

SAL



AI TONG SCHOOL

2005

SEMESTRAL ASSESSMENT (2)

PRIMARY FIVE

SCIENCE

DURATION : 1 HR 45 MINS

DATE: 27 OCTOBER 2005

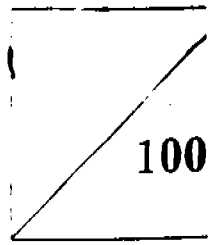
INSTRUCTIONS

Do not open the booklet until you are told to do so.
Follow all instructions.
Answer all questions.

Name : _____ ()

Class : Primary 5 _____

Marks:



Parent's Signature	: _____
Date	: _____

76
23

Section A: (30 x 2 marks)

For each question, from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Study the table below.

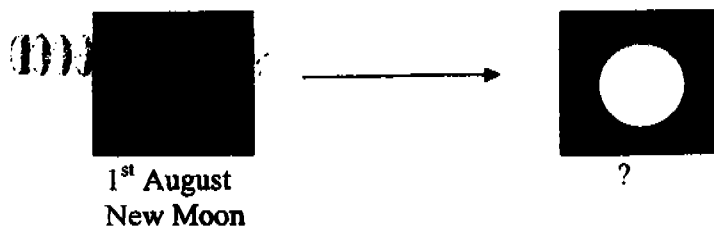
Planet	Distance from the Sun (million km)	Time taken to make one revolution round the Sun (years)
Jupiter	778	12 years
Mercury	58	88 days
Uranus	2870	84 years
Venus	108	225 days

We can predict that the Earth takes a longer time to revolve round the Sun than

_____.

- (1) Mercury and Venus
- (2) Jupiter and Uranus
- (3) Uranus and Venus
- (4) Jupiter, Mercury and Venus

2. Peter drew his observations of the moon.



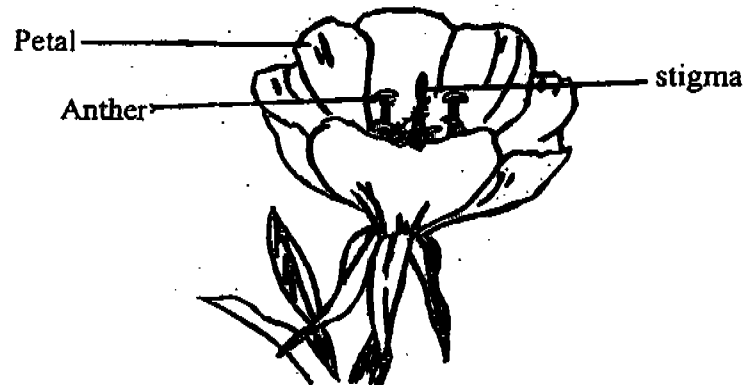
He would see the full moon on _____.

- (1) 7 August
- (2) 14 August
- (3) 21 August
- (4) 28 August

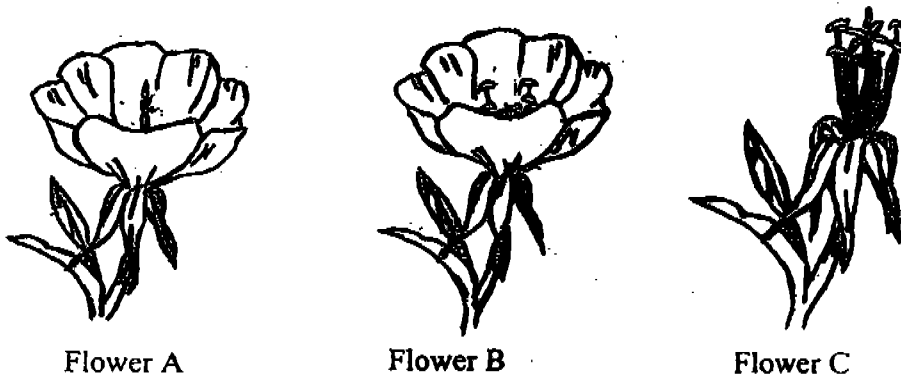
3. The Sun appears to move from the time it rises in the east till it sets in the west because the _____

- (1) Sun moves round the Earth
- (2) Earth spins on the Sun's axis
- (3) Earth spins on its own axis
- (4) Earth completes a turn around the Sun

4. A plant in Mary's garden produced the type of flowers shown below.



Mary wanted to find out whether a fruit is produced when a certain part of the flower is removed. Below are the diagrams that show what she did to the flowers A, B and C.

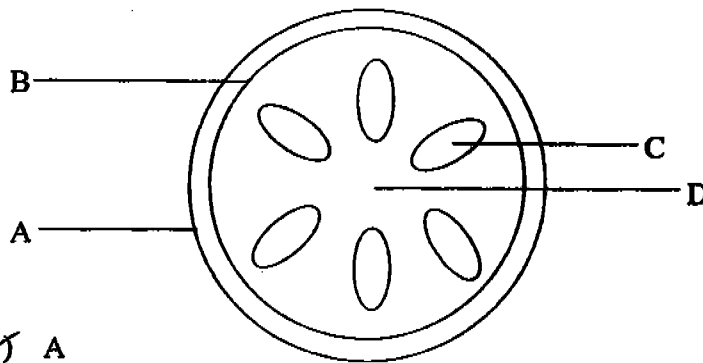


Mary then dusted the pollen grains from the same type of flowers over flowers A, B and C and observed the flowers for two weeks.

Which of the following flowers will most likely develop into a fruit?

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

5. The diagram below shows the cross-section of a stem. Which part of the stem consists of special cells that transport food and water in the plant?.

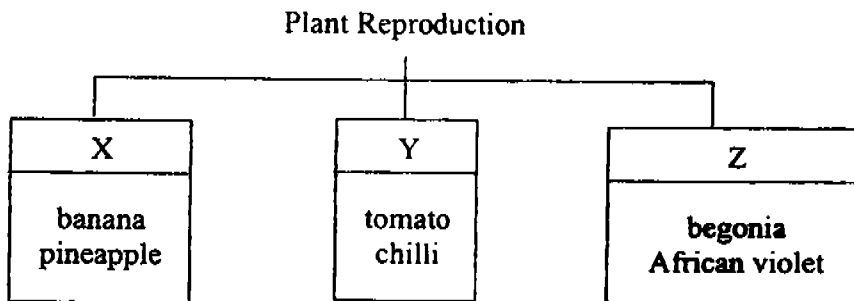


- (1) A
 (2) B
 (3) C
 (4) D

6. Our cells contain genes that carry our characteristics. These genes are found within the _____ of the cells.

- (1) nucleus
 (2) cytoplasm
 (3) chloroplasts
 (4) cell membrane

7. The diagram below shows 3 methods of plant reproduction.



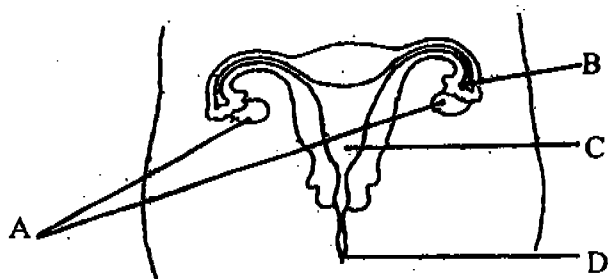
Which one of the following can be grouped under X?

- (1) bryophyllum
 (2) sealing wax palm
 (3) water chestnut plant
 (4) lady's finger

8. In which of the following lists are all the organisms grouped correctly?

	Method of Reproduction		
	Spores	Seeds	Underground stem
(1)	toadstool	balsam	ginger
(2)	mushroom	pumpkin	water-melon
(3)	moss	water-melon	potato
(4)	potato	moss	water-melon

9.



The above diagram shows the female reproductive system. In which part of the female reproductive organ are the eggs found?

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

10. Which of the following statements about human reproduction is/are true?

- A An egg is fertilized by many sperms.
- B Only one sperm is needed to fertilize an egg.
- C Sperms are produced by the male animals.
- D Fertilization occurs inside the body.

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

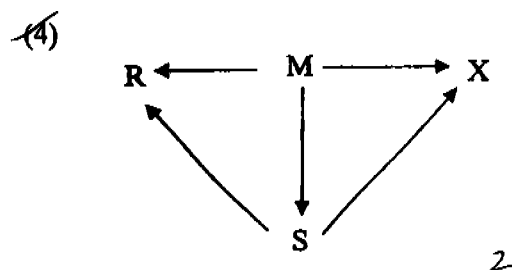
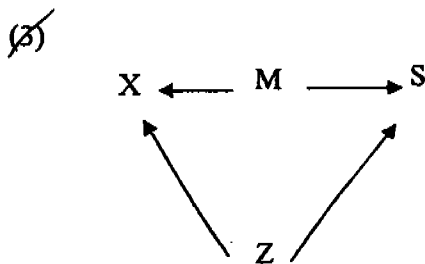
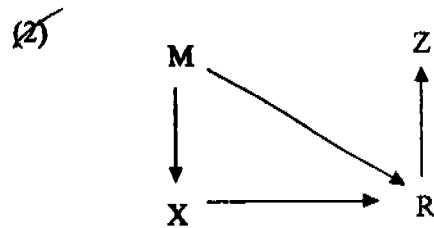
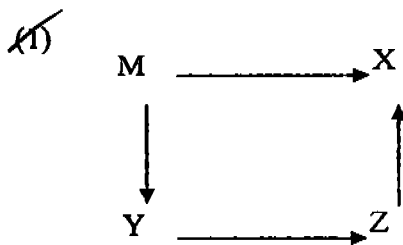
11. Mr Cheng wondered why the papaya plant in his garden did not bear any fruit while his neighbour's papaya plant had a lot of fruits. What is the most possible reason?

- (1) His papaya plant had only male flowers.
- (2) The flowers of his papaya plant were not pollinated.
- (3) His papaya plant did not receive enough water and sunlight.
- (4) The soil in his garden was not as rich as his neighbour's soil.

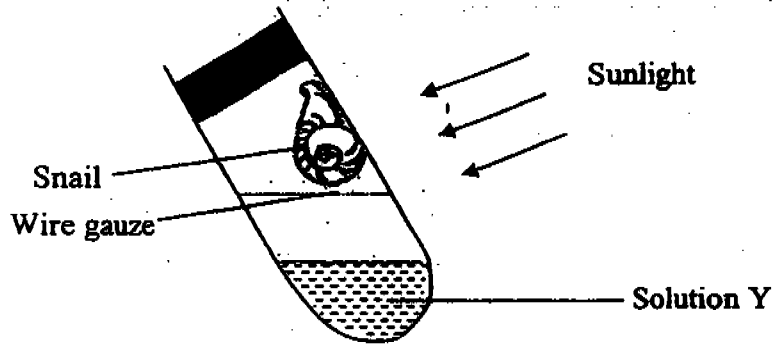
12. Study the table carefully.

Plant	Herbivore	Carnivore	Omnivore
M	X and Y	Z	R and S

Which one of the following food webs shows the correct energy transfer of the organisms in the table above?



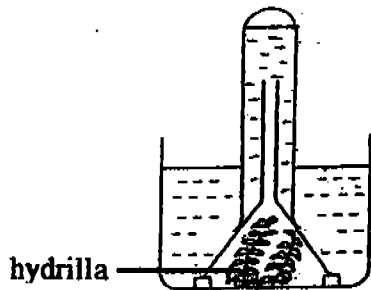
13. Ahmad sets up an experiment, as shown in the diagram below, to find out the gas produced by a snail when it breathes.



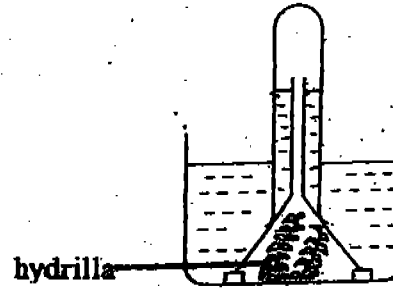
He uses a solution, Y, to test the presence of the gas. What is solution Y?

- (1) water
- (2) iodine
- (3) lime water
- (4) lemon juice

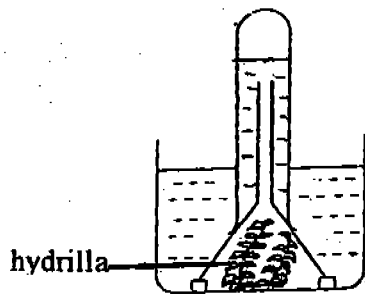
14. An experiment was carried out to compare the rate of photosynthesis. Four identical set-ups were placed at different locations. A gas was collected. The diagrams below show the amount of gas in each tube at the end of the experiment.



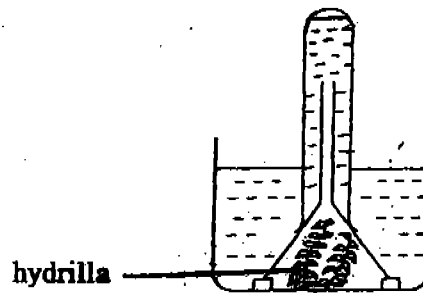
Set-up A



Set-up B



Set-up C



Set-up D

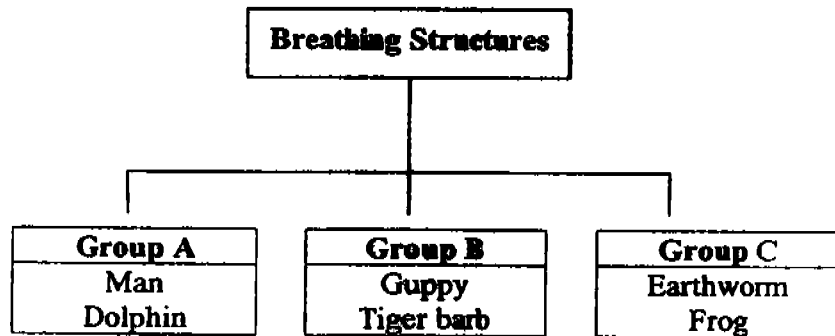
Which set-up was placed in the most sunny place?

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

15. Which of one the following is not the way to conserve electricity?

- ~~(1)~~ Use energy-saving bulbs.
- ~~(2)~~ Use fans instead of air-conditioners.
- ~~(3)~~ Leave the computer on standby mode overnight.
- ~~(4)~~ Switch off electrical appliances when they are not in use.

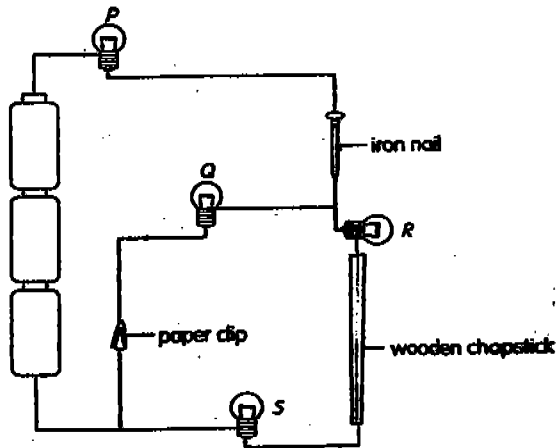
16. What kind of breathing structures do A, B and C represent?



	A	B	C
(1)	Gills	Skin	Lungs
(2)	Skin	Lungs	Gills
(3)	Lungs	Gills	Skin
(4)	Skin	Gills	Lungs

AK
ex

17. Study the diagram below carefully.



Which bulbs will not light up?

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

18. Which of the following describe what happens when someone exercises?

- A Pulse rate remains unchanged.
- B Cells use up the stored energy rapidly
- C Blood flows faster to all parts of the body.
- D Breathe faster to get rid of the extra carbon dioxide produced.

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

PS
82

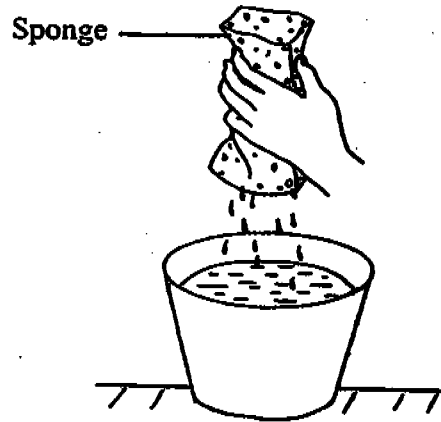
19. Leo carried out an experiment to find out which of the following objects, W, X, Y and Z are conductors of electricity. He connected each object to the same electrical circuit one at a time. His results are shown below in the table.

Objects	Light produced by the bulb
W	Dim
X	None
Y	Very bright
Z	None

Which 4 objects were used?

	W	X	Y	Z
(1)	Glass fibre	Steel nail	Plastic ruler	Pencil lead
(2)	Plastic ruler	Steel nail	Pencil lead	Aluminum foil
(3)	Aluminum foil	Glass fibre	Pencil lead	Steel nail
(4)	Pencil lead	Plastic ruler	Steel nail	Glass fibre

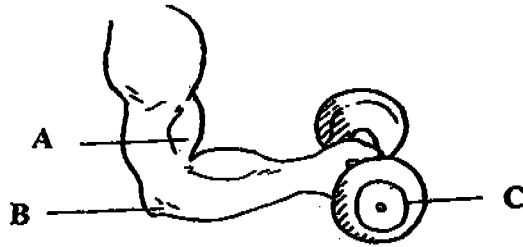
20. The diagram below shows a sponge being squeezed and water is flowing out of it.



This shows that a force can cause the sponge to _____.

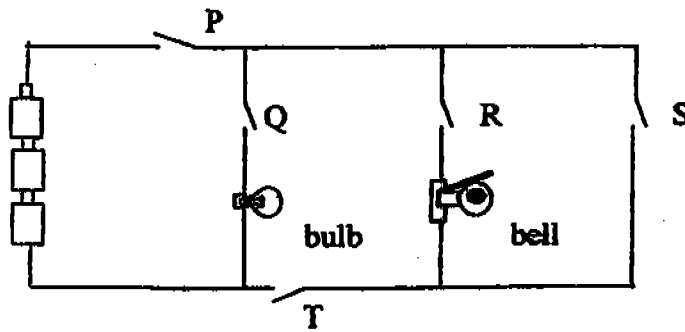
- ~~(1)~~ stop moving
- ~~(2)~~ start moving
- ~~(3)~~ increase its mass
- ~~(4)~~ change its shape

21. The diagram shows a human arm that can act as a lever. Identify A , B and C.



	A	B	C
(1)	Effort	Fulcrum	Load
(2)	Effort	Load	Fulcrum
(3)	Load	Effort	Fulcrum
(4)	Load	Fulcrum	Effort

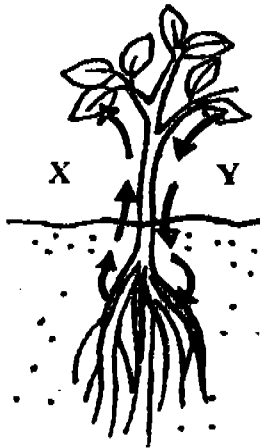
22. Study the diagram below.



Which of the switches, P, Q, R, S and T have to be closed to activate the bell?

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

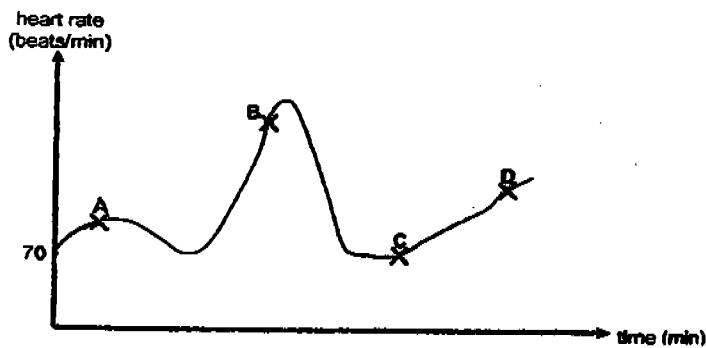
23.



The arrows in the diagram of the plant above show the direction of the flow of substances in the plant. Identify substances X and Y.

	X	Y
<input checked="" type="checkbox"/> (1)	Air	Food
<input checked="" type="checkbox"/> (2)	Water	Food
<input checked="" type="checkbox"/> (3)	Food	Air
<input checked="" type="checkbox"/> (4)	Food	Water

24. The graph below shows the heart rate of Ahmad.



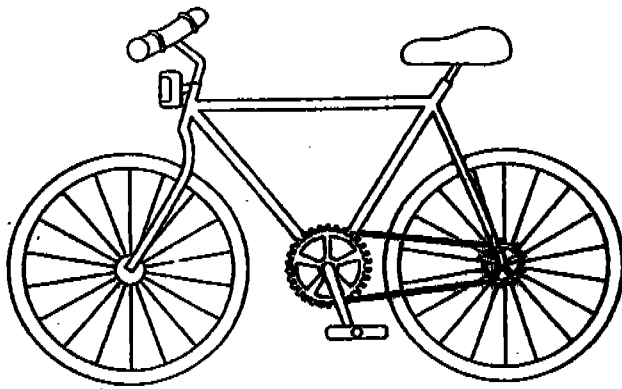
Which of the following activities carried out by Ahmad correspond to his heart rate as shown in the graph?

	A	B	C	D
(1)	Walking	Sitting	Running	Sleeping
(2)	Sitting	Running	Sleeping	Walking
(3)	Sleeping	Running	Walking	Sitting
(4)	Sleeping	Walking	Running	Sitting

25. The air that we breathe out has a _____ than the air that we breathe in.

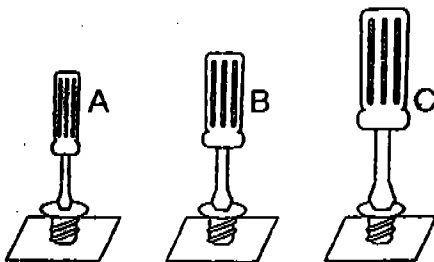
- (1) lower temperature
- (2) greater amount of oxygen
- (3) greater amount of carbon dioxide
- (4) smaller amount of water vapour

26. The diagram below shows a bicycle with gears that are connected by a chain.



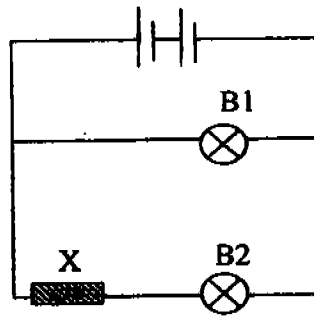
Which of the following statements is correct?

- (1) The smaller gear turns slower than the larger gear.
 - (2) The back wheel of the bicycle can turn without the chain.
 - (3) The larger and the smaller gears move in the same direction.
 - (4) The larger and the smaller gears move in the opposite direction.
27. The diagram below shows three screwdrivers of different sizes. Screwdriver C requires the least effort to turn the screw into the wood. Why?

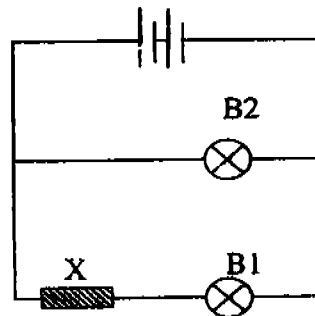


- (1) The axle is the longest.
- (2) The wheel moves a smaller distance.
- (3) The wheel has the largest diameter.
- (4) The effort is applied nearer to the load.

28. In the following circuit, B1 lights up but B2 does not.



When B1 and B2 switch positions as shown below, B1 lights up but B2 does not.



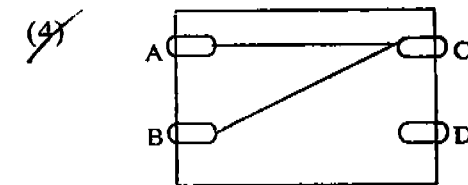
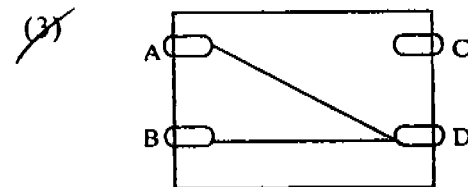
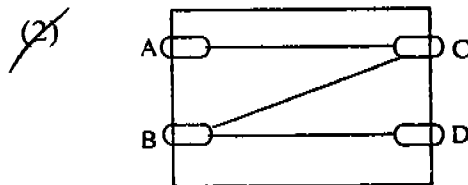
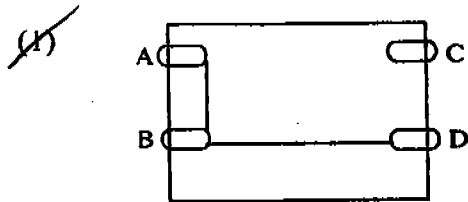
From the observation, what can be a possible reason why B2 does not light up?

- (1) X is a non-conductor of electricity.
- (2) The filament in B2 has fused.
- (3) The batteries are connected wrongly.
- (4) The bulbs are in a parallel arrangement.

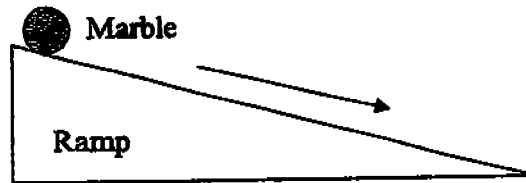
29. A circuit card is tested with a circuit tester. The results are recorded in the table.

Clips tested	Bulb of circuit tester
A and B	Lights up
A and C	Light up
B and C	Lights up
B and D	Does not light up
C and D	Does not light up

Which diagram represents the circuit card that was tested?



30. Kelly wanted to find out if the weight of a glass marble affects the distance it travels down a ramp.



The variables she should keep constant are _____.

- A the slope of the ramp
- B the size of the marble
- C the surface texture of the ramp
- D the position from which the marble is released

~~(1)~~ A, B and C only

~~(2)~~ A, C and D only

~~(3)~~ B, C and D only

~~(4)~~ A, B, C and D

Name: _____ ()

Class: _____

Section B (40 marks)

Write your answer in the spaces provided.

31. State whether the following statements are true or false by ticking (✓) in the correct column. [2]

		True	False
(a)	The Sun is the only star in the solar system.		
(b)	Planets and moons are natural satellites.		
(c)	Man-made satellites that move round the earth help to gather and send information from one place to another.		
(d)	We can see the other planets in the night sky from the Earth because they give out their own light.		

32. The living things listed below are not classified.

Mould	Anemones	Bacteria	Yeast
-------	----------	----------	-------

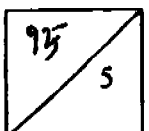
(a) Classify them into two groups, Group A and B. [1]

Group A	Group B

(b) Give a reason for your classification.

They are classified according to _____
_____ [1]

Organisms in Group A have _____ but
organisms in Group B have _____ [1]



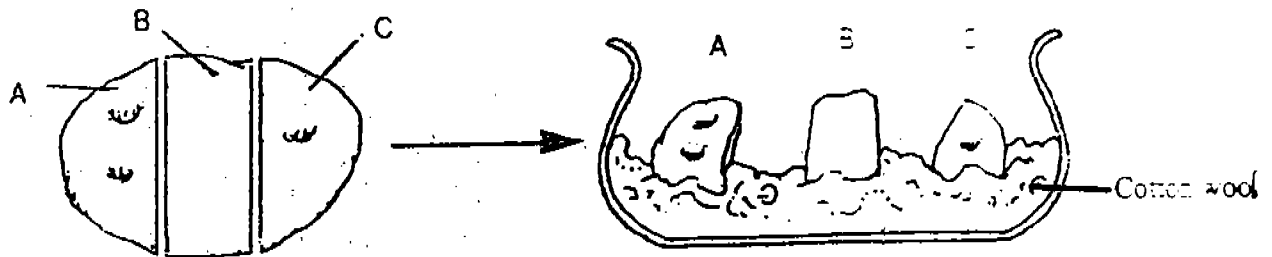
33. The statements below describe how fruits and seeds are produced.

- Pollen tubes reach the ovaries.
- Petals and styles wither and drop off.
- Male reproductive cells fuse with female egg cells.
- Ovules develop into seeds and ovaries develop into fruits.
- Pollen tubes grow from the pollen grains.

(a) In the boxes beside each statement, write the numbers, 1 to 5, to show the correct order of events. [1]

(b) Underline the statement that describes fertilization. [1]

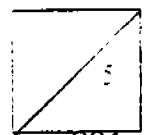
34. The diagram below shows a potato with some buds growing on it. It has been cut into three parts A, B and C. Each part is then placed in a large container with damp cotton wool and allowed to grow.



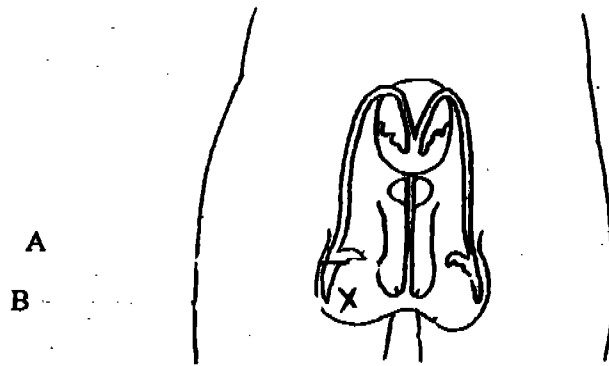
(a) Which part(s) will produce new plants? [1]

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

(c) State the conditions essential for the buds to grow into new plants? [1]



35. The diagrams below show the human male reproductive system.



(a) What are A and B?

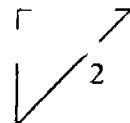
[1]

A: _____

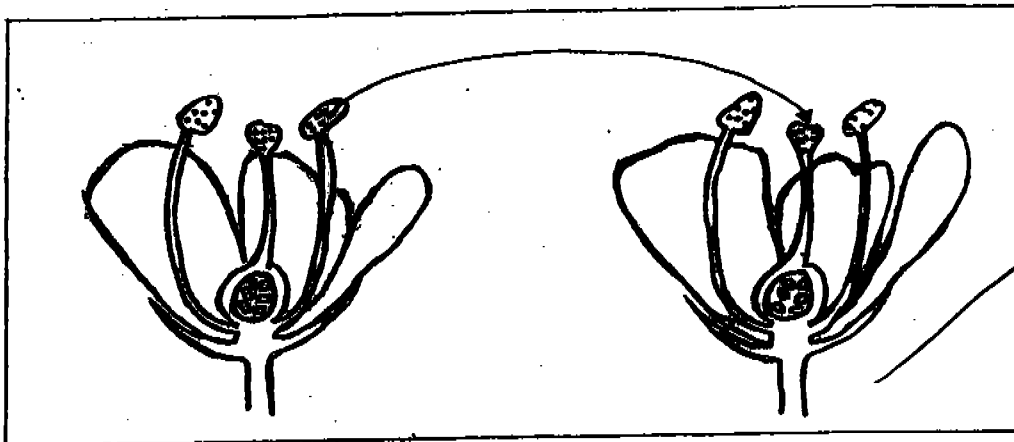
B: _____

(b) Put an 'X' on the part in the diagram which produces the sperms.

[1]



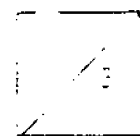
36. The diagram shows two flowers from a plant.



(a) Draw an arrow in the diagram to show the movement of pollen grains during cross-pollination. [1]

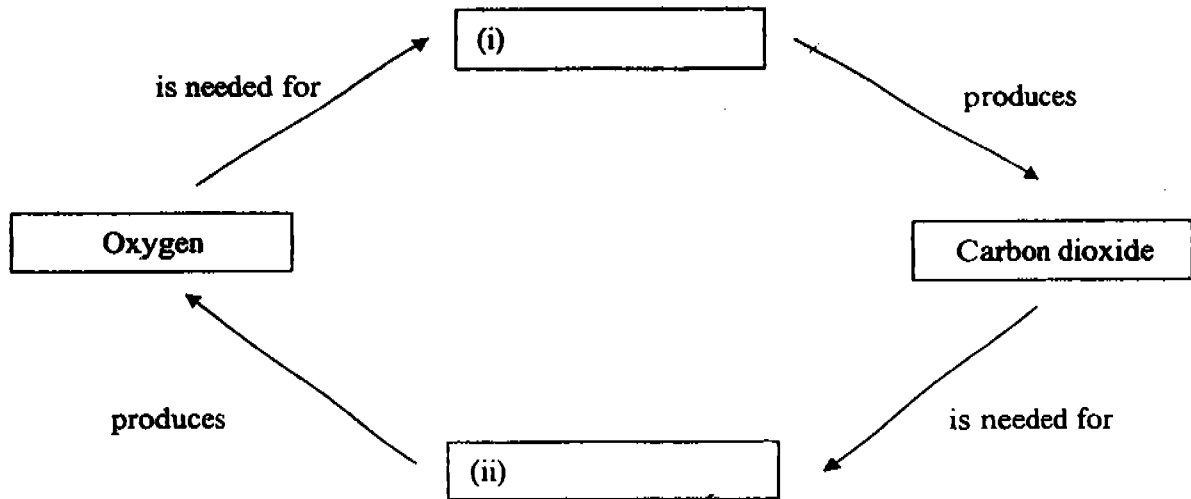
(b) Name another method of pollination. [1]

(c) Describe how the method of pollination you named in (b) takes place. [3]



37. Two processes that take place in plants are photosynthesis and respiration.

(a). Each arrow below represents a process in which oxygen and carbon dioxide is used or produced. Write either photosynthesis or respiration in the correct boxes. [1]

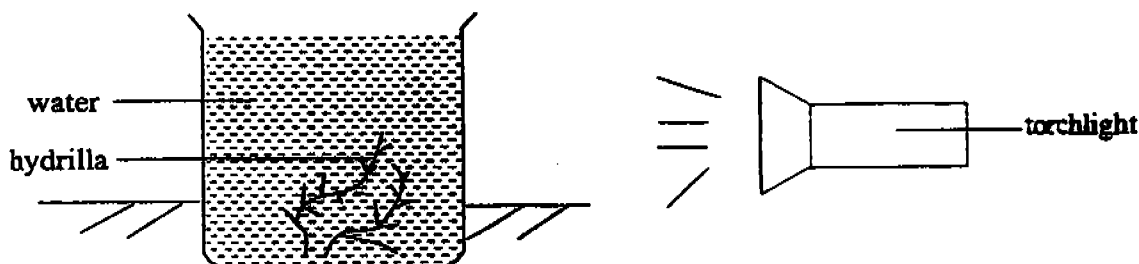


(b) Write 'P' in the box beside each short phrase if it describes photosynthesis. Write 'R' in the box if the phrase describes respiration. [2]

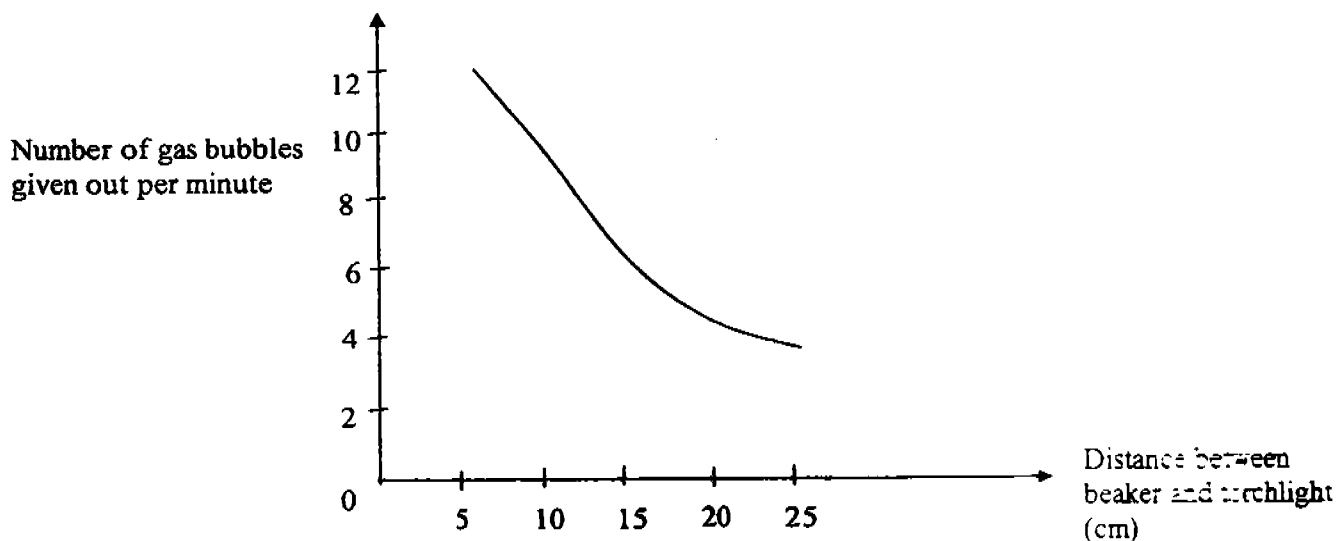
Food is:	▪ manufactured		▪ broken down	
Energy is:	▪ released from food		▪ stored as food	

3

38. Mark set up an experiment as shown in the diagram below.



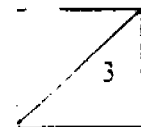
He measured the distance of the torchlight from the beaker and the number of bubbles given out per minute by the hydrilla. He repeated the experiment 3 times by moving the torchlight further from the beaker 5 cm each time. He then plotted the graph shown below with the results he obtained.



(a) Based on the above graph, what pattern do you see between the number of gas bubbles given out per minute and the distance of the beaker from the torchlight? [3]

(b) What process is taking place in the plant? [1]

(c) What do the bubbles contain? [1]



39. Study the diagram below carefully. Diagram A shows a fixed pulley and diagram B shows a movable pulley.

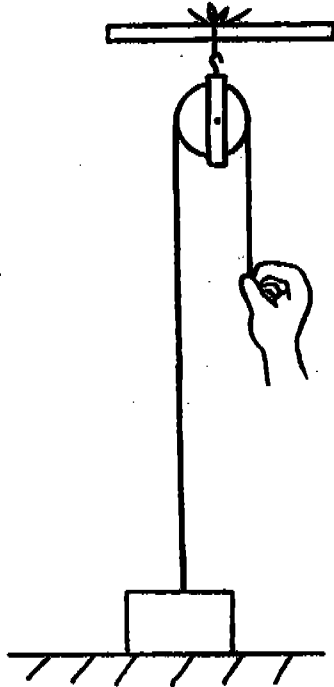


Diagram A

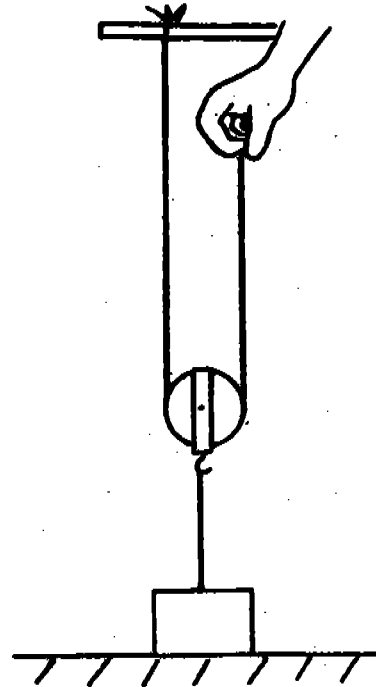
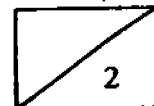


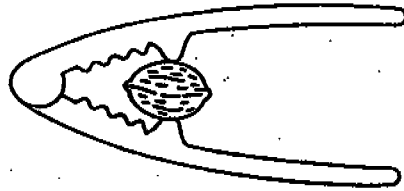
Diagram B

- (a) State one difference between a fixed pulley and a movable pulley in the way they work. Use the words 'effort' and 'load' in your answer. [1]

- (b) Which type of pulley is used in raising a flag? [1]



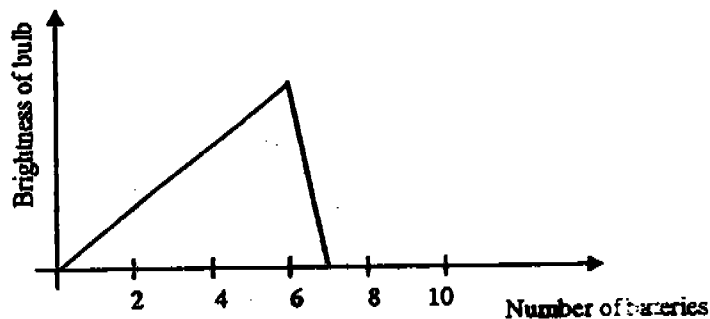
40. A nutcracker can be used to crack a nut easily.



(a) Which type of simple machine is a nutcracker an example? [1]

(b) How does the nutcracker help us to do work easily? [1]

41. Joey wanted to find out if the number of batteries affects the brightness of a bulb. The graph below shows the results of Joey's experiment.

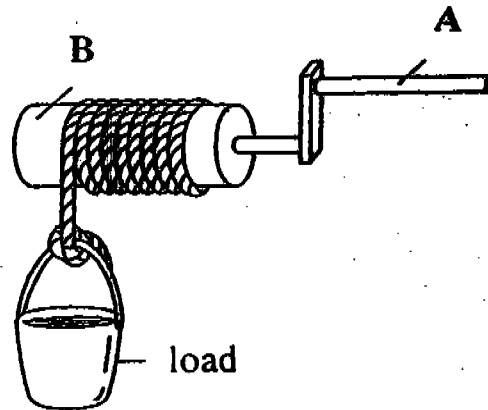


(a) What happened to the brightness of the bulb when the first 5 batteries were added? [1]

(b) Explain what happened when the 6th battery was added. [1]

(c) Why did it happen? [1]

42. The diagram below shows a simple machine which is an example of a wheel and axle.



- (a) Identify

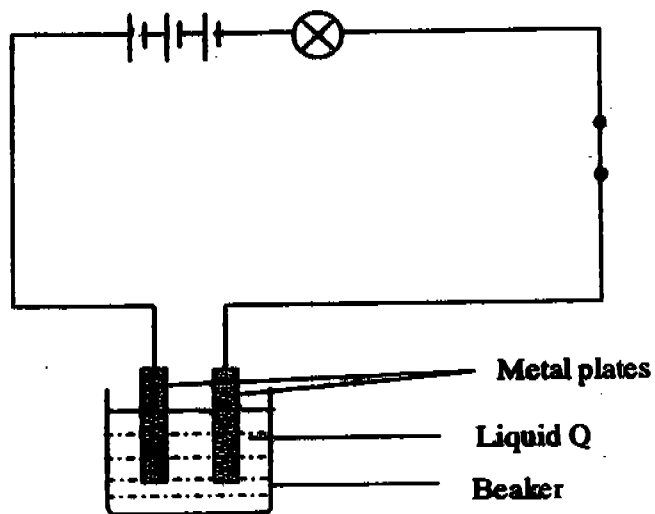
A: _____ [$\frac{1}{2}$]

B: _____ [$\frac{1}{2}$]

- (b) A worker is drawing a pail of water from a well with the wheel and axle as shown above. Compare the distance moved by the effort and the load. [1]

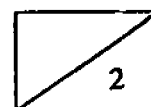


43. The diagram below shows how a bulb and 3 batteries are connected to 2 metal plates which are dipped into a liquid in the beaker.



- (a) The bulb lights up when the switch is closed. What can you conclude about liquid Q? [1]

- (b) If the metal plates are replaced with 2 pieces of wooden blocks, suggest what would be observed in the bulb? [1]



44. Diagram 1 below shows a piece of copper wire that is coated with plastic. When it was connected to an electric circuit, the bulb did not light up.



Diagram 1

- Diagram 2 below shows the same wire when some parts of the plastic from both ends of the wire were removed. Then the wire was connected to the same electric circuit again. This time, the bulb lit up.

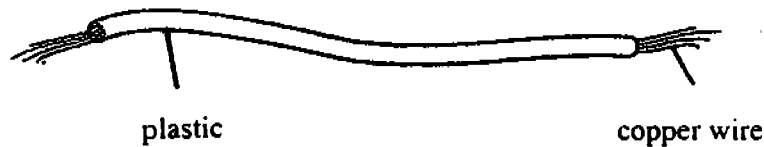
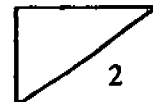


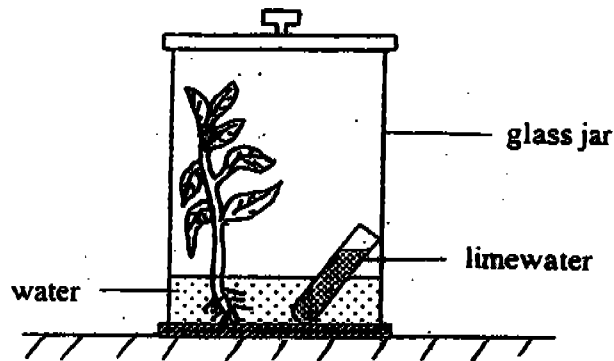
Diagram 2

- (a) What can you conclude about plastic and copper from the observation? [1]

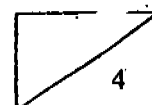
- (b) Explain why a person would experience an electric shock when he touched the wire shown in diagram 2 which was connected to an electric circuit with a pair of wet hands. [1]



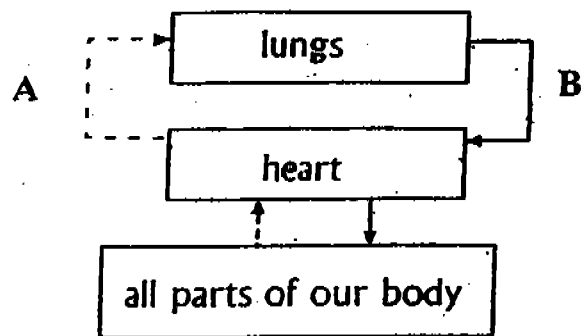
45. Dennis placed a glass jar containing a plant and a test tube of limewater in a dark place. He checked the equipment after two days.



- (a) He observed that the limewater has turned chalky. What gas interacted with the limewater? [1]
-
- (b) What life process would have taken place? [1]
-
- (c) Name the part of the leaf that enabled gaseous exchange to take place. [1]
-
- (d) What was the purpose of keeping the set-up in a dark place? [1]
-
-



46. The diagram below shows our body circulatory system. The arrows represent 2 types of blood vessels.

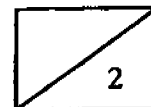


- (a) State one difference between the blood flowing in A and the blood flowing in B. [1]

- (b) Name two other substances our blood can carry other than gases. [1]

(i) _____

(ii) _____



107

SA2

Ai Tong Primary School
Primary 5 Science SA2 (2005)



Answer Sheets

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	2	3	2	3	1	2	3	1	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	2	3	2	3	3	2	3	4	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	3	2	2	3	3	3	2	4	2

- 31a. True
- 31b. True
- 31c. True
- 31d. False

- 32a. Mould Bacteria
 Anemones Yeast

- 32b. the number of cells they have
- 32c. a few cells
- 32d. only one cell

- 33. 2
 4
 3
 5
 1

- 34a. Parts A and C
- 34b. There are buds on them which allow them to grow into new plants.
- 34c. There must be air, water and warmth.

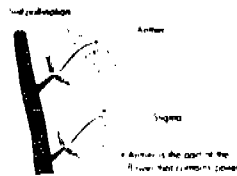
103

35a. A : Penis
B : Testes

35b.



36a.



36b. Self-pollination.

36c. The flower contains male and female parts and so the pollen grains from the anther can be transferred to the stigma within the flower.

37a. (i) respiration
(ii) photosynthesis

37b. P R
R P

38a. The nearer the torchlight is from the beaker, the more gas bubbles the hydrilla gives out.

38b. Photosynthesis

38c. Oxygen

39a. If a fixed pulley, the effort and the load move in opposite directions while in a movable pulley, the effort moves with the load.

39b. Fixed pulley

40a. Lever

40b. Less effort is needed to crack the nut.

109

- 41a. The brightness of the bulb kept increasing.
41b. The bulb fused.
41c. There was too much electric current flowing in the circuit, thus melting the filament of the bulb.
- 42a. A : wheel
B : Axle
- 42b. The effort moves over a greater distance than the load.
- 43a. Liquid Q is a good conductor of electricity.
43b. The bulb would not light up.
- 44a. Plastic is an insulator of electricity but copper is a good conductor of electricity.
- 44b. Current passes through the person as water is a conductor of electricity.
- 45a. Carbon dioxide
45b. Respiration
45c. Stomata
45d. To ensure that only respiration can take place.
- 46a. The blood flowing in A is rich in carbon dioxide but the blood flowing in B is rich in oxygen.
- 46b. (i) Food
(ii) Waste materials.