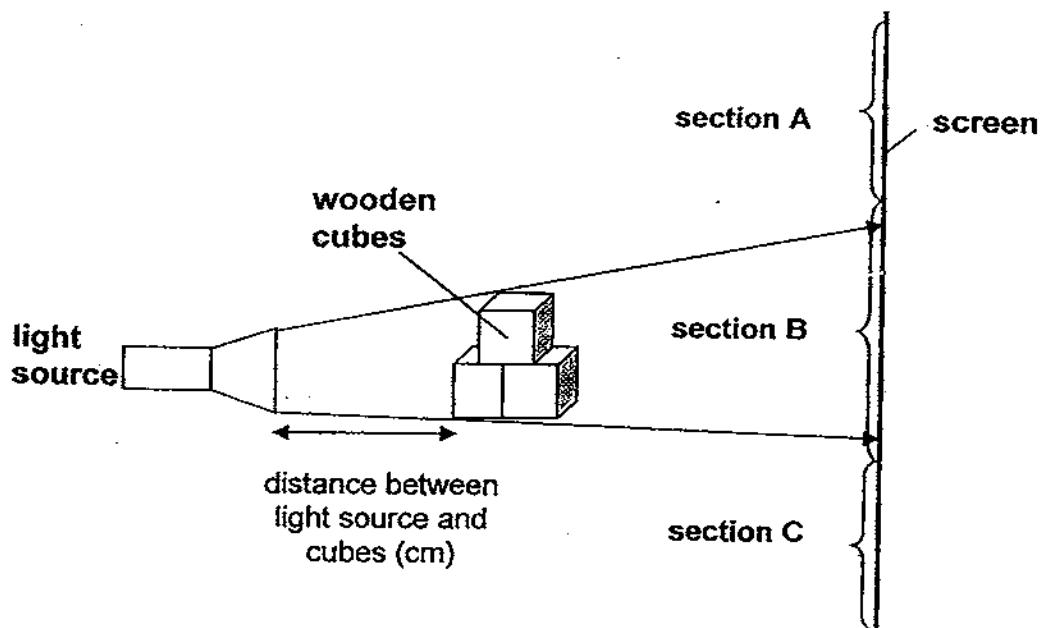
She added 5 identical marbles into the beaker of water.



- (a) State one observation which Daphne would have made. [1]

- (b) What conclusion could Daphne draw from her experiment? [1]

- 38 Lynn stacked three blocks of wooden cubes between a light source and a screen as shown below.



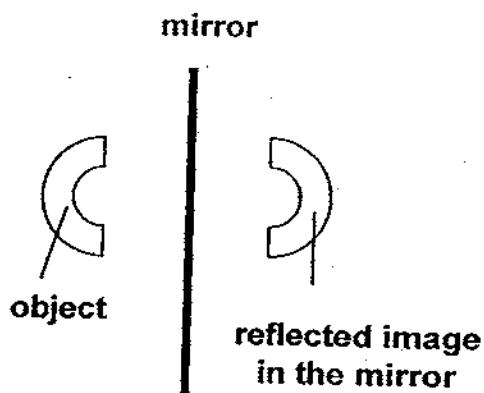
Based on the experiment above, answer the following questions:

- (a) Name the sections, A, B and/ or C, of the screen where the shadow of the cubes was **NOT** cast on. [1]

- (b) If Lynn moved the screen further away from the cubes, what would happen to the size of the shadow of the cubes? [1]

- (c) Using the **SAME** apparatus as shown above, what could Lynn do to cast a bigger shadow on the screen **WITHOUT** changing the distance between the stacked cubes and the screen? [1]

39. The diagram below shows the reflection of an object when it was placed before a mirror.

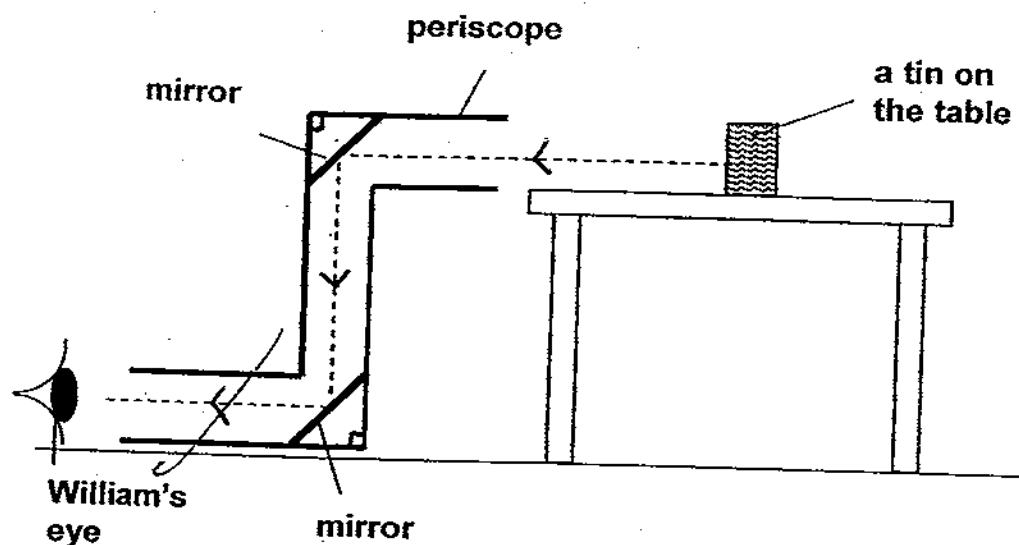


The object was replaced with the following word:

C A R

Write down in the box provided, the word that was reflected in the mirror. [2]

- 40 William placed a tin on the table and used a periscope (NOT drawn to scale) which he had constructed to see it.

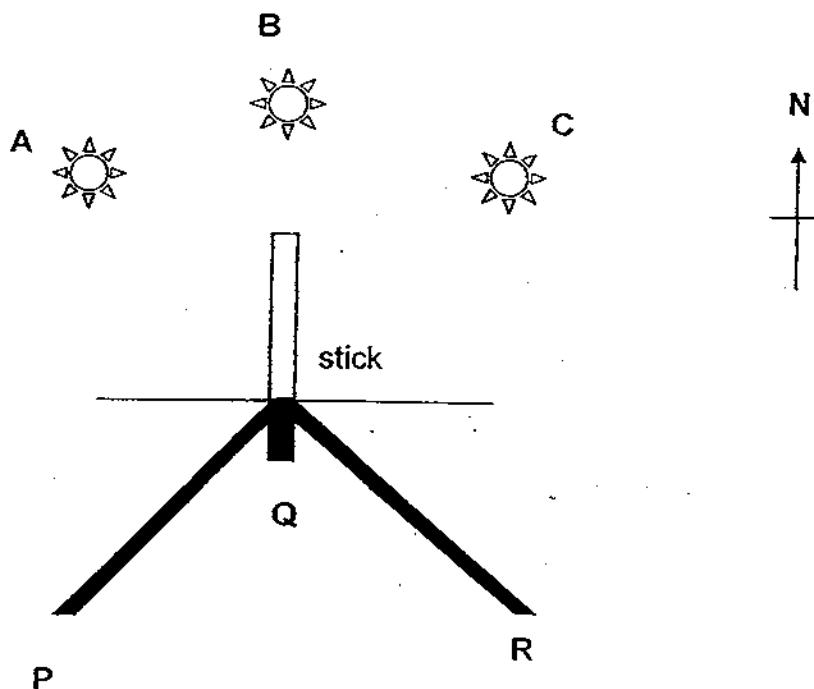


Using his periscope, William was able to see the tin on the table although he was lying down on the floor.

- (a) In the diagram above, DRAW arrowheads (►) on the light rays to show how William was able to see the tin on the table. [1]
- (b) State TWO properties of light which are used in the periscope. [2]

| | |
|------------|--|
| PROPERTY 1 | |
| PROPERTY 2 | |

- 41 John placed a stick in the middle of a basketball court as shown in the diagram below.



He recorded the length of the shadows P, Q and R at different times on the same day.

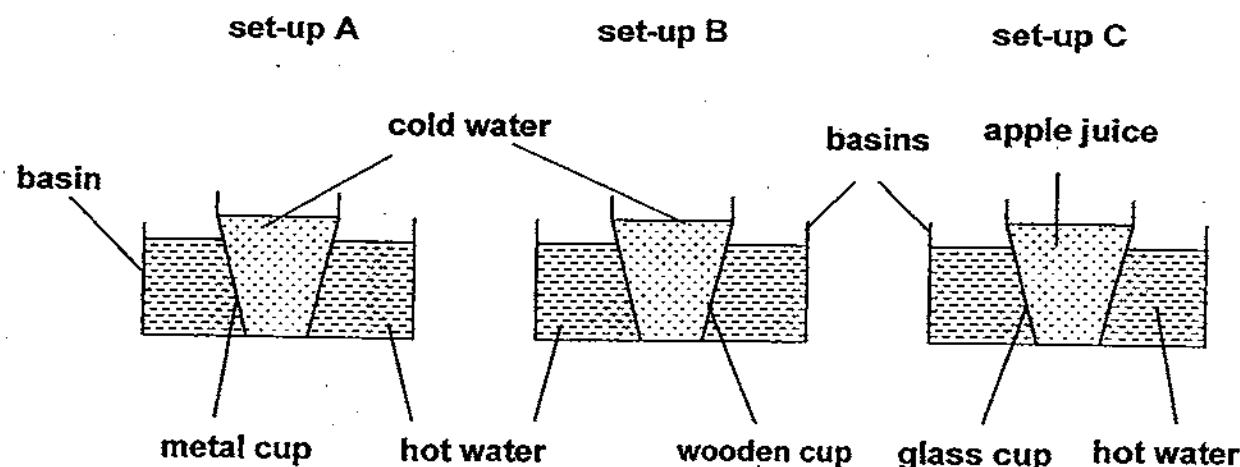
Complete the table below by filling in the shadow (P, Q and R) with its corresponding correct position of the sun (A, B and C).

[3]

| time | shadow | position of the sun |
|------------|--------|---------------------|
| 8.00 a.m. | | |
| 12.00 p.m. | | |
| 6.00 p.m. | | |

- 42 Mark had 3 cups of the same size. Each cup was made of a different material: metal, wood and glass. He wanted to conduct an experiment to find out which material is a good conductor of heat.

Mark set up the experiment using the same amount of liquid in each set-up as shown below.



- (a) Mark's teacher commented that Mark did NOT conduct a fair test for his experiment.

What should Mark do instead to conduct a fair test for his experiment?

[1]

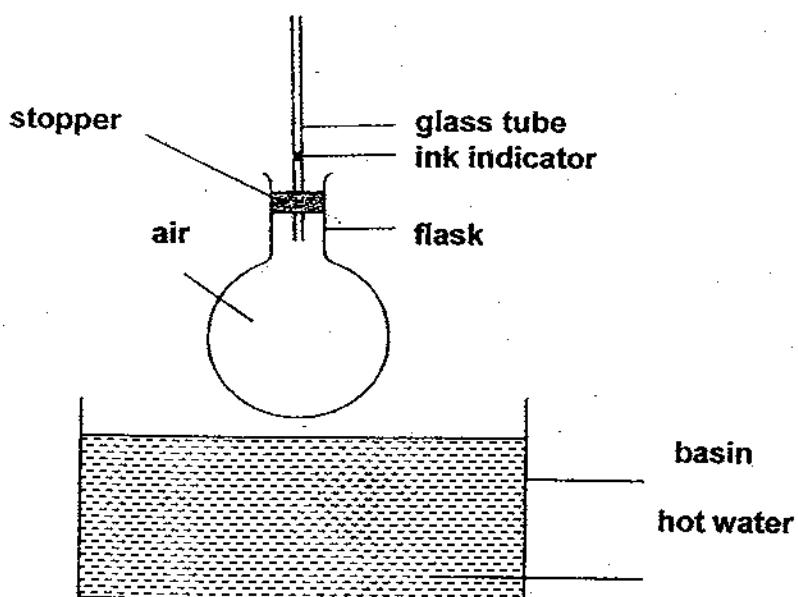
- (b) After 15 minutes, Mark realised that the temperature of the hot water in set-up A was NO longer as hot as before when he started the experiment.

Give two reasons for his observation.

[2]

| | |
|------------------------------|--|
| 1st REASON | |
| 2nd REASON | |

- 43 Mary set up an experiment using the apparatus as shown below.



Mary lowered the flask into a basin of hot water and observed that the ink indicator in the glass tube fell first before it rose.

- (a) Give a reason for Mary's observation.

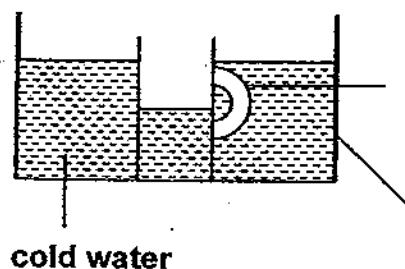
[2]

- (b) If Mary put the flask into a basin of cold water, predict what she would observe of the ink indicator in the glass tube.

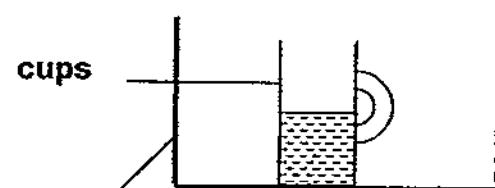
[1]

- 44 Peter poured an equal amount of hot water into two identical porcelain cups. He placed one of the cups into a basin of cold water and another into an empty basin as shown in the diagrams below.

set-up A



set-up B



After 10 minutes, Peter measured the temperature of the water in each cup and observed that the water in the cup of set-up A had a lower temperature than the water in the cup of set-up B.

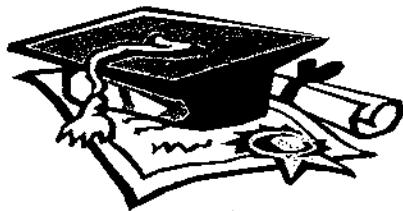
- (a) The temperature of the water in both cups became cooler.

Explain why the temperature of the water in both cups dropped in each of the following set-ups, A and B. [2]

| | |
|----------|--|
| set-up A | |
| set-up B | |

- (b) What could Peter conclude from his experiment? [1]

- END OF PAPER -



ANSWER SHEET

EXAM PAPER 2009

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 | 4 | 3 | 4 | 4 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 2 | 2 | 3 | 1 | 3 |

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

31)a)X: Give birth to its live young.

Y: lays eggs.

b)Kiwi.

c)Animal D.

32)a)He did not want air to enter the jars.

b)The bread would not turn mould. The moisture in the bread was removed so the bread was less likely to grow mould.

33)B: wooden ladle.

C: metal spoon.

D: window pane.

34)a)The paper and cloth will become red but the plastic sheet will remain white as it is water proof. The paper and cloth are not waterproof ,they absorb water, so they become red.

b)Both the white paper and cloth turned red while the white plastic remained white. The white plastic was waterproof were not waterproof.

35)a)A, C, B

b)1st : Air can be compressed.

2nd : Air occupies space.

36)a)A: sand.

B: carbonated drink.

C: air.

b)0cm.

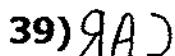
37)a)The water in the beaker will overflow.

b)Marbles, which are solid, occupy space.

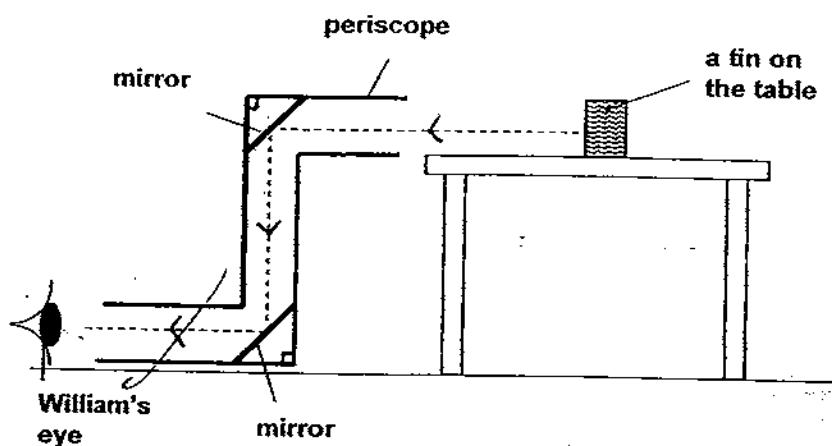
38)a)A and C.

b)The size of the shadow will increase.

c)Lynn could make the distance between the light source and cubes shorter.

39) 

40)a)



b)1: Light travels in a straight line.

2: Light can be reflected.

41) P C

Q B

R A

42)a)He should change the apple juice in set-up C to cold water.

b)1st : The hot water lost heat to the metal cup.

2nd : The hot water lost heat to the surroundings.

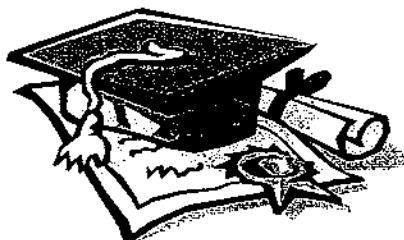
43)a)The flask expanded before the air in the flask expanded.

b)The ink indicator in the glass tube rose first before it fell.

44)a)A: The hot water in the cup lost heat to the basin of cold water.

B: The hot water in the cup lost heat to the surroundings.

b)Water is a better conductor of heat than air.





RAFFLES GIRLS' PRIMARY SCHOOL
SEMESTRAL ASSESSMENT (1)
2010

Name : _____ Index No.: _____ Class: P4 _____

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

7th May 2010

SCIENCE

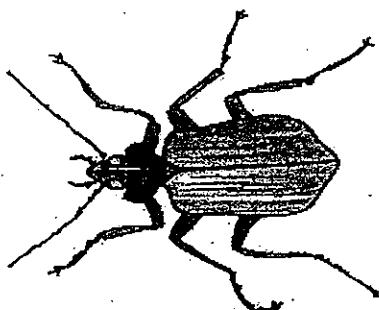
ATT: 1 h 30 min

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.

1. Which one of the following situations does NOT show that a living thing responds to changes in its surroundings?
 - (1) The cat died of old age.
 - (2) The frightened boy screamed loudly for help.
 - (3) The zebra runs away when it spots a cheetah.
 - (4) The mimosa plant folds up its leaves when touched.

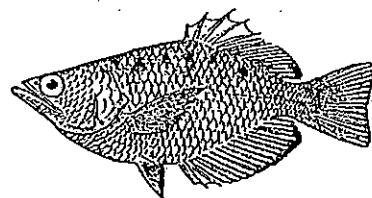
2. The diagram below shows an animal.



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.

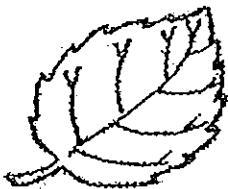
Based on their observations of the fish, which of these children made the correct statement(s) about the fish?

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

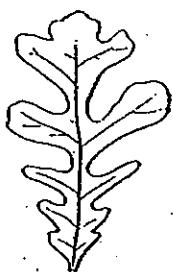
4. Ali was given 4 different types of leaves as shown below.



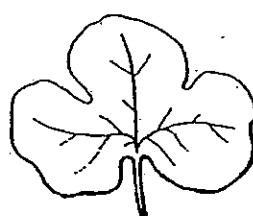
W



X



Y



Z

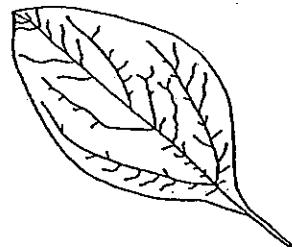
The leaf was described as follows:

is oval-shaped
has entire edge
has parallel veins

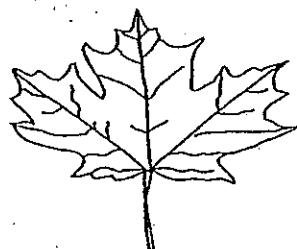
Which of these leaves, W, X, Y and/ or Z match(es) the descriptions above?

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

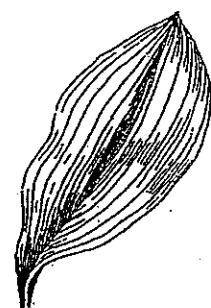
5. Three different types of leaves, A, B and C, are shown below.



A



B

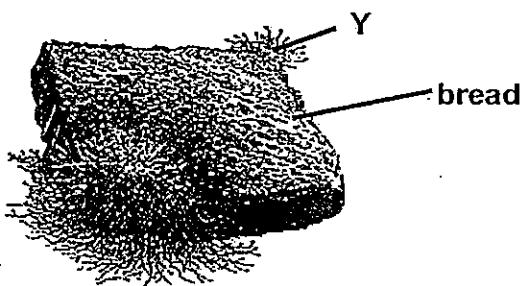
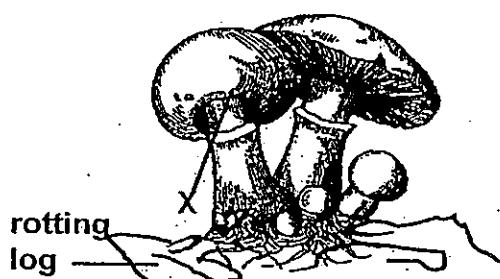


6

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

| How are the leaves classified? | Group 1 | Group 2 |
|----------------------------------|---------|---------|
| according to their shapes | A, B | C |
| according to their edges | B, C | A |
| according to their vein patterns | A, B | C |
| according to their textures | B, C | A |

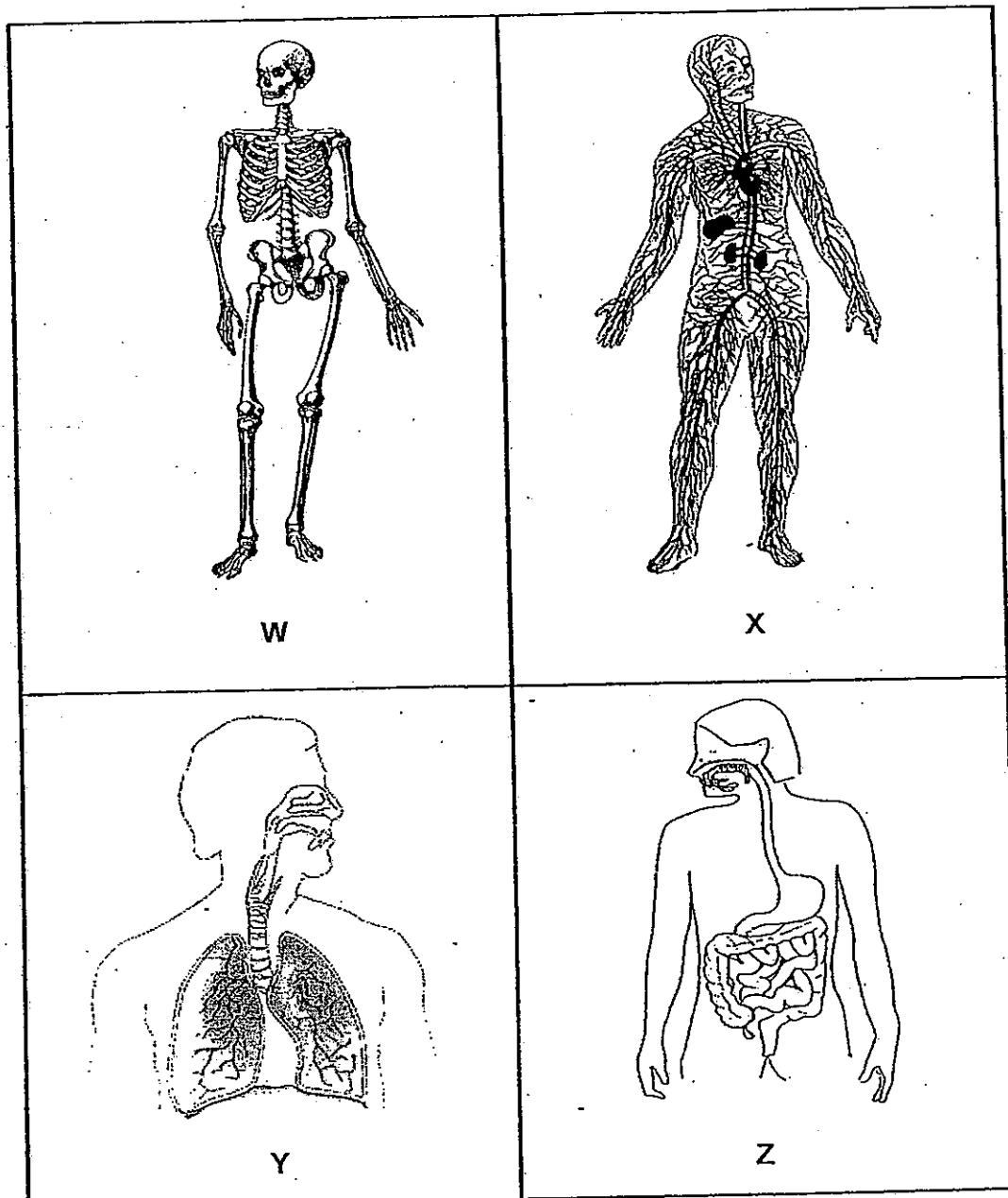
6. Two different types of living things are shown below:



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

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

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.

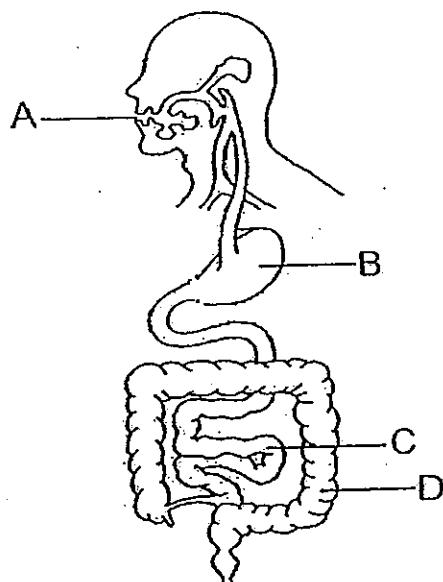
(1) A only

(2) A and C only

(3) B and C only

(4) A, B and C

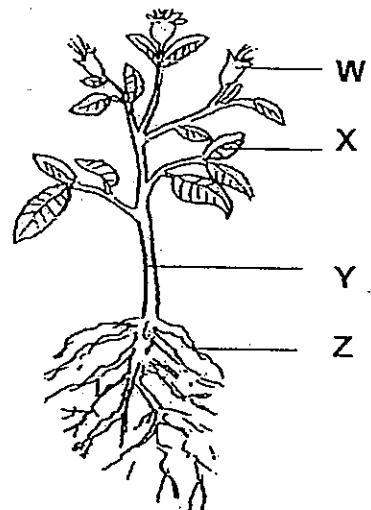
A human body system consists of the parts shown in the diagram below.



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.

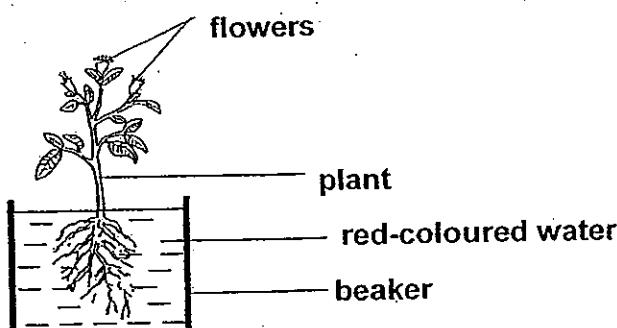
The parts of a plant, W, X, Y and Z, are labelled as shown in the diagram below.



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

| | 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 |

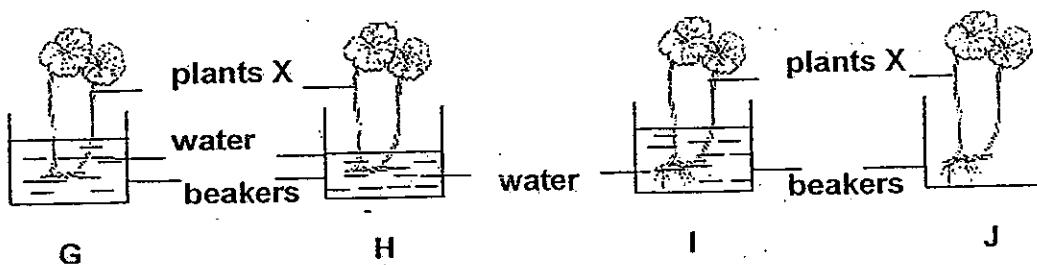
14. Sarah put a plant with flowers into a beaker of red-coloured water.



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.

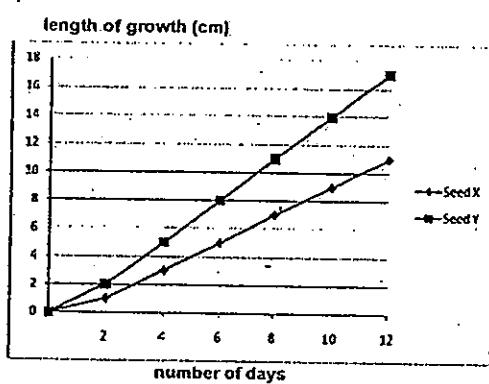
He planted 10 of each type of seeds in 2 identical pots and tabulated his findings as shown below.

| 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 |

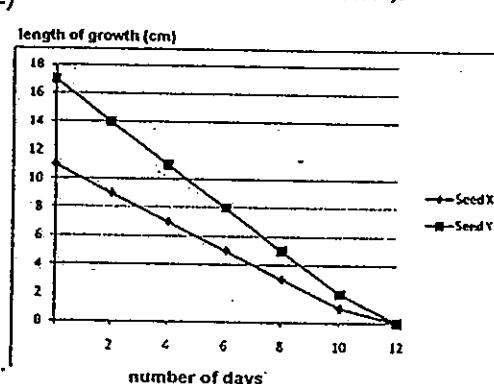
Based on the information above, answer questions 16 and 17.

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

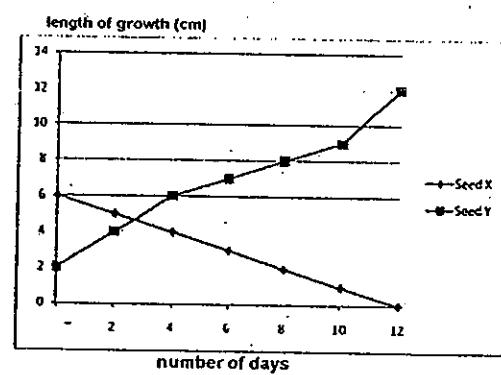
(1)



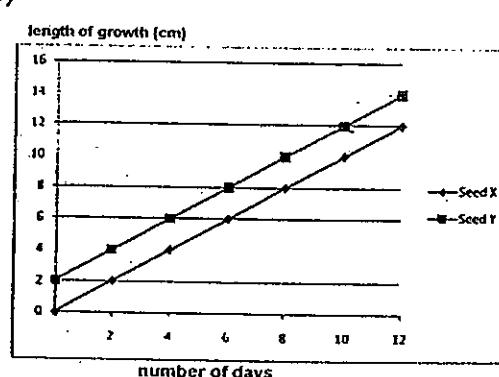
(2)



(3)



(4)



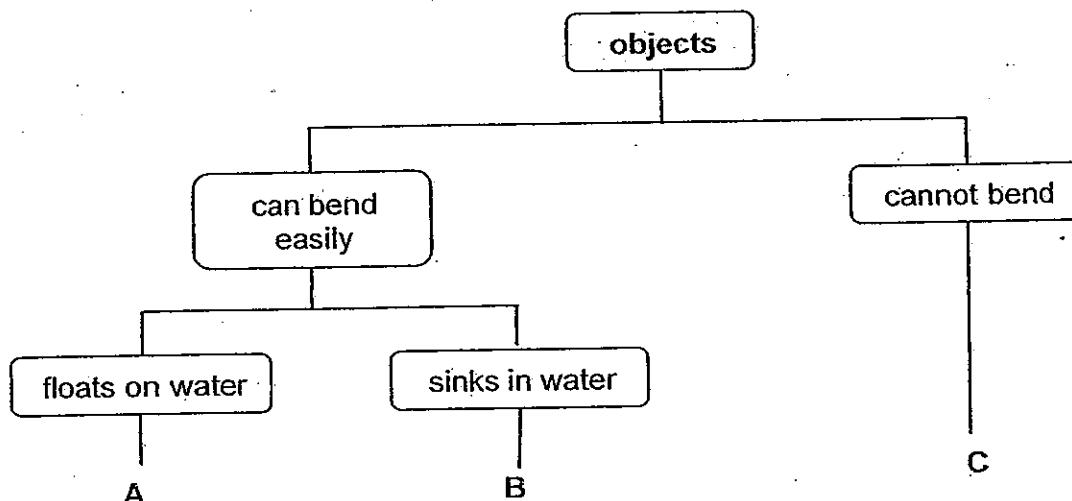
17. Which of the following conclusions Kumar made about his experiment is / are correct?

- 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
(3) B and D only

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

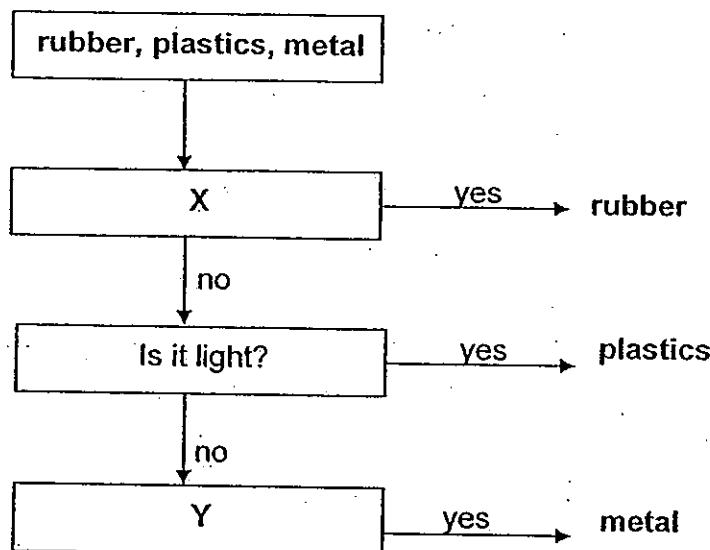
18. Darren classified some objects into two groups as shown in the diagram below.



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 |

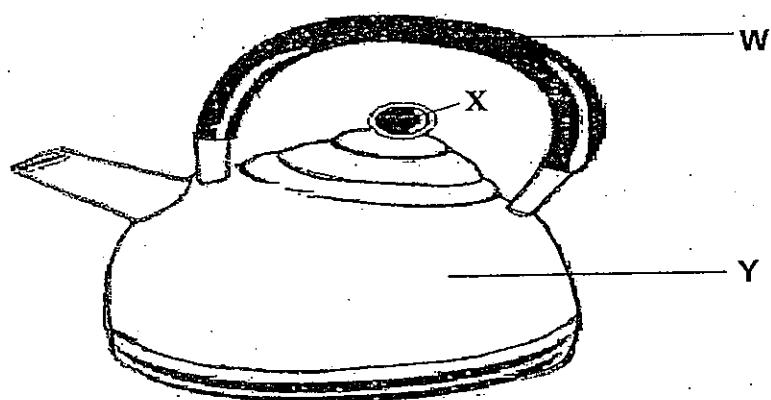
19. The flow chart below shows how some materials are differentiated.



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? |

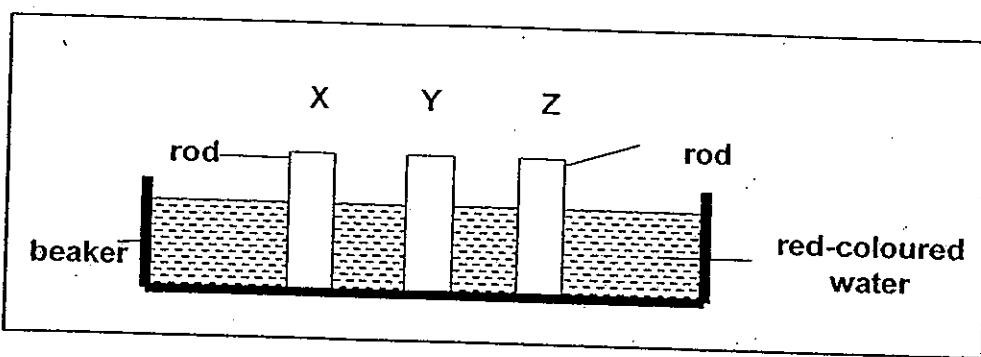
20. Johnson had a kettle with its parts labelled: W, X and Y.
W, X and Y are made of a different material.



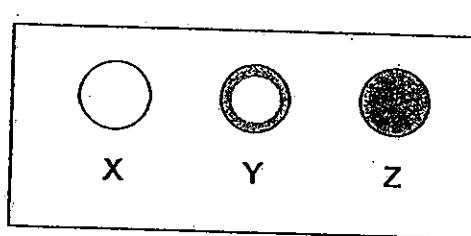
Which one of the following shows the most suitable materials used for W, X and Y?

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

21. 3 rods, X, Y and Z, were of the same length and thickness. Each of these rods was made of a different material. All were left to stand in a basin of red-coloured water as shown in the diagram below.



After a few hours, the 3 rods were removed from the basin of red-coloured water. Each of the rods was dried and the part where it was immersed in the red-coloured water was examined. The results were shown below.



| Key | |
|-----|----------------------|
| | NO part coloured red |
| | part coloured red |

What can be concluded from the experiment?

- A Rod X is made of a waterproof material.
 - B Material of rod Z is the least waterproof.
 - C Materials used to make the 3 rods are waterproof.
 - D Material of rod Y is more waterproof than material of rod X.
-
- | | |
|------------------|------------------|
| (1) C only | (2) D only |
| (3) A and B only | (4) B and D only |

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

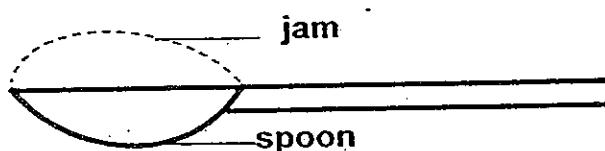
She recorded her observations in the table below.

| 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.

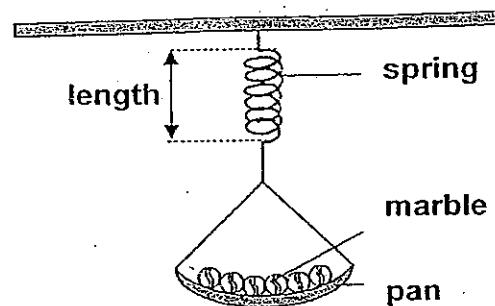
A tick (✓) in the box shows the presence of the property stated at room temperature.

| 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 |

Dorcus put a different number of identical marbles, ONE at a time, into a pan and recorded the change in the length of the spring in the table below.



Based on the information above, answer **questions 25 and 26**.

| number of marbles. | length of spring (cm) |
|--------------------|-----------------------|
| 0 | 10 |
| 5 | 12 |
| ? | 14 |
| 15 | 16 |
| 20 | 18 |

25. What was the original length of the spring?

- (1) 7 cm
(3) 12 cm

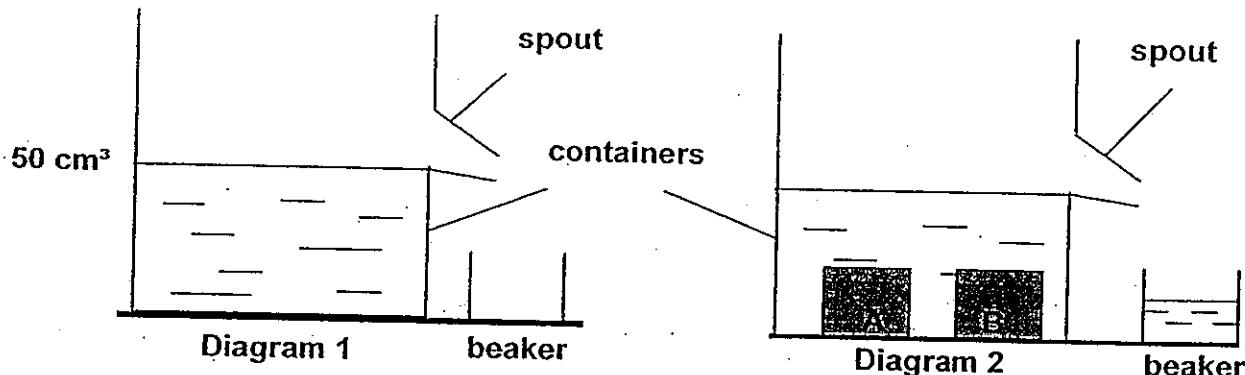
- (2) 10 cm
(4) 18 cm

26. How many marbles did Dorcus put in the pan when the length of the spring was 14 cm?

- (1) 7
(3) 9

- (2) 8
(4) 10

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.

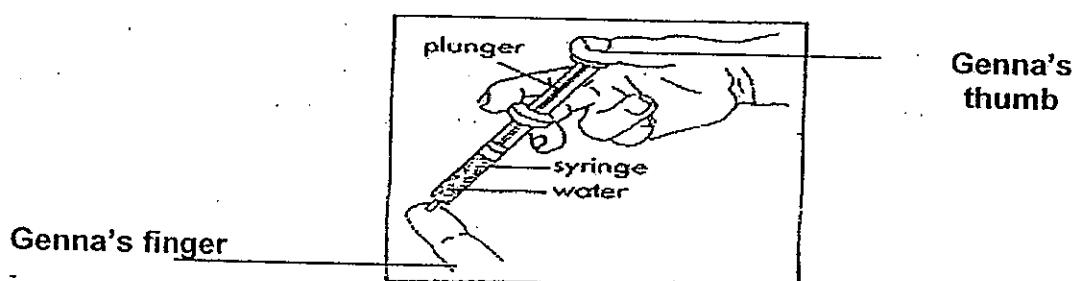


Two identical objects, A and B, each with a volume of 8 cm^3 , were dropped gently into the container of water. The beaker collected the overflowed water from the spout of the container as shown in Diagram 2.

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.

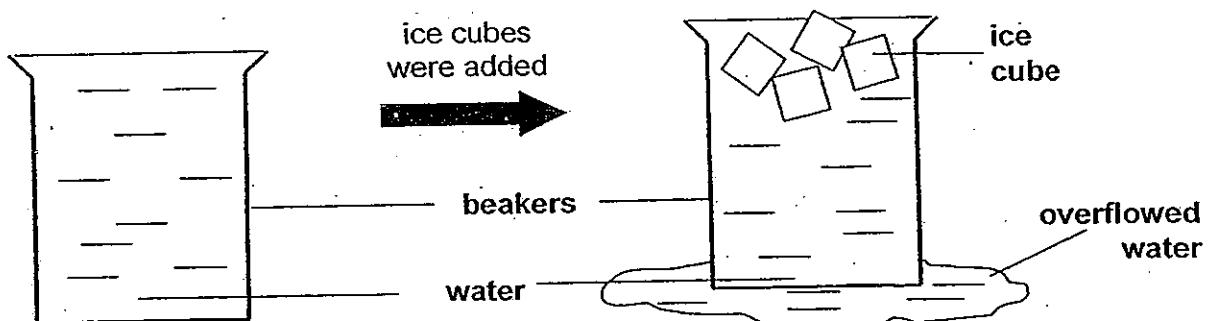


She tried to push in the plunger with her thumb but she found that she could NOT do so.

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

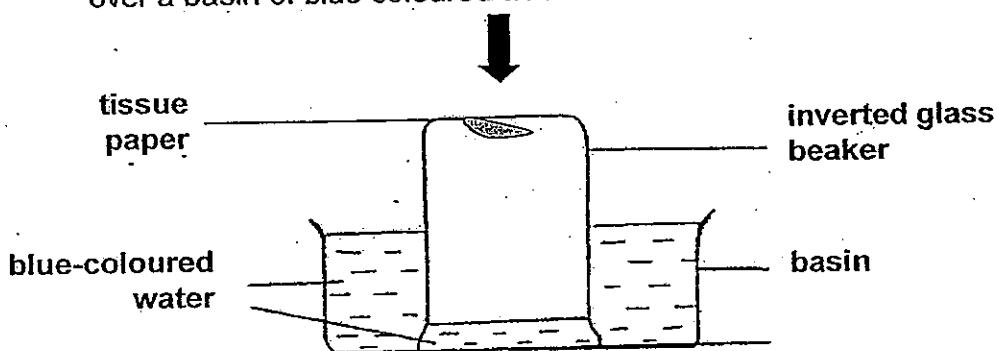
- (1) Water has no definite volume.
 - (2) Water cannot be compressed.
 - (3) Water cannot change its shape.
 - (4) The plunger cannot change its volume.

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.

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 | ✓ | | | |

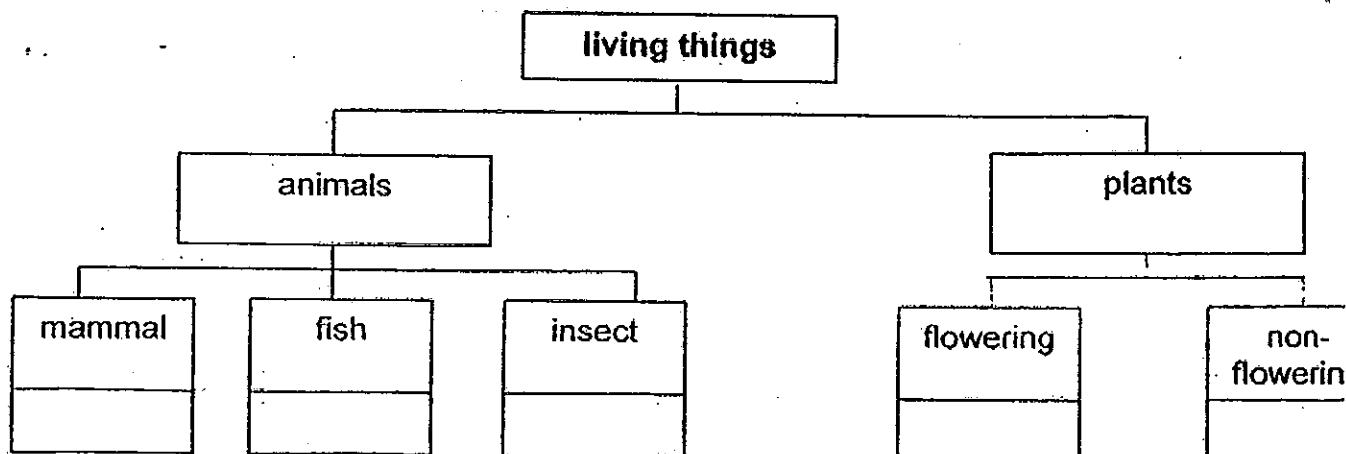
Based on the information above, answer the following questions:

- (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 page

- (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]
-
-

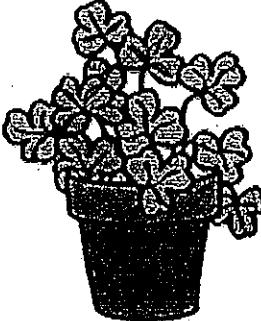
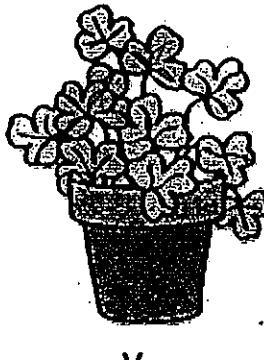
- (d) An animal, as shown below, is grouped together with D.



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.

| | | |
|---|---|---|
| pot filled with an equal amount of soil X |  S |  T |
| pot filled with an equal amount of soil Y |  U |  V |

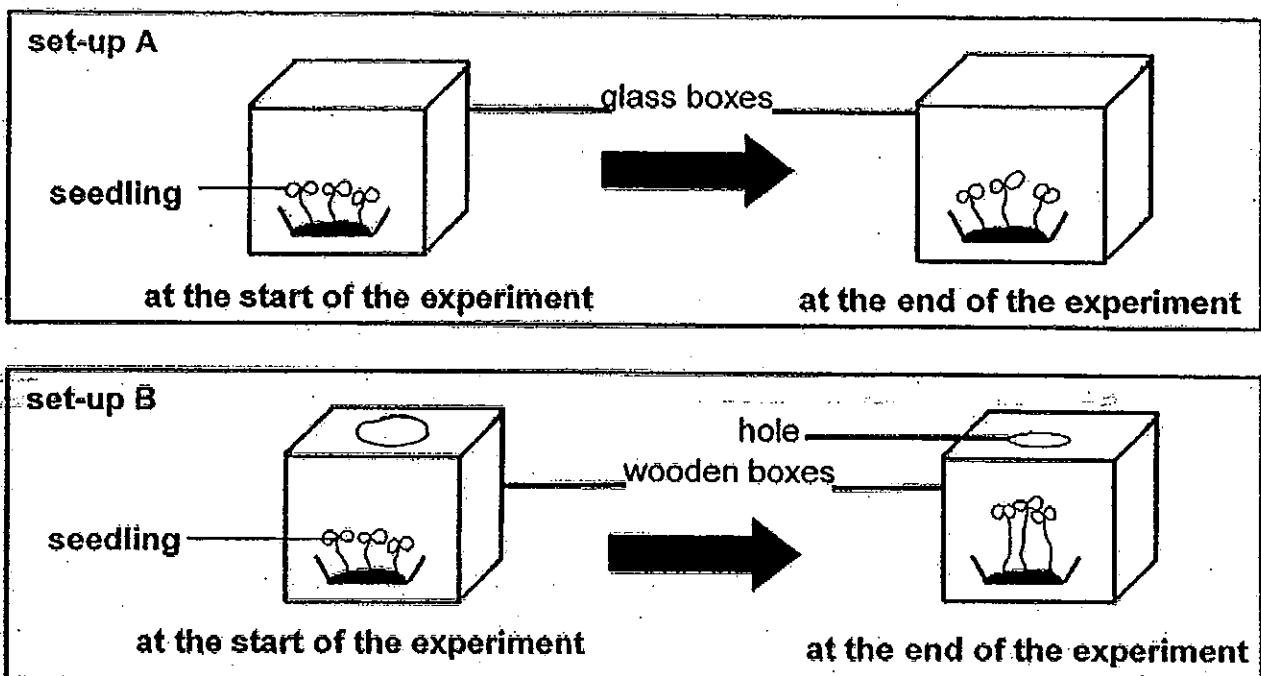
- (a) Which two of these pots should Mrs Sim use to conduct a fair experiment? [1]

Pots _____

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

| | |
|--------------------------|--|
| 1 ST VARIABLE | |
| 2 ND VARIABLE | |

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:

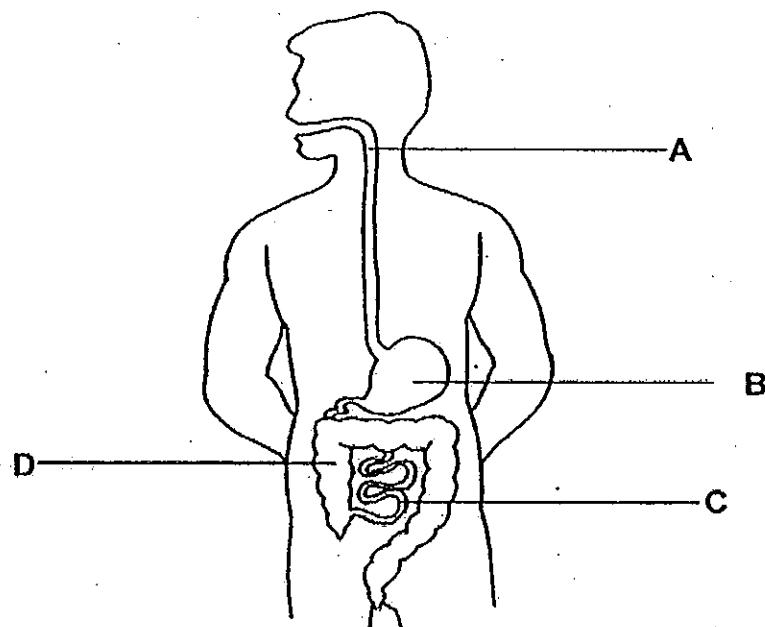
- (a) Name one OTHER difference observed between the seedlings in set-ups A and B. [1]

ANSWER *What is the name of the author of the book?*

- (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.

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.

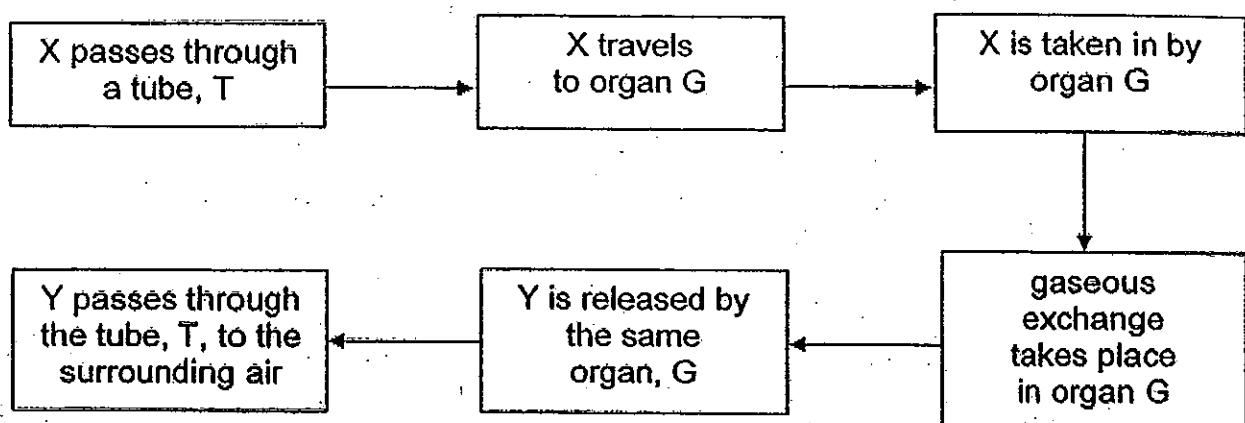
[1]

- (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.

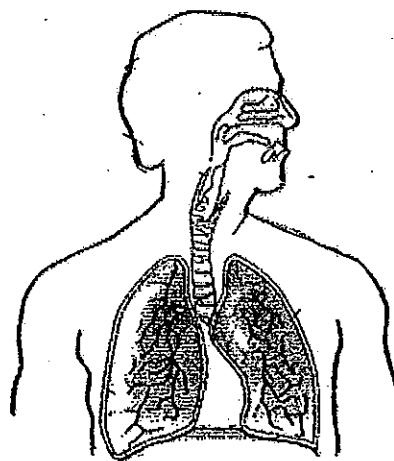


Based on the diagram above, answer the following questions:

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

Write letters G and T only.

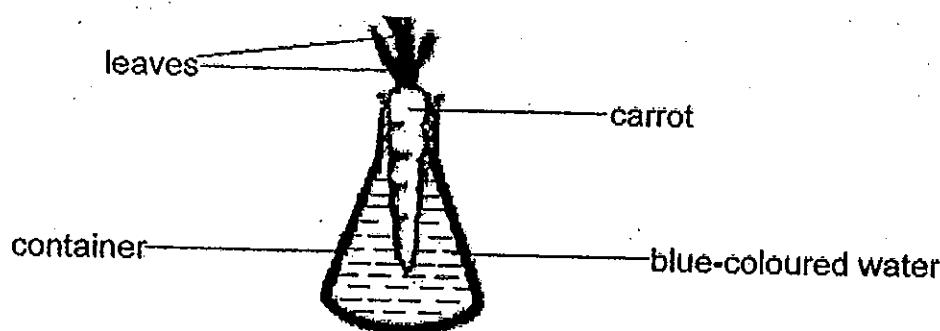
[2]



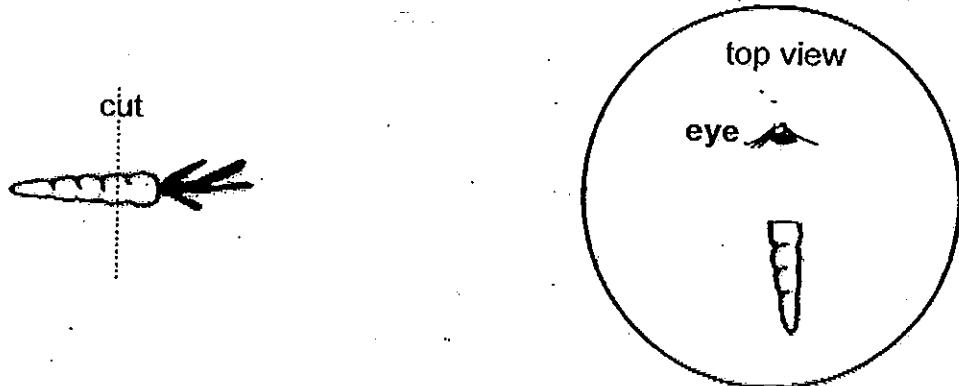
- (b) What happens to organ G when the person breathes in?

[1]

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



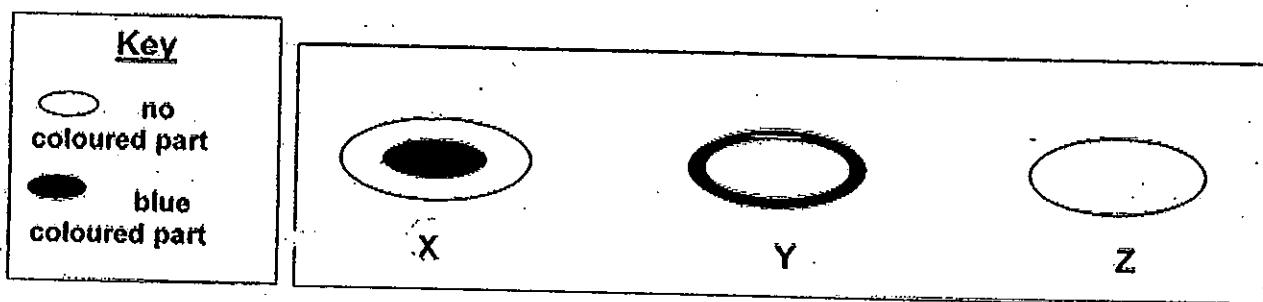
After a day, the carrot was removed and cut as shown in the diagram shown below.



- (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]

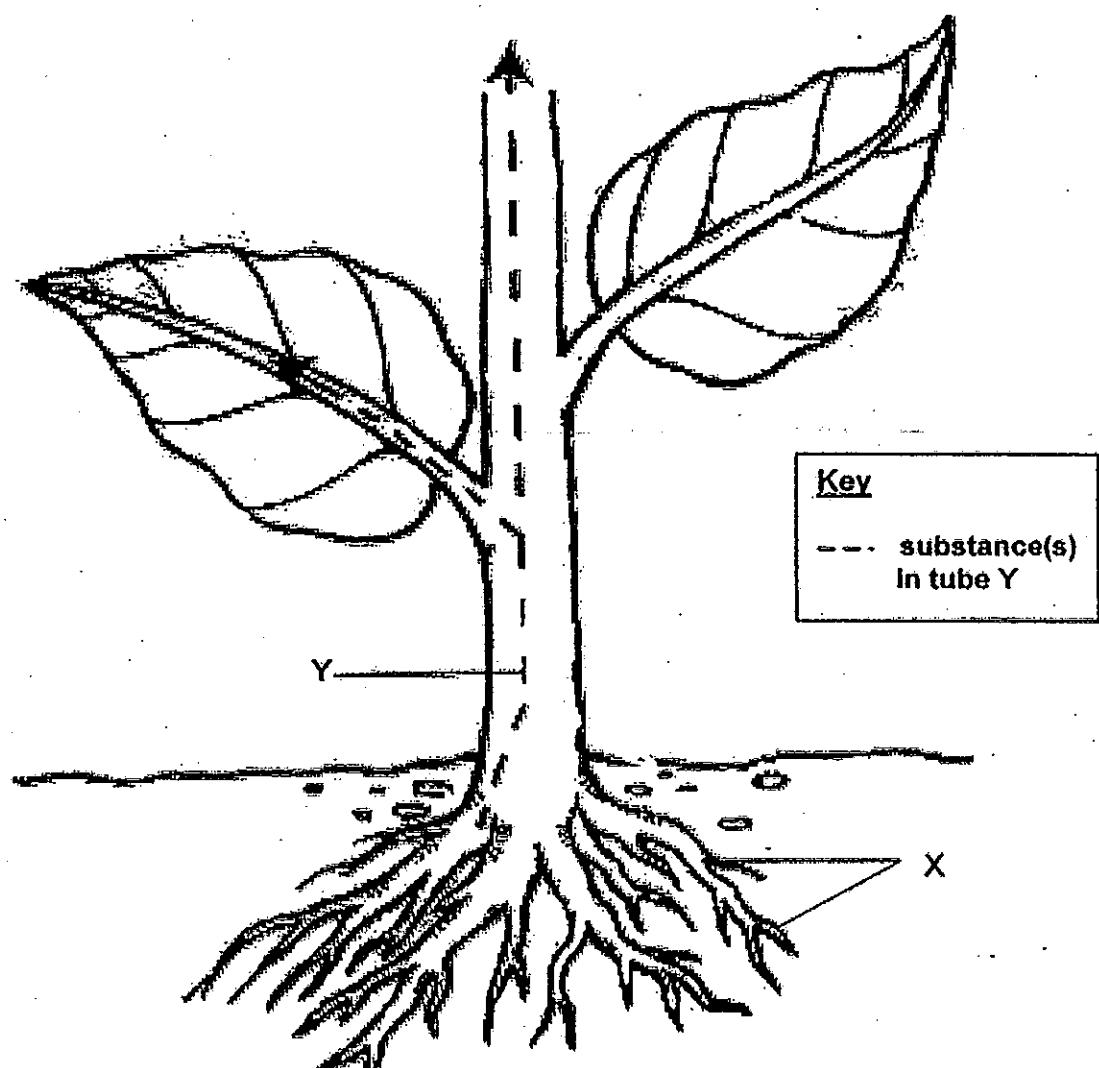


- (b) Did the leaves of the carrot turn blue?

Explain your answer.

[1]

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



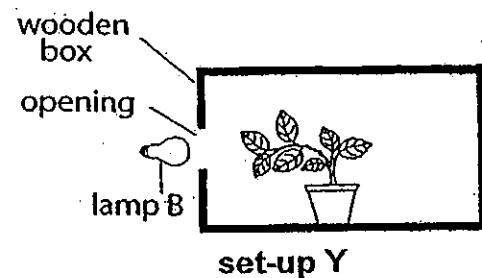
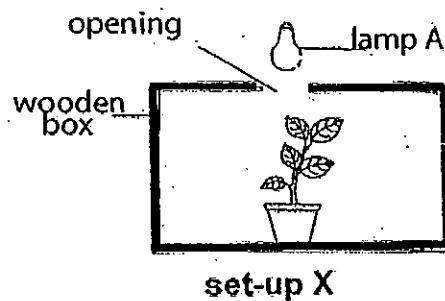
Based on the information above, answer the following questions:

- (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.



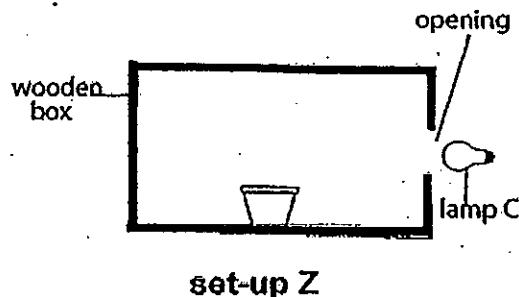
Each set-up consisted of a wooden box with an opening at one of its sides. A brightly-lit lamp was placed at the opening. A similar pot of plant was placed at the centre of the wooden box. Identical wooden boxes and lamps were used.

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.



- (b) Predict the growth of the pot of plant in set-up Z.

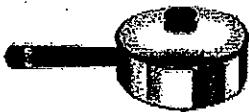
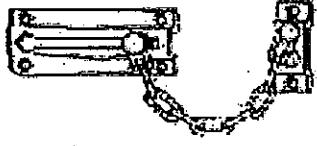
DRAW in the diagram above the growth of the plant in set-up Z after a week.

[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 | |

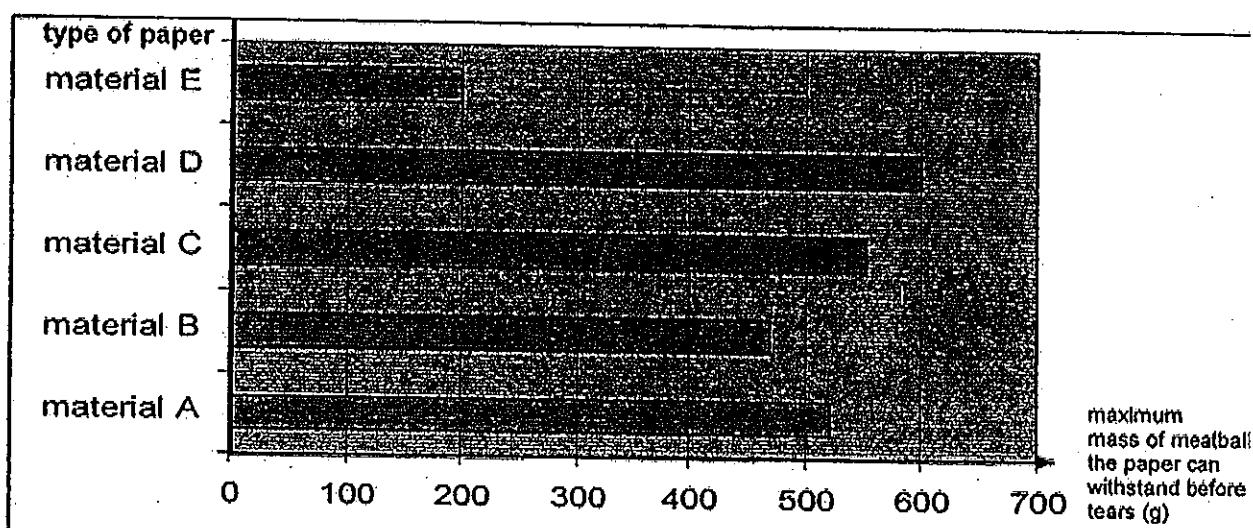
- (b) Which group would Ralph put a padlock in?

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.

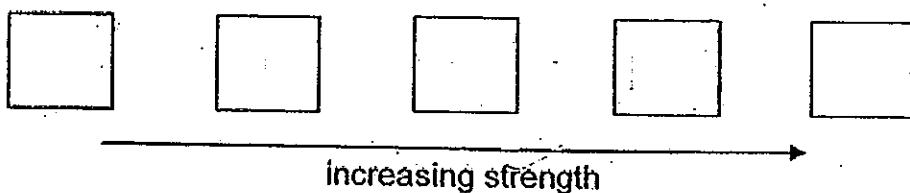


Based on the information above, answer the following questions:

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

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

[1]



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

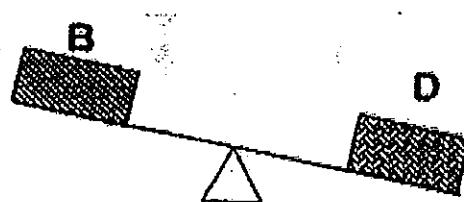
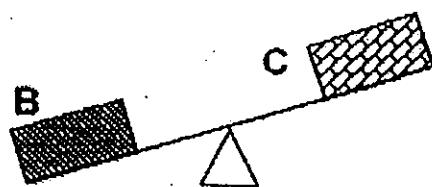
Give a reason for your answer.

[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

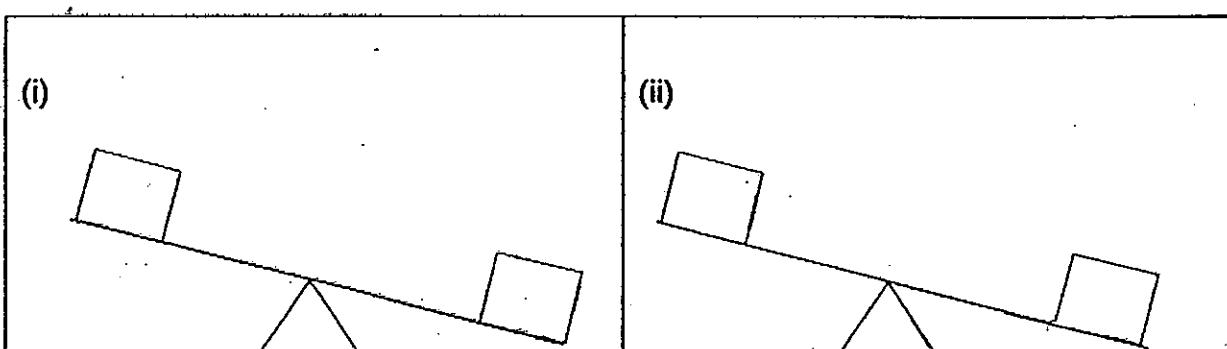
Jaime found another object, X, which was heavier than C but lighter than B.

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

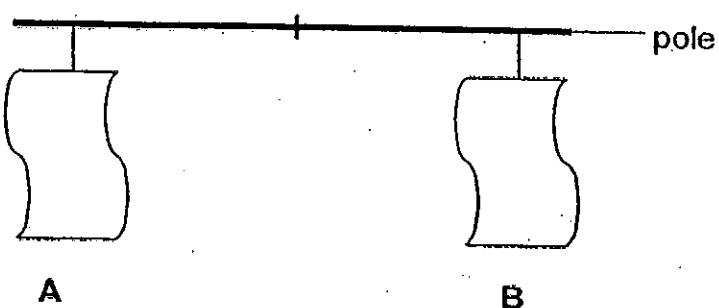
(i) X and B

(ii) X and C

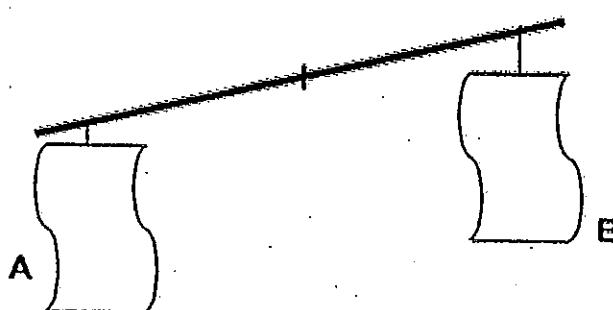
[2]



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.



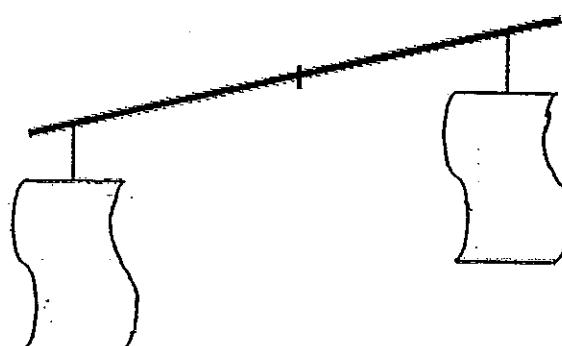
Based on the information above, answer the following questions:

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

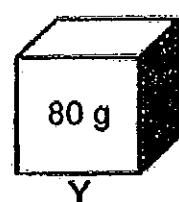
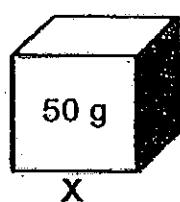
- (b) Immediately after, ANOTHER 100 cm³ of water was sprayed on the OTHER towel.

Predict the direction in which the pole would tilt.

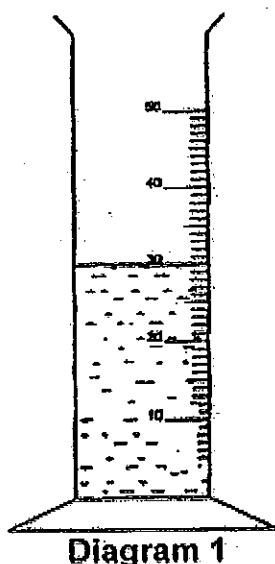
LABEL A and B on the correct towels in the diagram below. [1]



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.



block X
was put
into
the
cylinder

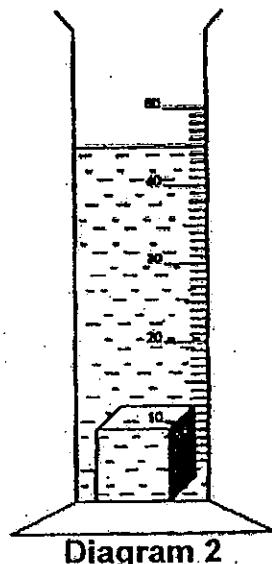
A diagram of a measuring cylinder containing water. The water level has risen to the 35 cm³ mark on the scale, indicating the volume of block X.

Diagram 1

Diagram 2

Based on the information above, answer the following questions:

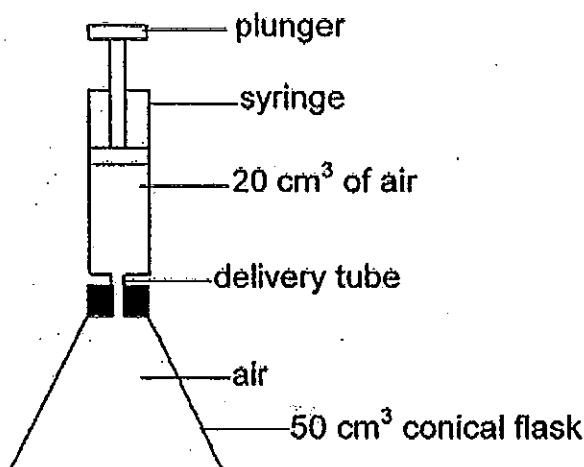
- (a) What was the volume of block X? [1]

- (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.

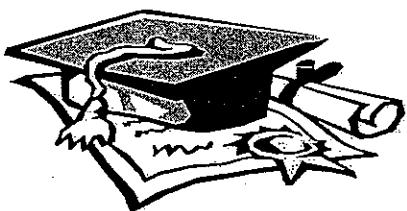
What was the total volume of air in the conical flask after the plunger was pushed in completely?

Give a reason for your answer.

[1]

- END OF PAPER -

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

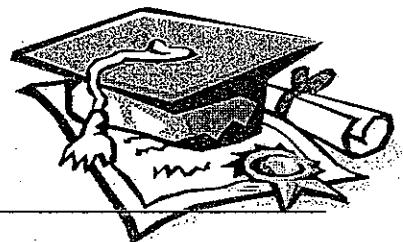


ANSWER SHEET

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

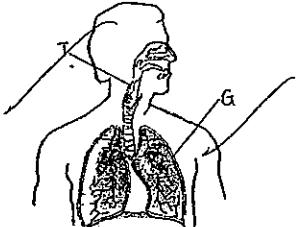
- b)A platypus.
c)They can respond to changes.
d)1)It has only 2 body parts. 2)It has 8 legs.

- 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

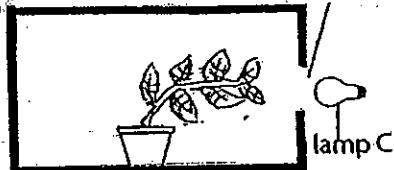
b)Yes. When the blue coloured water is absorbed the stem transports the blue water to the leaves.

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.



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (2) 2011

Name : _____ Index No: _____ Class: P 4 _____

28th October 2011

SCIENCE

Att: 1 h 20 min

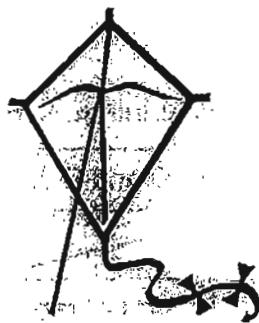
SECTION A (25 X 2 marks)

For each question from 1 to 25, 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.

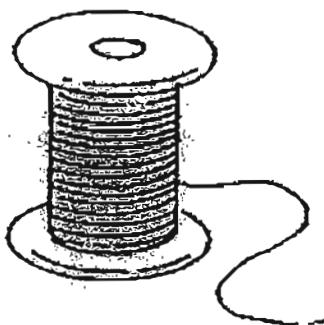
| | | |
|-----------------------|--------------------------|-------|
| Practical 10% | Your score out of 100 | |
| Section A 50% | | |
| Section B 40% | | |
| | Class | Level |
| Highest score | | |
| Average score | | |
| Parent's signature | | |

1. Which one of the following is a living thing?

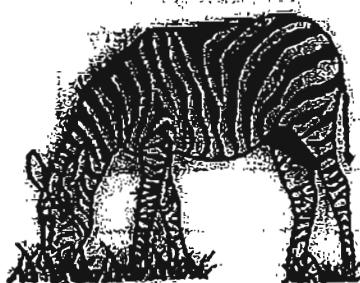
(1)



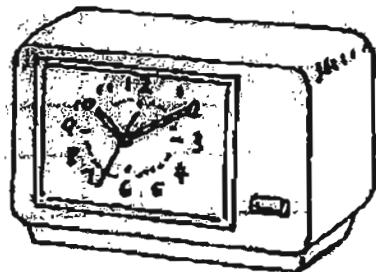
(2)



(3)

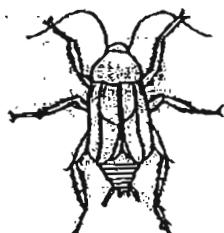


(4)



2. Which one of the following animals is NOT an insect?

(1)



(2)



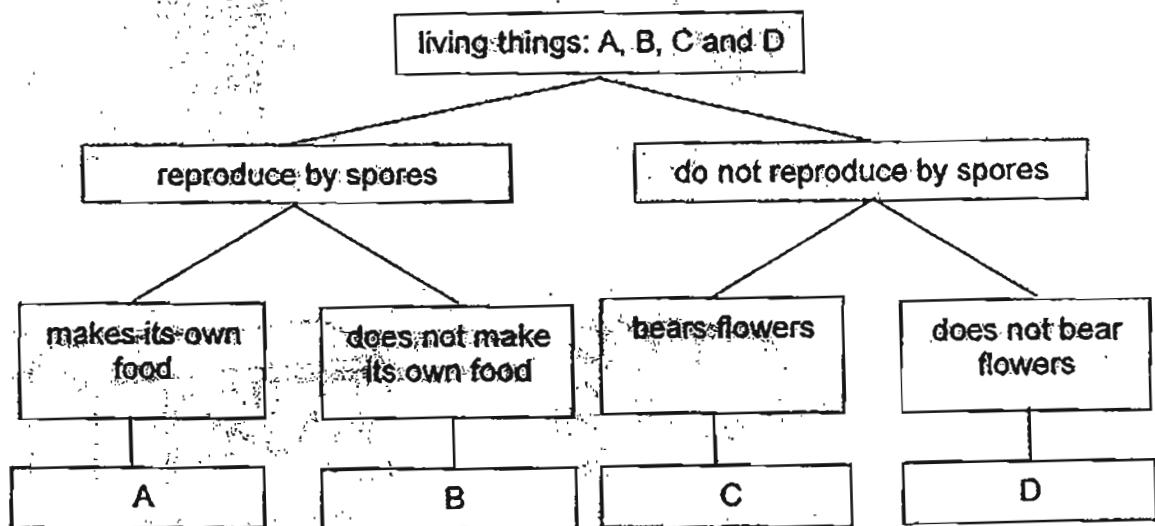
(3)



(4)



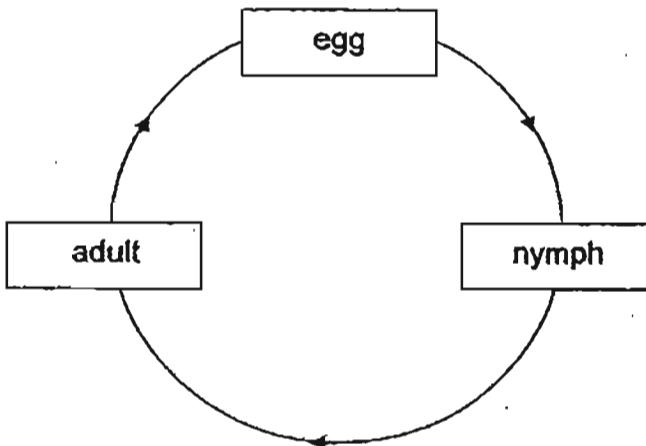
3. The classification table below differentiates living things A, B, C and D.



Which one of these living things represents moss?

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

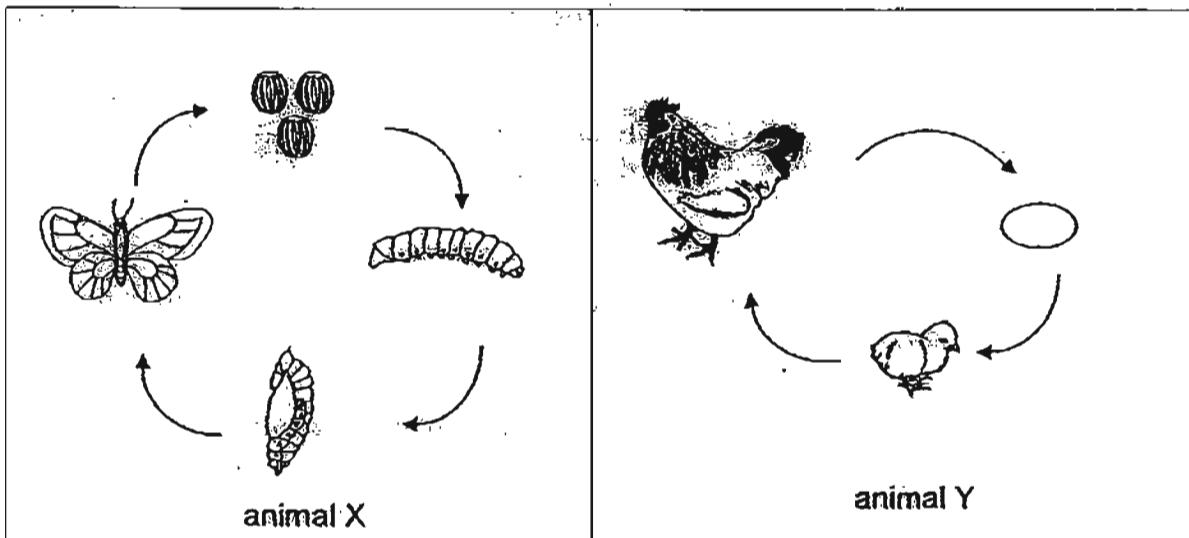
4. The diagram below shows the life cycle of an animal.



Which one of the following animals has its life cycle as shown above?

- (1) frog
- (2) beetle
- (3) chicken
- (4) cockroach

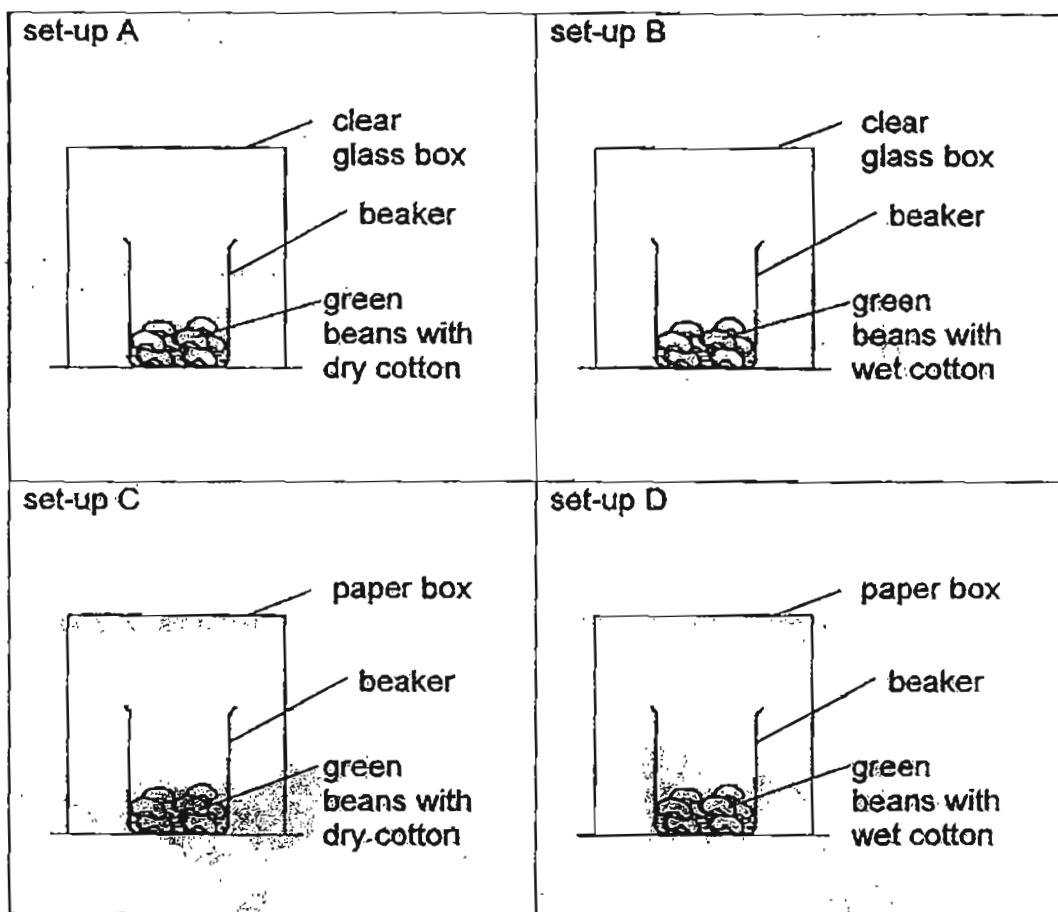
5. The diagrams below show the life cycles of two animals, X and Y.



Based on the information above, which one of the following statements is correct?

- (1) Both adults of animals X and Y lay eggs.
- (2) Animal Y has more stages in its life cycle than animal X.
- (3) Both the young of animals X and Y resemble their parents.
- (4) At the adult stage, animal X has wings but animal Y does not have wings.

6. Jimmy carried out an experiment using similar green beans and boxes of the same size in set-ups A, B, C and D as shown below.



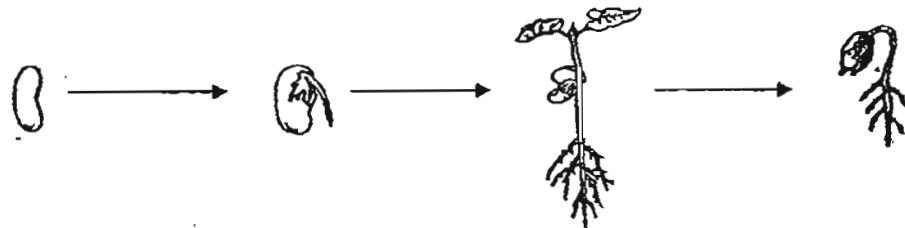
Jimmy placed all set-ups by a window. No sunlight reached the seeds in the paper boxes.

In which of these set-up(s) would the green beans germinate?

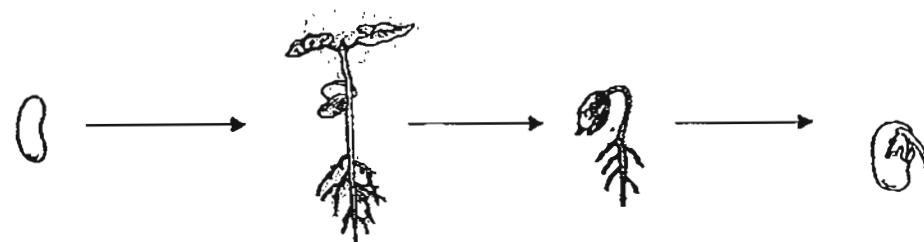
- (1) B only
- (2) A and D only
- (3) B and D only
- (4) A, C and D only

7. Which one of the following diagrams shows the correct development of a germinated seed?

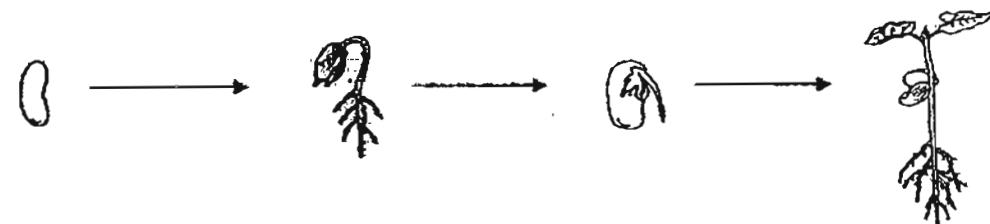
(1)



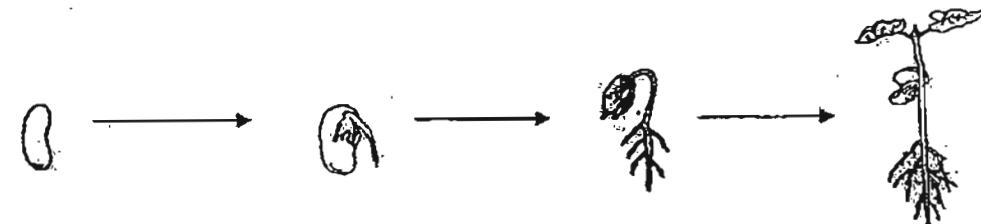
(2)



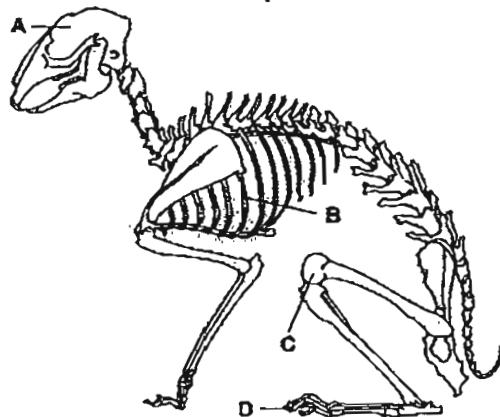
(3)



(4)



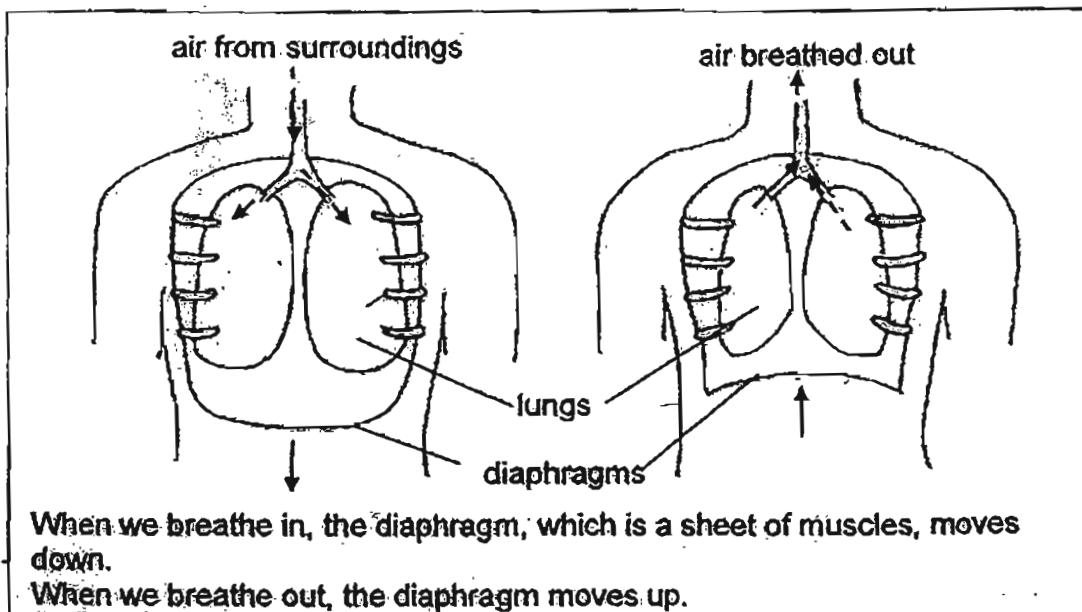
8. The diagram below shows the labelled parts of the skeletal system of an animal.



Which of these parts protect certain organs of the animal?

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

9. The diagram below shows what happens when we breathe in and out.



When we breathe in, the diaphragm, which is a sheet of muscles, moves down.

When we breathe out, the diaphragm moves up.

Key

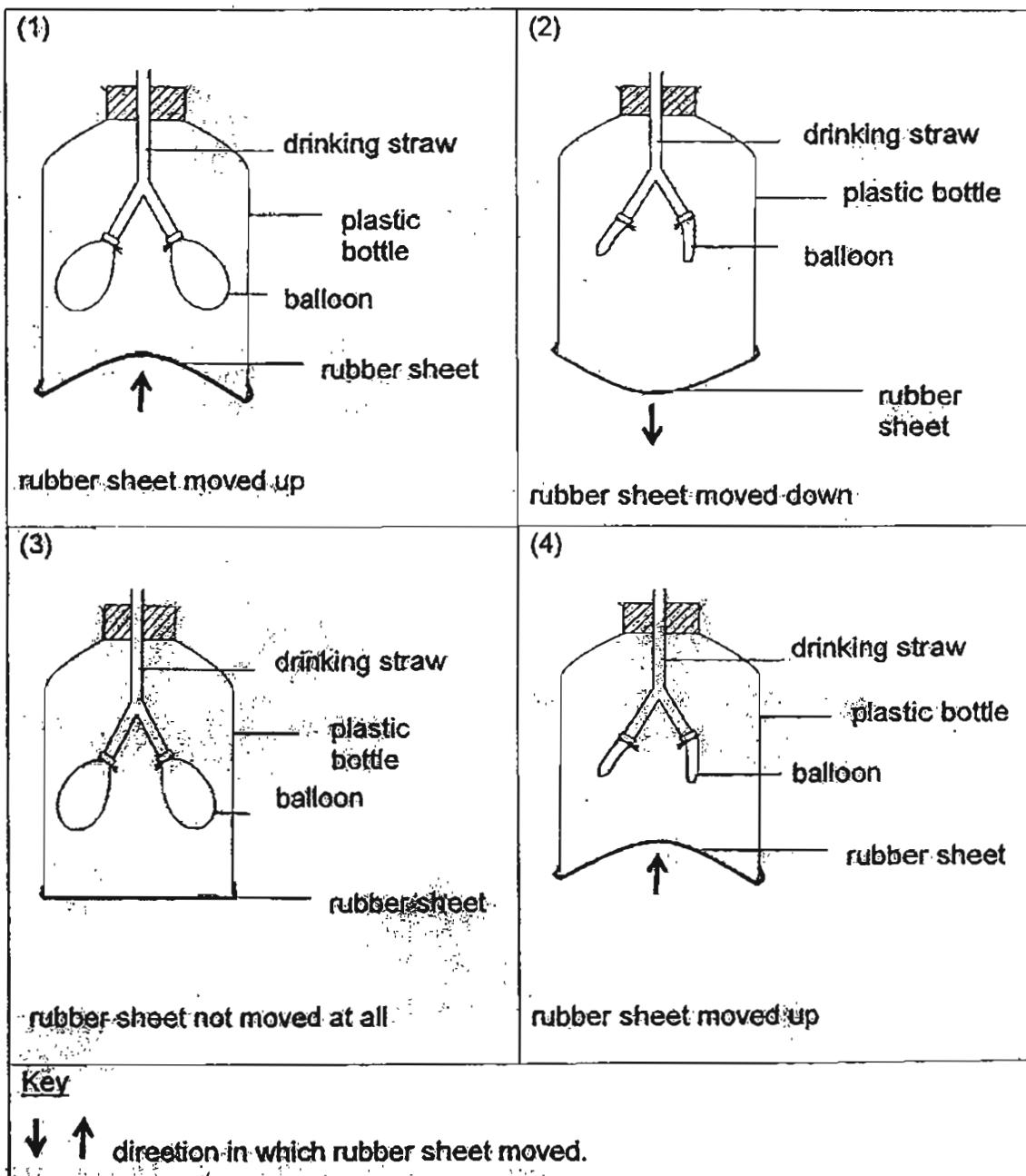
- direction of movement of diaphragm
- > direction of movement of air

to be continued on the next page

continued from the previous page

Based on the information on page 6, four pupils drew models of the human respiratory system as shown below.

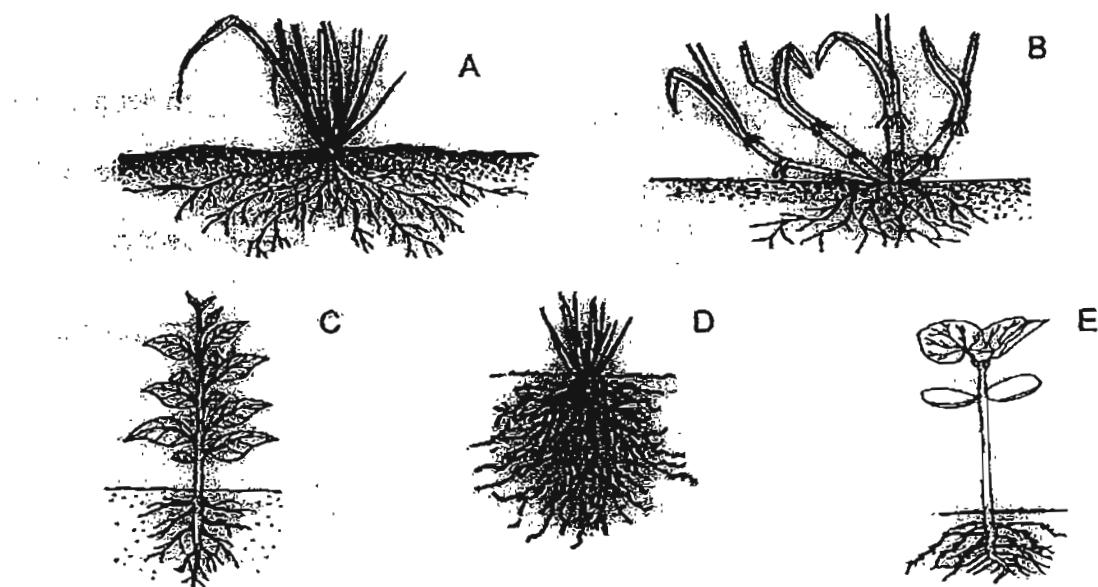
Which one of these model drawings was the best representation?



10. There are basically 2 types of root systems as shown in the diagrams below.

| tap root system | fibrous root system |
|--|--|
|  <p>ground main root branch roots</p> |  <p>stem ground cluster of roots</p> |
| The tap root system has a single main root with branch roots growing from it. | The fibrous root system has a cluster of roots growing from the base of the stem, replacing the main root. |

Based on the information above, classify the roots of these plants, A, B, C, D and E, as shown below.

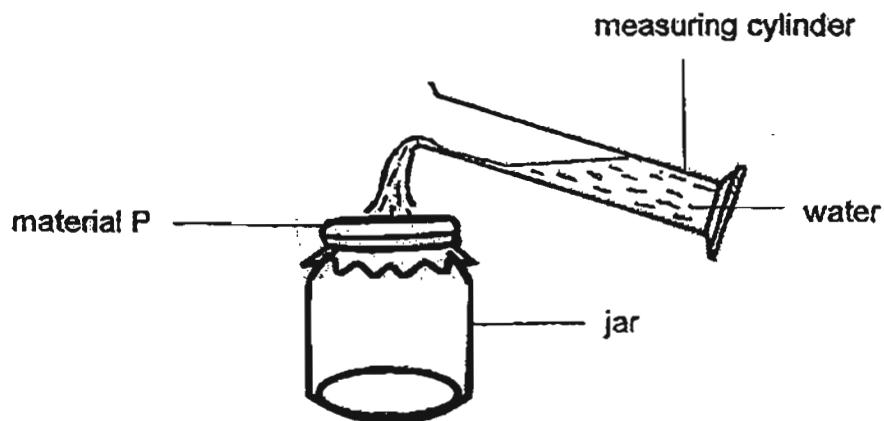


Which one of the following shows correctly how the roots of these plants are grouped?

| tap root system | fibrous root system |
|------------------------|----------------------------|
| (1) A and E | B, C and D |
| (2) B and C | A, D and E |
| (3) C and E | A, B and D |
| (4) B, D and E | A and C |

11. Sam selected four materials, P, Q, R and S, of equal size to find out how well each material absorbed water.

An experiment using the following apparatus was conducted for his investigation.



Material P was placed over the mouth of a jar. 50 ml of water was poured through the material.

The whole experimental procedure was repeated with Q, R and then S.

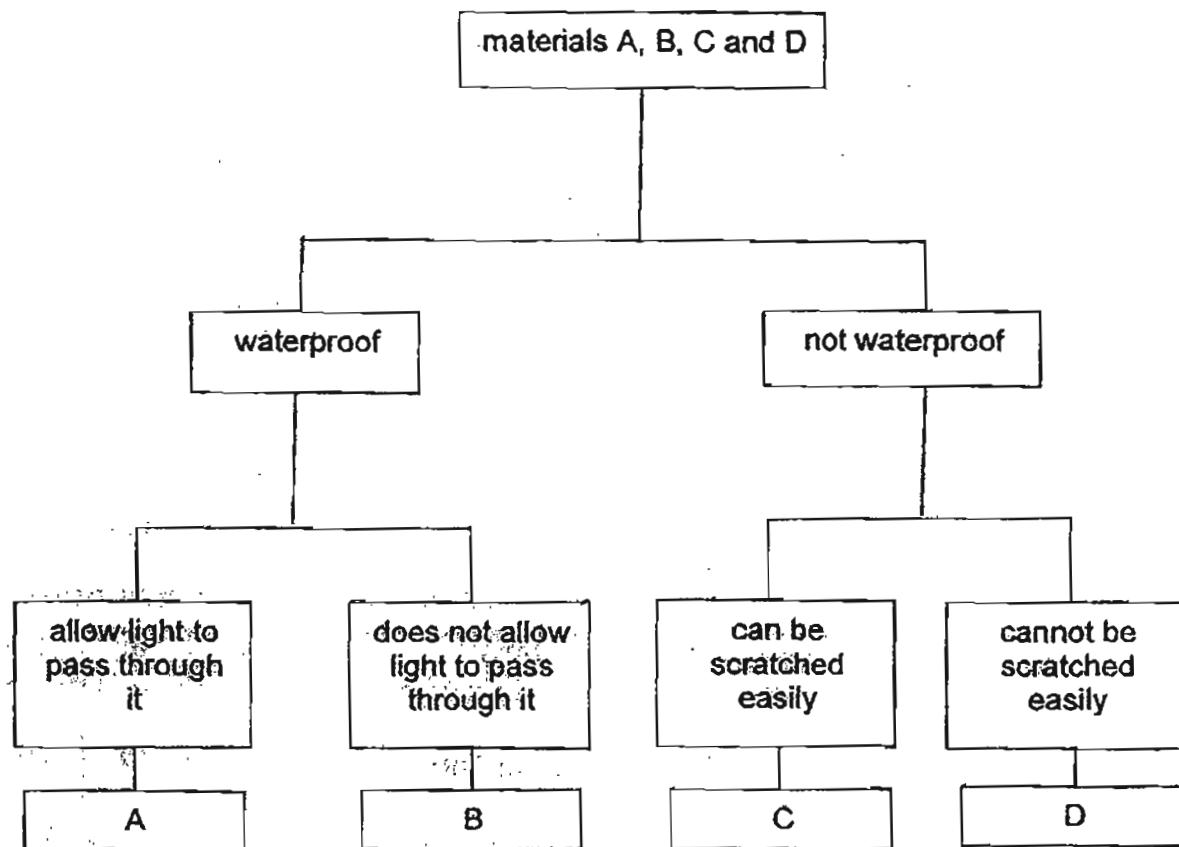
The amount of water collected in the jar was recorded in the table below.

| mouth of jar covered with material | P | Q | R | S |
|---|----|----|----|----|
| amount of water collected in the jar (ml) | 45 | 34 | 15 | 29 |

Based on the information above, which one of the following shows the correct arrangement of these materials based on how well they absorbed water?

| most absorbent | | | | |
|----------------|---|---|---|---|
| (1) | P | Q | S | R |
| (2) | Q | R | S | P |
| (3) | R | S | Q | P |
| (4) | S | P | Q | R |

12. Four materials, A, B, C and D, were differentiated as follows:



Martha wanted to make part X of an umbrella, as shown below, to keep rain and sun off.



Based on the information above, which one of these materials, A, B, C or D, should Martha use?

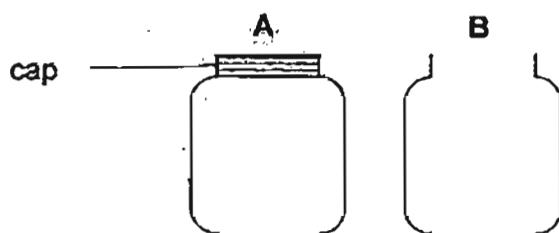
- (1) A
- (2) B
- (3) C
- (4) D

13. Matter is anything that has mass and occupies space.

Which one of the following is NOT matter?

- (1) air
- (2) honey
- (3) shadow
- (4) milk powder

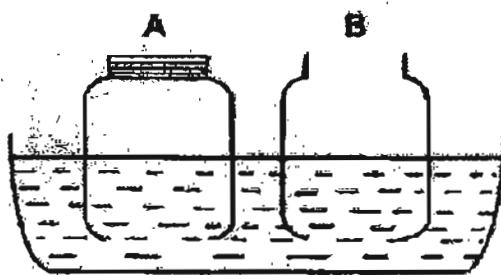
14. Siew Jing cut off the bottom of 2 plastic containers, A and B. She screwed the cap tightly on bottle A but NOT on bottle B as shown below.



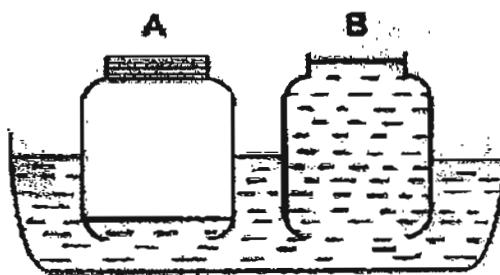
Next, she pushed both bottles directly into a tank of water.

Which one of the following diagrams shows the correct levels in bottles A and B?

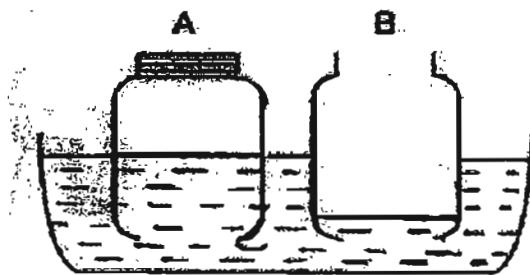
(1)



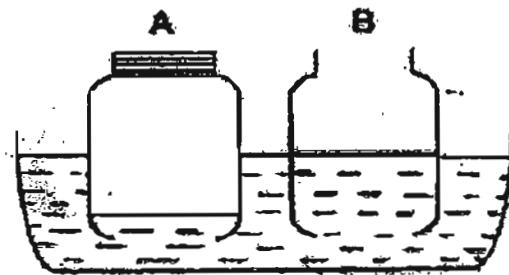
(2)



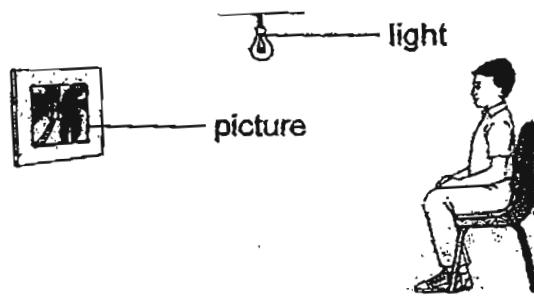
(3)



(4)



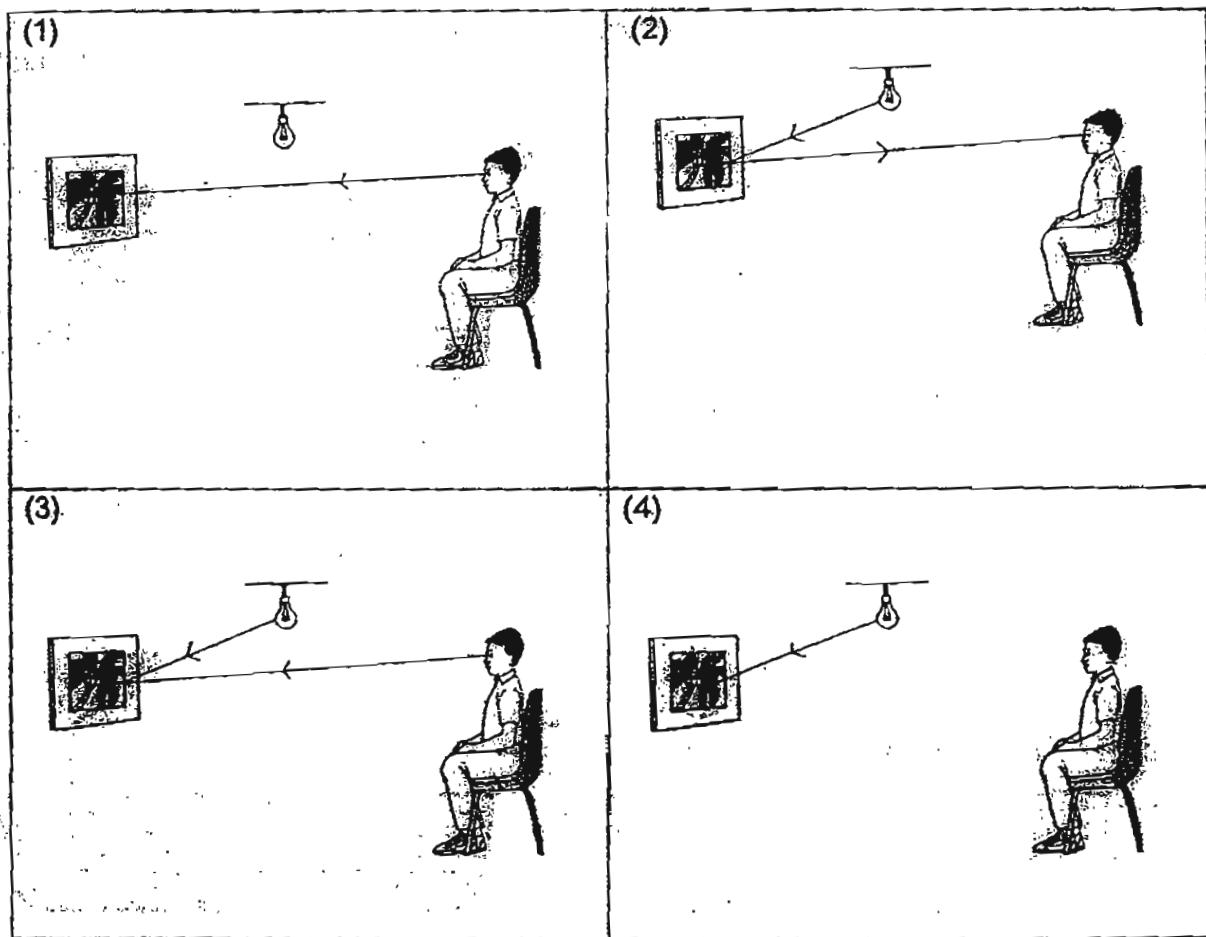
15. Look at the picture below.



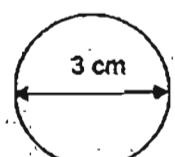
Which one of the following shows the path of light which enables the boy to see the picture?

Key

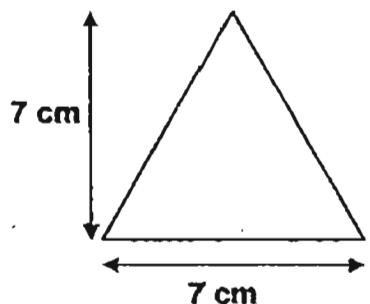
direction of light →



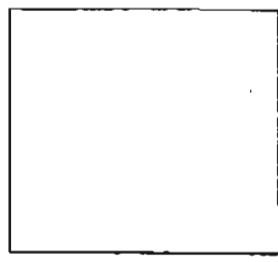
16. Below are 3 figures each cut out from a different material.



tracing
paper

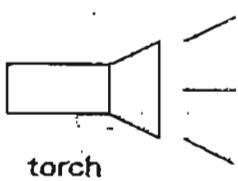


wood



7cm
clear plastic

The 3 figures are glued together and placed between a torch and a screen as shown below.



Which one of the following is the most likely shadow seen on the screen?

(1)



(2)



(3)

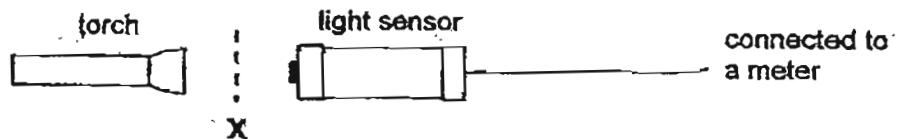


(4)



17. Ashley had 4 different materials A, B, C and D of similar size and shape.

She placed material A at position X between a lighted torch and light sensor connected to a meter which measured how much light passed through the material:



Ashley then replaced the material A with another material B, C and D, ONE at a time.

She recorded her results in the table below:

| material | amount of light that passed through (units) |
|----------|---|
| A | 450 |
| B | 600 |
| C | 100 |
| D | 850 |

Based on the information above, which material could possibly be used to make curtains to block out the greatest amount of sunlight?

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

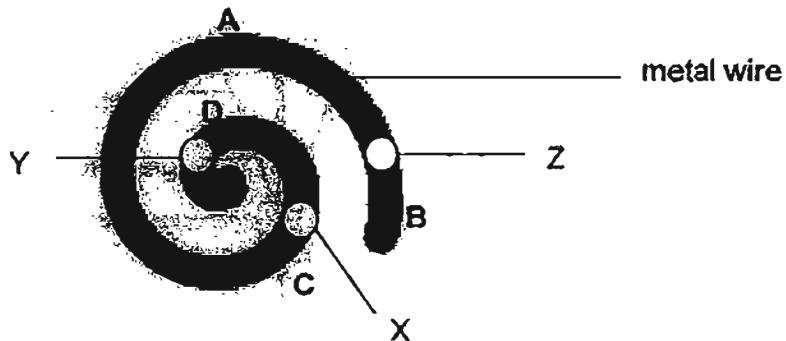
18. Which one of the following is NOT a source of heat?

- (1) the Sun
- (2) a lighted bulb
- (3) a burning log
- (4) a woollen jacket

19. X, Y and Z were blobs of wax on a piece of metal wire shaped into a spiral. The wax was of the same amount.

When the wire was heated at one point, blob X melted first, followed by Y and finally Z.

At which point, A, B, C or D, was the wire heated?



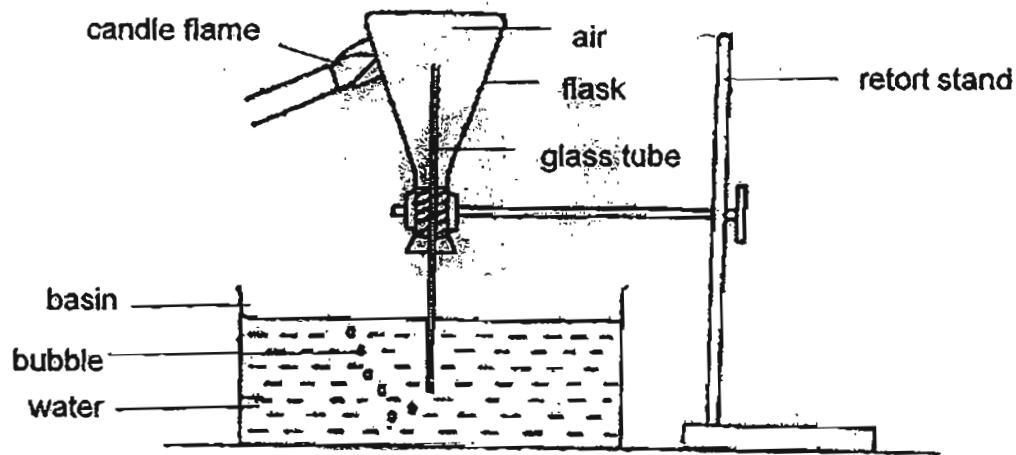
- (1) A
(2) B
(3) C
(4) D
20. Mary put some ice cubes and a metal spoon into a beaker of hot water at the same time. She left it on a block of wood as shown below.



Which one of the following identifies correctly the object(s) which gained/lost heat?

| gained heat | lost heat |
|---|-------------------------------------|
| (1) metal spoon | hot water, ice cubes, block of wood |
| (2) block of wood, hot water | metal spoon, ice cubes |
| (3) block of wood, ice cubes | metal spoon, hot water |
| (4) block of wood, ice cubes, metal spoon | hot water |

21. Jean used a candle flame to heat the side of an inverted flask as shown in the set-up below.



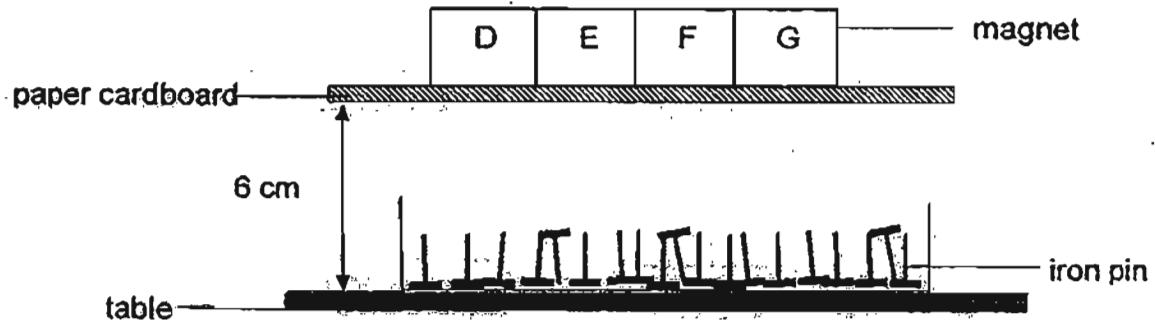
Jean removed the candle flame and allowed the flask to cool.

Which one of the following could be observed by Jean?

- (1) Water level in the basin rose.
 - (2) More air bubbles were seen in the water.
 - (3) A few large air bubbles entered the flask.
 - (4) Water entered the glass tube into the flask.
22. Which one of the following can be attracted by a magnet?
- (1) iron ball
 - (2) plastic ball
 - (3) rubber ball
 - (4) wooden ball.

23. Jennifer pasted a cardboard under a magnet and placed them directly above a tray of iron pins.

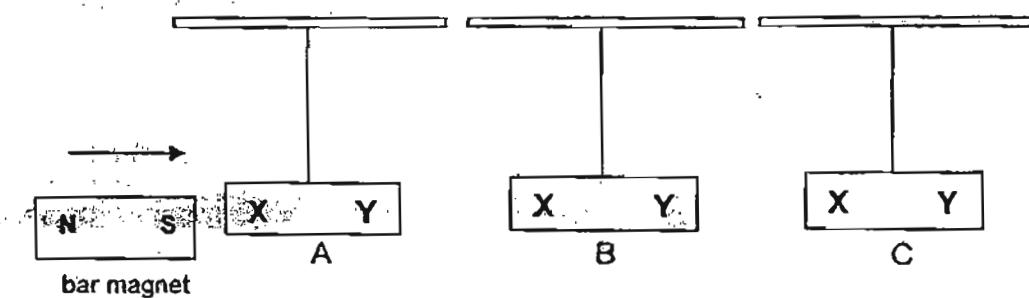
She lowered the magnet to a height of 6 cm above the table and recorded the number of iron pins attracted to each part of the magnet, D, E, F and G, as shown below.



Which one of the following shows the most possible number of pins attracted to each part of the magnet?

| | number of pins at | | | |
|-----|-------------------|--------|--------|--------|
| | part D | part E | part F | part G |
| (1) | 0 | 10 | 10 | 0 |
| (2) | 2 | 9 | 3 | 6 |
| (3) | 4 | 4 | 4 | 4 |
| (4) | 7 | 2 | 3 | 8 |

Each of the three different bars, A, B and C, of the same size is hung from a horizontal rod as shown in the diagram below.



The S-pole of a bar magnet is brought near to end X and end Y of each of the hanging bars, ONE at a time.

The table below shows the observations made during the experiment.

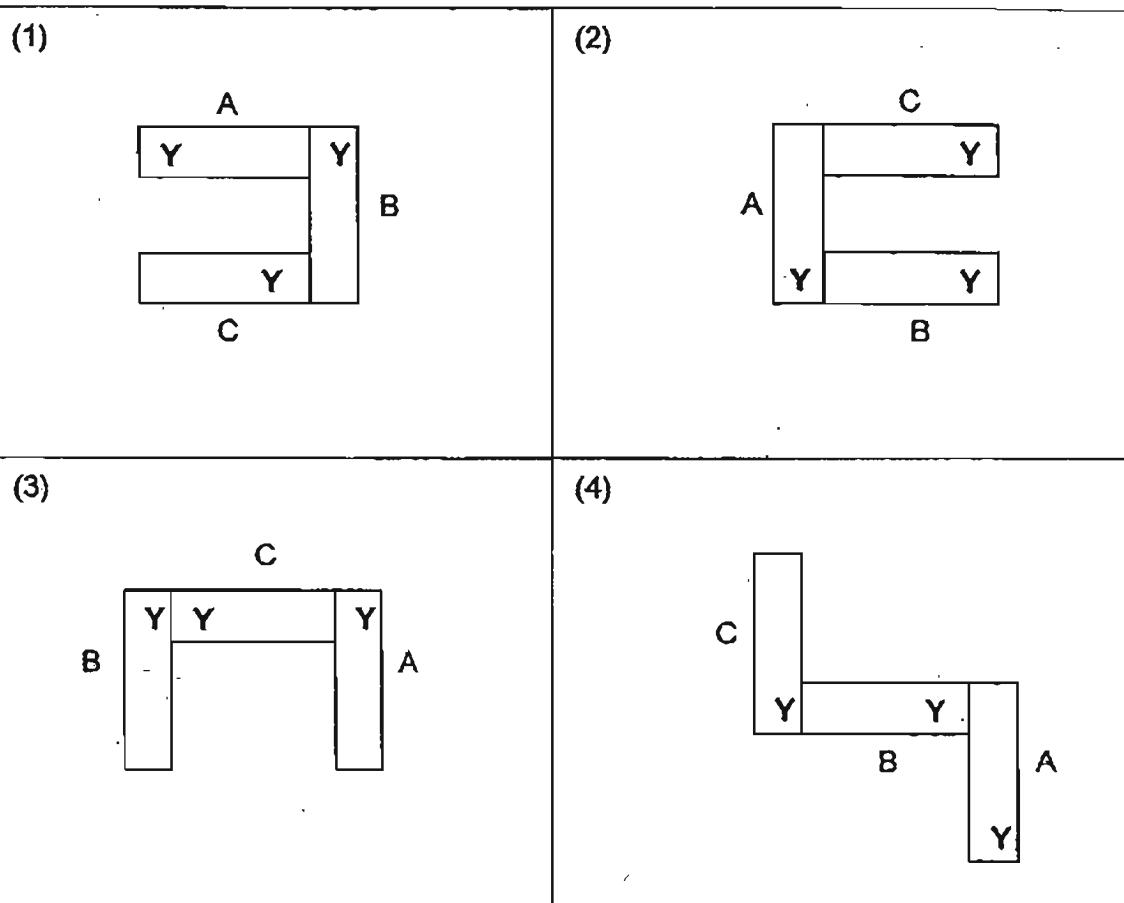
| object | observations | |
|--------|------------------------|------------------------|
| | X | Y |
| A | moved away from magnet | moved towards magnet |
| B | moved towards magnet | moved away from magnet |
| C | moved towards magnet | moved towards magnet |

Based on the information above, answer questions 24 and 25.

24. Which one of the following statements is correct?

- (1) Only A is a magnet.
- (2) A and B are magnets.
- (3) B and C are non-metals.
- (4) Part X of both A and C repel each other.

25. Using these bars, A, B and C, which one of the following diagrams is correct?

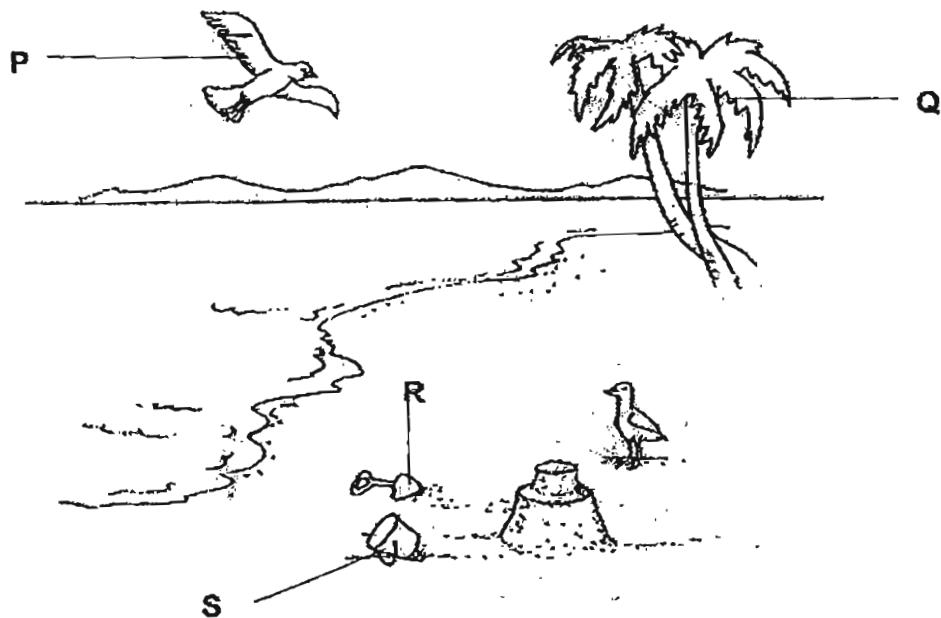


SECTION B (40 marks)

For questions 26 to 39, 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.

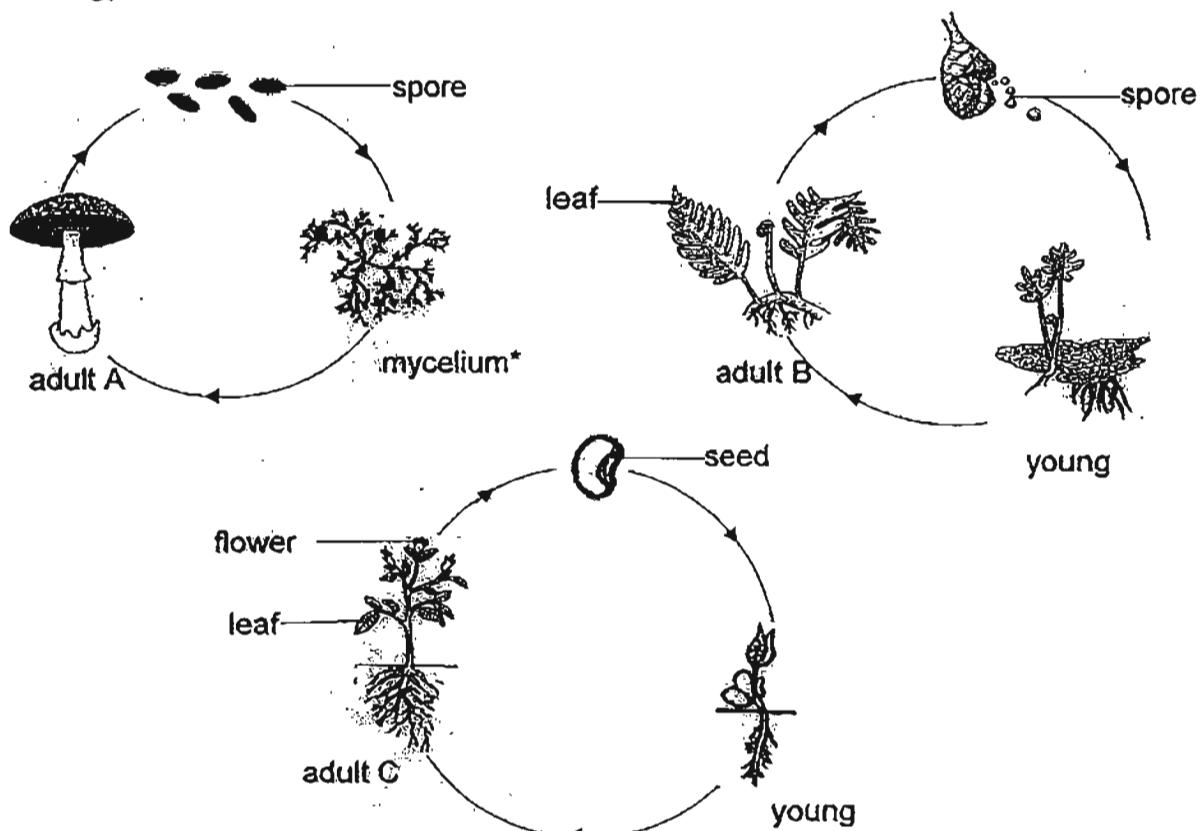
26. Marcus saw some living and non-living things, P, Q, R and S, on the beach as shown in the picture below.



Based on the information above, classify P, Q, R and S into suitable groups in the table below. [2]

| things | |
|--------|------------|
| living | non-living |
| | |

27. The diagrams below show the stages in the life cycles of living things A, B and C.



*mycelium feeds on decaying matter

Based on the information above, answer the following questions:

- (a) (i) Classify living things, B and C, into two groups in the table below according to how they are reproduced.

Write letters B and C ONCE only.

[1]

Living thing A and ladder fern have been classified together.

- (ii) Write a suitable heading for each group in the table below.

[1]

| | |
|------------------|--|
| | |
| ladder fern A | |

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- (b) Name ANOTHER plant that reproduces in the same way as living thing A. [1]
-

Justin carried out an experiment by using three pieces of bread from the same loaf.

He toasted a piece of bread and sprinkled some water on another.

Next, he put each piece of bread in a tightly-sealed jar in set-ups W, X and Y and left them in a dark room as shown below.



After a few days, Justin made the following observations of each piece of bread in set-ups W, X and Y.

A tick (✓) indicates the presence of mould on the bread.

| set-up | presence of mould on the bread |
|--------|--------------------------------|
| W | |
| X | ✓ |
| Y | ✓ |

- (c) In which set-up was the bread likely to have the largest amount of mould growing on it? Give a reason for your answer. [1]
-
-

28. Choose the correct words from the box to answer the questions below.

gullet large intestine mouth small intestine stomach

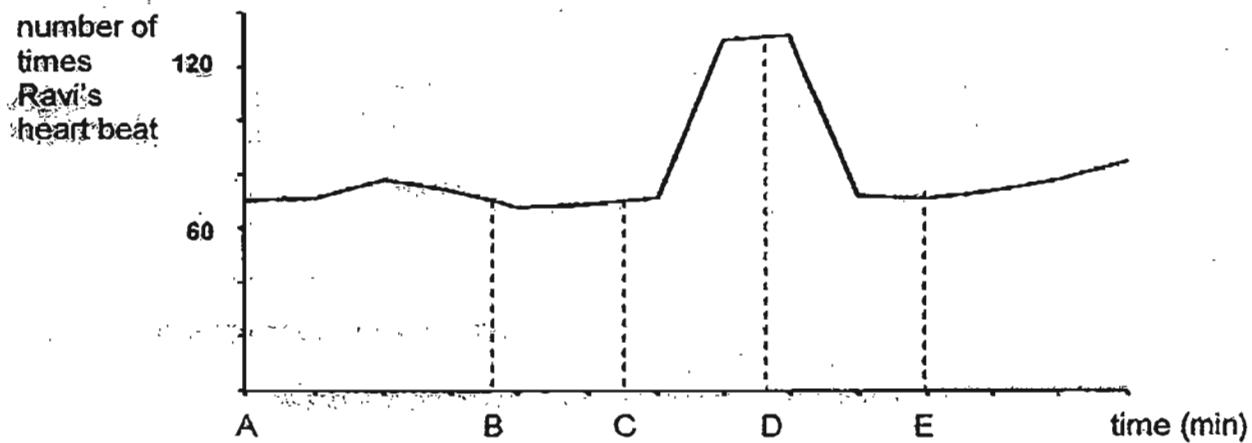
In a human digestive system, name the part where

- (a) partial digestion first takes place : _____ [1]
 (b) excess water is removed from undigested food : _____ [1]

29. Ravi measured the number of times his heart beat before, during and after his run.

His heart was beating at about 70 times a minute before his run.

The results are shown in the graph below.



AB, BC, CD and DE were different periods before, during and after Ravi's run.

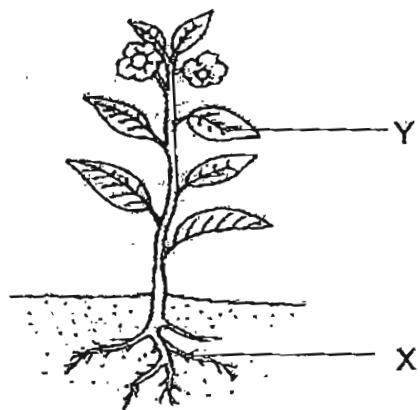
- (a) List 2 body systems which work together to enable Ravi to move. [2]

- (b) Name the period, AB, BC, CD or DE, during which Ravi started running vigorously.

Give a reason for your answer. [1]

| period of time | reason |
|----------------|--------|
| | |

30. The diagram shows a plant.



- (a) Label plant part X. [1]

X : _____

Fill in each blank with a suitable word/ phrase. [2]

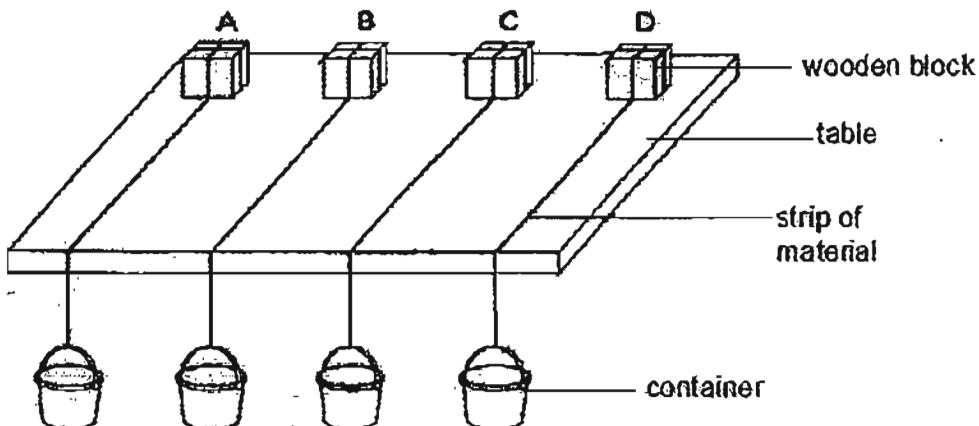
(b) Part X helps the plant to take in _____ from the soil.

(c) Part Y helps the plant to make _____ in the presence of light.

31. Jeremy selected four materials, A, B, C and D, to find out which was the best material to make bags for carrying heavy things.

An equal length of each material, A, B, C and D, was tied to each of the four identical wooden blocks on a table.

Four identical containers were hung at the end of the strips as shown below.



Jeremy dropped some marbles, one at a time, into each small container until the strip of material broke.

He recorded the total number of marbles in each container just before the strip of material broke in the table below.

| strip of material | number of marbles in the container before the strip broke |
|-------------------|---|
| A | 127 |
| B | 134 |
| C | 122 |
| D | 138 |

Based on the information above, answer the following questions:

- (a) Which of the following variables should Jeremy keep constant to conduct a fair test for his experiment?
Put a tick (✓) in the box(es) below. [1]

| variable | tick (✓) here |
|--------------------------------|---------------|
| mass of marble | |
| material of strips | |
| length of strip of material | |
| thickness of strip of material | |

to be continued on the next page

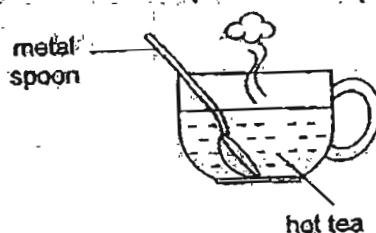
continued from previous page

- (b) What is the relationship between the number of marbles in the container and strength of the material? [1]

- (c) Which one of these materials, A, B, C or D, is the best material to make the bag to carry heavy things?

Give a reason for your answer. [1]

32. The diagram below shows a metal spoon in a cup of hot tea.



Complete each sentence to state if each part is solid, liquid or gas. [2]

- (a) The metal spoon is a _____
- (b) The hot tea is a _____

33. Ali and Bibi had a glass jar which had a mass of 100 g and a volume of 150 cm³.

They conducted an experiment using the steps below.

Step 1: Measure the mass of the jar.

Step 2: Pump in 30 cm³ of air into the jar.

Step 3: Measure the mass of the jar again.

Ali and Bibi repeated steps 1 to 3 several times and recorded their results as follows:

Ali's results:

| | | | | | |
|----------------------------------|-----|-----|-----|-----|-----|
| mass of jar (g) | 100 | 103 | 106 | 109 | 112 |
| volume of jar (cm ³) | 150 | 150 | 150 | 150 | 150 |

Bibi's results:

| | | | | | |
|----------------------------------|-----|-----|-----|-----|-----|
| mass of jar(g) | 100 | 103 | 106 | 109 | 112 |
| volume of jar (cm ³) | 150 | 180 | 210 | 240 | 270 |

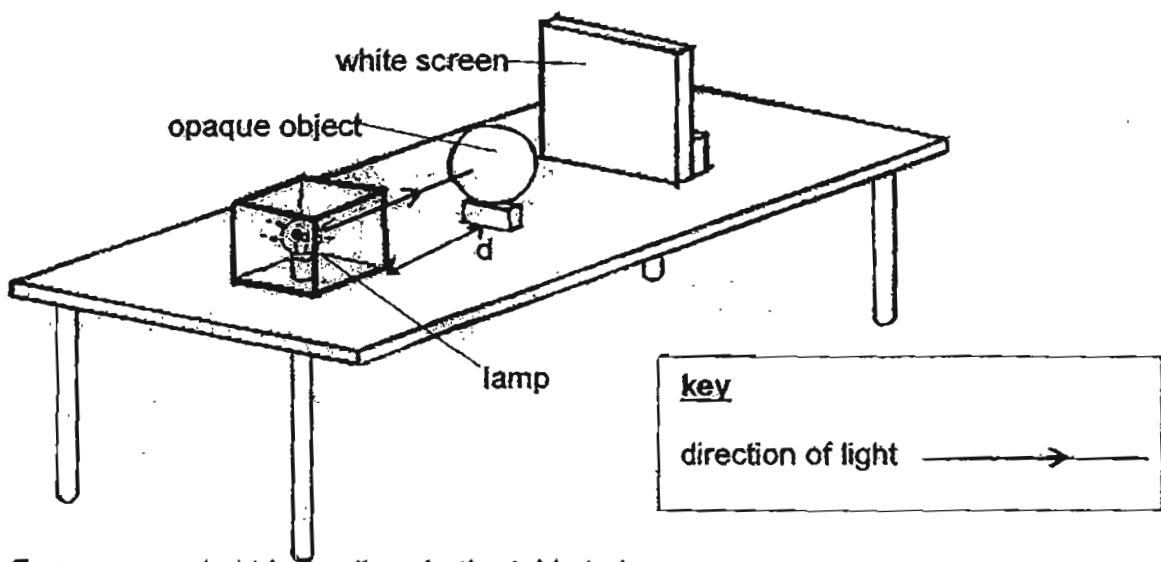
- (a) Which one of these boys, Ali or Bibi, recorded his results correctly? [1]

- (b) State 2 properties of air in this experiment. [2]

| | |
|------------|--|
| PROPERTY 1 | |
| PROPERTY 2 | |

34. Eugene wanted to find out how the distance between the light source, d (cm) and an opaque object affects the length of its shadow formed on the screen.

He set up the experiment below and measured the length of the shadow formed.



Eugene recorded his readings in the table below.

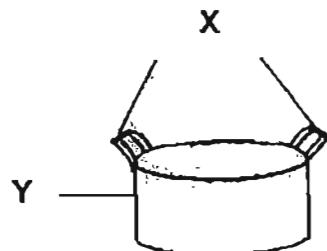
| distance between lamp and object, d (cm) | length of shadow (cm) |
|--|-----------------------|
| 18 | 10 |
| 23 | 8 |
| 28 | 5 |

- (a) State the relationship between d and the length of shadow of the object formed on the screen. [1]

- (b) What was the possible length of shadow formed on the screen when Eugene placed the object 25 cm from the lamp? [1]

- (c) Describe how the shadow of the opaque object is formed on the screen. [1]

35. The diagram below shows a cooking pot with its labeled parts, X and Y.

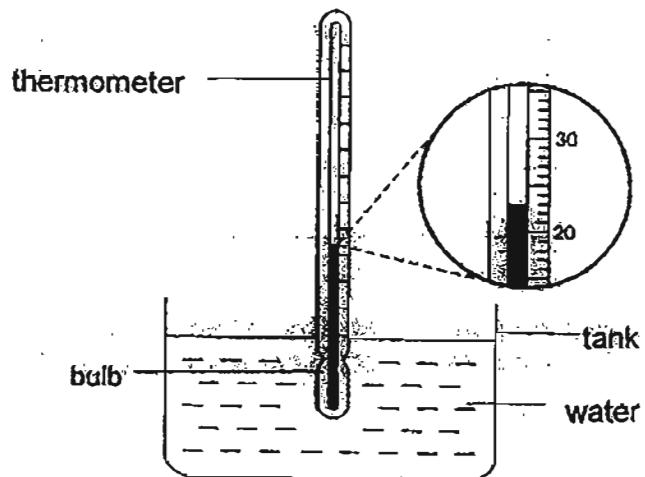


Fill in each blank with a suitable word.

[2]

- (a) Part X is made of plastic because it is a _____ conductor of heat.
- (b) Part Y is made of metal because it is a _____ conductor of heat.

36. Sara put a thermometer into a tank of water as shown below.



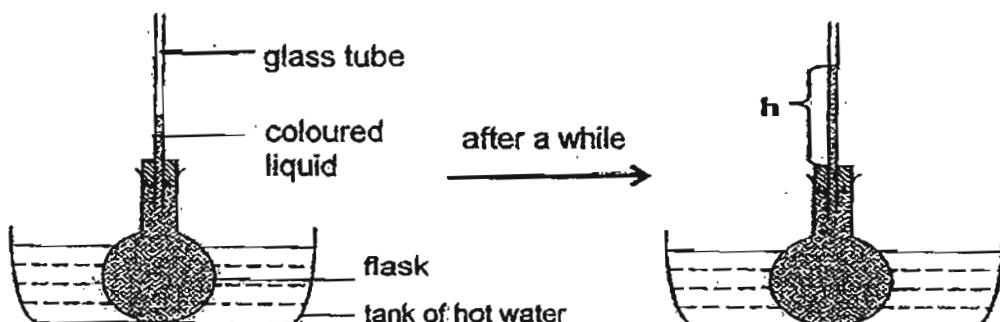
- (a) What was the temperature of the water in the tank?

[1]

to be continued on the next page

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Sara placed a flask of coloured liquid into a tank of hot water.



Sara observed that the liquid in the glass tube rose after a while and recorded the height of the liquid in the glass tube, h (cm), in the table below.

| time (s) | 0 | 20 | 30 | 40 | 50 | 60 |
|----------|---|----|----|----|----|----|
| h (cm) | 6 | 9 | | 15 | 13 | 10 |

- (b) Complete the table. Write down the possible height of the coloured liquid, h , in the glass tube at the 30th second. [1]
- (c) Explain why the liquid in the glass tube of a laboratory thermometer moves up when its bulb is placed in hot water. [2]

37. Sruthi places a rod magnet near a small iron bar. The iron bar moves towards the magnet in the direction shown by the arrow.

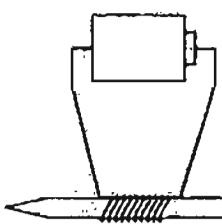
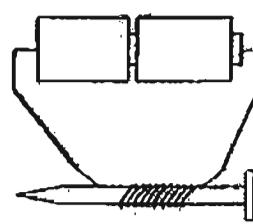
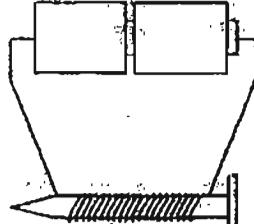
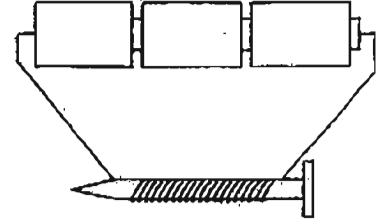


Complete each of the blanks with a suitable word from the box below. [2]

| | | | | | |
|------|------|----------|--------|------|--------------|
| push | hard | magnetic | strong | pull | non-magnetic |
|------|------|----------|--------|------|--------------|

- (a) Magnet exerts a/an _____ on the iron bar.
(b) Sruthi's observation shows that iron is a _____ material.

38. Ken wanted to find out whether the number of coils round an iron nail affects the strength of an electromagnet. He arranged four set-ups, A, B, C and D, as shown below.

| | |
|---|--|
| set-up A  12 coils round the nail | set-up B  12 coils round the nail |
| set-up C  25 coils round the nail | set-up D  25 coils round the nail |

- (a) Which two set-ups should Ken use to carry out a fair test for his experiment?

[1]

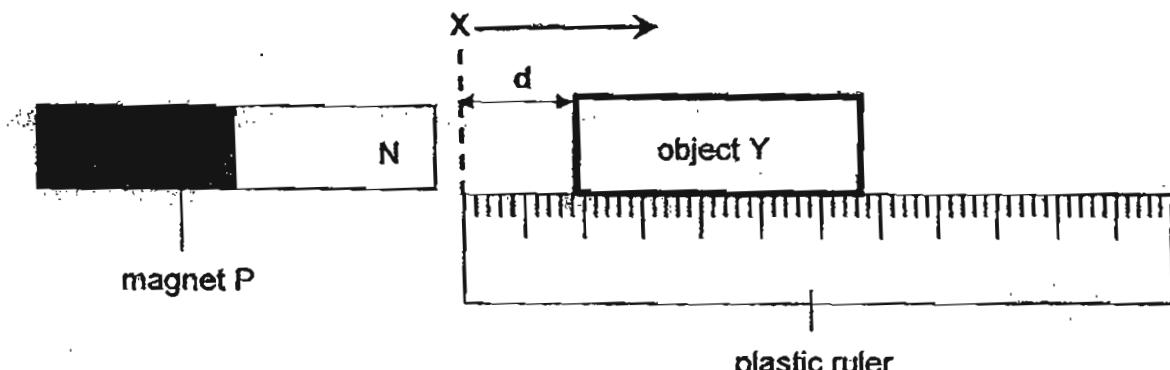
set-ups _____ and _____

- (b) Which one of these set-ups, A, B, C or D, could possibly pick up the most number of paper clips?

Give two reasons for your answer.

[2]

39. Joanne placed object Y at position X.
She brought the N-pole of a bar magnet P close to object Y which moved away in the direction as indicated by the arrow below.



Using a plastic ruler, Joanne measured the distance object Y had moved away from X, d (cm).

Next, she replaced bar magnet P with bar magnets, Q, R and S, of equal size, ONE at a time, and repeated her experiment.
She recorded her results in the table below:

| magnet | distance object Y moved from X, d (cm) |
|--------|--|
| P | 3 |
| Q | 12 |
| R | 7 |
| S | 14 |

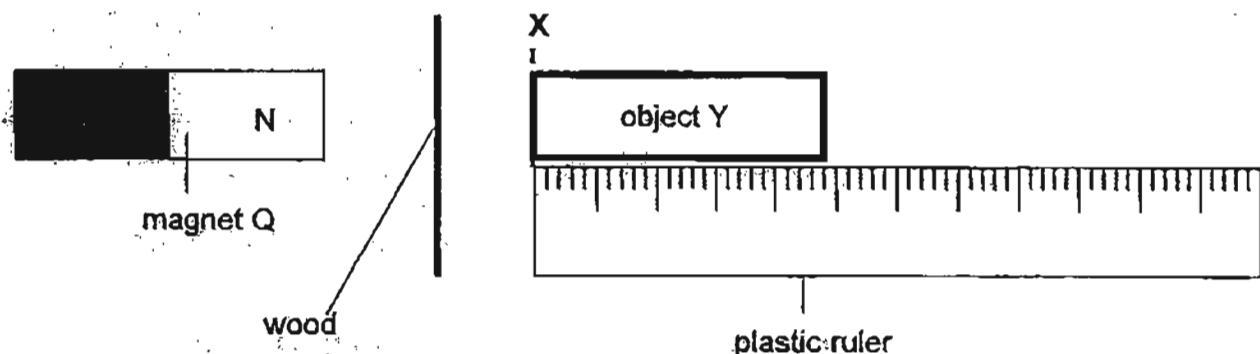
Based on the information above, answer the following questions:

- (a) What could Y possibly be? Give a reason for your answer. [2]

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Next, Joanne put a sheet of wood between magnet Q and object Y as shown below.



Joanne brought the N pole of magnet Q close to the sheet of wood and measured the distance object Y had moved away from position X.

She repeated the experiment by replacing the wood with an iron sheet, a steel sheet and a plastic sheet ONE at a time.
She recorded her results in the table below.

| material of sheet | distance object Y moved from X, d (cm) |
|-------------------|--|
| wood | 3 |
| iron | 0 |
| steel | 0 |
| plastic | 5 |

- (b) Based on the information above, classify wood, iron, steel and plastic into two different groups below. [1]

| magnetic material | non-magnetic material |
|-------------------|-----------------------|
| | |

- (c) Give a reason why object Y did NOT move from position X when the iron sheet was used in this experiment. [1]

- END OF PAPER -





RAFFLES GIRLS' PRIMARY SCHOOL

Please do NOT print the answer key for the pupils

2011 PRIMARY 4 SCIENCE SA 2 ANSWER KEY

Setters: Ms Ho Win Nie, Darren Lau*

* main compiler

SECTION A (25 X 2-marks)

| | |
|--|---|
| | 3 |
| | 2 |
| | 1 |
| | 4 |
| | 1 |

| | |
|--|---|
| | 3 |
| | 4 |
| | 1 |
| | 4 |
| | 3 |

| | |
|--|---|
| | 3 |
| | 2 |
| | 3 |
| | 4 |
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| | |
|--|---|
| | 2 |
| | 3 |
| | 4 |
| | 3 |
| | 4 |

| | |
|--|---|
| | 4 |
| | 1 |
| | 4 |
| | 2 |
| | 3 |

SECTION B (40 marks)

| No. | Marks | Suggested answers | Remarks |
|-----|-------|---|--|
| 26 | 2 | Living things – P, Q Non-living things – R, S | [1] for ONLY each correct group of things classified |
| 27 | (a) 2 | (Reproduce) by spores – B (Reproduce) by seeds – C NOT acceptable: Reproduce by spores – B Do not reproduce by spores – C Reproduce by seeds – C Do not reproduce by seeds – A, B | Diagrams clearly stated method of reproduction [1] for correct classification of B and C [1] for correct sub-headings after the B and C are correctly classified |
| | (b) 1 | Any plant that reproduces by spores Example : bird's nest fern, mosses, fern | NOT acceptable: ladder fern (as given in example) |
| | (c) 1 | <u>Answer:</u> Set-up X <u>Reason:</u> <ul style="list-style-type: none"> More(or most) moisture/ water was present on the bread to encourage more mould to grow on it. X is wetter/ damper than the other set-ups | mark holistically |

| No. | Marks | Suggested answers | Remarks |
|-----|-------|---|--------------------------------------|
| 28 | (a) 1 | mouth | -[½] for wrong spelling |
| | (b) 1 | large intestine | -[½] for wrong spelling |
| 29 | 2 | skeletal system and muscular system NOTE No mark is given for ONE correct system as TWO systems are to work together. | -[½] for wrong spelling |
| | 1 | <ul style="list-style-type: none"> ▪ Answer: ▪ CD <p>Reason:</p> <ul style="list-style-type: none"> ▪ During exercise, Ravi's heart pumped more quickly. ▪ During exercise, Ravi's heart needed to beat faster. <p>[0]: for the following:</p> <ul style="list-style-type: none"> ▪ Heart beat was the highest at D. | [0] for identifying the wrong period |
| 30 | 1 | <ul style="list-style-type: none"> ▪ roots ▪ root hairs | |
| | 1 | Any one of the following: | |
| | 1 | <ul style="list-style-type: none"> ▪ water ▪ mineral salts ▪ nutrients | |
| | 1 | <ul style="list-style-type: none"> ▪ food ▪ glucose | |

| No. | Marks | Suggested answers | Remarks |
|-----|-------|---|---|
| | (a) 1 | <p>All of the following must be selected:</p> <ul style="list-style-type: none"> ▪ mass of marble ▪ length of strip of materials ▪ thickness of strip of materials | NO partial mark |
| 31 | (b) 1 | <p>[1] for any of the following:</p> <ul style="list-style-type: none"> ▪ The more marbles ▪ The bigger the marbles ▪ The higher the number of marbles <p>a material can hold, the stronger is the material:</p> <ul style="list-style-type: none"> ▪ When the number of marbles a material can hold increases, the strength of the material increases. ▪ When the number of marbles a material can hold decreases, the strength of the material decreases. <p>The stronger the material, the more number of numbers it can hold.</p> <p>[0] for the following:</p> <ul style="list-style-type: none"> ▪ The weaker the material, the strip will break. ▪ Strength of material depends on the number of marbles. | |
| | (c) 1 | <p>Answer Material D</p> <p>Reason</p> <ul style="list-style-type: none"> ▪ It is the strongest material. ▪ It is a stronger material than the others. ▪ It withstands the most weight/ mass. ▪ It can carry/ hold more weight/ mass than A, B and C. <p>[1] It could hold the greatest amount of marbles before the strip broke.</p> <ul style="list-style-type: none"> ▪ It carried most number of marbles. ▪ It carried the heaviest load. <p>[0] for It could hold 138 marbles.</p> | <p>[1] correct answer and explanation</p> <p>Mark holistically</p> |

| No. | Marks | Suggested answers | Remarks |
|-----|-------|--|--|
| 32 | (a) 1 | solid | - [½] for wrong spelling |
| | (b) 1 | liquid | - [½] for wrong spelling |
| 33 | (a) 1 | Ali | |
| | (b) 2 | [1] for each of the following: ▪ Air has mass. ▪ Air can be compressed. | Do NOT accept: ▪ Air has weight. ▪ Air has no definite volume ▪ Air takes up space. |
| 34 | | [1] for any of the following: ▪ The greater the distance between lamp and object, d, the shorter the length of the shadow of the object. ▪ The smaller the distance between the lamp and object, d, the longer the length of the shadow of the object. ▪ When d increases, the length of shadow of the object decreases. ▪ When d decreases, the length of the shadow of the object increases. | |
| | (a) 1 | 5 cm < length of shadow of object < 8 cm | |
| | (b) 1 | [1] for any of the following: ▪ A shadow is formed when the light that travels in a straight line, is blocked by an object. OR ▪ A shadow is formed when light is blocked by an object. ▪ A shadow is formed when an object blocks [the path of light]. | |
| 35 | (a) 1 | poor | Not acceptable: bad |
| | (b) 1 | good | |

| No. | Marks | Suggested answers | Remarks |
|-----|-------|---|---|
| 36 | (a) 1 | 23 °C | [0] for using the wrong unit or NO unit |
| | (b) 1 | $9 < h < 15$ | |
| | (c) 2 | <p>When <u>heat from the hot water</u></p> <ul style="list-style-type: none"> - is applied - travelled - transferred <p>to the liquid [1] which expands [1] and moves up.</p> <p>OR</p> <p>Liquid gains heat <u>from the hot water</u> [1], and expands [1], causing it to move up.</p> <p>OR</p> <p>Liquid is heated <u>by the hot water</u> [1], so it expands [1] and moves up.</p> <p>[1½] for the following:</p> <p>Liquid gains heat [½] and it expands [1] and moves up.</p> | <p>Remarks:</p> <p>Gain heat from hot water must be mentioned</p> <p>[1] for each point/ idea</p> <ul style="list-style-type: none"> - how heat travels - what does heat do to the liquid |
| 37 | (a) 1 | pull | - [½] for wrong spelling |
| | (b) 1 | magnetic | - [½] for wrong spelling |
| 38 | (a) 1 | Answer B and C | NO partial mark |
| | (b) 2 | <p>Answer</p> <p>D</p> <p>[1] for each correct reason</p> <ul style="list-style-type: none"> - It has the largest number of coils round the nail. - It has the most number of batteries. | <p>Mark holistically</p> <p>No mark for identifying correct set-up only</p> |

| No. | Marks | Suggested answers | Remarks |
|-----|-------|---|--|
| | | <p>Answer A magnet</p> <p>Reason</p> <ul style="list-style-type: none"> ▪ Like poles of the magnet P and Y faced each other and repelled. ▪ Like poles of magnet P and Y repelled each other. ▪ Only magnets could repel. ▪ It was repelled by other magnets: P, Q, R and S. ▪ It could repel other magnets. | <p>Mark holistically</p> <p>[0]</p> <ul style="list-style-type: none"> ▪ It could attract or repel. ▪ It moved away from the magnets (already stated in the question) |
| 39 | | <p>(a) 2</p> <p>magnetic material [½]</p> <ul style="list-style-type: none"> ▪ iron ▪ steel <p>non-magnetic material [¼]</p> <ul style="list-style-type: none"> ▪ wood ▪ plastic | |
| | | <p>(b) 1</p> <p>Reason :</p> <p>[1] Magnetism cannot pass through the</p> <ul style="list-style-type: none"> ▪ iron sheet ▪ magnetic material <p>so the object Y would not move away from position X.</p> <p>Magnetism was blocked the iron sheet [1], which is a magnetic material.</p> <p>[0] for negative phrasing: Magnetism can pass through non-magnetic material.</p> | -[½] for wrong spelling of magnetism |

- END OF PAPER -



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (2) 2013

Name: _____ Index No: _____ Class: P4 _____

21 October 2013

SCIENCE

Att: 1 h 30 min

| | |
|----------------------|----|
| Section A | 50 |
| Section B | 40 |
| Your score out of 90 | |
| Parent's signature | |

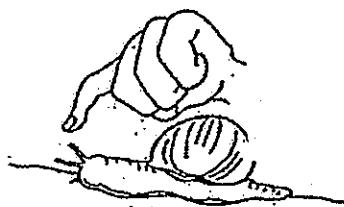
SECTION A (25 x 2 marks)

For each question from 1 to 25, 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 (OAS) provided.

1. A snail hides itself in its shell when touched.

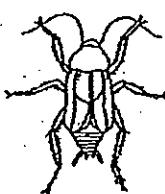


This shows that the snail is a living thing because it can _____.

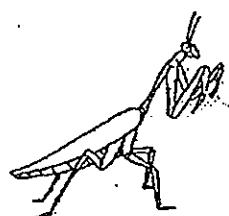
- (1) grow
- (2) respond
- (3) breathe
- (4) reproduce

2. Which one of the animals shown below is NOT an insect?

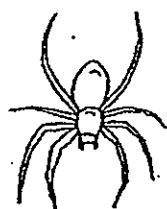
(1)



(2)



(3)



(4)



3. Study the classification table shown below.

| Plants | |
|---------------|-------------|
| Group X | Group Y |
| Moss | Ixora plant |
| Staghorn fern | Lychee tree |

Which of the following best describe how the plants are grouped?

| | X | Y |
|-----|---------------|-----------|
| (1) | Fungi | Plants |
| (2) | Water | Land |
| (3) | Non-poisonous | Poisonous |
| (4) | Non-flowering | Flowering |

4. Which of the following animal(s) has/have young that looks completely different from the adult?

- A: mosquito
- B: grasshopper
- C: frog
- D: cockroach

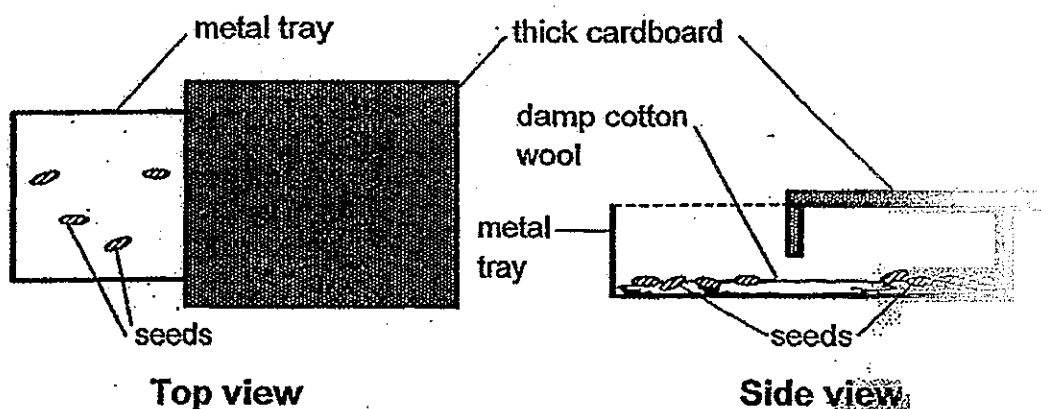
(1) C only

(2) B and D only

(3) A and C only

(4) B, C and D only

5. Ali set up an experiment as shown in the diagrams below.



He planted eight seeds in a metal tray of damp cotton wool. He then covered one half of the metal tray with a piece of thick cardboard and left his set-up near a window.

Ali was trying to find out whether seeds need _____ to germinate.

- (1) air
- (2) water
- (3) warmth
- (4) sunlight

6. Ali, Ben, John and Peter each gave a reason below to explain why the seeds they planted did not germinate.

Ali : My seeds did not have enough warmth.

Ben : My seeds did not receive any water.

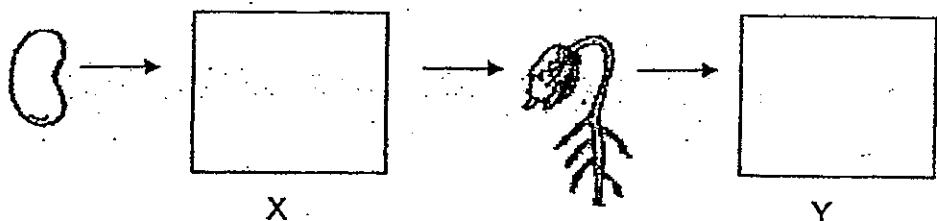
John : My seeds were left in the dark cupboard.

Peter : My seeds were not given enough fertilisers.

Whose reason(s) is/are possible to explain why the seeds he/they planted did not germinate?

- (1) Peter only
- (2) Ben and John only
- (3) Ali and Ben only
- (4) Ali, Ben, John and Peter

7. The diagram below shows the growth of a young plant with two missing stages X and Y.



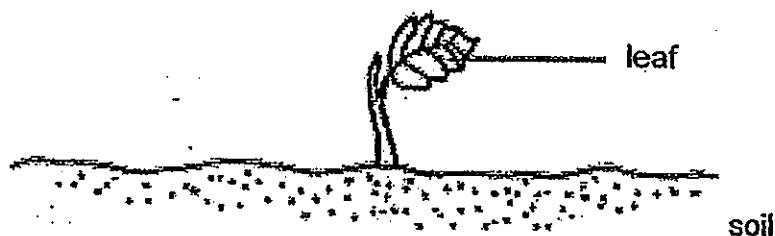
which one of the following shows the correct stages for X and Y?

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

8. Which of the following statements about our body system is incorrect?

- (1) The anus is part of the digestive system.
- (2) The rib cage protects the lungs and the stomach.
- (3) The muscular system works together with the skeletal system to help the body move.
- (4) The circulatory system helps to transport oxygen, digested food and water to all parts of the body.

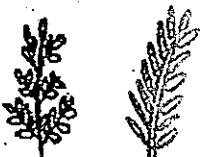
9. The diagram below shows a young plant



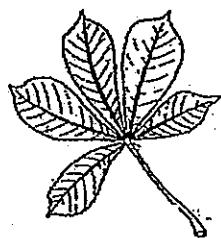
The leaf helps the plant to _____.

- | | |
|---------------------|------------------|
| (1) absorb nutrient | (2) absorb water |
| (3) grow upright | (4) make food |

10. Study the groups of leaves below carefully.

| Group A | Group B | Group C | Group D |
|---|---|--|---|
|  |  |  |  |

In which group would you place leaf X?



leaf X

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

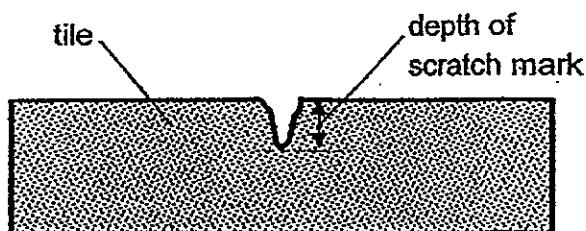
11. James wanted to find out whether the amount of light affects the growth of the plant.
He put four similar plants into 4 identical pots.
He gave each plant an equal amount of water every day.

| | | | |
|---|---|--|---|
|  |  |  |  |
| Plant W | Plant X | Plant Y | Plant Z |
| In the field | In the store room | In the store room | In the field |

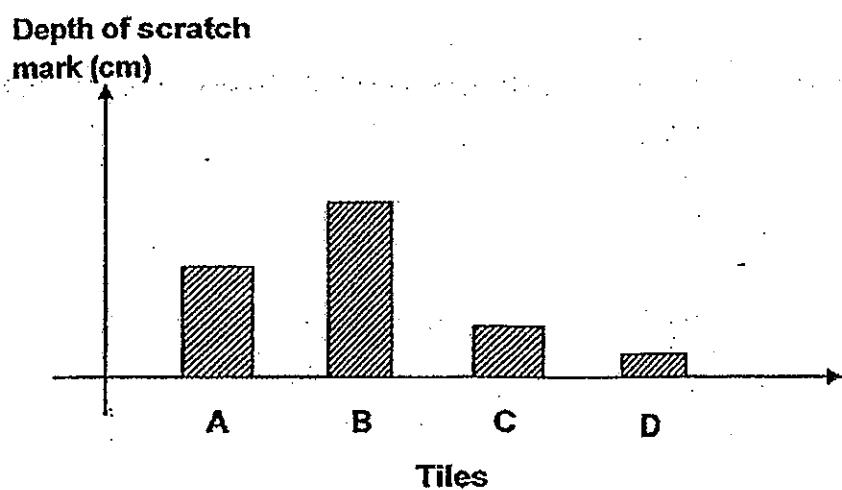
Which two plants above should he use to make the experiment a fair one?

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

12. Tom wanted to compare the hardness of four different tiles, A, B, C and D.
He scratched each tile once with a metal rod using the same amount strength.
He measured the depth of the scratch mark made by the metal rod as shown below.



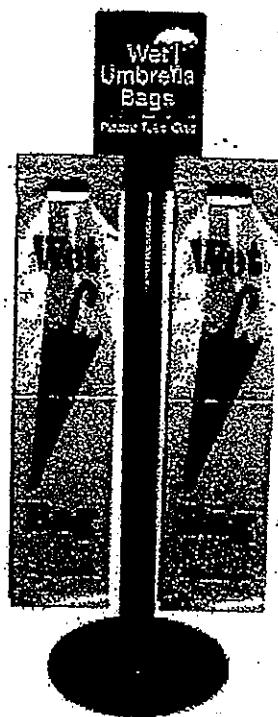
He then drew a bar graph to show the depth of the scratch mark left on the tile.



Based on the result above, which tile is the hardest?

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

13. To keep the floor dry in a building on rainy day, people entering the building are to keep their wet umbrellas in umbrella bags placed at the entrance of the building shown in the diagram below.



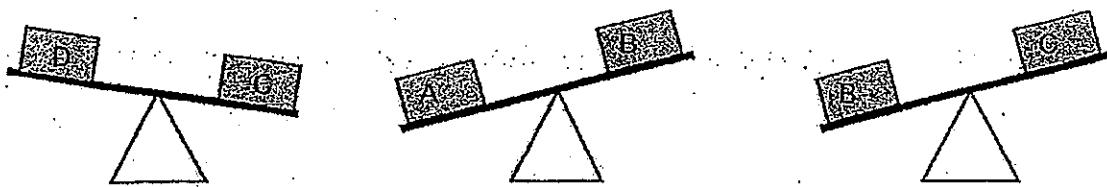
What are the two most important properties the umbrella bags must have to best serve this purpose?

- A : Light
 - B : Flexible
 - C : Waterproof
 - D : Able to float
-
- (1) A and B only
 - (2) A and D only
 - (3) B and C only
 - (4) C and D only

14. Which one of the following substances has a fixed shape?

- (1) air
- (2) oil
- (3) stone
- (4) water

15. Study the diagrams below carefully.



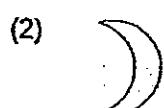
Arrange the objects, A, B, C and D, according to their mass, from the heaviest to the lightest.

| | heaviest | → | lightest |
|-----|----------|---|----------|
| (1) | A | B | C |
| (2) | B | C | D |
| (3) | C | B | A |
| (4) | D | C | B |

16. Which one of the following is a source of light?



an orange



a moon

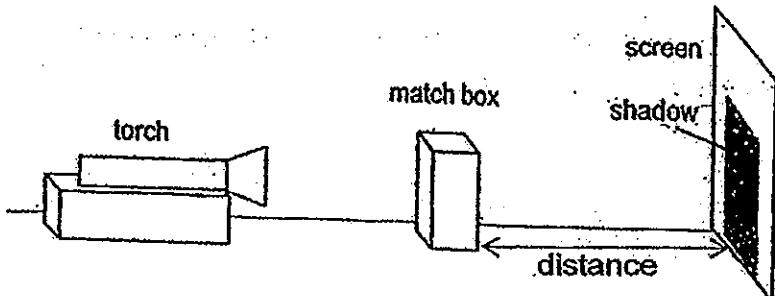


a candle flame



a leaf

17. Roy set up the experiment as shown in the diagrams below.



He carried out the experiment four times using the distance between the match box and the screen as shown in the table below.

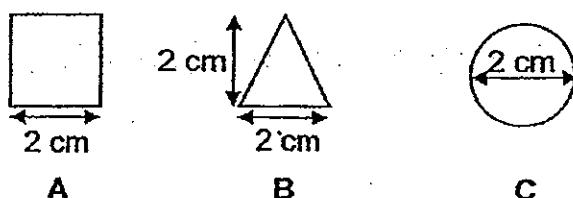
| Distance between the match box and the screen (cm) | Shadow |
|--|--------|
| 15 | A |
| 20 | B |
| 5 | C |
| 10 | D |

Roy also recorded the size of the corresponding shadows cast on the screen.

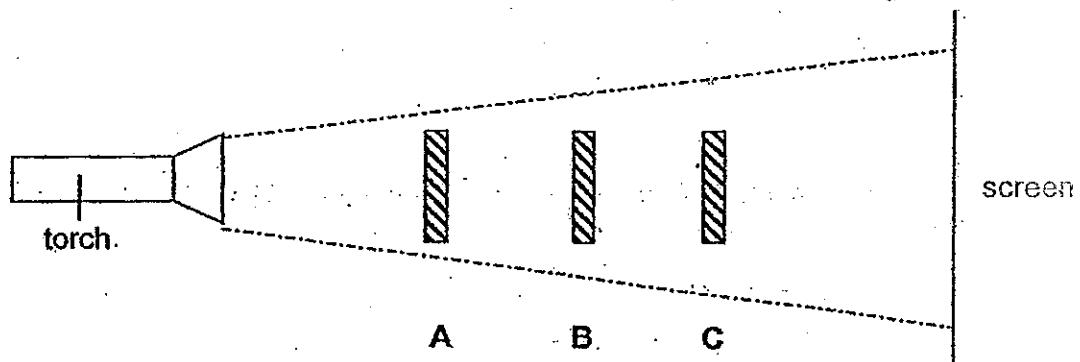
Arrange the shadows of the match box formed on the screen from the smallest to biggest in ascending order according to their sizes.

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

18. The diagram below shows three pieces of wood, A, B and C, in the shapes of a square, a triangle and a circle respectively.



The three pieces of wood are placed in front of a torch as shown in the diagram below.



Side view of the set up

Which one of the following shows how the shadow would look like on the screen?

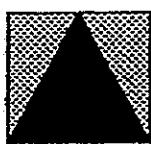
(1)



(2)



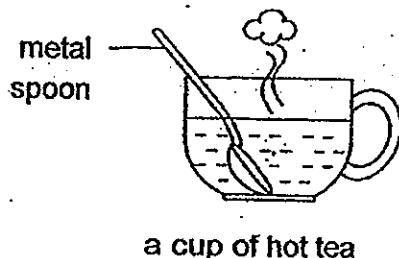
(3)



(4)



19. Ronald placed a metal spoon in the hot tea.

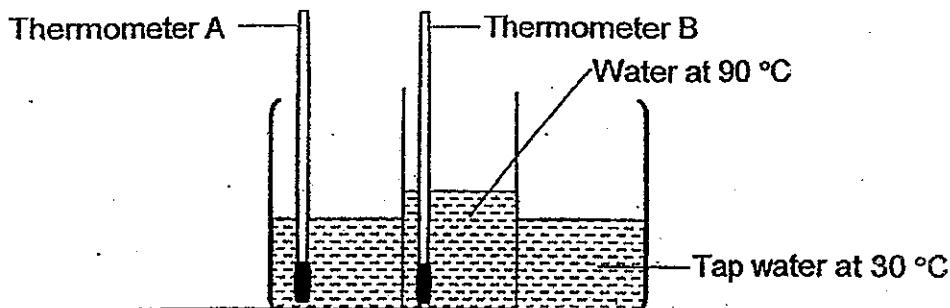


The spoon became hotter after a while.

Which one of the following explains this ?

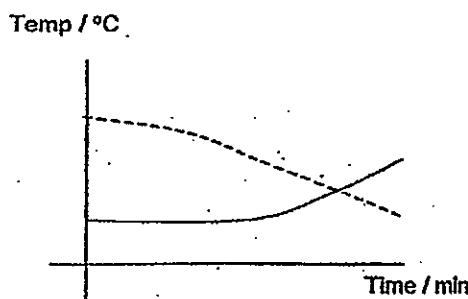
- (1) The cup lost heat to the hot tea.
- (2) The hot tea gained heat from the spoon.
- (3) The spoon gained heat from the hot tea.
- (4) The spoon lost heat to the hot tea.

20. Jason set up the apparatus as shown in the diagram below.
He placed the thermometers in two water containers and left the apparatus
on the science laboratory table.
He recorded the readings of the thermometers every 10 minutes for 2 hours.
He plotted his results on a graph.

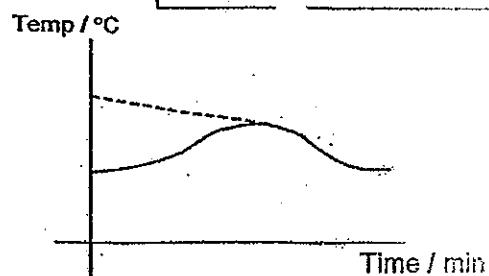


Which one of the graphs below correctly shows Jason's results?

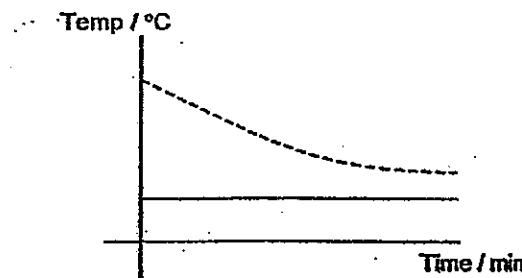
(1)



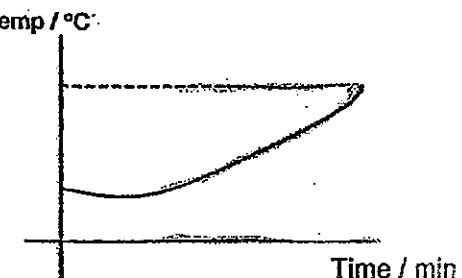
(2)



(3)



(4)

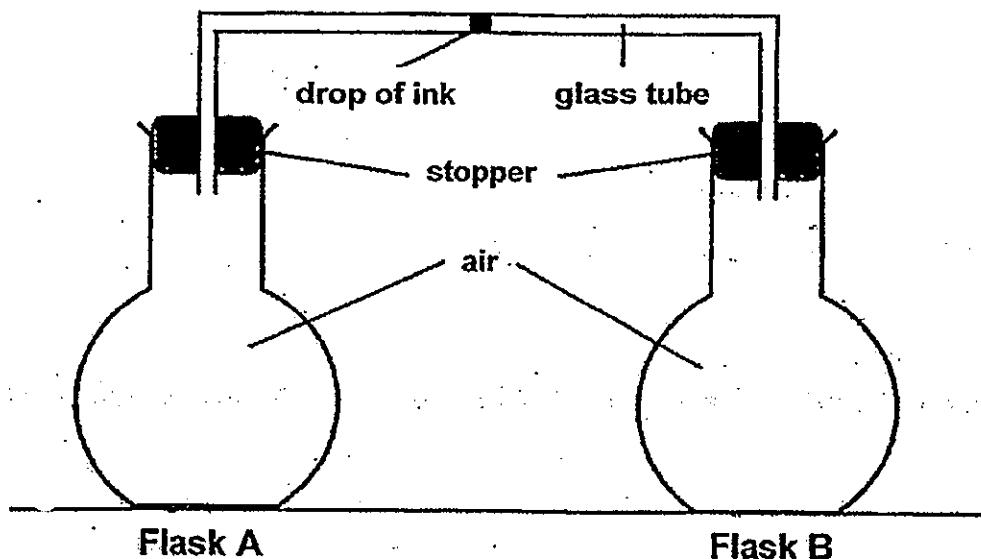


Legend

— Thermometer A
- - - Thermometer B

21. The diagram below shows two flasks, A and B, containing air.

The flasks are connected by a glass tube and there is a drop of ink in the tube as shown in the diagram below.



Which one of the following methods will cause the drop of ink to move towards flask B?

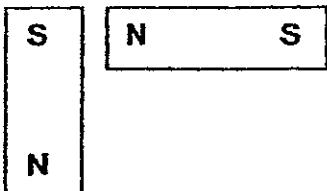
- (1) Place each flask in a basin containing ice.
- (2) Place Flask A in a basin containing hot water.
- (3) Place Flask B in a basin containing hot water.
- (4) Place each flask in a basin containing hot water at the same temperature.

22. In which one of the following will the two magnets push each other away ?

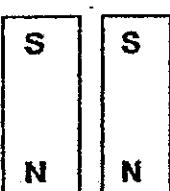
(1)



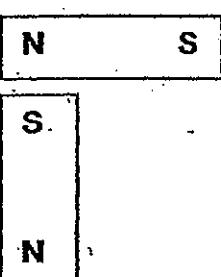
(2)



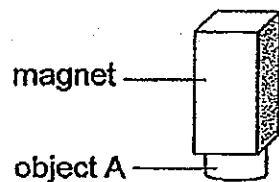
(3)



(4)



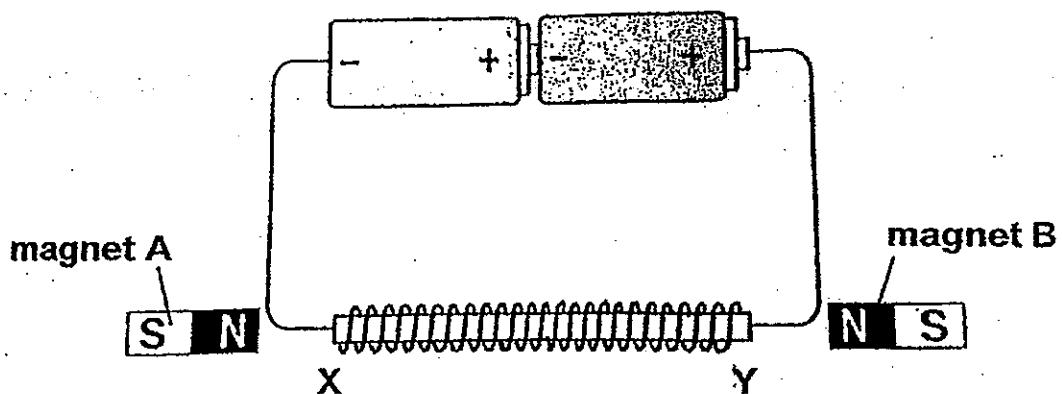
23. An object A was attracted to a magnet as shown in the figure below.



Object A is made of _____.

- (1) plastic
- (2) rubber
- (3) steel
- (4) wood

24. Siti magnetised an iron rod by placing it inside a coil of wire connected to some batteries as shown in the diagram below.

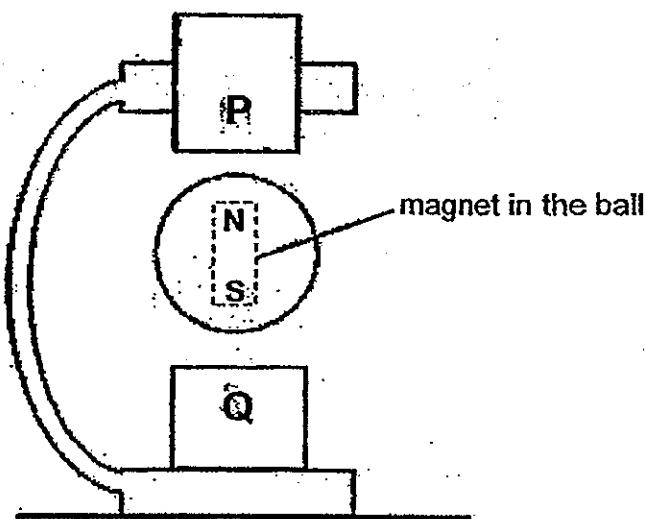


She observed that magnet A is attracted towards the iron rod at point X, while magnet B is repelled from the iron rod at point Y.

Based on Siti's observation, what can she conclude about the pole at Point X and Y of the iron bar when it was magnetised?

| | Point X | Point Y |
|-----|---------|---------|
| (1) | North | South |
| (2) | North | North |
| (3) | South | North |
| (4) | South | South |

25. The diagram below shows a toy that makes use of magnets. A ball with a magnet in it floats in between two magnets at point P and Q.



How should the magnets be placed at point P and point Q for the ball to float?

| | Point P | Point Q |
|-----|------------|------------|
| (1) | [N] [S] | [N] [S] |
| (2) | [S] [N] | [N S] |
| (3) | [N S] | [S] [N] |
| (4) | [S] [N] | [S] [N] |

End of Section A

Name : _____

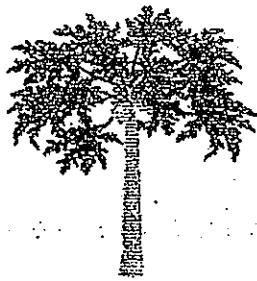
Index No : _____ Class : _____



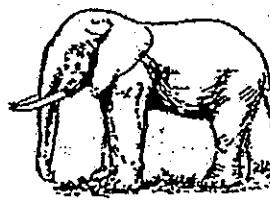
SECTION B (40 marks)

For questions 26 to 39, write your answers clearly in the spaces provided.
The number of marks available is shown in the brackets [] at the end of the question or part question.

26. Classify the following living things into animals and plants. [2]



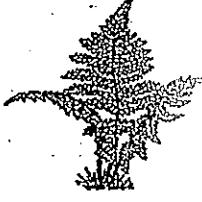
papaya tree



elephant



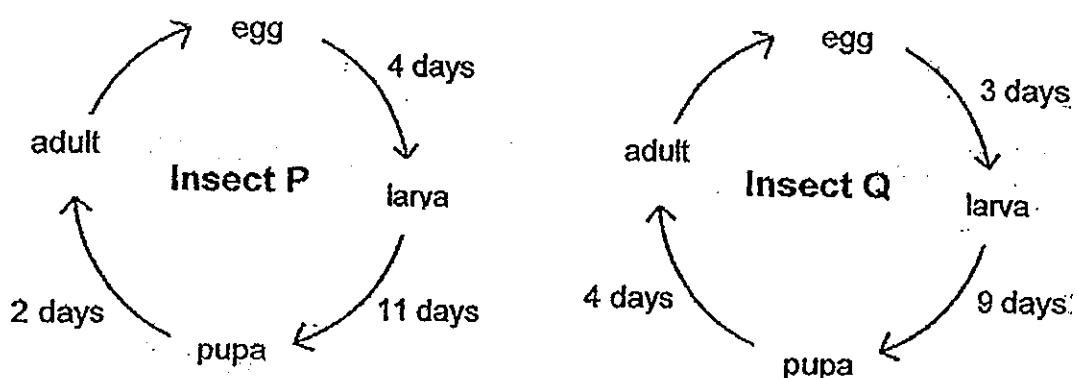
eagle



fern

| animals | plants |
|---------|--------|
| | |

27. Study the life cycles of insect P and insect Q below.



Based on the information above, answer the questions below:

- Besides the number of stages and the name of each stage, state one more [1] similarity between the life cycle of insect P and insect Q.
- Do you agree that insect P lives longer than insect Q ? Give a reason for your [1] answer.

Continue Q27 on the next page

| | |
|-------|---|
| Score | 2 |
|-------|---|

Meiling learnt that different caterpillars feed on different types of leaves. She conducted an experiment to see which type of leaf, A, B, C, D or E the caterpillar of butterfly X only feed on.

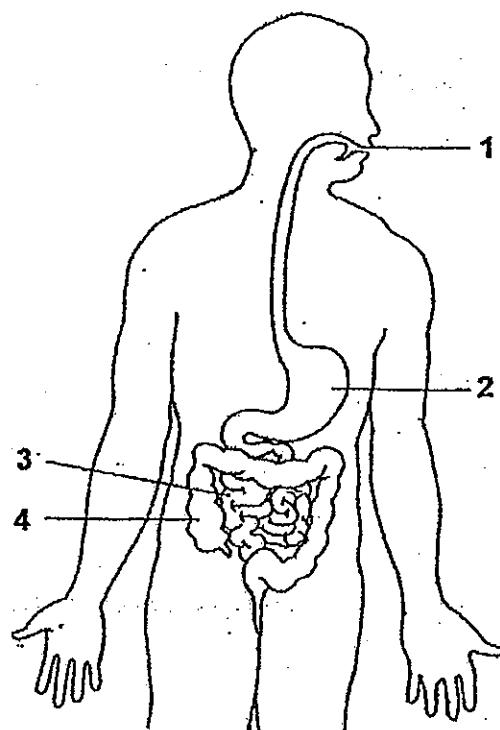
She caught a few caterpillars of butterfly X and placed them in a tank. She then put in few different types of leaves at a time into the tank to see which type of leaves the caterpillar fed on.

She recorded her observations in the table below:

| | Types of leaves put into the tank each time | | | | | |
|---------------------|---|--------|--------|--------|--------|---------------------------------|
| | Leaf A | Leaf B | Leaf C | Leaf D | Leaf E | Observation |
| 1 st try | ✓ | | ✓ | | ✓ | only one type of leaf was eaten |
| 2 nd try | ✓ | | ✓ | ✓ | | no leaf was eaten |
| 3 rd try | ✓ | ✓ | | | ✓ | only one type of leaf was eaten |
| 4 th try | | ✓ | ✓ | ✓ | | no leaf was eaten |

- (c) Based on the result above, which type of leaf, A, B, C, D or E, did the caterpillar of butterfly X feed on? _____
- (d) Name one variable that Meiling must keep the same in order to ensure it is a fair test. _____

28. The diagram below shows the human digestive system.



Fill in 1, 2, 3 or 4 in the blanks below.

Identify the part where

(a) digestion first takes place : _____ [1]

(b) there is no digestion : _____ [1]

| | |
|-------|---|
| Score | 2 |
|-------|---|

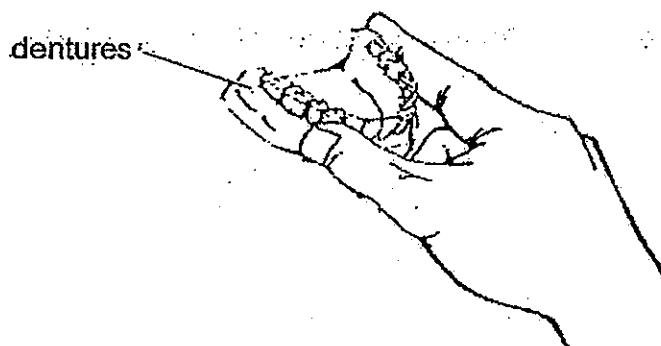
29

The diagram below shows an organ, labelled X, which is part of the human digestive system.



- (a) Where does the food next travel to when it leaves organ X? [1]

- (b) Grandma Mary needs to put on her dentures (false teeth) before she eats. The diagram below shows how the dentures look like.

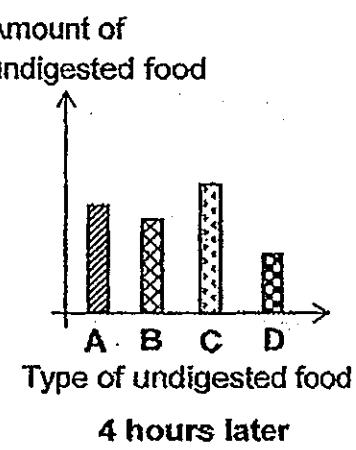
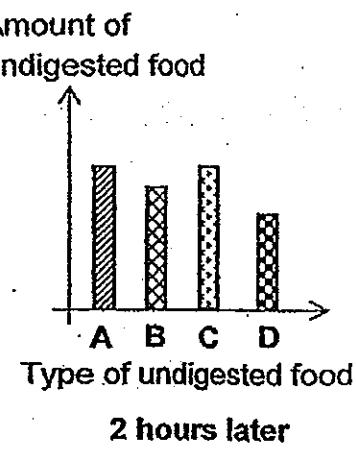
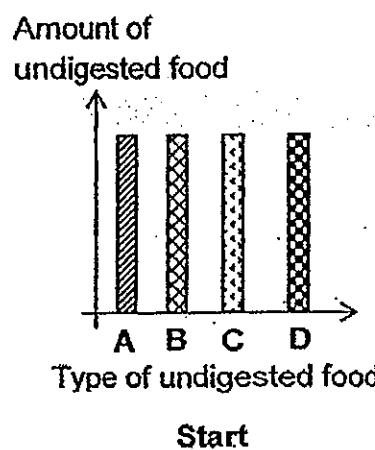


Explain how the use of the dentures help Grandma Mary in the process of [1] digestion.

Continue Q29 on the next page

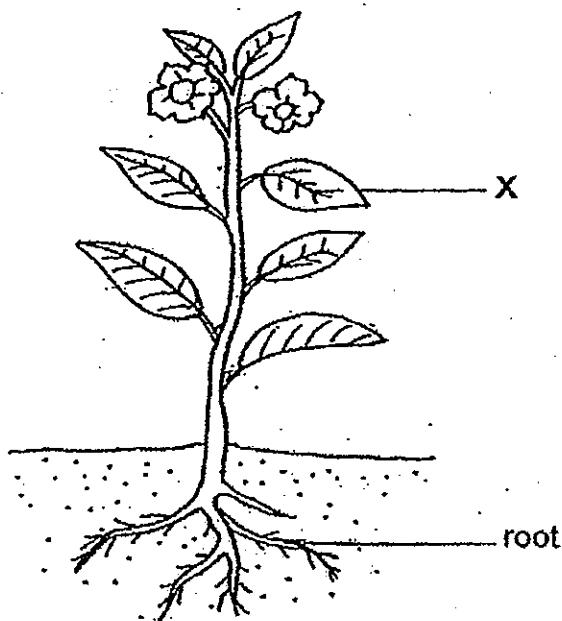
| | |
|-------|---|
| Score | 2 |
|-------|---|

- (c) The graphs below show the changes in the amount of four different type of undigested food, A, B, C and D, in a human digestive system over a period of time.



Based on the information given in the graphs, which type of food, A, B, C or D, [1] is the most difficult to be digested?

30. (a) The diagram below shows a plant.



(i) Name plant part X. [1]

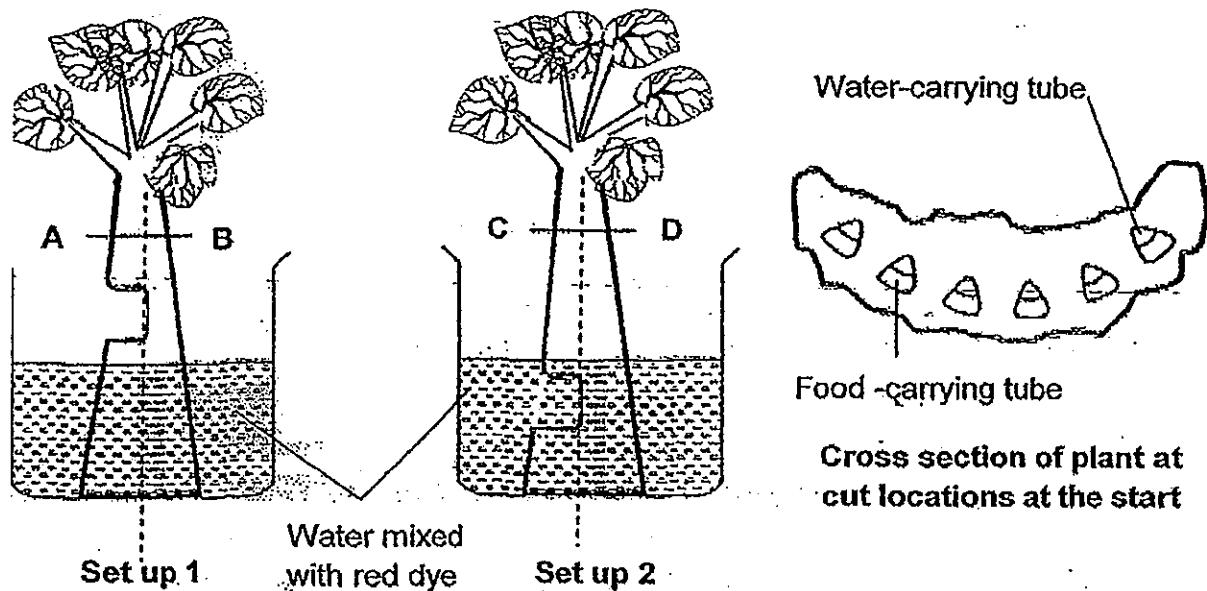
X:

(ii) One substance that the roots of plant take in from the soil is [1]

Continue Q30 on the next page

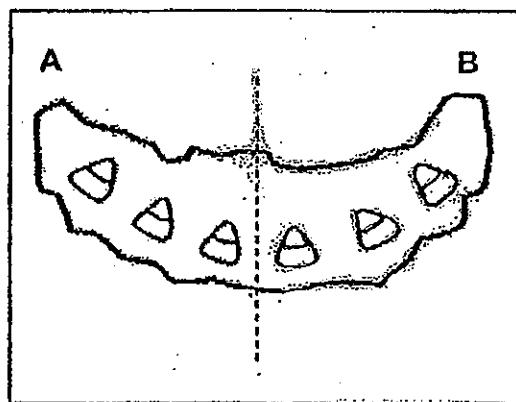
| | |
|-------|---|
| Score | 2 |
|-------|---|

- (b) Sally removed parts of the stalk of two similar plants. She then placed them into two containers of water which had been mixed with red dye. After two days, the plants were cut at two positions, AB and CD, as shown below to observe how much of the red dye could be seen at the cross-sections AB and CD.

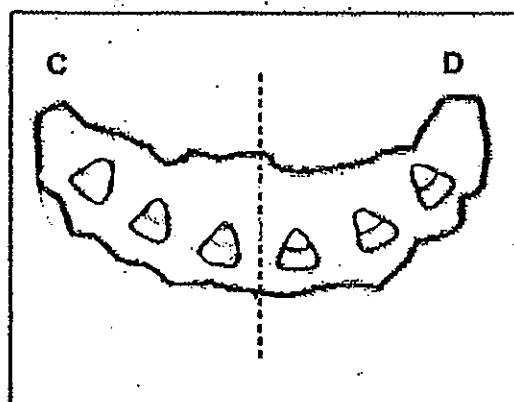


In the diagrams below, shade the parts in the cross sections AB and CD which you would expect to be stained with the red dye after one day. [2]

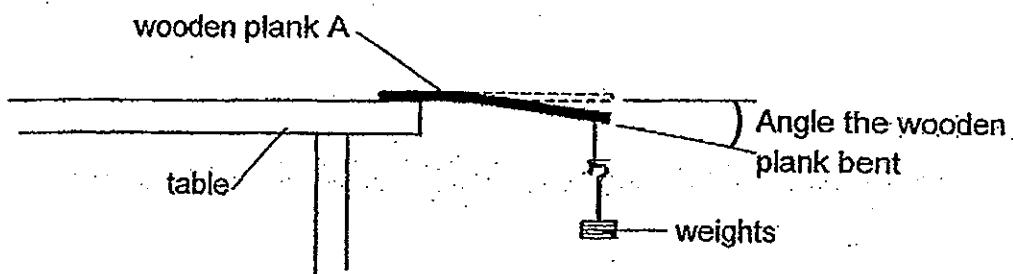
Set up 1



Set up 2



31. Fatimah set up an experiment as shown in the diagram below.



She added weights, one at a time, to one end of wooden plank A.

She recorded the number of weights wooden plank A could hold and the angle it can bend before it broke. She then repeated the same steps for another three wooden planks, B, C and D.

The table below showed what Fatimah has recorded.

| Wooden plank | Number of weights before the wooden plank broke | Angle the wooden plank bent before breaking |
|--------------|---|---|
| A | 6 | 11° |
| B | 11 | 25° |
| C | 7 | 9° |
| D | 4 | 28° |

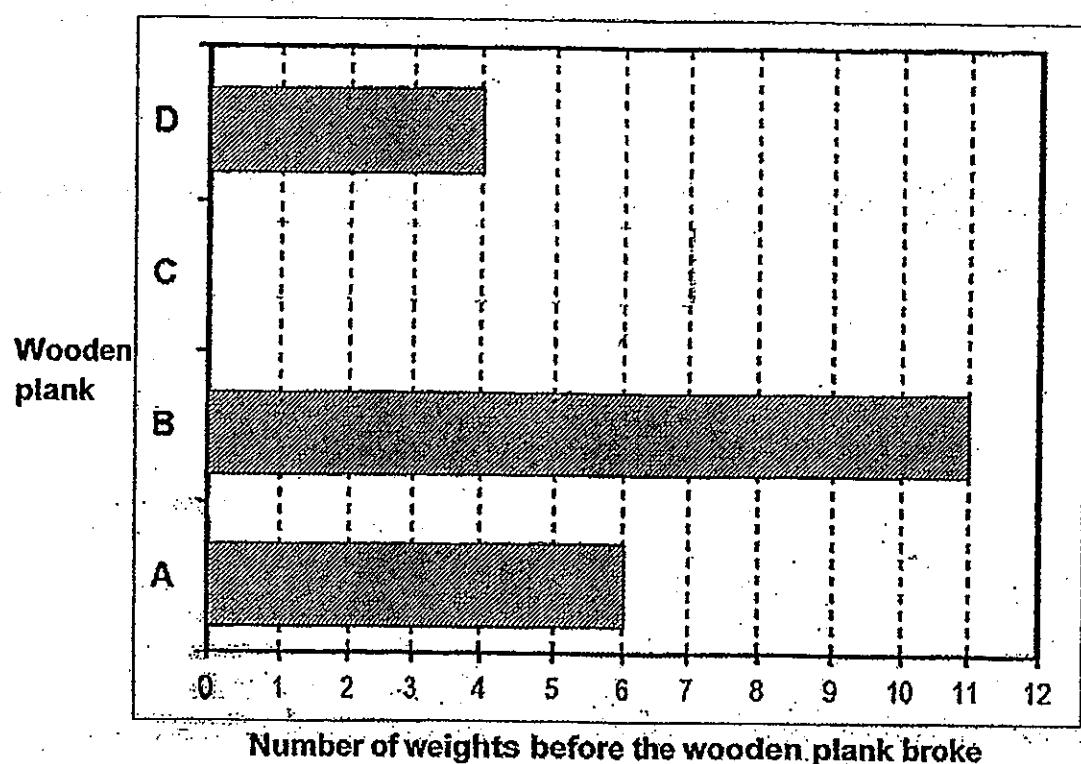
(a) Based on the information, which wooden plank, A, B, C or D, is the strongest? [1]

(b) Based on the information, which wooden plank, A, B, C or D, is the most flexible? [1]

Continue Q31 on the next page

| | |
|-------|---|
| Score | 2 |
|-------|---|

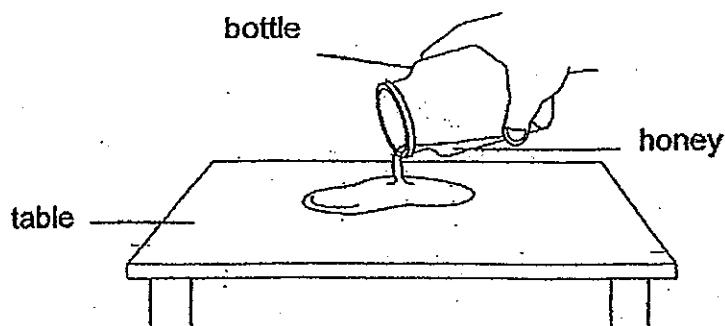
- (c) Complete the bar graph based on the information given in the table.



32 Choose the correct words from the box to fill in the the blanks below.

solid liquid gas

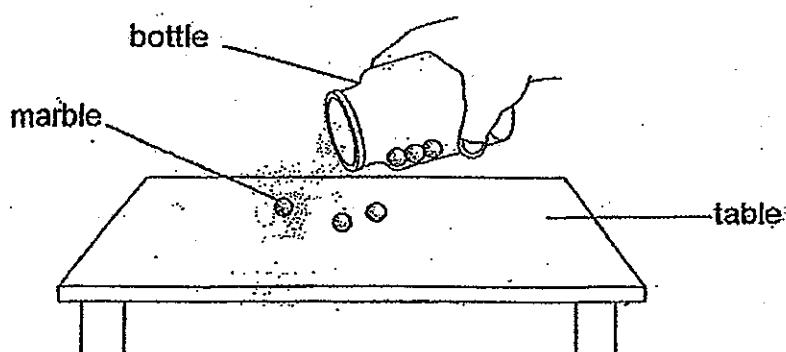
(a) Ali pours honey from a bottle onto a table as shown below.



The volume of honey remains the same but its shape changes.

This shows that honey is a _____ [1]

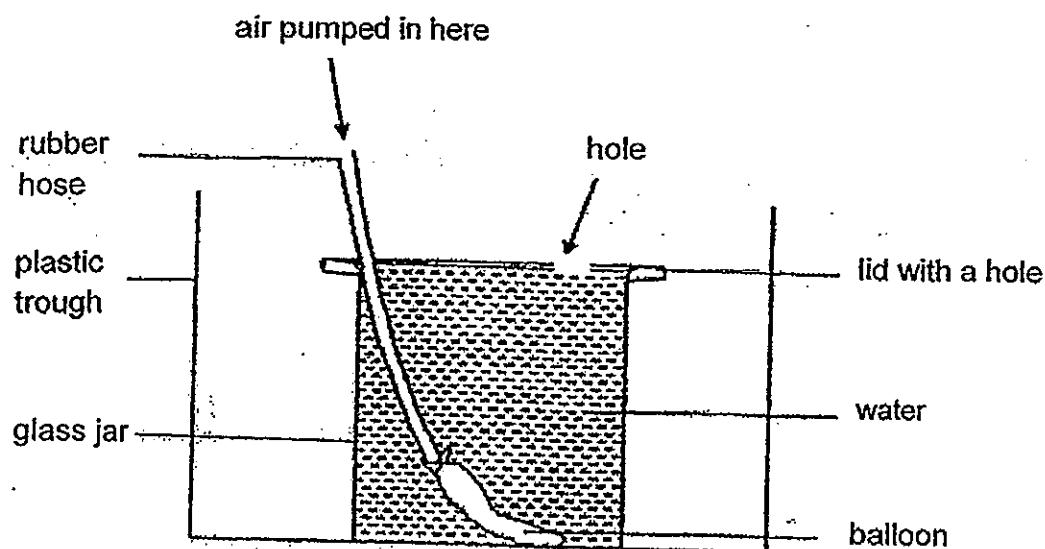
(b) Ali pours some marbles from a bottle onto a table as shown below.



The shape and volume of the marbles remain the same.

This shows that a marble is a _____ [1]

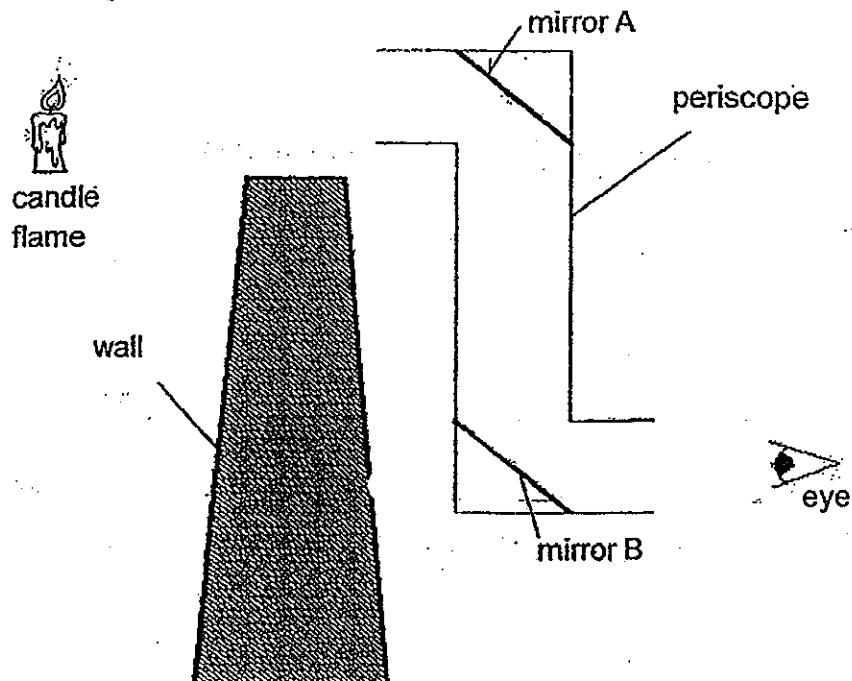
33. The glass jar in the diagram below is filled to the brim with 500 cm.
250cm³ of air is then pumped into the balloon.



- (a) Describe what will happen to the water in the glass jar when the balloon is [1]. inflated.

- (b) Explain your answer in part (a). [2]

34. A periscope allows our eyes to see the candle flame even though there is a wall blocking our view.

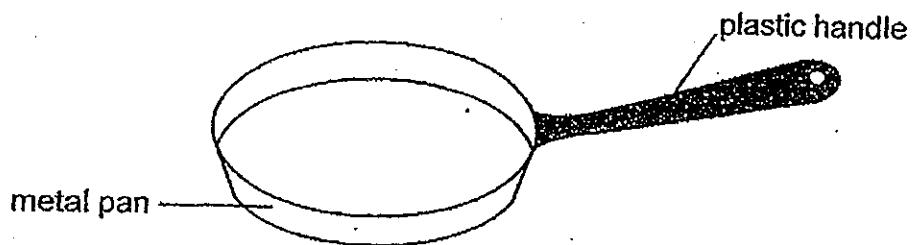


- (a) In the diagram above, draw the direction of the light that allows the eye to see the candle flame. [1]
- (b) Name two properties of light that allows the periscope to work. [1]

Property 1: _____

Property 2: _____

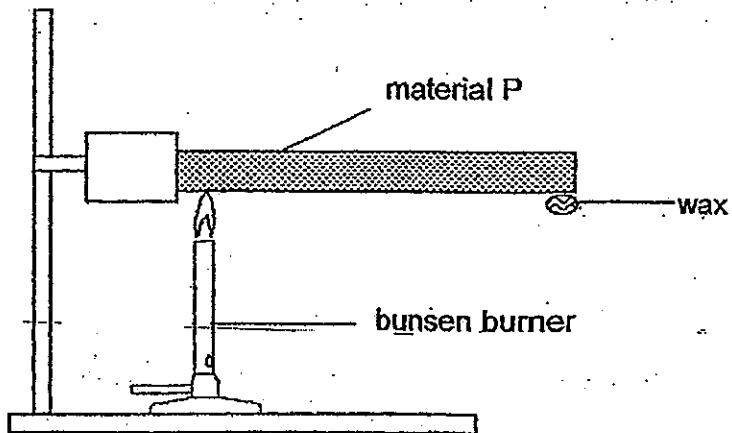
35. The diagram below shows a frying pan.



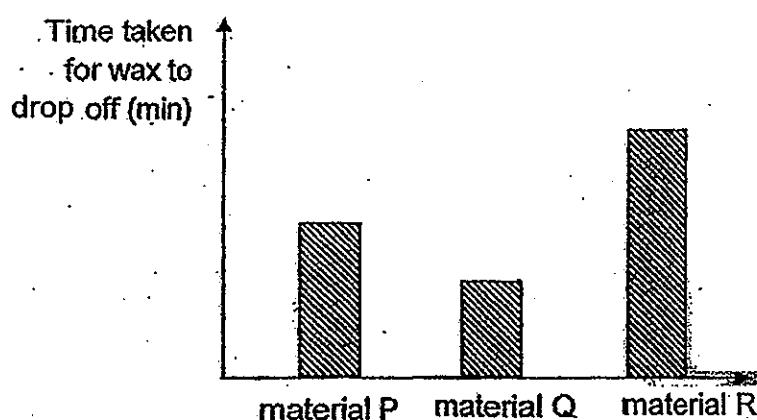
- (a) The handle is made of plastic because it is a _____ conductor of heat. [1]
- (b) The pan is made of metal because it is a _____ conductor of heat. [1]

| | |
|-------|---|
| Score | 2 |
|-------|---|

35. Sam carried out an experiment as shown below. He stuck one end of a rod made of material P with some candle wax. He heated the other end of the rod over a bunsen burner flame. He recorded the time taken for the candle wax to drop off from the rod.



He then repeated the experiment with two other rods made of materials Q and R. The time taken for the candle wax to drop off from rods made of materials Q and R was also shown in the graph below.



- (a) Based on the results he obtained, what could Sam conclude about material Q as compared to the other two materials? [1]

continue Q35 on the next page

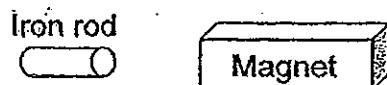
- (b) State two variables that Sam should keep constant for the experiment a fair one.

Variable 1:

Variable 2:

| | |
|-------|---|
| Score | 2 |
|-------|---|

Susan places a magnet near an iron rod. The iron rod moves towards the magnet.



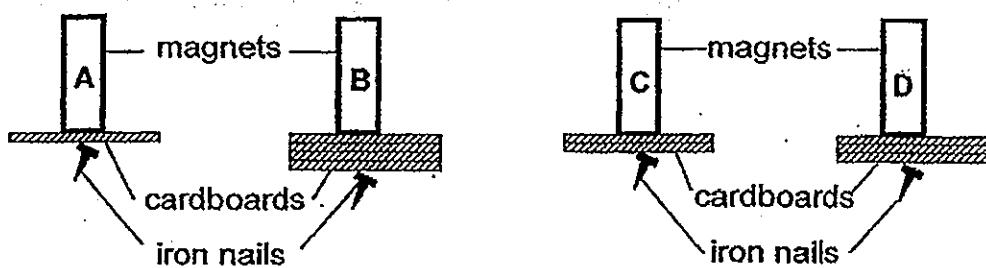
- (a) The magnet exerts a _____ on the iron rod. [1]

- (b) Choose the correct word from the box to answer the question below:

| | | |
|------|----------|--------|
| hard | magnetic | strong |
|------|----------|--------|

Susan's observation shows that iron is a _____ material [1]

38. The diagrams below shows the maximum number of cardboard that can be placed between an iron nail and four magnets, A, B, C and D, before the magnets are unable to attract the iron nail.



The magnets, iron nail and cardboard are of similar size and shape.

- (a) Based on the diagram above, arrange the magnets, A, B, C and D, [1] according to their magnetic strength, from the weakest to the strongest.

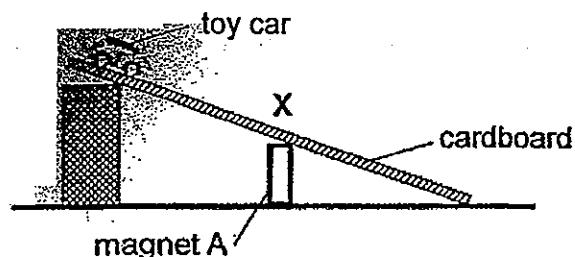
weakest

strongest

Continue Q38 on the next page

| | |
|-------|---|
| Score | 1 |
|-------|---|

David used magnet A for the set up as shown below.

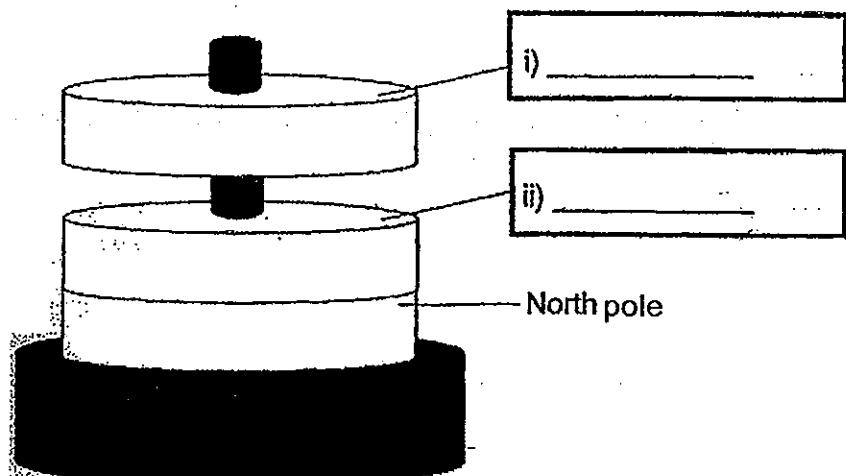


He released the toy car from the top of the cardboard and observed that the toy car stopped at point X. He repeated the test for another 3 times and observed the same result.

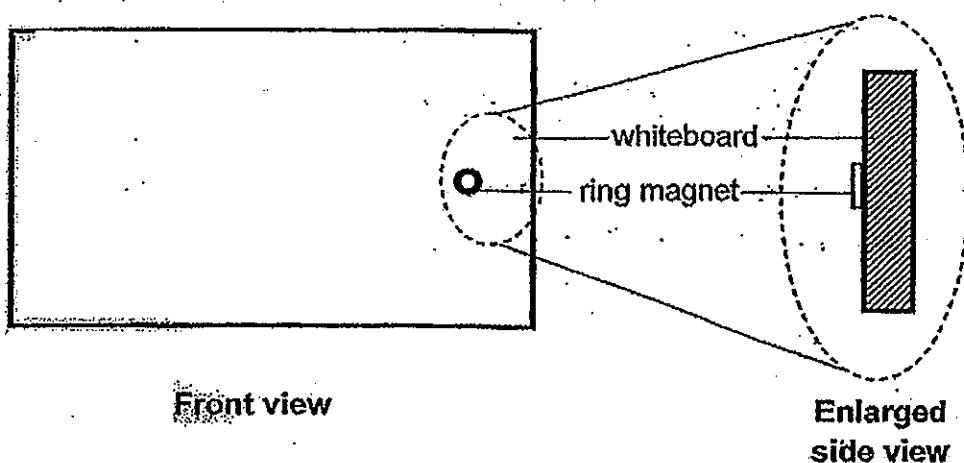
- (b) Explain clearly why the toy car is able to stop at point X. [2]

- (c) Why did David repeat his test for more than 2 times? [1]

39. (a) The diagram below shows three ring magnets placed in a wooden rod.
Find in the blanks with the correct word.
Fill



- (b) Simon brought a ring magnet to school.
He placed the ring magnet on the whiteboard and observed that it stuck on the whiteboard as shown in the diagrams below.



Describe clearly how Simon can find out whether the whiteboard is a magnet or [2]
is made of magnetic material using only the ring magnet.

Answer Ke

EXAM PAPER 2013

SCHOOL : RAFFLES GIRLS PRIMARY SCHOOL
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

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

| | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Q18 | Q19 | Q20 | Q21 | Q22 | Q23 | Q24 | Q25 |
| 2 | 3 | 2 | 2 | 3 | 3 | 3 | 4 |

Section B

Q26)

| Animals | Plants |
|----------|-------------|
| Elephant | Papaya tree |
| Eagle | Fern |

Q27

- a) Both insects lay eggs
- b) Yes. Insect P took 17 days to develop into an adult, while insect Q took 16 days to develop into an adult.
- c) Leaf E.
- d) The location of the tank

Q28

- a) 1
- b) 4

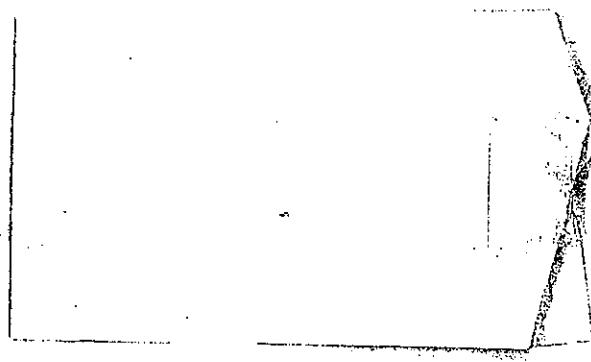
Q29

- a) The food will travel to the small intestine

- b) The dentures help to break the food into smaller pieces and increase surface area so that digestion is faster.
c) Type C

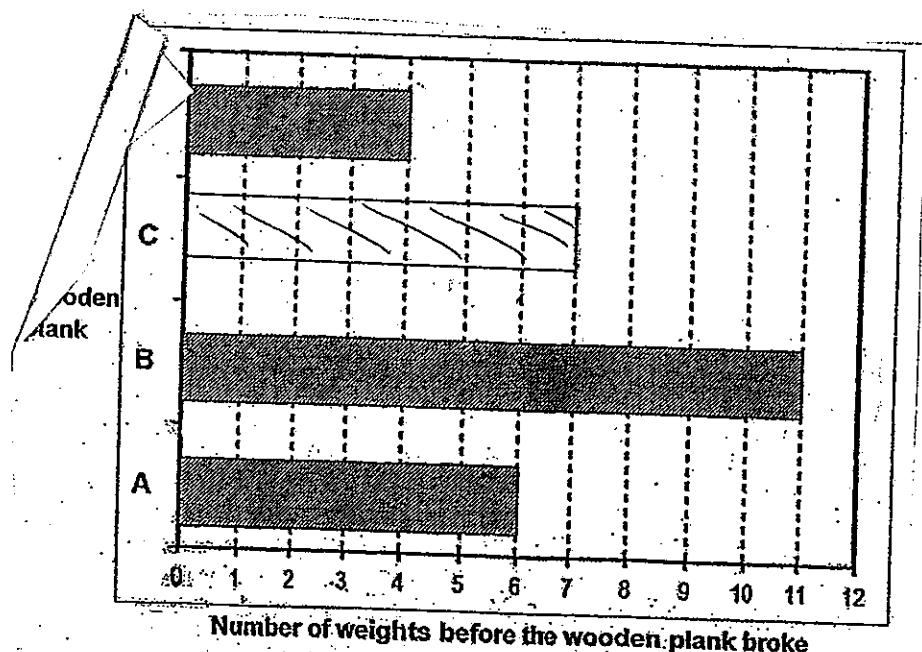
Q30

- a) i) X: Leaf
ii) Water
b)



Q31

- a) Wooden Plank B
b) Wooden Plank D
c)



Q32

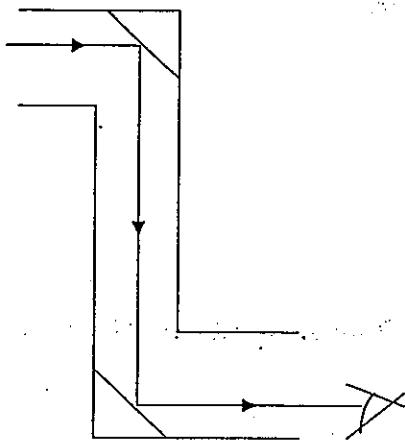
- a) Liquid
- b) Solid

Q33

- a) The water in the glass jar will flow out from the hole and into the plastic through
- b) Water cannot be compressed, so the water escapes from the hole in the lid

Q34

a)



b) Property 1: Light travels in a straight line

Property 2: Light can be reflected by the mirror

Q35

- a) poor
- b) good

Q36

- a) Material Q is the best conductor of heat among the three materials
- b) Variable 1: The amount of heat
Variable 2: The amount of wax on each material

Q37

- a) pull
- b) magnetic

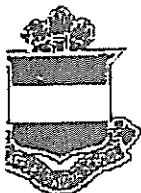
Q38

- a) A, C, D, B

- b) The toy car is magnetic and was attracted to magnet A as magnetism can pass through non-magnetic materials thus the toy car is able to stop at point X
- c) To ensure that David's result was reliable

Q39

- a)i) South-seeking
ii) North-seeking
- b) Simon should flip the ring magnet around. If the whiteboard repels the ring magnet, the whiteboard is made of a magnet, if it attracts the ring magnet, that means the whitboard is not magnetic.



**RAFFLES GIRLS' PRIMARY SCHOOL
SEMESTRAL ASSESSMENT (2)
2014**

Name: _____ Index No: _____ Class: P4 _____

20 October 2014 SCIENCE Att: 1 h 30 min

| | |
|----------------------|----|
| Section A | 50 |
| Section B | 40 |
| Your score out of 90 | |
| Parent's signature | |

SECTION A (25 x 2 marks)

For each question from 1 to 25, four options are given.

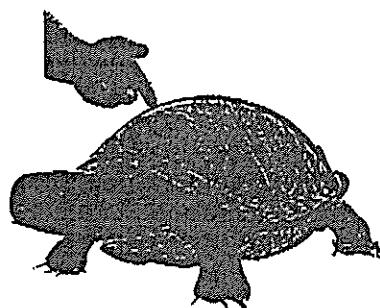
One of them is the correct answer. Make your choice (1, 2, 3 or 4).

Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1. Which one of the following statements is true for all insects?

- (1) They have tails.
- (2) They have wings.
- (3) They live on land.
- (4) They have 6 legs.

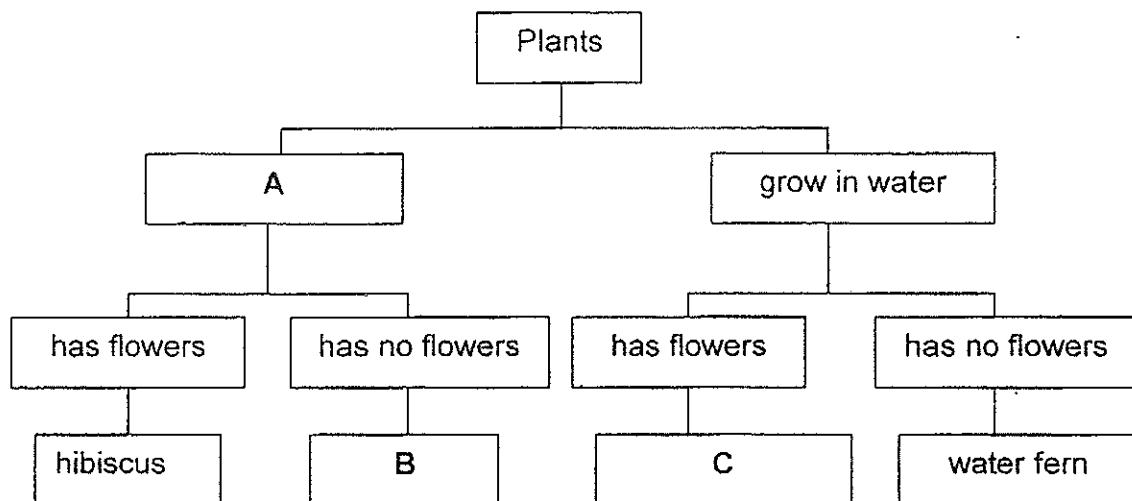
2. A tortoise hides in its shell when touched or when faced with danger.



Based on the information above, which one of the following statements shows that the tortoise is a living thing?

- (1) It grows.
- (2) It reproduces.
- (3) It responds to changes.
- (4) It needs food, water and air to survive.

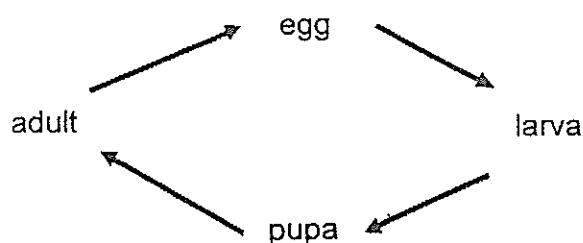
3. The classification chart below shows how plants can be classified.



Based on the information above, which one of the following best identifies boxes A, B and C?

| | A | B | C |
|-----|--------------|------------------|------------------|
| (1) | green plants | rose | bird's nest fern |
| (2) | green plants | mushroom | bird's nest fern |
| (3) | grow on land | mushroom | water lily |
| (4) | grow on land | bird's nest fern | water lily |

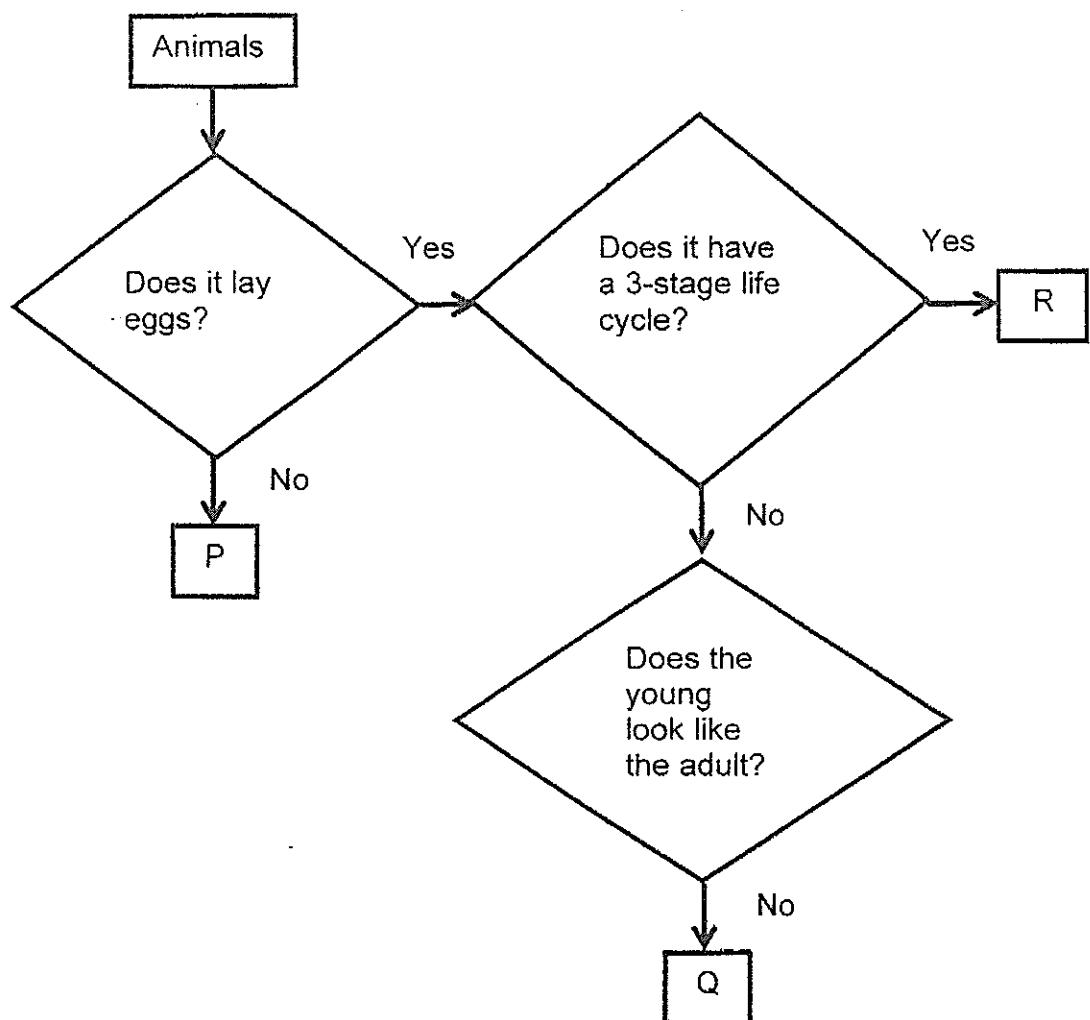
4. The diagram below shows the different stages in the life cycle of an animal.



Which of the following animals go through the above life cycle?

- A butterfly
 - B chicken
 - C mosquito
 - D cockroach
-
- (1) A only
 - (2) A and C only
 - (3) B and C only
 - (4) A, C and D only

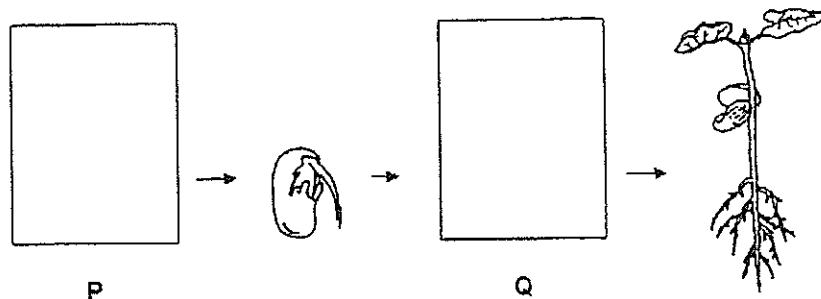
5. The flow chart shows how animals P, Q and R, are grouped.



Based on the information given above, which one of the following best represents animals P, Q and R?

| | P | Q | R |
|-----|---------|-----------|-----------|
| (1) | tiger | mosquito | cockroach |
| (2) | tiger | cockroach | mosquito |
| (3) | chicken | cockroach | mosquito |
| (4) | chicken | mosquito | cockroach |

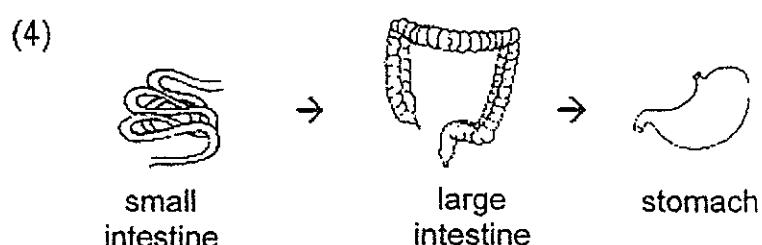
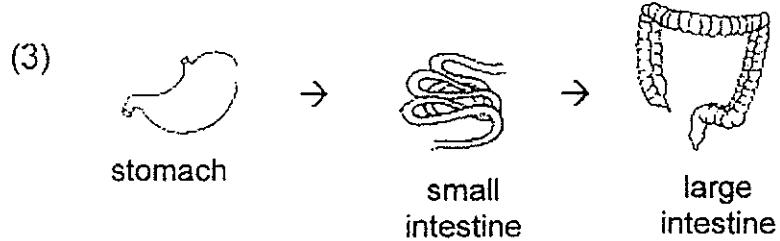
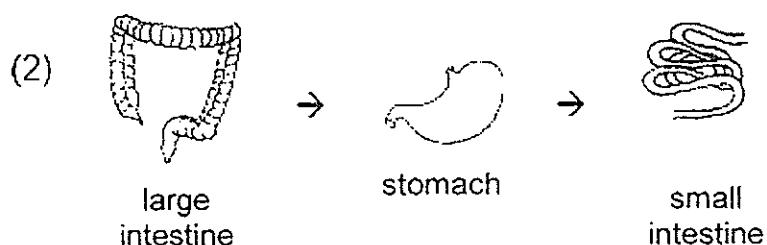
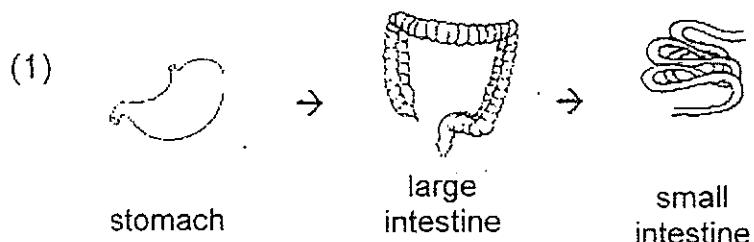
6. At which stages does the plant need sunlight to make food?
- A Seed
B Young plant
C Adult plant
- (1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C
7. The diagram below shows the growth of a young plant with two of its missing stages in boxes P and Q.



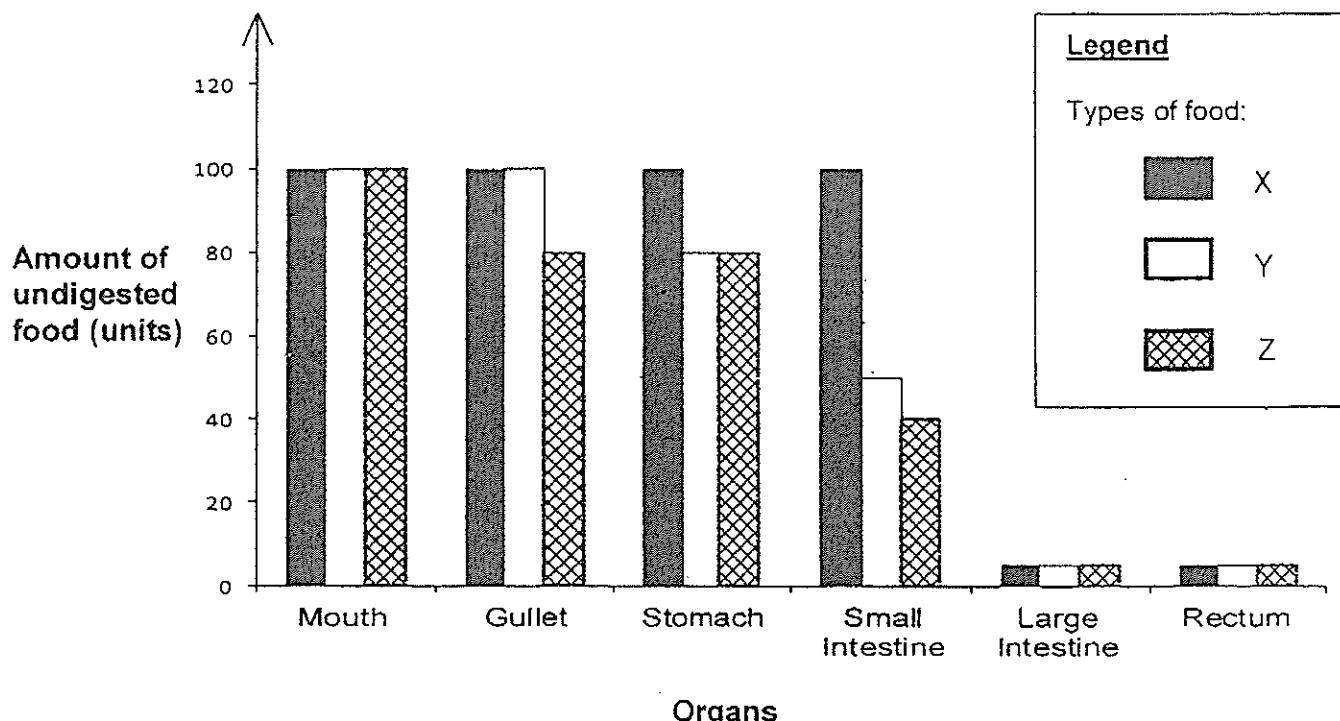
Which one of the following shows the correct stages for P and Q?

| | P | Q |
|-----|---|---|
| (1) | | |
| (2) | | |
| (3) | | |
| (4) | | |

8. Which one of the following set of diagrams shows the correct order in which food moves from one part of the digestive system to another?



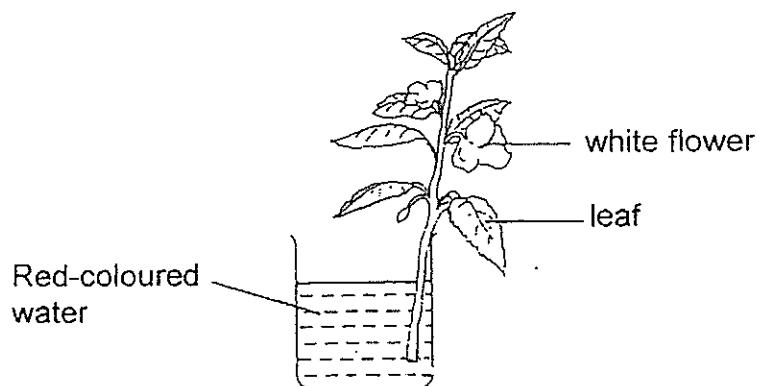
9. The graph below shows the amount of undigested food of type X, Y and Z when it first enters each organ.



Based on the information above, which one of the following about the process of digestion for the three types of food, X, Y and Z, is true?

- (1) The digestion of all the three types of food, X, Y and Z, starts from the mouth
- (2) The digestion process is still ongoing at the large intestine for food types Y and Z.
- (3) The digestive juices in the stomach can digest all three types of food, X, Y and Z.
- (4) The digestive juices in the small intestine can digest all three types of food, X, Y and Z.

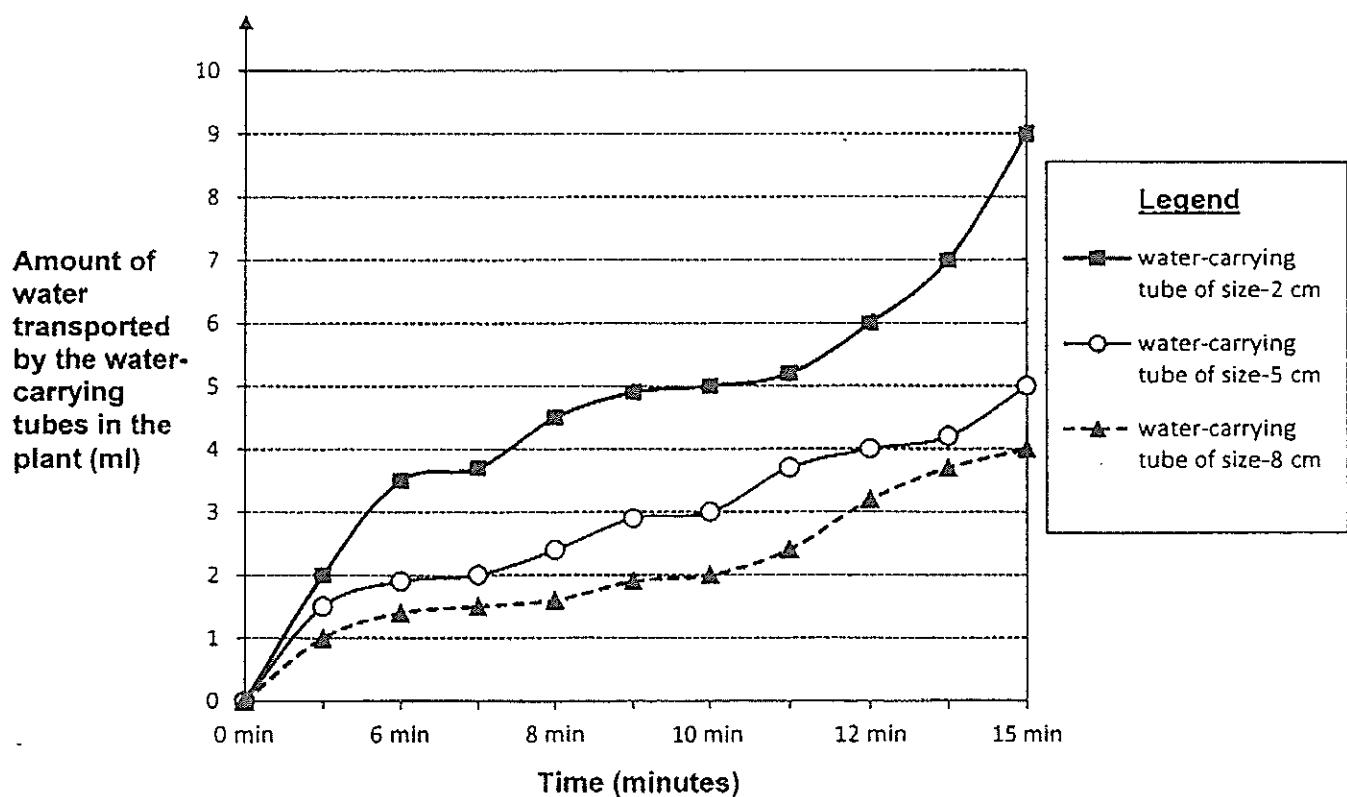
10. Mr Tan placed a plant without its roots in a beaker of red-coloured water. After 3 days, he observed that some parts of its leaves and white flowers had turned red.



Based on the information above, which one of the following statements best explain Mr Tan's observation?

- (1) Water is taken in by the flower and leaves.
- (2) Food is taken in by the flower and leaves.
- (3) Water is transported through the water-carrying tubes in the stem to all plant parts.
- (4) Food is transported through the food-carrying tubes in the stem to all plant parts

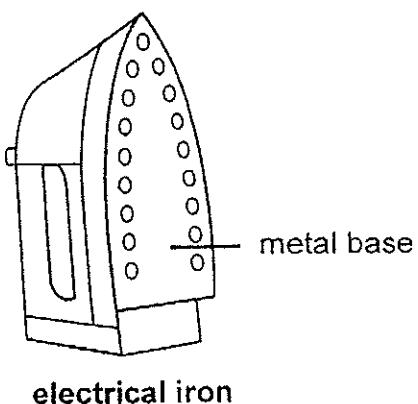
11. Mrs Seto carried out an experiment to find out how the size of the water-carrying tubes in the plant affects the amount of water transported by the plant within a period of 15 minutes. She recorded her results as shown in the graph below.



Based on the information above, which one of the following statements about Mrs Seto's experiment is true?

- (1) As the size of the water-carrying tube in the plant increases, the amount of water transported by the water-carrying tubes increases within a period of 15 minutes
- (2) As the size of the water-carrying tube in the plant increases, the amount of water transported by the water-carrying tubes decreases within a period of 15 minutes
- (3) The size of the water-carrying tube of the plant does not affect the amount of water transported by the water-carrying tubes within a period of 15 minutes
- (4) When the size of the water-carrying tube of the plant is 5 cm and above, the amount of water transported by the water-carrying tubes at 15 minutes is 5 ml.

12. The diagram below shows an electrical iron with a metal base.



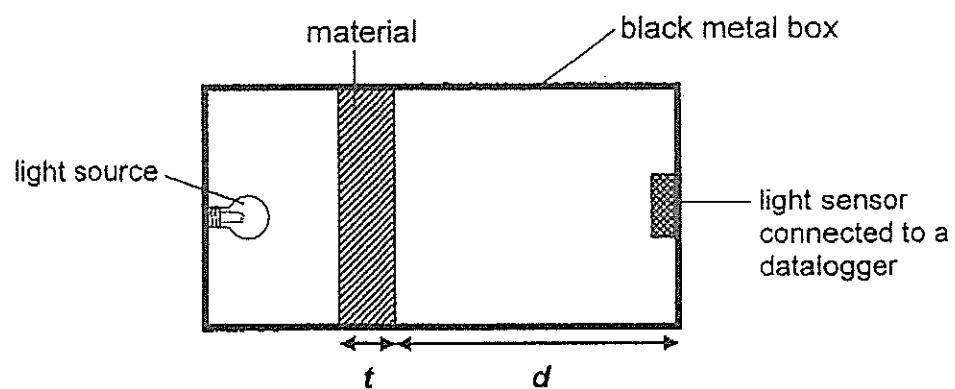
Which of the following properties should the base of the electrical iron possess?

- A It is strong.
- B It is flexible
- C It is a good conductor of heat.
- D It allows light to pass through it.

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

13. John prepared a set-up to find out which material, X or Y, blocks out more light.

He placed each material, one at a time, in a black metal box as shown in the diagram below.



John recorded his results in the table below.

| Set-up | material | <i>t</i> (cm) | <i>d</i> (cm) |
|--------|----------|---------------|---------------|
| 1 | X | 2 | 15 |
| 2 | X | 4 | 15 |
| 3 | Y | 2 | 12 |
| 4 | Y | 4 | 8 |
| 5 | Y | 4 | 15 |

Which of these set-ups would allow John to conduct a fair test for his experiment?

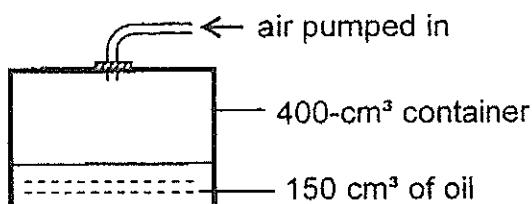
14. The table below describes three different states of matter, X, Y and Z.

| Property | X | Y | Z |
|--------------------|----|-----|-----|
| has a fixed shape | no | yes | no |
| has a fixed volume | no | yes | yes |

Based on the information above, which one of the following is correct?

| | X | Y | Z |
|-----|--------|--------|--------|
| (1) | gas | solid | liquid |
| (2) | gas | liquid | solid |
| (3) | liquid | solid | gas |
| (4) | liquid | gas | solid |

15. Muthu prepared 4 set-ups, P, Q, R and S, using identical 400-cm^3 containers. One of the set-ups is shown in the diagram below.



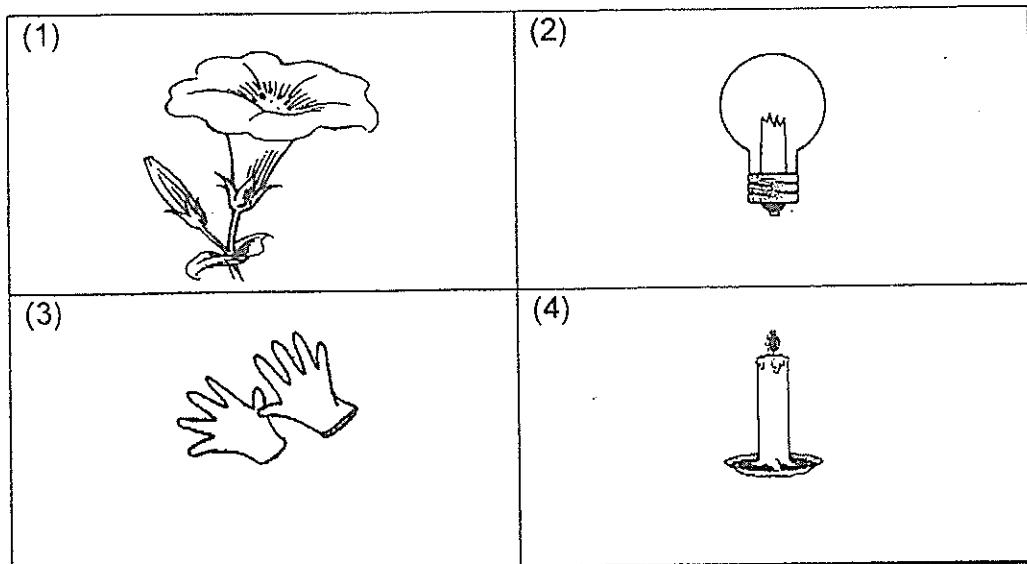
The container each contained different amount of oil as shown in the table below.

| Set-up | Amount of oil in container (cm³) |
|---------------|--|
| P | 150 |
| Q | 400 |
| R | 300 |
| S | 250 |

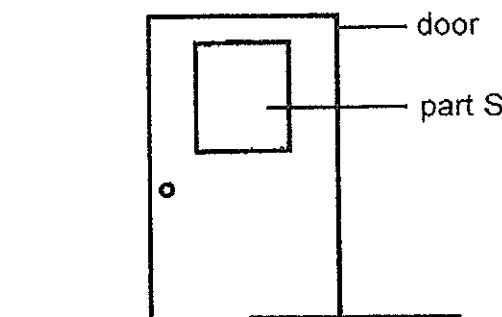
300 cm³ of air was pumped into each container.

In which set-up(s) was air compressed in the container(s)?

16. Which one of the following is a source of light?



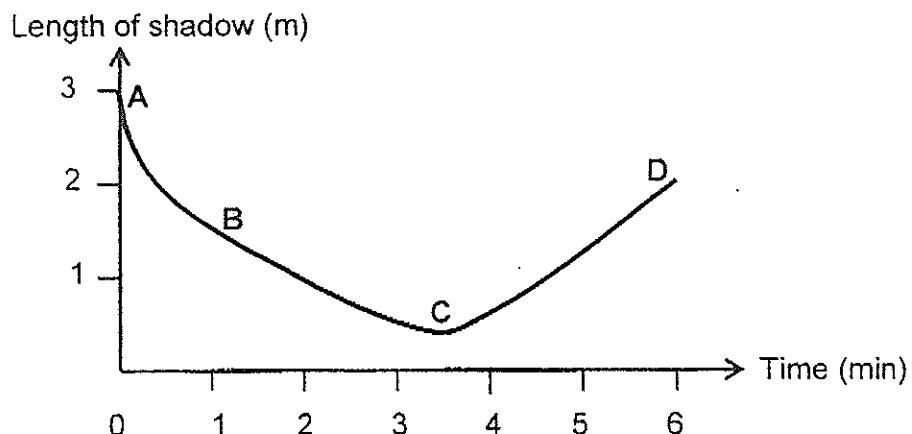
17. A carpenter wanted to build a classroom door. Part S of the door enabled people outside the classroom to see the pupils in the classroom clearly.



Which one of the following best identifies the type of material use to make part S and its property?

| | material | property of material |
|-----|---------------|---|
| (1) | wood | allows some light to pass through it |
| (2) | clear glass | does not allow light to pass through it |
| (3) | clear glass | allows most light to pass through it |
| (4) | frosted glass | allows most light to pass through it |

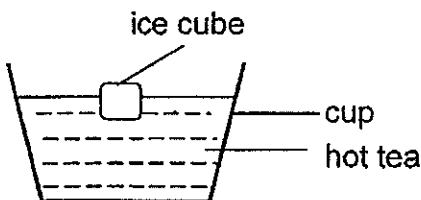
18. The line graph below shows how the length of Deana's shadow changed over a period of 6 minutes as she was walking in a straight line towards and away from a street lamp at night.
A, B, C and D are different points on the line graph.



Which parts of the graph show that Deana was walking towards and away from a street lamp?

| | walking towards street lamp | walking away from street lamp |
|-----|-----------------------------|-------------------------------|
| (1) | point A to B | point B to C |
| (2) | point B to C | point C to D |
| (3) | point C to D | point A to B |
| (4) | point C to D | point B to C |

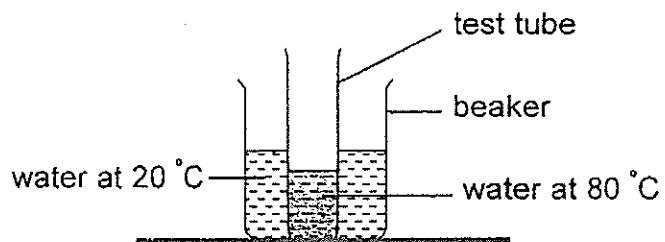
19. Susie placed an ice cube in a cup of hot tea as shown below.



Which one of the following statements is true?

- (1) The cup lost heat to the hot tea.
- (2) The ice cube lost heat to the cup.
- (3) The ice cube lost heat to the hot tea.
- (4) The hot tea lost heat to the cup and ice cube.

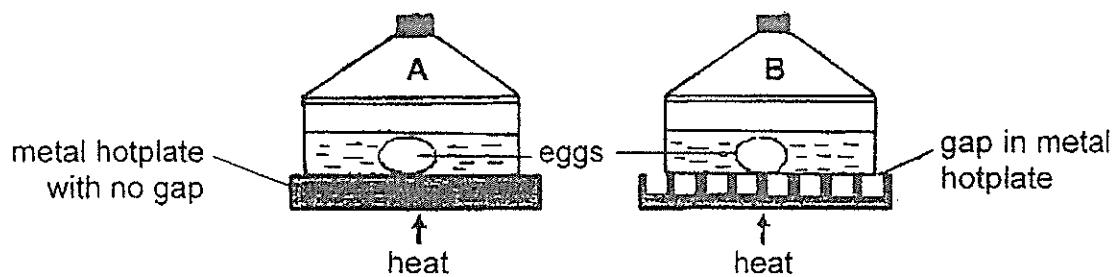
20. Ravi placed a test tube containing 50 cm^3 of water at 80°C into a beaker of 100 cm^3 of water at 20°C .



What would happen to the temperature of the water in both test tube and beaker after 5 minutes?

| | temperature of water in the test tube | temperature of water in the beaker |
|-----|--|---------------------------------------|
| (1) | increase | increase |
| (2) | increase | decrease |
| (3) | decrease | decrease |
| (4) | decrease | increase |

21. Steven placed an egg of similar size in identical saucepans with an equal amount of water at the same temperature. Identical lids were used to cover the saucepans.

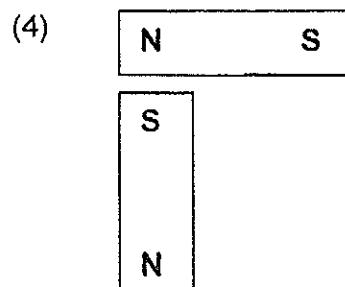
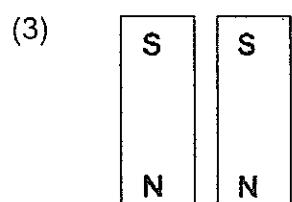
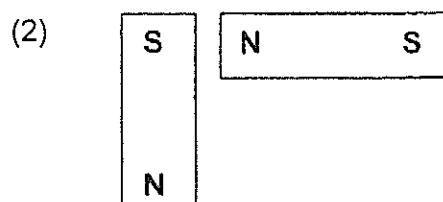
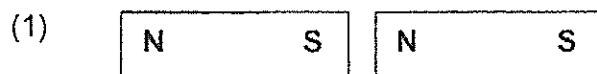


After a while, Steven found out that one egg cooked more quickly than the other though the same amount of heat was provided to boil the water.

Which one of the following provides the correct explanation for the egg which cooked first?

| | egg which cooked first | explanation |
|-----|-----------------------------------|--|
| (1) | in saucepan A | There was less surface area of contact between the metal hotplate and saucepan. Water gained heat slower from the hotplate. |
| (2) | in saucepan A | There was more surface area of contact between the metal hotplate and saucepan. Water gained heat faster from the hotplate. |
| (3) | in saucepan B | There was less contact surface area between the metal hotplate and saucepan. Water gained heat slower from the hotplate. |
| (4) | in saucepan B | There was more surface contact between the metal hotplate and saucepan. Water gained heat faster from the hotplate. |

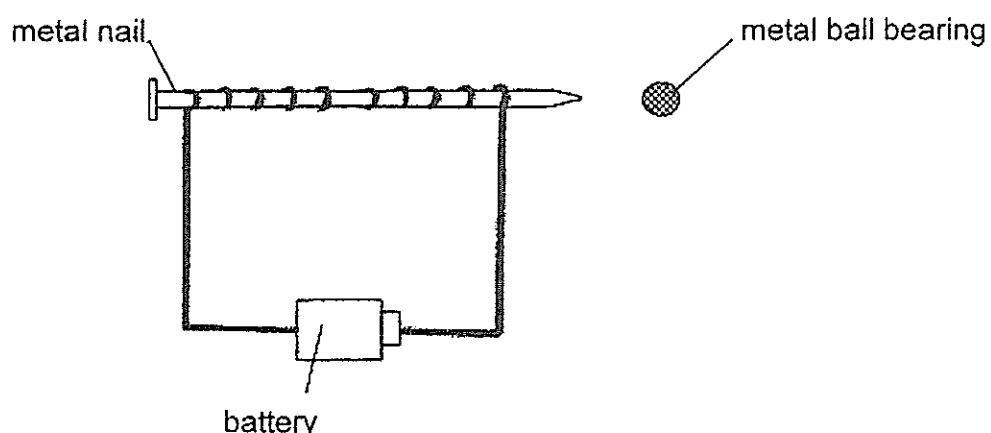
22. In which one of the following will the two magnets push each other away?



23. Which one of the following can be attracted by a magnet?

24. Muthu used a wire and coiled it around a metal nail. Both ends of the wire were connected to a battery.

Next, Muthu brought a metal ball bearing near to coiled nail as shown in the diagram below.

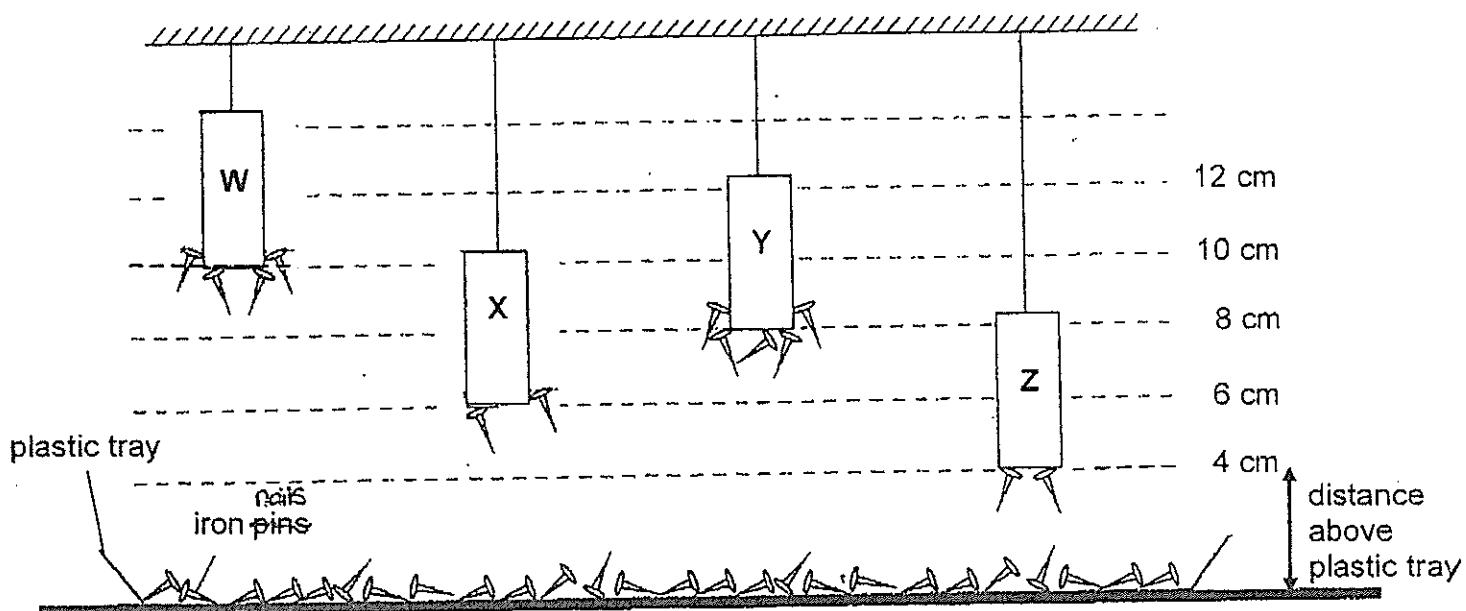


Muthu observed that the metal ball bearing was not attracted to the nail.

Which of the following could possibly explain Muthu's observations?

25. Yanglin wanted to compare the magnetic strength of four bar magnets, W, X, Y and Z of the same size.

She hung bar magnet W 10 cm above the plastic tray of iron nails. The rest of the bar magnets were hung at different distance above the plastic tray of iron nails as shown in the diagram below.



Based on information above, Yanglin could not conclude that magnet Y had a stronger magnetic strength than magnet W.

What should Yanglin do so that she could find out which magnet, W or Y, had a greater magnetic strength?

- (1) raise magnet Y to 10 cm above the plastic tray
- (2) raise magnet W to 12 cm above the plastic tray
- (3) lower magnet W to 8 cm above the plastic tray
- (4) lower magnet W to 6 cm above the plastic tray

End of Section A

Marks

40

Name : _____ Index No.: _____ Class: P4 _____

SECTION B (40 marks)

For questions 26 to 39, 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.

26. Haris observed and classified some things that are shown in the table below.

| things | |
|----------|--------|
| X | Y |
| ant | table |
| tiger | stone |
| mushroom | pencil |

Based on the information above, answer the following questions:

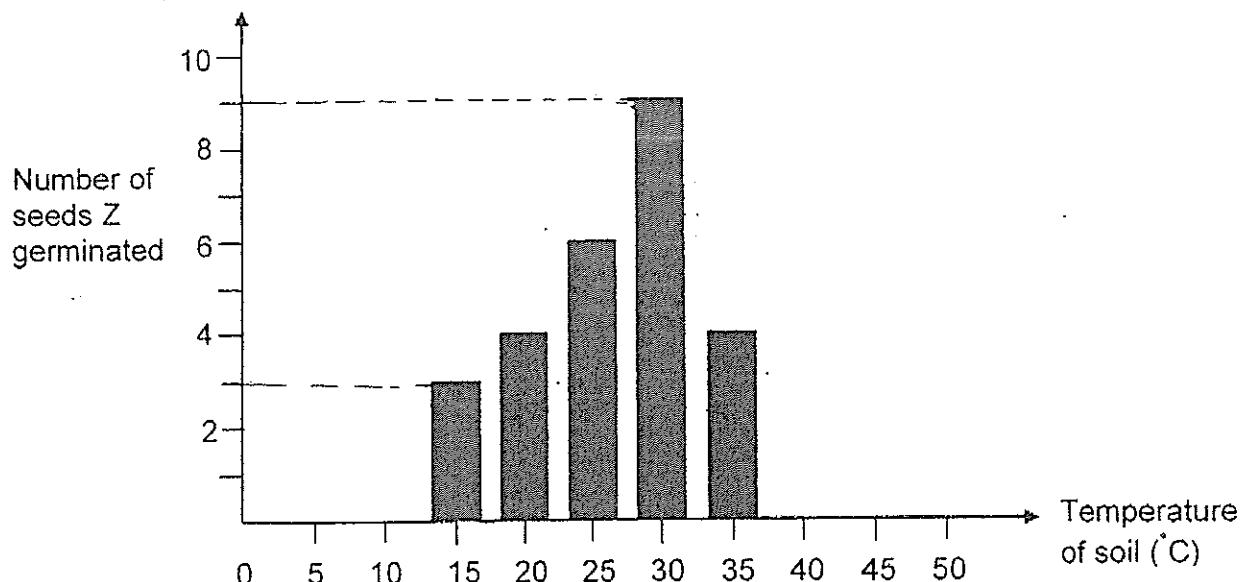
- (a) Write a suitable set of sub-headings for X and Y. [2]
- (i) X :
- (ii) Y :

Haris re-grouped the things in group X.

- (b) Fill the table below with the things from group X. [1]

| mammal | insect | fungi |
|--------|--------|-------|
| | | |

27. Yasmin carried out an experiment to find out if the temperature of the soil affects the germination of seeds Z.
She recorded her observations in the graph below.



Based on the information above, answer the following questions:

The table below shows the temperature ranges of soil.

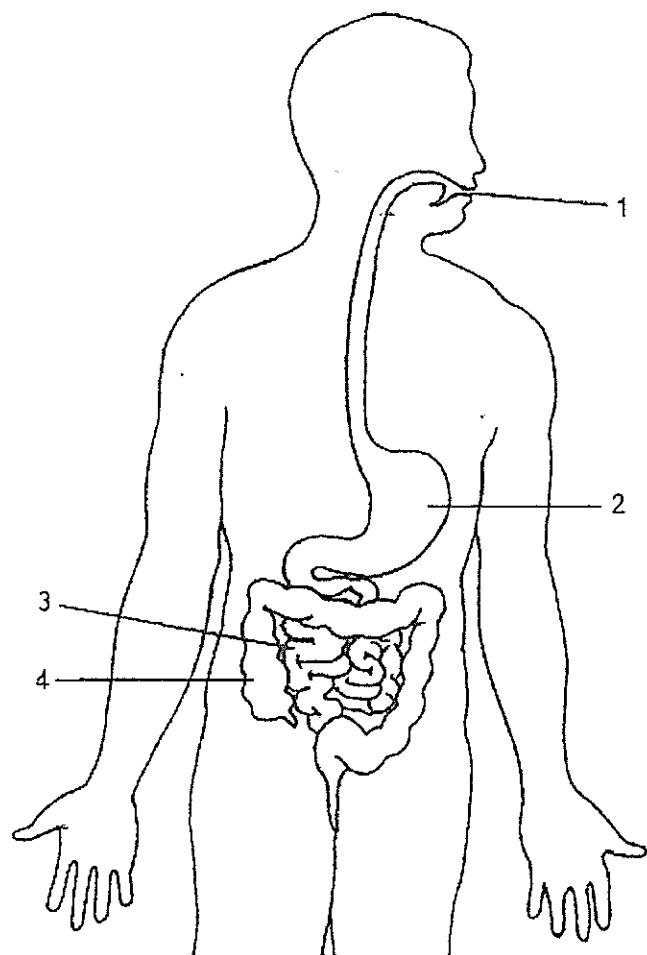
- (a) How did the temperature of soil affect the number of seeds Z germinated? [2]

| | |
|-------------------------------|-------|
| (i) from 15 °C to 30 °C | _____ |
| | _____ |
| (ii) 40 °C and above | _____ |
| | _____ |

- (b) State the temperature of the soil which was best suited for seeds Z to germinate. [1]

- (c) Other than warmth, state two more conditions needed for seeds to germinate. [1]

28. The diagram below shows the human digestive system.

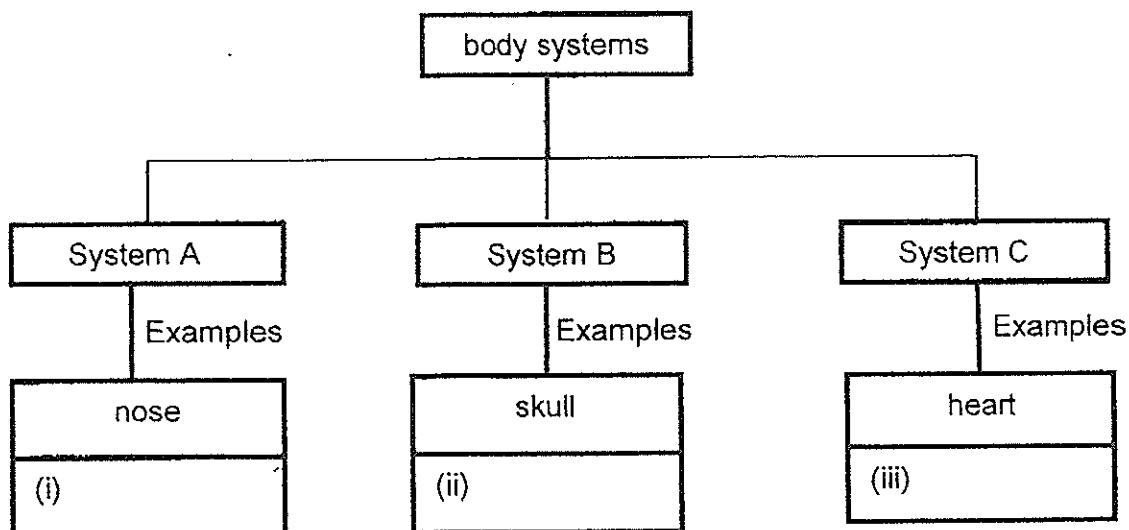


Based on the diagram above, fill in each blank with the correct number: 1, 2, 3 and/ or 4. [2]

- (a) Digestion begins at _____
- (b) There is no digestion at _____

29. (a) Classify the following body parts in the chart below. [1]

| | | | |
|---------------|-------|------|-----------------|
| blood vessels | lungs | bone | small intestine |
|---------------|-------|------|-----------------|

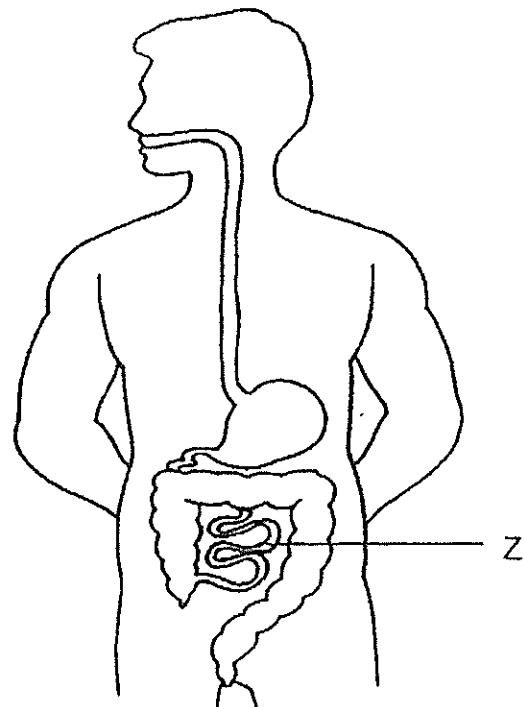


(b) Name system A. [1]

continue on the next page

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The diagram below shows a labelled part, Z, of the human digestive system.

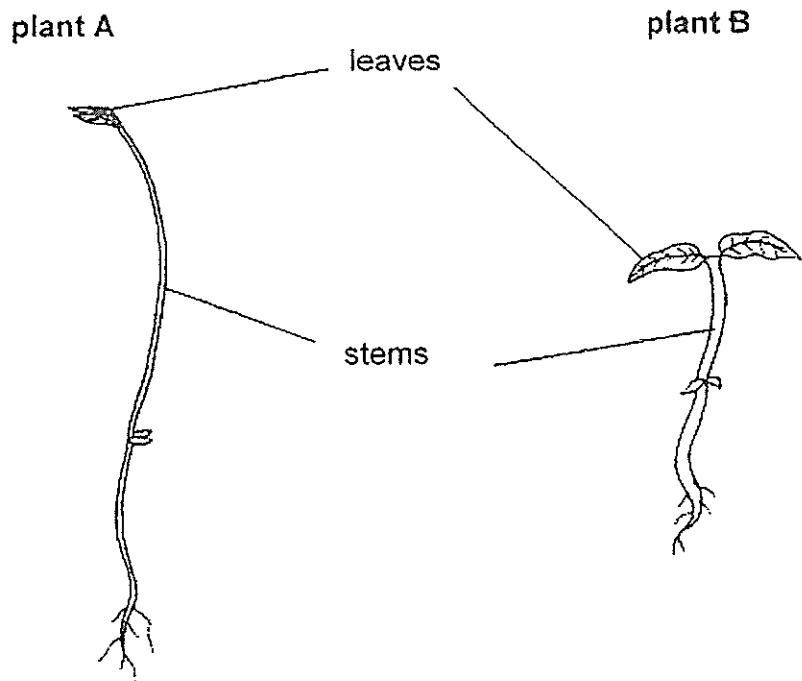


Based on the table and diagram above, answer the following question:

- (c) Which system, A, B or C, in question (a), works with organ Z so that digested food is carried to all parts of the body? [1]

System _____

30. The diagram below shows two plants.



(a) Based on the diagram above, answer the following questions:

(i) What is one difference between the stem of plant A and the stem of plant B? [1]

The stem of plant A is _____ than the stem of plant B.

(ii) The leaves help both plants make _____ in the light. [1]

continue on the next page

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Pauline removed a 1-cm ring from a branch as shown in the diagrams below. Figure A showed the magnified view of the branch.

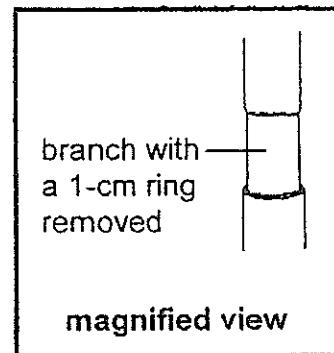
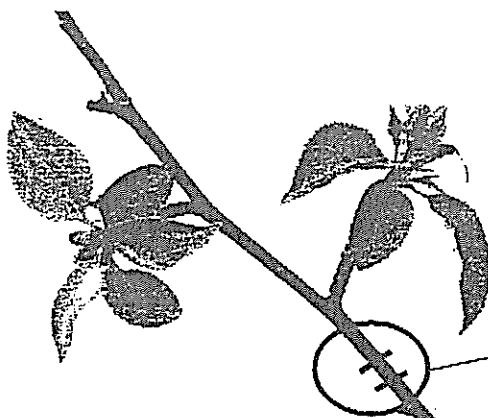


Figure A

Two weeks later, Pauline observed the following changes as shown below.

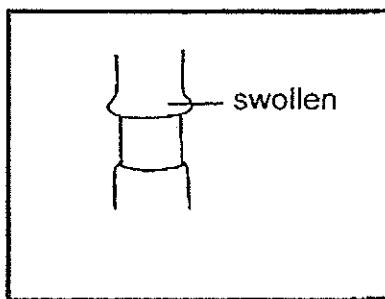
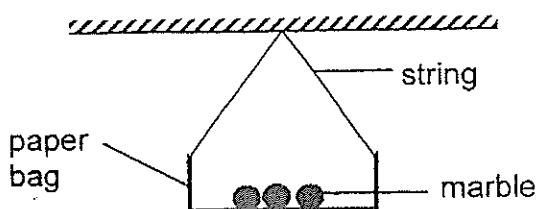


Figure A
(two weeks later)

- (b) Based on Pauline's observations above, explain why the upper part of the branch of Figure A was swollen.

31. James conducted an experiment to find out the strength of each type of paper, X, Y and Z. He used papers of type X, Y and Z of the same mass to make bags of the same size. Identical strings were used to tie at the side of each paper bag.

Next, he placed identical marbles, one at a time, in each paper bag as shown below.



James recorded the most number of marbles each paper bag could hold just before it tore.

His results are shown in the table below.

| Type of paper | X | Y | Z |
|--|---|---|---|
| Number of marbles the paper bag could hold just before it tore | 6 | 9 | 2 |

- (a) Which type of paper, X, Y or Z, was of the least strength?
Give a reason for your answer. [1]

- (b) Name one other variable which James must keep the same to conduct a fair test for his experiment. [1]

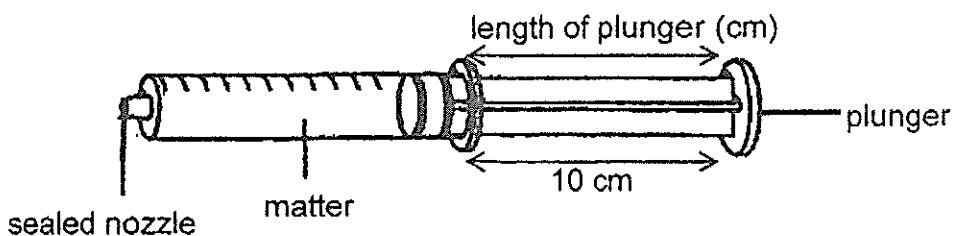
- (c) Could James conclude from the results of his experiment that paper of type Y was the most absorbent? Give a reason for your answer. [1]

32. Classify the following into matter and non-matter. [2]

| | | |
|------|-------|-----|
| heat | steam | oil |
|------|-------|-----|

| | |
|--------|------------|
| matter | non-matter |
|--------|------------|

33. Helen sealed the nozzles of two identical syringes. Next, she filled each syringe completely with a different matter, P and Q.



She measured the length of the plunger for each syringe after it had been pushed in. The table below shows her results.

| Matter in syringe | P | Q |
|------------------------|----|-----|
| length of plunger (cm) | 10 | 5.2 |

Based on the information above, answer the following questions:

- (a) Give an example of a substance that Helen put in syringe Q. [1]

- (b) Give an example of P and state one of its properties. [2]

(i) Example of P : _____

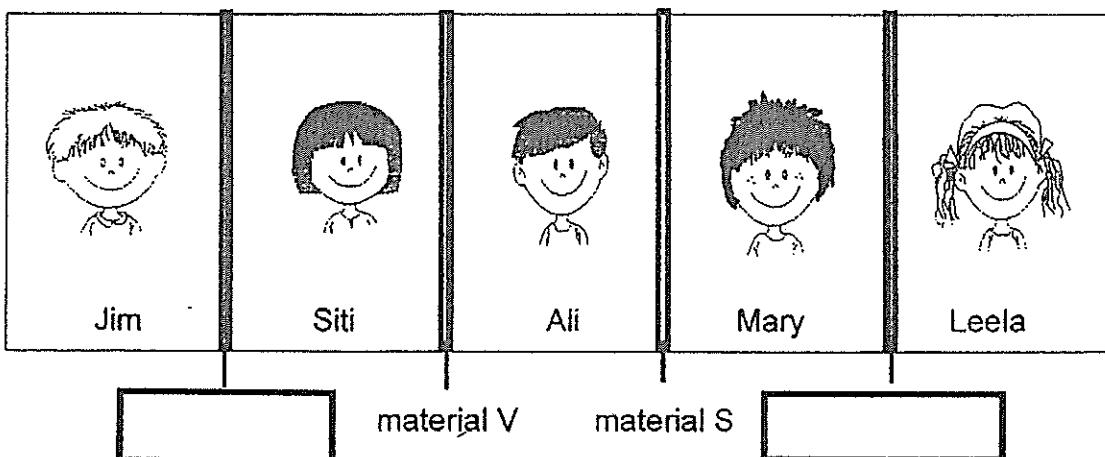
(ii) A property of P : _____

34. A factory produced four different types of materials, S, T, U and V, classified in the table as shown below.

| Types of materials | | |
|---------------------------------------|---------------------------------------|---|
| Allow most light to pass through them | Allow some light to pass through them | Do not allow light to pass through them |
| T V | U | S |

Some of these materials were used to make walls of equal thickness in a bright playroom.

Some children stood between the walls of the playroom as shown in the diagram below.



Based on the information above, answer the following questions:

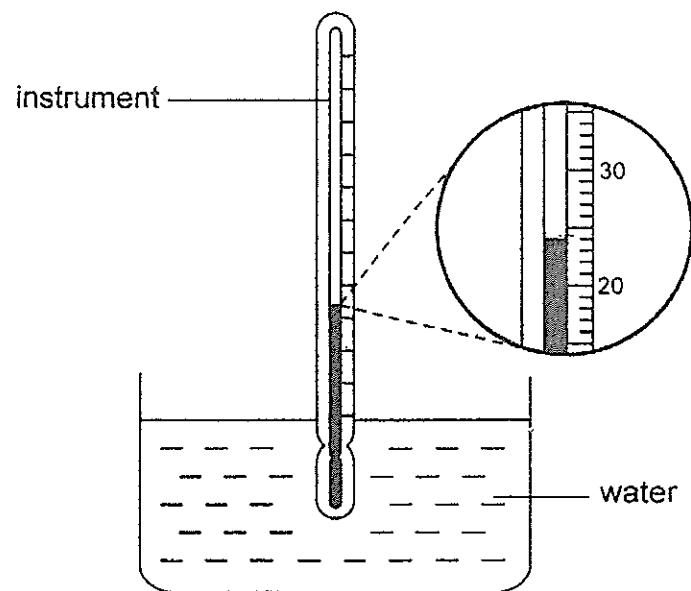
Jim could NOT see Siti but Mary could see Leela clearly.

- (a) In the diagram above, identify the materials of the walls which separated
 (i) Jim and Siti;
 (ii) Mary and Leela.

Write only letter S, T, U and/ or V in the correct boxes. [2]

- (b) Name two other children who could see each other clearly.
 Give a reason for your answer. [1]
-
-

35. Jane used an instrument to measure the temperature of water in a glass.

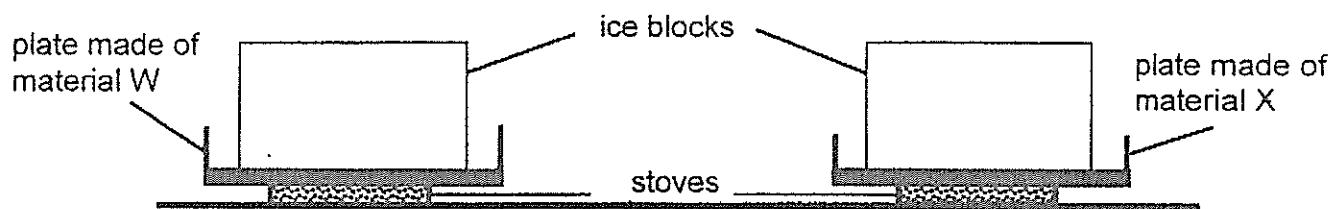


(a) What is the instrument called? [1]

(b) What is the temperature of the water in the glass? [1]

_____ °C

36. Bob placed two identical ice blocks on similar plates of the same size and thickness. Each plate was made of a different material, W and X. The plates of ice blocks were placed on identical stoves for an hour.

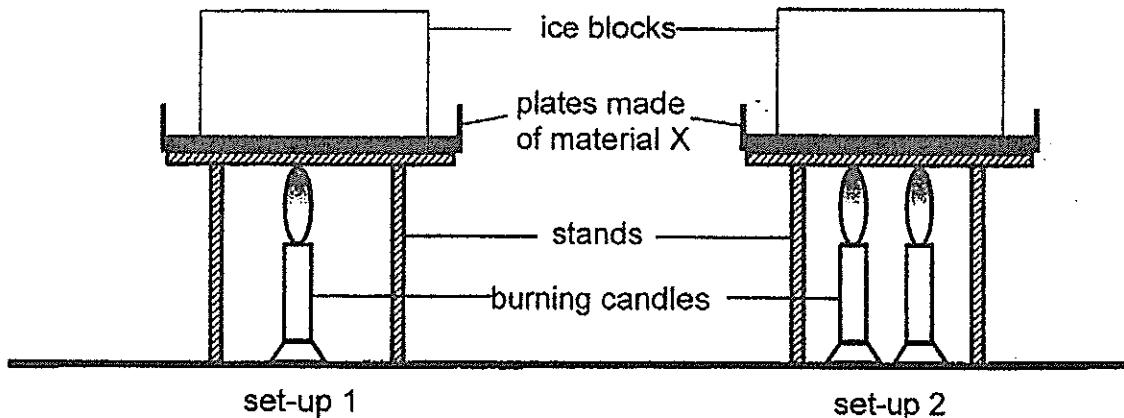


After an hour, Bob observed that more water was collected on the plate made of material W.

- (a) Which plate, W or X, was a better conductor of heat?
Explain your answer.

[2]

In another experiment, Bob used identical plates of material X in 2 different set-ups. He placed the plates of ice blocks on identical stands and replaced the stoves with burning candles as shown in the diagram below.



- (b) In which set-up, 1 or 2, would the ice block melt more quickly?
Explain your answer.

[1]

37. Susan places a magnet near an iron rod.
The iron rod moves towards the magnet.



(a) The magnet exerts a _____ on the iron rod. [1]

(b) Choose the correct word from the box to answer the question below. [1]

hard magnetic strong

Susan's observation shows that iron rod is a _____ material.

38. A bar WX made of a magnetic material was magnetised using the 'stroke' method as shown in Diagram 1 below.

Diagram 2 shows the magnetic poles of bar WX after it was magnetised.

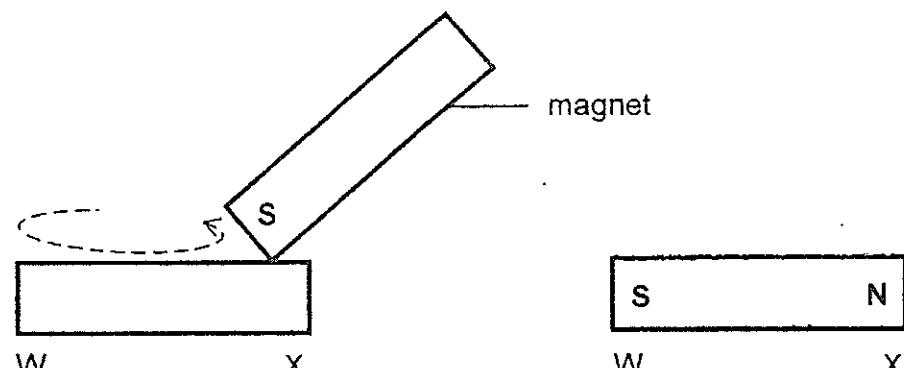
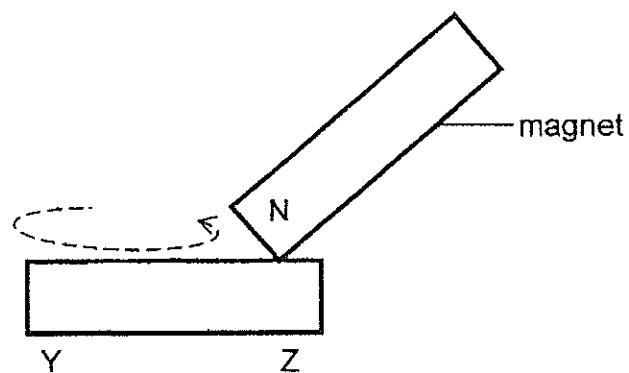


Diagram 1

Diagram 2

Another bar YZ made of the same material as bar WX was magnetised using the same method as shown in the diagram below.



continue on the next page

continued from the previous page

Based on the information on the previous page, answer the following questions:

Bar WX was brought near to bar YZ as shown in the diagrams below.

Describe what would happen in set-ups 1 and 2:

[2]

(i)

Set-up 1

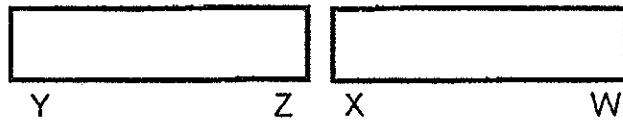
← brought near



(ii)

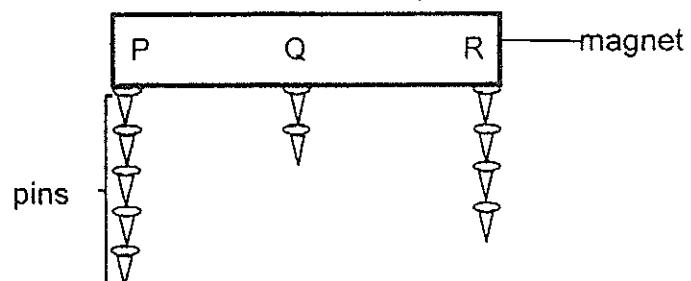
Set-up 2

← brought near



39. Rani set up an experiment using a strong bar magnet. She placed steel pins, one at a time, at parts P and R until no more pins could be attracted by the magnet.

Rani drew a diagram as shown below to show her results.



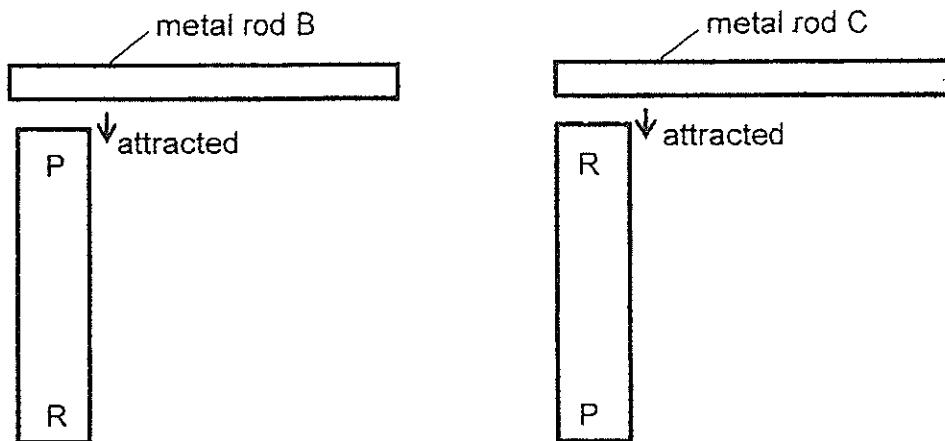
- (a) Explain why more pins were attracted at parts P and R than at Q. [2]

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Rani had two metal rods, B and C, of the same size. One of these rods was a magnet but the other one was made of a magnetic material. She wanted to find out which rod was the magnet.

She arranged the rods, B and C, and magnet PR as shown in the diagram below.



Rani could not conclude which rod was the magnet.

Below is the 1st step which Rani took to find out which rod, B or C, was the magnet.

- (b) Complete steps 2 and 3 which Rani would take to find out which rod was the magnet. [2]

| Step | Actions |
|------|---|
| 1 | Bring pole P to one end of rod B. Bring pole P to the other end of rod B. |
| 2 | Bring _____ to _____ Bring _____ to _____ |
| 3 | The rod which _____ from the pole of magnet PR identified the rod which was a magnet. |

END OF PAPER

Setters: Mdm Wirda, Mrs Sharon Seet



Exam Paper 2014 Answer Sheet

School: RAFFLES GIRLS' PRIMARY SCHOOL

Subject: PRIMARY 4 SCIENCE

Term: SA2

| | | | | |
|------|-------|-------|-------|-------|
| 1) 4 | 6) 3 | 11) 1 | 16) 4 | 21) 2 |
| 2) 3 | 7) 1 | 12) 3 | 17) 3 | 22) 3 |
| 3) 4 | 8) 3 | 13) 4 | 18) 2 | 23) 3 |
| 4) 2 | 9) 4 | 14) 1 | 19) 4 | 24) 1 |
| 5) 1 | 10) 3 | 15) 4 | 20) 4 | 25) 3 |

26. (a) i. X: Living
ii. Y: Non-living
(b) Mammal: tiger; Insect: ant; Fungi: mushroom
27. (a) i. As the temperature of the soil increases, the number of seeds Z germinated increases.
ii. No seeds Z germinated.
(b) 30°C
(c) Air and water
28. (a) 1
(b) 4
29. (a) i. lungs
ii. bones
iii. blood vessels
(b) Respiratory system
(c) C
30. (a) i. taller
ii. food
(b) The food carrying tubes were removed. Food made by the leaves gathered at the upper part of the branch causing it to swell.
31. (a) Z. It tore with the least amount of marbles.
(b) The thickness of the paper used.
(c) The strength of the paper did not measure its absorbing rate.
32. Matter: steam, oil; Non-matter: heat
33. (a) Air
(b) i. Water
ii. It does not have a definite shape.
34. (a) i. S
ii. T

1. *Leucosia* *leucostoma* *leucostoma* *leucostoma* *leucostoma*

19. *Leucosia* sp. A
19. *Leucosia* sp. B

19. *Leucosia* *leucostoma* *leucostoma* *leucostoma* *leucostoma*

卷之三

ପରିମାଣ କରିବା
ପରିମାଣ କରିବା

Pythagorean Theorem

10.000-15.000 m² per year. The first decades of the last century were the years of the most intense deforestation.

प्राचीन वैदिक वेदों के अनुसार यह विषय निम्न विवरण से प्राप्त है।

1990-1991 学年第一学期期中考试卷

19. 10. 1953

3. The number of cases for each

(b) Siti and Ali. Material V allows most light to pass through for them to see each other.

35. (a) A thermometer.

(b) 24

36. (a) W gained heat more quickly from the stoves to melt the ice more quickly.

(b) Set-up 2. The ice block gained more heat from more candles.

37. (a) pull

(b) magnetic

38. i. YZ will move away from WX.

ii. YZ will move towards XW.

39. (a) P and R are the magnet's poles and magnets are the strongest at its poles.

(b) Step 2: Bring pole R to one end of rod C. Bring pole R to the other end of rod C. Step 3: repels





RAFFLES GIRLS' PRIMARY SCHOOL
SEMESTRAL ASSESSMENT (2)
2012

Name : _____ Index No: ____ Class: P4 _____

22 October 2012 **SCIENCE** **Att: 1 h 30 min**

SECTION A (25 x 2 marks)

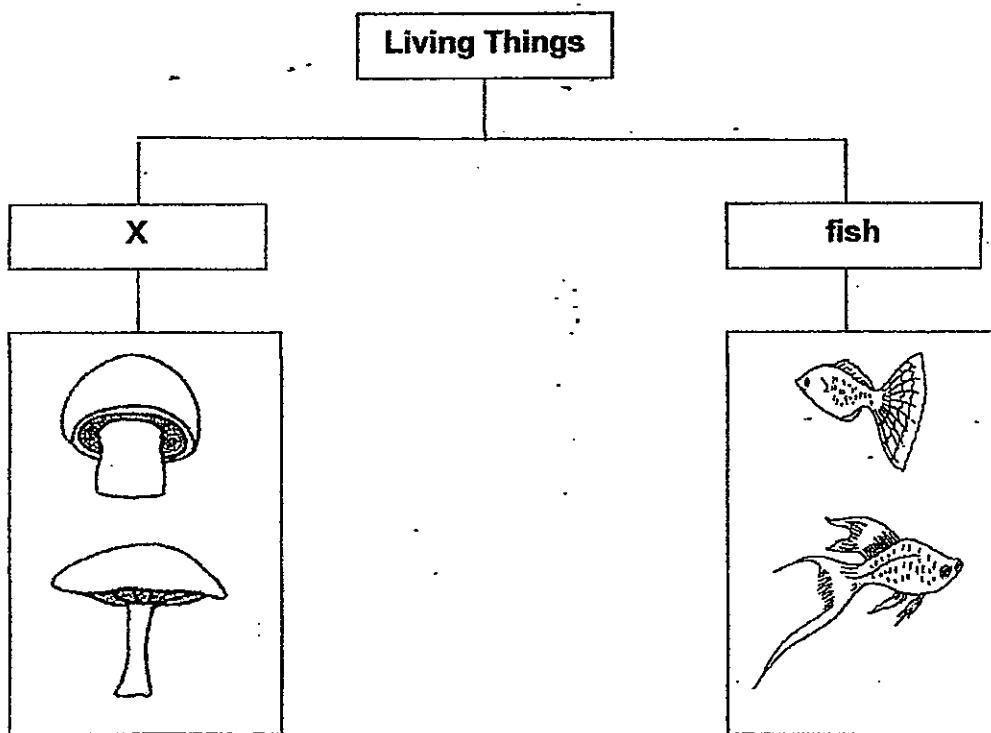
For each question from 1 to 25, four options are given.

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 (OAS) provided.

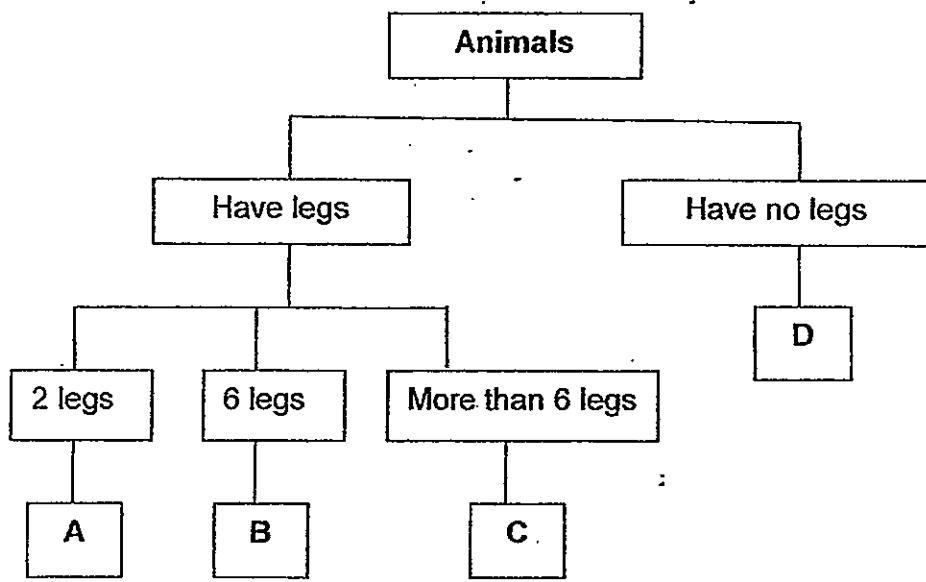
| | |
|---------------------------|--------------|
| Section A | 50 |
| Section B | 40 |
| Your score | |
| out of 90 | |
| Highest score | Class |
| Average score | Level |
| Parent's signature | |

1. The table below shows how some living things can be grouped.

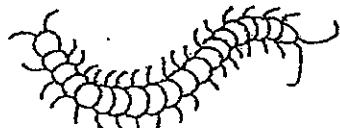


Which one of the following is the most suitable heading for group X?

2. Study the chart below.



Where would you put this animal in the chart above?



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

3. Lin Min indicated the characteristics of four different types of plants, A, B, C and D, by putting a tick in the table below.

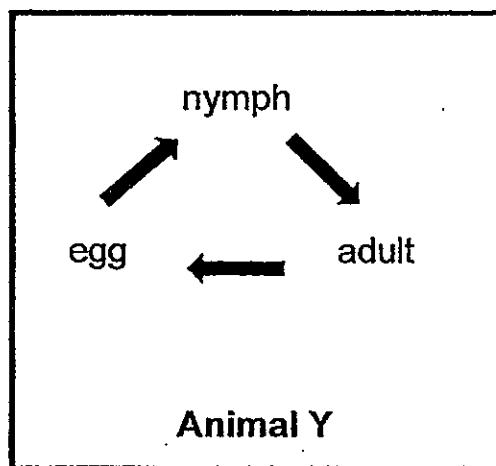
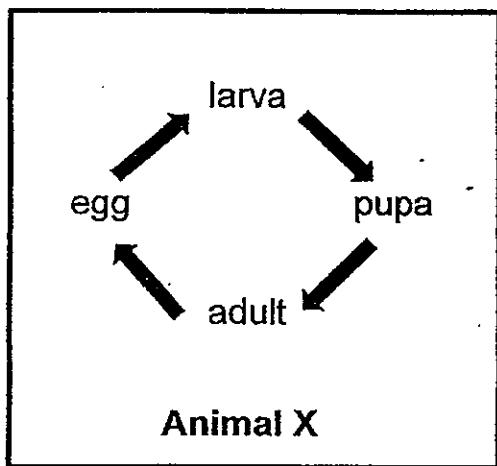
| Characteristics | | | |
|-----------------------|-----------------------|------------------------|-------------|
| Types of Plants | Reproduces from seeds | Reproduces from spores | Bears fruit |
| Flowering Plant A | ✓ | | ✓ |
| Flowering Plant B | | ✓ | ✓ |
| Non-flowering Plant C | | ✓ | ✓ |
| Non-flowering Plant D | | ✓ | |

Her teacher remarked that there were errors in the identification above.

Which of the following shows the plants with the correct identification of their characteristics by Lin Min?

- (1) Flowering Plant A and Non-flowering Plant C
- (2) Flowering Plant A and Non-flowering Plant D
- (3) Flowering Plant B and Non-flowering Plant D
- (4) Flowering Plant B and Non-flowering Plant C

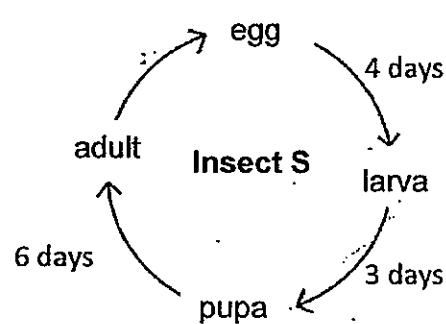
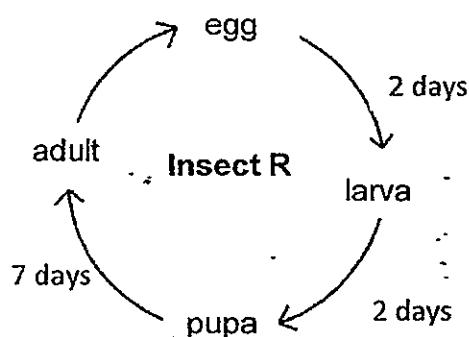
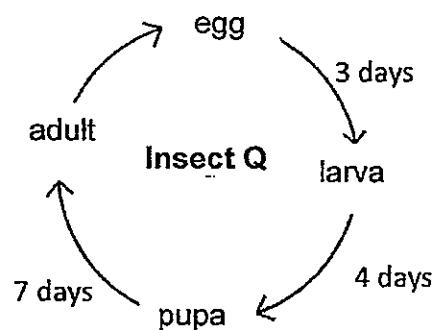
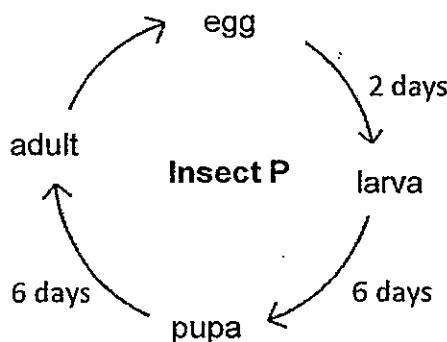
4. The diagram below shows the stages in the life cycles of two animals, Animal X and Animal Y.



Which of the following animals have similar life cycles as Animal X and Animal Y?

| | Animal X | Animal Y |
|-----|-----------|-----------|
| (1) | cockroach | frog |
| (2) | frog | mosquito |
| (3) | butterfly | mosquito |
| (4) | butterfly | cockroach |

5. The diagrams below show the life cycles of 4 different types of insects.



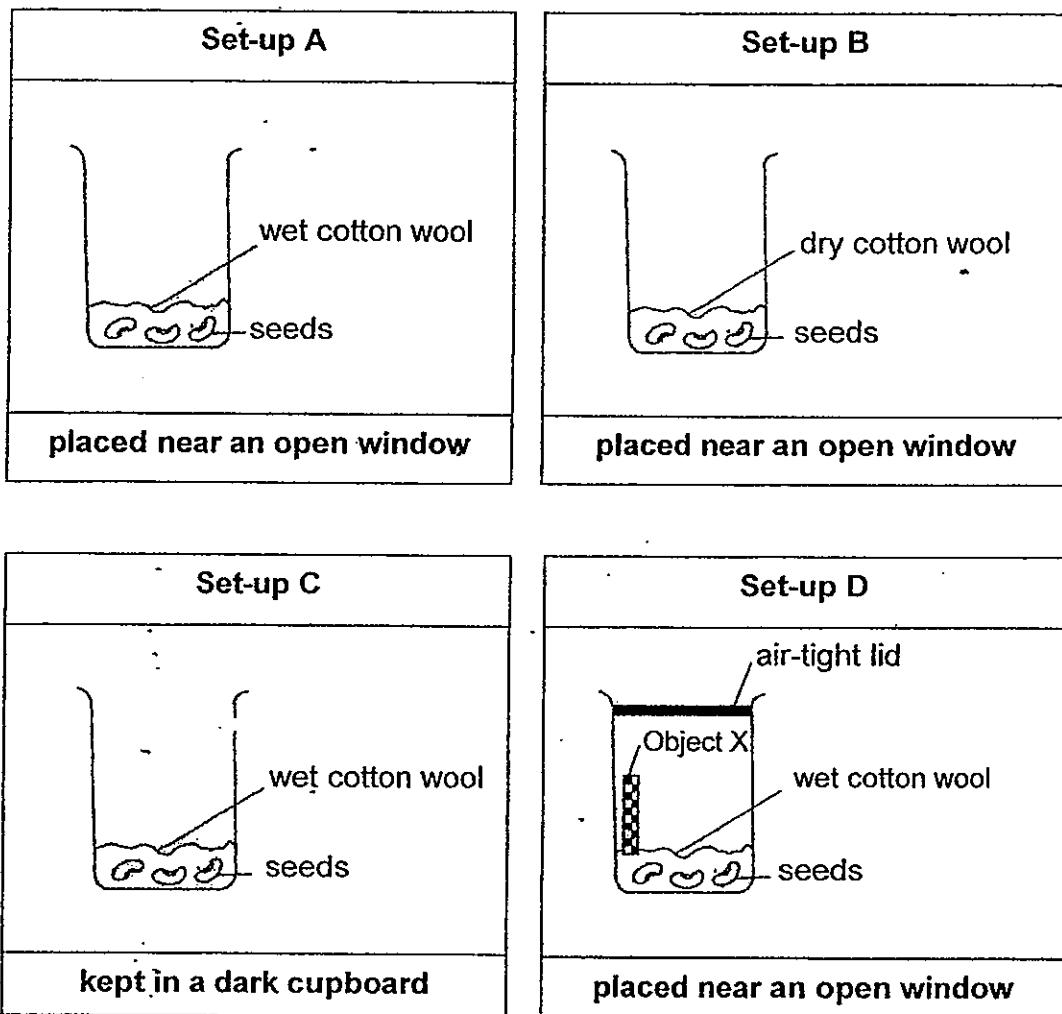
The larvae of insects P, Q, R and S feed on the leaves of lime plants and grow rapidly. The table below shows the amount of leaves which the larvae of insects P, Q, R and S feed on.

| | Larvae of insect P | Larvae of insect Q | Larvae of insect R | Larvae of insect S |
|--|--------------------|--------------------|--------------------|--------------------|
| Amount of leaves eaten by the larvae per day | 100g | 200g | 100g | 200g |

From the information given in the diagrams and table above, which one of these insects is likely to be the most destructive to lime plants?

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

6. Tim set up an experiment below in a classroom to find out the conditions needed for seeds to germinate. Object X is able to remove air from the surrounding.

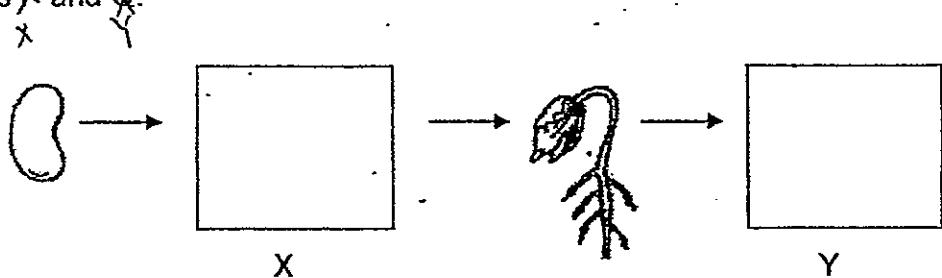


Tim put an equal number of similar seeds in each of the identical beaker, A, B, C and D, as shown above.

Which of the following set-up(s) would most likely to observe germination of seed?

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

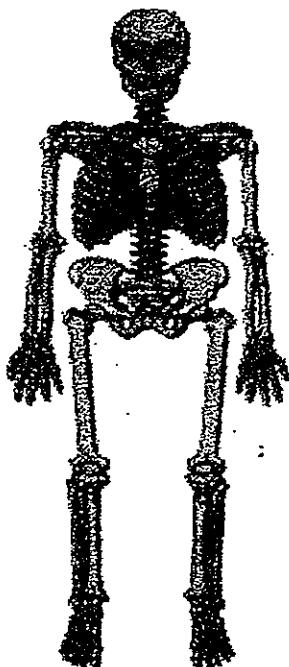
7. The diagram below shows the growth of a young plant with two missing stages X and Y.



Which one of the following shows the correct stages for X and Y?

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

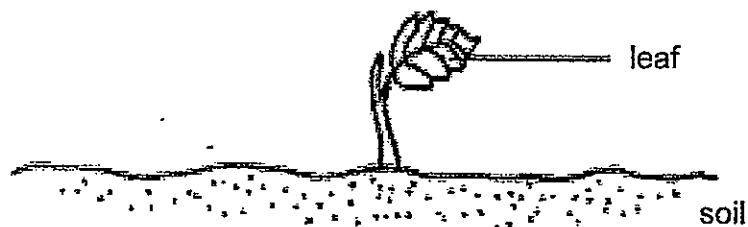
8. Study the diagram below carefully.



Which of the statements best describe the functions of the human system shown above?

- A It gives the body shape.
 - B It protects the important organs.
 - C It breaks down food into simpler forms.
 - D It enables the exchange of gases with the surroundings.
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) ~~A~~ and D only
- ↓
- C

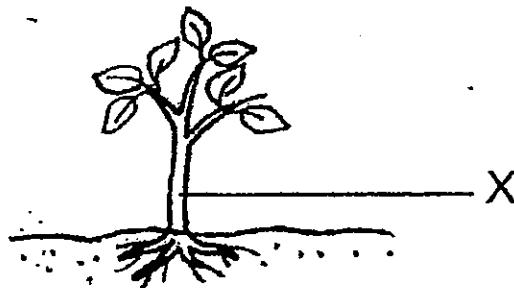
9. The diagram below shows a young plant.



The leaf helps the plant to _____.

- (1) absorb nutrient
- (2) absorb water
- (3) grow upright
- (4) make food

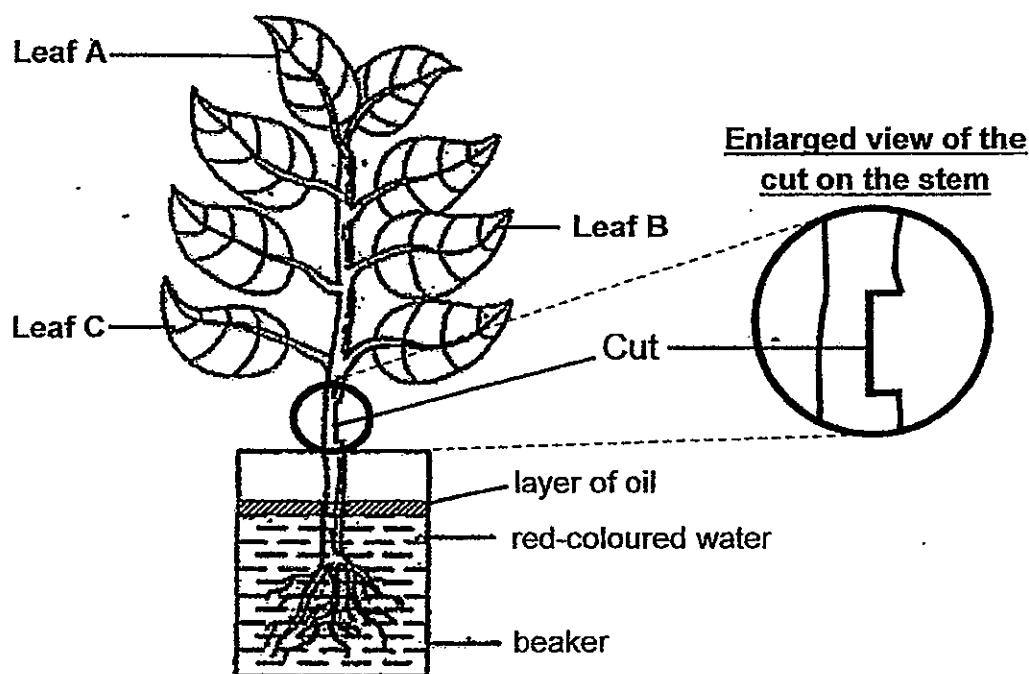
10. The diagram below shows a plant. The part labeled X _____.



- A anchors the plant firmly to the ground
- B contains tubes to transport food to the leaves
- C helps the plant to absorb water and mineral salts
- D contains tubes to transport water to the leaves

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

11. Siti removed a part of the stem from the plant as shown in the diagram below.



She then placed the plant in a beaker of red-coloured water and recorded her observations after 6 hours in the table below.

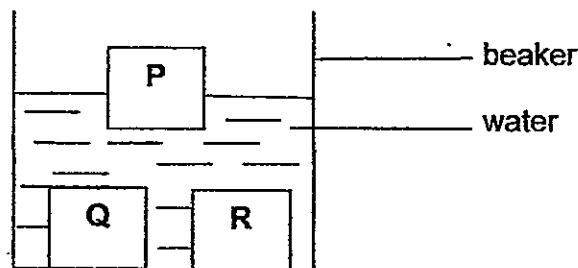
| Leaf | Was it stained red? |
|------|---------------------|
| A | Yes |
| B | No |
| C | Yes |

Which of the following statements below best explains why leaf B was not stained red?

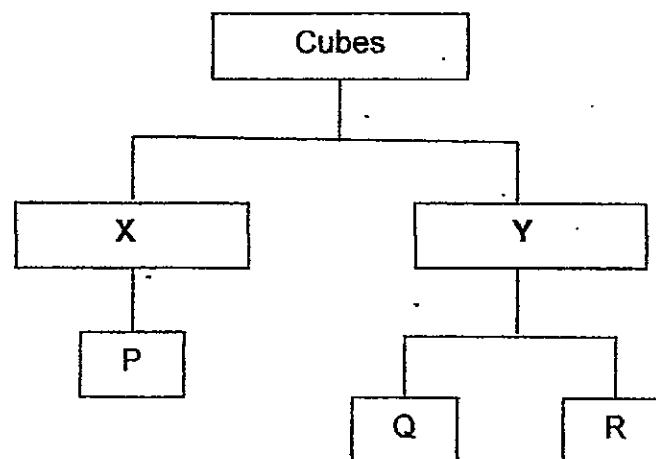
- (1) Part of the food-carrying tubes leading to leaf A and C were removed but not the one leading to leaf B.
- (2) Part of the food-carrying tubes leading to leaf B were removed but not the one leading to leaf A and C.
- (3) Part of the water-carrying tubes leading to leaf A and C were removed but not the one leading to leaf B.
- (4) Part of the water-carrying tubes leading to leaf B were removed but not the one leading to leaf A and C.

12. Peter conducted a test to find out the property of the materials which the cubes, P, Q and R, are made of.

Cubes P, Q and R are of similar shapes and sizes.



Based on his observation shown in the diagram above, Peter classified the cubes as shown in the classification table below.

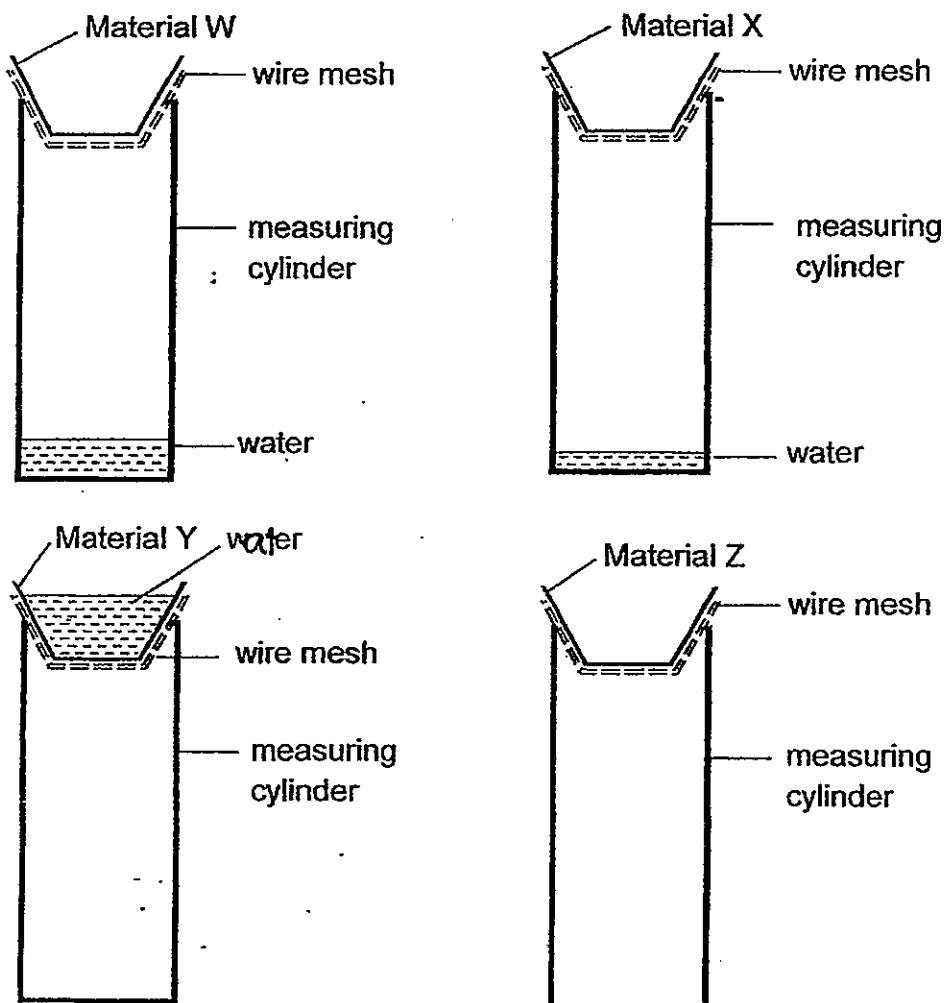


Based on the information above, which of the following best describes the property represented by X and Y respectively?

| | X | Y |
|-----|-----------------|----------------|
| (1) | waterproof | not waterproof |
| (2) | weak | strong |
| (3) | floats on water | sinks in water |
| (4) | flexible | stiff |

- 13 Minah conducted an investigation to find out how much water 4 different materials can absorb. She placed each sheet of material, W, X, Y and Z, of the identical size and thickness over a wire mesh and placed them over a measuring cylinder. She then poured an equal amount of water over each material.

The diagram below showed the result at the end of 4 minutes.



Based on the observation above, which of the following materials is best made into a mop to clean up spill most effectively?

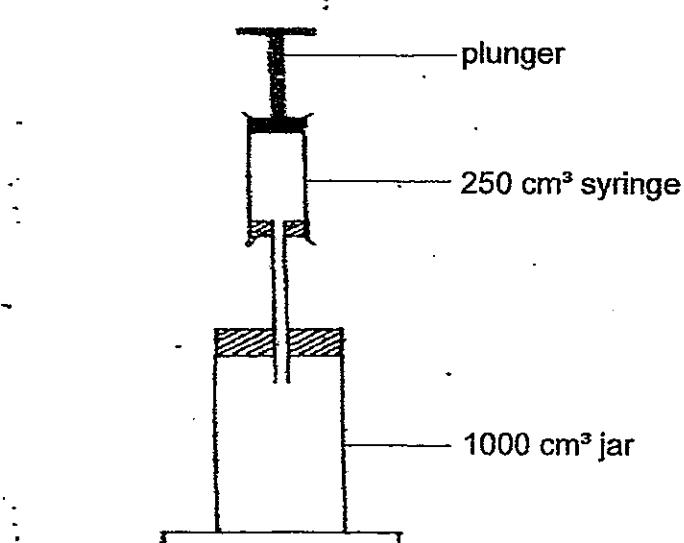
- (1) Material W
- (2) Material X
- (3) Material Y
- (4) Material Z

14. Matter is anything that has mass and occupies space.

Which one of the following is NOT matter?

- (1) Air
- (2) Soil
- (3) Water
- (4) Electricity

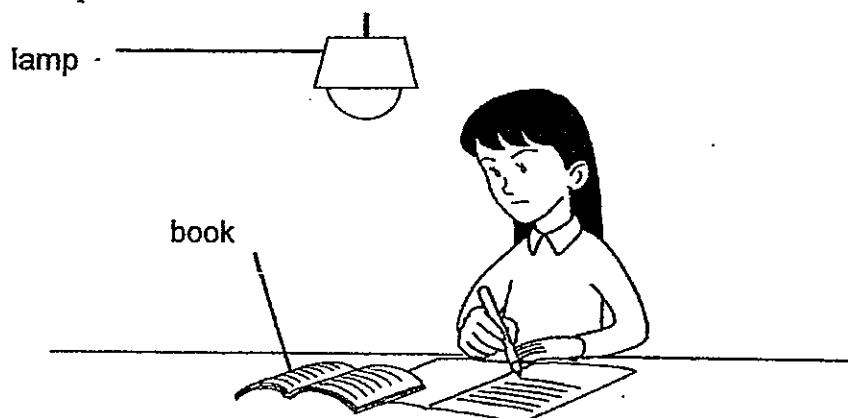
15. Jane set up an experiment as shown below.



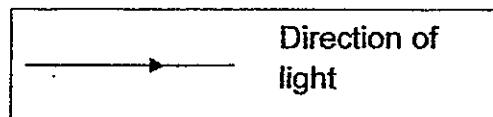
She used a syringe with a capacity of 250 cm³ and pumped in a syringe full of air into the jar twice. What would be the total volume of air in the jar now?

- (1) 250 cm³
- (2) 500 cm³
- (3) 1000 cm³
- (4) 1500 cm³

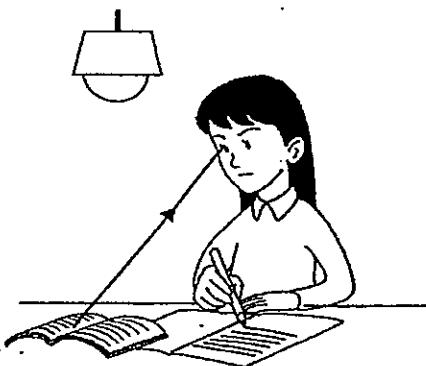
16. Study the diagram below carefully.



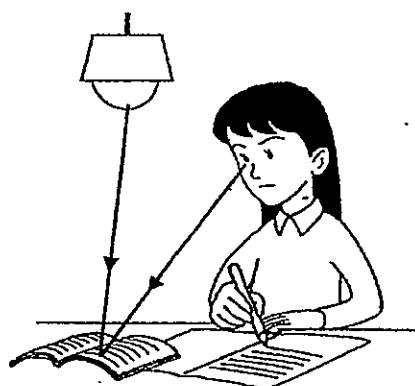
Which one of the following explains why Sue can see the book on the table when the lamp is switched on?



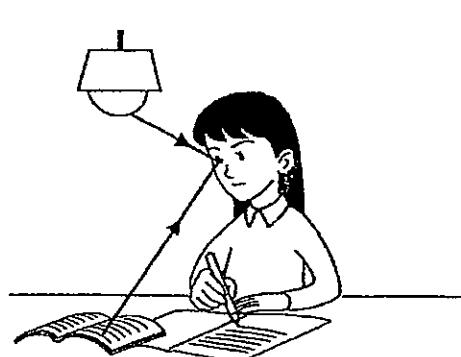
(1)



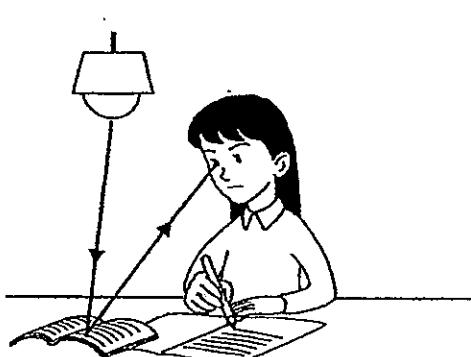
(2)



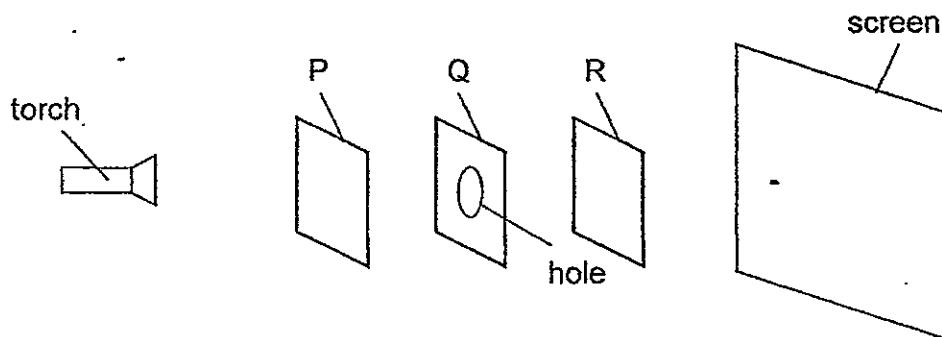
(3)



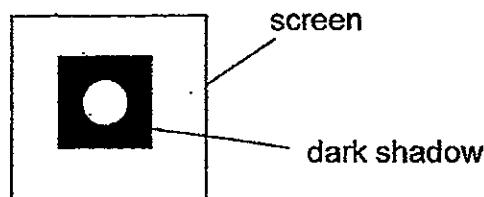
(4)



17. The experiment shown below was carried out in a dark room. Objects P, Q and R are each made of different materials. Object Q has a hole on it.



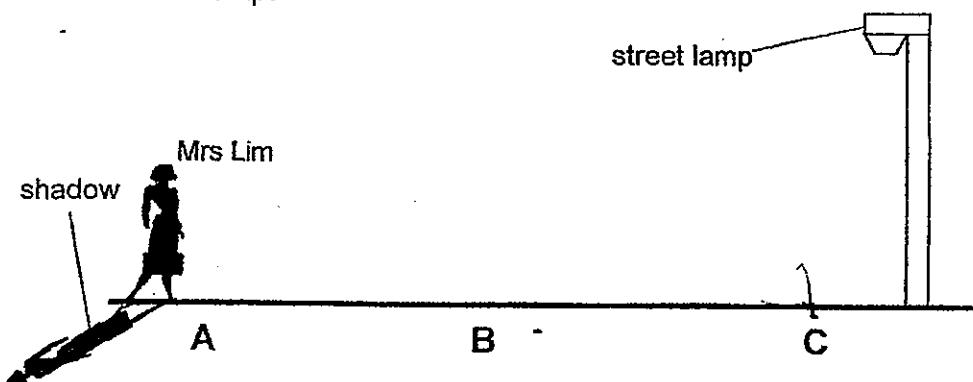
When the torch was switched on, a shadow was formed on the screen as shown below.



What material is each object, P, Q and R, most likely to be made of?

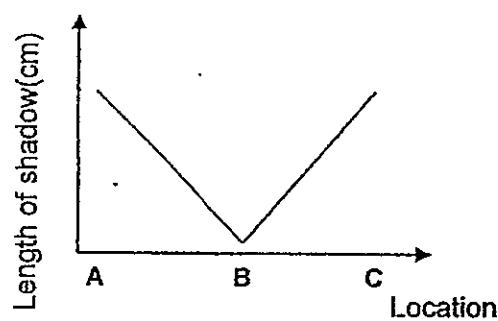
| | Object P | Object Q | Object R |
|-----|---------------|---------------|---------------|
| (1) | Cardboard | Tracing paper | Frosted glass |
| (2) | Clear plastic | Frosted glass | Tracing paper |
| (3) | Clear glass | Wood | Clear plastic |
| (4) | Wood | Cardboard | Clear glass |

18. Mrs Lim was walking home from work one night along a street. She noticed that the length of her shadow changed as she walked towards and then away from the street lamp.

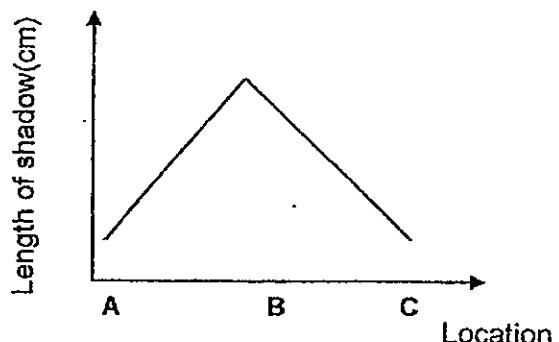


Which one of the following graphs shows the correct length of shadow as Mrs Lim walked from Point A to Point C?

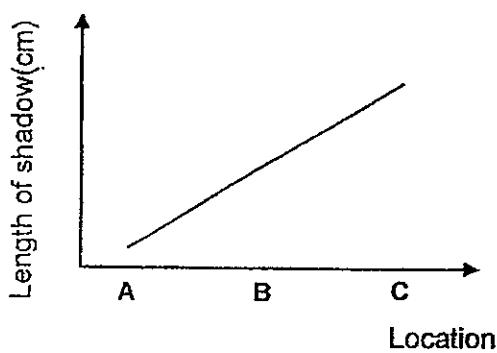
(1)



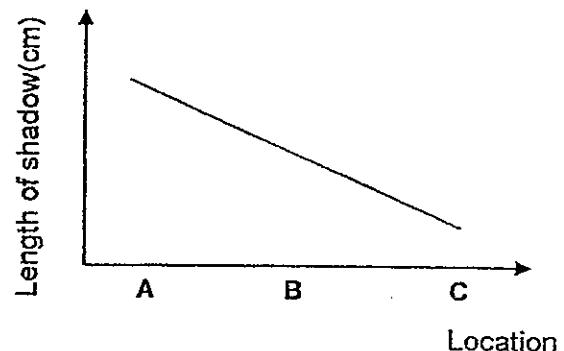
(2)



(3)

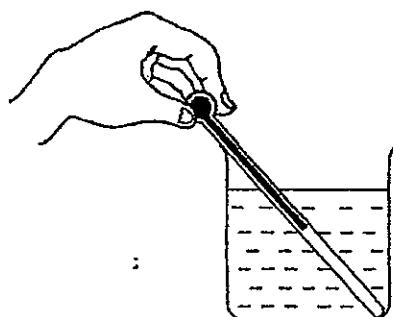


(4)

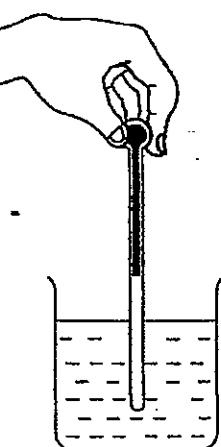


19. Catherine wants to measure the temperature of the hot water in the beaker. Which one of the following diagrams shows the correct position of the thermometer when taking the temperature reading?

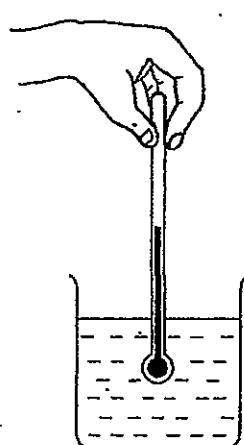
(1)



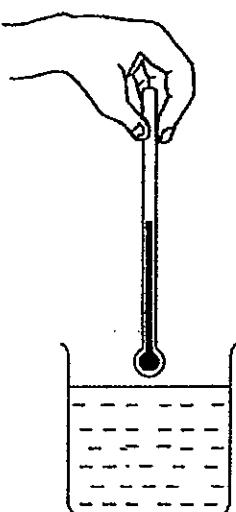
(2)



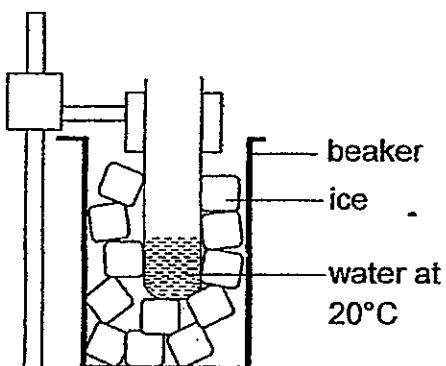
(3)



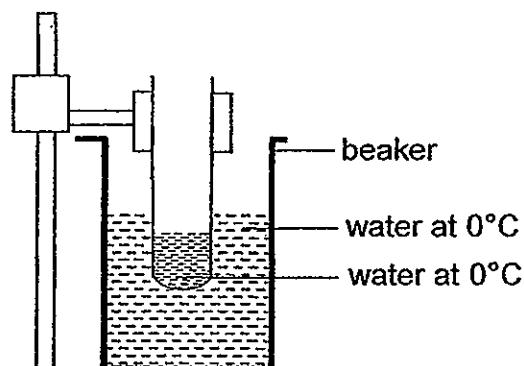
(4)



20. Amanda carried out an experiment as shown below. A test tube containing some water at 20°C was placed in the centre of a beaker with some ice. The beaker was then left in the science laboratory with a constant room temperature of 30°C for 15 minutes.



At the start



At the end of
15 minutes

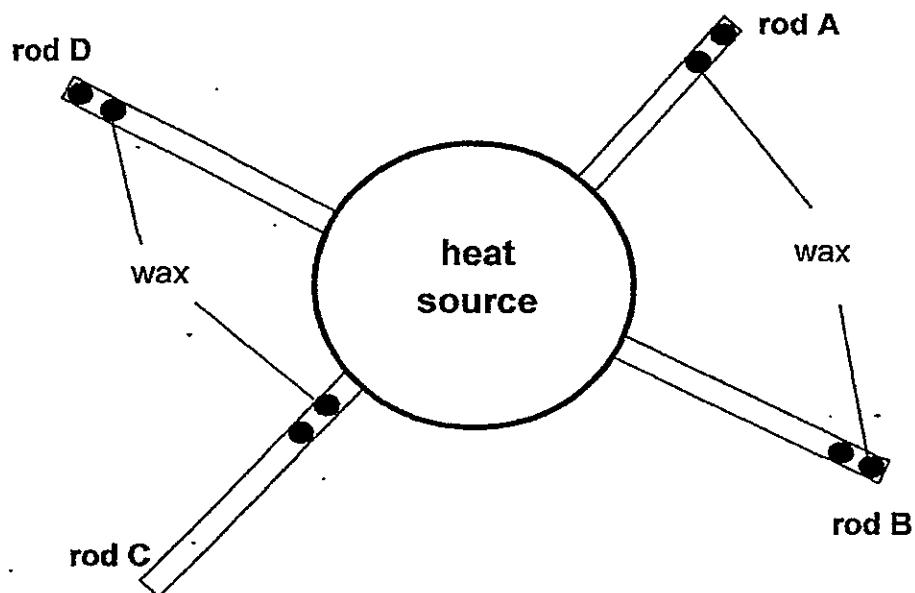
Which of the following statements is/are most likely to be correct based on the experiment above?

- A The test tube lost heat to the ice and became cooler.
 - B The beaker lost heat to the surrounding and become cooler.
 - C The ice gained heat from the water in the test tube and melted.
 - D The water in the test tube lost heat to the ice and became cooler.
-
- (1) A only
 - (2) B and D only
 - (3) C and D only
 - (4) A, C and D only

21. Muthu wanted to find out which material was the better conductor of heat between a pair of rods. Four rods, A, B, C and D, made of different materials were attached to an electrical heater. The table below shows the different materials he used.

| Rod | A | B | C | D |
|-----------------------|----|----|----|----|
| Length of rod (cm) | 40 | 50 | 50 | 50 |
| Thickness of rod (cm) | 3 | 3 | 3 | 3 |

The diagram below shows the set up.



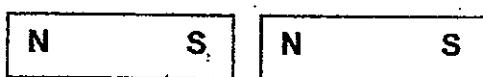
He placed two drops of wax of identical size on each rod.

Which two rods should he use to conduct a fair test?

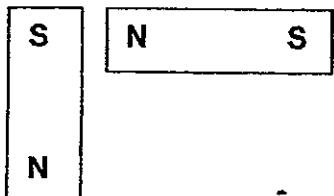
- (1) A and B
- (2) B and D
- (3) A and C
- (4) C and D

22. In which one of the following will the two magnets push each other away?

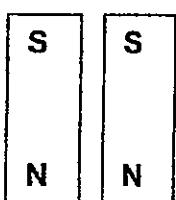
(1)



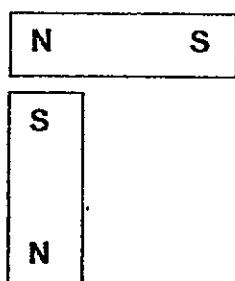
(2)



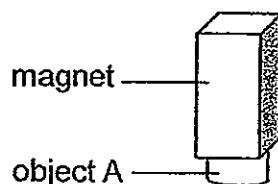
(3)



(4)



23. An object A was attracted to a magnet as shown in the figure below.



Object A is made of _____.

(1) plastic

(2) rubber

(3) Steel

(4) wood

24. Jane hanged two objects, X and Y, on each end of a balance. The balance moved downwards one end as shown in Diagram 1.

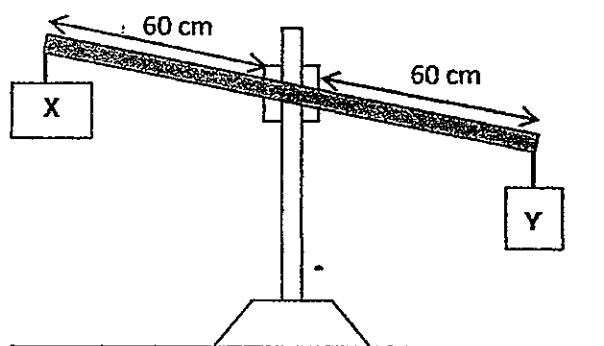


Diagram 1

Next, Jane placed object A directly below object Y and observed the result as shown in the diagram below.

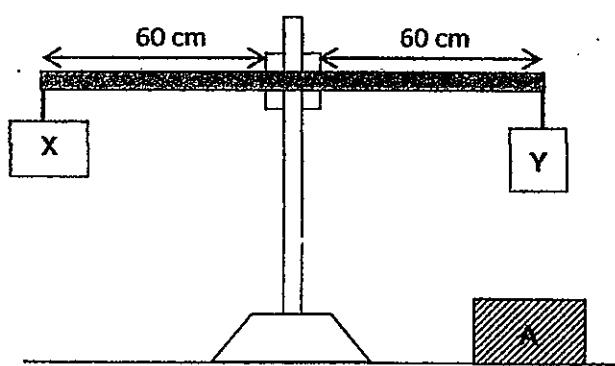
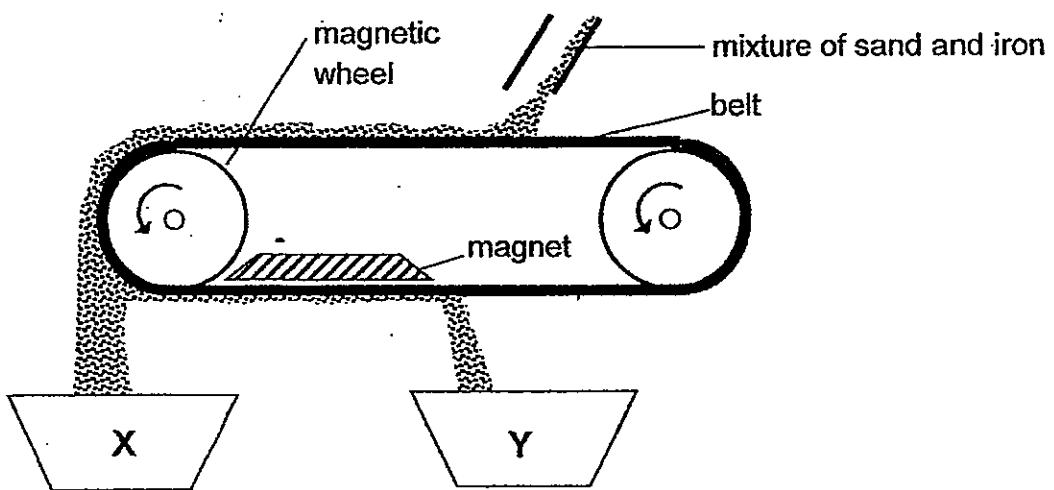


Diagram 2

Which one of the following best explains Jane's observation in Diagram 2?

- (1) Object Y was lighter than object X.
- (2) Objects A, X and Y were magnets.
- (3) Objects X and Y were of the same mass.
- (4) Objects A and Y were magnets with like poles facing each other.

- 25. The diagram below shows a way to separate magnetic metals and non-magnetic metals. A mixture of sand and iron is poured onto a moving belt.



The sand is collected in container X and the iron is collected in container Y as shown above.

Mr Chan wanted to fill container Y with more iron. He increased the amount of mixture of sand and iron poured on the belt. However, he discovered that the amount of iron collected in container Y remained the same.

What can Mr Chan do to fill container Y with more iron?

- A Increase the size of the magnet.
 - B Increase the size of container X and Y.
 - C Increase the magnetic strength of the magnet
 - D Increase the magnetic strength of the magnetic wheel
-
- (1) A and C only
 - (2) C and D only
 - (3) B and D only
 - (4) A, B , C and D

SECTION B (40 marks)

For questions 26 to 39, write your answers clearly in the spaces provided.
The number of marks available is shown in the brackets [] at the end of the question or part question.

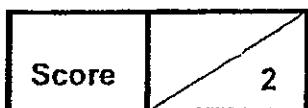
26. Jasmine observed and grouped some things as shown in the table.

| F | G |
|----------|-------|
| tiger | stone |
| ant | cloth |
| mushroom | pen |

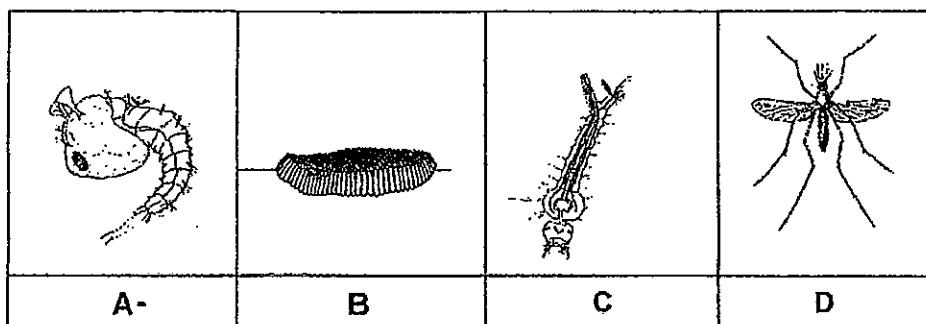
What are suitable headings for F and G?

Group F: _____ [2]

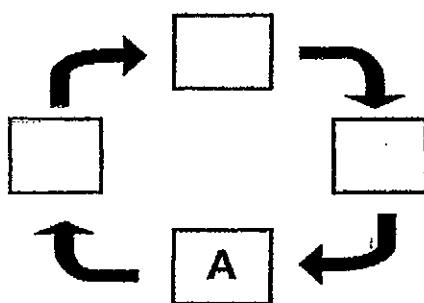
Group G: _____



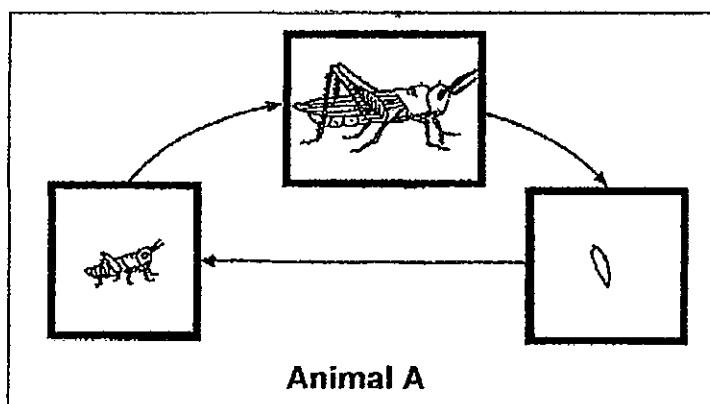
27. The pictures below show the different stages of the life cycle of a mosquito.



- (a) Complete the life cycle of the mosquito by filling in the letters B, C and D in [1] the boxes below.

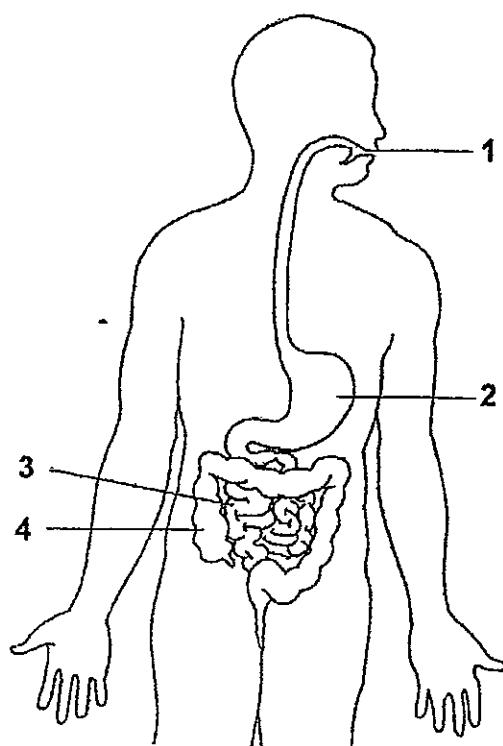


- (b) Study the life cycle of Animal A below.



State one difference between the life cycles of Animal A and mosquito. [1]

28. The diagram below shows the human digestive system.

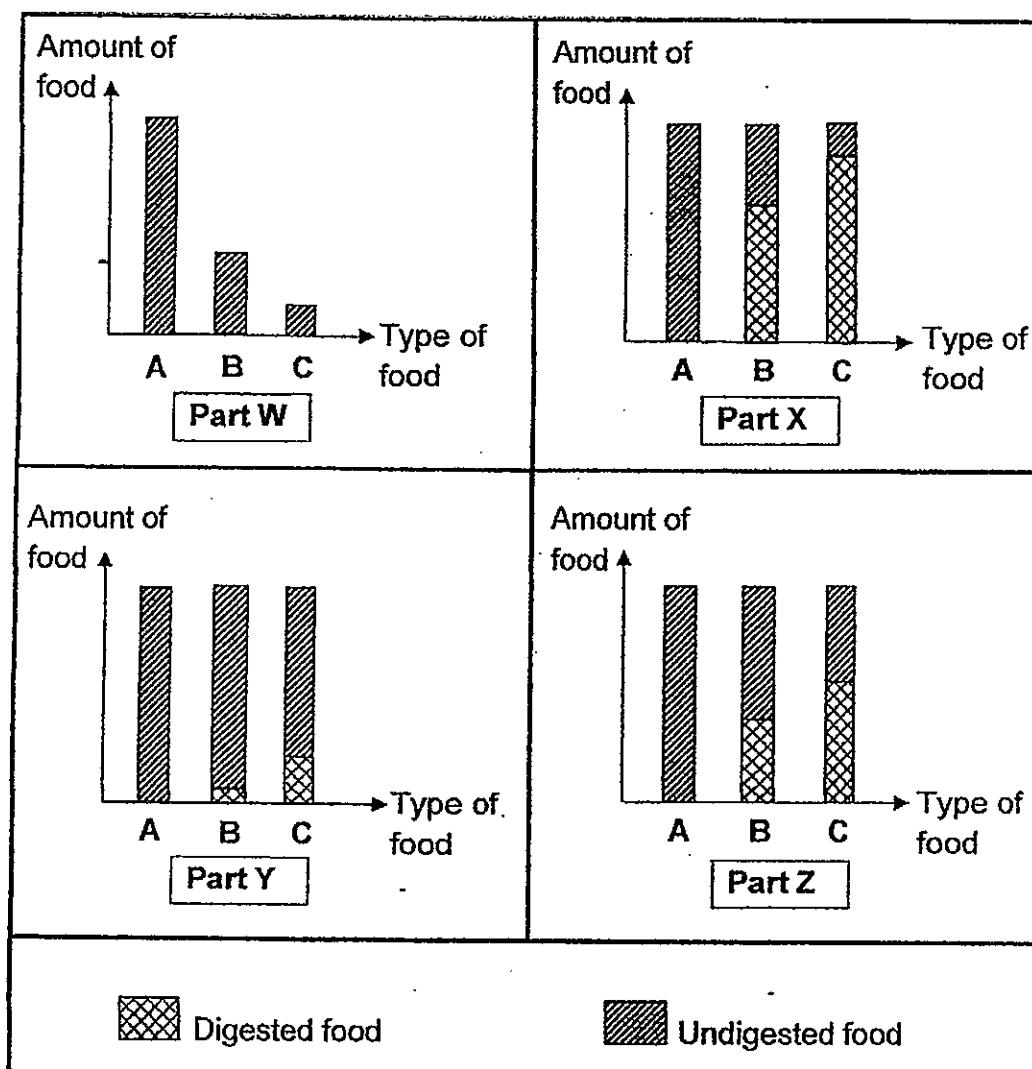


Identify the part where

(a) digestion first takes place : _____ [1]

(b) there is no digestion : _____ [1]

29. Ben ate three types of food, A, B and C, of equal amount. W, X, Y and Z are parts of the digestive system. The graph below shows the amount of digested and undigested food in the different parts of the digestive system.



- (a) Which part of the digestive system, W, X, Y or Z, is most likely the mouth? [1]

Part _____

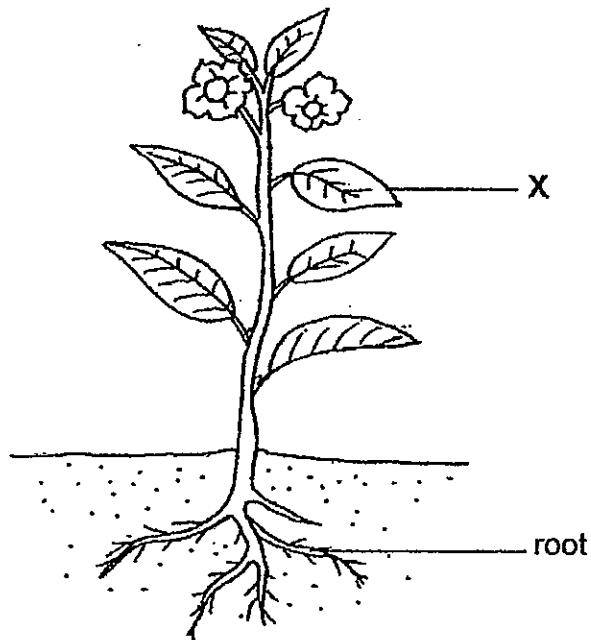
Continue on page 27

- (b) Sometimes, some food such as seeds of certain fruit are consumed but not digested at all. Which type of food, A, B or C most likely represents such food? [1]

- (c) Which part of the digestive system, W, X, Y or Z, is most likely the large intestine? Give a reason for your answer. [1]

| | |
|-------|---|
| Score | 2 |
|-------|---|

30. (a) The diagram below shows a plant.



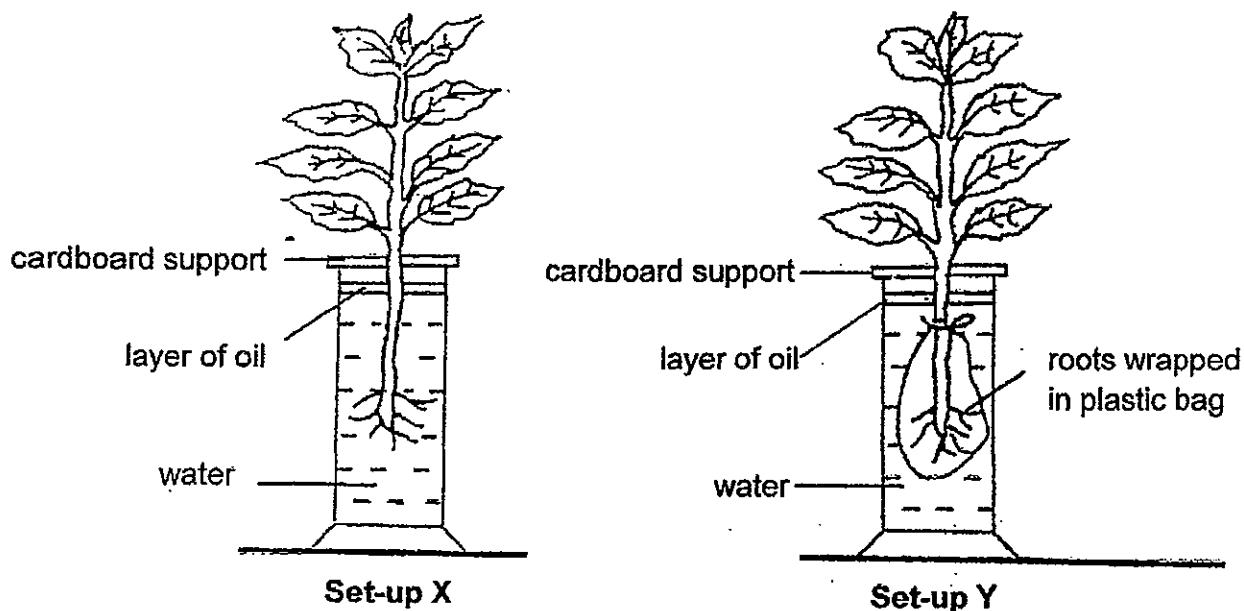
(i) Name plant part X. [1]

X : _____

(ii) One substance that the roots of plant take in from the soil is [1]

| | |
|-------|---|
| Score | 2 |
|-------|---|

- (b) Meiling placed two similar plants in identical jars. Each jar contained water at the same level as shown in the diagrams below. She then placed the two set-ups, X and Y, next to the window for 3 hours.

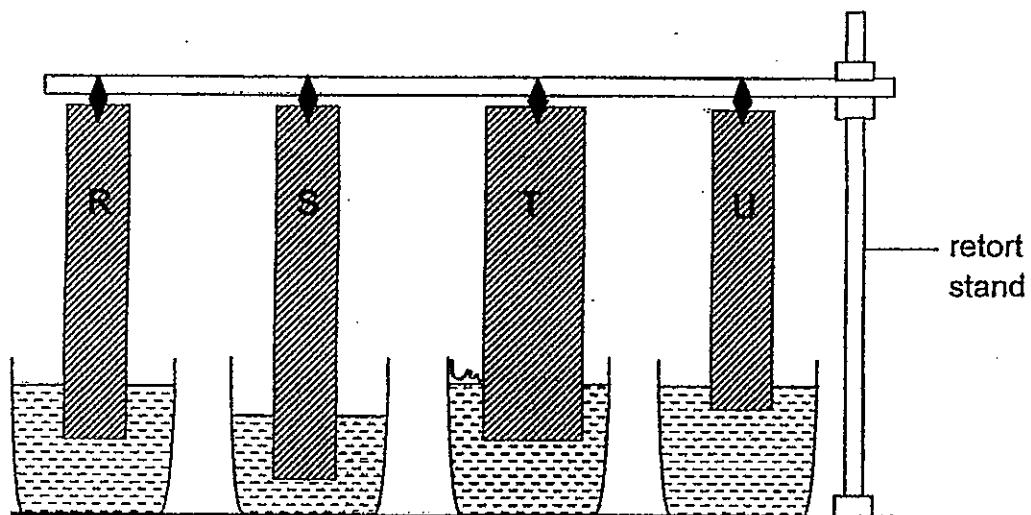


- (i) Based on the information above, what was Meiling trying to find out? [1]

- (ii) What would Meiling observe about the water level in the set-up Y after 3 hours? [1]

- 31 (a) Fatimah set up an experiment shown below. She hung four different strips of materials, R, S, T and U, each with a different thickness on a retort stand. The ends of the four strips of materials were dipped in four similar containers which contained some water.

She wanted to examine which material will absorb the most amount of water at a given time.



However, Fatimah's classmate said that she had not conducted a fair test.

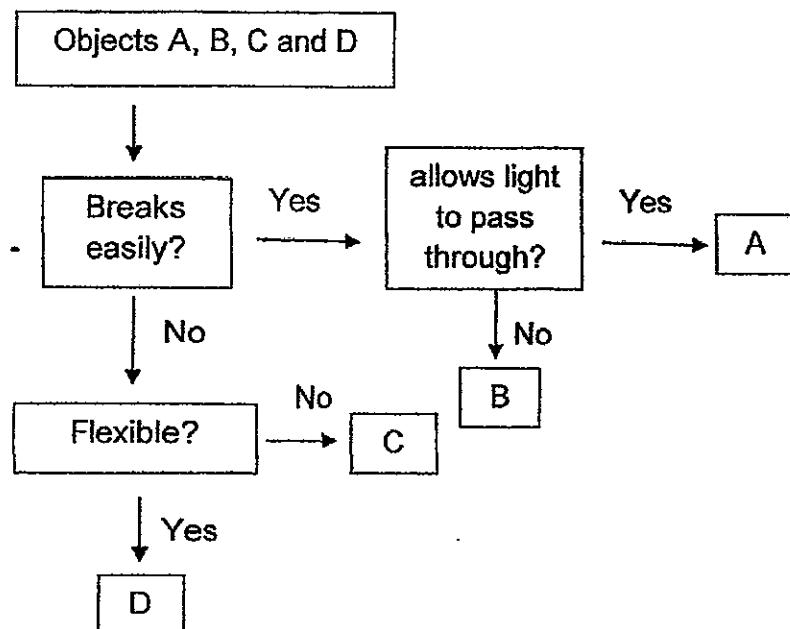
Besides the length and width of the materials, write down another two improvements Fatimah should make in order for her experiment to be a fair test.

(i) _____

(ii) _____

| | |
|-------|---|
| Score | 2 |
|-------|---|

- (b) Study the flow chart below. A, B, C and D are objects with different physical properties.



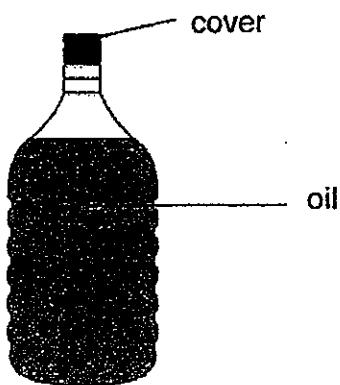
- (i) Based on the flow chart above, state two properties of object D.

[1]

- (ii) What material can object A be made of?

[1]

32. The diagram below shows a bottle of cooking oil.



Complete the sentences to state if the parts are solid, liquid or gas.

(a) The cover is a _____

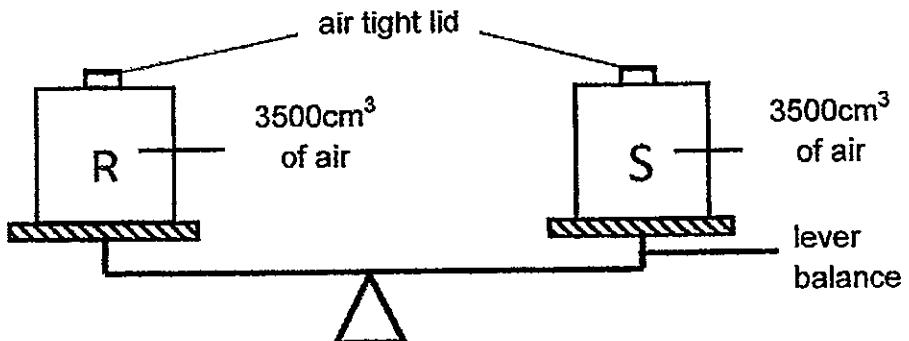
[1]

(b) Oil is a _____

[1]

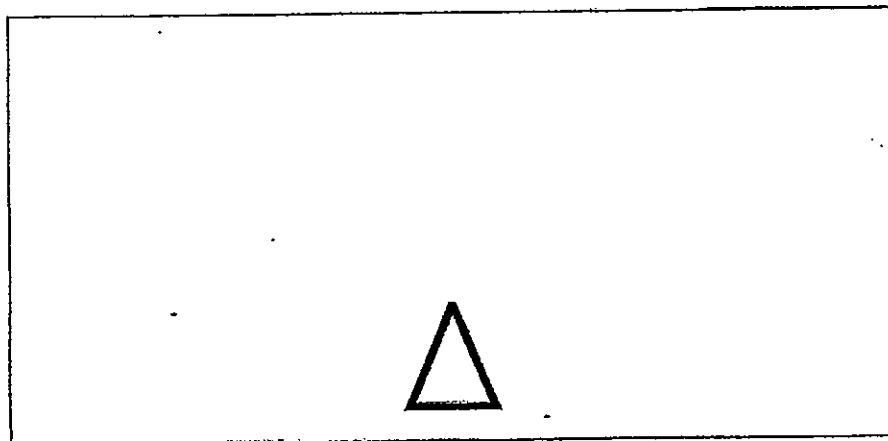
| | |
|-------|---|
| Score | 2 |
|-------|---|

33. Rachel had two identical glass containers, R and S, of the same mass and a volume of 3500 cm^3 each. She filled each container with 3500 cm^3 of air and placed them on a lever balance as shown in the diagram below



Rachel pumped in another 1000 cm^3 of air into glass container S. She then placed containers R and S onto the lever balance again.

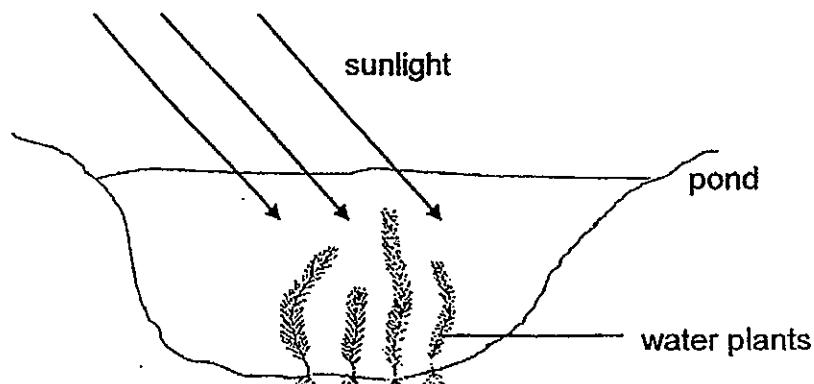
- (a) (i) Draw what she would observe of the balance after 1000 cm^3 of air was pumped into glass container S in the box below.
Label your diagram clearly.



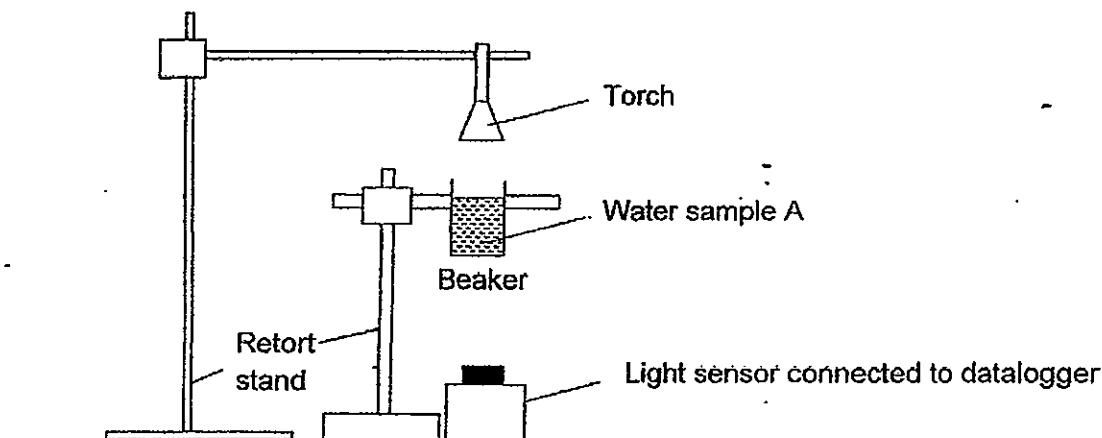
- (ii) Explain your answer in (i). [2]

- (b) What would be the volume of air in container R after 1000 cm^3 of air was removed from it? [1]

- 34 Water plants growing at the bottom of a pond take in any amount of sunlight which is able to pass through the water in order to make food.
The diagram below shows how it happens.



Ali collected 4 water samples A, B, C and D from 4 different ponds. He placed 50 ml of water sample A into a small beaker and set up the experiment as shown below.



Ali then switched on his torch and shone it over water sample A in the beaker. He used a datalogger to measure how much light is able to pass through water sample A in the beaker. He repeated the same experiment for the other 3 water samples, B, C and D, one at a time. He recorded his observations in the table below.

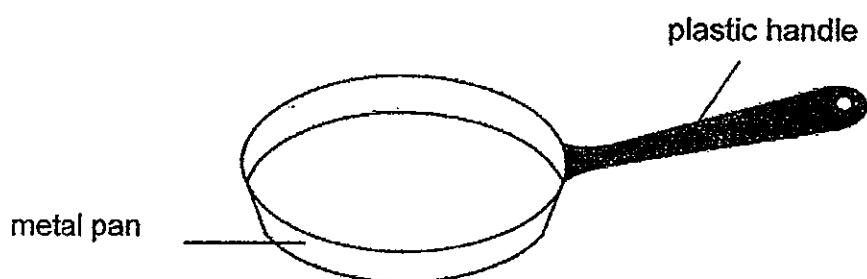
| Number of readings | Reading on the light sensor for each water sample (Lux) | | | |
|--------------------|---|-----|----|------|
| | A | B | C | D |
| 1 st | 500 | 800 | 61 | 1105 |
| 2 nd | 505 | 805 | 63 | 1101 |
| 3 rd | 495 | 807 | 59 | 1106 |
| Average reading | 500 | 804 | 61 | 1104 |

- (a) Plant X grows at the bottom of the pond, and it only grows well when it receives [1] plenty of light. In which water sample, A, B, C or D, would Ali be able to find most number of plant X growing? Give a reason for your answer.

- (b) Why did Ali take 3 readings of the amount of light that passed through the water [1] for each of the water samples?

| | |
|-------|---|
| Score | 2 |
| 35 | / |

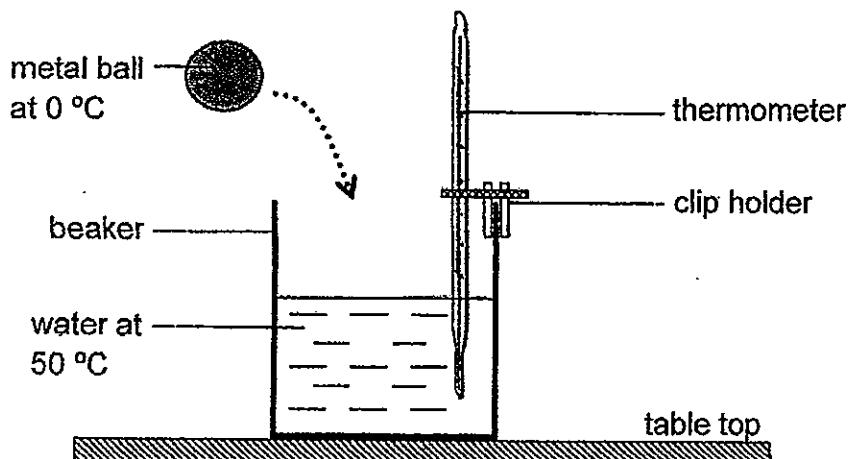
35. The diagram below shows a frying pan.



- (a) The handle is made of plastic because it is a _____ conductor of heat. [1]
- (b) The pan is made of metal because it is a _____ conductor of heat. [1]

| | |
|-------|---|
| Score | 2 |
|-------|---|

36. David took a metal ball from the freezer and put it into a beaker of water with a temperature of 50°C as shown in the diagram below. The set-up was placed in a room with constant temperature of 29°C .



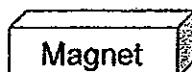
- (a) What would happen to the water level in the beaker when the metal ball was [1] put in it?

- (b) What would happen to the temperature of the water in the beaker after the [2] metal ball was place in it? Explain your answer.

- (c) After 12 hours, what is most likely to be the temperature of the water in the [1] beaker?

37. Susan places a magnet near an iron rod. The iron rod moves towards the magnet.

Iron rod

- (a) The magnet exerts a _____ on the iron rod. [1]

- (b) Choose the correct word from the box to answer the question below.

hard magnetic strong

Susan's observation shows that iron is a _____ material. [1]

| | |
|-------|---|
| Score | 2 |
|-------|---|

38. A steel bar was magnetised using the "stroke" method as shown in Diagram 1 below.

Diagram 2 shows the magnetic poles of the steel bar after it was magnetised.

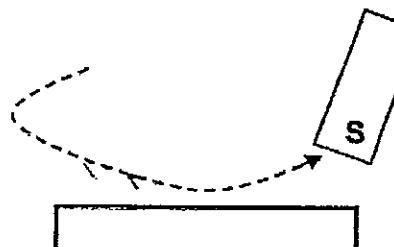


Diagram 1



Diagram 2

Two magnets were used to stroke another steel bar as shown in Diagram 3 below.

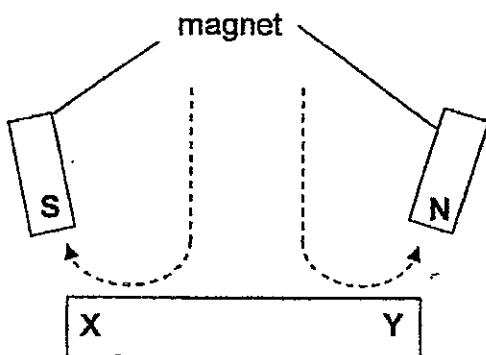


Diagram 3

- (a) Identify the poles of the magnetised steel bar at X and Y respectively. [2]

(i) At X: _____

(ii) At Y: _____

- (b) Siti placed pins, one at a time, at part A, B and C of a bar magnet until no more pins could be attracted by it. She observed the following result shown in Figure 1.

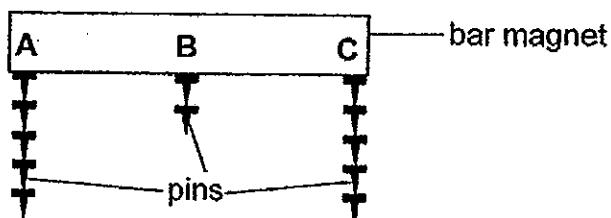


Figure 1

- (i) What can Siti conclude about the magnetic strength of the bar magnet based on the above observation? [1]

Siti was given two similar metal rods, J and K. One of the rods was a magnet and the other was a magnetic object. She wanted to find out which rod was the magnet.

Siti arranged the rods J and K as shown in Figure 2. She found that there was a strong magnetic pull between the rods. When she re-arranged the rods as shown in Figure 3, the magnetic pull between them was weak.

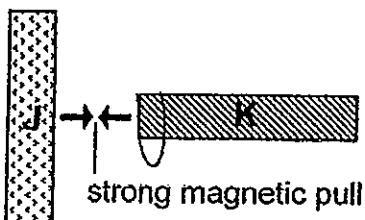


Figure 2

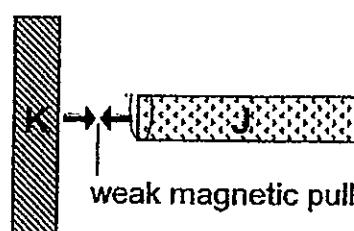
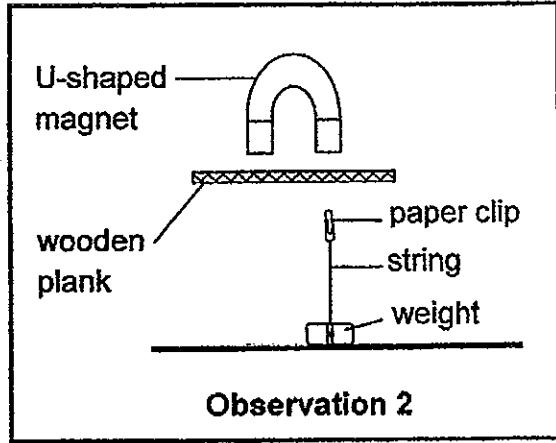
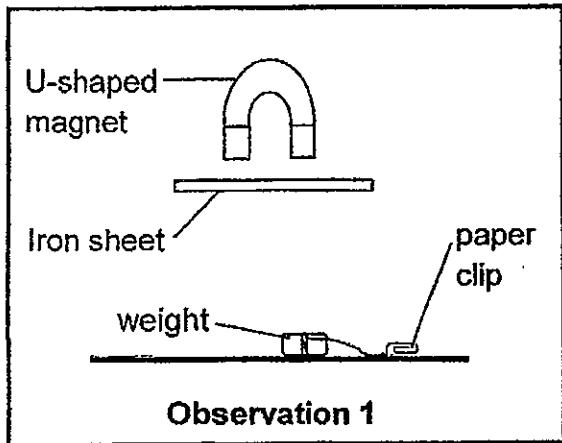


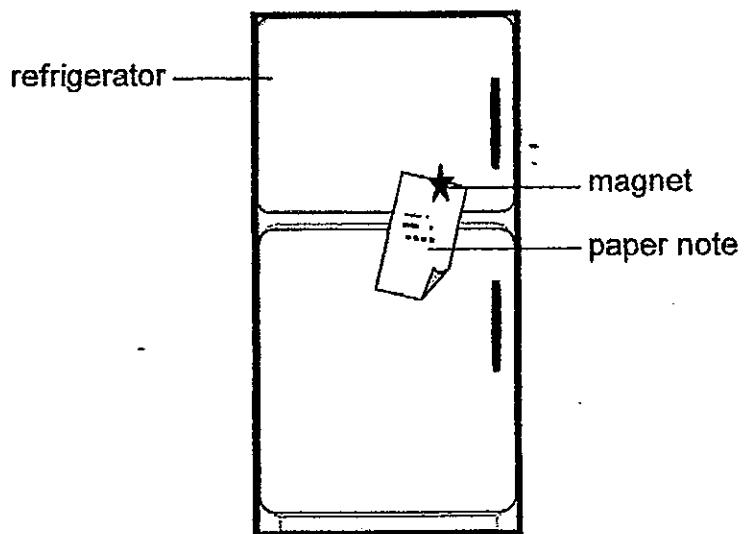
Figure 3

- (ii) Which rod, J or K, is the magnet? Give a reason for your answer. [1]

39. (a) David conducted an experiment to find out about magnetism in a science laboratory as shown below. The diagrams below showed the results of the experiment that he has observed.



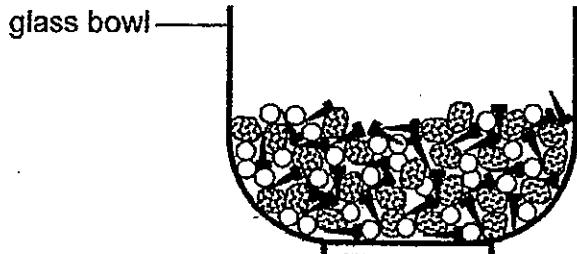
When David went home, he noticed that his mother left a piece of paper note on the door of the refrigerator. The note was held fast onto the door with the help of a magnet as shown below.



- (i) Name a material that the door of the refrigerator is most likely made of. [1]

-
- (ii) Give a reason why the magnet was able to hold a piece of paper on the door of the refrigerator. [1]
-
-

- (b) Jessica was given a large glass bowl containing a mixture of styrofoam balls, iron nails and pebbles as shown below.



Key:

- Styrofoam ball
- ▲ Iron nail
- pebble

She was given a fish net, a magnet, a stirrer and 500 ml of water. She was then asked to separate all the three items in the glass bowl.

The four statements below describe what ~~Fatimah~~ could do to separate the [2] items.
~~Jessica~~

Read the statements carefully. Write the number 1, 2, 3 and 4, in the box beside each statement to show the correct order that Jessica should follow to separate all the three items.

Step

(i) Pour away the water leaving behind only the pebbles.

(ii) Scoop up the floating styrofoam balls with the fish net.

(iii) Pour water into the mixture and stir the mixture with
the stirrer.

(iv) Remove all the iron nails by using a magnet
to attract them

END-OF-PAPER

| | |
|-------|---|
| Score | 2 |
|-------|---|

Answer Ke

EXAM PAPER 2012

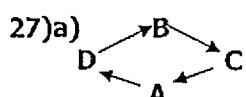
SCHOOL : RAFFLES GIRLS'
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA2

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

| Q18 | Q19 | Q20 | Q21 | Q22 | Q23 | Q24 | Q25 |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 4 | 3 | 4 | 2 | 3 | 3 | 4 | 2 |

26)F: Living things G: Non-living things



b)Animal A has 3 stages life cycle while mosquito has 4 stages life cycle.

28)a)1 b)4

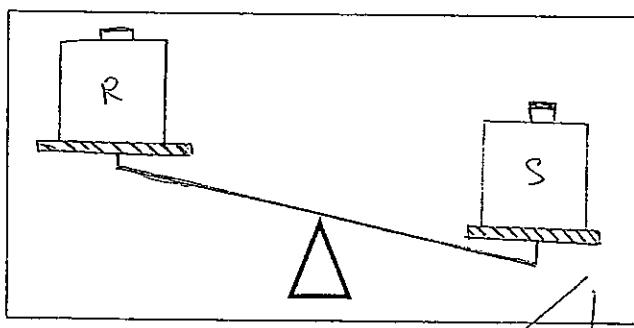
29)a)Y
b)Food A.
c)Part W only contain undigested food.

30)a)i)leaf ii)water
b)i)She was trying to find out if the root of the plants absorb water.
ii)It will still remain the same.

31)a)i)Pour same amount of water into the container.
ii)The strips of materials should be the same thickness.
b)i)It does not break easily and is flexible.
ii)Glass.

- 32)a)Solid
b)Liquid

33)a)i)



ii)Air has mass, if there are more air in the container, it will be heavier so it go down ward.

b)3500cm³

34)a)Water sample D. It allow the most light to pass through so plant will be able to receive plenty pf light.

b)To ensure that the experiment is reliable.

35)a)poor b)good

36)a)The water level will increase.

b)The temperature of the water will decrease. The metal will gain heat from the water.

c)29°C.

37)a)pull b)magnetic

38)a)i)North-pole ii)South-pole

b)i)The end poles A and C were the strongest part of the magnet.

ii)Rod K is the magnet. The center of the magnet is the weakest part so when a magnetic object is placed in the middle of the magnet, it will be a weak magnetic pull.

39)a)i)Steel.

ii)The material of the door of refrigerator is a magnetic material and magnetism can pass through the paper so the magnet is able to a piece of paper on the door of the refrigerator.

b)i)4 ii)2 iii)1 iv)3



RAFFLES GIRLS' PRIMARY SCHOOL
SEMESTRAL ASSESSMENT (2)
2010

Name: _____ Index No: _____ Class: P 4 _____

28th October 2010

SCIENCE

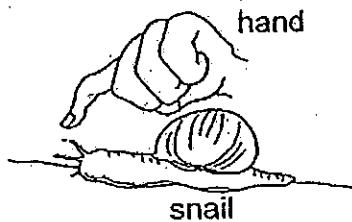
Att: 1 h 20 min

SECTION A (25 X 2 marks)

For each question from 1 to 25, 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.

| Practical 10% | Your score out of 100 | |
|-----------------------|--------------------------|-------|
| Section A 50% | | |
| Section B 40% | | |
| | Class | Level |
| Highest score | | |
| Average score | | |
| Parent's signature | | |

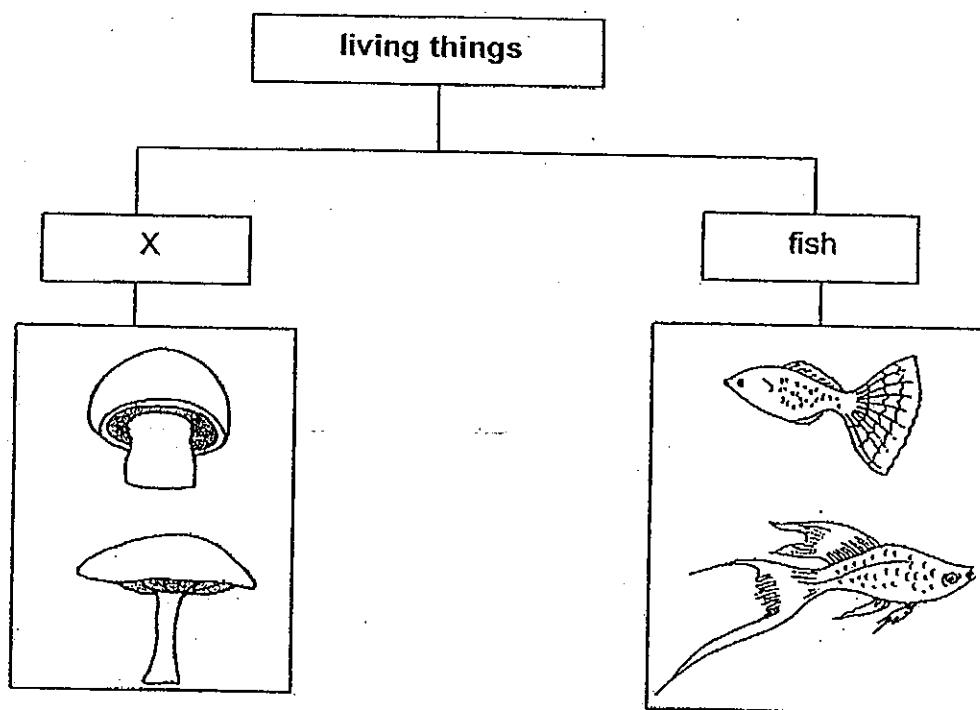
1. A snail hides itself in its shell when touched.



This shows that the snail is a living thing because it can _____.

- (1) grow
- (2) breathe
- (3) respond
- (4) reproduce

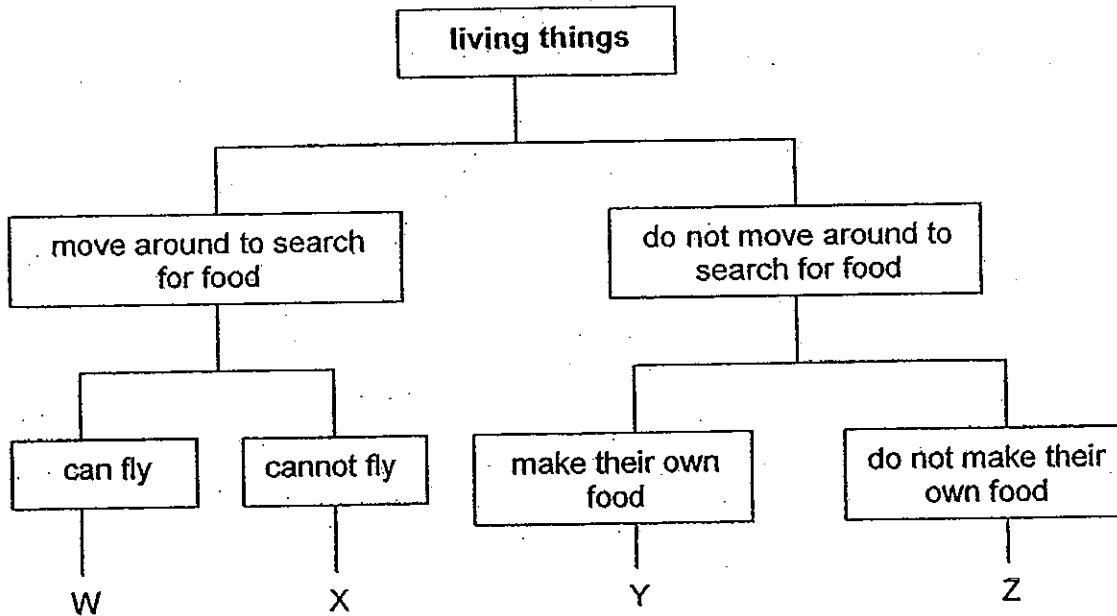
2. The table below shows how some living things can be grouped.



Which one of the following is the most suitable sub-heading for group X?

- (1) fungi
- (2) insects
- (3) bacteria
- (4) mammals

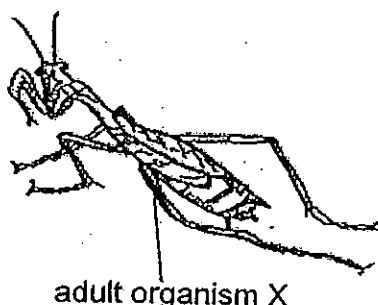
3. The flow chart below shows how some living things are grouped.



Based on the flow chart above, which one of the following is correct?

| | W | X | Y | Z |
|-----|---------|--------------|--------------|-----------|
| (1) | kiwi | fern | balsam plant | toadstool |
| (2) | pigeon | balsam plant | toadstool | fern |
| (3) | pigeon | kiwi | mushroom | fern |
| (4) | sparrow | penguin | balsam plant | mushroom |

4. The picture below shows an organism X.



Some facts about organism X are as follows:

- It has a 3-stage life cycle.
- It moult several times before it becomes an adult.
- Its young does not have wings but it resembles the adult.

The following pupils, Ada, Bernice and Carmen, made some comparisons between organism X and some animals.

- Ada : Both the frog and organism X have the same number of stages in its life cycle.
- Bernice : Both the young of the butterfly and organism X moult several times before they become adults.
- Carmen : Both the young of the mealworm beetle and organism X resemble the adults.

Which of these pupils made the correct statement(s)?

- | | |
|-----------------------------|-----------------------------|
| (1) Ada only | (2) Ada and Bernice only |
| (3) Bernice and Carmen only | (4) Ada, Bernice and Carmen |

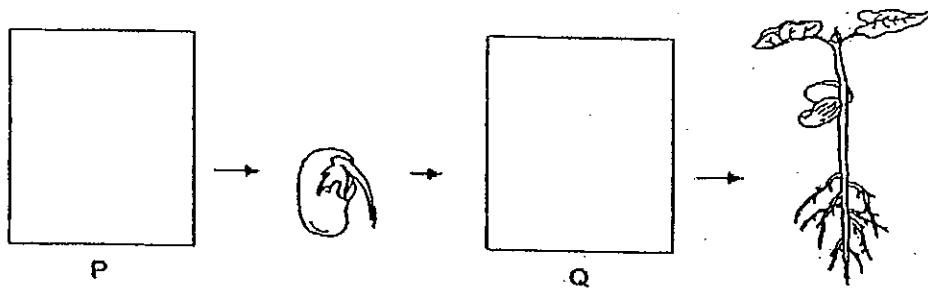
5. Some animals are put into two groups, Group 1 and Group 2.

| Group 1 | Group 2 |
|-------------|-----------------|
| R | S |
| ostrich | butterfly |
| penguin | mosquito |
| grasshopper | mealworm beetle |

Which one of the following can animals R and S possibly be?

| | R | S |
|-----|----------|----------|
| (1) | platypus | ladybird |
| (2) | ladybird | eagle |
| (3) | sparrow | chicken |
| (4) | pigeon | frog |

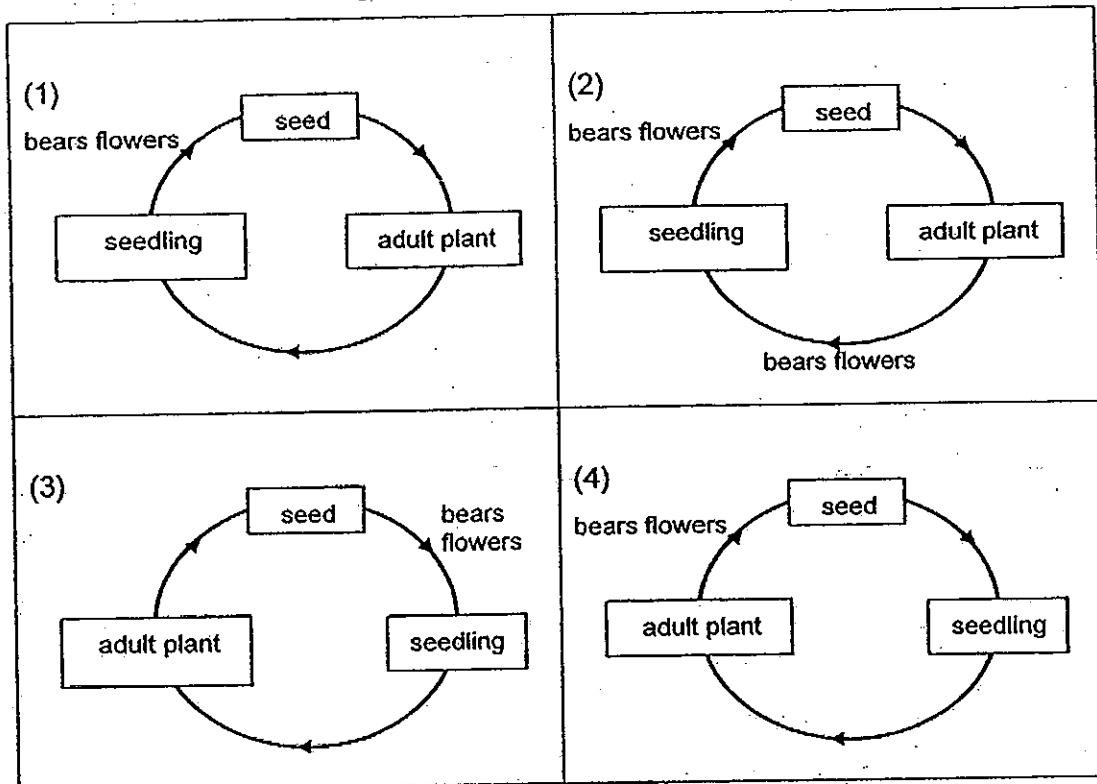
6. The diagram below shows the growth of a young plant with two missing stages, P and Q.



Which one of the following shows the correct stages at P and Q?

| | P | Q |
|-----|--|--|
| (1) | (seed) | (seedling with cotyledons) |
| (2) | (seedling with cotyledons) | (seedling with cotyledons) |
| (3) | (seedling with cotyledons and first true leaf) | (seed) |
| (4) | (seed) | (seedling with cotyledons and first true leaf) |

7. Which one of the following shows the life cycle of a flowering plant correctly?



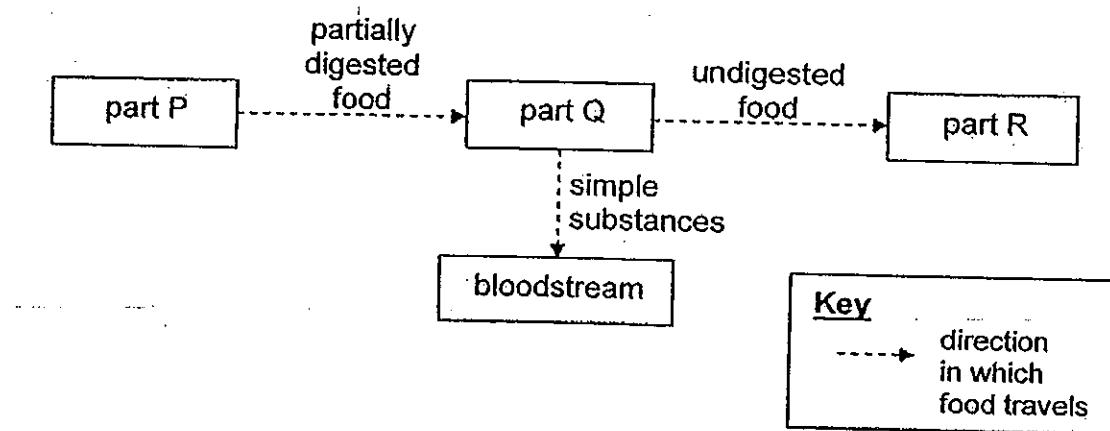
8. Which of the following statements about saliva are true?

- A Saliva is a liquid.
- B Saliva helps to digest food.
- C Saliva is produced in the stomach.
- D Saliva makes food easier to swallow.

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

9. The diagram below shows the movement of food from one part to another part of a man's digestive system.

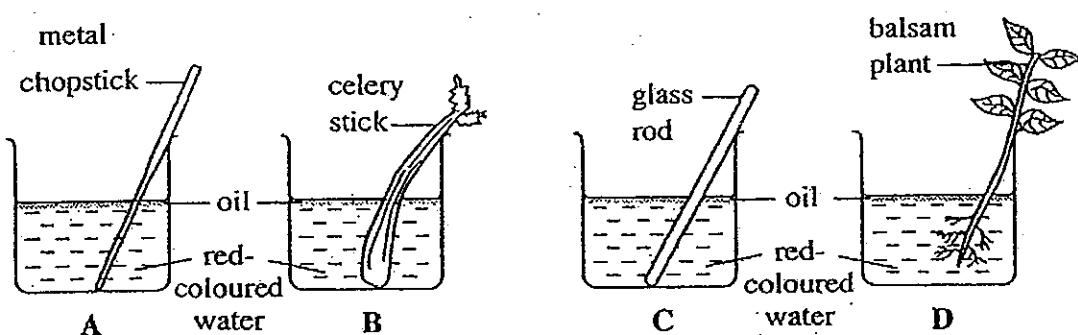
P, Q and R are parts of the digestive system.



Which one of the following identifies these parts, P, Q and R, correctly?

| | part P | part Q | part R |
|-----|---------|-----------------|-----------------|
| (1) | gullet | stomach | small intestine |
| (2) | mouth | gullet | small intestine |
| (3) | mouth | stomach | small intestine |
| (4) | stomach | small intestine | large intestine |

10. Marcus conducted an experiment using the following set-ups.

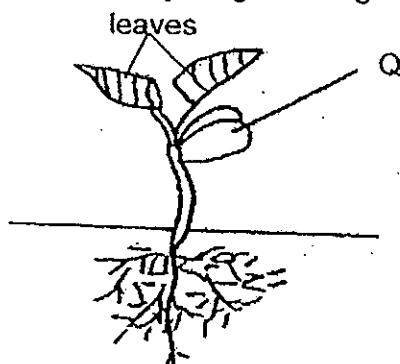


Four identical beakers were filled with an equal amount of water and a layer of oil. The layer of oil prevents the water from evaporating.

What could Marcus observe of the water levels of the coloured water in the beakers after three days?

| | set-up A | set-up B | set-up C | set-up D |
|-----|-----------------|-----------------|-----------------|-----------------|
| (1) | no change | decrease | decrease | decrease |
| (2) | no change | decrease | no change | decrease |
| (3) | decrease | no change | decrease | no change |
| (4) | decrease | decrease | no change | decrease |

11. The diagram below shows a young seedling with part Q.



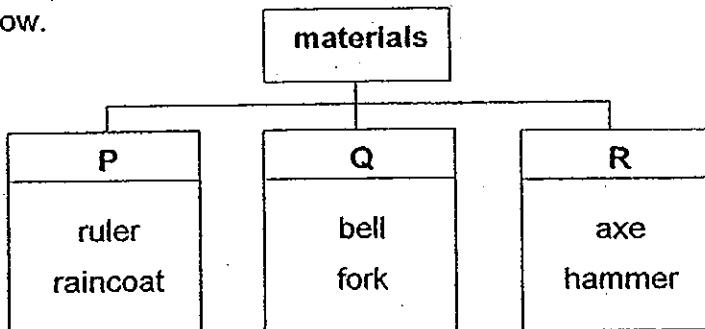
The following students, Anne, Bernard, Charles and Debbie, made some statements about part Q of the young seedling.

- Anne : Q makes food for the adult plant.
Bernard : Q traps light for the seedling to make food.
Charles : Q takes up water and minerals for the seedling.
Debbie : Q provides food for the seedling before its leaves appear.

Which of these pupils made the correct statement(s)?

- (1) Anne only
- (2) Debbie only
- (3) Anne and Bernard only
- (4) Bernard and Charles only

12. Some objects, each made of one or more different materials, are grouped as shown below.

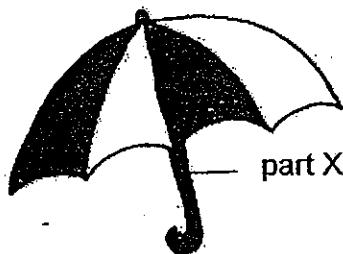


Which one of the following is a set of suitable sub-headings for the objects in groups P, Q and R?

| | P | Q | R |
|-----|----------------|---------------|----------------|
| (1) | plastics only | metal only | wood only |
| (2) | wood and metal | wood only | plastics only |
| (3) | wood only | plastics only | wood and metal |
| (4) | plastics only | metal only | wood and metal |

13. The umbrella shown below is described as follows:

- It is convenient to use.
- It is **NOT** easily damaged.

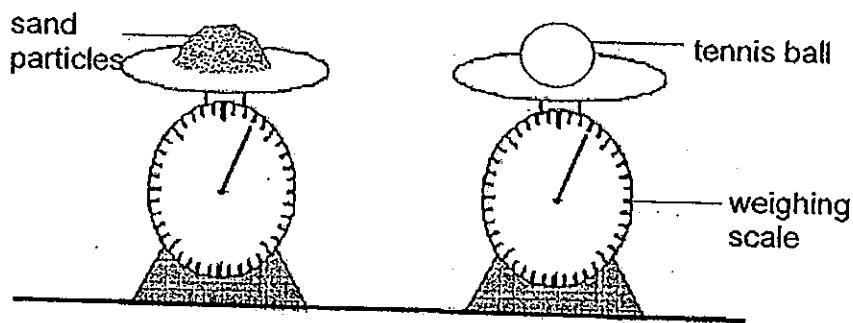


Which of the following is an / are important property / properties of part X that must be considered when making the umbrella?

- A light
- B strong
- C flexible
- D transparent

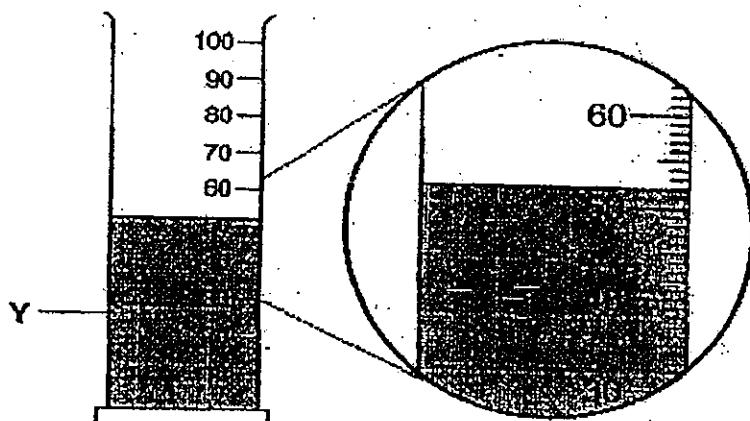
- | | |
|---------------------|---------------------|
| (1) A only | (2) A and B only |
| (3) B, C and D only | (4) A, B and D only |

14. Some sand particles and a tennis ball were each placed on a similar weighing scale as shown below.



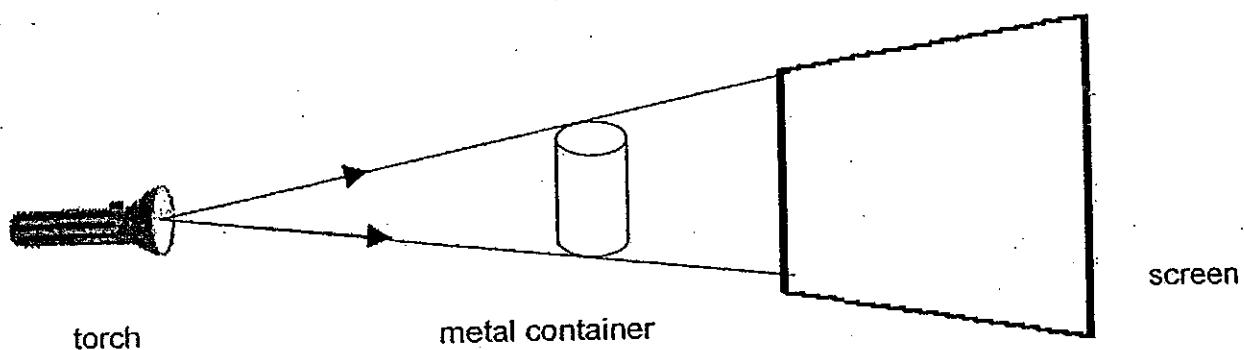
Based on the information above, which of the following statement(s) about the sand particles and tennis ball is/ are true?

15. The diagram below shows some liquid Y in a measuring cylinder.



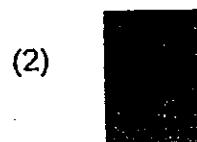
What is the volume of liquid Y?

Mike placed a metal container between a torch and a screen as shown below.



Based on the diagram above, answer **questions 16 and 17**.

16. Which one of the following shows the shadow formed on the screen?



17. What could Mike do to enlarge the shadow on the screen?

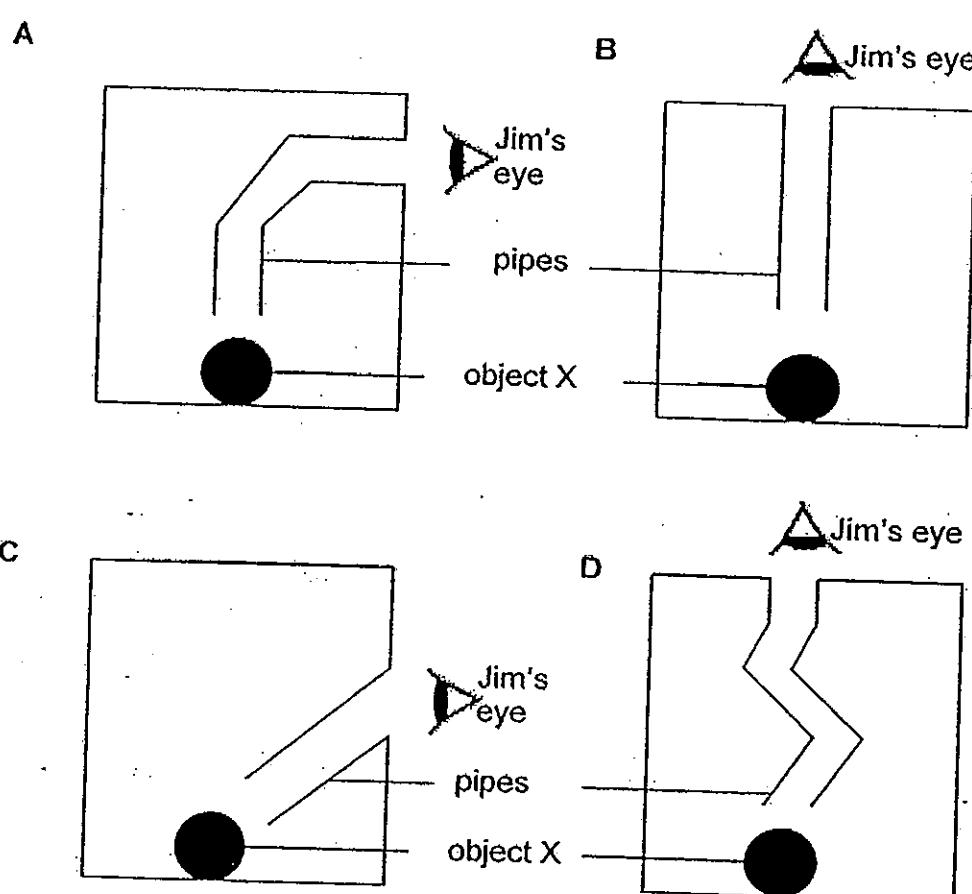
- A He could move the container closer to the torch.
- B He could move the container closer to the screen.
- C He could move the torch away from the container and screen.

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

18. Jim placed an object X, which could glow in the dark, in container A. Next, he inserted a pipe into the hole of container A. He looked through the pipe to see if he could see object X.

Jim did the same with object X in three other containers, B, C and D, ONE at a time, each time using a different pipe as shown in the diagrams below.

All the containers and pipes were made of the same opaque material.

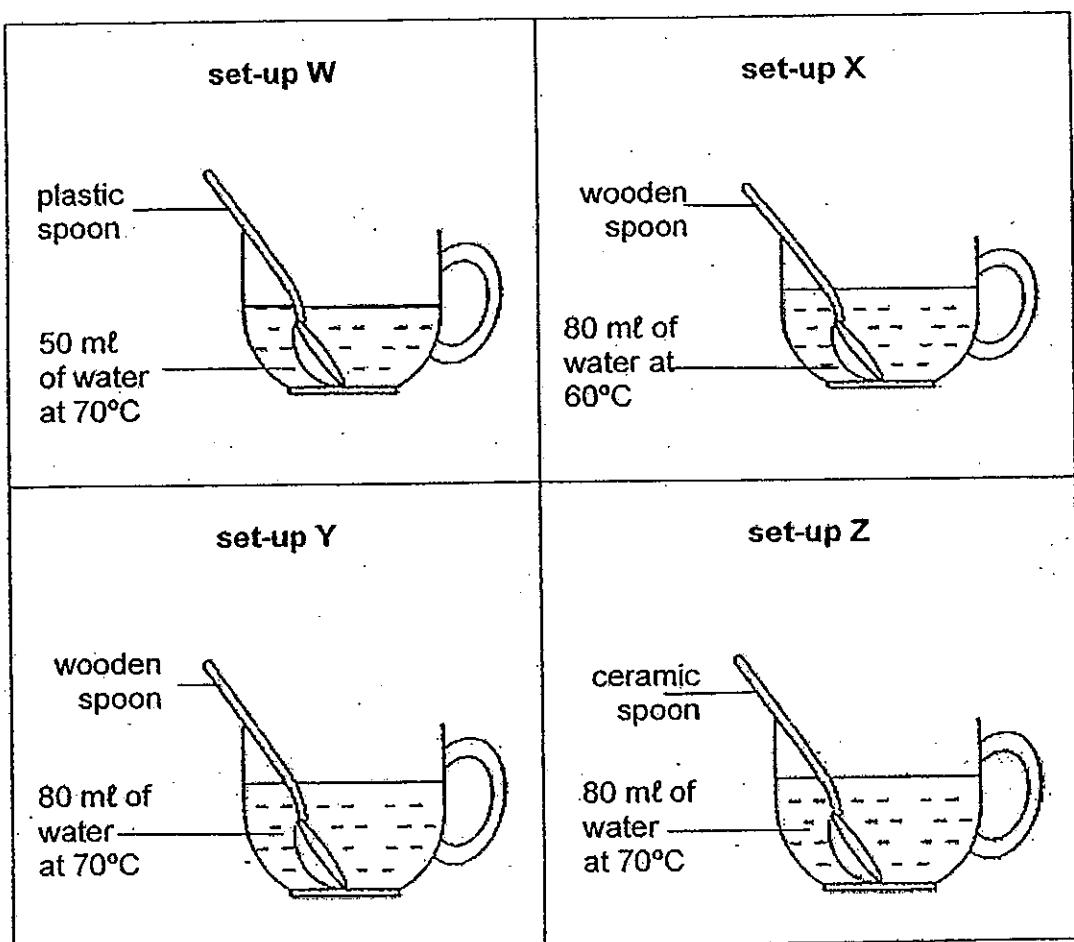


Which of these containers could possibly allow Jim to see the glowing object X within it/ them?

19. Which one of the following plates is the best conductor of heat?

- | | |
|-------------------|------------------|
| (1) metal plate | (2) paper plate |
| (3) plastic plate | (4) wooden plate |

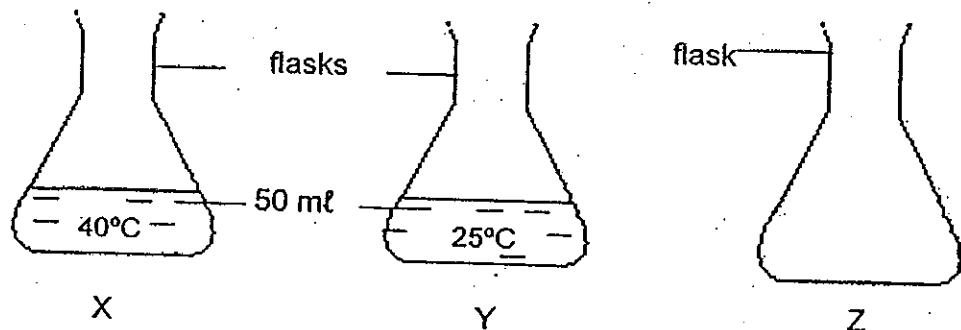
20. Fatimah had 4 identical cups in the following set-ups, W, X, Y and Z.



She wanted to find out which material is a better/ the best conductor of heat.

Which of these set-ups could Fatimah use to make a fair comparison?

21. The diagrams below show three identical flasks, X, Y and Z.



Flasks X and Y contained an equal amount of water at different temperatures.

All the water in flasks X and Y was poured into an empty flask Z. The temperature of the water in flask Z should be

22. In which one of the following diagrams will the two magnets push each other away?

- (1) N S N S

(2) S N S
N

(3) S S
N N

(4) N S
S N

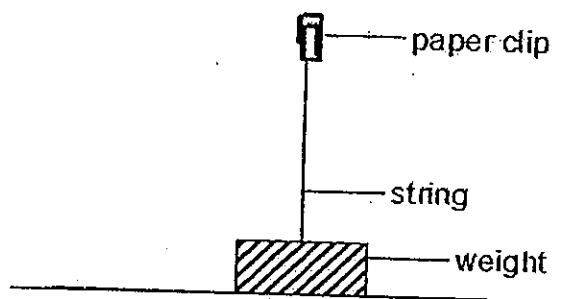
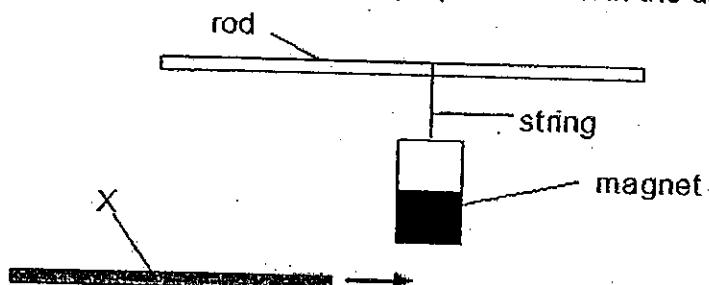
23. A magnet is brought near a ball. The ball moves towards the magnet in the direction as shown in the diagram below.



Which one of the following materials is possibly used to make the ball?

- | | |
|------------|--------------|
| (1) steel | (2) wood |
| (3) rubber | (4) plastics |

24. Yukie held a bar magnet directly above a metal paper clip tied to a weight by a string. The magnet pulled the paper clip up as shown in the diagram below.

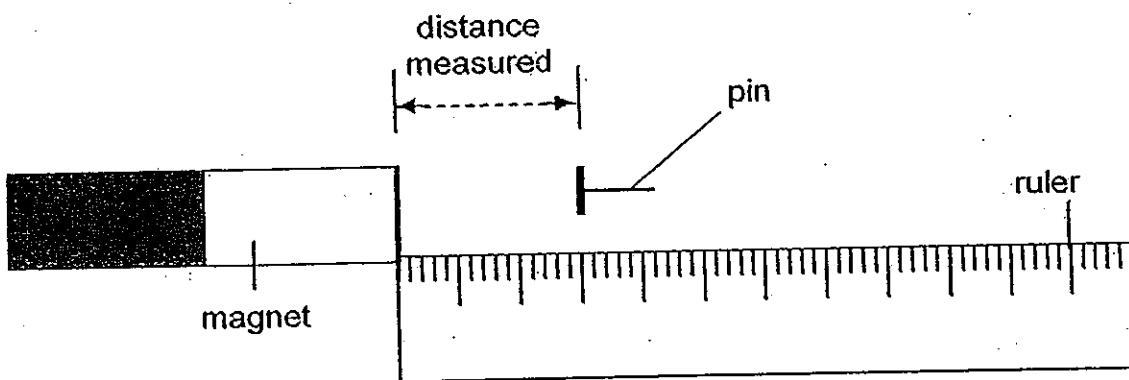


When Yukie placed a thin sheet of material X between the magnet and the paper clip, the paper clip remained suspended in the air.

What could material X be?

- A glass
 - B nickel
 - C wood
 - D copper
- (1) A and C only
(2) B and C only
(3) B and D only
(4) A, C and D only

25. Jayne set up the following apparatus to compare the magnetic strength of magnets A, B, C and D.



Using the same pin, Jayne measured the greatest distance from which the pin could be attracted to one end of each magnet, **ONE** at a time.

She tabulated her results as shown below.

| magnet | distance between magnet and pin (cm) |
|--------|--------------------------------------|
| A | 5 |
| B | 9 |
| C | 3 |
| D | 12 |

Based on the information above, which one of the following conclusions that Jayne made is correct?

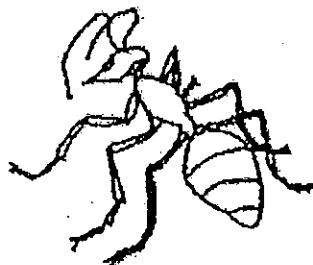
- (1) Magnet A was stronger than magnet C.
- (2) Magnet B was as strong as magnet D.
- (3) Magnet C was the strongest.
- (4) Magnet D was the weakest.

SECTION B (40 marks)

For questions 26 to 39; 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.

26. The picture below shows an animal Q.



animal Q

Based on your observations, which of the following descriptions fit(s) animal Q?

Put a tick (✓) in the correct box(es) below.

[1]

can fly

has 6 legs

has 3 body parts

has a pair of feelers

27. The table below shows the duration of time taken for animal Y to change from one stage to another in its life cycle.

| stage in the life cycle of Y | duration of each stage (number of days) |
|------------------------------|--|
| egg | 5 |
| nymph | 365 |
| adult | 120 |

- (a) Based on the information above, what is the least number of days taken for animal Y to reach its adult stage from the time the fertilised egg is laid? [1]

_____ days

The nymph of animal Y moult several times before reaching its adult stage.

- (b) Explain why the nymph of animal Y needs to moult several times. [1]

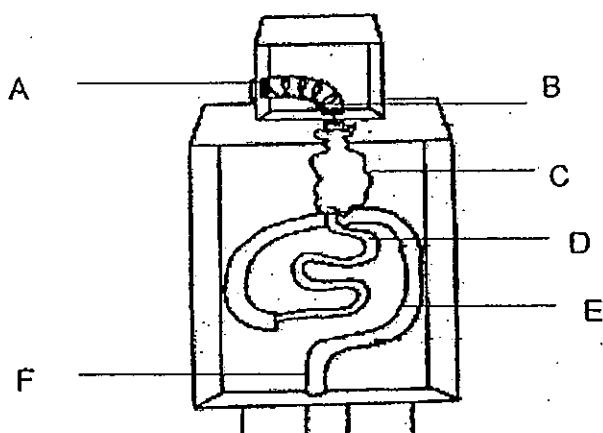
28. Choose the correct words from the box to answer the questions below.

gullet large intestine mouth small intestine stomach

For each of the following, name a part of a human digestive system where

- (a) partial digestion first takes place : _____ [1]
- (b) absorption of digested food takes : _____ place [1]

29. Ralph created a model of the human digestive system and labelled its parts as shown below.



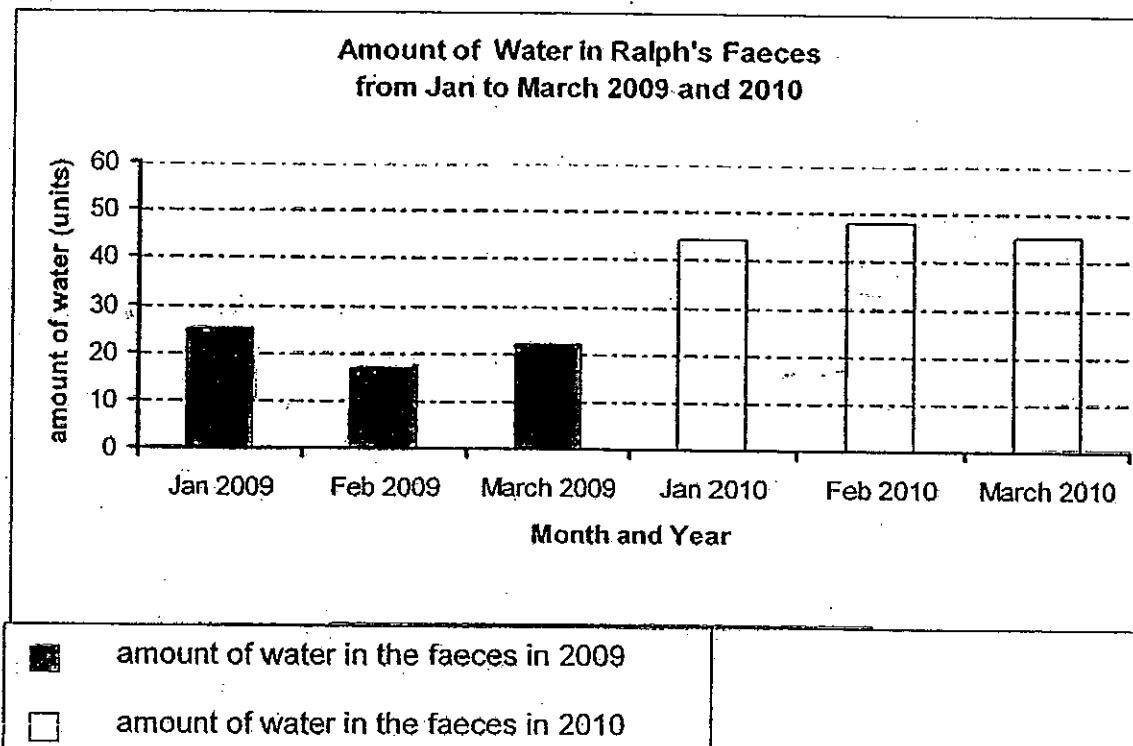
- (a) Describe clearly what happens to the food at part C. [1]

- (b) Ralph said, "Digestion ends at F before waste is discharged from it." Is his statement correct? Explain your answer. [1]

- (c) State the main function of part E. [1]

Ralph had health problems so his doctor removed a portion of part E of his digestive system in December 2009.

The diagram below shows the amount of water in Ralph's faeces for the first three months in 2009 and 2010.



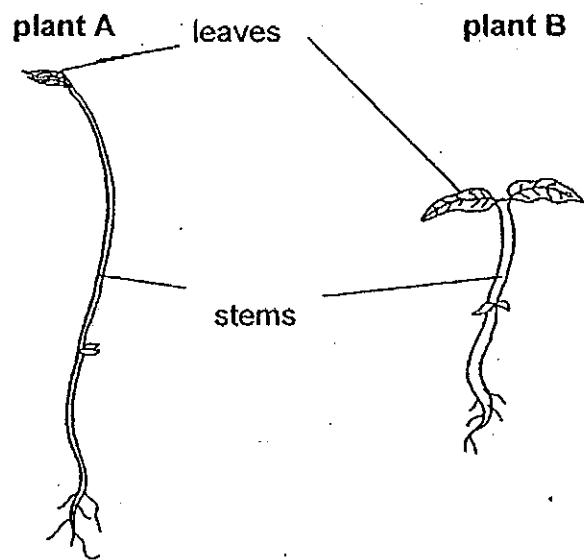
Ralph maintained a similar diet in 2009 and 2010.

Based on the graph above, answer the following question:

Compare the amount of water in Ralph's faeces between the two periods, January to March, for 2009 and 2010.

- (d) State the difference in the amounts of water in his faeces before and after a portion of part E of his digestive system was removed. [1]

30. The diagram below shows two plants, A and B.



Fill in each blank with a suitable word.

[2]

- (a) State one difference between the stems of plants A and B.

The stem of plant A is _____ than the stem of plant B.

- (b) The leaves help both plants to make _____ in the light.

- (c) Name the conditions necessary for seeds to grow their first roots. [2]
-

31. Priya wants to use either bag A or bag B to pack the items needed for her camping trip. The properties of bag A and bag B are shown below.

| | bag A | bag B |
|-----------------------|----------------------|--------------------------|
| properties of the bag | waterproof strong | non-waterproof strong |
| mass of the bag (g) | 80 | 300 |

Based on the information above, answer the following questions:

- (a) Compare bags A and B.

Write down TWO characteristics that make bag A a better choice than bag B for Priya's camping trip. [2]

| | |
|---------------------|--|
| CHARACTERISTIC 1 | |
| CHARACTERISTIC 2 | |

The tent below is made of the same material as bag A.



Priya's teacher commented that the tent must be made of a waterproof material.

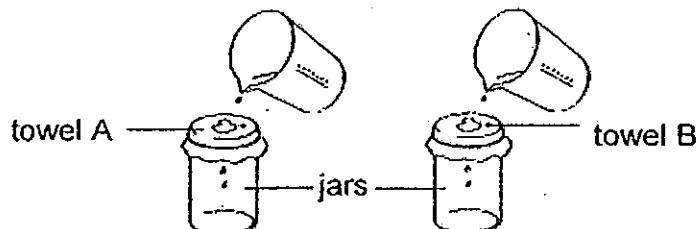
- (b) Why did Priya's teacher say so?

[1]

to be cont'd on the next page

Priya could not decide which towel, A or B, to bring along for her camping trip. She tried out the following experiment to find out.

She covered the mouth of each of 2 identical jars with towel A and towel B. Next, she poured an equal amount of water through each towel.



Priya recorded the amount of water collected in each jar at the end of her experiment in the table shown below.

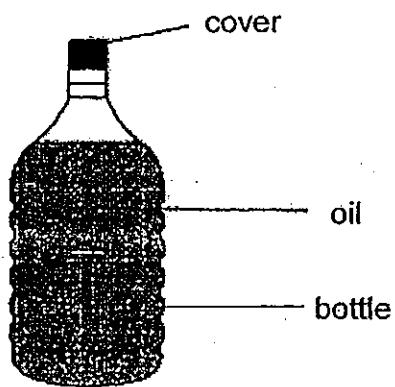
| mouth of jar covered with | towel A | towel B |
|---|---------|---------|
| amount of water collected in the jar (ml) | 15 | 25 |

- (c) Which towel, A or B, should Priya bring along to dry herself better for her camping trip?

Give a reason for your answer.

[1]

32. The diagram below shows a bottle of cooking oil.



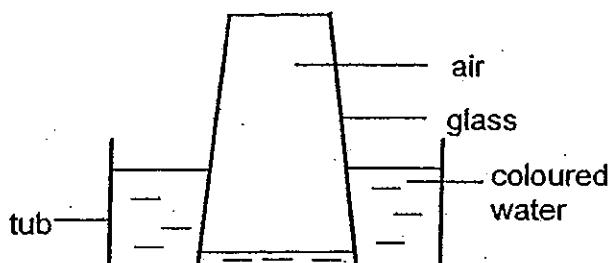
Fill in each blank with any of these words: solid, liquid or gas.

[2]

- (a) The cover is a _____.
- (b) Oil is a _____.

33. Minah inverted a glass into a tub of coloured water. NO air escaped from the glass into the water when she inverted the glass.

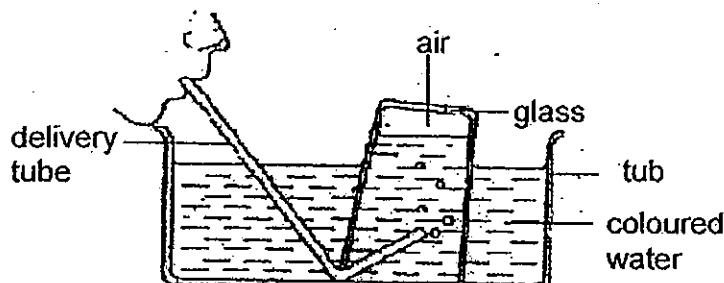
However, a small amount of coloured water entered the glass as shown below.



- (a) Explain why a small amount of coloured water entered the glass. [1]

- (b) Why did Minah use coloured water instead of clear water for her experiment? [1]

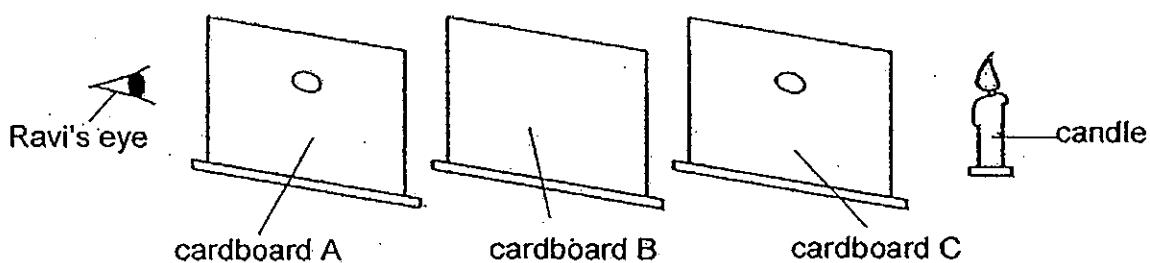
In a different experiment, Minah filled another glass with coloured water before inverting it into the tub of coloured water again.



Next, Minah blew air through a delivery tube into the glass. She observed that bubbles were seen rising up in the coloured water inside the glass. The water level in the glass dropped as Minah continued to blow air into the delivery tube.

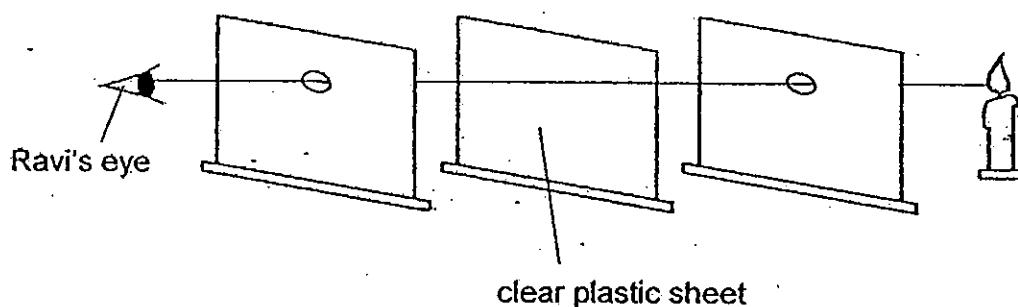
- (c) Why had the water level in the glass dropped? [1]

34. Ravi had cardboards A and C, each with a hole, and another cardboard B without a hole. He arranged the 3 cardboards in a row as shown in the diagram below.



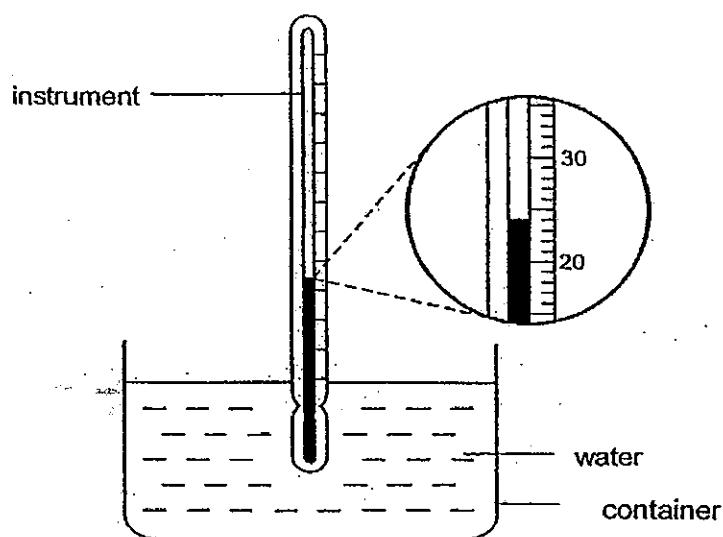
- (a) Why was Ravi NOT able to see the candle flame when he looked directly through the hole of cardboard A? [1]

Ravi replaced cardboard B with a piece of clear plastic sheet as shown in the diagram below.



- (b) DRAW arrowheads (►) on the given line to show how light travelled so that Ravi was able to see the candle flame.
Explain why Ravi was able to see the flame. [2]

35. Jenny used an instrument to measure the temperature of water in a container as shown below.



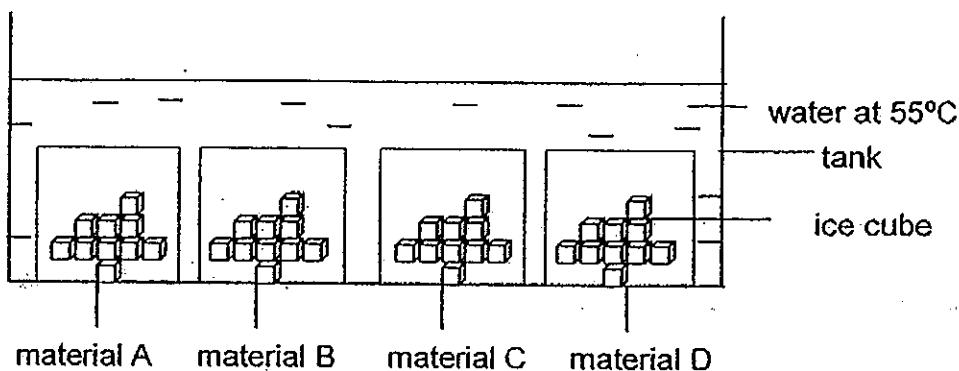
(a) Name the instrument Jenny used. [1]

(b) State the temperature of water in the container. [1]

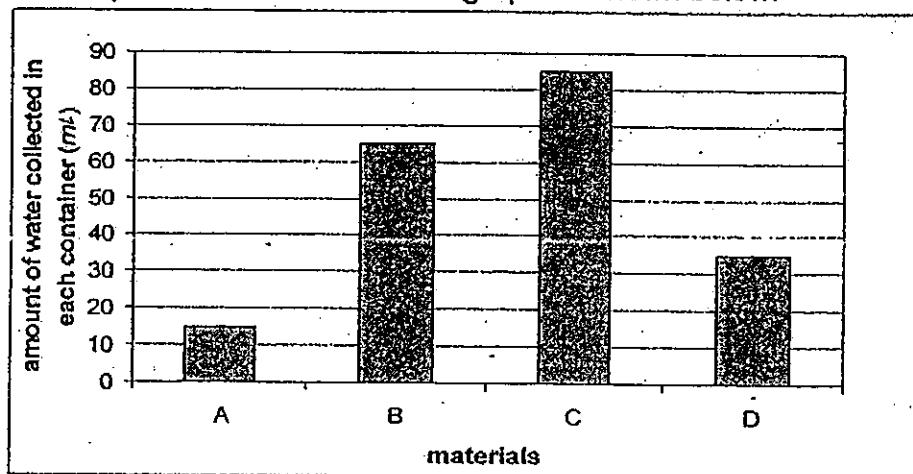
_____ °C

36. Janice had 4 containers of the same size but each was made of a different material, A, B, C and D.

She put in 10 identical ice cubes in each of these containers and sealed them. Next, she put all the containers in a tank filled with water at 55°C as shown below.



Janice recorded the amount of water collected in each container after 10 minutes and presented her results in a graph as shown below.



Based on the information above, answer the following questions:

- (a) Arrange these materials, A, B, C and D, according to how fast each conducted heat.

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

[1]

fastest

to be cont'd on the next page

Janice would like to boil water in the shortest possible time.

- (b) Which one of these materials, A, B, C or D, should Janice choose?
Explain your answer. [2]

37. Susan places a bar magnet near an iron rod. The iron rod moves towards the magnet in the direction shown by the arrow.

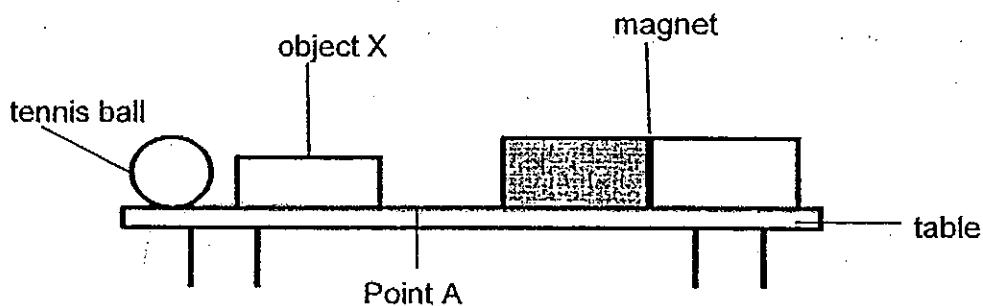


Complete each of the blanks with a suitable word from the box below. [2]

| | | | | | |
|------|------|----------|--------|------|--------------|
| push | hard | magnetic | strong | pull | non-magnetic |
|------|------|----------|--------|------|--------------|

- (a) Magnet exerts a/an _____ on the iron rod.
(b) Susan's observation shows that iron is a _____ material.

38. Chloe placed one end of a magnet close to one end of an object X as shown below.



Chloe moved the magnet towards object X until one end of the magnet reached Point A.

Object X moved away from the magnet and the tennis ball was pushed off the table.

- (a) Suggest what object X could be.

Explain your answer.

[2]

Using the same set-up as above, the object X was removed and replaced by an iron bar of the same size.

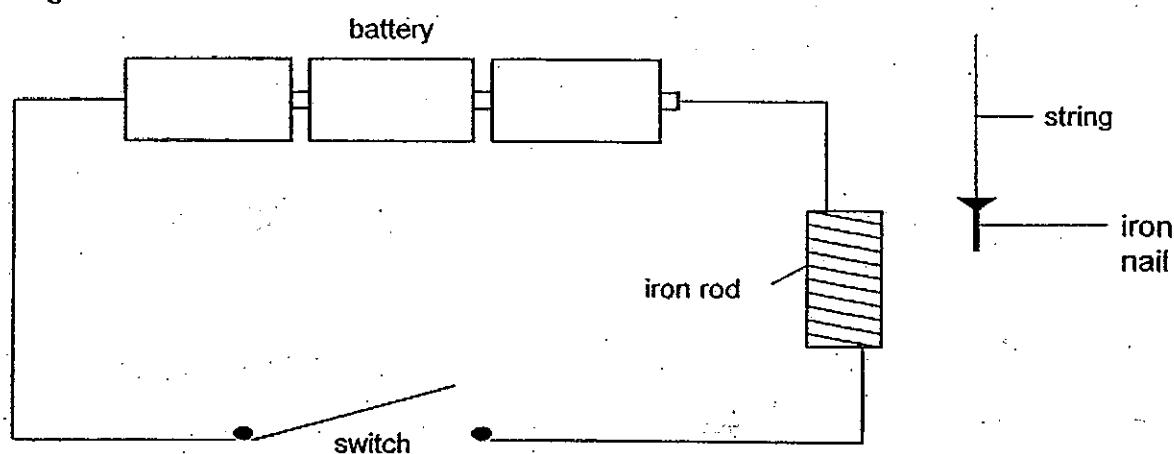
Chloe moved the magnet towards the iron bar. She stopped moving the magnet when one end of the magnet reached Point A.

- (b) State what would happen to the tennis ball.

Give a reason for your answer.

[2]

39. An iron nail was freely suspended next to a coiled iron rod as shown in the diagram below.



When the switch was closed, the iron rod became an electromagnet.

Based on the information above, answer the following questions:

- (a) When the switch was closed, what happened to the iron nail? [1]

- (b) Suggest TWO ways to make the electromagnet stronger. [2]

| | |
|-----------------|--|
| SUGGESTION 1 | |
| SUGGESTION 2 | |

- (c) What would happen to the iron rod when the switch was opened? [1]

- END OF PAPER -



RAFFLES GIRLS' PRIMARY SCHOOL

2010 PRIMARY 4 SCIENCE SA 2 ANSWER KEY

Setters : *Mr Darren Lau, Ms Ho Hsien Lin, Mrs Elaine Lim
* compiler

SECTION A (25 X 2 marks)

| | |
|---|---|
| 1 | 3 |
| 2 | 1 |
| 3 | 4 |
| 4 | 4 |
| 5 | 1 |

| | |
|----|---|
| 6 | 4 |
| 7 | 4 |
| 8 | 4 |
| 9 | 4 |
| 10 | 2 |

| | |
|----|---|
| 11 | 2 |
| 12 | 4 |
| 13 | 2 |
| 14 | 1 |
| 15 | 2 |

| | |
|----|---|
| 16 | 2 |
| 17 | 1 |
| 18 | 2 |
| 19 | 1 |
| 20 | 2 |

| | |
|----|---|
| 21 | 2 |
| 22 | 3 |
| 23 | 1 |
| 24 | 4 |
| 25 | 1 |

SECTION B (40 marks)

| No. | Marks | Suggested answers | Remarks |
|-----|-------|--|--|
| 26 | 1 | <ul style="list-style-type: none">▪ has 6 legs▪ has 3 body parts▪ has a pair of feelers | NO partial marks |
| | (a) 1 | Both <ul style="list-style-type: none">▪ breathe through their gills▪ use their gills to breathe [in water]. | [½] for any of the following: Both take in oxygen. Both breathe in the water |
| 27 | | | |
| | (b) 1 | <ul style="list-style-type: none">▪ The dragonfly outgrows its outer [body] covering.▪ The dragonfly becomes too big for its outer [body] covering. | |
| 28 | (a) 1 | mouth | -[½] for wrong spelling |
| | (b) 1 | small intestine | -[½] for wrong spelling |

| No. | Marks | Suggested answers | Remarks |
|-----|-------|---|--|
| 29 | (a) 1 | The food is <ul style="list-style-type: none"> ▪ partially [½] digested at C ▪ mixed with digestive juices at C ▪ is further broken down at C | -[½] for wrong spelling of word in bold |
| | (b) 1 | <u>Answer</u> No. <u>Explanation</u> While waste is discharged at F, digestion ends at <ul style="list-style-type: none"> ▪ the small intestine ▪ D | -[½] for wrong spelling of word in bold |
| | (c) 1 | Percentage of water in Ralph's faeces <ul style="list-style-type: none"> ▪ increased ▪ was higher in 2010 than in 2009 ▪ in 2010 was more than in 2009 | Comparison between the percentage (NOT amount) of water in the faeces in 2009 and 2010 must be made -[½] for 'amount' instead of 'percentage' |
| | (d) 1 | E <ul style="list-style-type: none"> ▪ removes ▪ absorbs water [and minerals] from undigested food | NOT acceptable E removes water [and minerals] from faeces. |
| 30 | (a) 1 | <ul style="list-style-type: none"> ▪ longer ▪ thinner | -[½] for wrong spelling Do NOT accept: weaker |
| | (b) 1 | food | -[½] for wrong spelling |
| | (c) 2 | <ul style="list-style-type: none"> ▪ oxygen / air ▪ warmth ▪ water | [1] for any two correct answers -[½] for wrong spelling NOT acceptable: sunlight |

| No. | Marks | Answers | Remarks |
|-----|-------|---|---|
| 31 | (a) 2 | [1] for each correct answer <ul style="list-style-type: none"> ▪ It is waterproof. ▪ It is lighter. OR It has a smaller mass. | Comparison must be made. -[½] It is light. |
| | (b) 1 | Reason to ensure that Priya remained dry in the tent when it rained | Mark holistically [½] for each of the following ideas: <ul style="list-style-type: none"> ▪ Priya's state of dryness within the tent ▪ the tent kept out the rain |
| | (c) 1 | Answer B Reason <ul style="list-style-type: none"> ▪ It absorbs more water. ▪ It absorbs water at a faster rate. ▪ It absorbs water in a shorter time. | Mark holistically A comparison must be made -[½] for <ul style="list-style-type: none"> ▪ wrong spelling of word in bold ▪ missing word 'more' |
| 32 | (a) 1 | solid | - [½] for wrong spelling |
| | (b) 1 | liquid | - [½] for wrong spelling |
| 33 | (a) 1 | <ul style="list-style-type: none"> ▪ Air <u>in the glass</u> [½] was compressed [½]. ▪ Air which occupied space <u>in the glass</u> [½] was compressed [½]. | Air can be compressed. [½] -[½] for wrong spelling of word in bold |
| | (b) 1 | Coloured water enabled Minah to see <u>the water level</u> [½] <u>more clearly</u> [½] | [½] The coloured water helped us to see it/ the water level. |
| | (c) 1 | Air entered the glass [½] and <ul style="list-style-type: none"> ▪ pushed the water out } [½] ▪ displaced the water in it } | |

| No. | Marks | Answers | Remarks |
|-----|-------|---|--|
| | (a) 1 | <p>Light travels in a straight line [½] and</p> <ul style="list-style-type: none"> ▪ could not pass through cardboard B which was opaque } ▪ B blocked all the light } [½] | [0] There is no hole in B. |
| 34 | (b) 2 | <p><u>Answer</u></p> <ul style="list-style-type: none"> ▪ Yes. ▪ He would be able to see the flame. <p><u>Explanation</u></p> <ul style="list-style-type: none"> ▪ Light was able to pass through clear plastic [½] and reached Ravi's eyes [½]. ▪ Clear plastics, which is transparent [½], allowed <u>most</u> light to pass through to Ravi's eyes [½]. ▪ Clear plastics which allows <u>most</u> of light to pass through [½], did not block light from reaching Ravi's eyes[½]. ▪ Clear plastics, which is transparent [½], allowed most light to be reflected from the flame to Ravi's eyes [½]. | <p>Mark holistically Both answer and explanation must be correct.</p> <p>Pupils must show a clear understanding of</p> <ul style="list-style-type: none"> ▪ how light is reflected from the flame into Ravi's eyes ▪ the material which allows <u>most</u> light to pass through <p>-[½] for</p> <ul style="list-style-type: none"> ▪ missing 'most light' ▪ wrong spelling of word in bold |
| 35 | (a) 1 | <ul style="list-style-type: none"> ▪ thermometer ▪ laboratory thermometer | -[½] for wrong spelling of thermometer [0] for clinical thermometer |
| | (b) 1 | 24 | |
| | (a) 1 | C, B, D, A | NO partial marks |
| 36 | (b) 2 | <p><u>Answer</u></p> <ul style="list-style-type: none"> ▪ A ▪ material A <p><u>Explanation</u></p> <p>[1] Ice cubes in container A melted <u>most</u> quickly.</p> <p>[1] This shows that A</p> <ul style="list-style-type: none"> ▪ is the <u>best</u> conductor of heat ▪ gained heat <u>most</u> quickly ▪ conducted heat <u>most</u> quickly ▪ allowed heat to pass through it <u>most</u> quickly <p>So water could be boiled quickly.</p> | <p>Mark holistically [0] Plastic is a poor conductor.</p> <p>-[½] wrong use of comparatives e.g. more</p> <p>[1] interpretation of the graph [1] inference</p> |

| No. | Marks | Answers | Remarks |
|-----|----------------|--|--------------------------|
| 37 | (a) 1 (b) 1 | pull magnetic | - [½] for wrong spelling |
| | (a) 2 | <u>Answer</u> magnet <u>Explanation</u> Like poles of the magnets were facing each other. [1] AND The magnets repelled [½] and pushed the tennis ball off the table. [½] | Mark holistically |
| 38 | (b) 2 | <u>Prediction</u> The tennis ball <ul style="list-style-type: none"> ▪ was not pushed off the table ▪ remained at <ul style="list-style-type: none"> - the same place - its original position <u>Reason</u> <ul style="list-style-type: none"> ▪ The iron bar would be attracted to the magnet. ▪ The magnet would attract the iron ball. ▪ The magnet would pull the iron ball towards it. | Mark holistically |

| No. | Marks | Answers | Remarks |
|-----|-------|---|---|
| 39 | (a) 1 | <ul style="list-style-type: none"> ▪ It became attracted to the iron rod. ▪ It moved towards the iron rod. ▪ It was pulled towards the iron rod. | - [½] for wrong spelling of words in bold |
| | (b) 2 | <ul style="list-style-type: none"> ▪ Increase the number of batteries in the circuit. ▪ Add another battery <u>in series</u> [½] to the circuit. ▪ Increase the number of coils on the iron rod. | [1] for each correct answer |
| | (c) 1 | <ul style="list-style-type: none"> ▪ The iron rod became demagnetised. ▪ The iron rod could no longer attract the iron nail. | <p>Question asked of iron rod NOT of iron nail</p> <p>[0]</p> <ul style="list-style-type: none"> ▪ iron rod is not mentioned e.g. The iron nail could not be attracted to the iron rod. ▪ Iron rod became normal again. <p>[½]</p> <p>Iron rod moved back to its original position.</p> |

- END OF PAPER -



RAFFLES GIRLS' PRIMARY SCHOOL
SEMESTRAL ASSESSMENT (1)
2011

Name : _____ Index No: _____ Class: P 4

Date: 6th May 2011 SCIENCE Attn: 1 h 30 min

| | | |
|-------------------------------------|---------------------------------|--------------|
| Section A 60% | Your score out of 100 | |
| Section B 40% | | |
| | Class | Level |
| Highest score | | |
| Average score | | |
| Parent's signature | | |

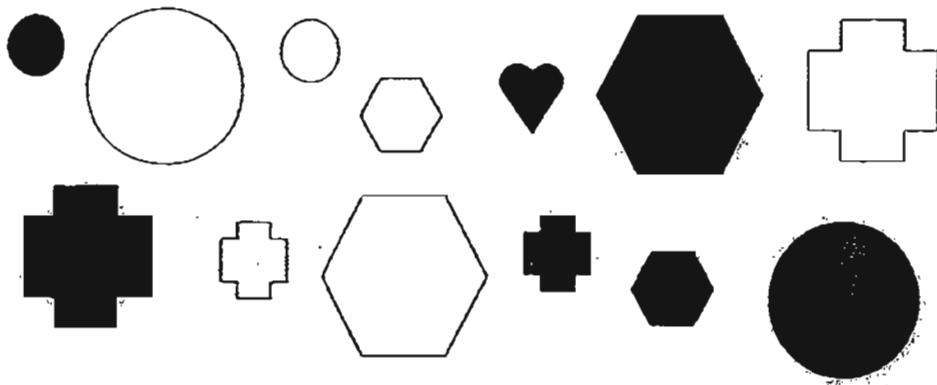
SECTION A (30 X 2 marks)

For each question from 1 to 30, four options are given.

For each question from 1 to 20, 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.

1. Ali was given the following set of objects.

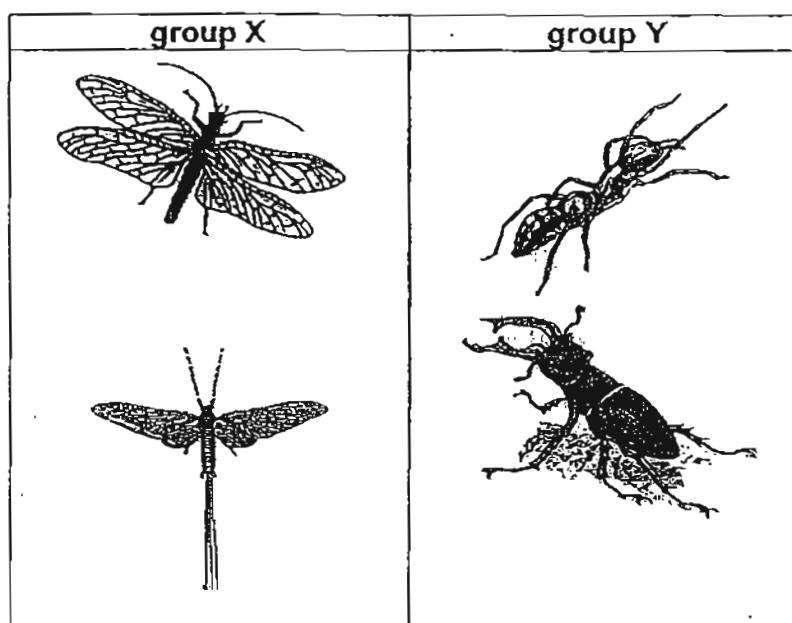


He arranged them according to two different groups, X and Y, as follows:

| | | | | | | | |
|---|--|--|--|--|--|--|--|
| X | | | | | | | |
| Y | | | | | | | |

How did Ali arrange the set of objects?

2. The insects as shown below are grouped as follows:



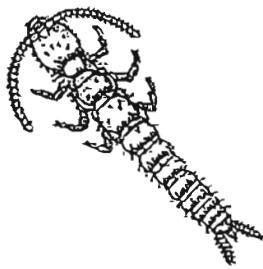
How are these insects grouped?

- A according to the number of legs
 - B whether they have wings or no wings
 - C whether they have feelers or no feelers
-
- (1) A only
 - (2) B only
 - (3) A and B only
 - (4) B and C only

3. The key below distinguishes the different groups of animals: W, X, Y and Z.

| | | |
|---|---|--------------------|
| 1 | (a) It has a pair of feelers longer than its legs. (b) It has a pair of feelers shorter than its legs. | Go to 2 Go to 3 |
| 2 | (a) It has 3 body parts. (b) Its body is divided into many segments. | W X |
| 3 | (a) It has two pairs of wings. (b) It does not have a pair of wings. | Y Z |

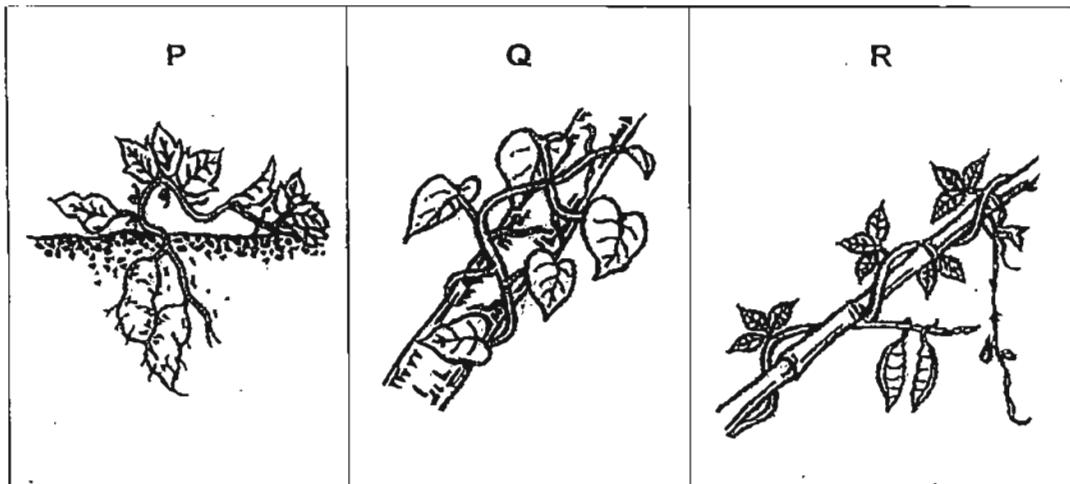
Ravi was given the animal as shown below.



Using the key above, which one of the animals is it?

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

4. The diagrams below show how plants P, Q and R grow.



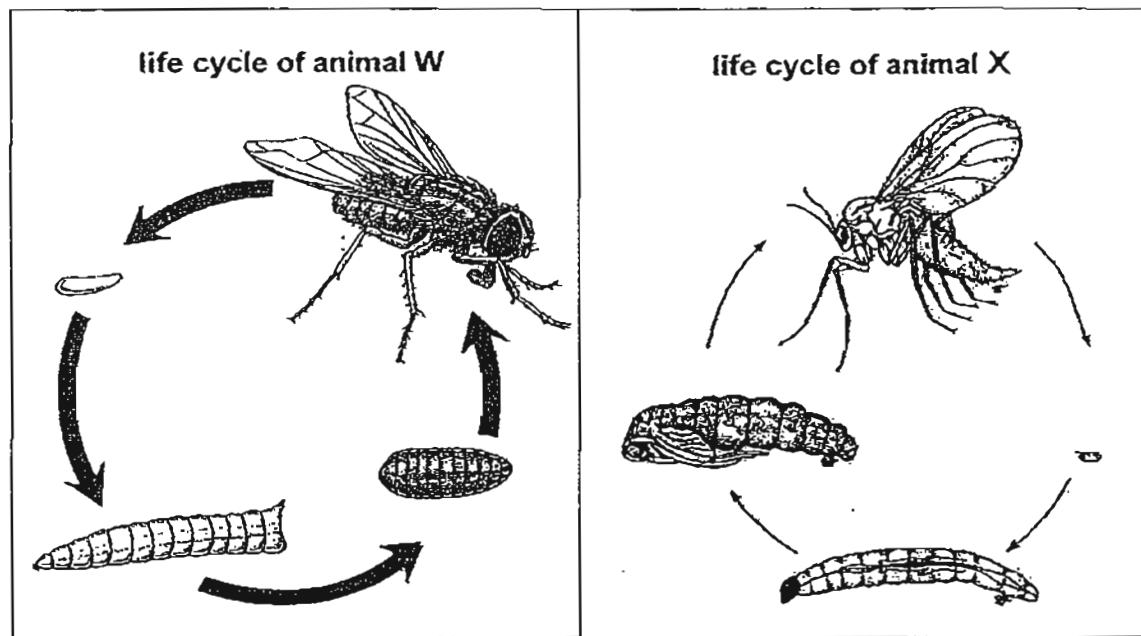
Which of these plants have weak stems?

5. Some organisms are classified into three groups, A, B and C, as shown below:

| group A | group B | group C |
|------------|-----------------|------------------|
| hydrilla | bracket fungus | moss |
| water lily | button mushroom | bird's nest fern |

Which of the following group(s) consist(s) of plants?

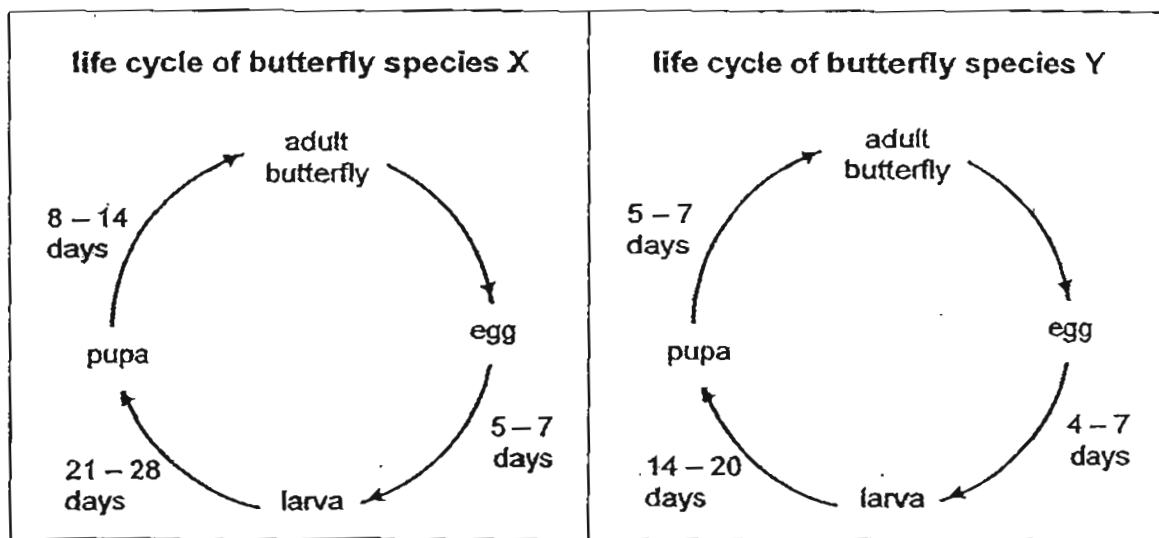
6. The diagrams below show the stages in the life cycles of two different types of animals, W and X.



Based on the information above, which one of the following statements about W and X is NOT correct?

- (1) Each of their larva develops into a pupa.
- (2) Both of these animals develop from eggs.
- (3) Both animals have four stages in their life cycles.
- (4) The young of both animals look like their parents. (4)

7. The diagrams below show the stages in the life cycles of two different species of butterflies, X and Y, living in the same area.

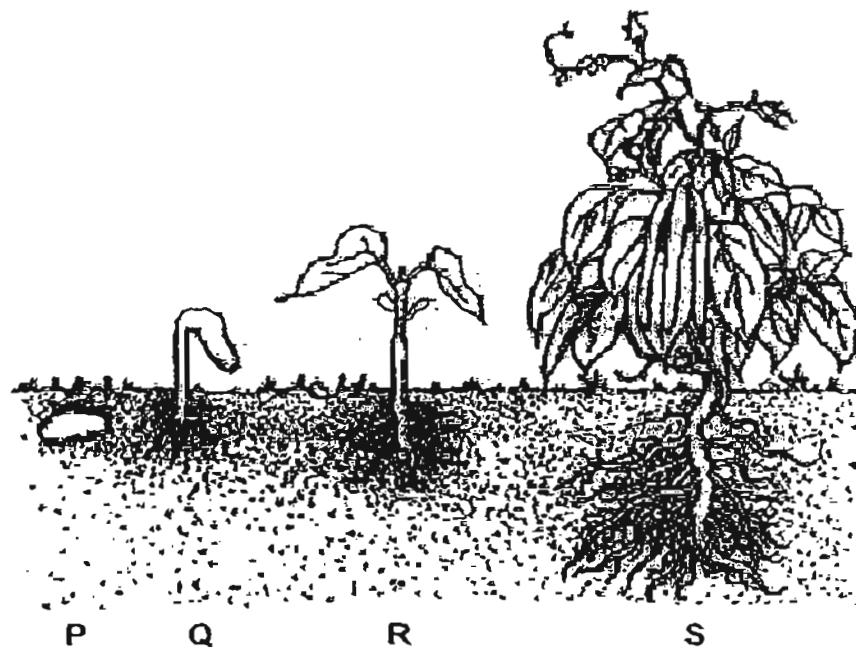


Daily temperature affects the rate at which butterflies grow from egg to adult. Butterflies are able to reproduce as soon as they emerge as adults. These butterflies do NOT reproduce in the colder months.

Based on the information above, which one of the following statements is most likely true?

- (1) Adult butterflies of species Y reproduce in colder months.
- (2) The adult butterfly of species X lives longer than the adult butterfly of species Y.
- (3) It takes a shorter time for the young of species Y than of species X to become an adult.
- (4) The larva of species Y takes a longer time than that of species X to develop into a pupa.

The diagram below shows the stages, P, Q, R and S, involved in the life cycle of a flowering plant.



Based on the information above, answer questions 8 and 9.

10. Pupils A, B, C and D made the following statements about the different systems of a human body:

- A : Our skull protects our brain.
- B : The circulatory system consists of the heart, blood and blood vessels.
- C : The respiratory system consists of the gullet, lungs and stomach.
- D : The skeletal system works together with the muscular system to enable body movements.

Which of these pupils made the correct statements?

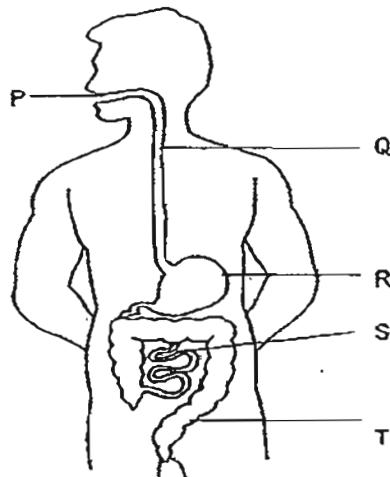
- (1) A and B only
- (2) A and C only
- (3) C and D only
- (4) A, B and D only

11. Which of the following are carried by blood?

- A water
- B oxygen
- C digested food
- D carbon dioxide

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

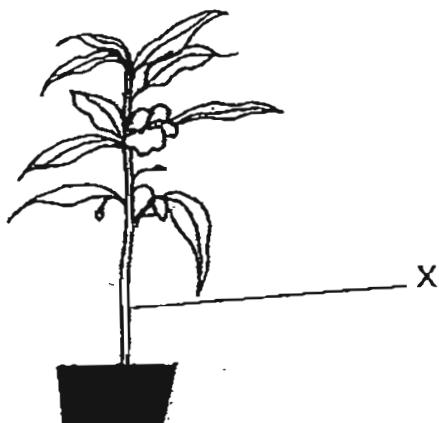
The diagram below shows parts of the digestive system of a man.



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

| Q | R | T |
|------------------------------|------------------------------|---------------------------|
| allows food to flow through | digestive juices are present | digested food is absorbed |
| digestive juices are present | water is being removed | digested food is absorbed |
| digested food is absorbed | digestive juices are present | water is being removed |
| allows food to flow through | digestive juices are present | water is being removed |

14. The flowering plant below shows one of its parts labelled X.

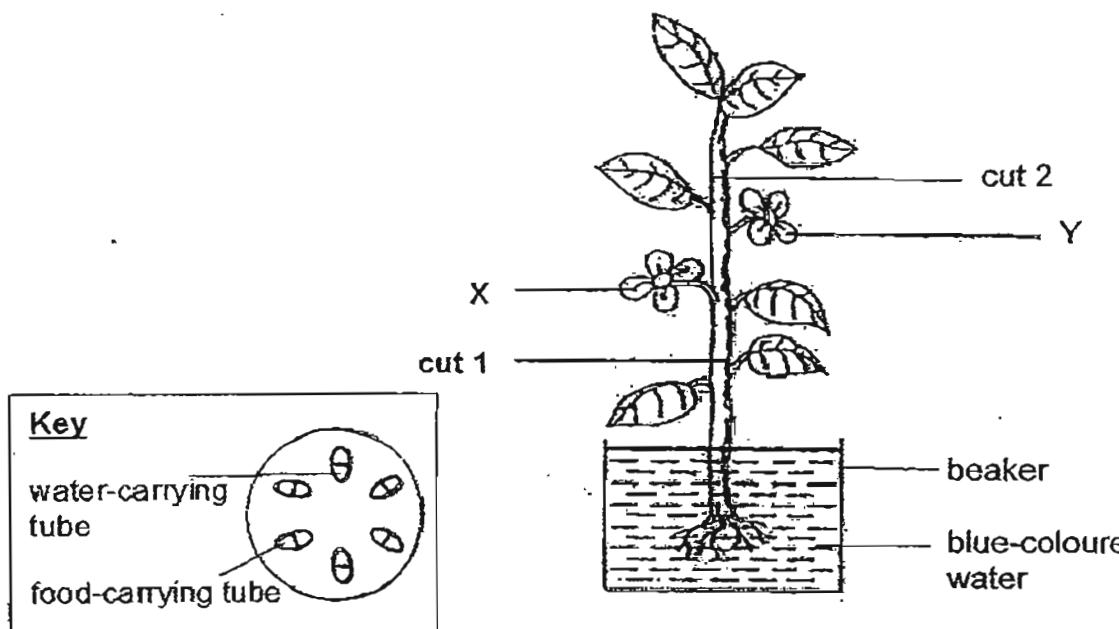


Which of the following is/ are function(s) of X?

- A carries food to the leaves
 - B carries water and mineral salts
 - C holds the plant firmly to the ground
 - D holds the plant upright to receive sunlight
-
- (1) A and C only
 - (2) A and D only
 - (3) B and D only
 - (4) A, B and D only

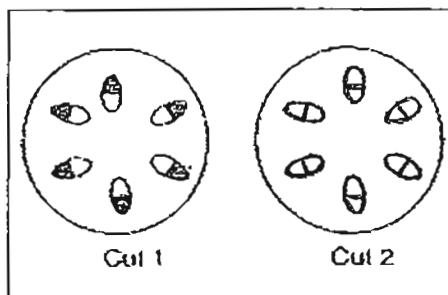
15. Li Ying placed a plant with two white flowers, X and Y, into a container containing blue-coloured water. After a short while, flower X had turned blue while flower Y remained white.

Li Ying made two cuts as shown in the diagram below.

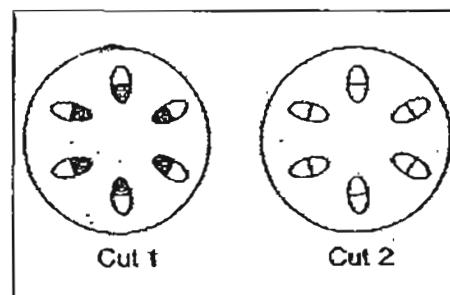


Which one of the following pairs shows the correct cross-sections of the stems Li Ying made at cuts 1 and 2 respectively?

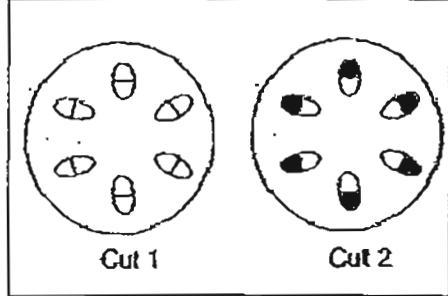
(1)



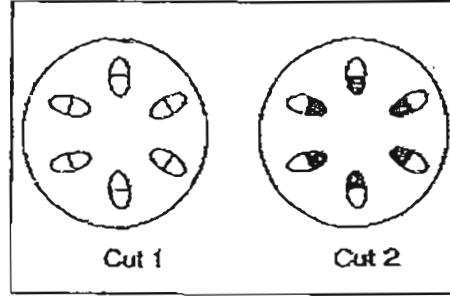
(2)



(3)



(4)



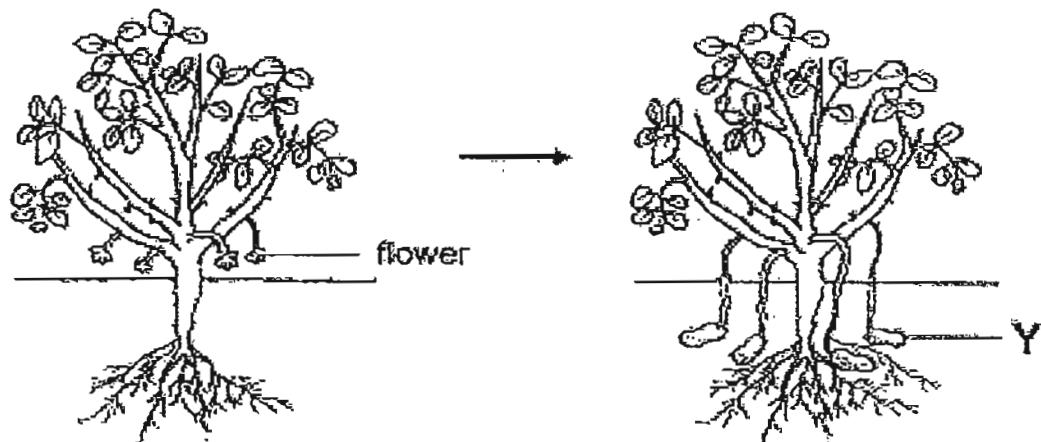
16. Rosalind wanted to find out what type of soil was suitable for growing plants of type P. She planted plants of similar size in each of these pots, X, Y and Z.

| pot | X | Y | Z |
|--|---------|---------|-------------|
| material of pot | plastic | plastic | plastic |
| type of soil | sand | clay | garden soil |
| amount of soil used (cm ³) | 750 | 800 | 500 |
| amount of water used everyday (cm ³) | 150 | 150 | 150 |

Why was Rosalind's experiment NOT a fair one?

- (1) The pots were made of the same material.
- (2) The amount of soil in each pot was different.
- (3) The type of soil used in each pot was different.
- (4) The three pots were given the same amount of water.

17. The diagrams below show the development of structure Y in a plant.



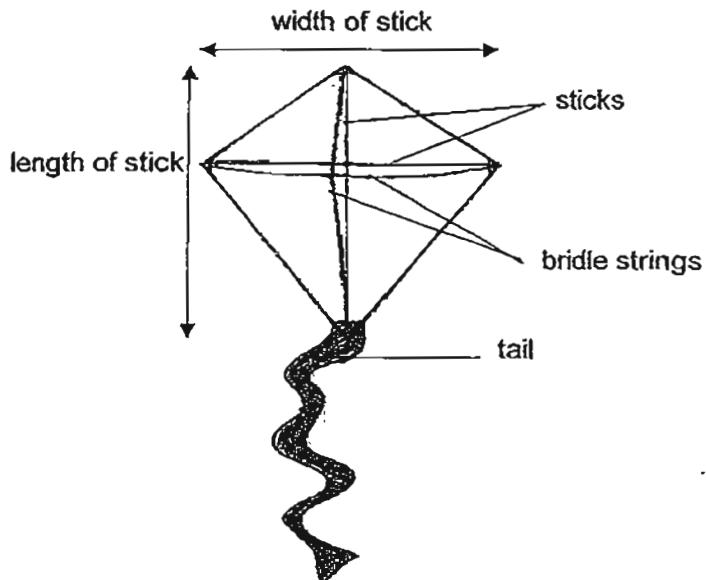
Which of the following statement(s) about Y is/ are correct?

- A It stores food.
- B It takes in water.
- C It can reproduce.

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

18. Tim made different kites of the same design and materials.

One of his kites is shown in the diagram below.



The table below shows the dimensions of the different kites which Tim made:

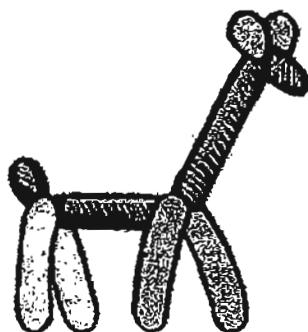
| kite | length of stick (cm) | width of stick (cm) | length of bridle string (cm) | length of tail (cm) |
|------|-------------------------|------------------------|------------------------------------|------------------------|
| 1 | 64 | 35 | 76 | 80 |
| 2 | 64 | 35 | 86 | 160 |
| 3 | 42 | 20 | 56 | 80 |
| 4 | 64 | 35 | 76 | 160 |
| 5 | 42 | 20 | 56 | 160 |

Tim wanted to find out if varying the length of the bridle string could affect how high the kite could fly.

Which pair of kites should Tim use?

- (1) kites 1 and 2 (2) kites 2 and 3
(3) kites 2 and 4 (4) kites 3 and 5

19. Bozo blew air into his long balloon. He then twisted and turned the inflated balloon to form a shape of an animal as shown in the diagram below.

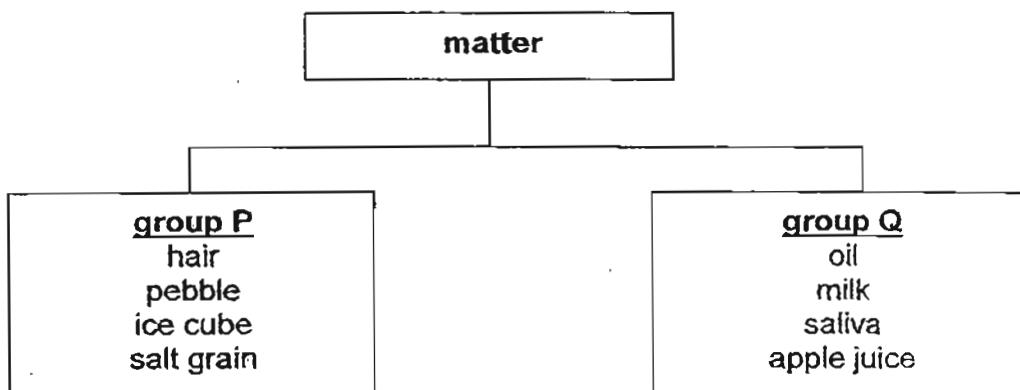


Which of the following property / properties of air allowed Bozo to create the shape of an animal out of his inflated balloon?

- A Air has mass.
- B Air occupies space.
- C Air has no definite shape.

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

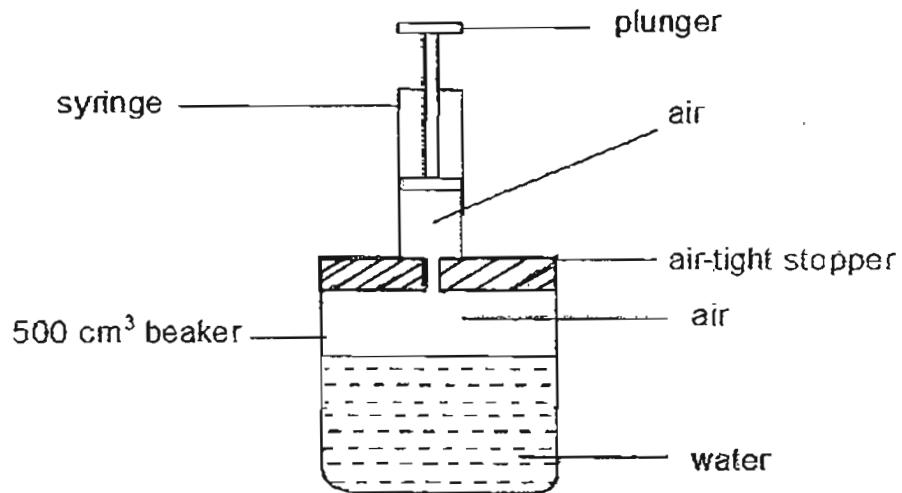
20. The matter below are classified according to their common properties.



Based on the classification above, which of the following property / properties is / are common for both groups P and Q?

- A have mass
 - B occupy space
 - C can be compressed
 - D have a definite shape
-
- (1) B only
 - (2) A and B only
 - (3) C and D only
 - (4) A, C and D only

21. Carl filled a 500 cm^3 beaker with 200 cm^3 of water. A 100 cm^3 syringe filled with air was inserted into the air-tight stopper as shown below.

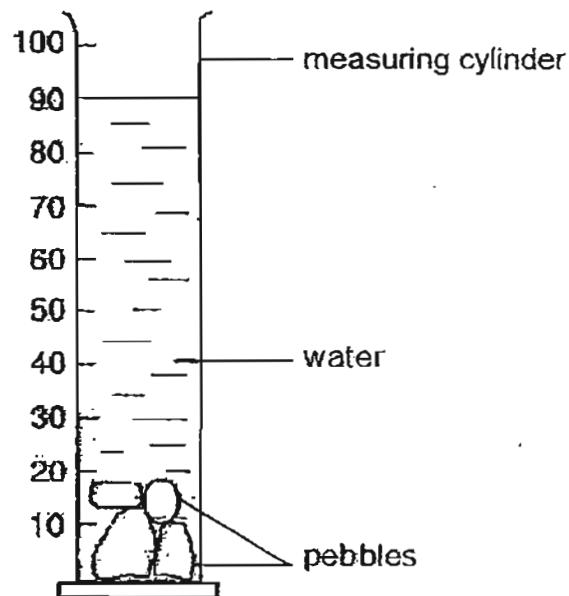


Carl pushed in the plunger of the syringe, allowing all the 100 cm^3 of air into the beaker.

What would be the final volume of air and water in the beaker?

| | volume of air / cm^3 | volume of water / cm^3 |
|-----|-------------------------------|---------------------------------|
| (1) | 200 | 300 |
| (2) | 250 | 250 |
| (3) | 300 | 200 |
| (4) | 300 | 300 |

22. Raj filled a measuring cylinder with 20 cm^3 of water. He then dropped four pebbles, P, Q, R and S, one at a time into the cylinder. He measured and recorded the water level after he had dropped each pebble of a different size.

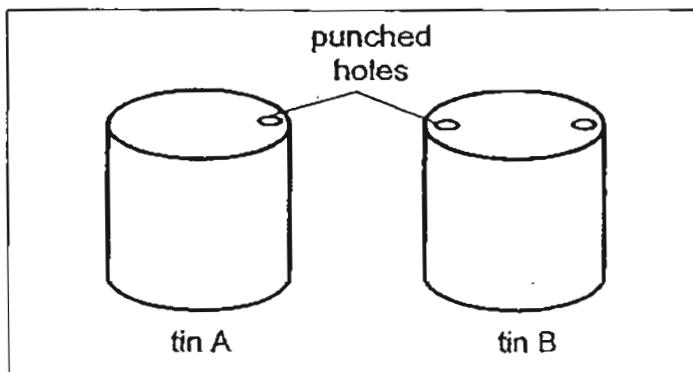


| content(s) in measuring cylinder | water level (cm^3) |
|----------------------------------|-------------------------------|
| P + water | 35 |
| P + Q + water | 55 |
| P + Q + R + water | 60 |
| P + Q + R + S + water | 90 |

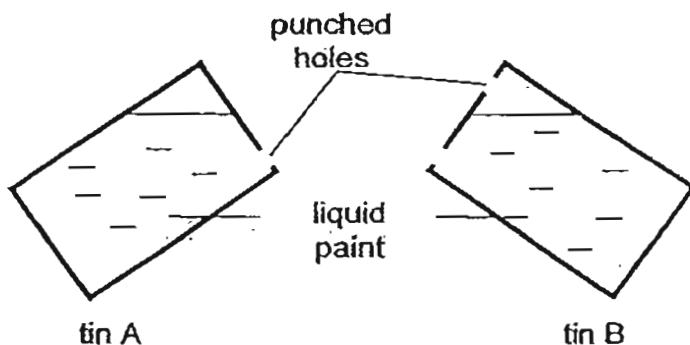
Which one of the following shows the correct order of the size of the pebbles?

- | increasing size
→ | |
|----------------------|------------|
| (1) | P, S, R, Q |
| (2) | Q, R, S, P |
| (3) | R, P, Q, S |
| (4) | S, P, Q, R |

Aini wanted to pour out liquid paint from two identical tins, A and B. She punched one hole through tin A and two holes through tin B as shown in the diagram below.



She then tilted both tins A and B at the same angle to pour out the liquid paint as shown below.



Based on the information above, answer questions 23 and 24.

23. Which of the following would likely happen?
- (1) Only liquid paint from tin A would flow out.
 - (2) No liquid paint would flow out from both tins A and B.
 - (3) Liquid paint from tin A would flow out as quickly as liquid paint from tin B.
 - (4) Liquid paint from tin B would flow out more quickly than liquid paint from tin A.

to be continued on the next page

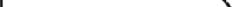
25. A bar magnet is broken into two pieces as shown below.



Which one of the following diagrams shows the correct labelling of the ends of the broken pieces of bar magnet?

- (1)  

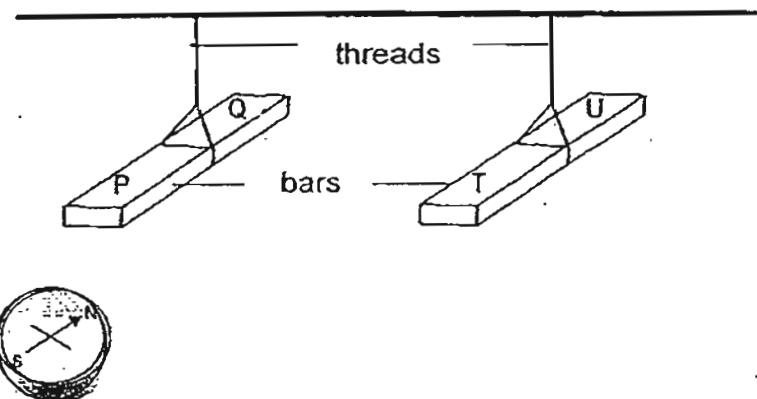
(2)  

(3)  

(4)  

26. A metal bar PQ, hung by a thread, was allowed to spin freely. Each time bar PQ came to rest, one end of the bar, Q, would point to the North as shown in the diagram below.

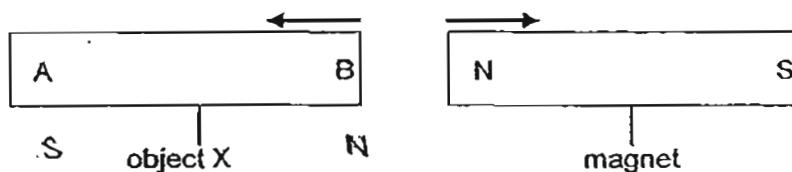
Another metal bar TU came to rest in a different direction each time after it was spun.



Which one of the following is definitely true about the ends of these bars?

- (1) P would attract T and U.
- (2) Q would attract T but repel U.
- (3) Both P and Q would attract T but repel U.
- (4) No attraction and repulsion would take place between P and T.

27. When object X was placed near a bar magnet, the two objects were pushed away from each other as shown below.

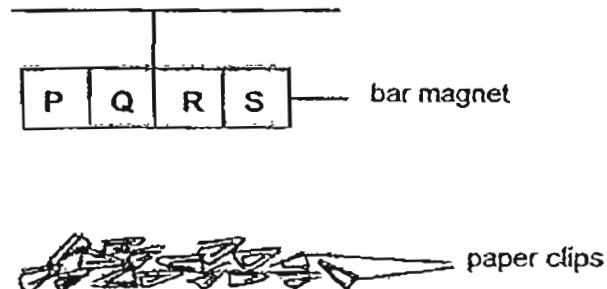


Which of the following statement(s) is/are true of object X?

- A Object X is a magnet.
 - B Object X is made from a non-magnetic material.
 - C S-pole of the magnet can be attracted to part A of object X.
 - D Part B of object X can be attracted to the S-pole of the magnet.
-
- (1) A only
 - (2) A and D only
 - (3) B and C only
 - (4) A, C and D only

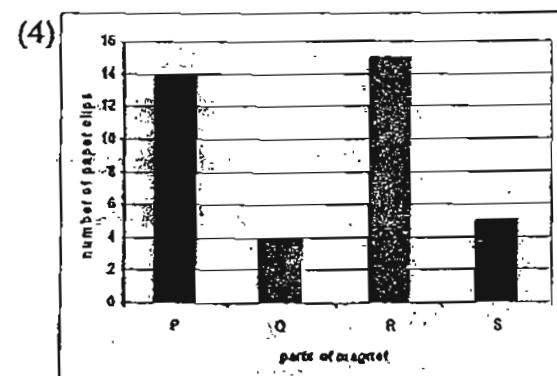
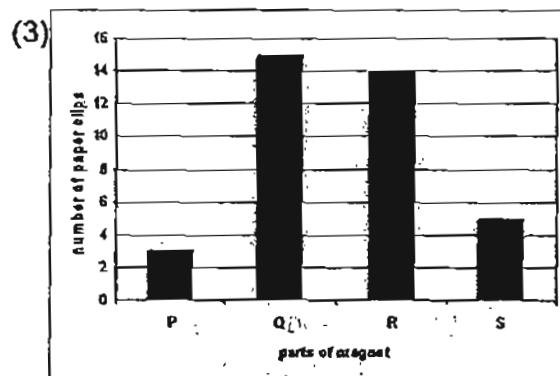
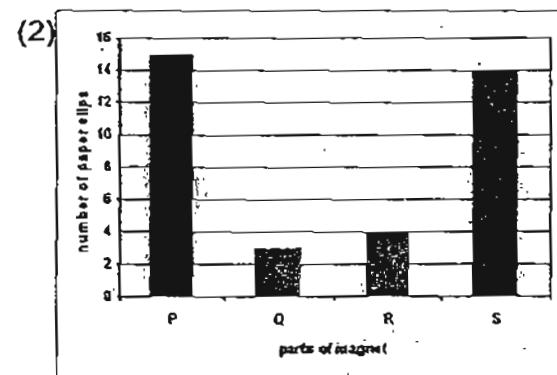
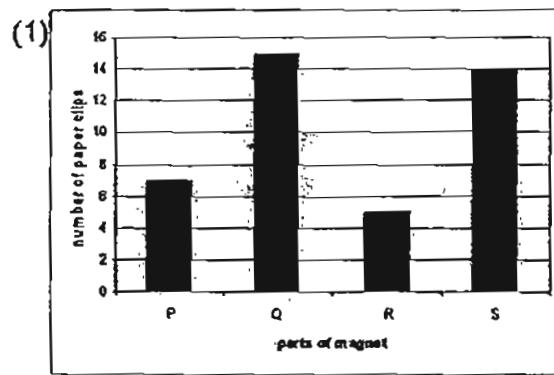
28. Julie marked P, Q, R and S on a strong bar magnet.

She hung the magnet above some paper clips as shown in the diagram below.

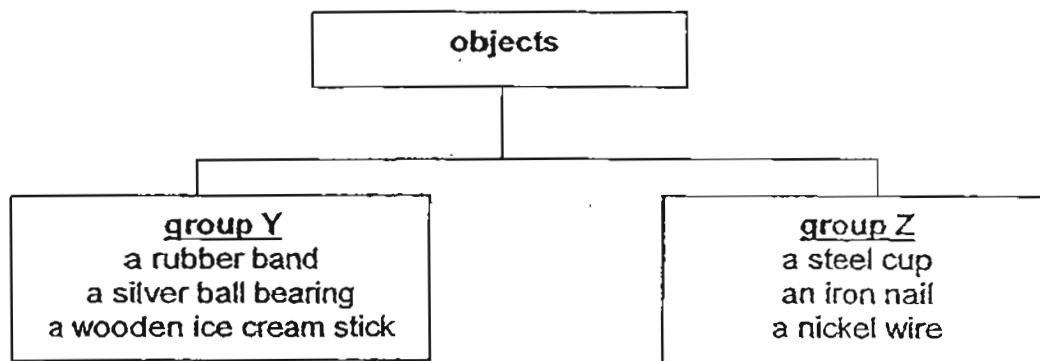


As Julie moved the bar magnet closer to the paper clips, she observed that a different number of paper clips were attracted to each part of the magnet.

Which one of the following graphs could possibly be drawn by Julie to show the results of her experiment?



29. The objects below are classified according to their common properties.



Based on the classification above, which of the following object(s) belong(s) to group Y ONLY?

- A a crayon
- B a gold bracelet
- C a styrofoam ball
- D a button magnet

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

30. Which of the following object(s) do/ does NOT use magnets to store information?

- A doorstop
- B cashcard
- C compass needle
- D compact disc (CD)

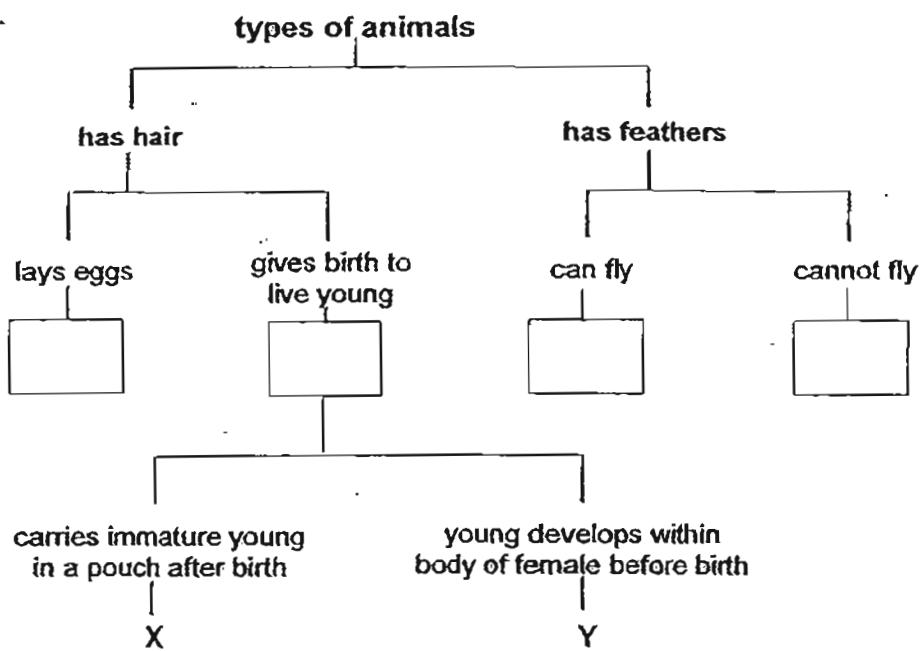
- (1) A only
- (2) A and C only
- (3) B and D only
- (4) B, C and D only

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 diagram below shows similarities and differences between some animals.



Based on the information above, answer the following questions:

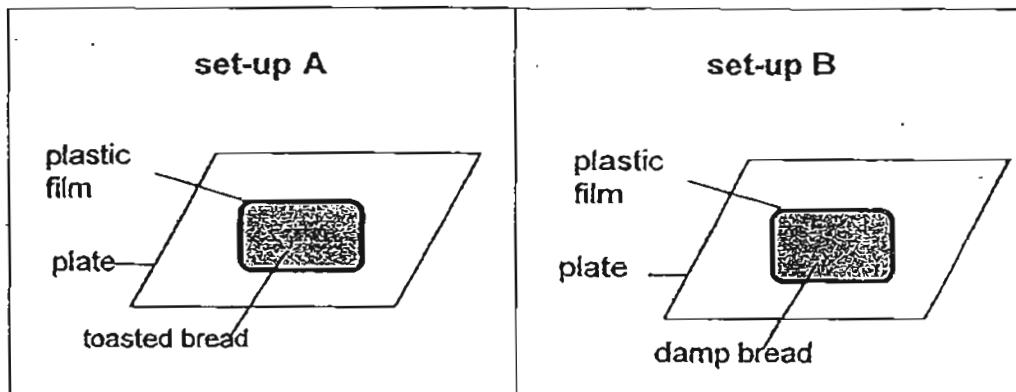
- (a) Write letter Z in the appropriate box to show the characteristic(s) of an eagle.

State its TWO characteristics. [3]

Both animals X and Y give birth to their young.

- (b) Name one OTHER common characteristic between both animals. [1]

32. Alexis took two pieces of bread from a loaf. She toasted one of them. Next, she wrapped each of them with a plastic film as shown in the two-set-ups, A and B, below.



Alexis placed these set-ups in the open air in the same place. After a week, she observed that mould was growing on the piece of bread of one of these set-ups.

Based on the information above, answer the following questions:

- (a) Give a reason why Alexis toasted the bread in set-up A. [1]

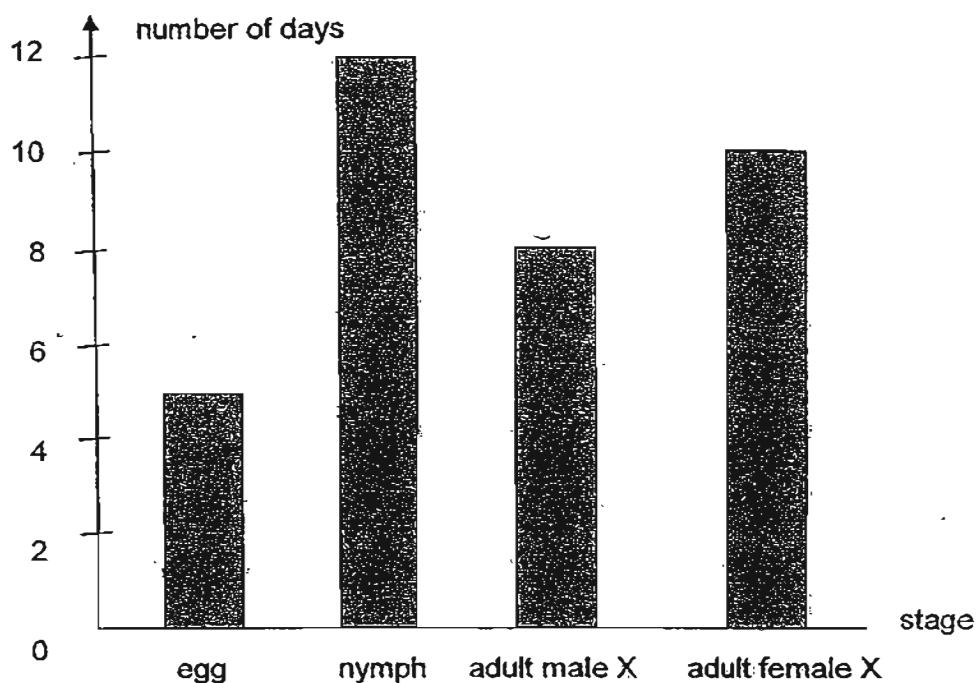
- (b) Name the set-up, A or B, in which mould was found to be growing.

State the condition which encouraged the growth of mould in the set-up mentioned. [1]

| set-up | condition which encouraged the growth of mould |
|--------|--|
| | |

- (c) State one OTHER characteristic which shows that mould is a living thing. [1]

33. The graph below shows the number of days at each stage in the life cycle of an organism X.



Based on the information above, answer the following questions:

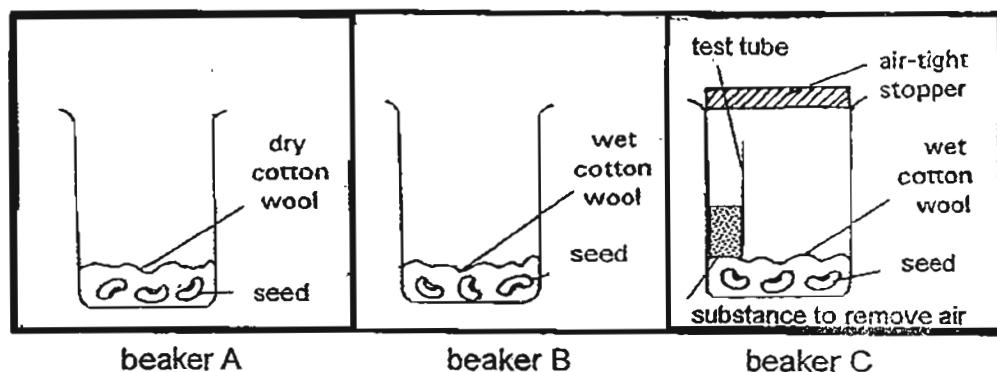
- (a) How many days does organism X take to become an adult after the egg is hatched? [1]

_____ days

- (b) DRAW and LABEL the life cycle of organism X in the given box below. Do NOT indicate the number of days at each stage. [1]

- (c) Name an organism which has the same stages as the life cycle of organism X. [1]

34. An equal number of seeds of the same type were placed in each of these identical beakers, A, B and C, as shown below.



All the beakers were left in a cupboard for a few days.

Based on the information above, answer the following questions:

- (a) In which of these beakers, A, B and/ or C, would the seeds NOT able to grow into seedlings?

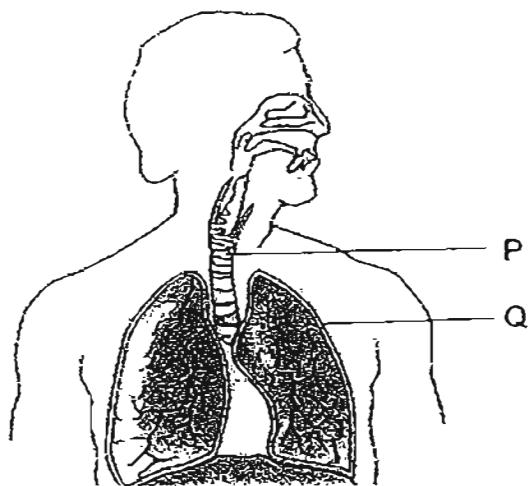
Give a reason for your answer.

[2]

- (b) State one **OTHER** variable which must be kept constant to ensure a fair test for this experiment.

[1]

35. The diagram below shows one of the body systems in a human.



- (a) Which one of these parts, P or Q, allows gaseous exchange to take place?

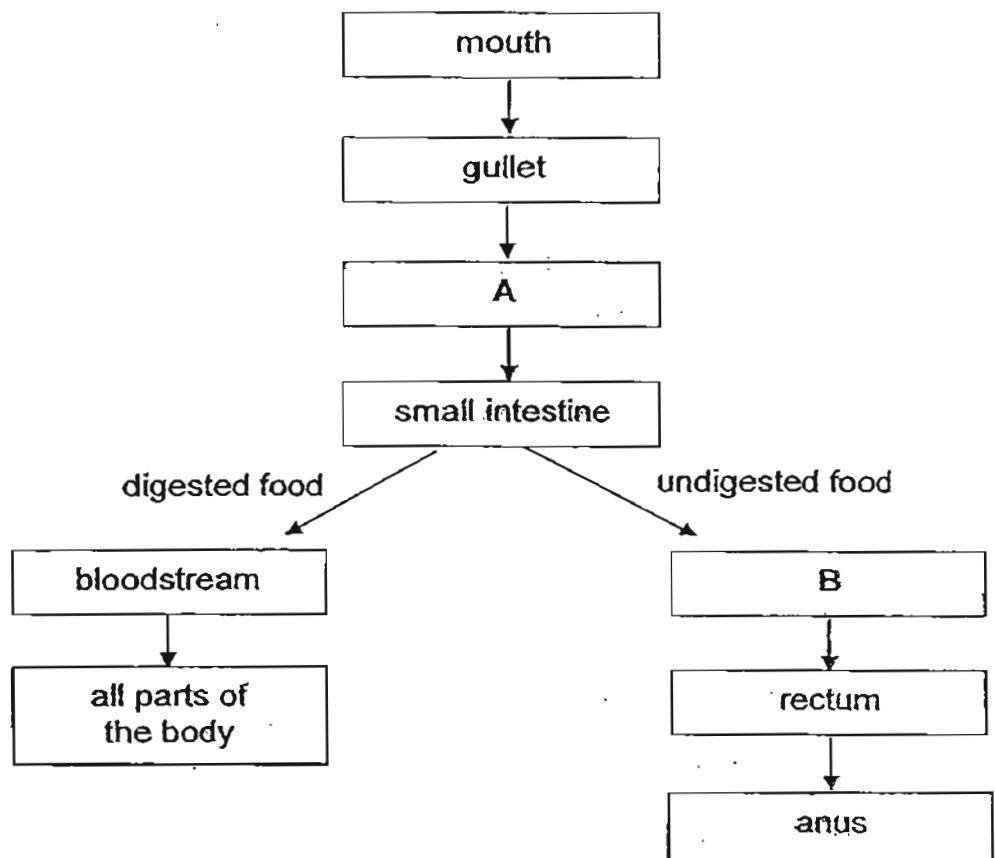
Write letter P or Q ONLY.

State the two main gases involved.

[2]

- (b) Name the part of the skeletal system which protects Q. [1]

36. The diagram below shows the direction in which food travels from one part to another in the body of a man.



Based on the diagram above, answer the following questions:

- (a) Name each of the following parts and state a function for each part: [2]

| part | function |
|------|----------|
| A | |
| B | |

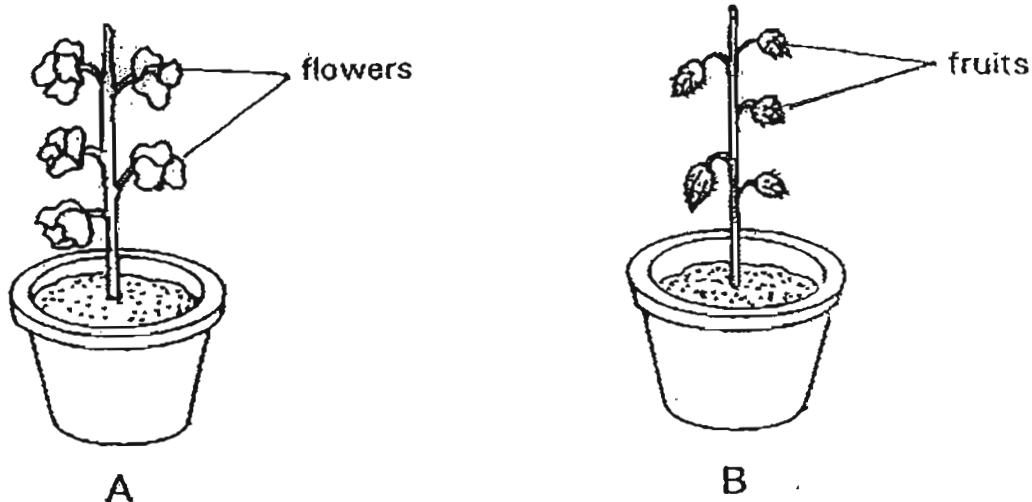
- (b) Name the part of the system where food is completely digested. [1]

| |
|--|
| |
| |

- (c) Name two body systems which work together in this diagram. [2]

| |
|--|
| |
| |

37. Fatimah cut off the leaves from 2 potted plants, A and B, of the same type and size. **ONLY** flowers of plant A and the fruits of plant B remained on the plants as shown in the diagrams below.



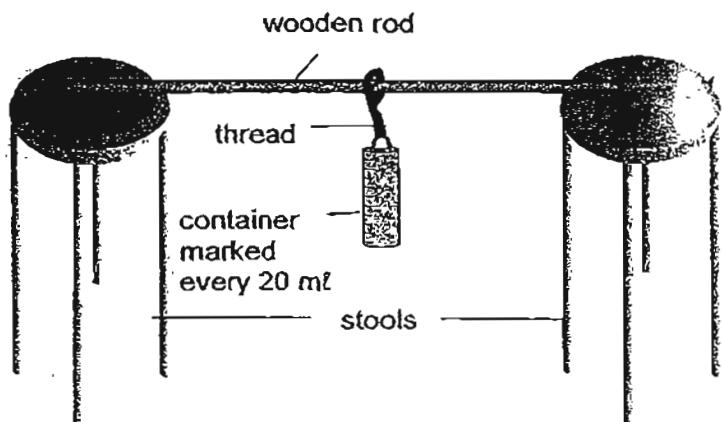
Fatimah left both potted plants in the garden and watered them daily.

- (a) Would any of these plants be able to survive after a few days?
Explain your answer. [1]

Some blue-dyed water was later used to water plant A.

- (b) State what would happen to the flowers on plant A.
Give a reason for your answer. [1]

38. Jin Lian used the following set-up to compare the strength of different types of threads, each made of a different material, W, X, Y and Z.



Using the same set-up with a different thread at a time, Jin Lian added water to the container slowly until the thread broke.

She recorded the greatest amount of water that was added to the container just before the thread broke in the table as shown below:

| material of thread | amount of water in the container (ml) |
|--------------------|---------------------------------------|
| W | 50 |
| X | 30 |
| Y | 70 |
| Z | 20 |

Based on the information above, answer the following questions:

- (a) Which one of these materials was the strongest?
Give a reason for your answer.

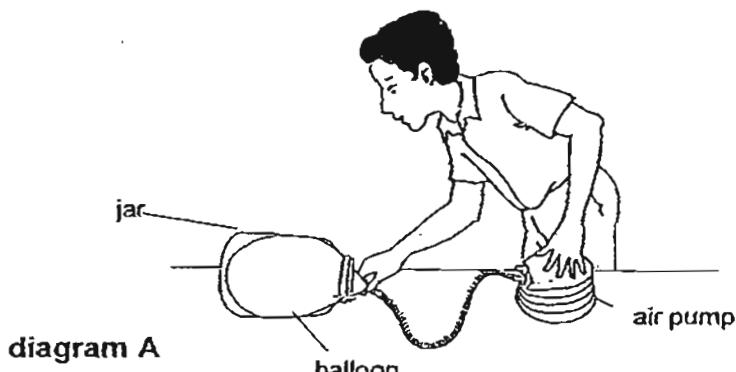
[1]

- (b) Name two variables which Jin Lian should keep the same in order to conduct a fair test for her experiment.

[2]

| | |
|------------|--|
| VARIABLE 1 | |
| VARIABLE 2 | |

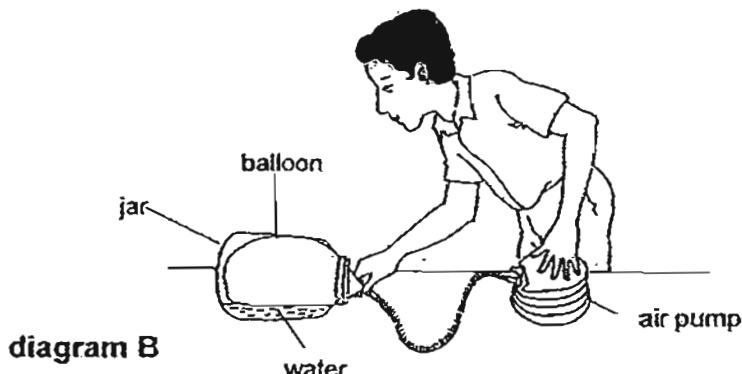
39. Mr Tan placed a deflated balloon into a jar and pumped air into the balloon as shown in **diagram A** below.



Mr Tan wanted the balloon to fill the jar completely. He continued to pump air into the balloon but he could NOT get the balloon to fill the entire jar.

- (a) Give a reason why the balloon could NOT fill the jar completely. [1]

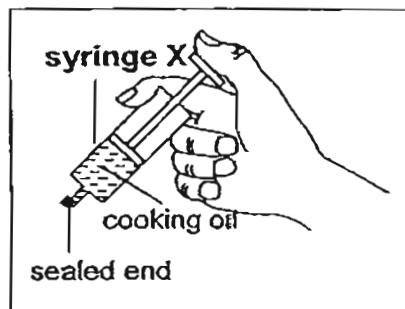
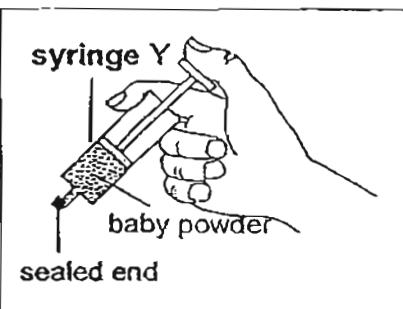
Mr Tan deflated the balloon and removed it from the jar. Then he filled the jar with some water. Using the same deflated balloon, Mr Tan placed it in the jar again and air was pumped into the balloon as shown in **diagram B**.



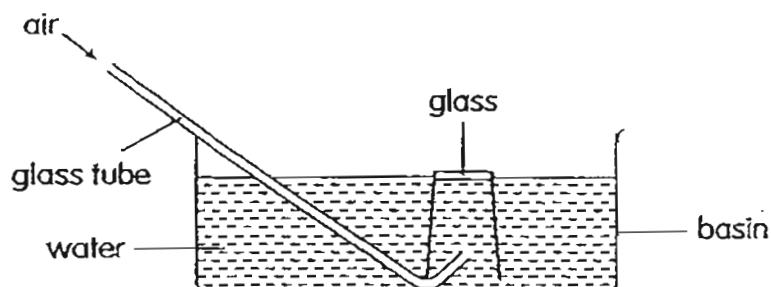
Mr Tan observed that the size of the balloon was not as big as the one that he had in **diagram A** above.

- (b) Explain why the balloon was not as big as the one in **diagram A**. [2]

40. Kate filled equal volumes of cooking oil and baby powder separately in two identical syringes, X and Y, with one of their ends sealed, as shown in the diagrams below. [2]

| |  |  |
|--|---|--|
| (a) Name the state of matter found in each syringe. | | |
| (b) Could the plunger be lowered in the syringe? Give a reason for your answer. | | |

41. June set up an experiment using the apparatus as shown below.

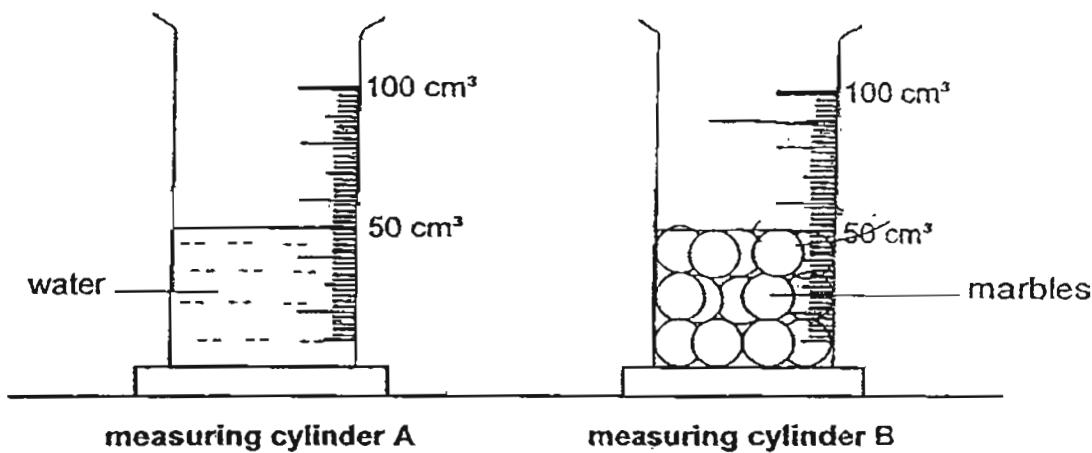


She blew into the glass tube.

List two observations which June would make as she blew into the glass tube.
[2]

| | |
|---------------|--|
| OBSERVATION 1 | |
| OBSERVATION 2 | |

42. Raj filled measuring cylinder A with 50 cm^3 of water. He filled another identical measuring cylinder B with marbles up to its 50 cm^3 mark as shown below.



Next, Raj poured 50 cm^3 of water from measuring cylinder A into measuring cylinder B.

DRAW the water level in measuring cylinder B to show the total volume occupied by both the marbles and water.

Give a reason for your answer.

[1]

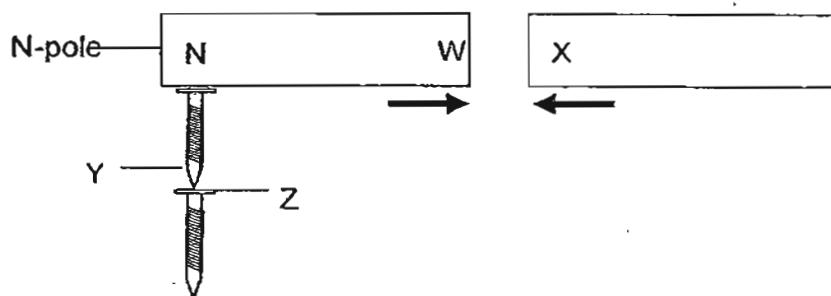
43. The diagrams below show four similar strong bar magnets of the same size moving in different directions when two different bar magnets were placed close to each other.

Two iron nails, with ends Y and Z, were temporarily magnetised.

Diagram 1



Diagram 2



Key

→ direction in which
the magnet moved

Write S-pole or N-pole for each of the following ends of the bar magnets/ iron nails:
[3]

T : _____

U : _____

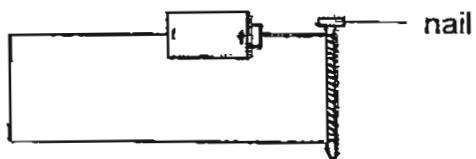
W : _____

X : _____

Y : _____

Z : _____

44. The diagram below shows an electromagnet.



- (a) Which of the following electromagnets is/ are stronger than the electromagnet shown above?

Put a tick (✓) in the correct box(es) and give a reason for each of your answers.
(Do NOT state the reason for the box(es) NOT ticked.) [2]

| set-up | Put your tick (✓) here | reason |
|--|------------------------------------|--------|
| A circuit diagram showing a battery and a switch connected in series with a nail-coated iron core. | | |
| A circuit diagram showing two batteries in series, followed by a switch, and then a nail-coated iron core. | | |
| A circuit diagram showing three batteries in series, followed by a switch, and then a nail-coated iron core. | | |

- (b) Suggest a suitable material of the nail. [1]

- END OF PAPER -

Setters: Ms Aishah, Ms Chong Jieqi, Mrs Sharon Seet



ANSWER SHEET

EXAM PAPER 2011

SCHOOL : RAFFLES GIRLS'
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA1



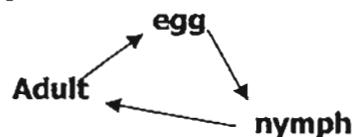
| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 |
|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 2 | 1 | 4 | 3 | 4 | 3 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 2 | 2 | 2 |

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

- 31)a)Birds have feathers. Birds can fly.
b)mammals have hair.

- 32)a)She toasted the bread in set-up A to confirm weather mould needs water to grow.
b)B. The moisture encouraged the growth of mould.
c)Mould can reproduce.

- 33)a)12 days.
b)



- c)The cockroach.

- 34)a)A and C. A does not have water to grow. C does not have air to grow.
b)Amount of cotton wool used in each beaker.

- 35)a)Q. Oxygen and carbon dioxide.
b)Ribcage.

- 36)a)A: Stomach / The food is mixed with the digestive juices to become mushy.
B: Large intestine / It absorb the water from the undigested food.
b)Small intestine.
c)Circulatory system and Digestive system.

37)a)No. The plant has no leaves to trap sunlight for photosynthesis, so it would eventually die.

b)The flowers on Plant A would turn blue. The stem transport the blue water to the flowers, that is why it turned blue.

38)a)Y. It can hold the most amount of water before the string breaker.

- b)1)The length of the string.
- 2)The way the thread is tied.

39)a)The air in the jar took up space, so the balloon could not fill the entire jar.

b)The water took up extra space in the jar so the air in the balloon would compress and squeeze through / lesser amount of air could fill the balloon to take up space in the jar.

40)a)liquid

No.

Liquid cannot be compressed

solid

No.

Solid cannot be compressed

41)1)Bubbles will be seen.

2)The water level in the glass will drop.

42)There is air space in between the marbles, so the water didn't reach up to 100cm³.

43)T: N-pole

W: S-pole

Y: N-pole

U: N-pole

X: N-pole

Z: N-pole

44)a)

| | | |
|--|---|---------------------------------------|
| | | |
| | | |
| | ✓ | The electromagnet has more batteries. |
| | ✓ | The electromagnet has more batteries |

b)Iron.