AI TONG SCHOOL

2010 SEMESTRAL ASSESSMENT (1)

PRIMARY FIVE SCIENCE

DURATION : 1hr 45 min

DATE: 13 May 2010

INSTRUCTIONS

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

Name : _____ **( )**

Class : Primary _____

Parent's Signature : _____

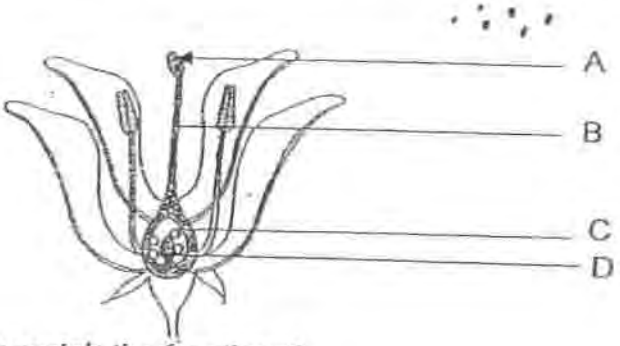
Date : _____

MARKS	100

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. The picture below shows some parts of a flower. Their functions are given in the table below.



Which parts correctly match the functions?

	Part	Function
A	Stigma	Receives pollen grains
B	Style	Allows pollen tubes to grow downwards to reach the ovules
C	Ovary	Protects the ovules inside it
D	Ovule	Contains an egg cell

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

2. Catherine wanted to find out the amount of water needed for balsam plants to grow well. She planted 3 balsam plants in three pots, X, Y and Z and placed them in the same place.

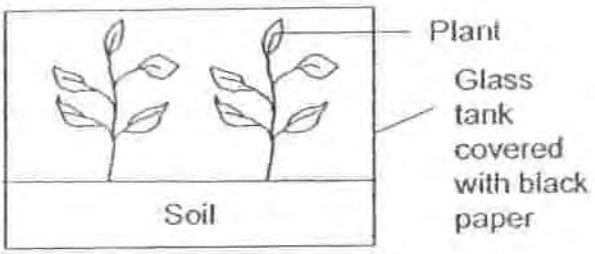
	Pot X	Pot Y	Pot Z
Material of pot	Plastic	Plastic	Plastic
Type of soil	Garden soil	Garden soil	Garden soil
Amount of soil	200g	400g	500g
Amount of water used every day	100ml	250ml	400ml

Why was the experiment **NOT** a fair one?

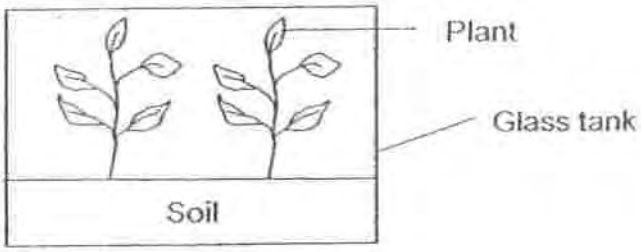
(1) The amount of soil in each pot was different.
(2) The type of soil used in each pot was the same.
(3) The three plants were given different amounts of water.
(4) The balsam plant in Pot Z obtained more sunlight than the others.

3. Peter wanted to investigate if the presence of light is necessary for the growth of a type of plant. Which two setups should he use to ensure a fair test?

A



B



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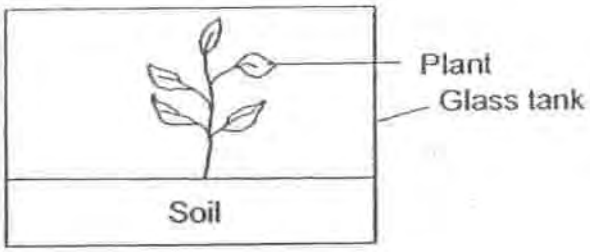
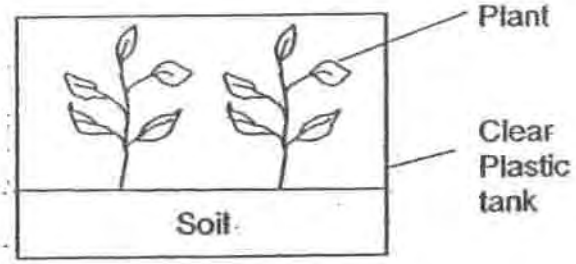
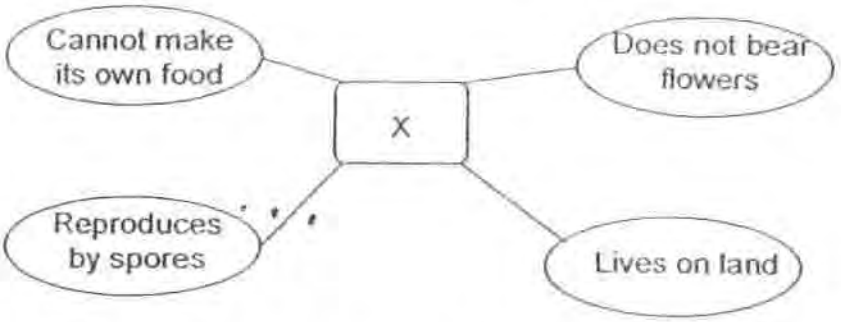


D



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

4. The diagram below shows the characteristics of Organism X.



Which one of the following cannot be Organism X?

(1) moss
(2) mould
(3) toadstool
(4) bracket fungi

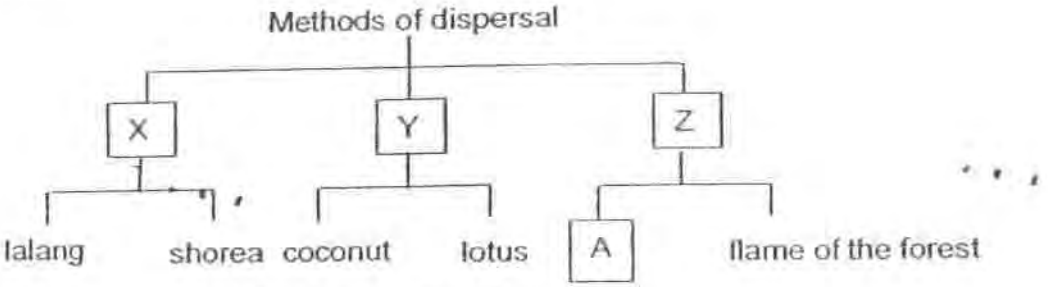
5. The table below shows the characteristics of 4 seeds or fruits W, X, Y and Z.

Seed/Fruit	Size	Weight	Other characteristics
W	Small	Light	It has hooks
X	Small	Light	It is brightly coloured
Y	Big	Heavy	It has a fibrous husk
Z	Small	Light	It has a dry and hard fruit wall when ripe

How are W, X, Y and Z likely to be dispersed?

	W	X	Y	Z
(1)	By wind	By animals	By water	By splitting open
(2)	By animals	By animals	By water	By splitting open
(3)	By animals	By wind	By splitting open	By water
(4)	By wind	By splitting open	By animals	By wind

6. The diagram shows 3 methods of fruit and seed dispersal.

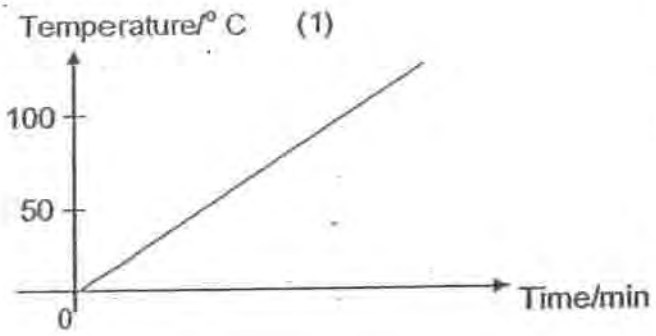


Which one of the following plants can 'A' be?

(1) balsam
(2) mimosa
(3) angsana
(4) mangrove

7. Jamie heated a beaker of ice. All the ice melted after a few minutes. She continued to heat the water until it boiled. She allowed the water to boil for a while. Then, she turned off the fire and recorded her observations on a graph.
Which one of the following graphs correctly shows the temperature changes in this activity?

(1)



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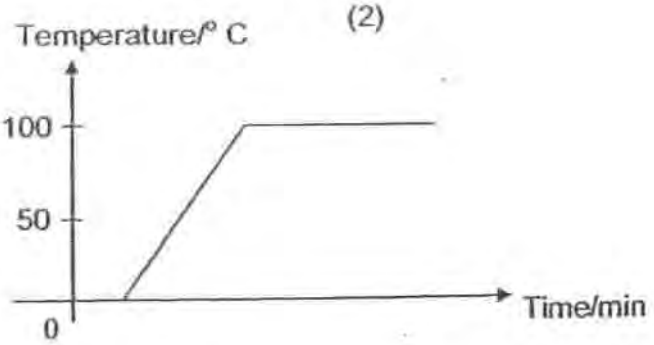

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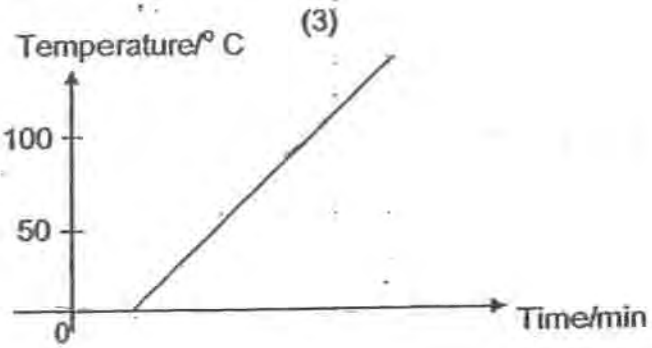

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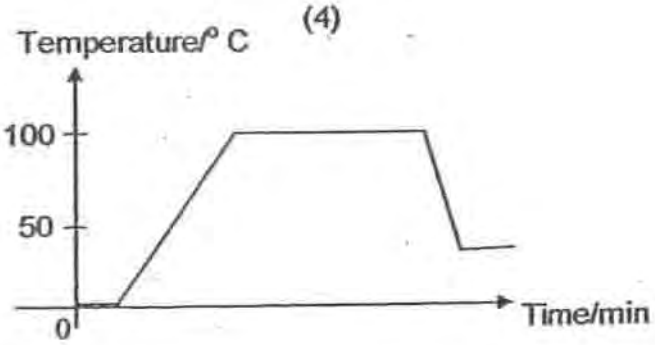


8. A boy carried out the following experiment. He used two identical types of plants and 2 identical pots, Pot A and Pot B. He placed 2 plants in Pot A and many plants in Pot B. He used the same type of soil in both pots and watered them with the same amount of water. Both pots were placed in a sunny area.

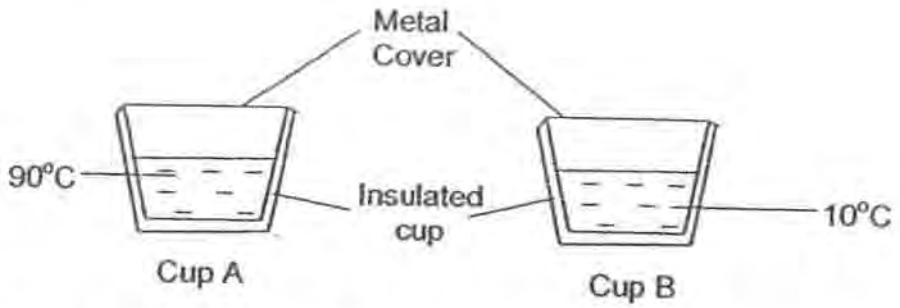
Pot A Pot B

After one month, he observed that the plants in Pot A were healthier than those in Pot B.

He carried out this experiment to find out if _____.

(1) plants need water to germinate
(2) overcrowding affects how plants grow
(3) plants can grow straight in crowded spaces
(4) plants need water, soil and light to reproduce

9. James poured 200ml of water into two insulated cups as shown below. The temperature of the water in cup A is 90°C and the temperature of water in Cup B is 10°C.



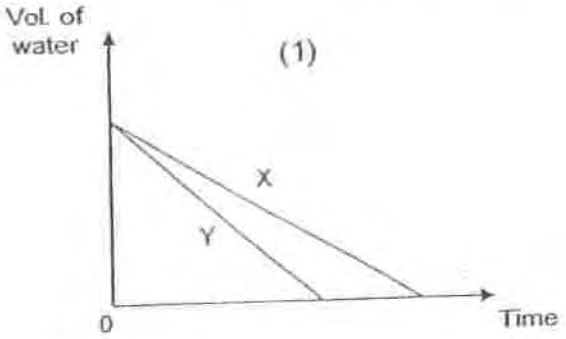
Which of the following statements about the results of the experiment are **correct**?

A The water vapour inside Cup A condensed on the metal cover of Cup A.
B The water vapour inside Cup B condensed on the metal cover of Cup B.
C The water vapour in the surrounding air condensed on the metal cover of Cup A
D The water vapour in the surrounding air condensed on the metal cover of Cup B.

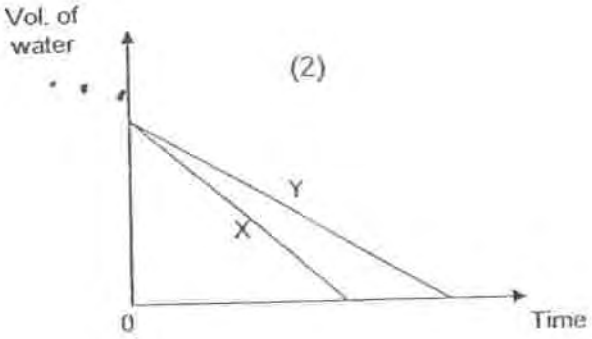
(1) A and B only
(2) C and D only
(3) A and D only
(4) B and C only

10. One windy and sunny day, Janet filled two identical Containers, X and Y, with the same amount of water. She placed Container X in a cupboard and Container Y in the garden. Which of the following graphs shows the amount of water left in Container X and Container Y at different times of the day?

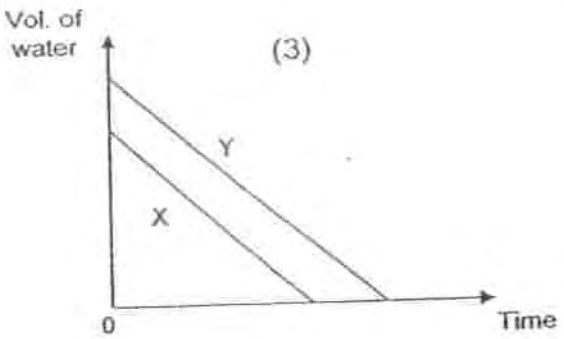
(1)



(2)



(3)



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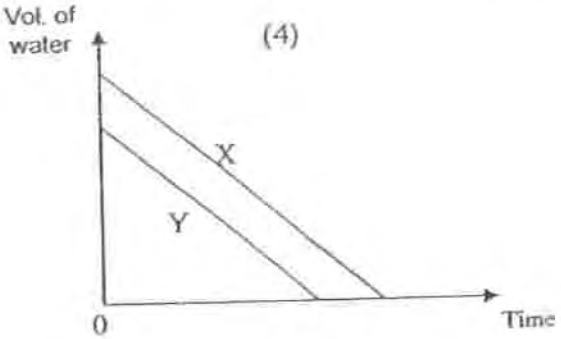
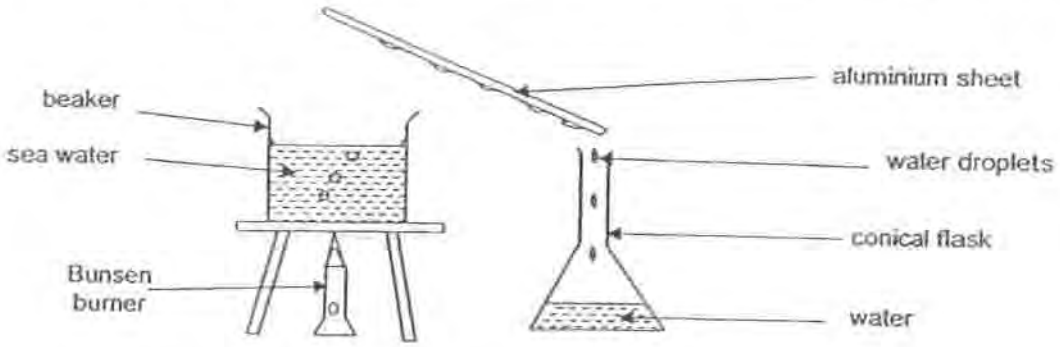


11. Peter heated some sea water in a beaker. After some time, he observed that the number of water droplets formed on the aluminium sheet became less and less. Why was this so?



A The sea water had become hotter
B The rate of evaporation had increased
C The rate of condensation had decreased
D The aluminium sheet had become hotter

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

12. What is the function of the large intestine in our digestive system? It _____.

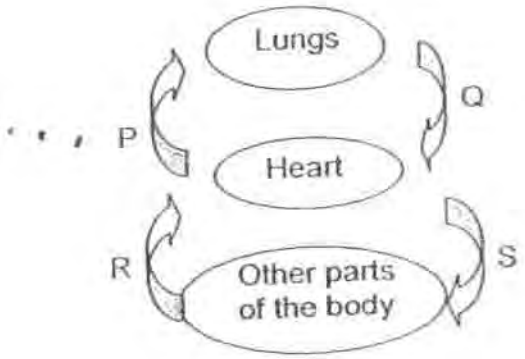
(1) breaks the food down
(2) removes water from the undigested food
(3) passes the undigested food out of the body
(4) allows the digested food to be absorbed into the blood

13. Which of the following are similarities between the plant and the human circulatory system?

A Both systems transport food and water
B Both systems have tubes to transport materials
C Both systems transport oxygen and carbon dioxide
D Both systems use organs to pump the materials through the tubes.

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

14. The diagram below shows parts of the circulatory system. P, Q, R and S are blood vessels.



Which of the following shows the amount of oxygen in our body at P, Q, R and S?

	More oxygen at	Less oxygen at
(1)	Q and P	R and S
(2)	P and S	R and Q
(3)	Q and S	R and P
(4)	R and P	Q and S

15. Diana carried out different activities and measured her pulse rate after each activity. The results are recorded in the table below.

Activity	Pulse rate per minute
A	70
B	80
C	110
D	140

Which letter correctly represents the activity she was engaged in?

	Jogging	Running	Reading	Strolling
(1)	A	C	B	D
(2)	B	A	D	C
(3)	C	D	A	B
(4)	B	D	C	A

16. Look at the following table. Which is true of the air which we breathe out?

	Oxygen	Temperature	Water vapour	Carbon dioxide
(1)	Less	Cooler	More	More
(2)	Less	Warmer	Less	More
(3)	More	Cooler	Less	Less
(4)	Less	Warmer	More	More

17. Which of the following statements about blood vessels is **true**?

A Veins have very thick walls
B Arteries have very thick walls
C There are three types of blood vessels in our body.
D Capillaries are very narrow blood vessels that join arteries to the veins.

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

18. Heidi observed some cells taken from an organism under the microscope as shown below.

Which one of the following is a possible inference that Heidi can make from her observation of the cells?

(1) These cells are taken from an alga.
(2) Photosynthesis is carried out by these cells.
(3) These cells are taken from the human cheek.
(4) These cells control all the activities of the organism.

19. Which one of the following statements is true about cells?

(1) Different parts of a cell carry out different functions.
(2) Cells have different sizes but the shapes are the same.
(3) All cells in the human body carry out the same function.
(4) All cells have regular shapes and are three-dimensional.

20. The nucleus plays a few important roles. Which of the following are functions of the nucleus?

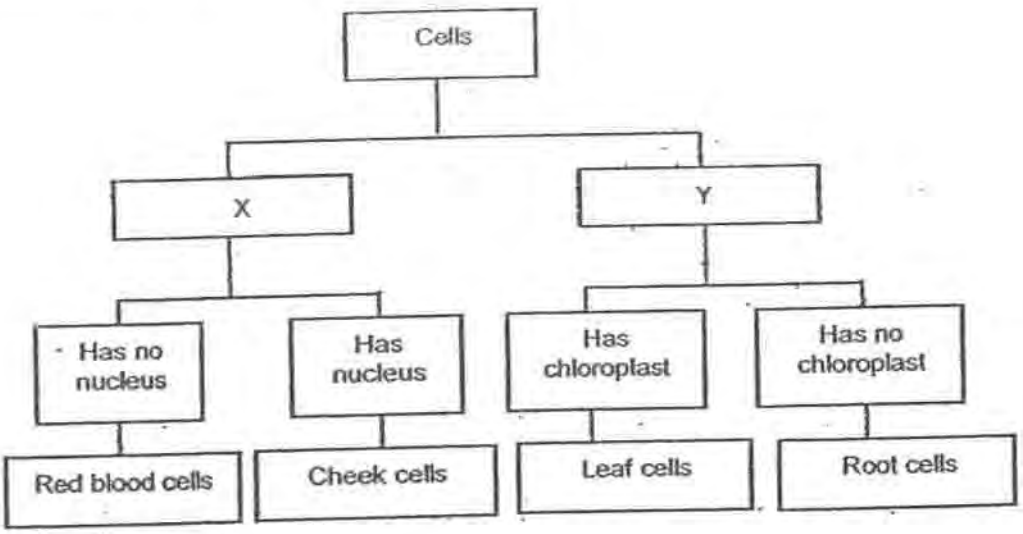
A Contains genetic information.
B Controls the activities of the cell.
C Allows only certain substances to pass through the cell.
D Controls the movement of substances in and out of the cell.

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

21. Some plant cells contain chloroplasts. What is the function of the chloroplasts?

(1) Give the cell its shape.
(2) Contain chlorophyll that traps sunlight.
(3) Control the amount sunlight to be trapped.
(4) Allow substances to move around the cell.

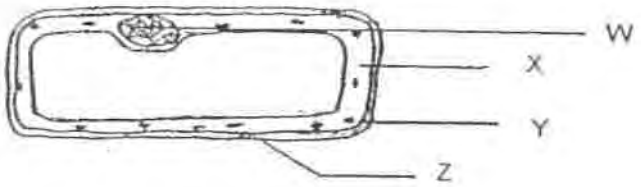
22. The concept map below compares different cells.



What do X and Y tell us about the cell?

	X	Y
(1)	Has cell sap	Has no cell sap
(2)	Has chlorophyll	Has no chlorophyll
(3)	Has no cell wall	Has cell wall
(4)	Has no cell membrane	Has cell membrane

23. The cell below is taken from an organism.



What one of the following correctly identifies the cell parts W, X, Y and Z?

	W	X	Y	Z
(1)	cytoplasm	nucleus	cell wall	cell membrane
(2)	cell wall	nucleus	cytoplasm	cell membrane
(3)	nucleus	cell membrane	cell wall	cytoplasm
(4)	nucleus	cytoplasm	cell membrane	cell wall

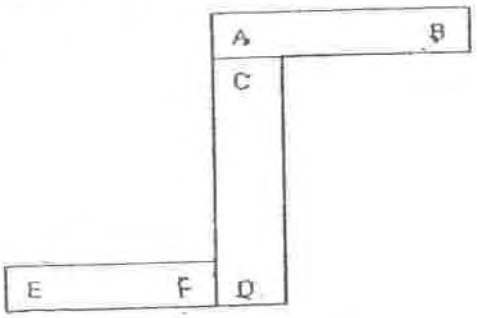
24. During a Science quiz, Alex, Ben, Clara and Denzel each listed the cell parts of an animal cell in the table below.

	Cell parts
Alex	nucleus, cytoplasm, chloroplasts
Ben	nucleus, chloroplasts, cell wall, cell membrane
Clara	nucleus, cytoplasm, cell membrane
Denzel	cytoplasm, cell membrane, cell wall, nucleus

Which pupil(s) have listed the cell parts of an animal cell correctly?

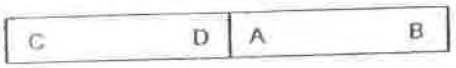
(1) Alex only.
(2) Clara only.
(3) Ben and Clara only.
(4) Alex and Denzel only.

25. Three bar magnets with their ends marked A to F can be arranged as shown below.

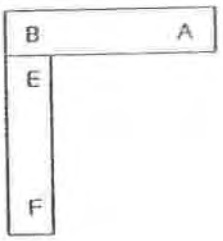


Which one of the following diagrams shows a possible arrangement of two of the magnets?

(1)



(2)



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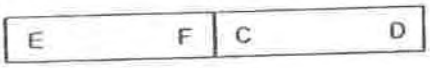
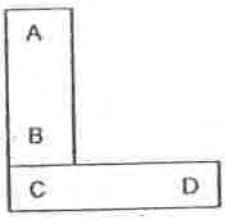
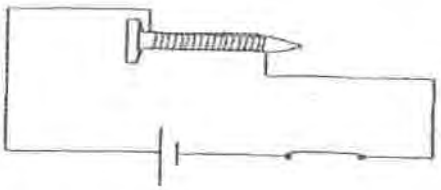


(4)



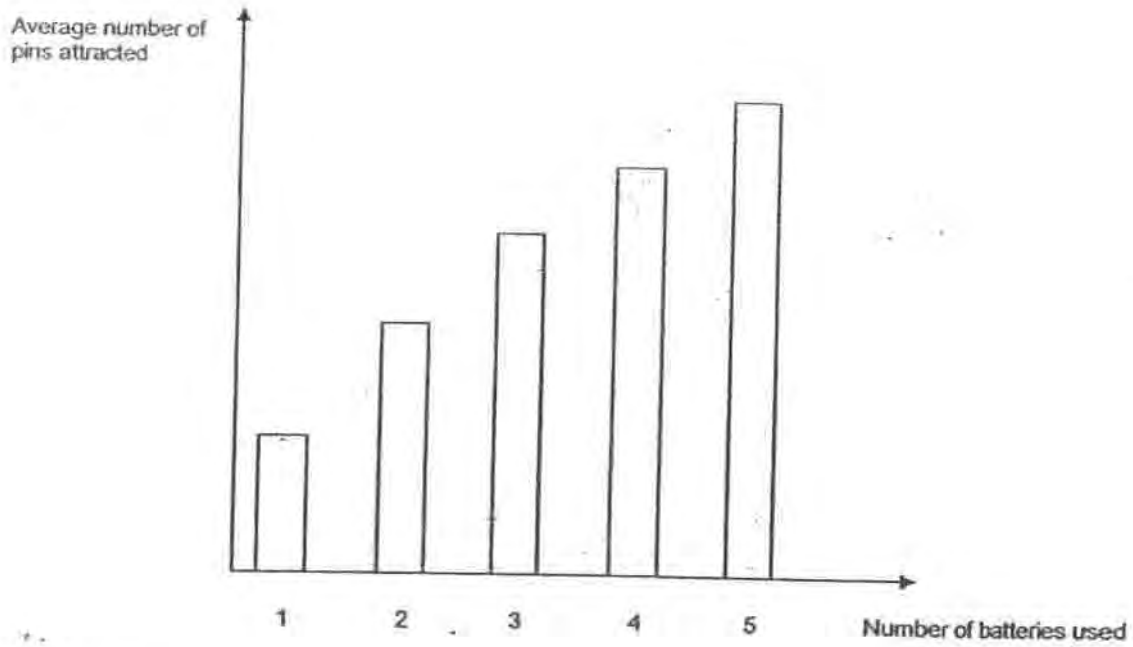
26. Regan used the setup below to carry out an experiment.



He carried out the following steps:

1. Brought the tip of the magnetised iron nail into a tray of iron pins.
2. Observed the number of iron pins that were attracted by the magnetized iron nail.
3. Repeated steps 1-and 2.
4. Calculated the average number of pins attracted.
5. Changed the number of batteries used in the set-up.
6. Repeated steps 1 to 4.

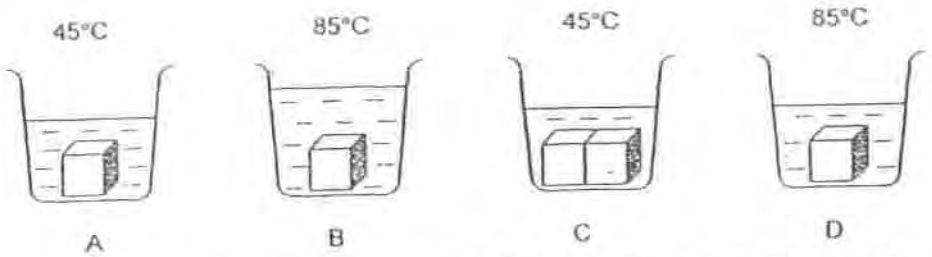
The graph below shows the result of his experiment.



What can Regan conclude from the result of his experiment?

(1) The magnetised iron nail is a strong magnet.
(2) The type of batteries used will affect the number of pins attracted.
(3) The pins become magnetized when the iron nail is brought near them.
(4) The number of pins attracted is affected by the number of batteries used.

27. An experiment is to be conducted to find out whether the temperature of the water will affect the rate at which the sugar dissolves.



Which two of the above set-ups should be used to ensure a fair test?

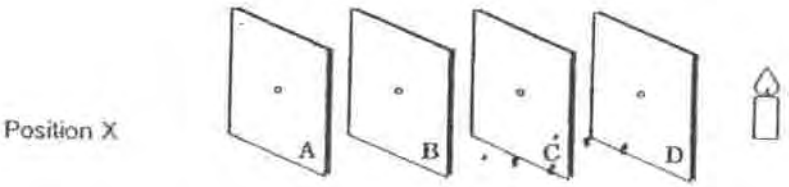
(1) A and C
(2) A and D
(3) B and C
(4) B and D

28. Kyle left a foam cup and a metal cup in the refrigerator overnight. In the morning, when he picked up the metal cup, it felt much colder than the foam cup. Which of the following statements explain why this is so?

A The foam cup is thicker and conducts more heat.
B The metal cup is a better conductor of heat.
C Heat is transferred from the metal cup to Kyle's hand more quickly.
D Heat is transferred from Kyle's hand to the metal cup more quickly.

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

29. Jim placed four pieces of opaque cardboards such that all the small holes in the centre of the cardboards are in a straight line.

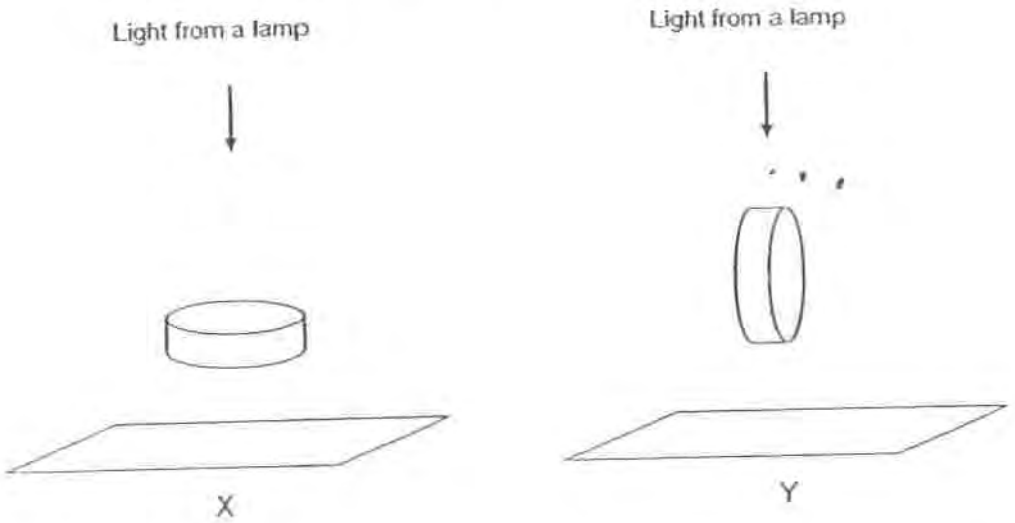


If cardboard B is moved out of the straight line, Jim at position X would not be able to see the candle flame. Which of the following explain why this is so?

A Light travels in a straight line.
B Light is reflected by the cardboard.
C Light is absorbed by cardboards A, C and D.
D Light cannot pass though the opaque cardboards.

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

30. The diagrams below show two identical oval containers that were placed in different positions directly under identical light sources in a dark room.



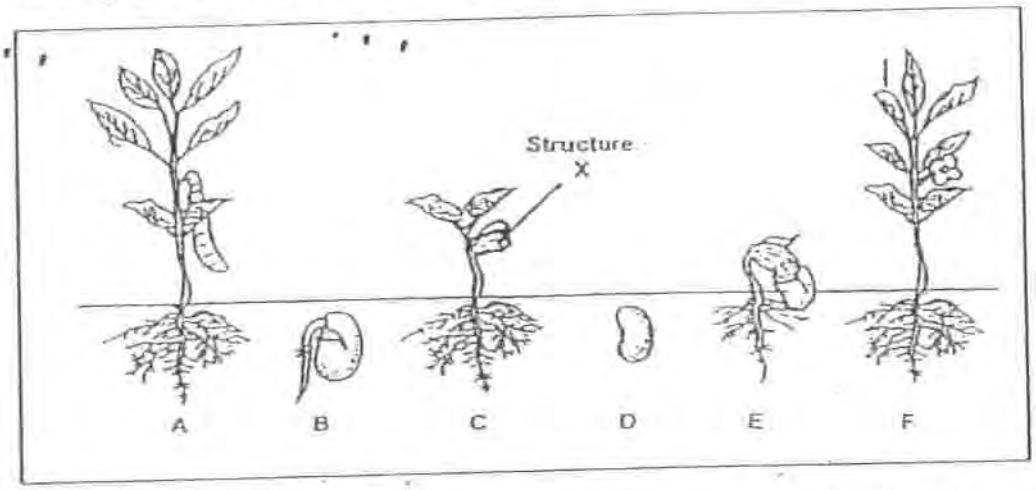
Shadows were formed on screens X and Y as shown below. Which of the following shadows would be observed for each screen?

	Screen X	Screen Y
(1)		
(2)		
(3)		
(4)		

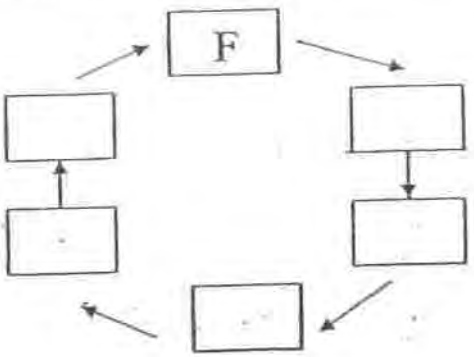
Name: _____ ( )
Class: P5 ( )

Section B: 40 marks
Read the questions carefully and write down your answers in the spaces provided.

31. The diagram below shows the stages of growth of a bean plant.



(a) Arrange the stages of growth of the bean plant in sequence by writing the corresponding letters in the boxes below. One of the stages has been filled for you. [1]



(b) What happens to structure X as the plant continues to grow? [1]

_____

(c) Give a reason for your answer in (a) [1]

_____

3

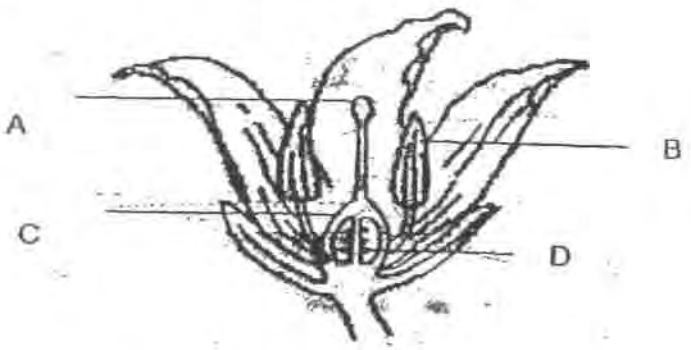
32 The diagram below shows a fruit.

(a) How is the fruit shown above dispersed? [1]

(b) What structure tells you that the fruit is dispersed by the method you have selected? [1]

(c) Name two other fruits that are dispersed in the same method as the fruit above. [2]

33. The diagram below shows the cross section of a flower.

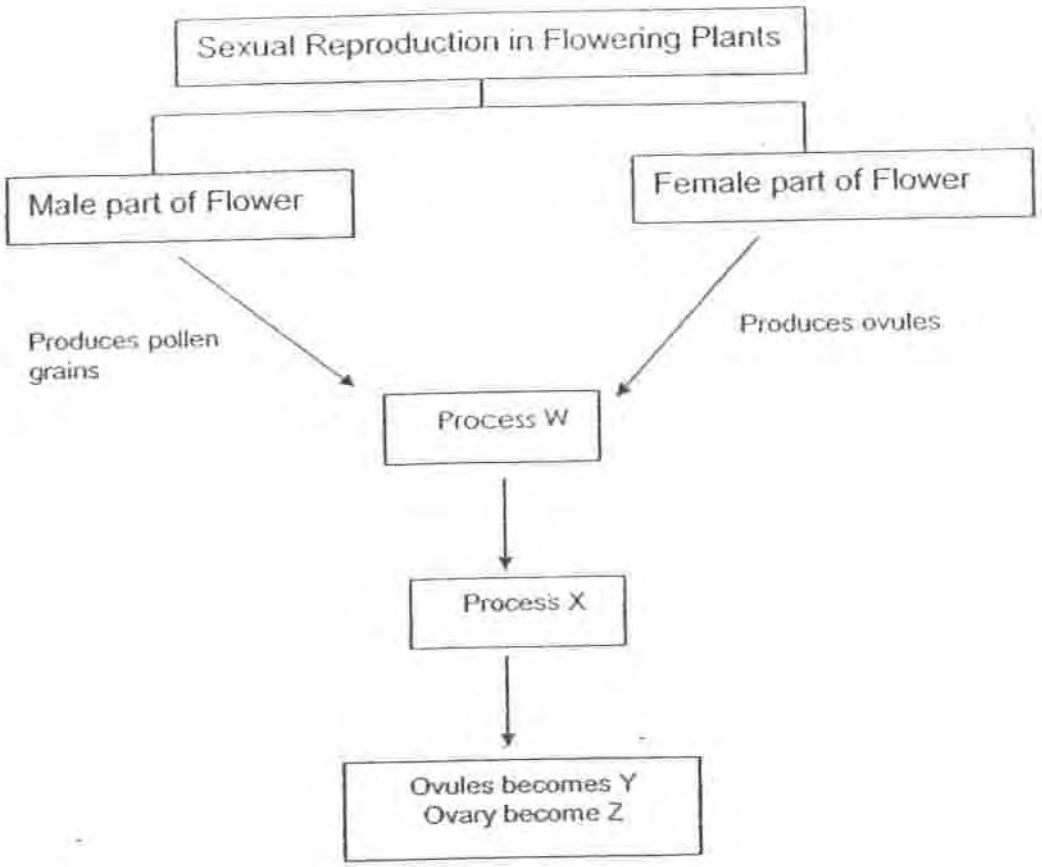


(a) Draw an arrow on the diagram above to show how the pollen grains can be transferred. [1]

(b) Name the process in which pollen grains are transferred from one part of the flower to another on the same flower. [1]

6

34. The flow chart shows the process of sexual reproduction in flowering plants.



(a) What are Process W and Process X? [2]

(i) Process W: _____

(ii) Process X: _____

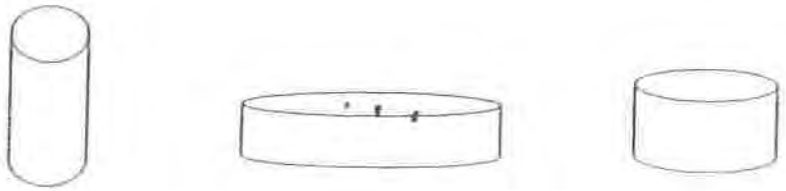
(b) Name the plant parts Y and Z. [2]

(i) Plant Part Y: _____

(ii) Plant Part Z: _____

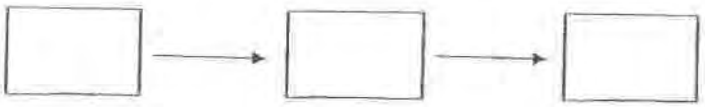
4

35. Jeryl poured the same amount of water into 3 containers A, B and C. These containers were made from the same material but of different size. He placed all of them in the sun. He wanted to find out how quickly the water in each container would evaporate.



A B C

(a) Write down the order of the rate of evaporation of water in the three containers in ascending order. [1]



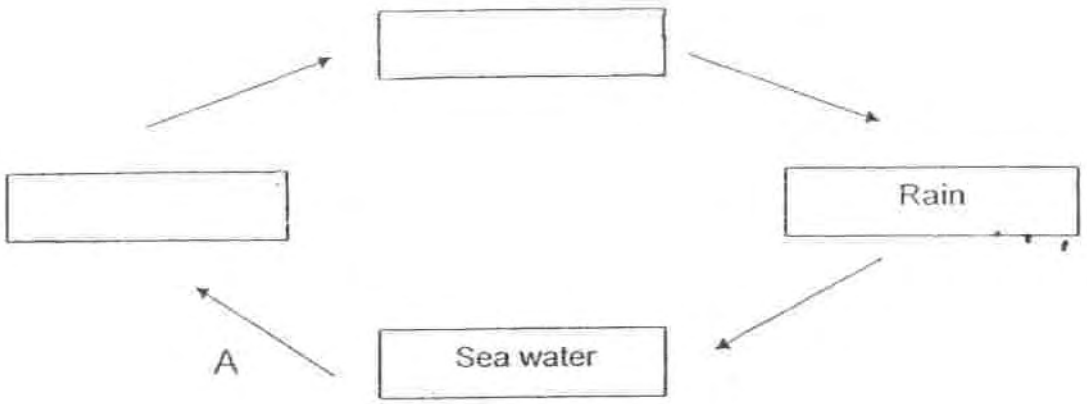
(b) Name the factor that affects the rate of evaporation of water in the three containers? [1]

(c) Jeryl commented that if all the containers were put in an air-conditioned room, the water would not evaporate at all. Is Jeryl correct? Why? [1]

3

36 Complete the diagram of the water cycle by writing the correct words in the boxes. [2]

(a)



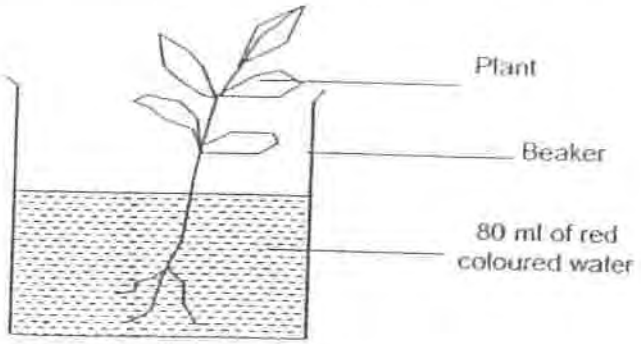
(b) What change of state takes place during process A? [1]

_____

_____

3

37. Kai Wai put a plant into a beaker of coloured water as shown in the diagram below.



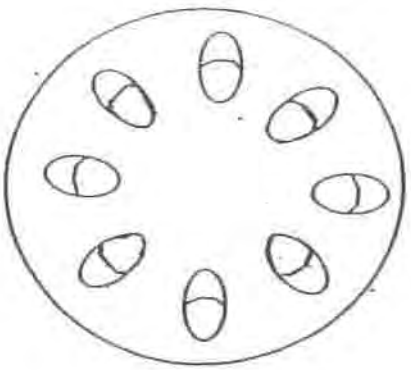
(a) What observation can she make about the leaves of the plant after one day? [1]

_____

(b) What does this activity tell you about the function of the roots of plants? [1]

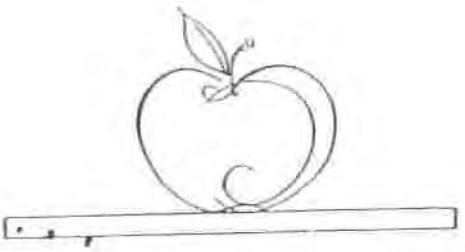
_____

(c) The diagram below shows the cross-section of the stem of the plant in the diagram above.
Shade the parts of the stem that are stained red. [1]



3

38. Joseph took an apple out of the refrigerator and placed it on a table.



(a) What would she see on the apple after a few minutes? [1]

_____

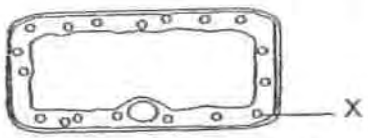
(b) Explain what happened in (a) [1]

_____

(c) What change of state has taken place? [1]

_____

39. The cell below is taken from a plant part. Cell part X labelled in the diagram is a disc-like cell part.



(a) Can cell part X be found in all plant cells? Why? [1]

_____

_____

(b) List an example of a plant part that the cell above is taken from. [1]

_____

5

40. The diagram below shows Organism P, a single-celled organism.

Organism P

(a) Label on the diagram of Organism P the following cell parts: [1]
(i) cell membrane
(ii) cytoplasm

A scientist wanted to find out the function of the cell membrane of organism P. He put organism P in a solution that contained substances X and Y. After several hours, organism P was observed to take in substance X only while substance Y remained in the solution.

(b) Based on this observation, what can the scientist conclude about the function of the cell membrane of organism P? [1]

_____

41. Classify the organisms listed in the box by completing the classification table below. [4]

elodea	paramecium	yeast	man
bacteria	bee	onion	tree

Made up of one cell	Made up of many cells

6

42 Diagram 1 below shows a magnet held near P which is tied to a string. It is then observed that P moved away from the magnet and a distance is maintained between them. A flame was then placed at one end of the magnet as shown in Diagram 2. After some time, P started to move toward the magnet and the distance between them decreased.

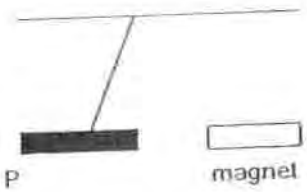


Diagram 1

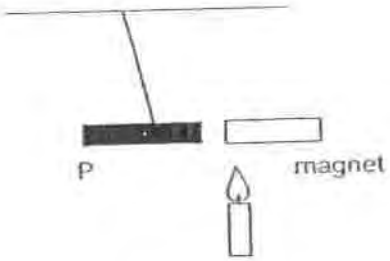


Diagram 2

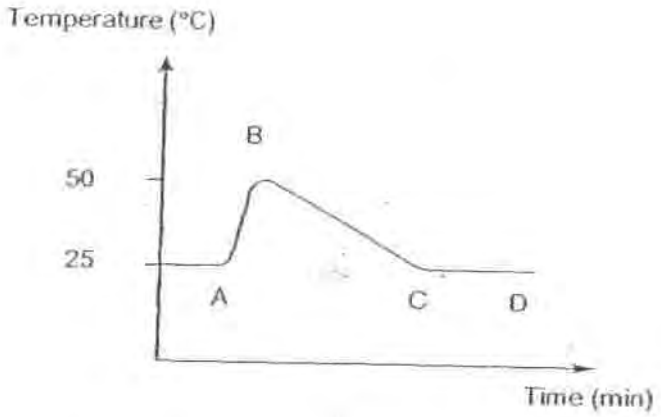
(a) Based on the above observation, what is P likely to be? [1]

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

(c) In Diagram 2, explain why the distance between P and the magnet decreased. [1]

3

43. Joshua mixed Liquid X and Liquid Y together in a glass container. After a few minutes, he observed that a chemical reaction had taken place. He recorded the temperatures of Liquids X and Y immediately after they were mixed at regular intervals in the container during the experiment. The graph below shows the results of his experiment.



(a) At which point of the graph did the chemical reaction between Liquids X and Y take place?

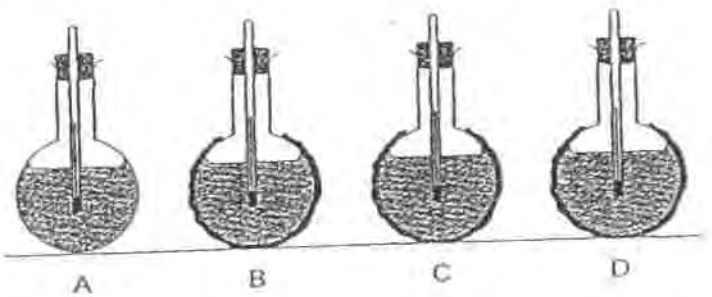
[1]

(b) Based on the graph, what is produced as a result of the chemical reaction between Liquids X and Y?

[1]

2

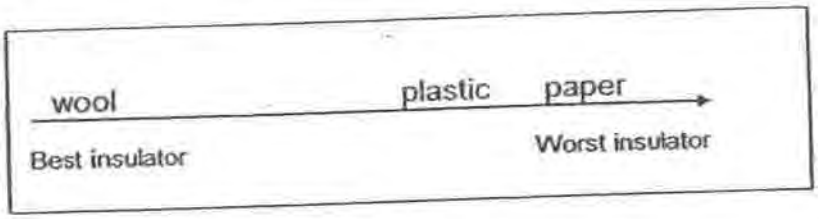
44. Four identical flasks were filled with equal volumes of water at 90°C. Flasks B, C and D were covered with three different materials. Only flask A was left uncovered.



The temperature of the water in each flask was measured before the start of the experiment and after every five minutes for 30 minutes. The results are shown in the table below.

	Temperature (°C)			
Time (min)	Flask A	Flask B	Flask C	Flask D
0	90	90	90	90
5	83	85	89	87
10	78	81	88	84
15	71	77	87	80
20	64	71	85	77
25	56	67	84	73
30	48	62	83	70

The materials used to cover flasks B, C and D are listed below.



(a) Based on the result table, which is the material used to cover: [1]

(i) Flask B: _____

(ii) Flask D: _____

(b) State one variable that was kept the same in the above experiment. [1]

_____

2

ANSWER SHEET

EXAM PAPER 2010

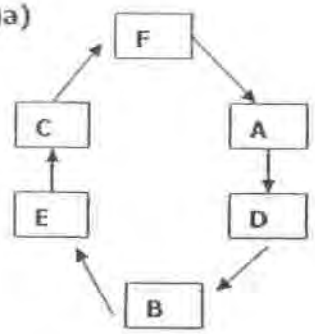
SCHOOL : AI TONG PRIMARY
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

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

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

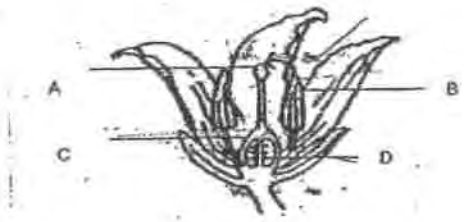
31)a)



b)It will drop off from the plant.
c)Food shared in structure X is used up from the growth of young seedling.

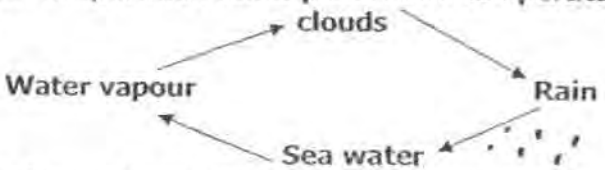
32)a)It dispersed by wind.
b)It has wing-like structure.
c)They are lalang and shorea.

33)a)

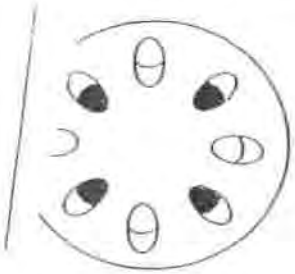


b)The process is pollination.

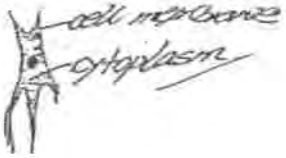
34)a)i)pollination ii)fertilisation
b)i)seeds ii)fruit
35)a)A→C→B
b)The exposed surface area.
c)No. Evaporation takes place at all temperature.
36)a)



b)It change from liquid state to gaseous state.
37)a)Their have coloured drops on the plant.
b)The roots help plant to absorb water.
c)



38)a)They are have water droplets on the apple.
b)Water vapour in the air lost heat and condensed on the cool surface of the apple.
39)a)No, some plant cell do not (photosynthesis or make food).
b)It can taken from leaves.
40)a)i)ii)



b)It allows only certain substances/substance X to pass through.
41)

Made up of one cell	Made up of many cells
Bacteria	bee
Paramecium	onion
Yeast	man
	tree
	elodea

42)a)It likely to be a magnet.
b)It can repel the magnet, and when the magnet is heated they attract each other.
c)The magnet lost its magnetism when heated.
43)a)At point A or AB b)Heat is produced.
44)a)i)paper ii)plastic b)They must have the same amount of water.

42)a)It likely to be a magnet.
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b)They must have the same amount of water.