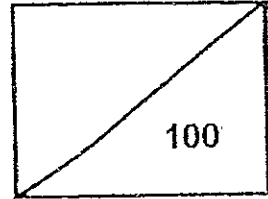




Rosyth School
First Continual Examination for 2014
SCIENCE
Primary 6

Name: _____

Total
Marks



Class: Pr 6 - _____ Register No. _____ Duration: 1 h 45 min

Date: 3 March 2014

Parent's Signature: _____

Booklet A

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

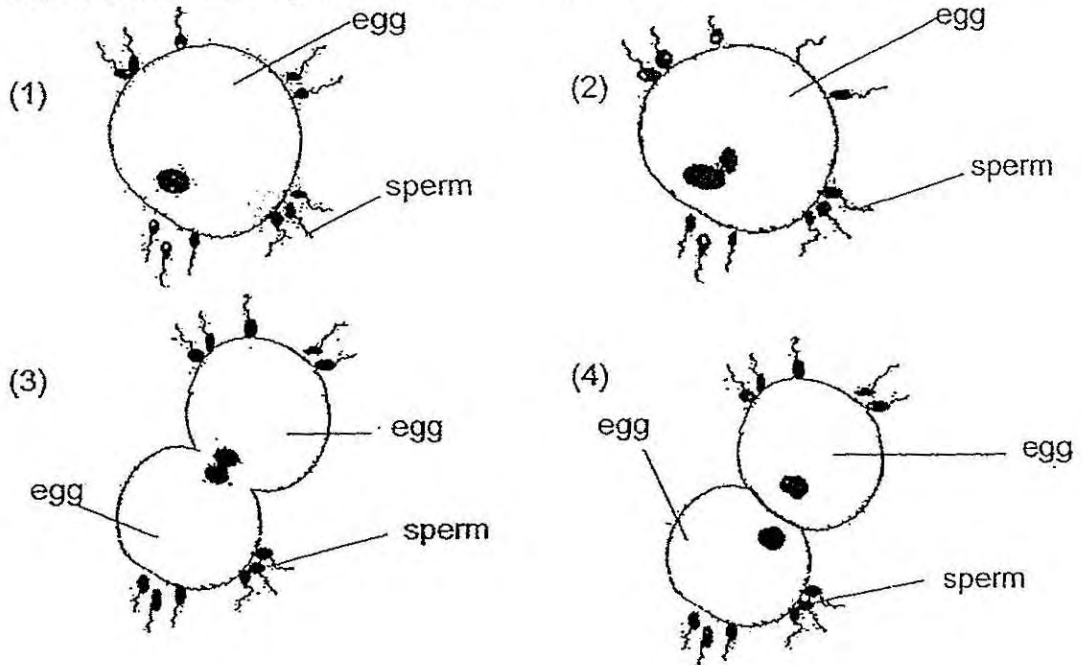
This booklet consists of 17 pages.

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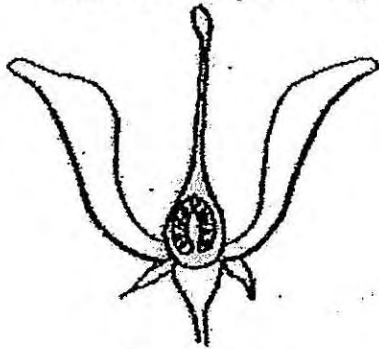
Part I (60 Marks)

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.

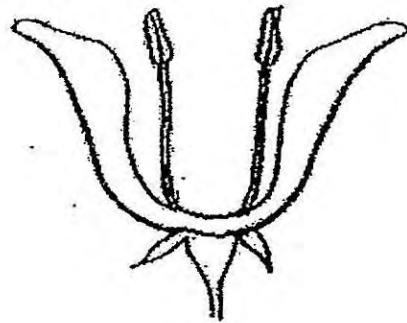
1. Which one of the diagrams below illustrates fertilisation in humans?



2. The diagrams below shows the cross-sections of 2 different types of flowers. Study the diagrams as shown below.



Flower A



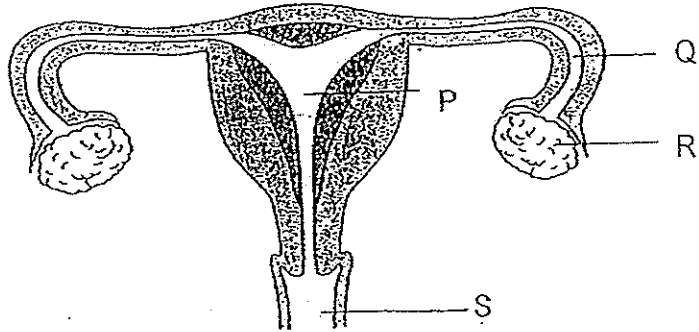
Flower B

Which statement(s) about the flowers is/are true?

- A: Both flowers can grow into fruits.
- B: Pollination can take place in both flowers.
- C: Fertilisation cannot occur in Flower B.

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

3. The diagram shows the female reproductive system.



In which part is the egg formed and in which part does the foetus develop?

	Egg	Foetus
(1)	R	P
(2)	Q	R
(3)	S	R
(4)	S	P

4. Which of the following about the male reproductive cell in the human body are correct?

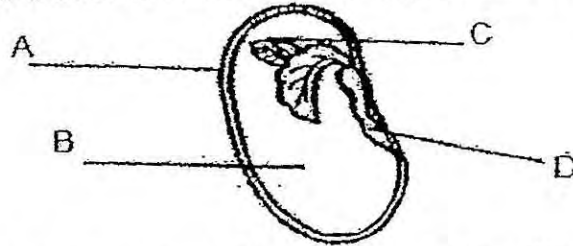
- A: It has a nucleus.
- B: It is stored in the testicles.
- C: It is produced in the penis.
- D: It is the largest cell in the human body.

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

5. Which of the following is the path taken by a pollen tube after pollination of a flower?

- (1) stigma → style → ovary → ovule
- (2) style → filament → stigma → ovary
- (3) anther → filament → stigma → ovary
- (4) filament → stigma → ovary → ovule

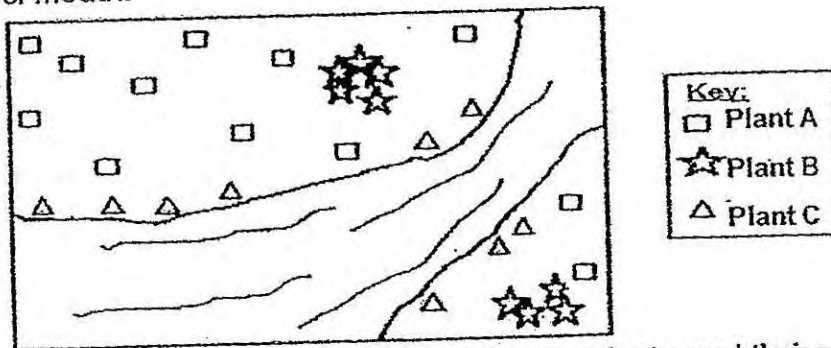
6. The parts of a seed are shown in the diagram below.



Which part of the seed provides food for the seedling?

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

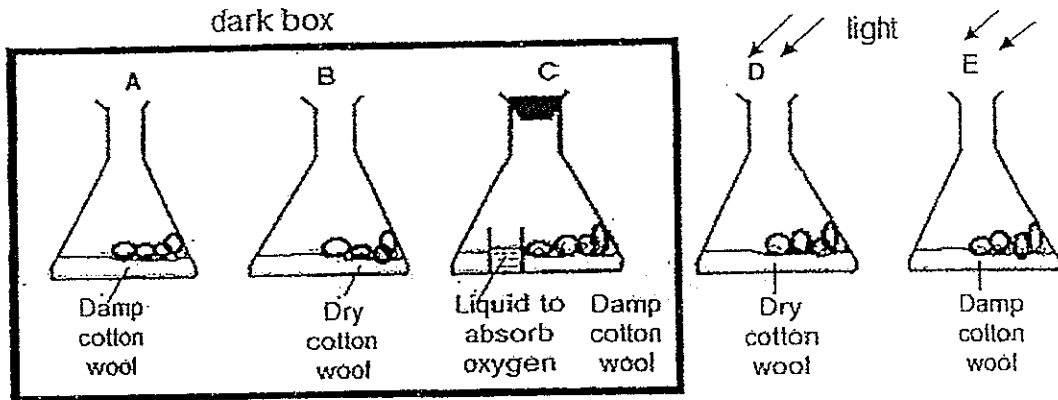
7. The diagram below shows the location of 3 plants, A, B and C, near a river mouth.



Which of the following correctly matches the plants and their seeds?

	Plant A □	Plant B ☆	Plant C △
(1)			
(2)			
(3)			
(4)			

8. In the experiment shown below, each conical flask contains 4 identical seeds on cotton wool.

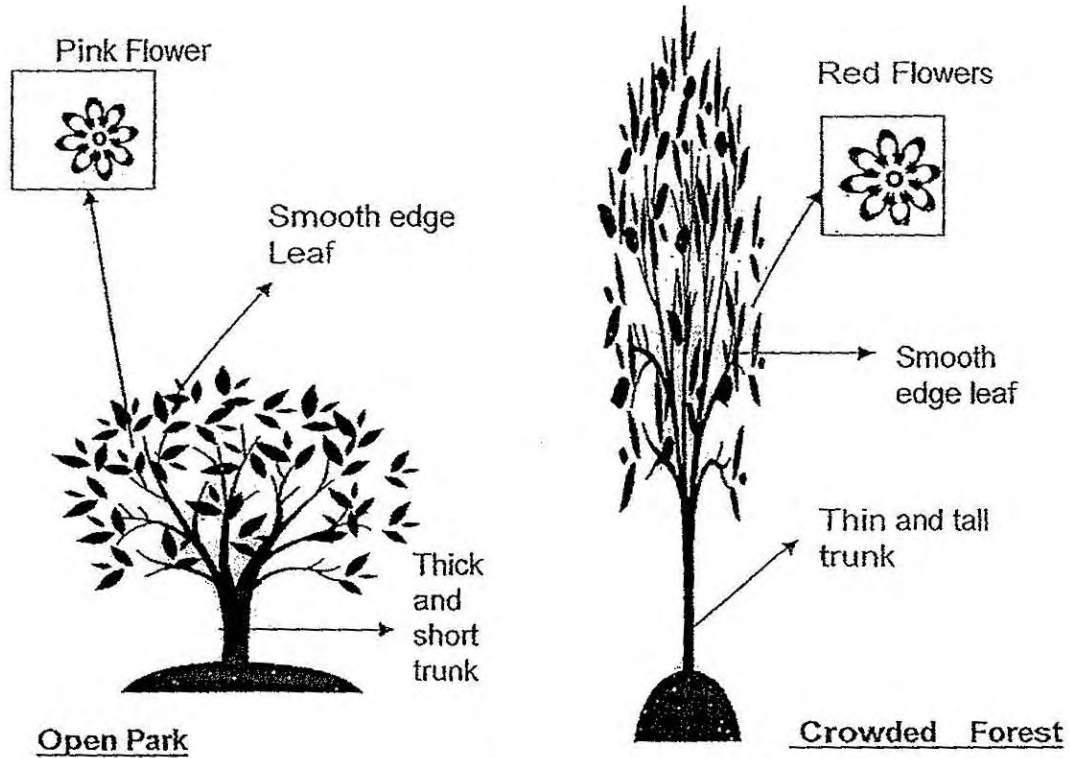


Which two conical flasks should be compared to find out whether light is needed for germination of these seeds?

- (1) A and D
- (3) A and E

- (2) B and D
- (4) D and E

9. Study the diagram below. The two similar species of trees are grown at two different places.



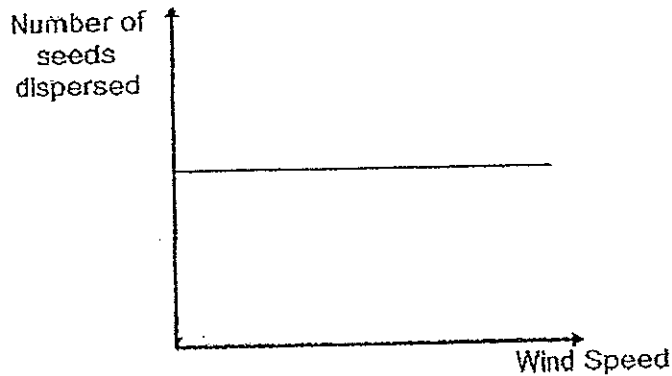
If sexual reproduction takes place between the two trees, which are the characteristics the young of the tree can inherit?

- A: Types of leaves
- B: Height of the tree
- C: Colour of the flower
- D: Thickness of the trunk

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

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

10. Study the graph below.



Based on the graph above, which of the following is likely to be the description of the fruit which contained the seeds?

- (1) fluffy and light
- (2) fleshy and sweet
- (3) flat and has wing-like structure
- (4) small and has hair-like structure

11 The classification table below shows the classification of the cucumber plant, love grass, bracket fungus and ladder fern into two groups X and Y.

Group X	Group Y
ladder fern bracket fungus	chilli plant love grass cucumber plant

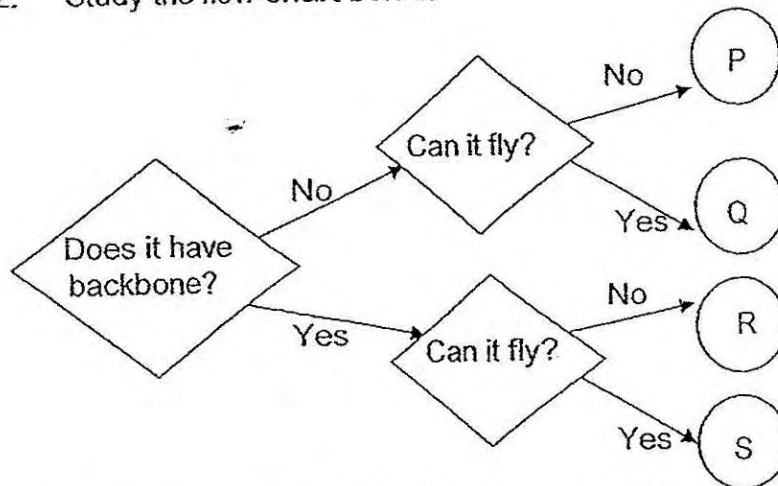
What characteristics can be used to classify them into groups X and Y?

- A: Source of nutrition
- B: Method of reproduction
- C: Unicellular or multicellular
- D: Non-flowering or flowering

- (1) A and C
- (3) B and C

- (2) B and D
- (4) A and D

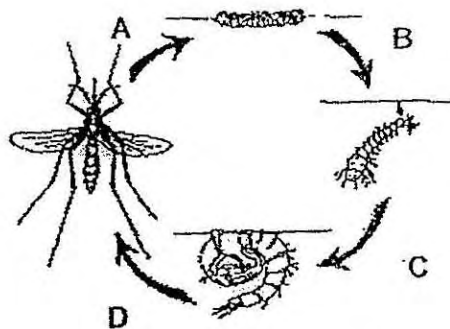
12. Study the flow chart below.



According to the chart, which one of the following statements is true?

- (1) P is a fish.
- (2) Q is a bird.
- (3) R is a mammal.
- (4) S is an insect.

13. The diagram below shows the life cycle of a mosquito.



At which period/s does/do cell division take place?

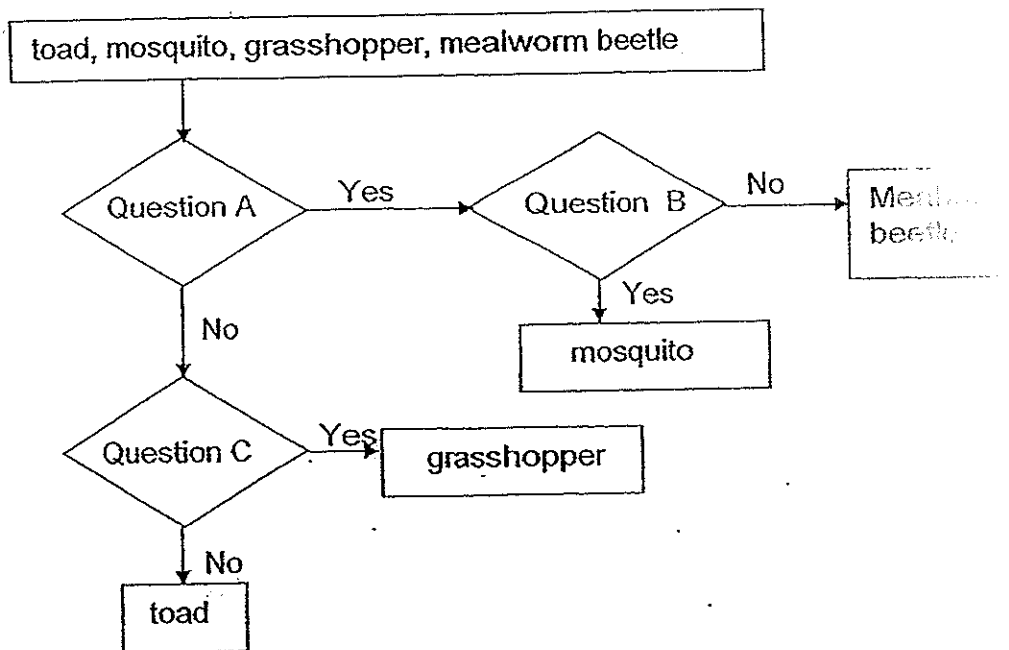
- (1) B only
- (2) A and B only
- (3) A, B and C only
- (4) A, B, C and D

14. Jeremy germinated some seeds and recorded his observations in a table as shown below.

Observation	Day
Seeds become swollen	2
Seed coats break	5
Roots appear	7
Shoots start to appear	11
Shriveled seed leaves drop off	17

On which day will the seedlings most probably start to need light for their survival?

- (1) Day 4
 (2) Day 8
 (3) Day 10
 (4) Day 15
15. Tom classifies some organism using the chart below.



What are the questions for A, B and C?

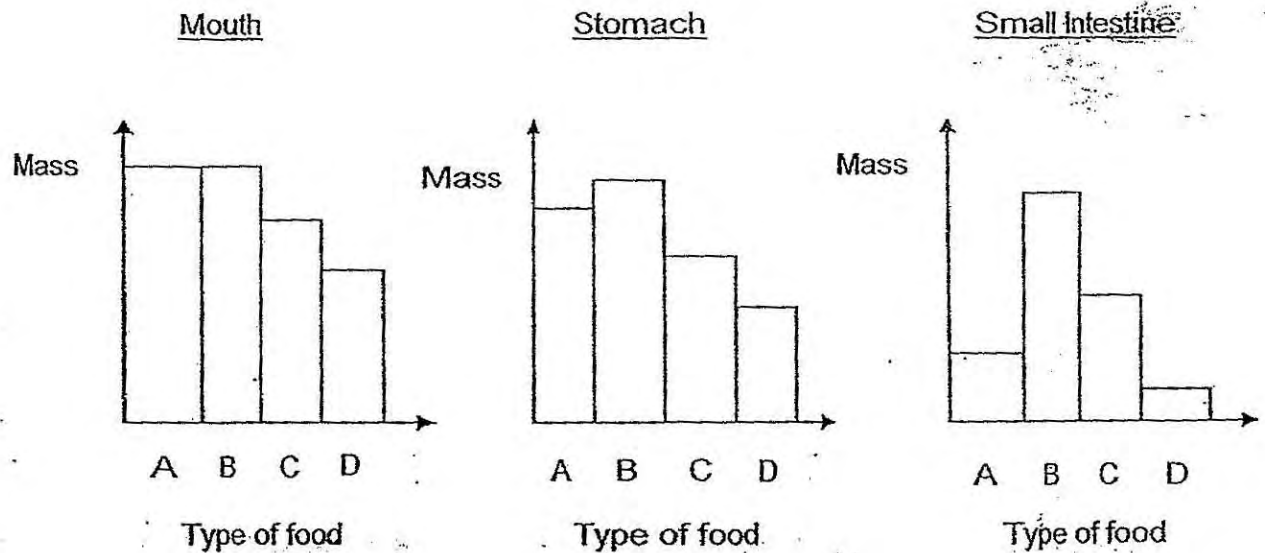
	Question A	Question B	Question C
(1)	Are there 4 stages in the life cycle?	Is part of its life cycle spent in water?	Does the young look like the adult?
(2)	Are there 4 stages in the life cycle?	Does the young look like the adult?	Is part of its life cycle spent in water?
(3)	Is part of its life cycle spent in water?	Are there 4 stages in the life cycle?	Does the young look like the adult?
(4)	Does the young look like the adult?	Is part of its life cycle spent in water?	Are there 4 stages in the life cycle?

16. Jane viewed two cells under a powerful microscope and recorded her observations in the table below.

Cell parts	Cell A	Cell B
Cell wall	Present	Absent
Cell membrane	Present	Present
Cytoplasm	Present	Present
Nucleus	Present	Absent
Chloroplasts	Absent	Absent

Which of the following are possible deductions from her observations?

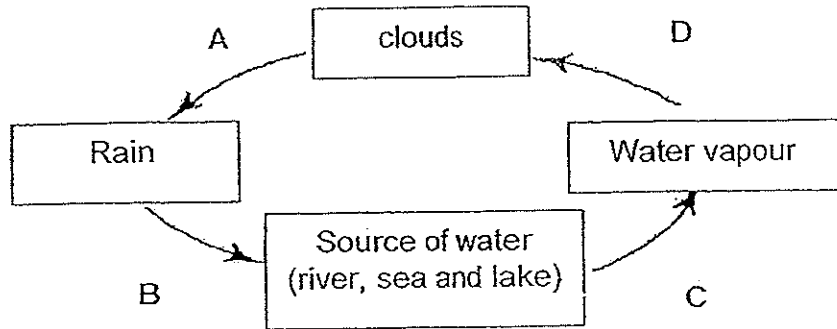
- (1) Cell A and Cell B are plant cells.
 - (2) Cell A is a cheek cell but Cell B is a yeast cell.
 - (3) Cell A is a root cell but Cell B is a red blood cell.
 - (4) Cell A is a bacterial cell but Cell B is a white blood cell.
17. The graphs below show the masses of 4 different types of food, A, B, C and D as they travel from the mouth to the small intestine.



Which type of food was the least digested?

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

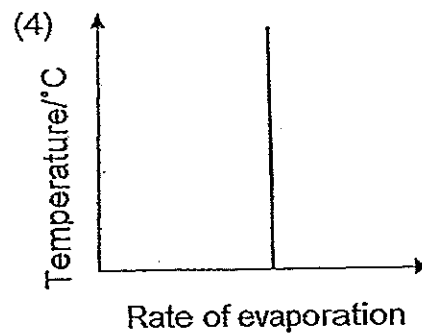
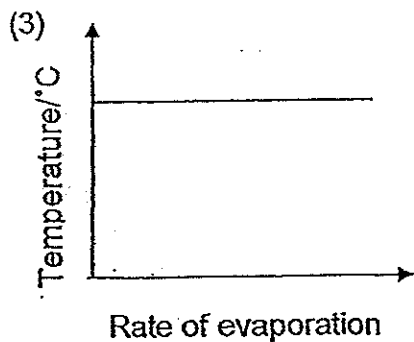
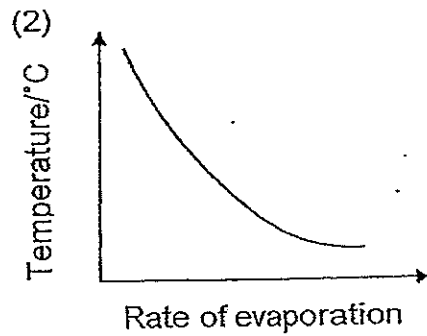
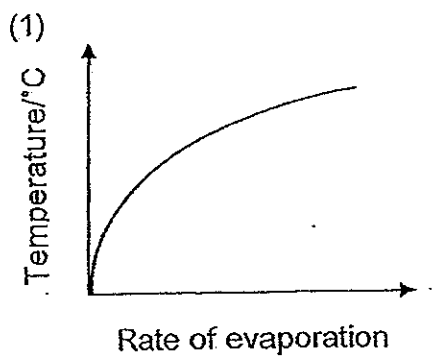
18. Study the water cycle below.



At point C, what happens to the surrounding air and the state of the water?

	Surrounding air	Change in state
(1)	Gains heat	Liquid to gaseous state
(2)	Loses heat	Liquid to gaseous state
(3)	Gains heat	Gaseous state to liquid state
(4)	Loses heat	Gaseous state to liquid state

19. Which one of the following graphs shows the relationship between temperature and rate of evaporation?



20. One rainy day, Annie, Brenda, Claire and Diana observed that all the windows inside their house got misty although all the windows were closed. The explanations provided by each of them are listed below.

Annie: The glass window is colder than the air inside the house.

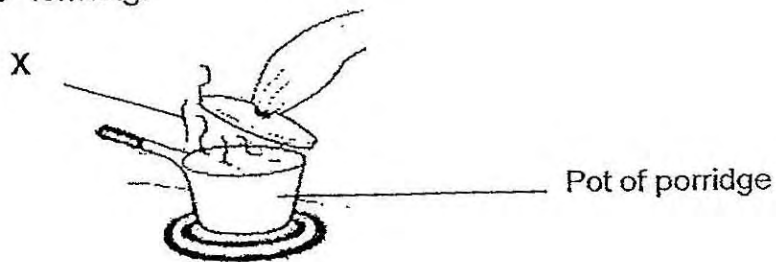
Brenda: The glass window is warmer than the air inside the house.

Claire: Water vapour outside the house condenses on the cold glass window.

Diana: Water vapour inside the house condenses on the cold glass window.

Whose explanations are correct?

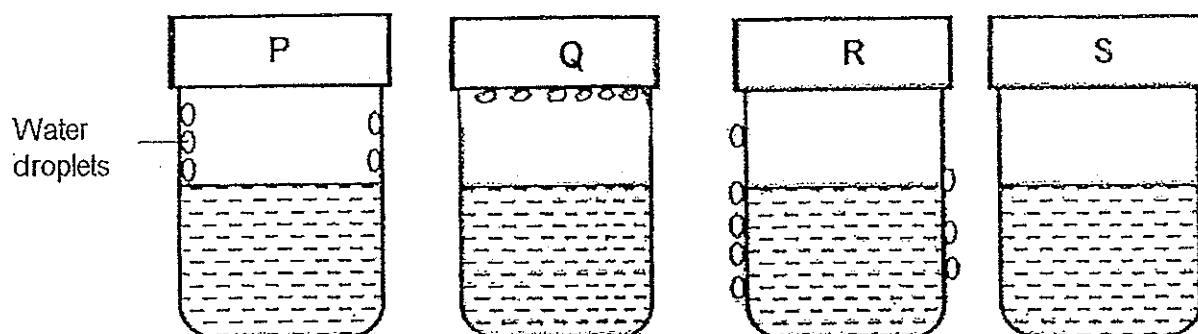
- (1) Annie and Claire only (2) Annie and Diana only
(3) Brenda and Claire only (4) Brenda and Diana only
21. Mrs Lee was cooking some porridge in a pot. She lifted the lid and noticed 'clouds' forming.



What are these 'clouds' formed at X?

- (1) Steam (2) Smoke
(3) Water Vapour (4) Water droplets

22. Felicia filled four similar containers P, Q, R and S with the same amount of water at different temperatures. The containers were then placed on a table in her kitchen. The diagram below shows the containers after 15 minutes.



Which of the above containers are most likely to contain water above room temperature?

- (1) P and Q
 (2) P and R
 (3) Q and R
 (4) P and S
23. Water can be conserved through reducing, reusing and recycling. William listed the following ways in which water can be conserved.

- A: Repair a leaking tap immediately.
 B: Purify sewage water to get drinking water.
 C: Avoid washing the car with a running water hose.
 D: Water the plants using water from the aquarium.

Which one of the following shows correctly how water is conserved for each situation.

Ways to conserve water			
	Reduce	Reuse	Recycle
(1)	A, B	C	D
(2)	B, C	A	D
(3)	A, C	D	B
(4)	A, D	C	B

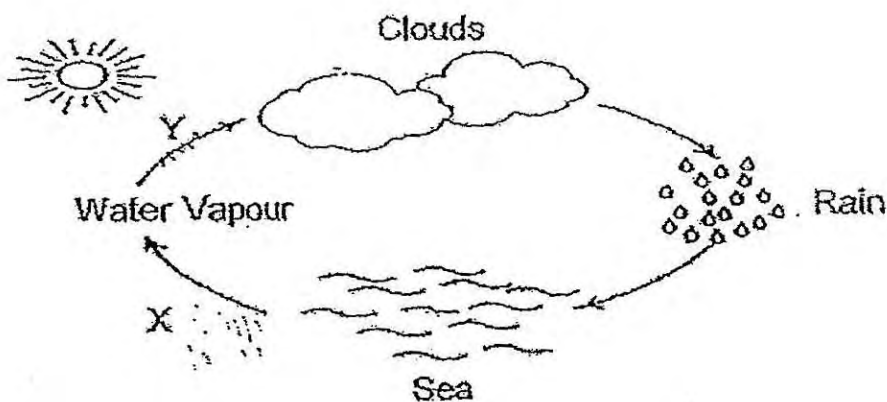
24. A group of pupils decided to carry out an experiment to find if the exposed surface area of a beaker affects the rate of evaporation.

The table below shows the variables used in four set-ups A, B C and D.

	A	B	C	D
Amount of water (ml)	150	150	150	150
Surface Area (cm ²)	40	40	60	60
Temperature (°C)	25	38	30	38
Speed of wind (km/h)	10	20	10	20

Which two set-ups could the pupils use in order to carry out a fair test?

- (1) A and B only
 (2) A and C only
 (3) B and D only
 (4) C and D only
25. Study the diagram below.

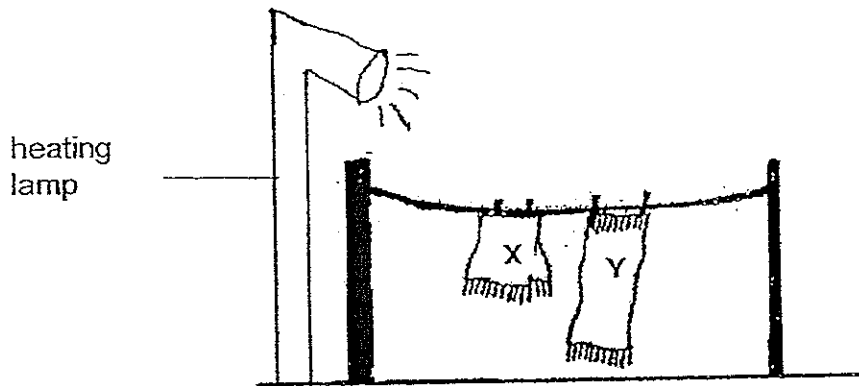


Processes X and Y take place in the water cycle. Which of the following describes water going through the same processes as X and Y in the diagram above?

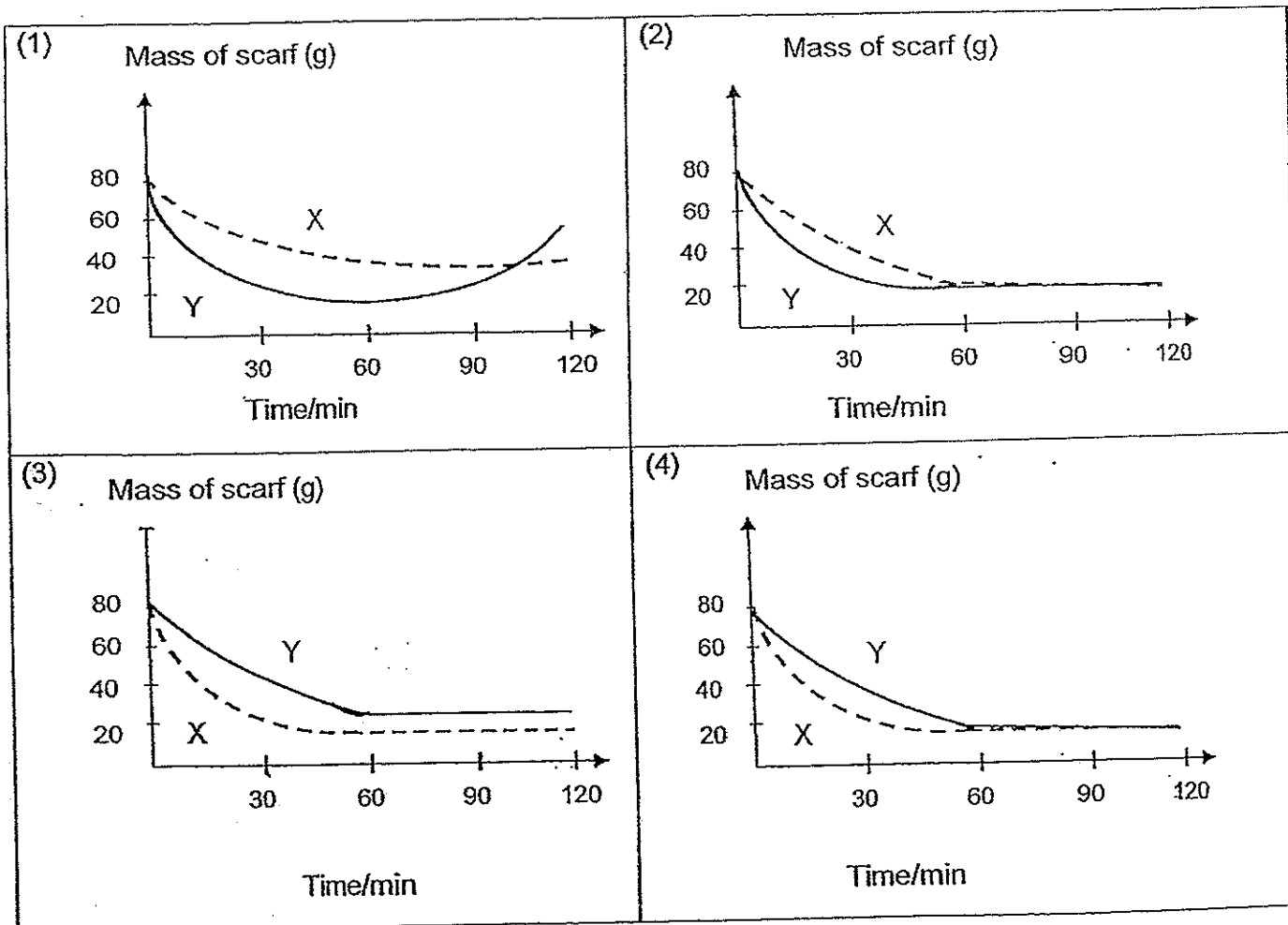
- A : Leaving a piece of ice on a table
 B: Blowing wet hair using a hairdryer
 C: Adding water into a glass of orange juice
 D: Spectacles turning misty when stepping out of an air-conditioned room.

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

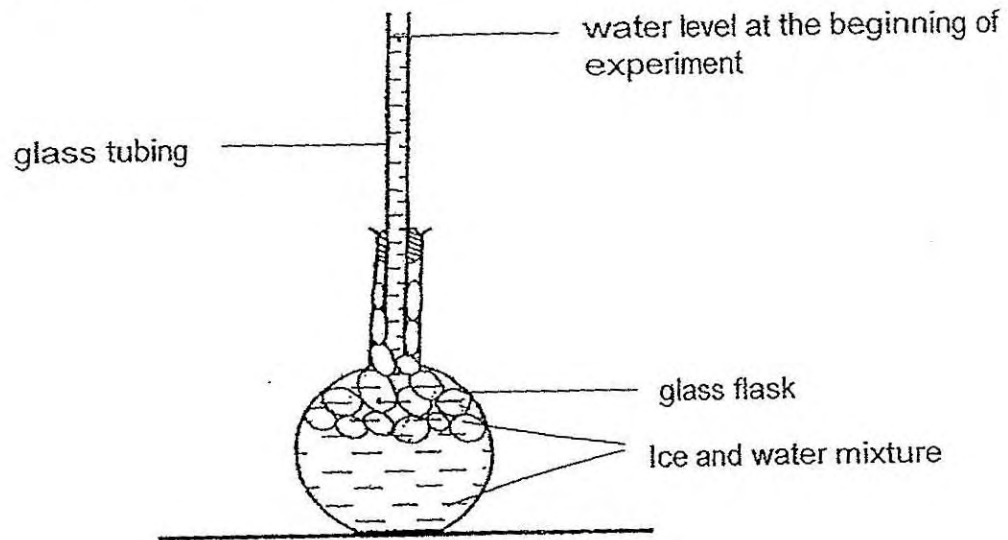
26. Jill hung two identical wet scarves, X and Y, in a room kept warm by a heating lamp as shown below. She weighed the scarves at regular intervals and used her results to plot a graph.



Which one of the following graphs shows the most likely results obtained by Jill?



27. Study the diagram below.



A flask containing a mixture of ice and water is allowed to stand on a table for some time.

Which of the following will occur as the ice in the flask melts?

A: The state of the ice changes.

B: The water level in the glass tube changes.

C: The temperature of the ice and water mixture increases.

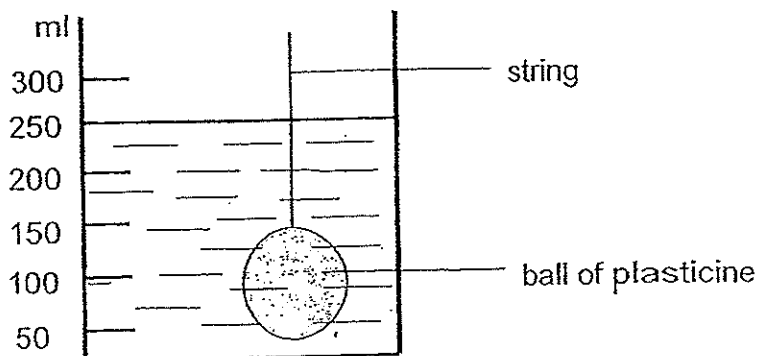
(1) A only

(2) A and B only

(3) B and C only

(4) A, B and C

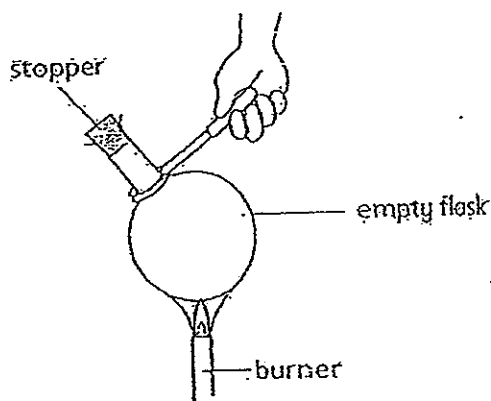
28. Betty lowered a ball of plasticine tied to a string into a container of water. She noticed that the water level rose to the 250ml mark.



She then lifted the string to remove the ball of plasticine out of the water. She divided the ball of plasticine into three pieces and lowered them slowly into the water again.

Which would be the approximate water level in the container after the three pieces of plasticine were lowered into the water?

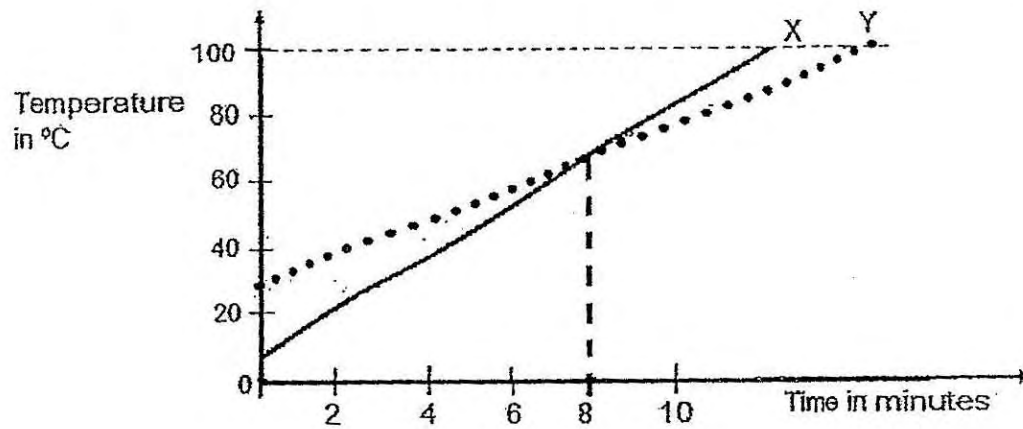
- | | |
|------------|-----------|
| (1) 100ml | (2) 250ml |
| (3) 150 ml | (4) 300ml |
29. Azman placed a bottle with a tightly fitted stopper over a flame as shown in the diagram. He observed that the stopper popped out after a while.



Which of the following correctly explained his observation?

- (1) The stopper contracted and became loose.
- (2) The bottle expanded and pushed the stopper out.
- (3) The air inside the bottle expanded and pushed the stopper out.
- (4) The air around the bottle expanded and pushed the stopper out.

30. Wendy heated two identical beakers marked X and Y, which were filled with the same amount of water. The graph below shows the changes in the temperature of water in beakers X and Y over a period of time.



Based on the graph above, which of the following statements is/are true?

- A: Beaker Y received less heat than Beaker X.
 B: Both beakers of water reached the same temperature after 8 minutes.
 C: Wendy filled the beakers with water of the same temperature before heating.

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

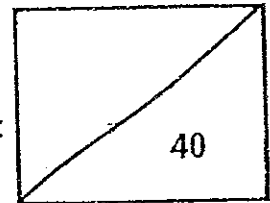
End of Part I



Rosyth School
First Continual Examination for 2014
SCIENCE
Primary 6

Name: _____

Total
Marks:



Class: Pr 6 - _____ Register No. _____ Duration: 1 h 45 min

Date: 3 March 2014 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 44, write your answers in the spaces given in this booklet.

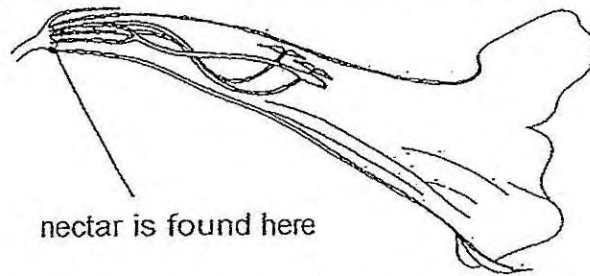
* This booklet consists of 12 pages.

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Part II (40 marks)

For questions 31 to 44, write your answers in this booklet.

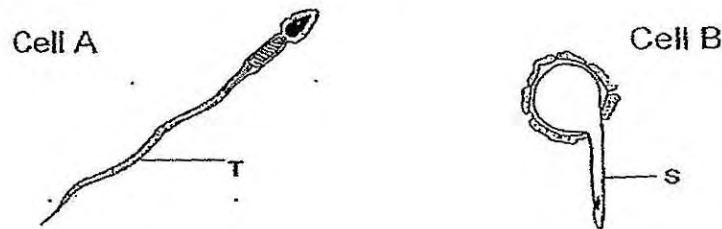
31. The figure below shows a section of a flower.



(a) Based on your observations, state the agent of pollination for the flower. Support your choice with a reason. (1m)

(b) Explain how the agent helps in the pollination. (1m)

32. The diagram below shows structures produced by the male reproductive organs of a human being and a plant.



(a) Identify Cell A and Cell B. (1m)

(b) What is part S? (1m)

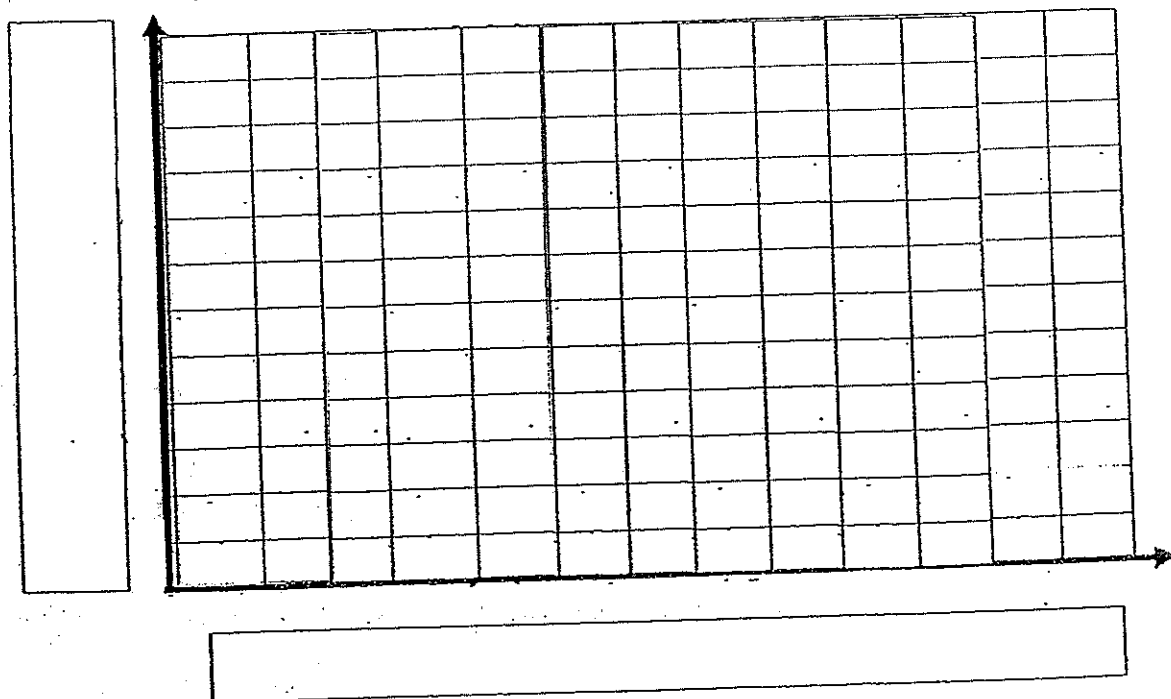
(c) How is the function of part T similar to part S? (1m)

33. Bala planted a 2cm identical seedling in each of 4 similar pots. Each pot contained the same amount and type of soil. He watered each seedling with different amounts of water daily. Then he measured the height of each seedling at the end of 10 days and recorded his observations in the table below.

Pot	Amount of water given daily (ml)	Height of seedling after 10 days (cm)
P	20	3
Q	35	6
R	40	9
S	45	12

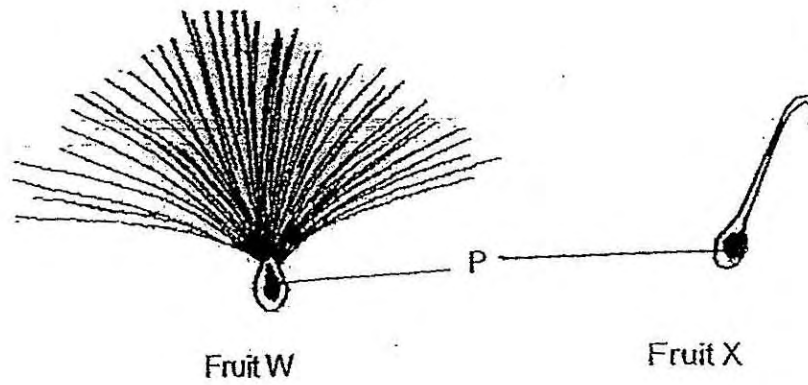
- (a) What was the aim of the experiment? (1m)

- (b) Draw a bar graph in the space below to show the height of the seedling in each pot after 10 days. Label the X and Y axes. (2m)



- (c) He wanted to ensure that his results were reliable, but he did not want to repeat his experiment. What do you think he should have done at the start of his experiment? (1m)

34. The diagram below shows the cross-section of 2 fruits, W and X.



(a) What is part P in both fruits? (1m)

(b) Suggest and explain how each of the fruits might be dispersed. (2m)

Fruit W

Method of dispersal: _____

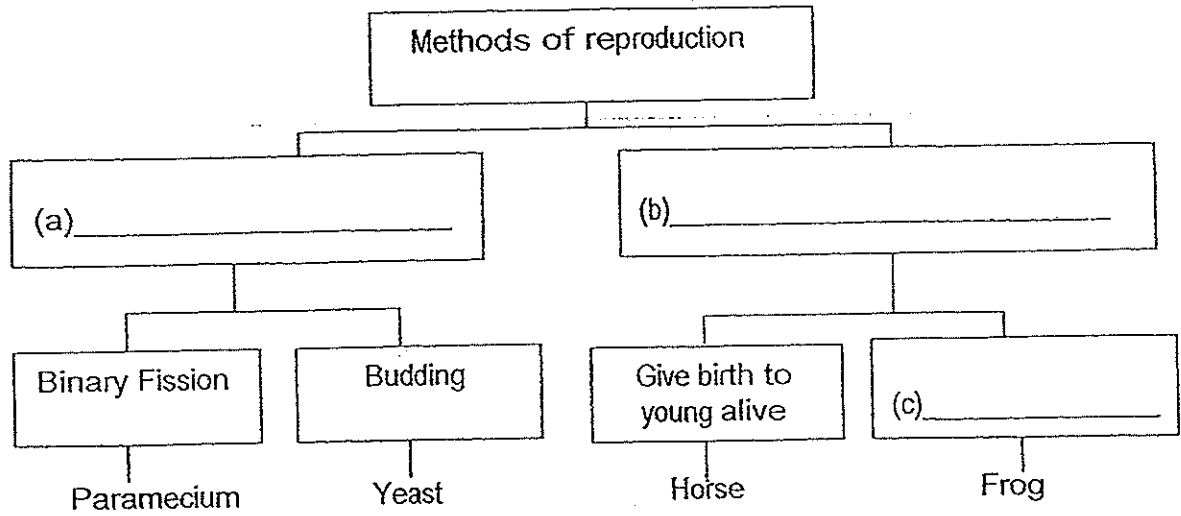
Explanation: _____

Fruit X

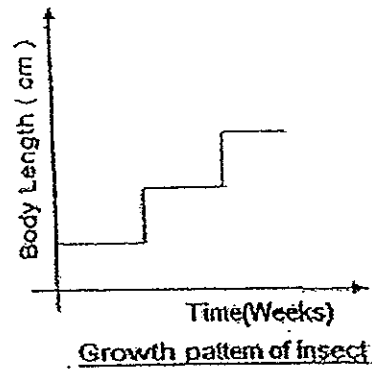
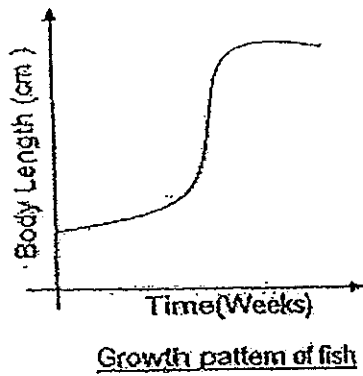
Method of dispersal: _____

Explanation: _____

35. Look at the classification chart below. Complete the chart with suitable words in (a), (b) and (c). (3m)



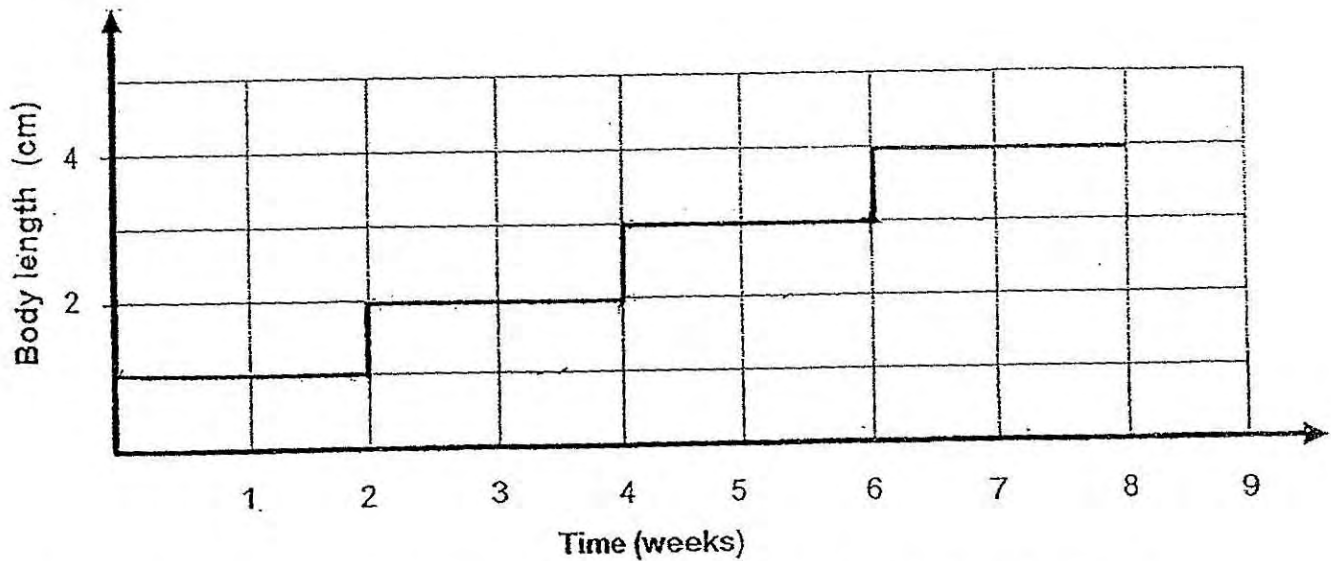
36. The graphs below show the pattern of growth of a fish and an insect from young to adulthood.



- (a) State one similarity between the growth pattern of the two organisms. (1m)

Question 36 is continued on page 5

- (b) Study the growth pattern of an insect as shown in the graph below.
 The nymph of the insect moults 3 times before reaching the adult stage in eight weeks. After the third moult, its body grows to a maximum length of 4cm.

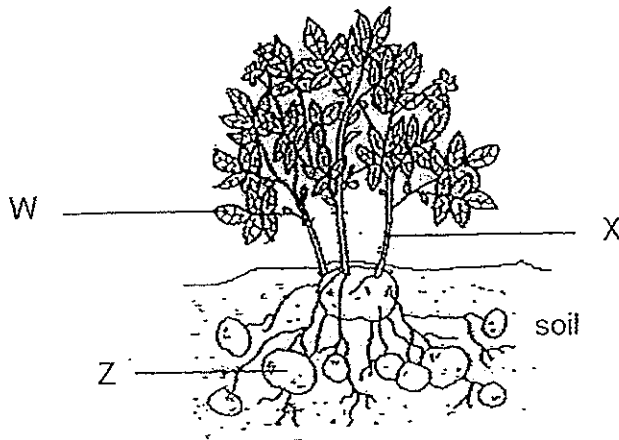


- (i) On the graph above, indicate with 3 crosses (X) to show when the three moults are taking place. (1m)
- (ii) Complete the table below to show how the insect's body length changes after each moult. (1m)

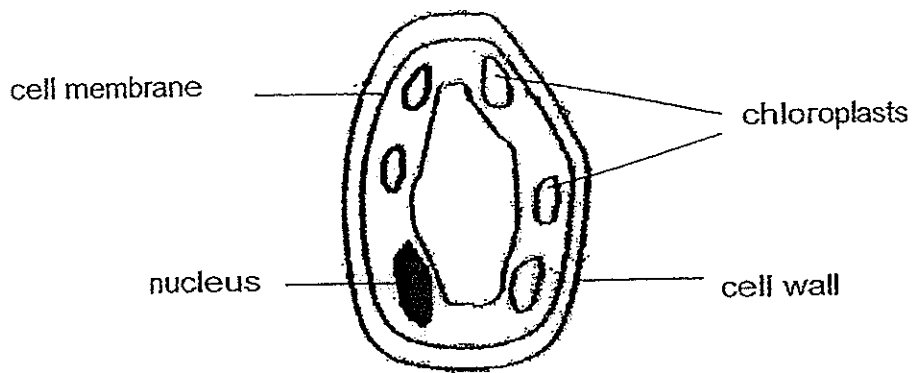
Number of moults	Body length (cm)
1	
2	
3	4

- (c) Why do the young of insects need to moult in order to grow? (1m)

37. The diagram below shows the parts of plant A.



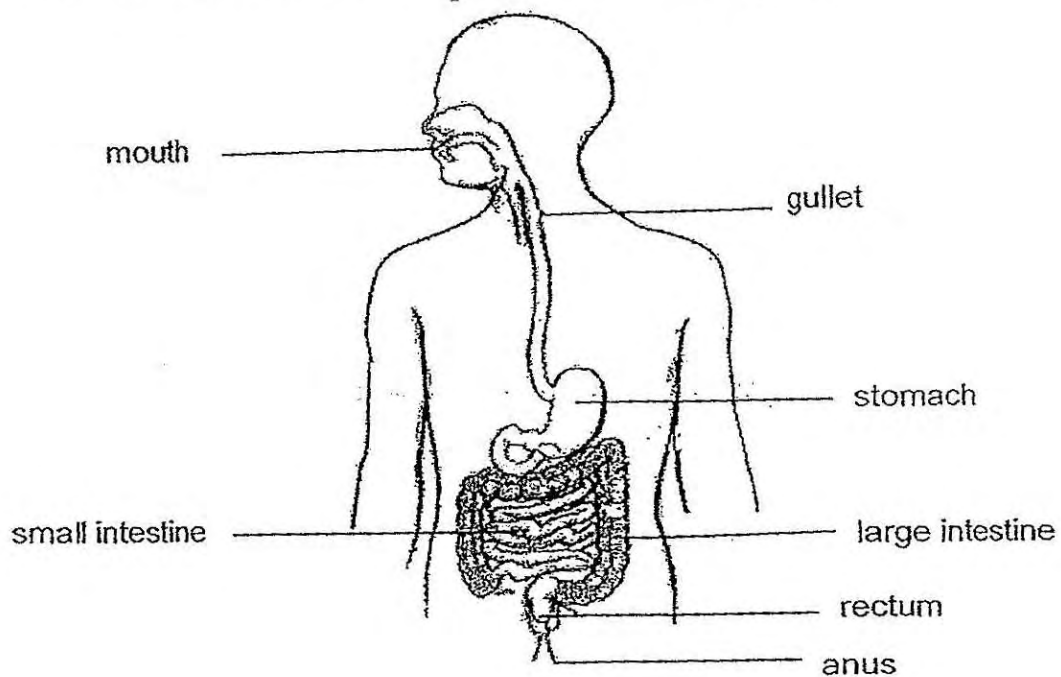
The magnified cell below is taken from a certain part of plant A.



(a) Which part of the plant is the cell least likely to have been taken from? (1m)

(b) Explain your choice in (a). (1m)

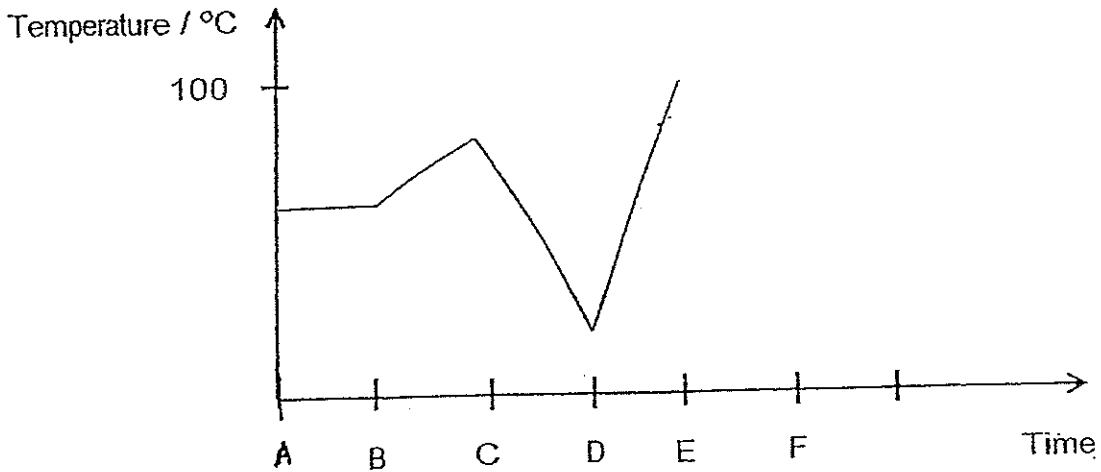
38. The diagram below shows part of the human digestive system.



(a) At which part of the digestive system does digestion end? (1m)

(b) Blood vessels carry blood to and from parts of the digestive system. Explain why there are many blood vessels in the walls of the small intestine. (1m)

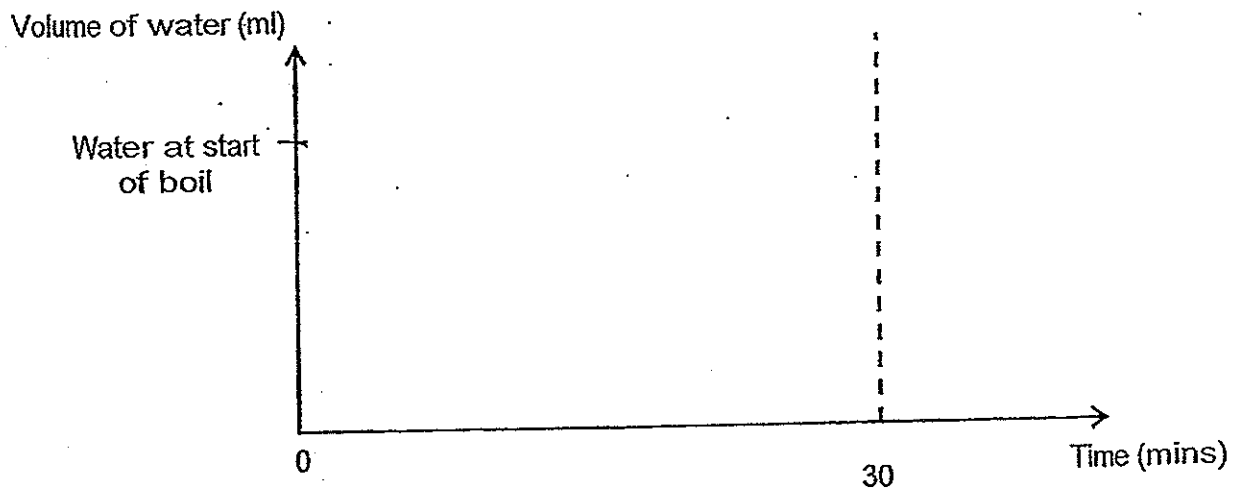
39.. Kenny heated a kettle of water and recorded how the temperature of the water in the kettle changes over time. He turned on the stove at period B.



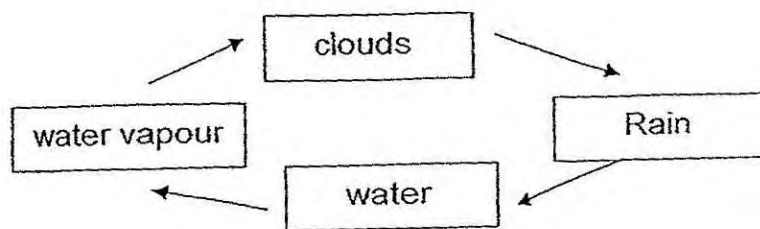
(a) On the graph above, mark with an 'X' when steam had been formed. (1m)

(b) Kenny did not lower the fire on the stove or turn it off. Suggest what he had done to cause the temperature change between C and D. (1m)

(c) Draw on the graph below to show how the volume of water in the kettle will change as the water continued to boil for 30 minutes. (1m)



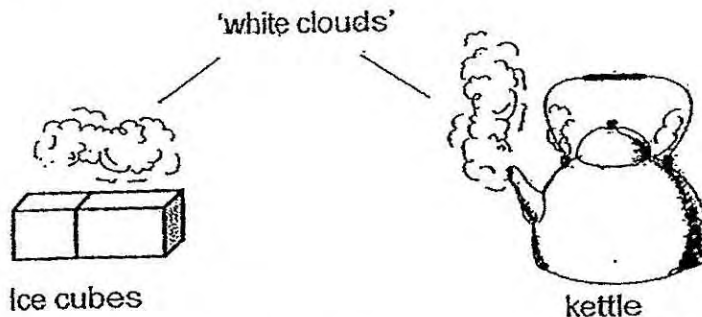
40. The diagram below shows how the water cycle recycles the water from the earth. The arrows show the different stages of water in motion.



- (a) Where does the energy for the continuation of the water cycle come from? (1m)

- (b) Explain how plants can be part of the water cycle (2m)

41. Fatimah took out some ice cubes from the freezer and boiled some water in a kettle.



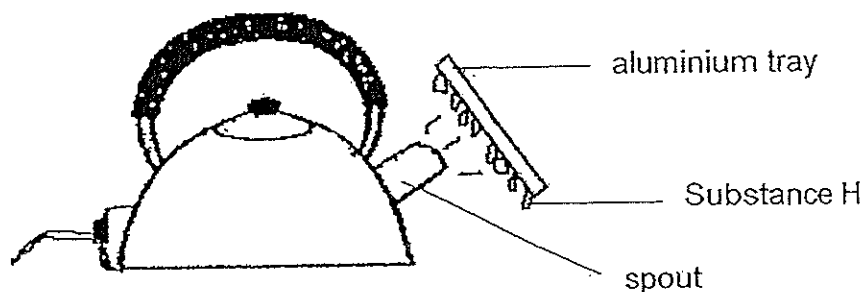
- (a) She noticed 'white clouds' forming above the ice cubes and spout of the kettle. Name the process that causes the 'white clouds' to form (1m)

- (b) Explain how the 'white clouds' were formed above the ice cubes and the kettle. (2m)

(i) Ice Cubes : _____

(ii) Kettle : _____

42. Mary boiled some water in an electric kettle as shown in the diagram below.



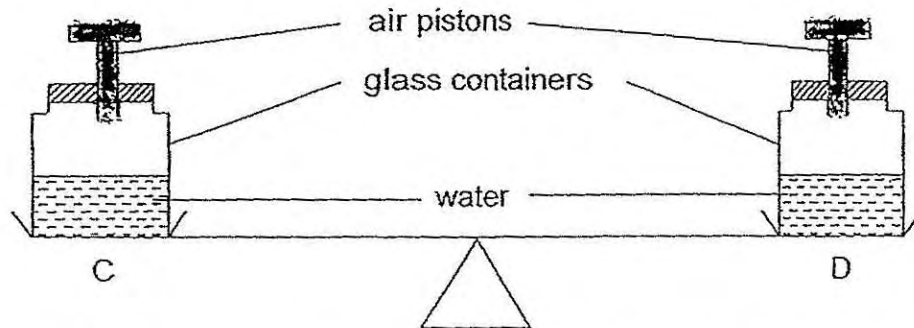
Electric kettle

When she held an aluminium tray a short distance from the spout of the boiling kettle, substance H is formed.

- (a) What is substance H? (1m)

- (b) After some time, Mary observed that less and less of substance H was formed even though the water in the kettle was still boiling. Explain her observation. (2m)

43. Two similar glass containers, C and D, both with a maximum capacity of 4000 cm^3 were both filled with 2000 cm^3 of water and capped. They were placed on a balance as shown in the diagram below.



Through an air piston, Pete managed to pump another 500 cm^3 of air into Container C and another 300 cm^3 of air into Container D. Both containers were then placed on the balance again.

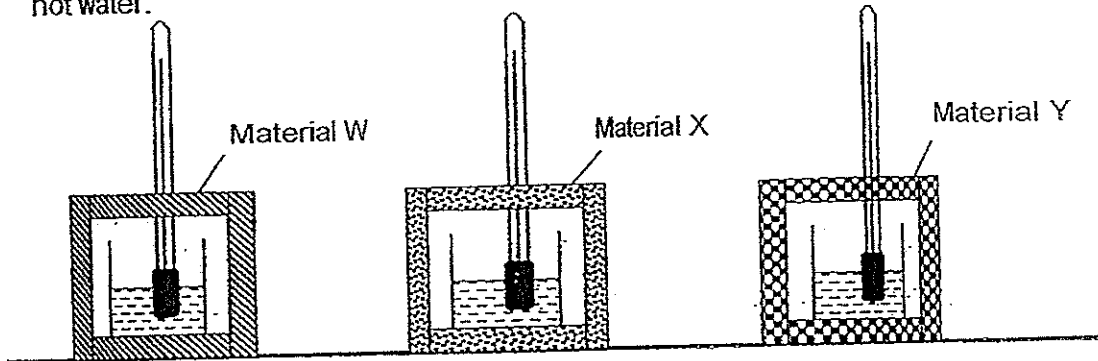
- (a) What happens to the balance? (1m)

- (b) What is the volume of air in each container, now? (2m)

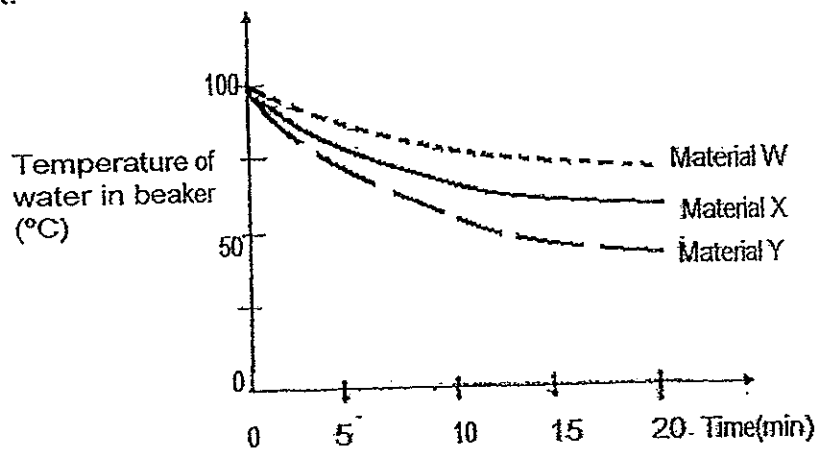
Volume of air in Container C : _____ cm^3

Volume of air in Container D : _____ cm^3

44. Gabriel set up the apparatus below using different insulation materials of equal thickness. He used beakers of the same size containing the same amount of hot water.



He measured and recorded the temperature of water in each beaker at regular intervals using a thermometer. The graph below shows the results of the experiment.



- (a) Based on the results of the experiment, match the type of materials, W and Y are made of. (1m)

W •	• metal
Y ▣	• Wool

- (b) Which material W, X or Y is the most ideal for making a container to keep ice-cream frozen? Explain your answer clearly. (1m)

End of Paper

ANSWER SHEET

EXAM PAPER 2014
SCHOOL : ROSYTH
PRIMARY : P6
SUBJECT : SCIENCE
TERM : CA1

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

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

31)a)The anther and the stigma are inside the flower.

b)Pollen grain are stuck on the insect's body when it flies to anther flower of the same species, the pollen is deposited on the stigma.

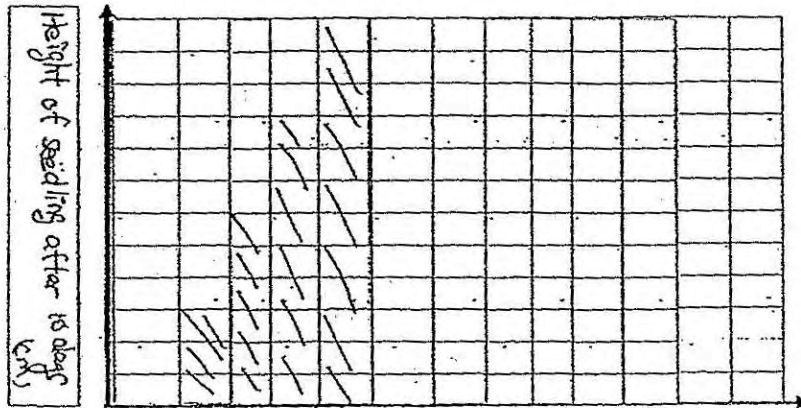
32)a)Cell A is a sperm. Cell B is a pollen grain.

b)Pollen tube.

c)Both help the male sex cell to move towards the female sex cell.

33)a)The aim to find out if the amount of water given daily affects the height of the seedling after 10 days.

33)b)



c) He should have done more experimental setup by growing seedling in each pot and taking the average height.

34)a) seed of Both fruits.

b) Fruit W

Method of dispersal: Wind dispersal.

Explanation : Has Hair that helps it float in the wind.

Fruit X

Method of dispersal : animal dispersal.

Explanation: Have hook-like structure to hang on the animal.

35)a) asexual reproduction

b) sexual reproduction.

36)a) Both of the two organism body length increases.

b)i)

36)b)ii) 2 3

c) The insect shed has to shed the hard outer skin as it prevents them from growing.

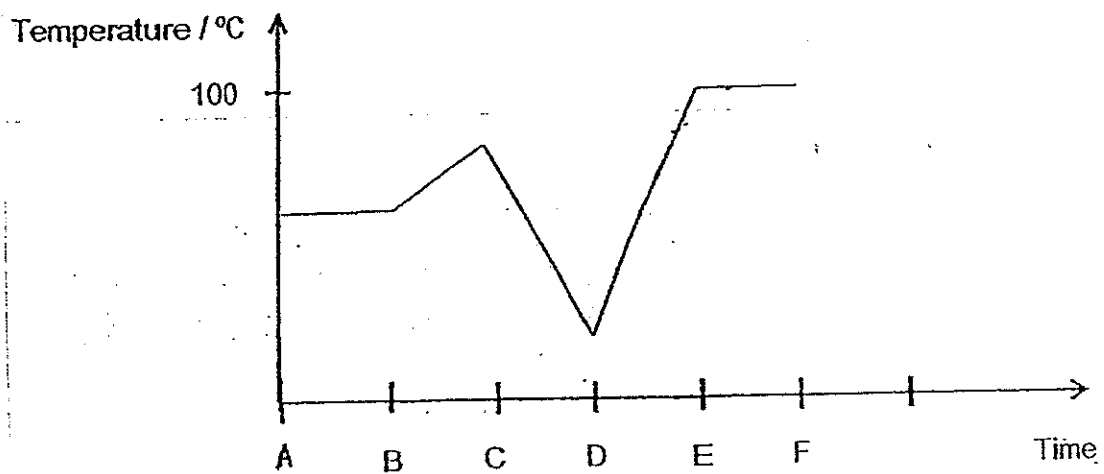
37)a) Z.

b) It does not have chloroplast and does not need to make food.

38)a) Small intestine.

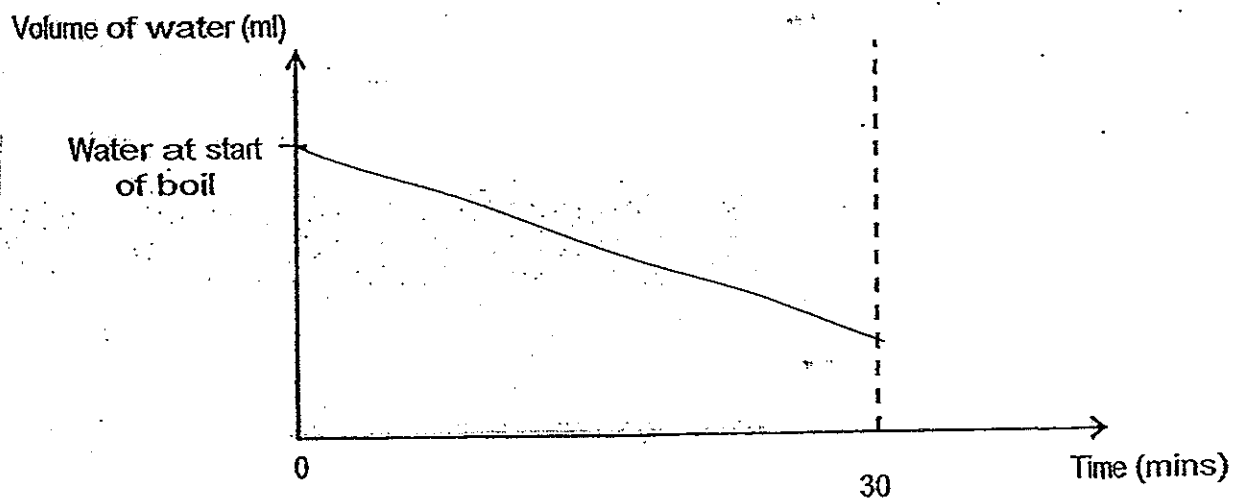
b) To help absorb food more quickly into the blood.

39)a)



b) He added cold water to the kettle.

c)



40)a)Sun.

b)Water from water bodies is taken in by the plants, water evaporates from the plant.

41)a)Condensation.

b)i)The water vapour in the surrounding air loses heat to the ice and condense to the water droplet.

ii)The hot water vapour from the kettle loses heat to the cooler surface surrounding air and condenses to water.

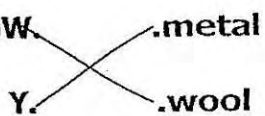
42)a)water droplet/water.

b)When the hot vapour comes in contact with the cool surface of the aluminium sheet, the sheet gains heat and becomes hotter. This slows down the rate of condensation.

43)a)Container C will move down while container D will move up.

b)C: 2000 cm³

D: 2000 cm³

44)a)W. 

b)The temperature of the water decreased the least making it the poorest conductor of heat.