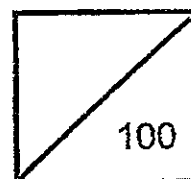




Rosyth School
Second Semestral Examination 2014
SCIENCE
Primary 5

Total
Marks:



Name: _____

Class: Pr 5 - _____

Duration: 1 h 45 min

Date: 29 October 2014

Parent's Signature: _____

BOOKLET A

Instructions to Pupils:

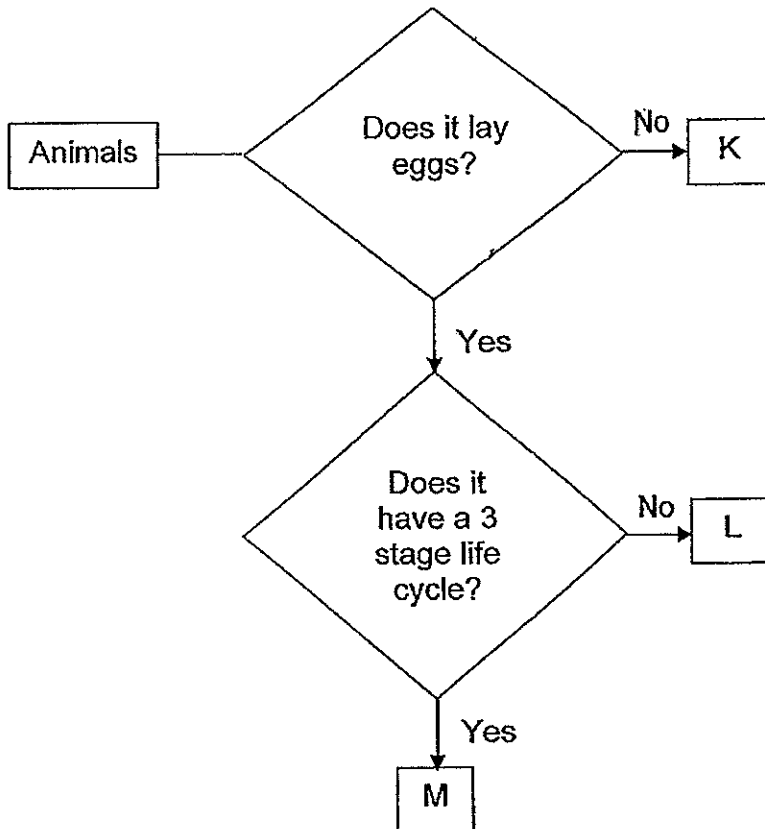
1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.

* This booklet consists of 19 pages.

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. Study the flowchart below.



Based on the flow chart, which of the following statement(s) is/are correct?

A: L lays eggs.

B: M has a 4-stage life cycle.

C: K gives birth to young alive.

(1) B only

(3) A and C only

(2) C only

(4) A, B and C

2. The table below compares the life cycles of the cockroach and the mosquito. (X) shows that the insect does not have the characteristic while (√) shows that the insect has the characteristic.

		Cockroach	Mosquito
W	4 stages in life cycle	X	√
X	Lays eggs on land	√	√
Y	The young resembles the adult	√	X
Z	It is a pest during the larval stage	X	√

Which of the following comparisons are correct?

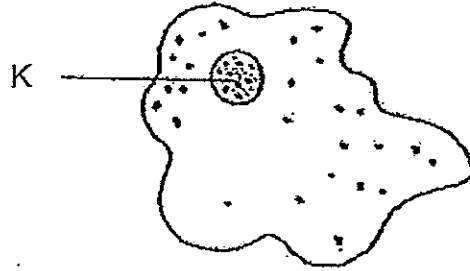
- (1) W and Y only
 (2) W and Z only
 (3) X and Y only
 (4) Y and Z only
3. John placed identical number of seeds over cotton wool in 4 identical jars A, B, C and D. The seeds in each jar are exposed to the conditions as shown in the table below.

Jar A	Jar B	Jar C	Jar D
• Sealed	• Sealed	• Open	• Open
• Damp cotton wool	• Damp cotton wool	• Damp cotton wool	• Dry cotton wool
• Placed in the garden	• Placed in the garden	• Placed in the garden	• Placed in a refrigerator
• Contained substance to absorb carbon dioxide	• Contained substance to absorb oxygen		

In which of the jars are the seeds most likely to germinate?

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

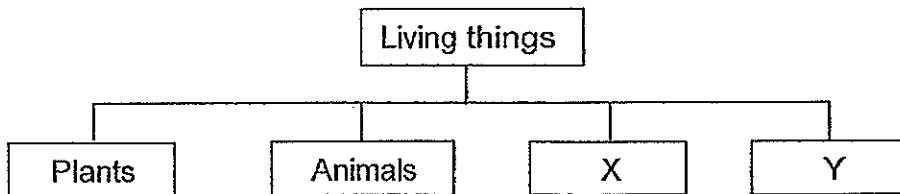
4. The diagram below shows a cell.



What is the function of the part labelled K?

- (1) It gives the cell a regular shape.
- (2) It controls all activities in the cell.
- (3) It contains chlorophyll which absorbs sunlight.
- (4) It controls substances that move in and out of the cell.

5. Study the chart below.



Which one of the following could X and Y be?

	X	Y
(1)	Non-flowering plants	Fungi
(2)	Micro-organisms	Bacteria
(3)	Mammals	Birds
(4)	Micro-organisms	Fungi

6. Which of the following statements are true about the cells in human?

X: The cells divide to form new cells.

Y: The cells will increase in size as the human grows.

Z: The baby's cells carry genetic information that is passed on from his parents.

(1) X and Y only

(2) X and Z only

(3) Y and Z only

(4) X, Y and Z

7. The parts of a cell are shown below. The ticks (✓) in the boxes represent the parts of a cell that Cells L, M and N have.

Parts of the Cell	Cell L	Cell M	Cell N
Cytoplasm	✓	✓	✓
Cell membrane	✓	✓	✓
Cell Wall		✓	✓
Nucleus		✓	✓
Chloroplasts			✓

Based on the information, which of the following statement(s) is/are correct?

A: L and M are animal cells.

B: L can increase in size if water enters it.

C: N is the only cell that can carry out photosynthesis.

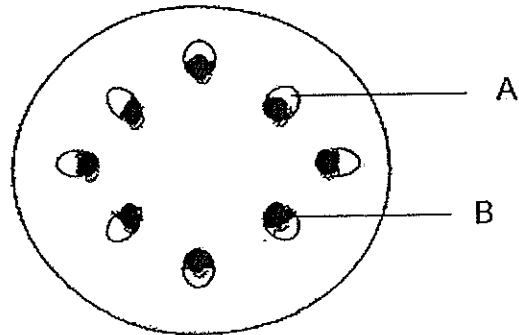
(1) A only

(2) A and B only

(3) B and C only

(4) A, B and C

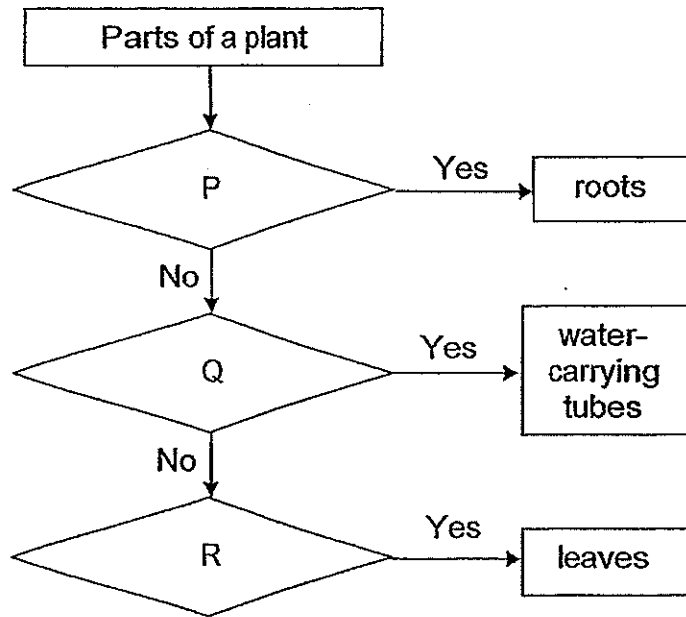
8. The diagram below shows two types of tubes, A and B, present in a stem.



Which of the following substances are transported in both A and B?

- (1) Water and sugar
- (2) Dissolved mineral salts and water
- (3) Dissolved mineral salts, water and sugar
- (4) Dissolved minerals salts, water, sugar and air

9 Study the flowchart below.



Which of the following correctly identifies P, Q and R?

	P	Q	R
(1)	Does it help the plant to transport mineral salts?	Does it help to make food?	Does it help the plant to absorb water?
(2)	Does it help to make food?	Does it help the plant to absorb water?	Does it help the plant to transport food?
(3)	Does it help the plant to transport food?	Does it help to make food?	Does it help the plant to absorb water?
(4)	Does it help the plant to absorb water?	Does it help the plant to transport mineral salts?	Does it help to make food?

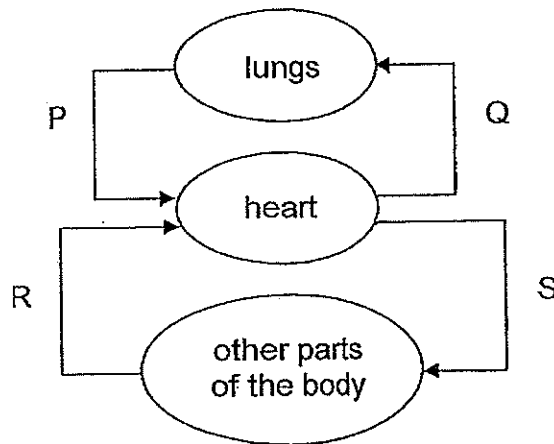
10. When a boy was playing soccer, which of the following body systems were involved?

- A: Skeletal System
- B: Muscular System
- C: Digestive System
- D: Circulatory System
- E: Respiratory System

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

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

11. P, Q, R and S represent the blood vessels in which blood flows in the human body. The arrows represent the direction of blood flow.



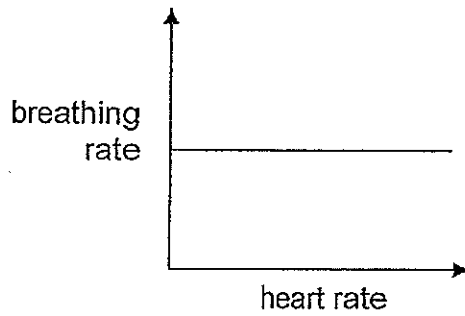
Which of the following show blood vessels containing blood rich in carbon dioxide?

- (1) P and Q
- (3) Q and S

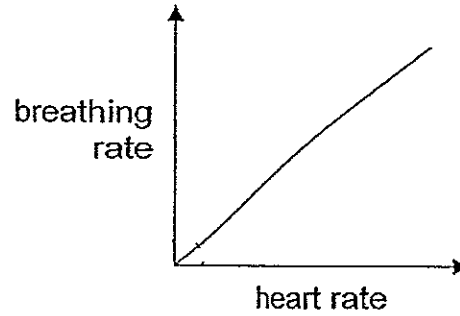
- (2) Q and R
- (4) R and S

12. Which one of the following graphs shows the relationship between heart rate and breathing rate?

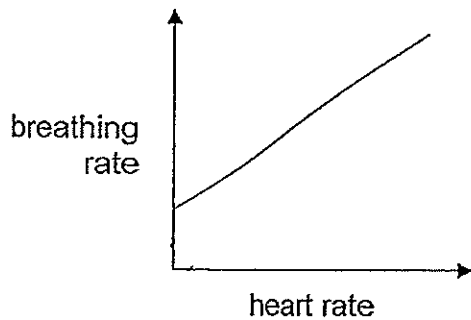
(1)



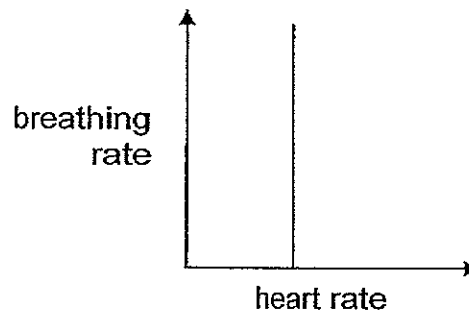
(2)



(3)



(4)

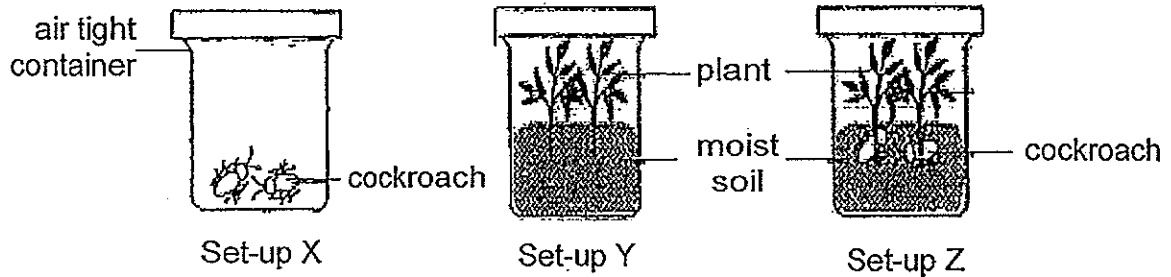


13. Which of the following is not needed for the plants to carry out photosynthesis?

- (1) water
- (3) sunlight

- (2) oxygen
- (4) carbon dioxide

14. Four students A, B, C and D put some organisms into 3 identical containers as shown below. They left the set-ups in a sunny part of a field from morning to noon.



Which of the following statement/s about the amount of oxygen in the set-ups is/are correct?

- A: There was an equal amount of oxygen at noon in all the set-ups.
- B: Set-up Z had the most amount of oxygen at the end of the experiment.
- C: Set-up X had the least amount of oxygen at the end of the experiment.
- D: There was more oxygen in Set-up Y than Z at the end of the experiment.

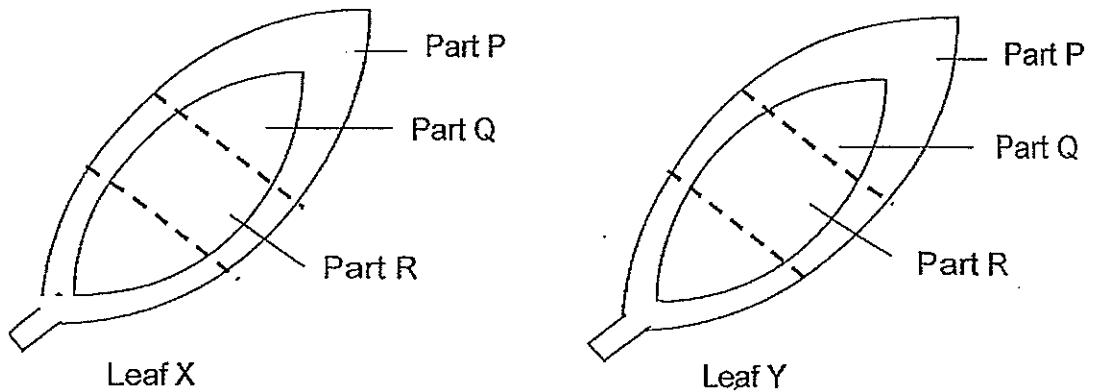
(1) D only

(2) A and D only

(3) B and C only

(4) C and D only

15. A plant was kept in the dark for two days and then some leaves were partially covered with black paper. After that, the plant was left in the sun for a few days. Two leaves, X and Y were removed for the starch test. One leaf had been partially covered with black paper while the other was not. The diagram below shows both leaves, X and Y, labelled with parts P, Q and R.



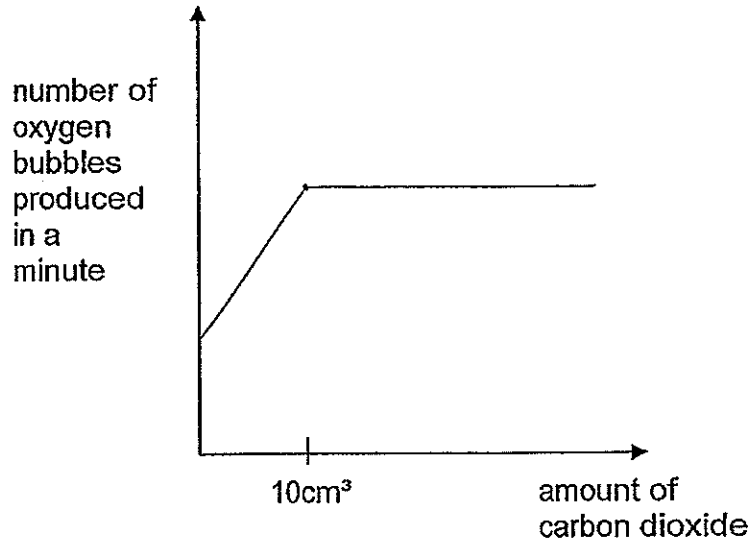
Observations on the different parts of leaves X and Y were made and recorded in the table below.

Parts	Did the iodine turn dark blue?	
	Leaf X	Leaf Y
P	No	No
Q	Yes	Yes
R	No	Yes

Which of the following can you infer from the results?

- (1) Part P of the leaves, X and Y has chlorophyll.
- (2) In leaf Y, part Q was the part not receiving sunlight.
- (3) In leaf X, part R was the part not receiving sunlight.
- (4) Part Q of the leaves, X and Y did not have chlorophyll.

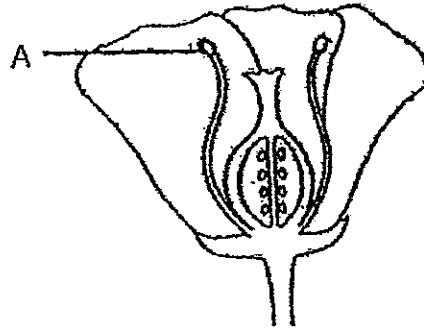
- 16 An experiment was conducted to find out how the number of oxygen bubbles was affected by the amount of carbon dioxide during photosynthesis. The data was represented in the graph as shown below.



At 10cm³, the amount of carbon dioxide kept on increasing but the number of oxygen bubbles remained the same. What is the limiting factor that could have most likely caused this result?

- (1) water
- (2) sugar
- (3) oxygen
- (4) mineral salts

17. The diagram below shows the cross-section of a flower.



The part marked 'A' _____.

- (1) contains ovules
- (2) develops into a fruit
- (3) contains pollen grains
- (4) receives pollen grains

18. An experiment was set up using 4 insect-pollinated flowers of the same species. At the start of the experiment, different parts of the flowers were removed, as shown in the table below. Insects visited the flowers.

Flowers	Stigma	Anthers	Petals
P	Present	Removed	Present
Q	Present	Present	Removed
R	Removed	Present	Removed
S	Removed	Removed	Present

Which two flowers are likely to bear fruits?

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

19. The two diagrams X and Y below show two ways an organism can increase the number of its kind.

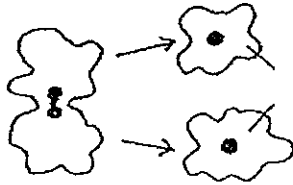


Diagram X

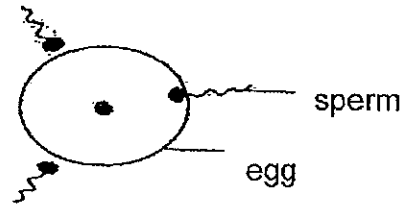


Diagram Y

Which of the following statements about the two ways are true?

Statement	Diagram X	Diagram Y
A	Only one parent is involved	Two parents are involved
B	The offspring is genetically identical to the parent	The offspring are not genetically identical to the parents
C	It involves external fertilisation	It involves internal fertilisation

(1) A only

(3) A and B only




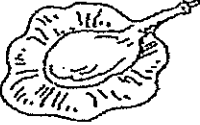








(2) C only

(4) A, B and C

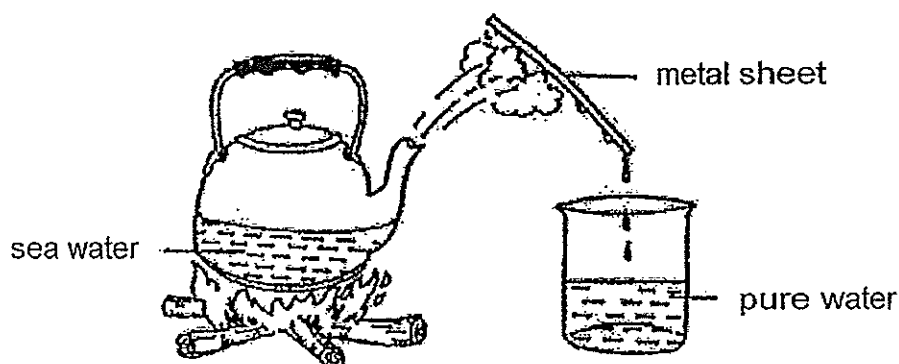
20. Sean wanted to find out how the wing-like structure of a fruit would affect the time taken for it to reach the ground. He selected three similar fruits F, G and H and cut their wing-like structure to different sizes. Then, he recorded the time taken for each fruit to reach the ground when dropped from a certain height in the table as shown below.

Fruit	Time taken for the fruit to reach the ground (seconds)		
	1st Try	2nd Try	3rd Try
F	7.8	7.4	7.0
G	3.3	3.0	3.5
H	5.6	5.8	5.2

Which one of the following correctly represents the fruits F, G and H?

	Fruit F	Fruit G	Fruit H
(1)			
(2)			
(3)			
(4)			

21. The diagram below shows a way of getting drinking water from seawater.

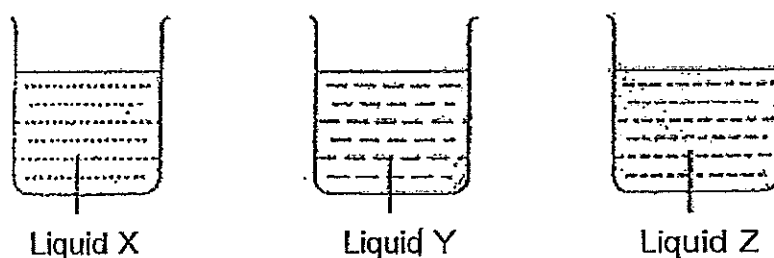


What processes have occurred in this method of getting drinking water?

- A : Condensation
- B : Melting
- C : Evaporation
- D : Freezing

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

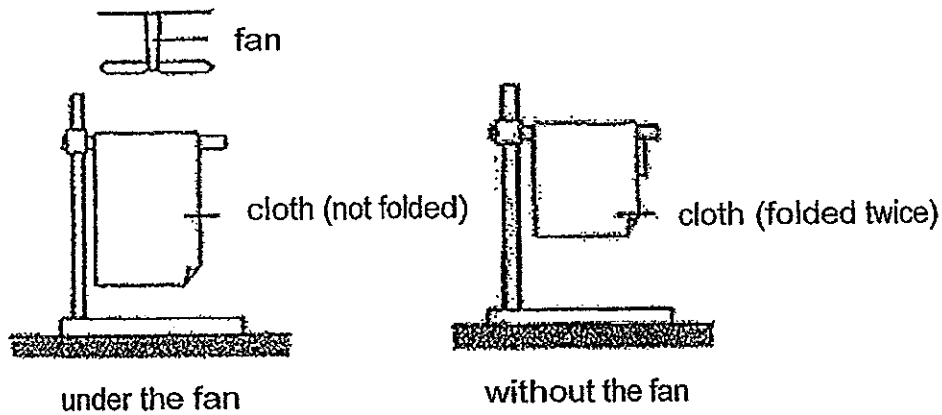
22. Mary carried out an experiment by filling three similar beakers with an equal volume of liquid X, Y and Z as shown in the diagram. She placed the beakers side by side in the open where it was sunny and windy.



After a few hours, she recorded the volume of liquid remaining in each of the three beakers. What is the aim of the experiment?

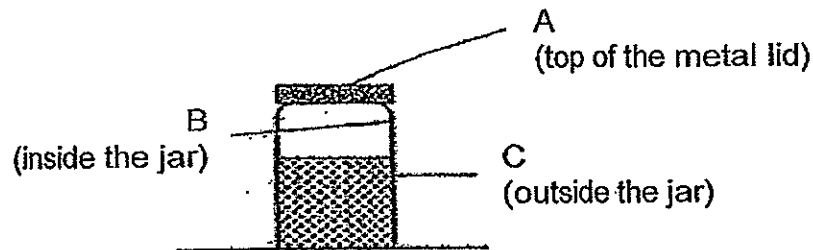
- (1) To find out if the wind speed affects the rate of evaporation.
- (2) To find out if the temperature affects the rate of evaporation.
- (3) To find out if the type of liquid affects the rate of evaporation.
- (4) To find out if the exposed surface area affects the rate of evaporation.

23. Larry used 2 set-ups below to find out how the presence of wind affects the rate of evaporation of water.



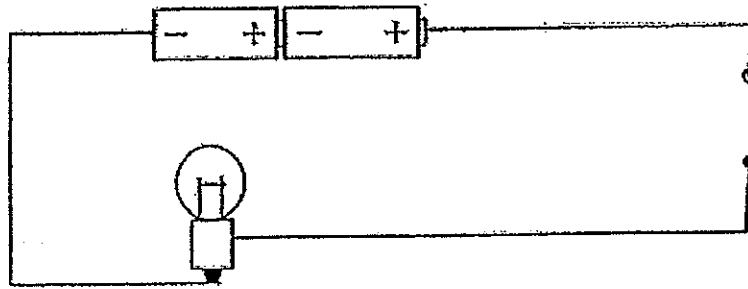
Larry soaked 2 identical pieces of cloth completely with an equal amount of water and conducted the experiment in a classroom during the day. Why is his experiment not a fair test?

- (1) The thickness of the cloth is the same.
 - (2) The amount of water present is the same.
 - (3) The location of the experiment is different.
 - (4) The exposed surface area of the cloth is different.
24. Yen poured some icy cold soft drink into a jar. She covered it with a metal lid and placed it on a table at room temperature. At which of the following part(s) would she observe tiny water droplets after 5 minutes?



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

25. The diagram below shows an open circuit.

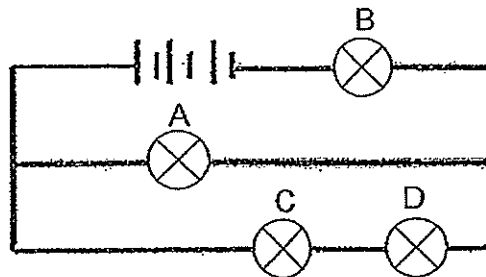


Which of the following item(s) when placed in the gap will close the circuit?

- A: Glass rod
- B: Steel nail
- C: Iron paperclip

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

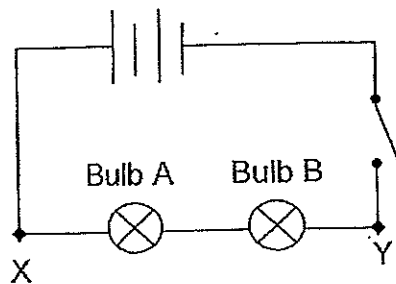
26. Study the circuit diagram below.



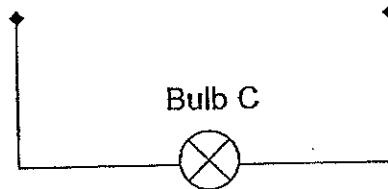
Which of the bulb(s) will remain lit when bulb C fuses?

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

27. A circuit diagram is set up as shown below. Bulb A and B will light up in equal brightness when the switch is closed.

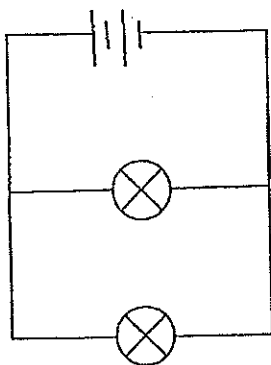


Bulb C is then connected to the circuit at X and Y.

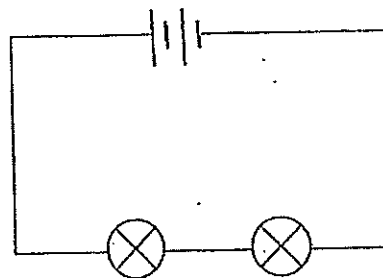


What will happen to Bulb A?

- (1) It will not light up.
 - (2) It will become dimmer than before.
 - (3) It will become brighter than before.
 - (4) It will light up with the same brightness as before.
28. Study the circuits below.



Circuit A



Circuit B

Which one of the following statements describes the two circuits, A and B, correctly?

- (1) The bulbs in circuit A will be of different brightness.
- (2) The bulbs in circuit B will be dimmer than in circuit A.
- (3) The bulbs in circuit A will be lit longer than in circuit B.
- (4) The bulbs in circuit B can be controlled independently by adding two switches.

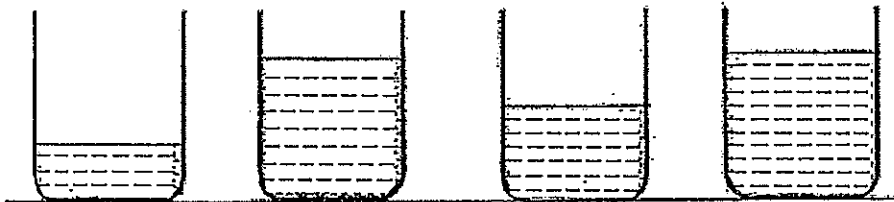
29. Which one of the following spoons heats up the fastest when placed in a bowl of hot porridge?

- (1) A metal spoon
- (3) A wooden spoon

- (2) A plastic spoon
- (4) A ceramic spoon

30. Study the 4 set-ups, P, Q, R and S below carefully.

4 identical beakers in the set-up below were filled with different amounts of water at different temperatures.



Set up P
50ml of water
at 80°C

Set up Q
150ml of water
at 40°C

Set up R
100ml of water
at 40°C

Set up S
150ml of water
at 80°C

If you want to melt a block of ice in the shortest time, which set-up would you use?

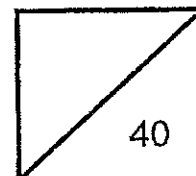
- (1) P
- (3) R

- (2) Q
- (4) S

End of Part I



Rosyth School
Second Semestral Examination 2014
STANDARD SCIENCE
Primary 5



Total
Marks:

Name: _____

Class: Pr 5 - _____

Register No. _____

Duration: 1 h 45 min

Date: 29 October 2014

Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write your answers in this booklet.

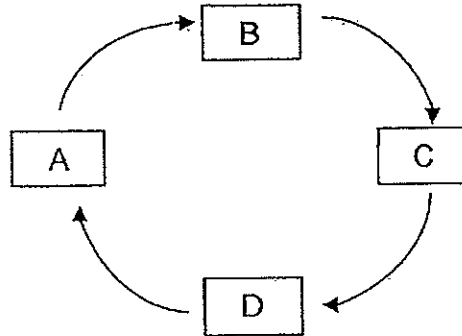
	Maximum	Marks Obtained
Part I	60 marks	
Part II	40 marks	
Total	100 marks	

* This booklet consists of 13 pages.

Part II (40 marks)

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

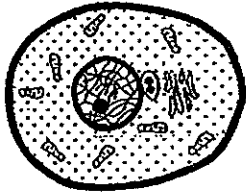
31. The diagram below represents the life cycle of a mealworm beetle.



(a) If A is the adult stage, which is the pupa stage? (1m)

(b) What will happen to the life cycle of mealworm beetle if the egg stage is absent? (1m)

32. Cell X shown below comes from one of the two organisms A and B.



Cell X



Organism A

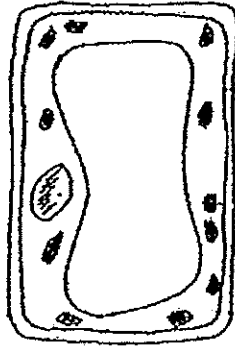


Organism B

(a) From which organism does the cell come from? (1m)

(b) Explain your answer in (a) (1m)

33. Jenny observed a cell found in an organism using a microscope.



(a) Label the following in the diagram above. (1m)

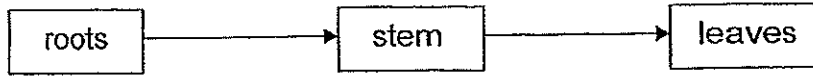
- i) cell wall
- ii) cytoplasm

Jenny mentioned that the cell membrane has a function to that of a school security guard.

(b) Do you agree with her? Support your answer with a reason. (1m)

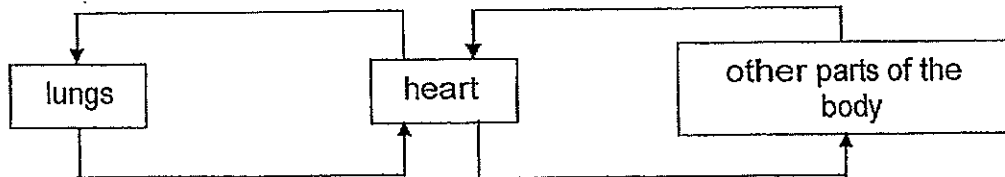
(c) Can the cell above carry out cell division? Why? (1m)

34. The diagram below shows the movement of water in a plant.



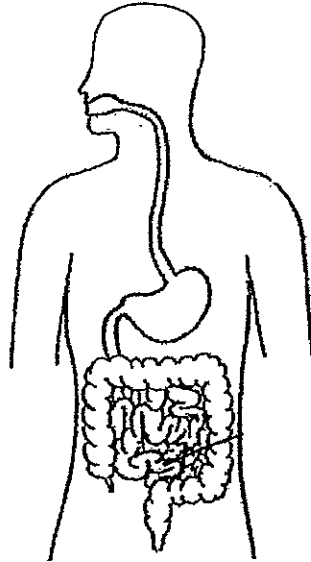
(a) What happens to the water after it reaches the leaves? (1m)

The arrows below show the flow of blood in human body.



(b) State one difference between the direction of movement of water in plants and the direction of movement of blood in the human body. (1m)

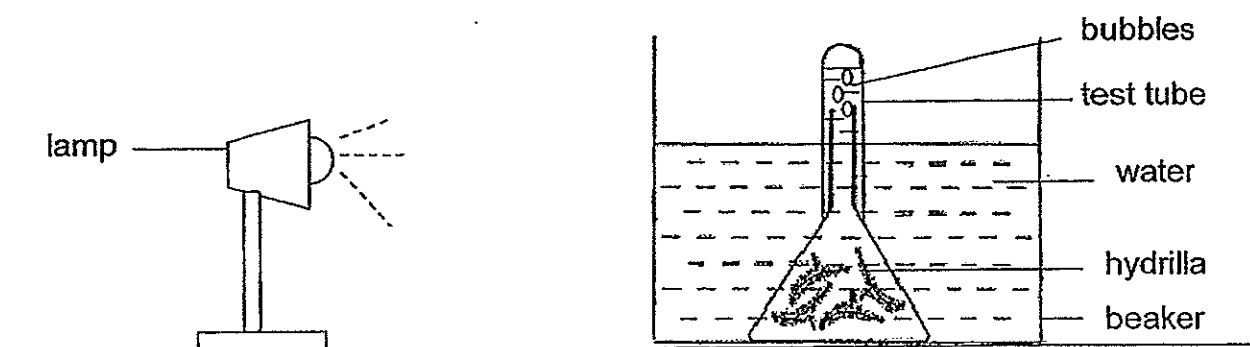
35. The diagram below shows the human digestive system.



(a) Draw a line and label the part of the system where digestion is completed. (1m)

(b) Describe how our digestive system and circulatory system work together to provide digested food to our body parts. (2m)

36. Sunny set up the following experiment.



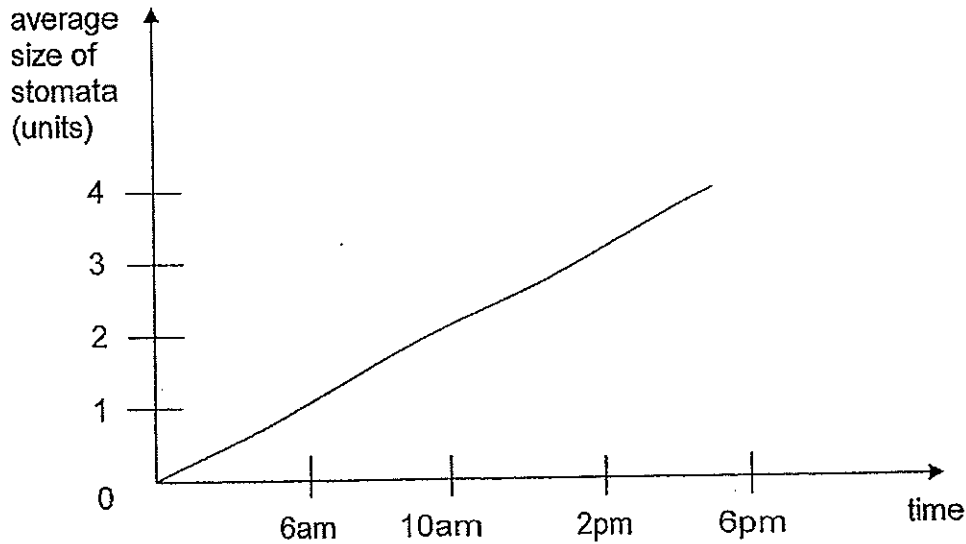
Distance between the lamp and hydrilla	Number of bubbles
10 cm	8
20 cm	6
30 cm	4
40 cm	2

(a) What is the aim of the experiment? (1m)

(b) What conclusion can you make for the above experiment? (1m)

(c) Other than measuring the number of bubbles given out per minute, what other variable can you measure for the above experiment? (1m)

37. Leaves have tiny openings called stomata on their surface. Some of the gases that move through the stomata are oxygen, carbon dioxide and water vapour. Rena measured the changes in the size of the stomata of a plant placed by the window at different times of the day. She plotted her results as shown below.

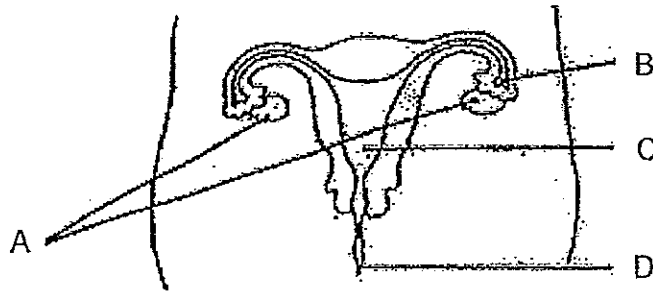


- (a) Based on her results, what effect did light have on the size ^{of} stomata? (1m)

- (b) How does the change in the size of stomata in (a) help in photosynthesis? (2m)

- (c) The change in size of stomata in the presence of light can also be a disadvantage to the plant. What is the disadvantage? (1m)

38. The above diagram shows the female reproductive system.



(a) Label the parts C and D. (2m)

C: _____

D: _____

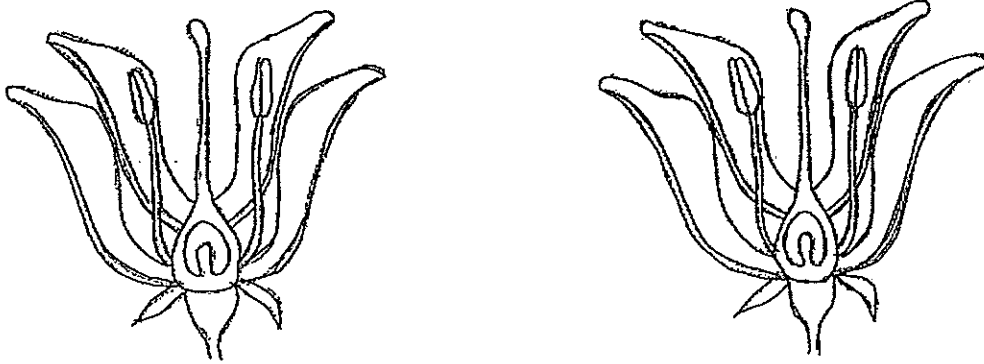
(b) What is the function of part A? (1m)

39. Emily observed that there were some plants growing on the roof of her house.

(a) Name a method of seed dispersal that could have allowed the plants to grow on the roof. (1m)

(b) What conditions were present on the roof that allowed the seeds to germinate? (1m)

40. The diagram below shows two wind pollinated flowers from a plant.



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

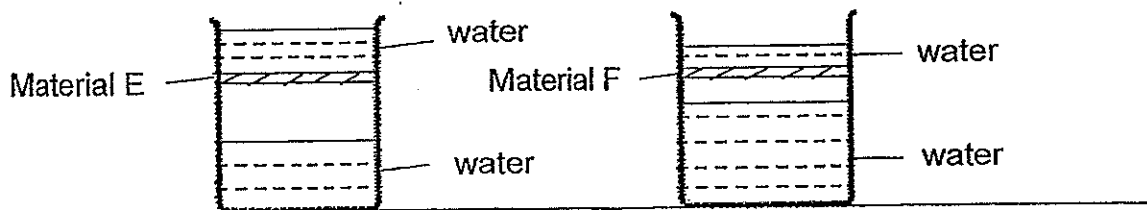
(b) Name another method of wind pollination. (1m)

(c) Describe how the method of wind pollination you named in (b) takes place. (1m)

(d) What will happen to the ovary and ovules after fertilization? (1m)

41. Two materials E and F were tested as follows. The materials were placed in the beakers as shown

1000ml of water each was poured onto materials, E and F. The diagram below shows the results of the experiment.



- (a) Which material allowed more water to pass through it? Support your choice. (1m)

Nowadays, floods occur on Singapore roads.

- (b) Which material would you choose to make the roads in Singapore to prevent floods? Explain why. (1m)

- (c) Water can go underground. Explain how underground water can be part of the water cycle again. (1m)

42. In the early morning, Judy noticed water droplets on the outside of her white car even though it did not rain during the night.

(a) Explain how the water droplets were formed on the outside of the car.

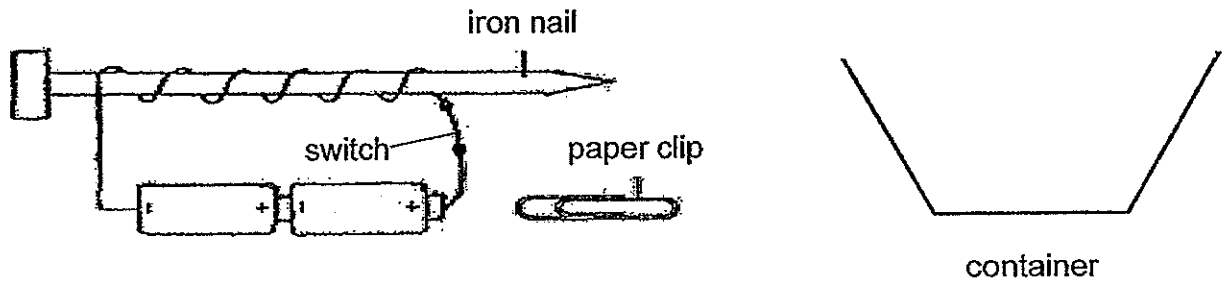
(2m)

Judy then compared the amount of water droplets found on her white car with a black car.

(b) Which car would have more water droplets on it? Give a reason for your answer.

(2m)

43. Cindy made an electromagnet as shown below.



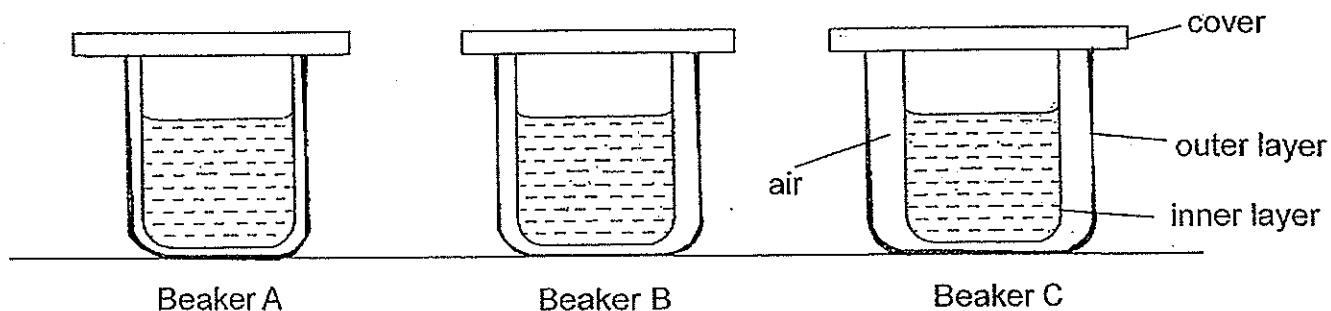
She tested her electromagnet by increasing the number of coils around the nail each time as shown below.

Number of wire coils around the nail	10	20	30	40
Number of paper clips attracted by the nail	10	15	20	25

(a) What is the relationship between the number of wire coils around the nail and the strength of the electromagnet? (1m)

(b) If Cindy wants to drop the attracted paper clips into a container at each time, what should she do? (1m)

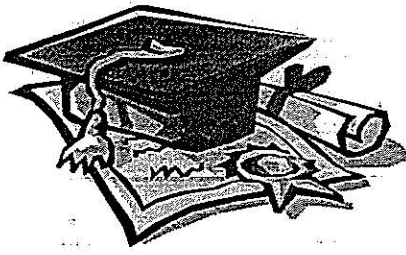
44. Ryan wanted to compare the heat conductivity of three special beakers. They were made of the same material with different amount of air trapped between the inner and outer layers of the material. He set up the apparatus as shown below. The temperature of the soup in all 3 beakers at the beginning of the experiment was the same. He conducted his experiment for 20 minutes.



- (a) Which beaker would be able to keep the soup the hottest after 20 minutes?
Explain your answer. (2m)

- (b) If all the beakers were not covered, what would Ryan observe about the temperature change? (1m)

End of Part II



ANSWER SHEET

EXAM PAPER 2014
SCHOOL : ROSYTH
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA2

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

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

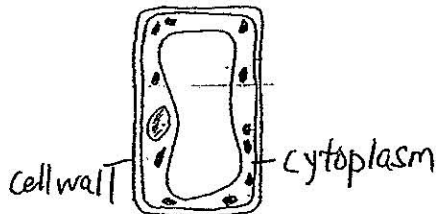
31)a) Stage D.

b) The life cycle of the mealworm beetle would not be able to continue if the egg stage is absent.

32)a) Organism B.

b) In cell X, there is chloroplast which contains chlorophyll for photosynthesis. As Organism B is a green plant, it needs to make food thus Cell X, comes from Organism B.

33)a)



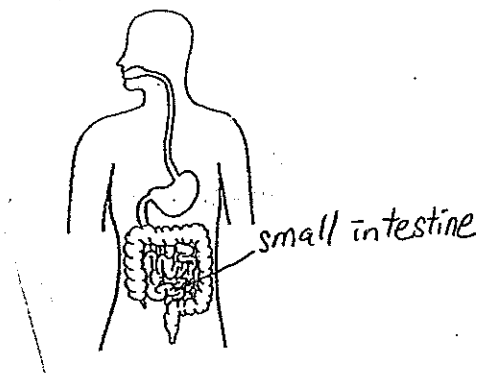
33)b)Yes, I agree with Jenny. The cell membrane controls what kind of substance entering the cell just like the school security guard who watches over the gates to prevent intruders from entering the school.

c)Yes, the cell above can carry out cell division. The cell above has a nucleus which contains genetic information that is needed for cell division.

34)a)It will be used for photosynthesis to make food.

b)Water moves from roots to leaves and not return while blood travels from lungs to other parts of the body and back again.

35)a)



b)Digestive system helps to digest the food and absorbs it into the bloodstream. The circulatory system will transport the digested food to all parts of the body.

36)a)To find out if the Distance between the lamp and hydrilla will affect the rate of photosynthesis.

b)The closer lamp and the hydrilla is the higher the rate of photosynthesis.

c)Measure the height of air space in the test tube.

37)a)The brighter it is, the smaller the size of the stomata.

b)The bigger the stomata size allows more carbon dioxide allows more carbon dioxide to enter the leaves and then will increase the rate of photosynthesis.

c)The plant would lose too much water.

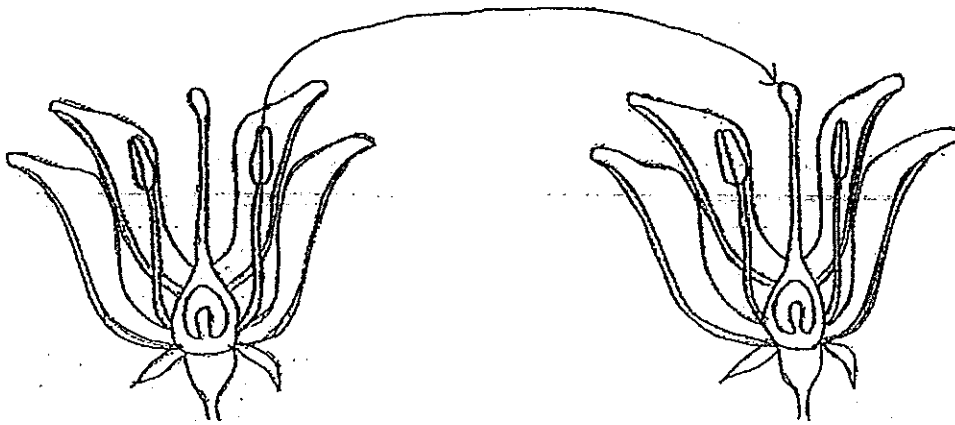
38)a)C: womb D: vagina

b)To produce release and store eggs.

39)a)Wind dispersal.

b)Air, warmth, water

40)a)



b) Self-pollination.

c) The anther in the plant, passes its own pollen grain to the flower's stigma.

d) The Ovary would develop into a fruit and the ovules would develop into seeds.

41)a) Material F allowed more water to pass through it. Compared to material E, more water is seen in material F's beaker than Material E's beaker.

b) Material F. It allows more water to pass through so less water remains on the road.

c) Plants take in underground water for their daily needs or either mat underground water flows into the open sea and evaporate, condenses into clouds and the water cycle repeats again.

42)a) The water vapour from the surrounding air comes into contact with the cooler surface and loses heat to the car and condenses into water droplets.

b) The black car. It loses heat at night. Therefore rate of condensation will be higher.

43)a) As the number of wire coils around the nail increases, the strength of the electromagnet also increases.

b) She should turn off the switch.

44)a) Beaker C. It has the greatest amount of air trapped and since air is a poor conductor of heat the least amount.

b) The temperature will decrease.

