



ANGLO-CHINESE SCHOOL
(PRIMARY)

END-OF-YEAR EXAMINATION 2004

SCIENCE

BOOKLET A

Name: _____ ()

Class: Primary 5 _____

Date: 3th November 2004

Duration of paper: 1 h 45 min

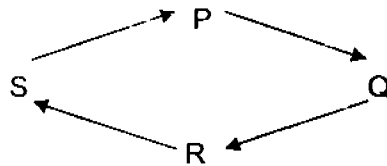
THIS BOOKLET CONTAINS 19 PAGES.
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FOLLOW ALL INSTRUCTIONS CAREFULLY.

PART I

For each of the following 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.

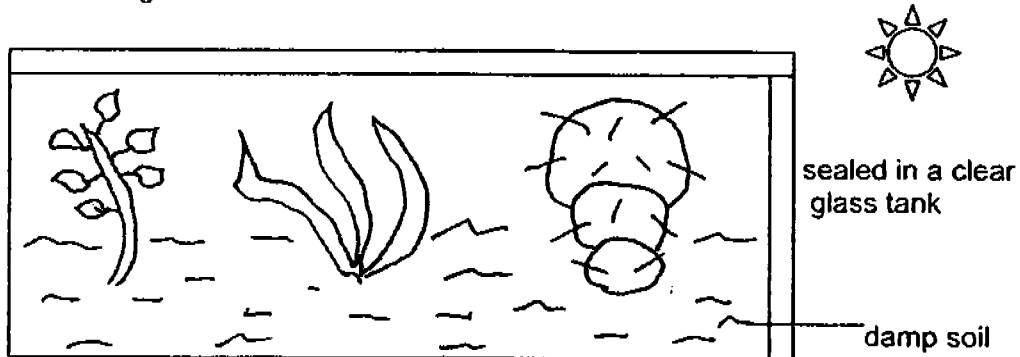
(30 x 2 marks)

- 1 Each letter in the diagram below represents a stage in the life cycle of a butterfly.



If P represents the stage of an adult butterfly, what stage does R represent?

- (1) egg
 - (2) pupal
 - (3) larval
 - (4) nymph
- 2 Dana decided to grow some plants in a terrarium. In the clear glass tank, she put a layer of damp soil and planted some green plants. Then she sealed the glass tank to make it air tight and left the tank in the sun.



After two weeks, she found the plants had survived and continued to grow. This is possibly due to the presence of _____ in the tank.

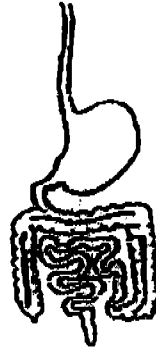
- A air
 - B water
 - C nutrients
 - D light
- (1) D only
 - (2) B and C only
 - (3) A, B and C only
 - (4) All of the above

- 3 Which one of the following figures correctly shows the position of our stomach and intestines?

(1)



(2)



(3)

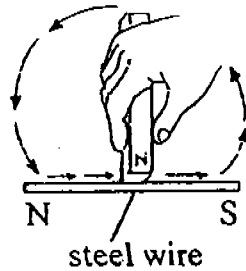


(4)

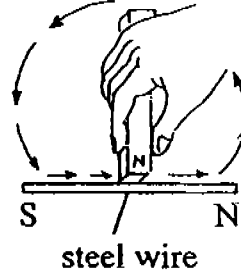


- 4 A steel wire can be made into a magnet by using the stroking method shown in each of the following diagrams. The arrows in each diagram indicate the direction of movement of the magnet.

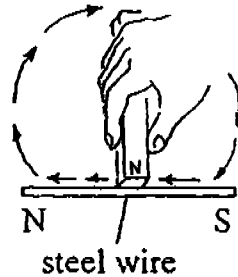
A



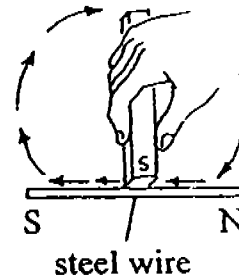
B



C



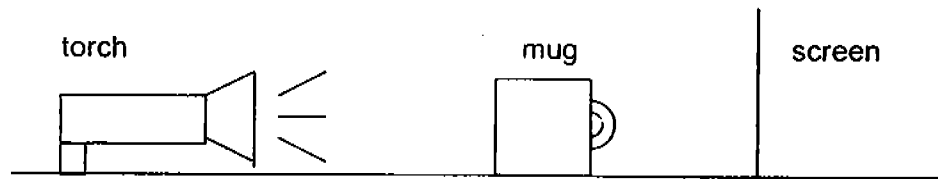
D



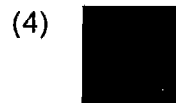
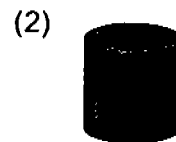
Which diagram **correctly** indicates the positions of the North and South poles of the steel wire?

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

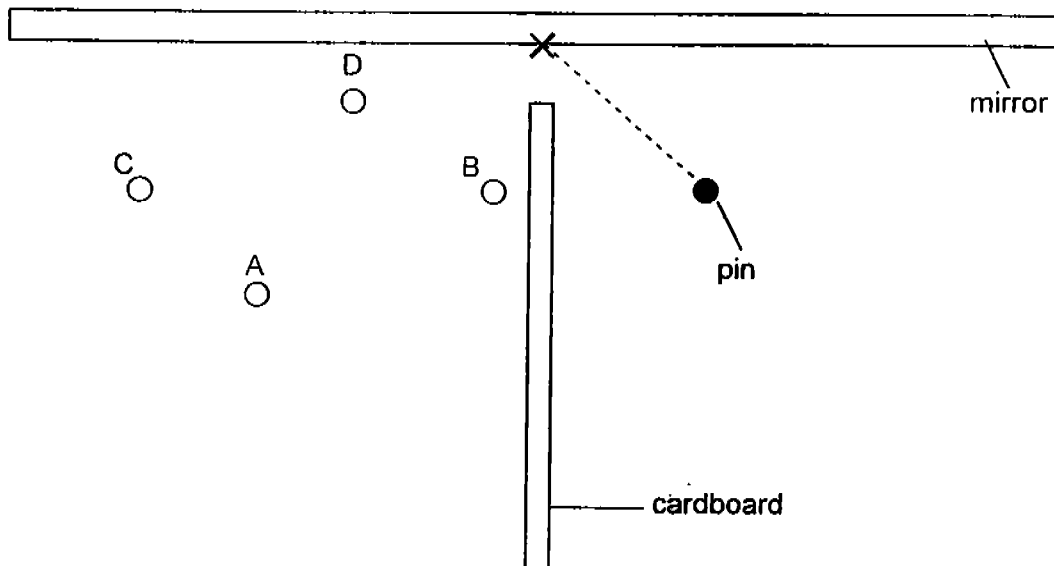
- 5 The diagram below shows a torch shining directly on a mug with its handle facing the screen. The mug is some distance from the screen in a dark room.



Which one of the diagrams below shows the shadow cast by the mug on the screen?

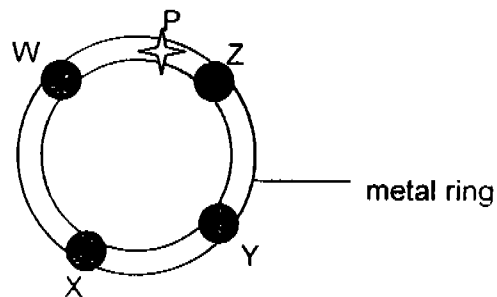


- 6 Muthu placed a box in front of a mirror and a piece of cardboard between the pin and him as shown in the diagram below.



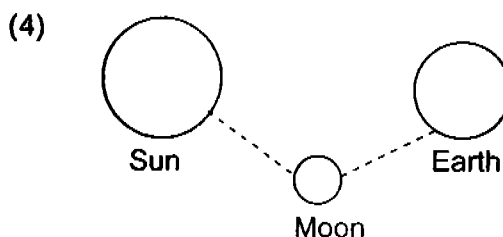
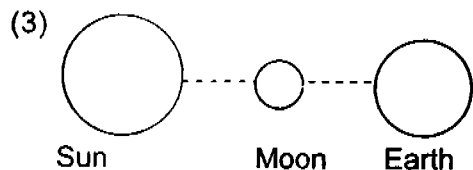
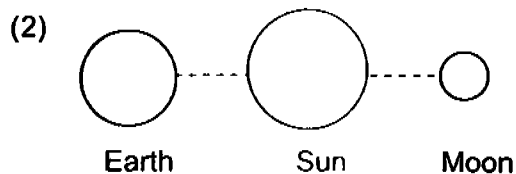
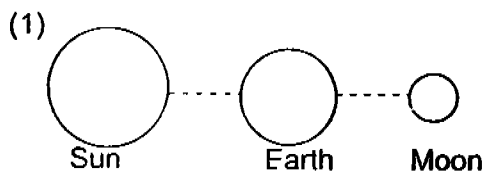
If Muthu could see the pin while staring at point X in the mirror, in which position, A, B, C or D, would he have been standing?

- (1) A
 - (2) B
 - (3) C
 - (4) D
- 7 Blobs of wax are placed in different positions, W, X, Y and Z, on a metal ring shown below. The ring is then heated at Point P. In what order will the wax melt, starting with the fastest?

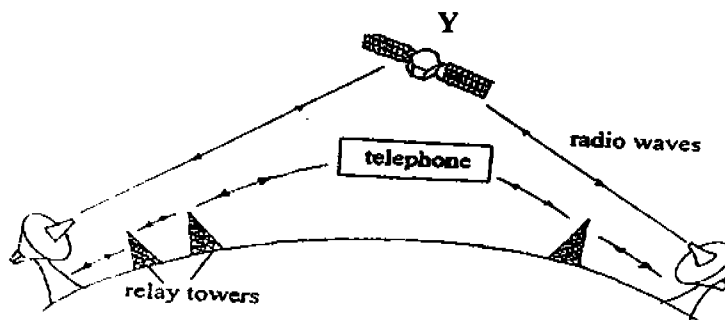


- (1) W, X, Y then Z
- (2) Z, W, Y then X
- (3) Z, Y, X then W
- (4) W, Z, Y then X

8 In which of the following arrangements will the Moon cast a shadow on the Earth?



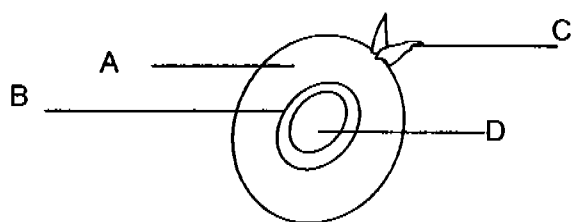
9 The diagram below shows an object, Y, which is used to relay telephone signals.



Which one of the following statements about object Y is true?

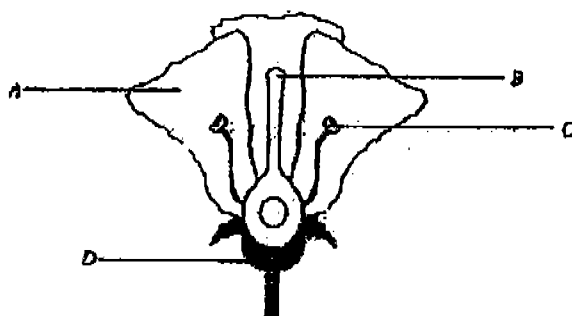
- (1) Object Y is constantly revolving around the Sun.
- (2) Object Y is constantly revolving around the Moon.
- (3) Object Y is constantly revolving around the Earth.
- (4) Object Y does not move at all.

- 10 The diagram below shows a coconut fruit.



Which part(s) of the fruit enable(s) it to float on water?

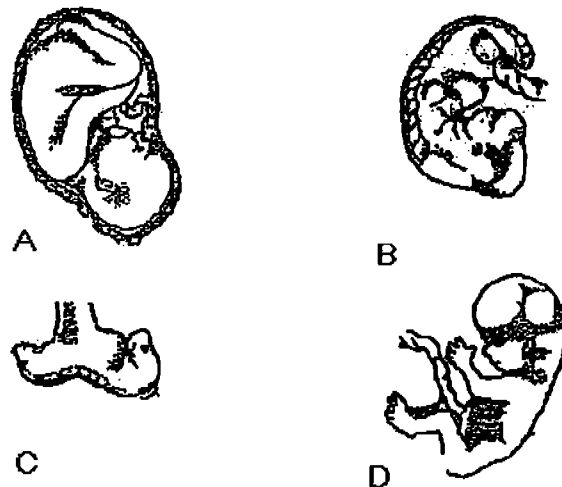
- (1) A only
 - (2) B and C only
 - (3) A and D only
 - (4) All of the above
- 11 The diagram below shows the cross-section of a flower.



Which parts, A, B, C or D, are directly involved in the sexual reproduction of plants?

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

- 12 The diagram below shows the different stages in the development of the human embryo.



What is the correct order of development?

- (1) B, C, D, A
 - (2) C, B, D, A
 - (3) B, C, A, D
 - (4) C, B, A, D
- 13 The diagram below shows a cut section of a lady's finger fruit.



Which part of a flower does X correspond to?

- (1) Ovule
- (2) Ovary
- (3) Stigma
- (4) Pollen Grain

- 14 The diagrams below show 4 different types of cells. Which one of the following is a plant cell?

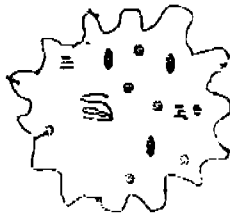
(1)



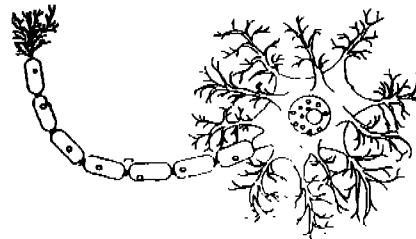
(2)



(3)



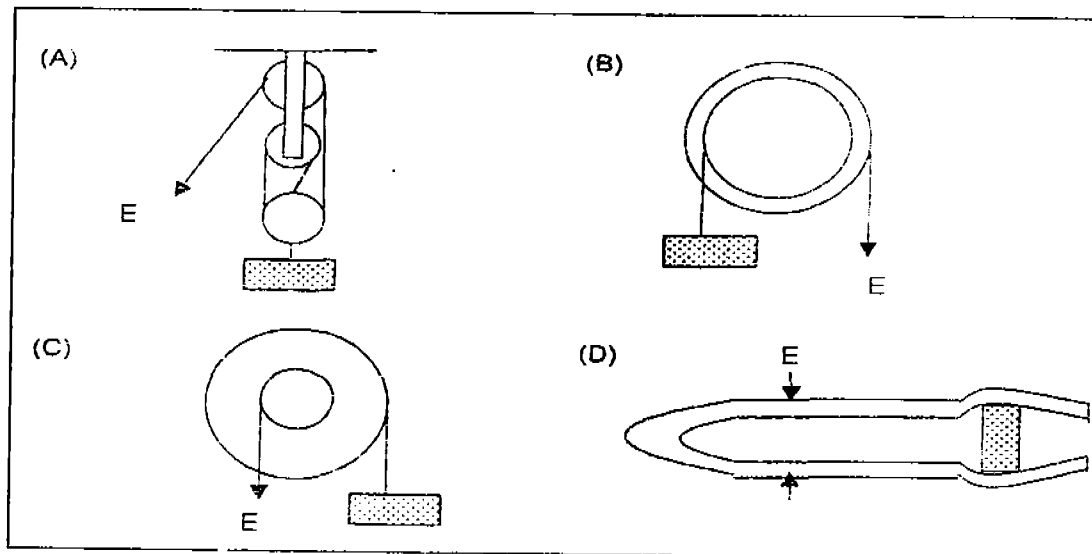
(4)



- 15 Which one of the following statements is **true** about sexual reproduction?

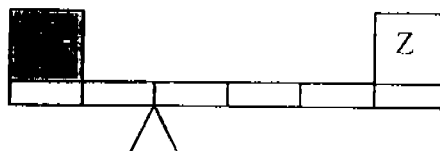
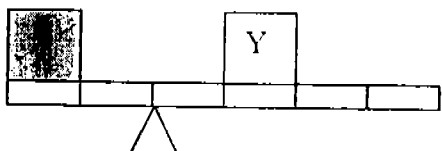
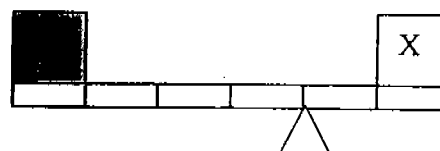
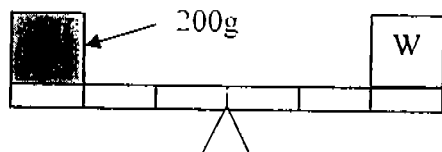
- (1) It only occurs in animal kingdom.
- (2) It does not involve the laying of eggs.
- (3) It ensures that the young are healthy.
- (4) It involves the male and female reproductive cells.

- 16 Which of the following machines both changes the direction of force and reduces effort?



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

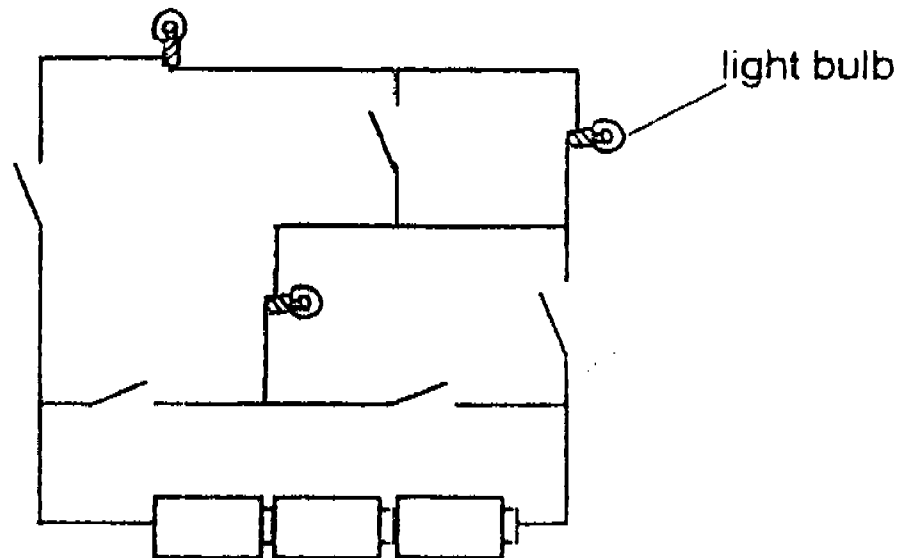
- 17 Four objects W, X, Y and Z were used to balance a 200g weight as shown below.



Which object is the lightest?

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

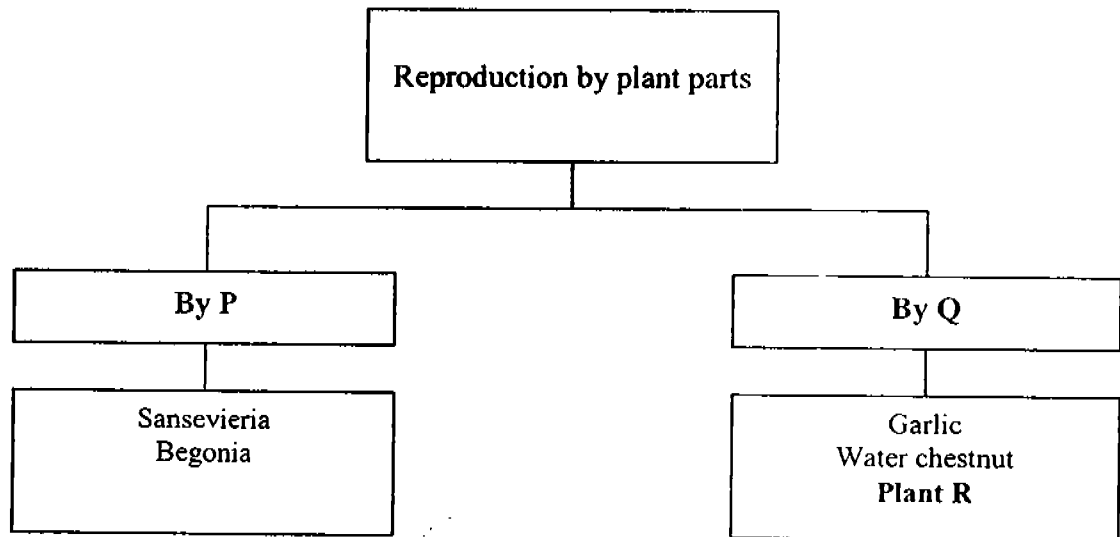
18 Study the circuit shown below.



What is the least number of switches that must be closed for all the bulbs to light up?

- (1) 1 switch only
- (2) 2 switches only
- (3) 3 switches only
- (4) 4 switches only

19 Study the classification table below.



Which of the following can be P, Q and R?

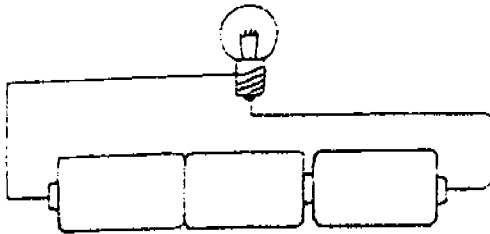
	P	Q	R
(1)	Leaves	Underground Stems	African Tulip
(2)	Roots	Leaves	Carrot
(3)	Suckers	Roots	Sweet potato
(4)	Leaves	Underground Stems	Ginger

20 The table below shows 4 groups of plants classified according to their methods of dispersal. Which of the following groups is wrongly classified?

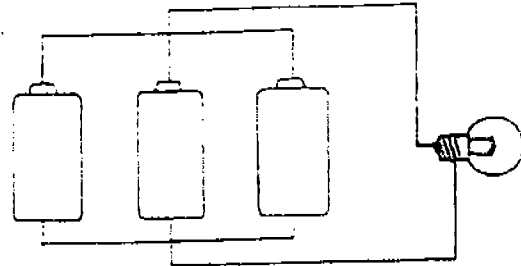
	Methods of dispersal	Plants
(1)	By Wind	Cupid's Shaving Brush, Vernonia, Angsana, Shorea
(2)	By Water	Pong Pong, Mangrove, Sea Almond, Coconut
(3)	By Splitting	Saga, Rubber, Flame of the Forest, Lady's Finger
(4)	By Animals	Papaya, Mimosa, Love Grass, Lallang

21. The 4 circuits shown below are set up using the same light bulb. In which of these circuits will the light bulb shine the brightest?

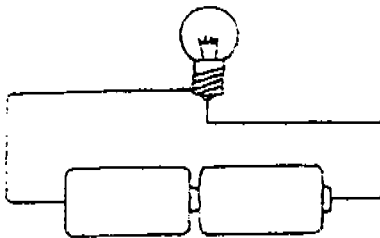
(1)



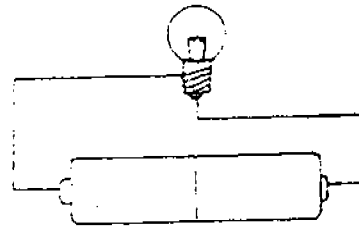
(2)



(3)



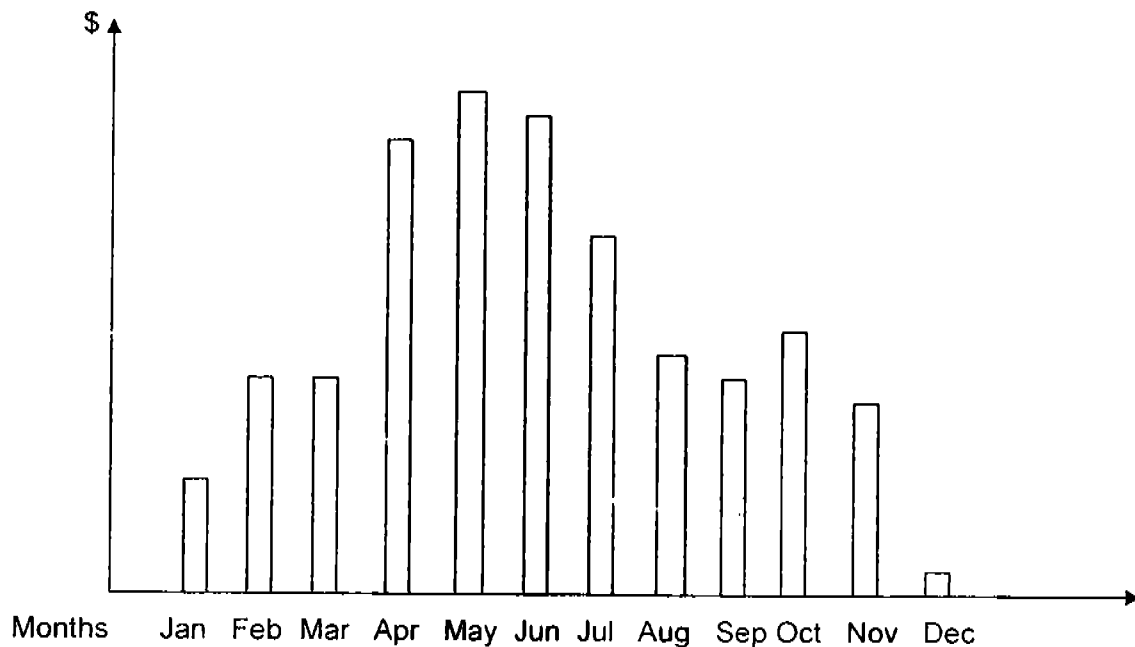
(4)



22. Which of the following does not make use of a pushing force?

- 1) A boy bouncing a ball
- 2) A child winding his toy
- 3) A lady stirring her coffee
- 4) A picture hanging on the wall

- 23 The graph below shows the electricity bill of a household in a year.



4 students made the following comments with regards to the data from the graph above:

Joel: The weather in the months of April, May and June could have caused the increased in the consumption of electricity

Mary: The family could have gone on vacation in the months of December and January.

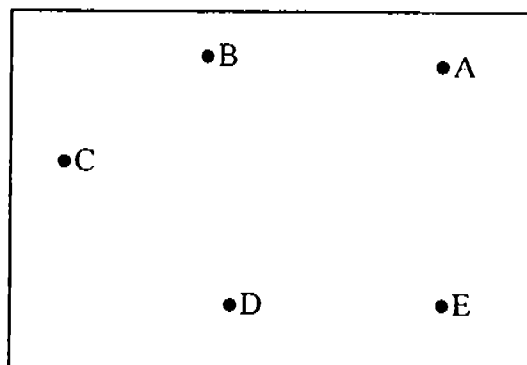
Vicky: The family does not use much electricity.

Leon: There are months when the consumption of electricity is constant.

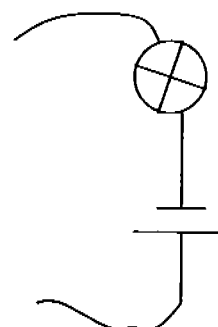
Whose comment is the least justifiable based on the information given in the graph?

- (1) Joel
- (2) Mary
- (3) Vicky
- (4) Leon

- 24 The diagram below shows a circuit tester and a circuit board.



Circuit Board



Circuit Tester

Raul connected the two ends of the circuit tester to different points on the circuit board. Each time he did so, he observed if the bulb would light up. His observations are recorded in the table below.

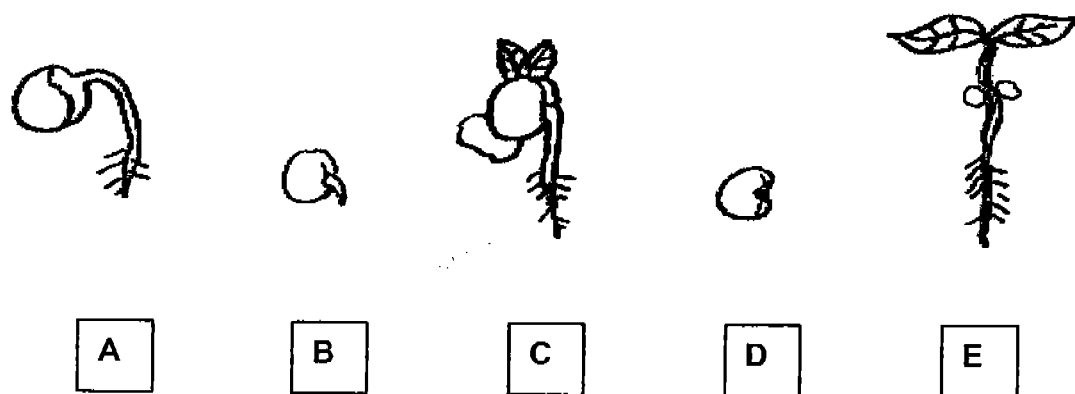
Tester connected to points	Did the bulb light up?
A to B	No
A to E	Yes
B to D	No
D to C	Yes
E to C	Yes

Summary
A-E
D-C

Raul then went on to make 4 predictions shown below. Which of his predictions is incorrect?

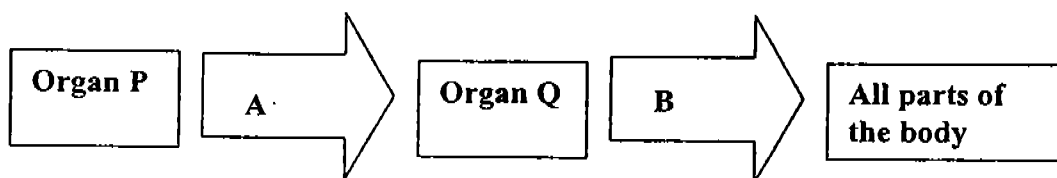
	Tester connected to points	Did the bulb light up?
1	A to C	Yes
2	E to B	No
3	D to A	Yes
4	E to D	No

- 25 The diagram below shows the different stages in the germination of a seed. The stages are not in order.



Which of the following statements about the stages shown above is correct?

- (1) At stage B and D, sunlight is required.
 - (2) At stage C, the seedling can make its own food
 - (3) At stage A, the plant begins to take in carbon dioxide
 - (4) At stage E, the seedling need not depend on its seedleaves for food
- 26 The diagram below shows a one directional flow of blood in our circulatory system.



Based on the diagram above, what do the letters P, A, Q and B represent?

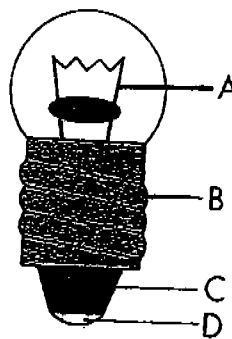
	P	A	Q	B
1	Heart	Blood rich in oxygen	Lungs	Blood rich in carbon dioxide
2	Lungs	Blood rich in oxygen	Heart	Blood rich in oxygen
3	Stomach	Blood rich in carbon dioxide	Heart	Blood rich in carbon dioxide
4	Lungs	Blood rich in carbon dioxide	Stomach	Blood rich in oxygen

27 Which of the following are transported by tubes in plants?

- (A) water
- (B) sunlight
- (C) food
- (D) nutrients

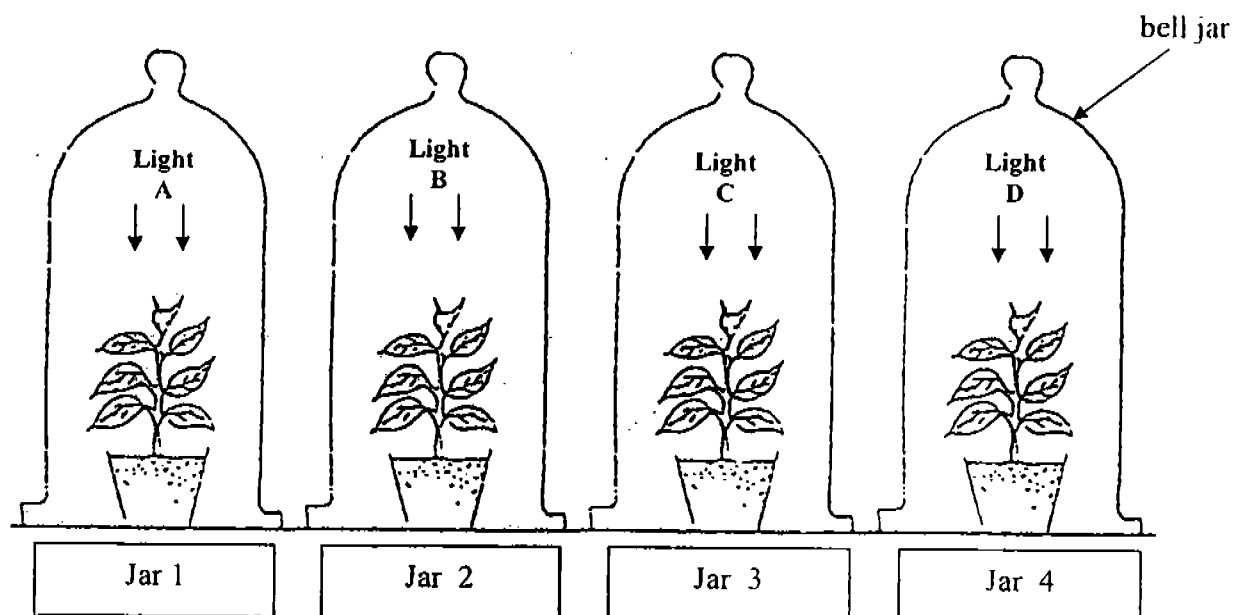
- (1) A only
- (2) C only
- (3) A, C and D only
- (4) All of the above

28 The diagram below shows a bulb. Which part of the bulb does not conduct electricity?



- 1. A
- 2. B
- 3. C
- 4. D

- 29 4 different coloured light bulbs (A, B, C and D) were used in an experiment shown below. The set-ups were left in a room for 24 hours. The percentage of carbon dioxide in the bell jars before and after the experiment were measured and recorded in the table below.

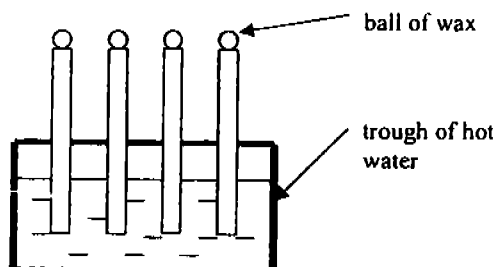


Jar	Light	Percentage of carbon dioxide before the experiment	Percentage of carbon dioxide after the experiment
1	A	0.03	0.025
2	B	0.03	0.035
3	C	0.03	0.01
4	D	0.03	0.02

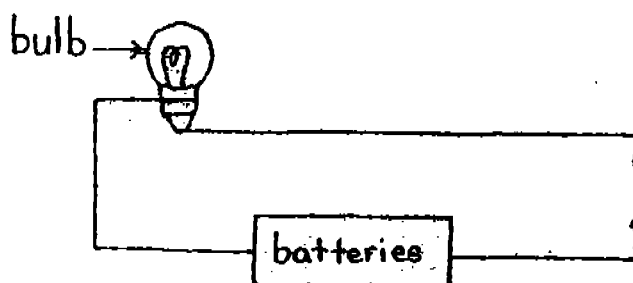
What is the aim of the experiment?

- (1) To find out if carbon dioxide is required when plants make food
- (2) To find out how the colours of light affect the rate at which plants make food
- (3) To find out how the amount of light affects the rate at which plants make food
- (4) To find out how the amount of carbon dioxide affects the rate at which plants make food

- 30 4 similar rods (W, K, R, Z), each with a ball of wax of similar size dripped on one end, were immersed into a trough of hot water as shown in the diagram below. The rods are similar in size but of different materials.



The time taken for the wax to melt completely for each rod is recorded. The rods were then removed and used to close a circuit as shown below. The brightness of the bulb is observed.



The table below shows the observations from the two activities.

Rod	Time taken for wax to melt completely (seconds)	Brightness of Bulb
W	90	Bright
K	60	Very bright
R	165	Not bright
Z	86	Bright

Based on the observations made, which of the following conclusions would be correct?

- (1) Rod R is a non-conductor of heat and electricity
- (2) All the rods are conductors of electricity but not heat
- (3) A good conductor of heat is a good conductor of electricity
- (4) A poor conductor of heat is a good conductor of electricity



ANGLO-CHINESE SCHOOL
(PRIMARY)

END-OF-YEAR EXAMINATION 2004

SCIENCE

BOOKLET B

Name: _____ ()

Class: Primary 5 _____

Date: 4th November 2004

Duration of paper: 1 h 45 min

Parent's Signature

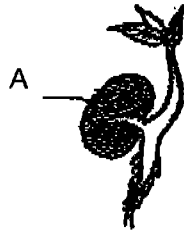
Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

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PART II

For questions 31 to 46, write your answers in this booklet. The number of marks available is shown in brackets [] at the end of each question or part question. (40 marks)

31



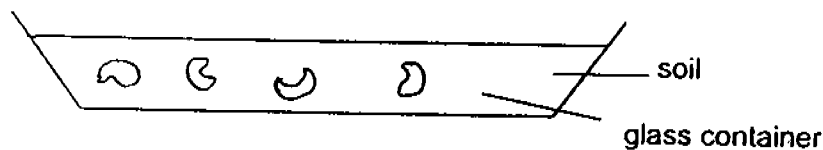
(a) Name the part labelled A.

[1]

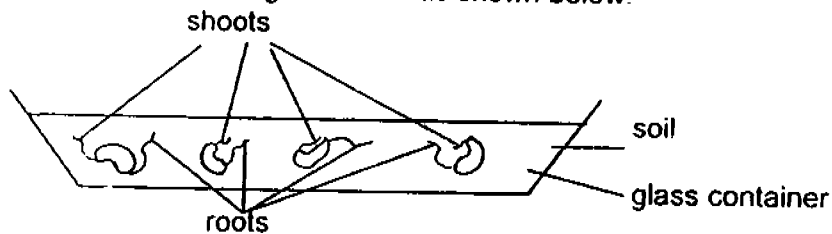
(b) State the function of A.

[1]

32 Lionel wants to find out if the position of a planted seed affects its germination. He puts 4 seeds in different positions in the glass container as shown below. These seeds are watered regularly and left near the window.



A few days later, the seeds germinated as shown below.



(a) Name one other variable which Lionel must keep constant for the experiment to be fair.

[1]

(b) What can you conclude from this experiment?

[1]

33 One day, Jane vomitted after eating a bowl of noodles from a roadside stall.

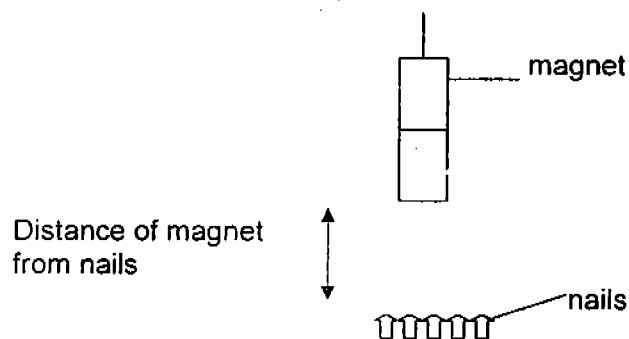
(a) Which part of the body does the vomit come from?

[1]

(b) Give a reason why the vomit left a sour taste in her mouth.

[1]

34 A girl hangs a magnet over some nails as shown in the diagram below. She wants to find out how the distance of the magnet from the nails affects the number of nails which it can attract.



The table below shows her findings as she increased the distance between the magnet and the nails.

Distance of magnet from nails (cm)	No. of nails attracted
10	20
20	15
30	10
40	5

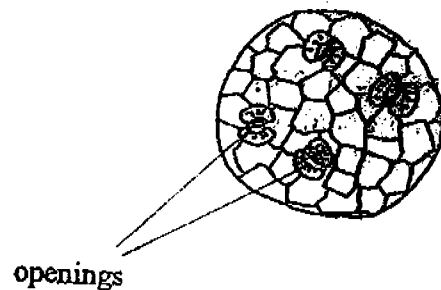
What can she conclude from this experiment?

[2]

- 35 Food and oxygen are transported from certain organs in our body to the heart. This is carried out by our blood. In the table below, state the respective organ where food and oxygen are transported from. [2]

Substance	Organ(s)
(a) Food	
(b) Oxygen	

- 36 The diagram below shows part of a plant part under a microscope.

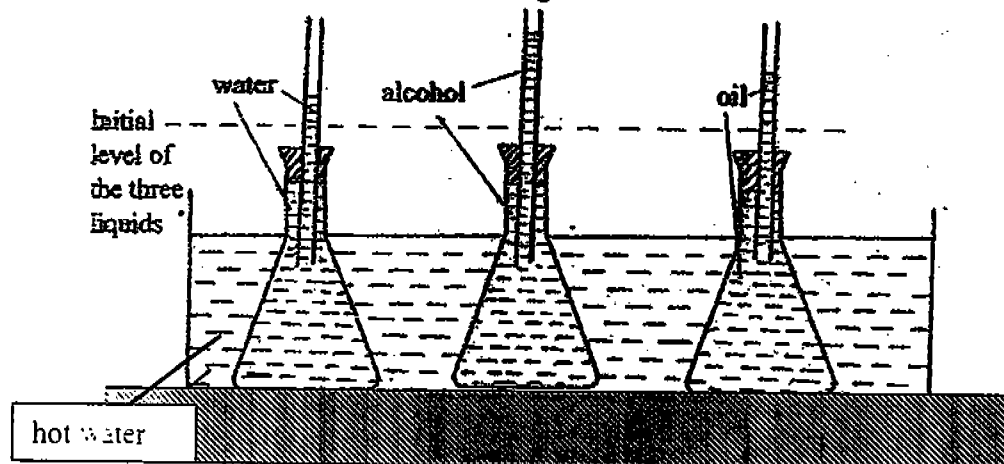


- (a) For most plants, where can these tiny openings be found? [1]

- (b) What is the function of these openings? [1]

- (c) Which organ in our body performs a similar function to that of these openings? [1]

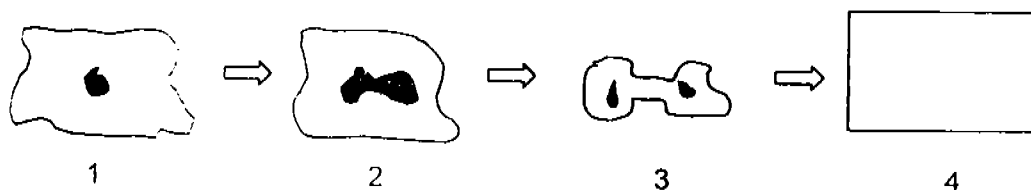
- 37 An experiment was set up using 3 identical flasks and capillary tubes. The flasks of different liquids were heated in a basin of hot water. The amount of liquid in all the three glass tubes was at the same level initially. However, upon heating, each liquid rose to a different level as shown in the diagram below.



- (a) What is the aim of the experiment? [1]

- (b) What can you conclude from this experiment? [1]

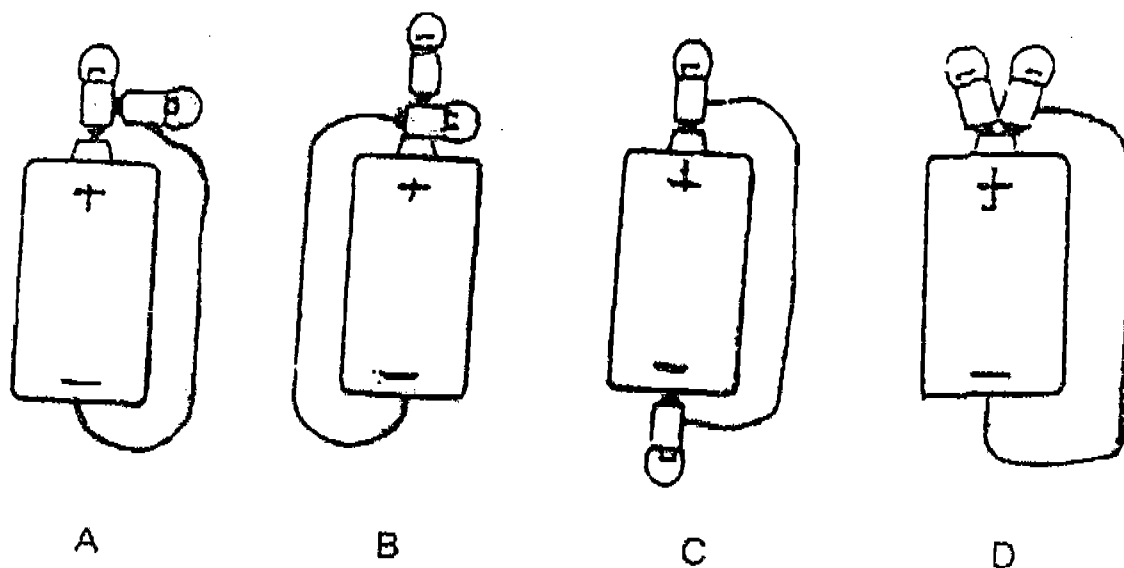
- 38 The diagram below shows the amoeba undergoing different stages of reproduction.



- (a) Complete the reproductive process by drawing stage 4 in the box provided. [1]

- (b) Name this method of reproduction. [1]

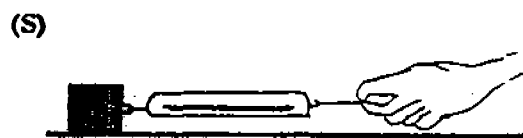
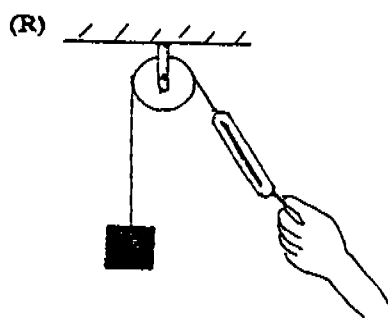
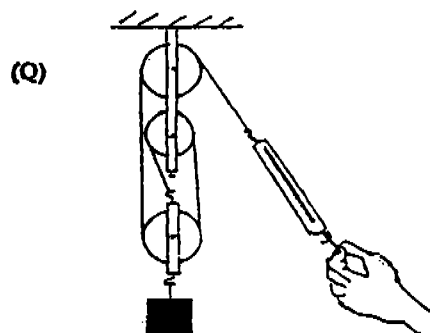
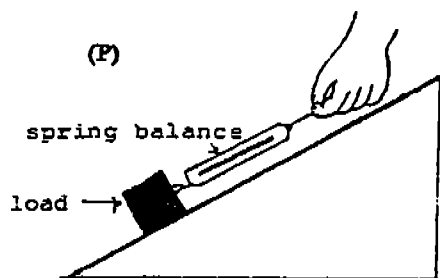
39 John sets up 4 electrical circuits A, B, C and D as shown below:



Study the circuits carefully. All the equipment used is in working condition. In the table given below, indicate the number of light bulbs that will light up in each set up by ticking the relevant boxes. [2]

Circuits	None of the light bulbs will light up	1 light bulb will light up	2 light bulbs will light up
A			
B			
C			
D			

- 40 The diagrams below show 4 different ways (P, Q R and S) a load of a given weight can be lifted.

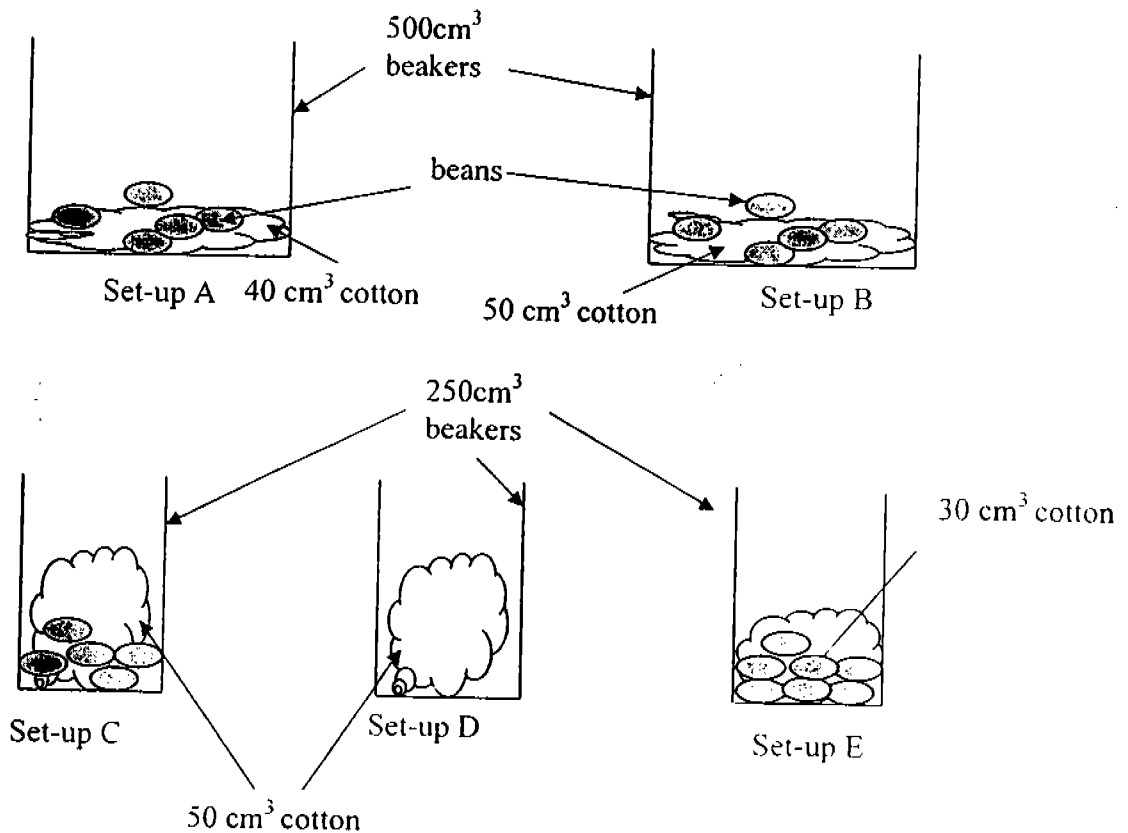


Based on the diagrams, a boy made 6 statements as shown in the table below. For each statement, indicate with a tick (✓) if it is True, False or Not Possible To Tell.

[3]

Statements	True	False	Not Possible To Tell
More effort is required to overcome the frictional force in S than in P			
The effort is greater than the load for P and S			
The effort moves through a longer distance than the load in Q compared to S			
The effort and load move in opposite directions for Q and R			
The effort required in R is greater than the effort required in S			
None of the set-ups speeds up work			

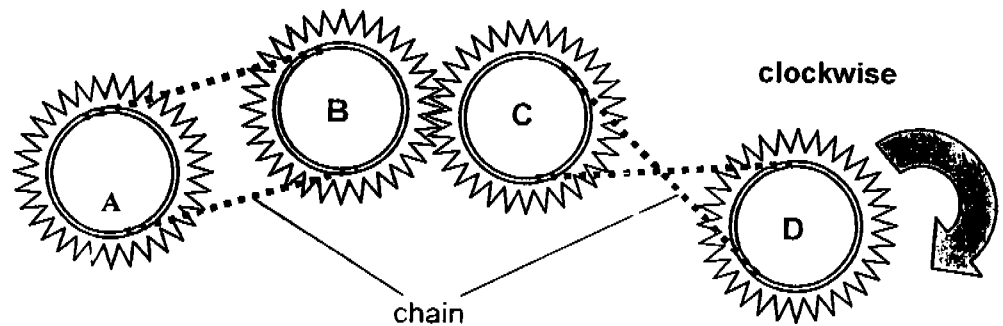
- 41 Peter wants to demonstrate the effects of overcrowding on the growth of plants. He is given 5 set-ups (A, B, C, D and E) to choose from for his experiment. Similar types of beans and cotton wool are used for each set-up. Each set-up is watered regularly.



- (a) For Peter to conduct a fair test, which 2 set-ups should he use? [1m]

- (b) Name two other variables he should keep constant. [2m]

- 42 The diagram below shows a series of 4 identical gears connected by 2 continuous chains.



- (a) If Gear D is being rotated in the direction as indicated, state the directions in which Gears C and A will rotate. [1]

Gear C: _____

Gear A: _____

- (b) If the above series is modified such that Gear A has 24 teeth and Gear B has 40 teeth, when Gear A completes 5 turns, how many turns will Gear B have rotated? [1]

Gear B will have rotated _____ turns.

- 43 Plants take in _____ and give out _____ during _____. When this happens, sugar is produced.

Plants use the sugar produced to grow and to repair damaged tissues. Excess sugar is stored as _____ in various parts of the plant.

_____ solution can be used to test for the presence of this

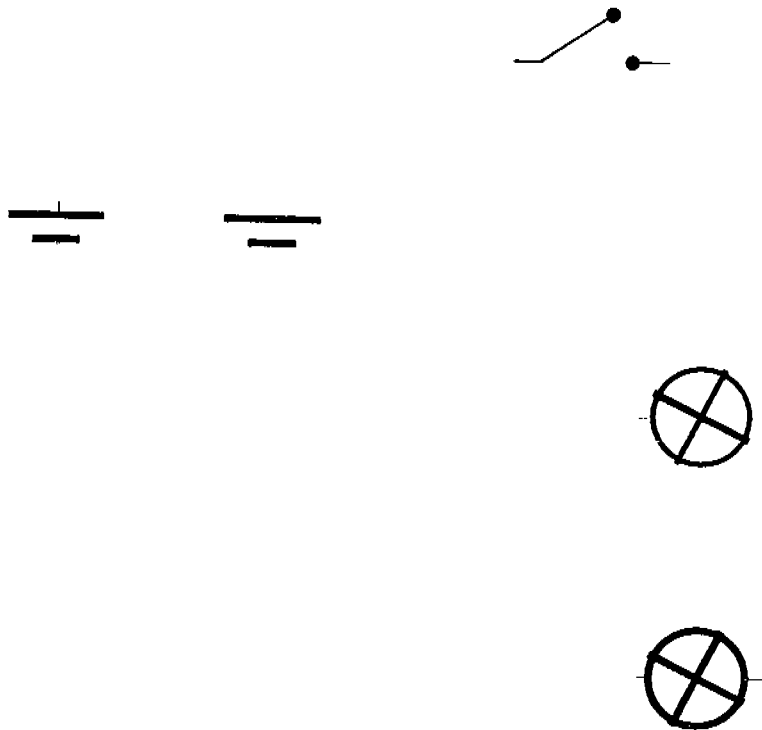
substance in plants. Non-green plants can also produce sugar. This is because they also have _____ which is hidden. [3m]

44 Complete the circuit diagram below by drawing in the wires such that the following conditions are satisfied:

(a) when one of the light bulbs blows, the other will continue to light up [1]

(b) when one of the batteries is flat, the bulbs will continue to light up [1]

(c) when the switch is open, no light bulbs will light up [1]



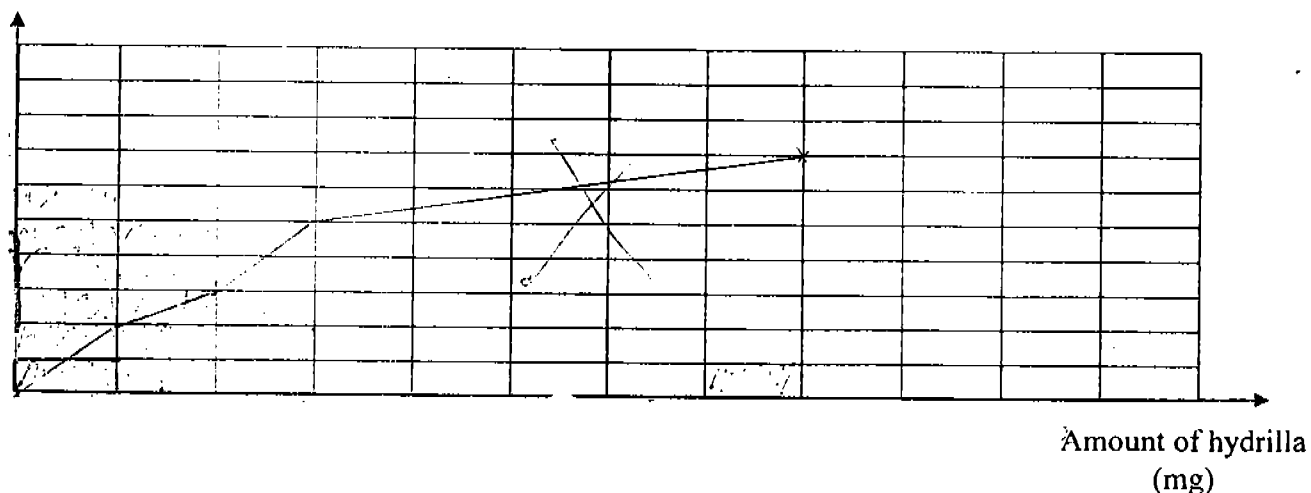
- 45 John noticed that the fish in his aquarium tend to swim near the surface of the water. His friends advised him to add some water plants into his aquarium. John added some hydrilla and found that fewer fish swam near the surface. He decided to conduct an experiment to find out more.

The table below records his findings.

Tank	Amount of hydrilla	Number of fish swimming at the surface
A	100mg	6
B	200mg	5
C	300mg	3
D	800mg	1
E	0mg	8

- (a) Using this information, draw a bar graph on his findings for tank A, B, C and D. Include all labels. [2]

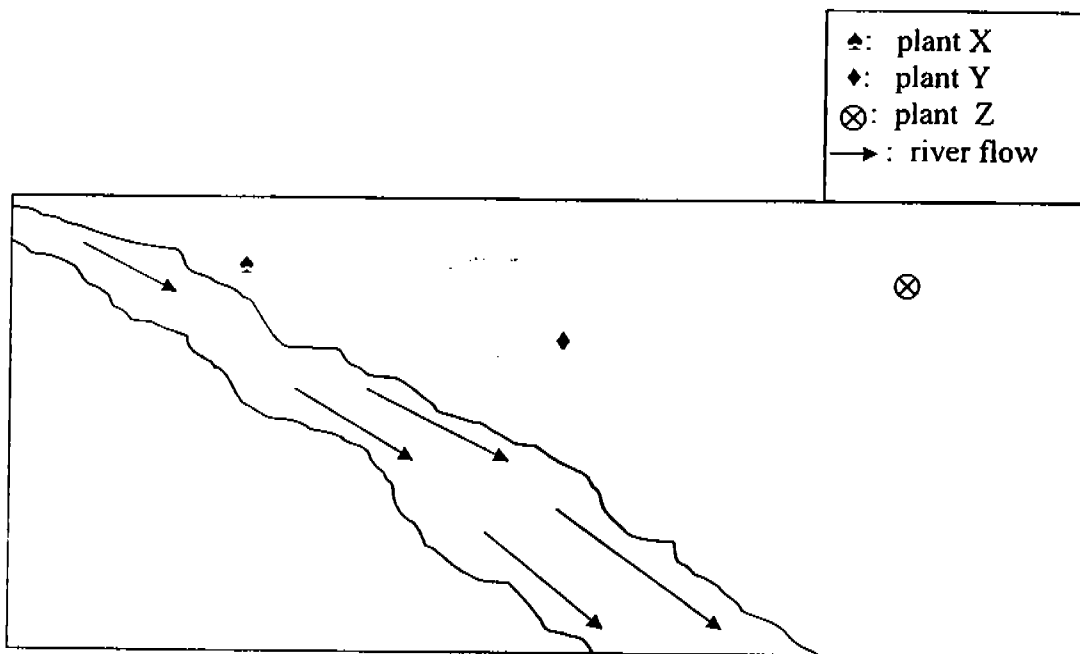
number of fish at the surface



- (b) What is the relationship between the amount of hydrilla in the aquarium and the number of fish swimming near the water surface? [1]

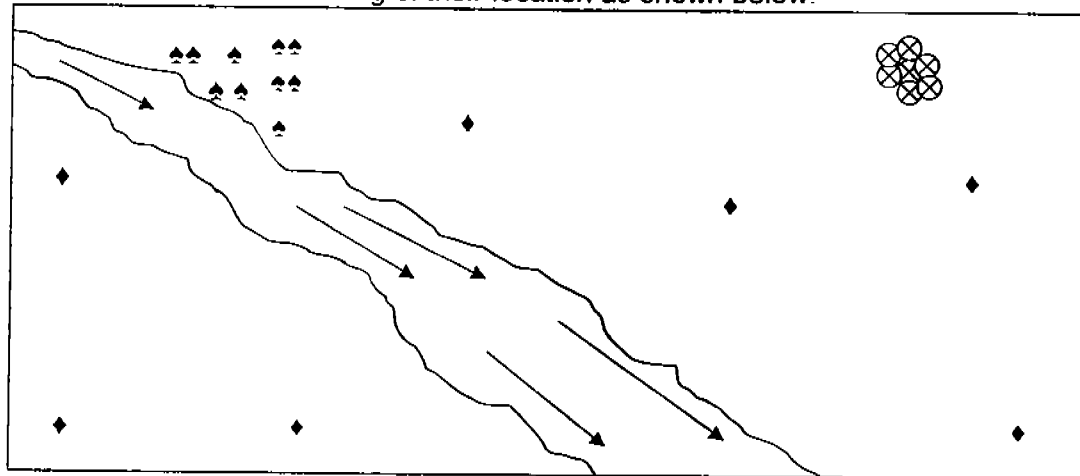
- (c) What is the purpose of tank E? [1]

- 46 John planted 3 plants in an area behind his house. He made a drawing of the location of the plants as shown below.



At the beginning

After 3 years, John noticed that more of the same types of plants have grown. He made a second drawing of their location as shown below.



After 3 years

Given that X, Y and Z produce fruits and are dispersed differently, name the methods of dispersal for each type of plants. [3]

Plant X: _____

Plant Y: _____

Plant Z: _____

END OF PAPER

PS ACS (SCIENCE) SA2 (2004)

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

31) a) Seed coating b) To protect the seed

32) a) The type of seed used for the experiment. b) The position of a planted seed does not affect germination.

33) a) The vomit came from the stomach.

b) she had vomited some of her digestive juices, so the digestive juices left a sour taste in her mouth.

34) The closer the magnet to the nails, the more the number of nails attracted.

35) a) small intestines b) lungs


36) a) These tiny openings can be found on the under side of a leaf.

b) It allows the exchange of gases.

c) The lungs perform a similar function.

37) a) To see which liquid can expand the most.

b) Alcohol can expand more than water and oil.

38) a)  b) cell division

39)	A			✓	40)			✓
	B		✓				✓	
	C			✓		✓		
	D			✓		✓		

✓

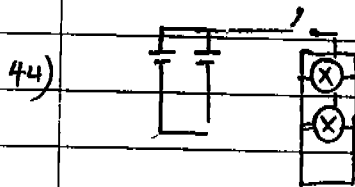
63

P5 ACS Science (2004) SA2

- 41) a) Set up C and Set up B
b) The amount of water used to water the Set-up and the material of the beakers.

- 42) a) Gear C : anti-clockwise b) 3 turns
Gear A : clockwise

- 43) carbon dioxide , oxygen , photosynthesis , starch , Iodine , chlorophyll



- 45) a)
b) The more the amount of hydrilla , the less the number of fish swimming at the surface
c) It acts as a control to show how no. hydrilla affects where the fish goes with other tanks with different amount of hydrilla.

- 46) a) plant X : animals
plant Y : wind
plant Z : splitting action