



## AI TONG SCHOOL

### 2011 SEMESTRAL ASSESSMENT ( 1 ) PRIMARY FIVE SCIENCE

**DURATION:** 1hr 45 min

**DATE:** 13<sup>th</sup> May 2011

#### INSTRUCTIONS

**Do not open the booklet until you are told to do so.**

**Follow all instructions.**

**Answer all questions.**

**Name:** \_\_\_\_\_ ( )

**Class :** Primary 5 \_\_\_\_\_

**Parent's Signature:** \_\_\_\_\_

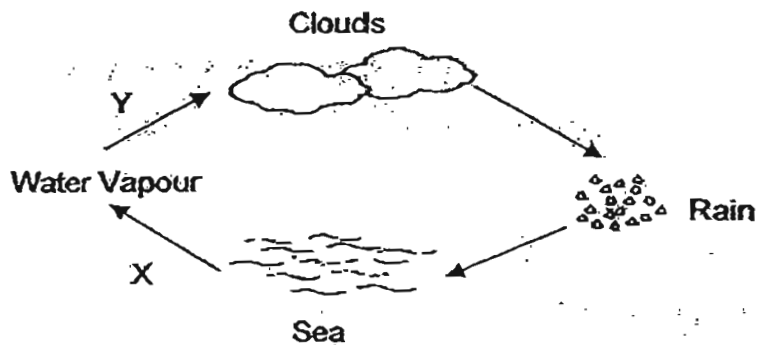
**Date :** \_\_\_\_\_

<b>Practical Assessment</b>	<del>15</del>
<b>Written Assessment</b>	<del>85</del> <del>83</del>
<b>Total</b>	<del>100</del> <del>78</del>

**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. Look at the diagram below.



Process X and Y are two processes that take place in the water cycle. Which of the following describe water going through the same processes as X and Y in the diagram above?

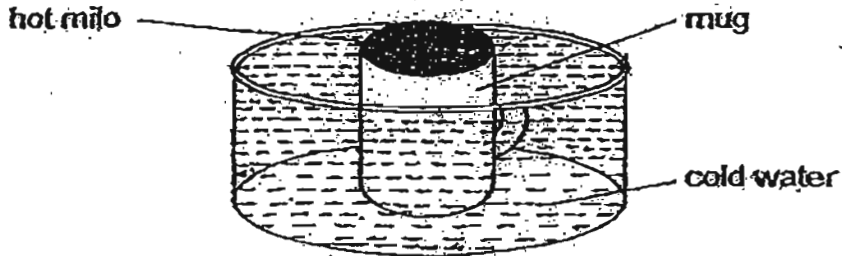
- A: Leaving a piece of ice on the table.
- B: Blowing wet hair with a hairdryer.
- C: Adding water into a glass of milk.
- D: Spectacles turning foggy when alighting from an air-conditioned bus.

	Process X	Process Y
(1)	A	B
(2)	A	C
(3)	B	C
(4)	B	D

2. Which one of the following lists consists of only the female parts of a flower?

- (1) Ovary, Ovule, Ovum
- (2) Stigma, Style, Petal
- (3) Anther, Stigma, Petal
- (4) Anther, Filament, Pollen

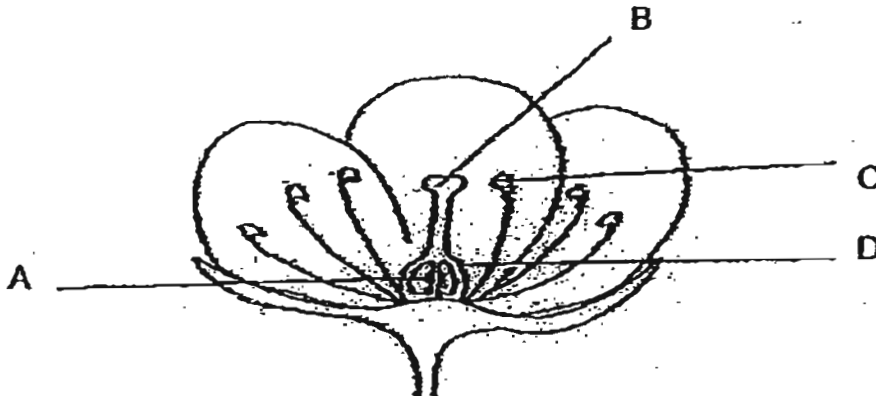
3. Faith carried out an experiment. She heated up a mug of Milo in a microwave oven. She then took out the mug from the microwave oven and placed it in a basin of cold water as shown in the diagram below.



Which one of the following correctly shows the objects in the above setup gaining heat or losing heat after 15 minutes?

	Items		
	Hot Milo	Mug	Cold Water
(1)	lost heat	lost heat	gained heat
(2)	gained heat	gained heat	gained heat
(3)	gained heat	lost heat	lost heat
(4)	lost heat	gained heat	gained heat

4. Which part of the flower will eventually turn into a fruit after fertilisation?

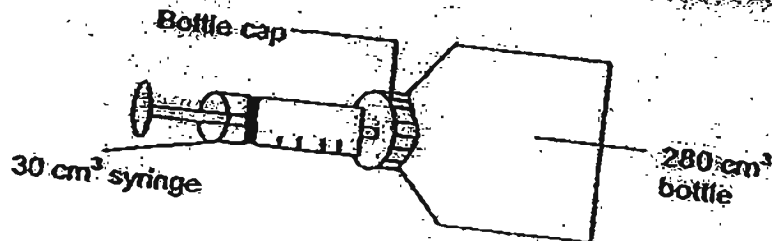


- (1) A
- (2) B
- (3) C
- (4) D

5. Which one of the following plants reproduces from spores?

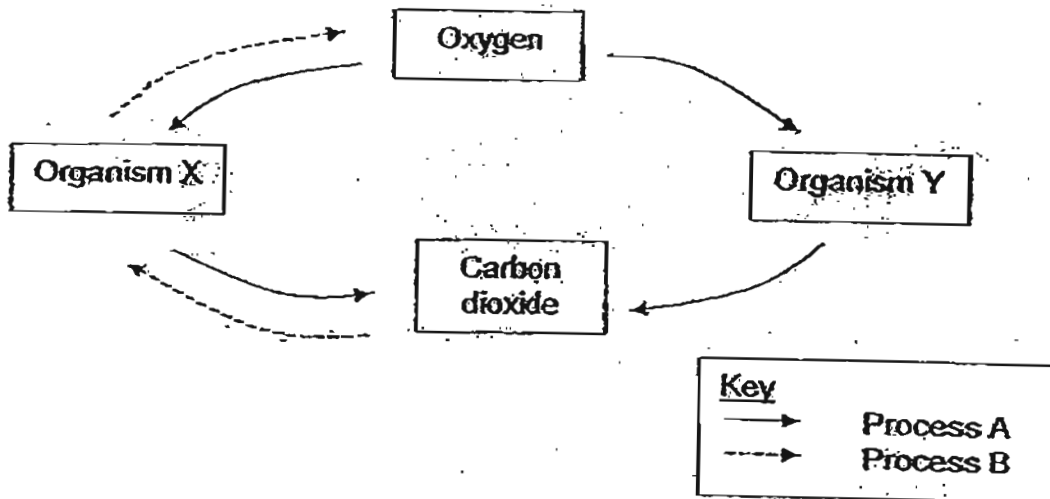
- (1) Lantana
- (2) Jews' Ears
- (3) Balsam Plant
- (4) Hibiscus Plant

6. Helen took a  $30\text{ cm}^3$  syringe and filled it with air. She poked a hole through a bottle cap and pushed all the air out of the syringe into an empty bottle with a capacity of  $280\text{ cm}^3$ . After that, she sealed the bottle cap with sticky tape to prevent any air from escaping. What is the volume of air in the bottle now?



- (1)  $30\text{ cm}^3$
- (2)  $280\text{ cm}^3$
- (3)  $250\text{ cm}^3$
- (4)  $310\text{ cm}^3$

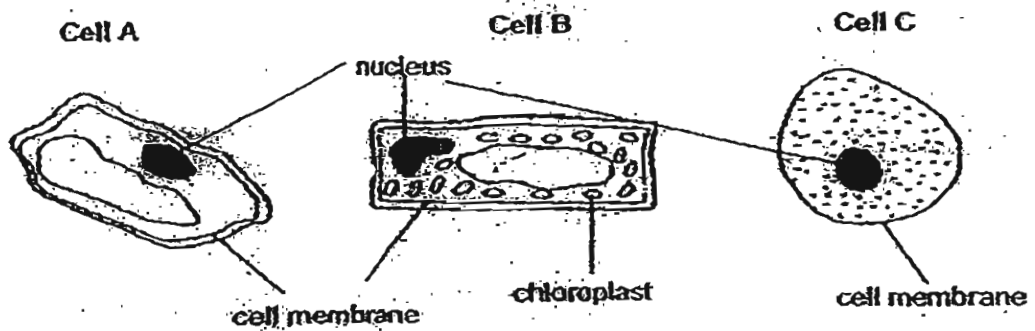
7. The diagram below shows how living things exchange gases with the environment.



Which one of the following statements is not correct?

- (1) Organism X could be algae.
- (2) Process A takes place all the time.
- (3) Process B takes place all the time.
- (4) Water is needed for Process B to take place.

8. Tyler observed three different types of cells under a microscope. Cells A and B are from the same organism while Cell C is from another organism.

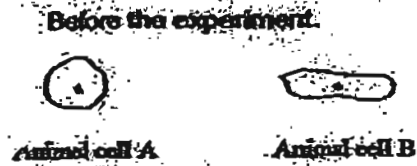


Which of the following statements are true?

- A: Only Cell B is a plant cell.
- B: Only Cell C is an animal cell.
- C: Cells A and B are plant cells.
- D: Cells A and C are animal cells.

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

9. The diagram below shows two animal cells, A and B, before an experiment.



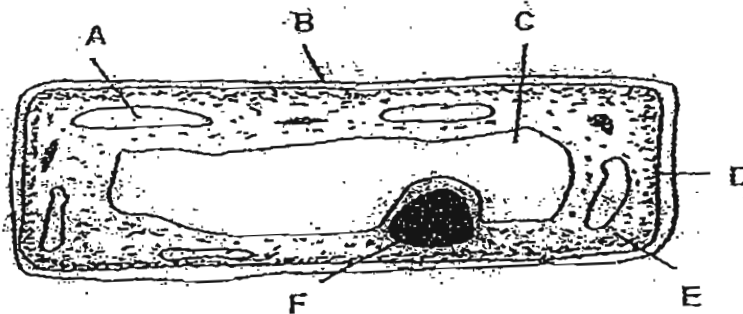
Keegan placed these two animal cells, A and B, in a container of water containing the same amount of dissolved substances, X and Y, in it as shown below.



He then made the following observations. Which one of the following observations is incorrect?

- (1) Water can enter both cells A and B.
- (2) Substance X and Y are unable to enter cell B.
- (3) Cell A does not allow substances to enter easily.
- (4) Substance X enters cell A more easily as compared to substance Y.

10. The diagram below shows a plant cell seen under a microscope. Parts of the cell are labelled A, B, C, D, E and F.

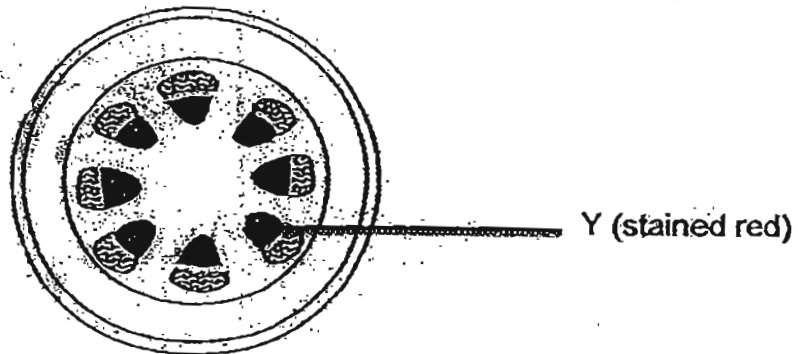


Which of the following parts of the cell have been correctly matched to the information in the table below?

	Gives the plant its characteristics	Controls the movement of substances in and out of the cell	Also found in an animal cell
(1)	A	B	B,E,F
(2)	F	B	C,D,E
(3)	C	D	B,C,E
(4)	F	D	D,E,F



11. The roots of a plant are dipped into a beaker of red coloured solution. The diagram below shows the cross-section of the stem after a period of time.

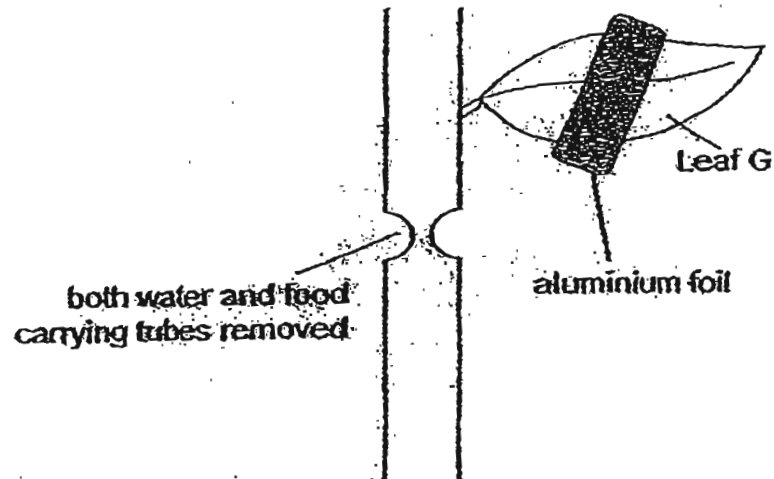


Based on the experiment, what does Part Y transport?

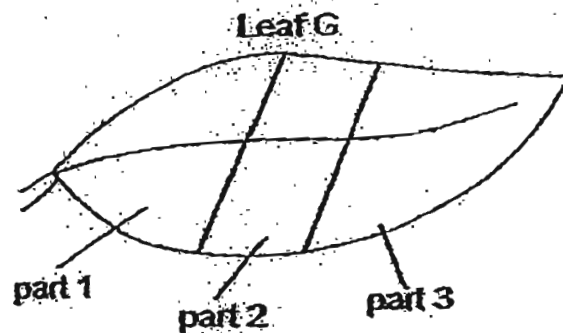
- A: Food
- B: Water
- C: Oxygen

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

12. A plant in the science garden had a ring of water-carrying tubes and food-carrying tubes removed. The plant was watered daily. Leaf G was partially covered with aluminium foil on both of its sides.



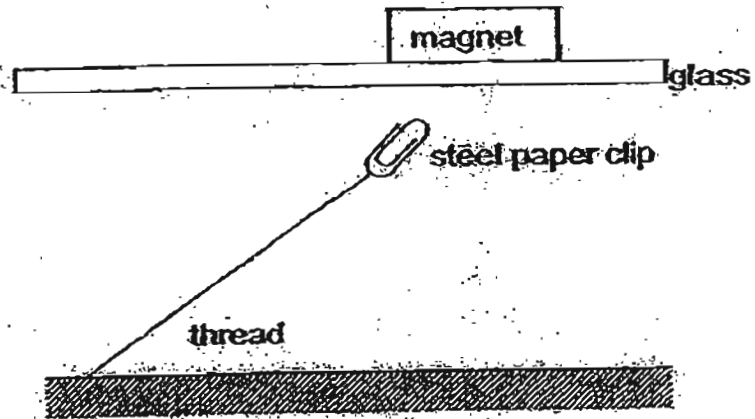
After 5 days, leaf G was tested for starch.



Which part(s) of the leaf would the iodine solution remain brown?

- (1) Part 1 only
- (2) Part 2 only
- (3) Parts 1 and 3 only
- (4) Parts 1, 2 and 3

14. Study the set-up shown below carefully.



What can you conclude from this set-up?

- A: Magnetic force is very weak.
- B: Magnetic force acts from a distance.
- C: Magnetic force can pass through glass.
- D: Magnetic force can be a pull or a push.

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

13. Diagram 1 below shows what happens when the first side of Disc X faces Disc Y and Diagram 2 shows the second side of Disc X facing the same side of Disc Y.

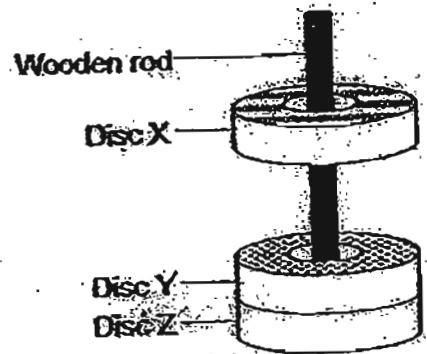


Diagram 1

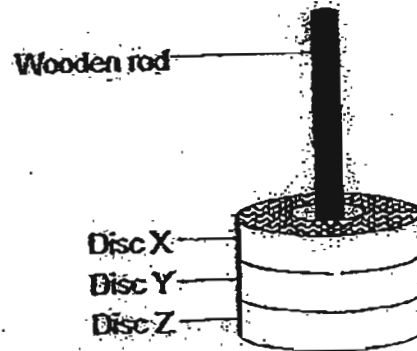


Diagram 2

Based on the above diagrams, what could we conclude about Discs X, Y and Z?

- A: Disc X is a magnet.
- B: Disc Y is a magnet.
- C: Disc Y is magnetic.
- D: Disc Z is magnetic.

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

15. The diagram below shows two beakers, X and Y, filled with different amounts of water. The water in both beakers was heated up to  $80^{\circ}\text{C}$ .

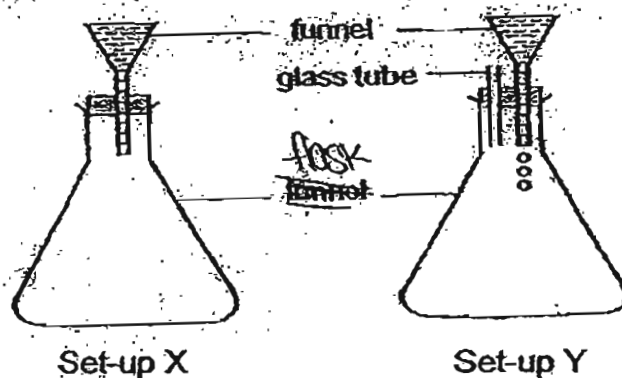


Which of the following statements are true about the two beakers of water?

- A: The water in both beakers has the same temperature.
- B: The water in both beakers has same amount of heat energy.
- C: The water in beaker Y has more heat energy than beaker X.
- D: The water in beaker Y would evaporate faster than the water in beaker X.

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

16. Lynn prepared the set-ups as shown below.

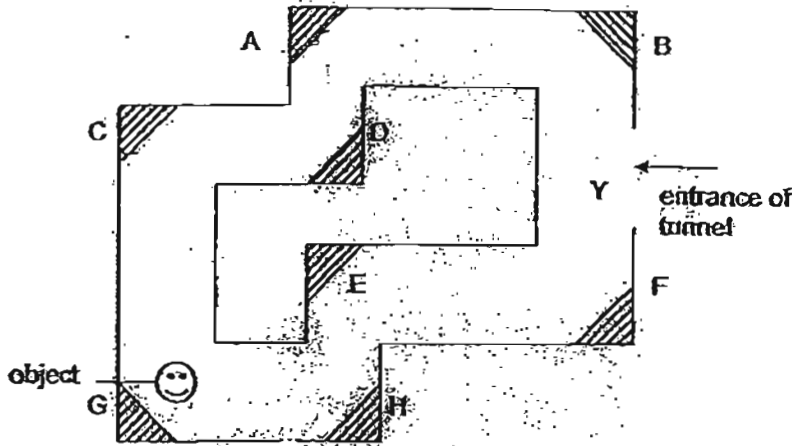


When she pours water into the funnels of both set-ups, it readily flows into the flask for Set-up Y, but stops after a few drops for Set-up X.

Which one of the following conclusions can be drawn from the observations in the above set-ups?

- (1) Only water can replace air.
- (2) Air and water occupy space.
- (3) Water and air do not have a definite shape.
- (4) Only air does not have a definite shape or volume.

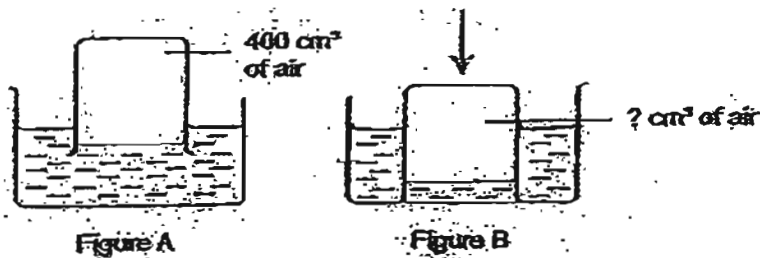
17. The diagram below shows a top view of an underground tunnel.



Where should the mirrors be placed so that a person standing at Point Y could see the object in the tunnel?

- (1) A, B and C only
- (2) B, E and F only
- (3) A, B, C and D only
- (4) B, E, G and H only

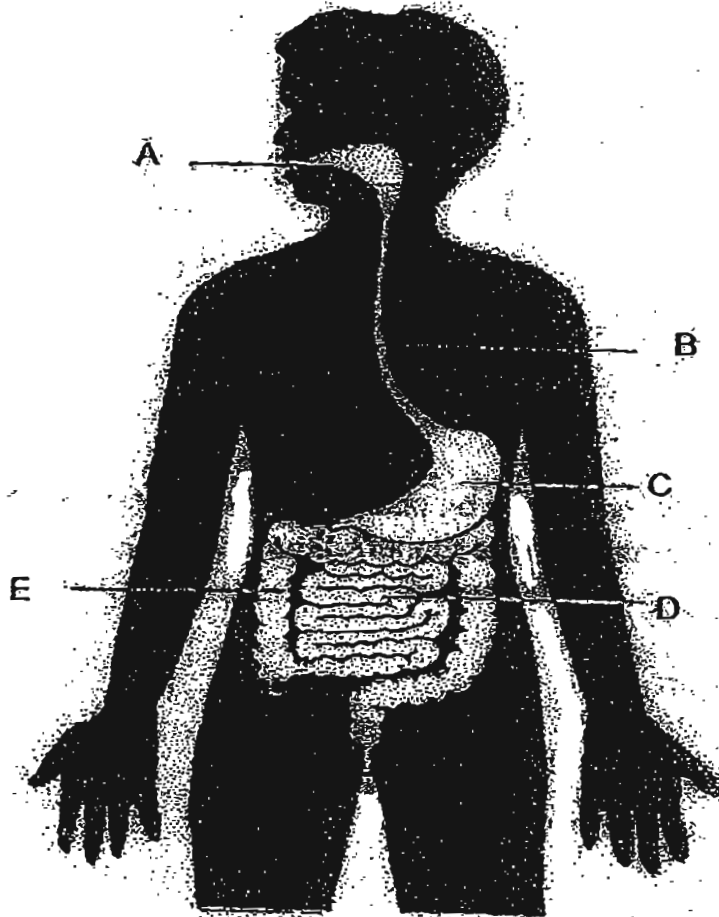
18.  $400\text{cm}^3$  of air is trapped in a beaker as shown in Figure A. The beaker is then pushed deeper into the water as shown in Figure B.



What is the likely volume of air in the beaker in Figure B?

- (1)  $0\text{ cm}^3$
- (2)  $360\text{ cm}^3$
- (3)  $400\text{ cm}^3$
- (4)  $430\text{ cm}^3$

19. Look at the diagram below carefully.

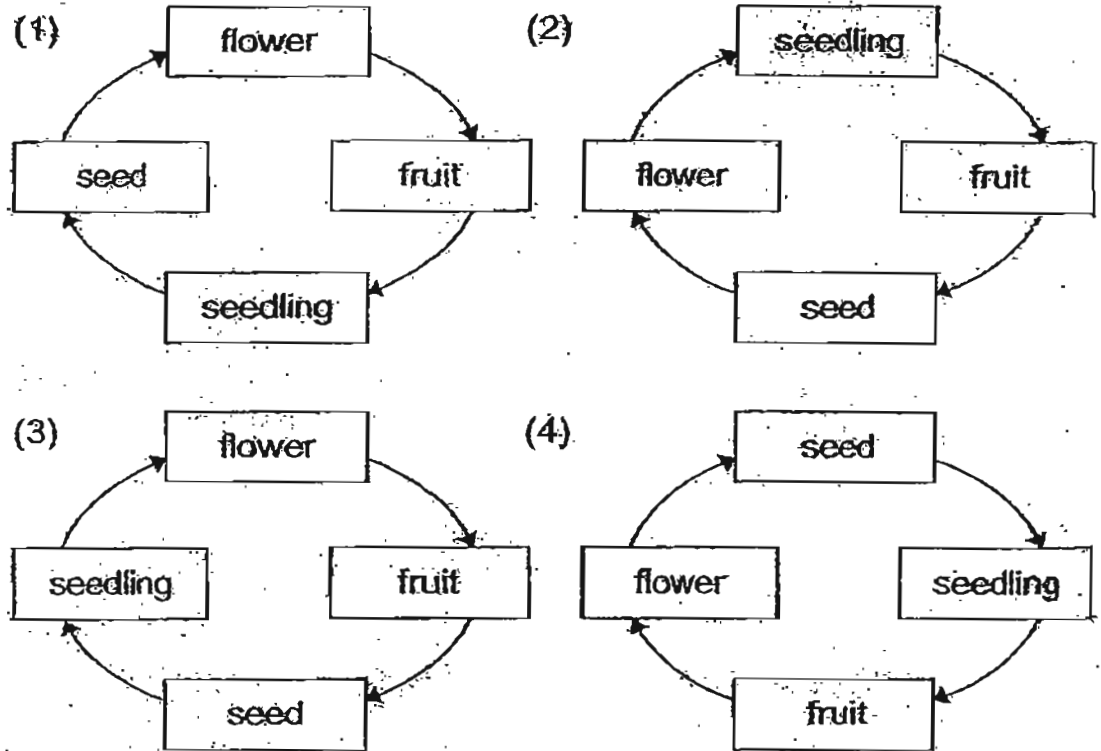


At which parts of the digestive system are digestive juices produced?

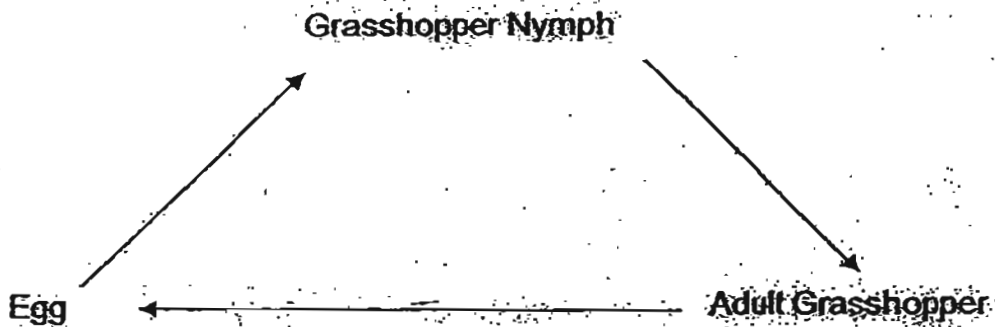
- (1) A, B and C
- (2) A, C and D.
- (3) B, D and E.
- (4) C, D and E



20. Which diagram shows the correct life cycle of a flowering plant?



21. The diagram below shows the life cycle of a grasshopper.



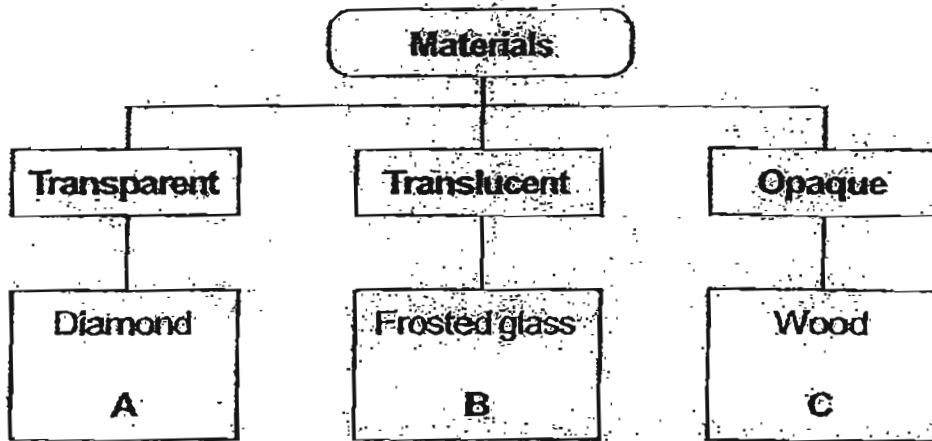
Which of the following has similar stages in its life cycle?

- (1) Moth
- (2) Beetle
- (3) Butterfly
- (4) Dragonfly

22. Which of the following parts of the plants are similar to the blood vessels in a human body?

- (1) Hair on the roots
- (2) Stomata on the leaves
- (3) Chlorophyll in the leaves
- (4) Water-carrying and Food-carrying tubes in the stem

23. The diagram below shows a classification table of how some objects are classified according to the materials they are made of.



Which materials belong to the correct groups?

	A	B	C
(1)	Mirror	Television screen	Clay
(2)	Magnifying glass	Tracing paper	Clay
(3)	Wooden door	Tracing paper	Mirror
(4)	Television screen	Magnifying glass	Cardboard

24. Was a month after Chinese New Year, Ernie found a white substance covering the oranges that were left over after Chinese New Year. What was this white substance?

(1) moss

(2) algae

(3) seeds

(4) mould

25. Look at the animals shown below.



In what ways are the animals shown above similar?

They \_\_\_\_\_

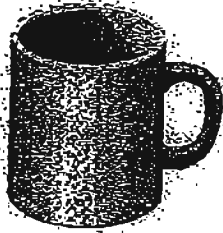
(1) can fly

(2) live on land

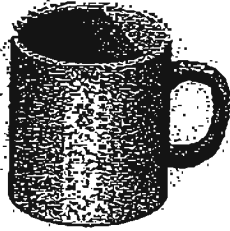
(3) breathe with their gills

(4) reproduce by laying eggs

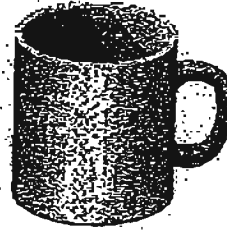
26. Mr Lee has four mugs made of different materials of the same thickness. He poured equal amounts of hot water, of the same temperature into each mug.
- different materials of the same thickness*  
*the same temperature into each mug.*



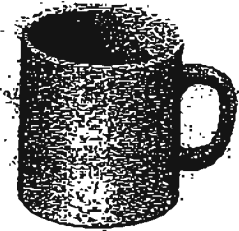
Aluminium



Porcelain



Styrofoam



Plastic

Which one of the above mugs will feel the hottest?

- (1) Plastic
- (2) Porcelain
- (3) Styrofoam
- (4) Aluminium

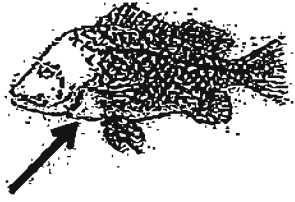
dissolved oxygen in the

27. Which one of the following diagrams shows how the dissolved oxygen in the water enters the fish?

(1)



(2)



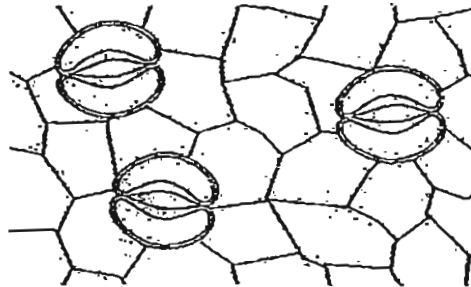
(3)



(4)



28. The diagram below shows some of the openings found on the underside of a leaf.



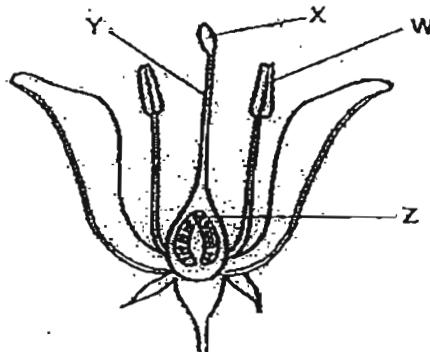
Andrew made the following statements about their functions.

- A: They take in oxygen during respiration.
- B: Water vapour is lost through these openings.
- C: They take in light energy from the Sun to make food during the day.
- D: Carbon dioxide is given out through these openings during respiration.

Which of the above statements are actually correct?

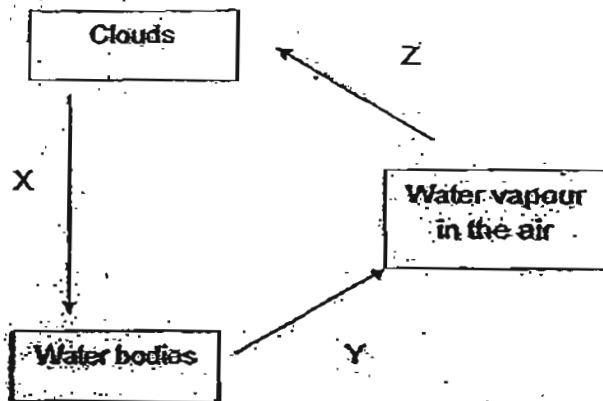
- (1) B and D only
- (2) A, B and C only
- (3) A, B and D only
- (4) All of the above

29. The pollen grains of a flower will not develop a pollen tube until they reach part \_\_\_\_\_.



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

30. The diagram below shows the water cycle with processes X, Y and Z involved.



Which one of the following statements about the water cycle is correct?

- (1) Heat is gained during Process Y.
- (2) Heat is gained during Process Z.
- (3) Process X causes the clouds to gain heat.
- (4) Processes X, Y and Z require the Sun's energy to occur.

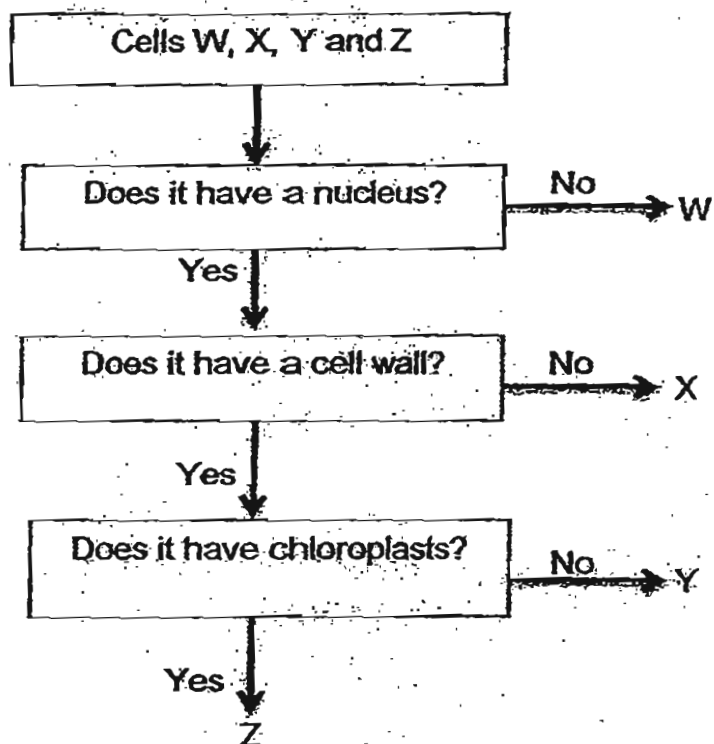
Name: \_\_\_\_\_ ( )

Class: P5 \_\_\_\_\_

**Section B: 25 marks**

Read the questions carefully and write down your answer in the spaces provided.

31. The flow chart below identifies some cells, W, X, Y and Z.



Based on the information above, answer the following questions.

(a) Identify the following cells:

[1]

(i) A cell which cannot reproduce: \_\_\_\_\_

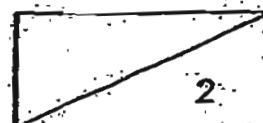
(ii) A cell which is able to carry out photosynthesis: \_\_\_\_\_

(b) Explain why the cell mentioned in (a)(ii) is most likely able to carry out photosynthesis?

[1]

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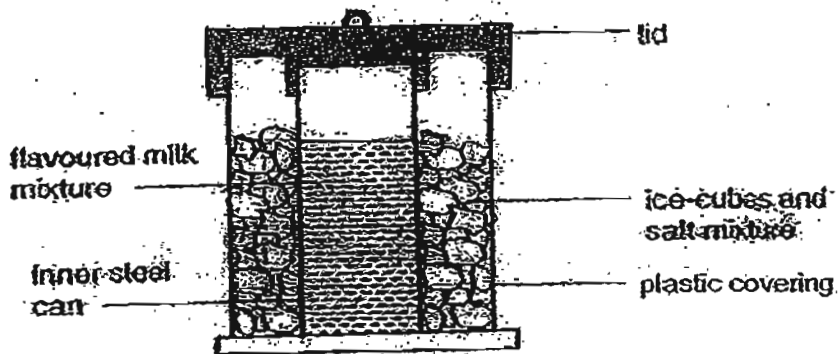
(c) Which of these cells, X, Y and/or Z, is/are animal cell(s)?  
Give a reason for your answer.

[1]

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32. Mrs Wong wanted to make some ice cream without the use of a freezer. She used the set-up as shown in the diagram below to make ice cream.



(a) Explain why salt was added to the ice cubes in order to make ice cream without the use of a freezer.

[1]

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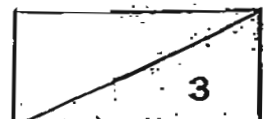
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(b) Why is the inner can made of steel and not plastic?

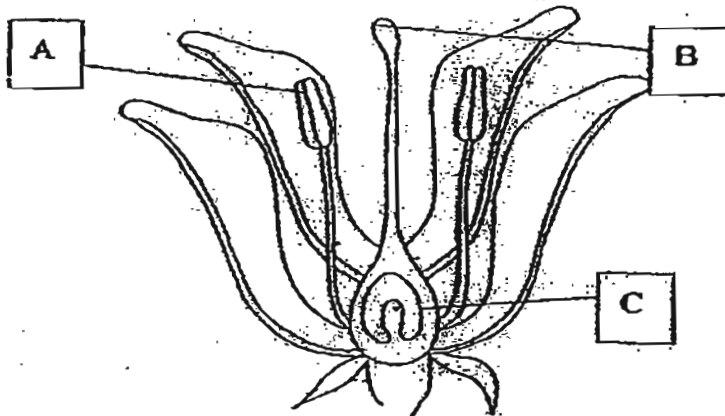
[1]

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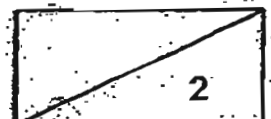


33. The diagram below shows a cross-sectional view of a flower.



Explain the functions of the parts labelled in the table below. [2]

Parts	Functions
A	
B	



34. Ethan set up an experiment as shown below to find out if the rate of breathing would be affected when the hamster exercised.

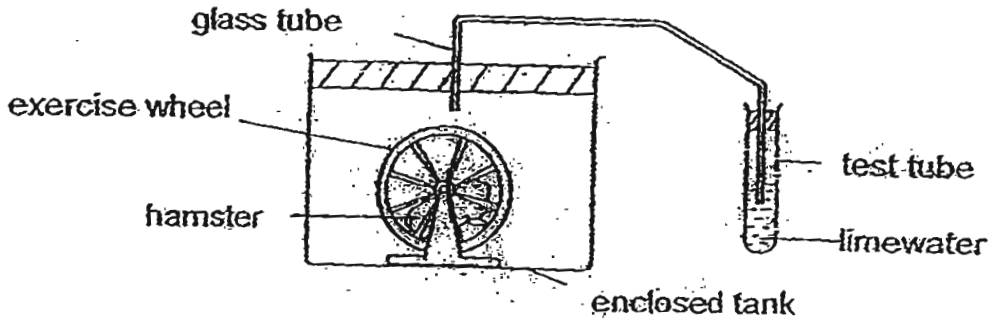
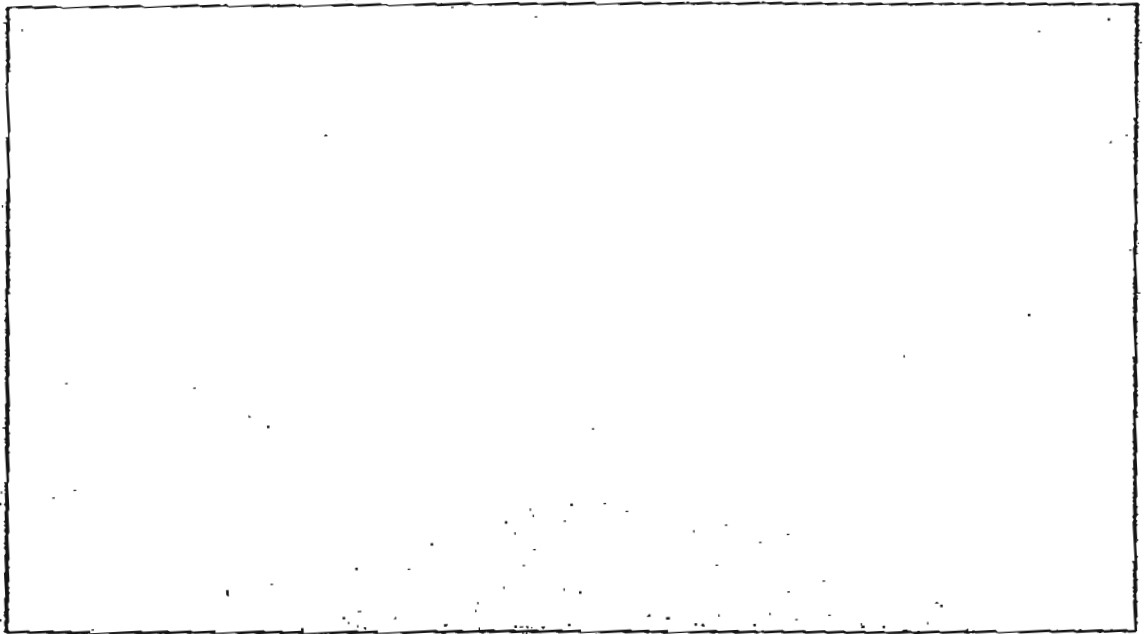


Diagram A

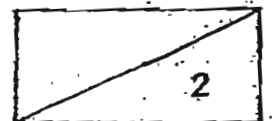
- (a) His teacher told him that he would need to have a control for his experiment. In the space provided below, draw what the control would look like. Please label the drawing. [1]



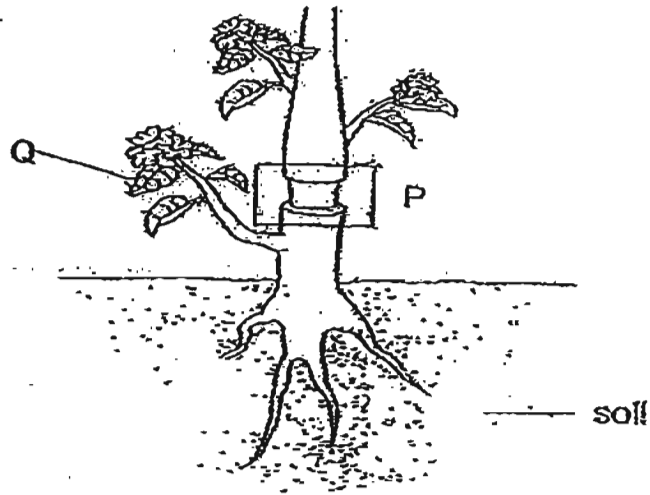
- (b) By observing the limewater closely, what observation would he make in order to draw a conclusion for his experiment? [1]

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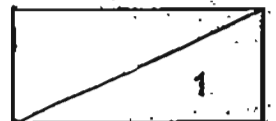
35. The diagram below shows a plant.



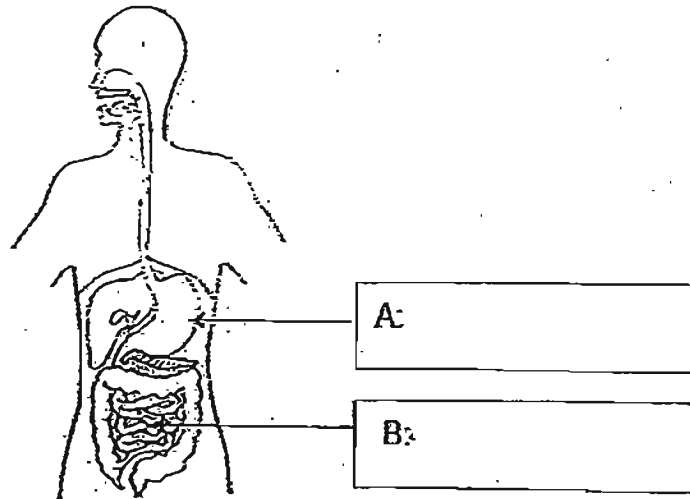
Keegan cut a ring around the stem at P. As a result, the tubes carrying food were removed. However, the part marked Q continued to grow bigger and bigger. Why is this so? [1]

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36. Look at the diagram below.



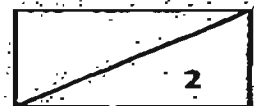
(a) Label Parts A and B in the boxes above.

[1]

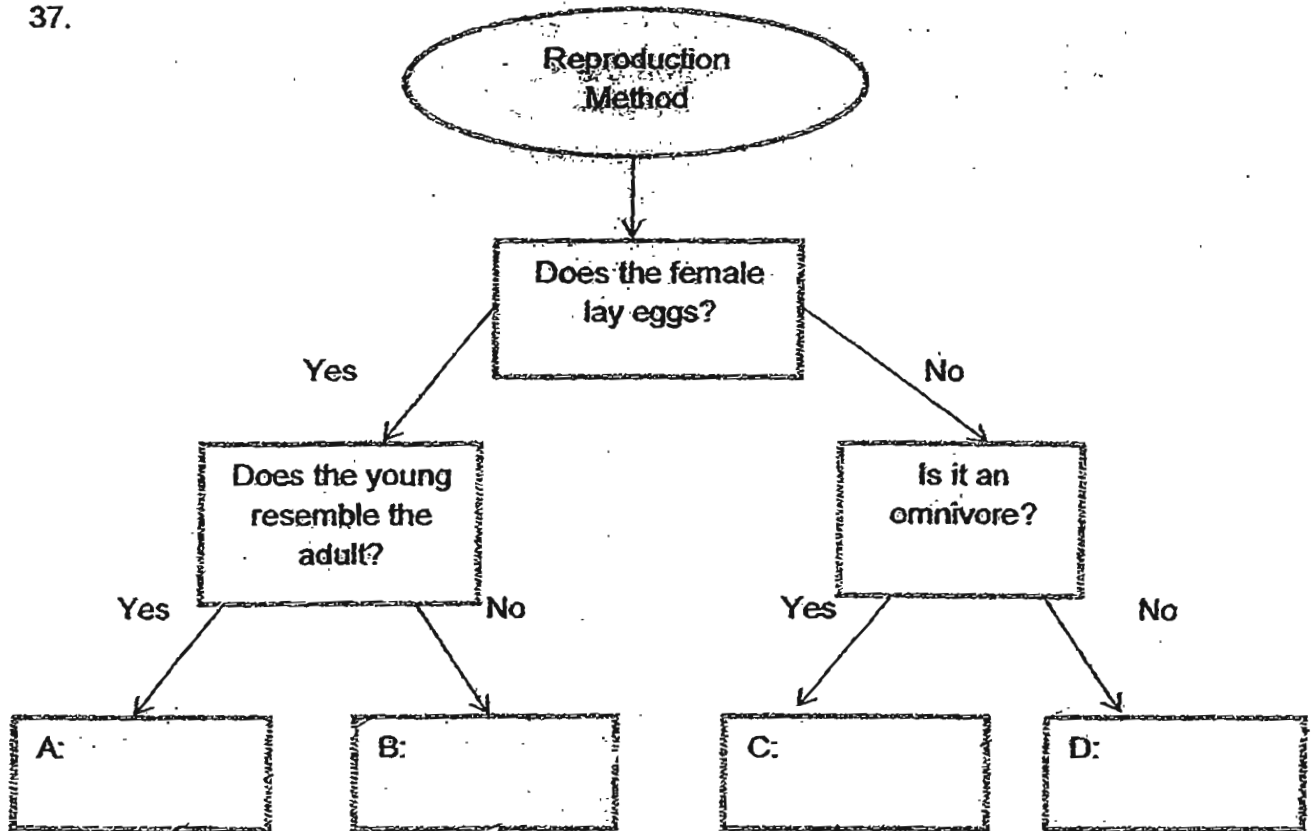
(b) Name the part of the body where water is removed from the undigested food.

[1]

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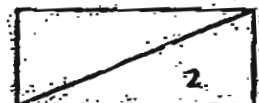


37.

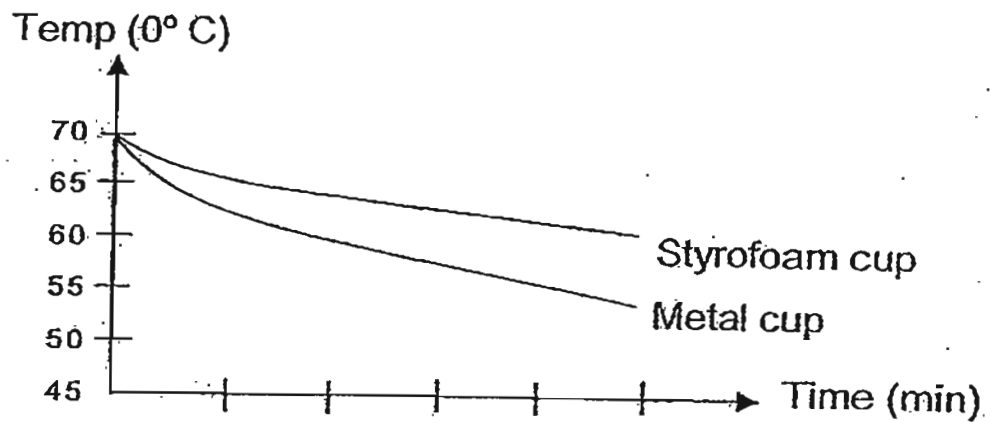


(a) Put the following animals: lizard, zebra, man and mosquito in the boxes above. [1]

(b) Name an organism that is a mammal but lays eggs. [1]



38. Allan decided to carry out an experiment to find out which material is better for keeping a drink hot. He poured the same amount of hot water at  $70^{\circ}\text{C}$  into both a metal cup and a styrofoam cup of the same size and shape. He measured the temperature of the water of both cups at 2 minute intervals. The results of the experiment are shown in the diagram below.

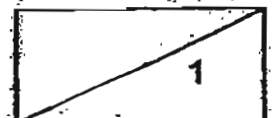


What can he conclude from the results of the experiment?

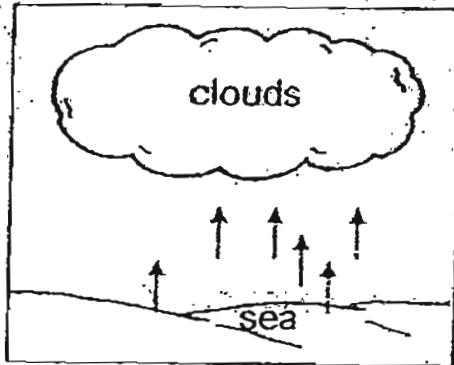
[1]

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39. Study the diagram below.



(a) Name the two processes that take place in the diagram above. [1]

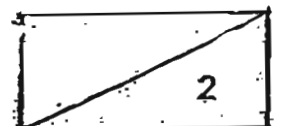
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(b) Explain how rain clouds are formed. [1]

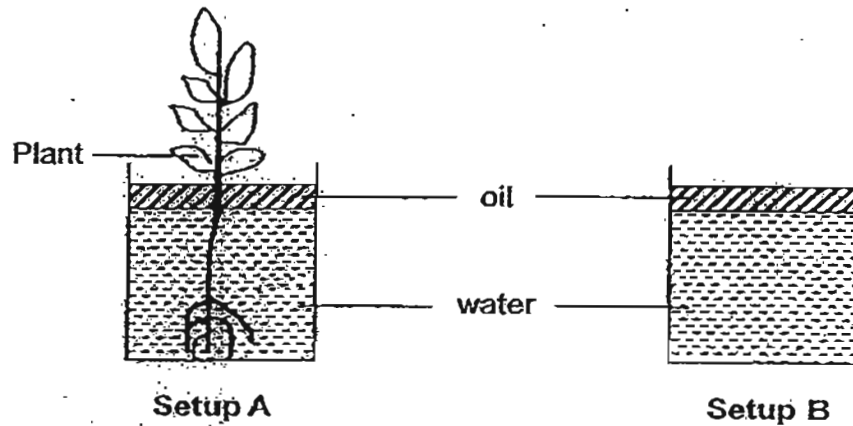
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40. Look at the two set-ups below.



(a) What do you think could be the aim of the above experiment? [1]

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(b) What is the purpose of having a layer of oil above the water? [1]

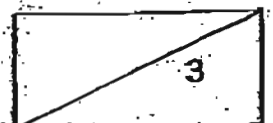
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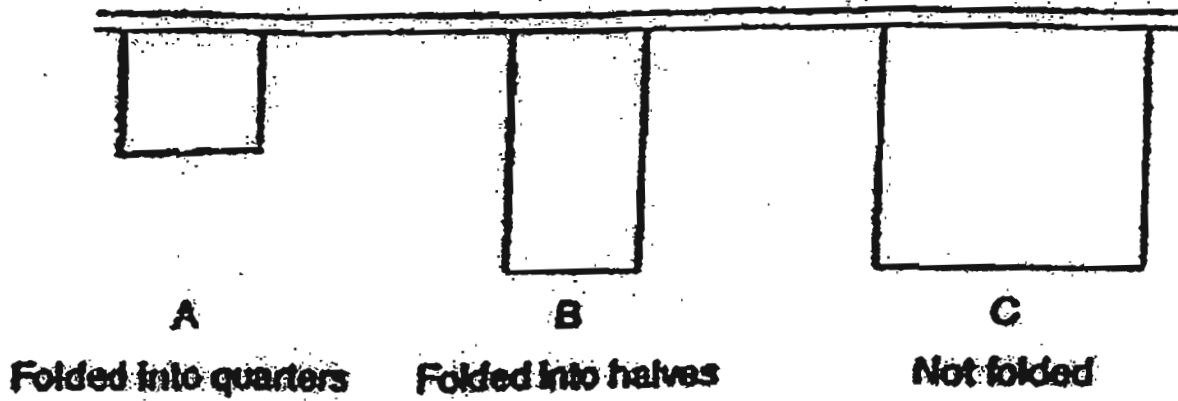
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41. Study the statements carefully and put a tick in the appropriate box. [1]

	Statement	True	False	Not Possible to tell
(a)	The stoma is found only on the leaves of plants.			
(b)	The stoma consists of one cell.			
(c)	The stoma allows the exchange of gases during photosynthesis and respiration.			
(d)	The guard cells control the amount of water lost through respiration.			



42. After washing 3 similar handkerchiefs, Mrs Chen hung them on a clothes line in her garden to dry as shown below:



- (a) Which one of the above handkerchiefs took the longest time to dry? [1]

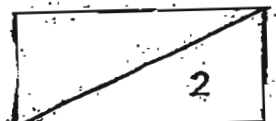
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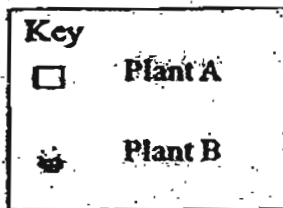
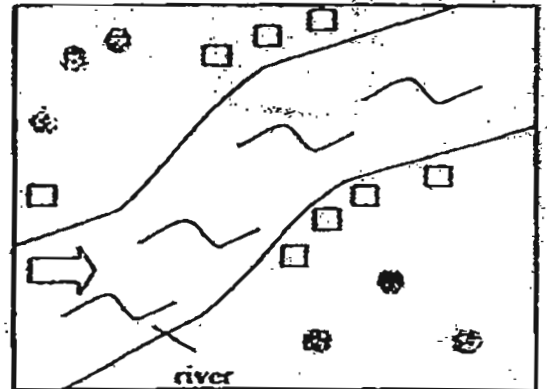
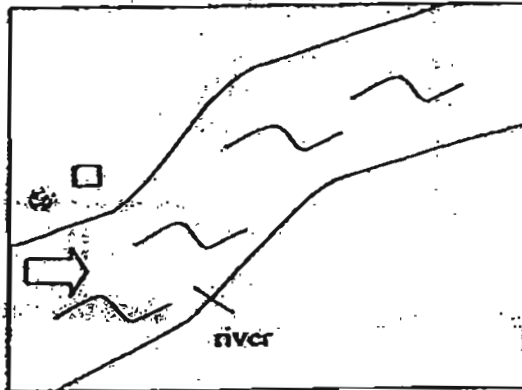
- (b) Explain your answer in (a). [1]

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43. Sally counted the number of wild plants, A and B, on a piece of land. After a few months, she looked at the same piece of land again. Her observations are shown below.



(a) State the method of dispersal for plants A and B.

[1]

(i) A: \_\_\_\_\_

(ii) B: \_\_\_\_\_

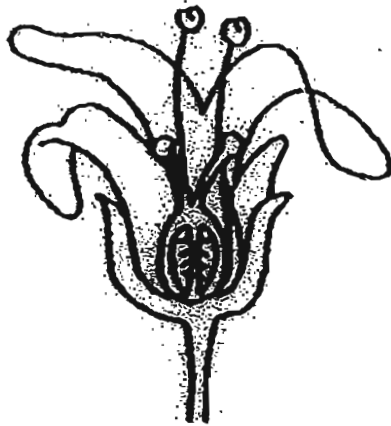
(b) Name one characteristic of the fruit of plant A.

[1]

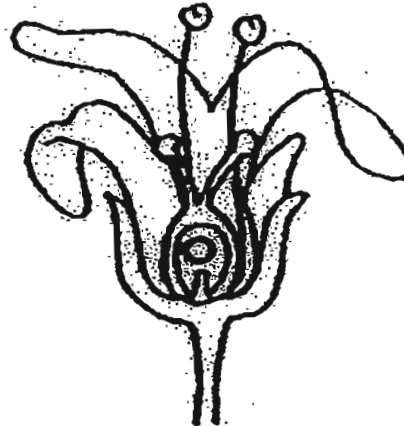
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44. The following pictures show the longitudinal section of two flowers, A and B, with all their ovules exposed.

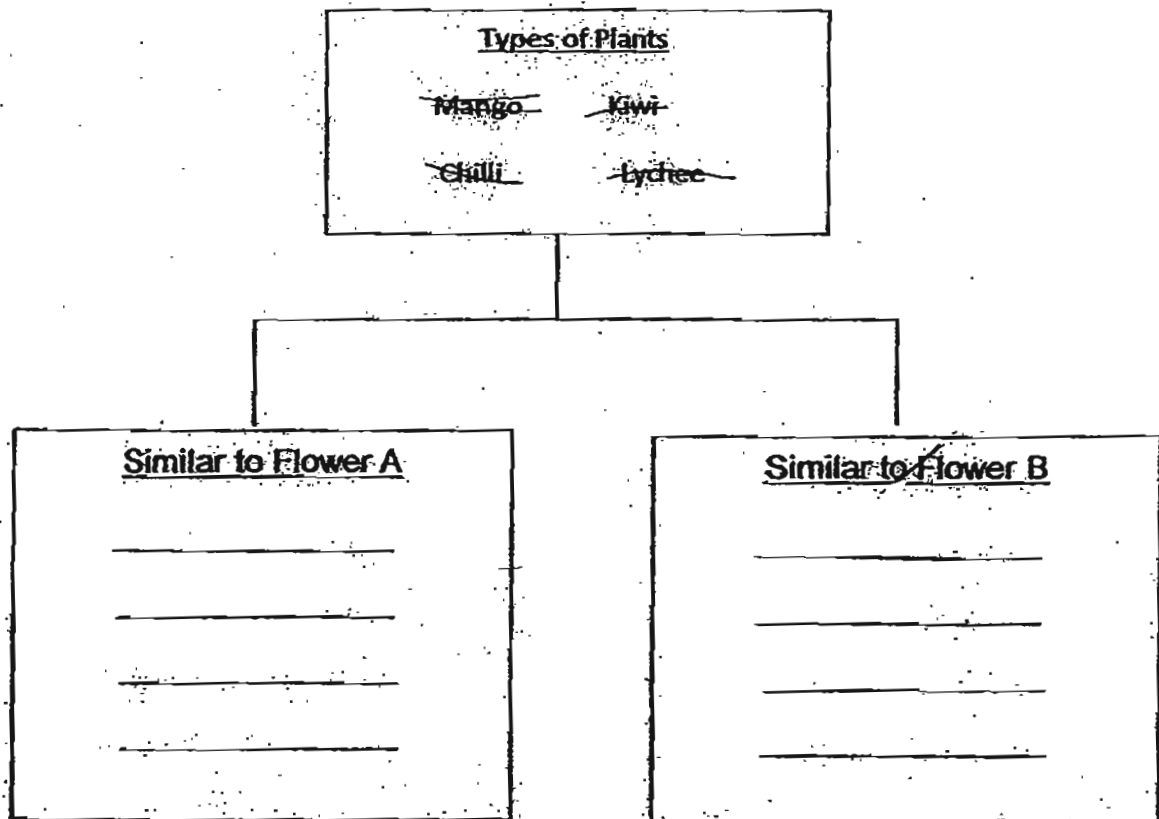


Flower A

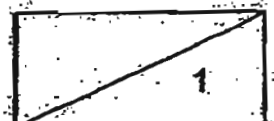


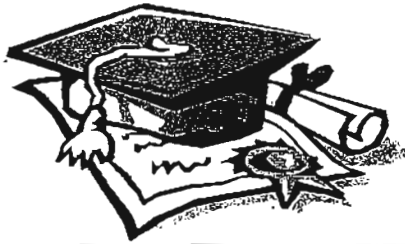
Flower B

From the list of plants below, classify these plants so that they have flowers which are similar in structure to that of flower A or B. [1]



The End



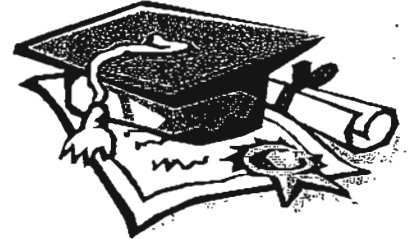


# ANSWER SHEET

**EXAM PAPER 2011**

**SCHOOL : AITONG**  
**SUBJECT : PRIMARY 5 SCIENCE**

**TERM : SA1**



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

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

31)a)i)W ii)Z

b)Cell Z has chloroplasts contains chlorophyll which absorb light needed for photosynthesis to be carried out.

c)Cell X. Cell X has a nucleus and does not have a cell wall like an animal cell.

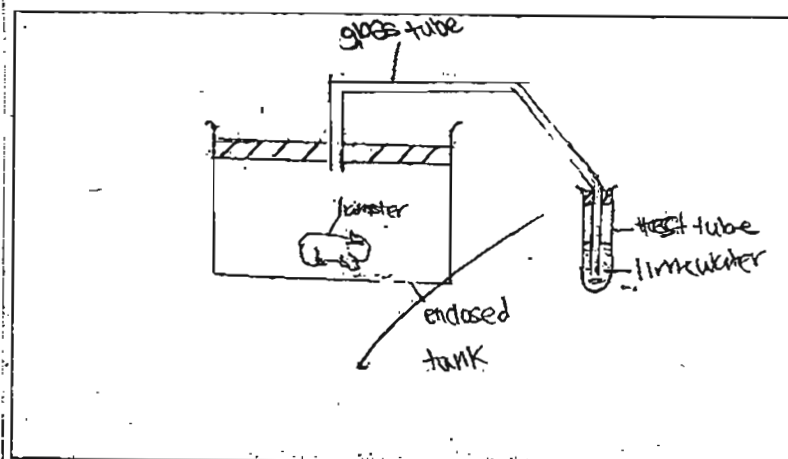
32)a)The milk thus loses heat to the ice and salt quickly and changed into ice-cream.

b)Steel is a good conductor of heat allowing the flavoured milk mixture to lose heat more quickly unlike plastic which is a poor conductor of heat.

33)A: Contains pollen grains and will open up when the pollen grains in ready to be carried away by the insect or wind.

B: Produces a substance which makes the pollen grain which lands of it grow a pollen tube down to the ovary.

34)a)



b)The limewater turns chalky faster when the hamster is exercising.

35)The leaves Q are still able to make its own food as the water-carrying tubes are able transport water from the root to the leaves at Q.

36)a)A: stomach      B: small intestine  
b)Large Intestine.

37)a)A: Lizard      B: mosquito      C: man      D: zebra  
b)Platypus.

38)The Styrofoam cup keeps the drink hotter than the metal cup.

39)a)Evaporation and Condensesation.

b)Water from the water bodies evaporate into water vapour. The hot water vapour rises upwards comes into contact with the cooler air above, loses heat and condenses into water droplets. They gather to form clouds.

40)a)It was to find out if plants absorb water.

b)It is to prevent water from evaporating because any water loss is solely due to the plant taking in water.

41)a)F      b)F      c)T      d)F

42)a)Handkerchief A.

b)A had the smallest exposed surface area than the rest of the handkerchiefs. Therefore it took the longest time to dry as the larger the exposed surface area the faster the rate of evaporation.

43)a)i)water      ii)wind

b)"Fibrous husk" , "waterproof covering",fruit is light.

44)Flower A: kiwi , Cilli

Flower B: Mango, Lychee