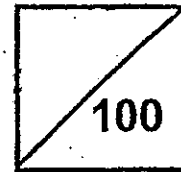




Rosyth School
First Continual Assessment for 2013
SCIENCE
Primary 6

Name: _____

Total
Marks:



Class: Pr 6 _____

Register No. _____

Duration; 1 h 45 min

Date: 4 March 2013

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, write your answers in the OAS provided
5. For questions 31 to 44, write your answers in the spaces given in the Booklet B.

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

* This booklet consists of 18 pages.

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Part 1 (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.

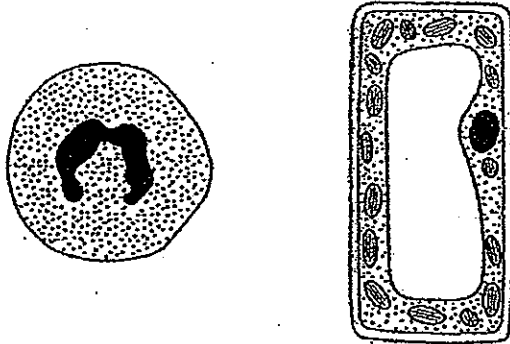
1. Study the characteristics of organism A, B, C and D below.

Organism	Respond to changes	Can move from one place to another	Can reproduce	Can produce its own food
A	√			
B	√	√	√	
C	√		√	√
D	√		√	

Which of the things above are correctly classified as plants, animals and fungi?

	Plants	Animals	Fungi
(1)	C	A	B
(2)	A	C	B
(3)	C	B	D
(4)	D	A	C

2. The diagrams below show two cells.

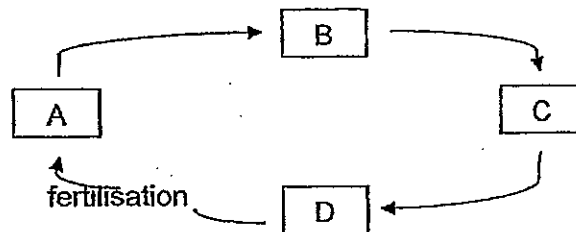


Which of the following process/es take/s place in both cells?

- A: fertilisation
- B: digestion
- C: cell division
- D: photosynthesis

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

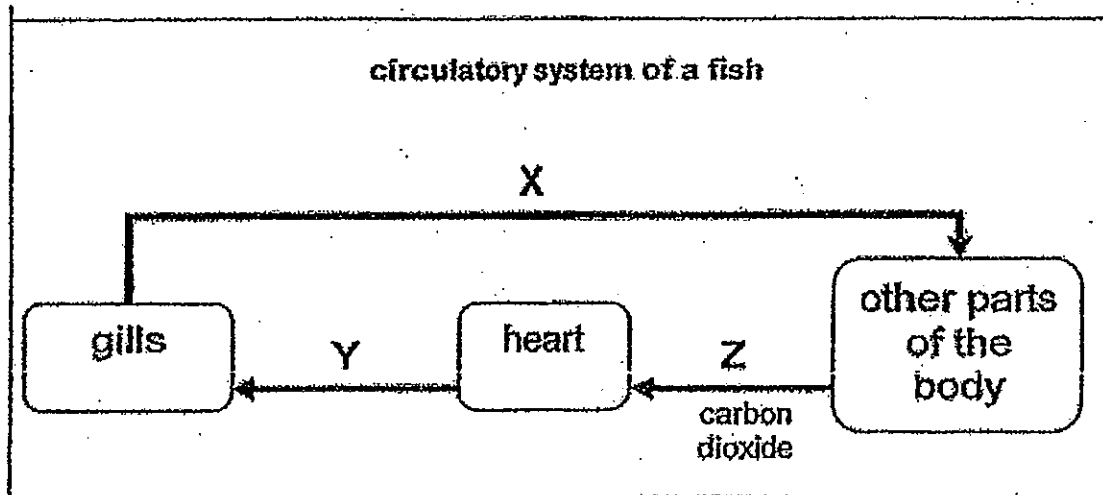
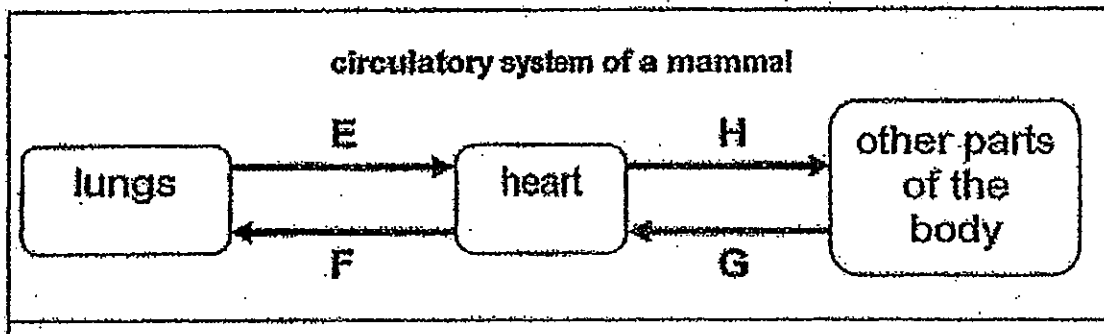
3. The diagram below shows the life cycle of an insect and the point at which fertilisation occurs.



Which one of the followings shows the correct stages of an insect in the diagram above?

	A	B	C	D
(1)	larva	pupa	adult	egg
(2)	pupa	adult	egg	larva
(3)	adult	egg	larva	pupa
(4)	egg	larva	pupa	adult

4. The diagrams below show the circulatory system of two organisms, a mammal and a fish respectively. The arrows represent the blood vessels that carry blood from the lungs or gills to the other parts of the body.

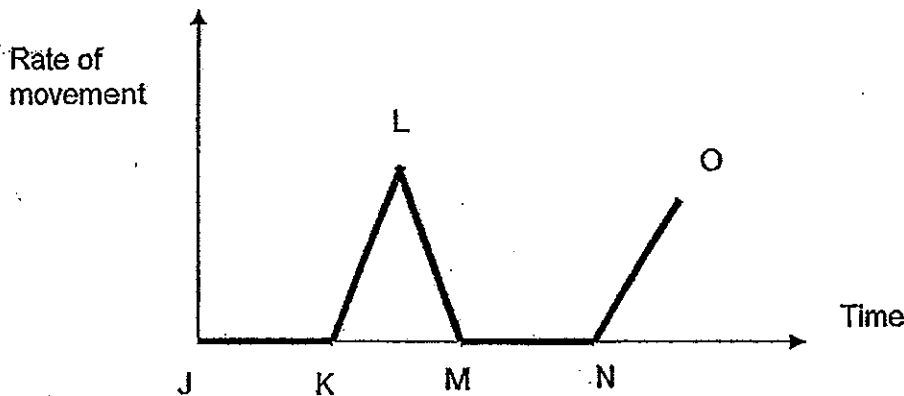


Based on the diagrams above, which of the following statement/s is/are correct?

- A: Only G, Y and Z carry blood rich in carbon dioxide.
 B: Only E, H and X carry blood rich in oxygen.
 C: Blood rich in oxygen goes to the heart directly from the lungs and gills respectively.

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

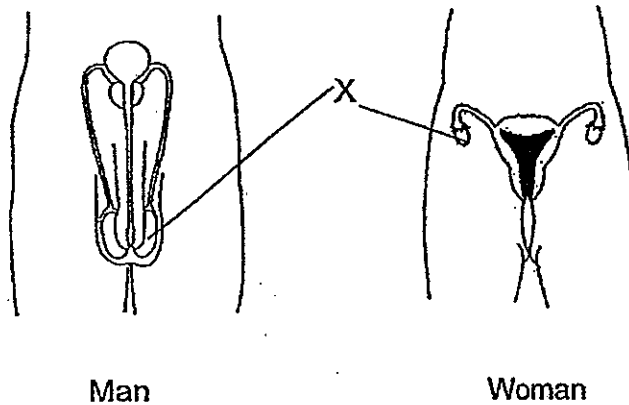
5. During its life cycle, a mealworm beetle will undergo changes. J to O show the rate of movement from an egg to an adult.



At which stage of the graph above is the mealworm a pupa?

- (1) JK (2) KL
(3) LM (4) MN
6. Why do some animals lay large number of eggs at a time?
- A: The animals have many predators.
B: This prevents overcrowding from happening.
C: It can increase the chances of survival of the young.
D: This ensures that each sperm cell from the male animals has an egg to fertilise.
- (1) A and B only (2) A and C only
(3) B and D only (4) C and D only
7. In which part of the human body does the fertilised egg develop to become a baby?
- (1) Fallopian Tube (2) Ovary
(3) Stomach (4) Uterus

8. The diagram below shows the reproductive systems of a man and a woman.



In what way(s) is/are the part(s) labelled X similar?

- A: X stores the reproductive cells.
- B: X produces the reproductive cells.
- C: Cells stored in X only contain half the amount of genetic information.
- D: Cells stored in X are genetically identical to any other cells found in the body.

(1) A only

(2) B and C only

(3) A, B and C only

(4) A, B, C and D

9. The table below shows the characteristics of Ali and his parents.

	Physical Characteristics			
	Earlobes	Eyelids	Hair	Hair Length
Ali	Attached	Double	Curly	Short
Father	Detached	Single	Curly	Short
Mother	Attached	Double	Straight	Long

How many characteristics did Ali inherit from his parents?

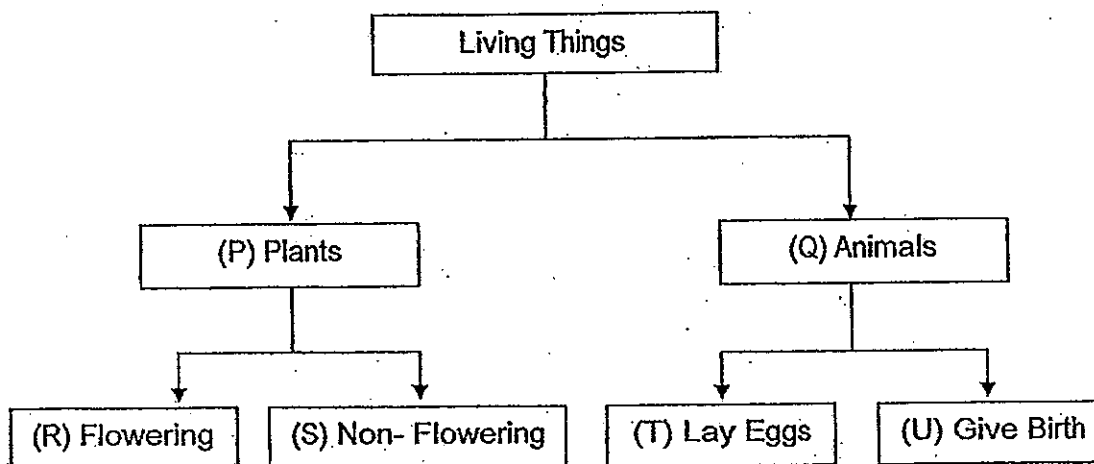
- (1) He inherited one from each parent.
- (2) He inherited two from each parent.
- (3) He inherited two from his father and one from his mother.
- (4) He inherited one from his father and two from his mother.

10. Which of the following statements are true of plants?

- A: All young plants grow only from seeds.
- B: A germinating seed first gets its food from the seed leaves.
- C: The seeds found inside the fruits can grow into new plants.
- D: Each new plant goes through the same life cycle as the parent plant.

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

11. Study the classification chart below carefully.



Which of the statements below best describe the organisms in the respective groups?

- A: All S reproduce by spores.
- B: An insect can be placed under T.
- C: R and S contain chlorophyll to make food.

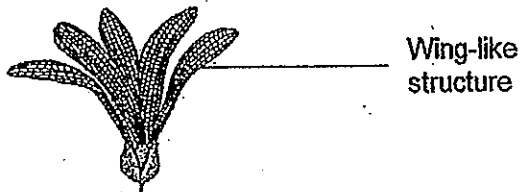
- (1) A and B only
- (2) B and C only
- (3) A and C only
- (4) A, B and C

12. Vivian conducted an experiment to determine how the duration of light exposure affects the rate of germination.

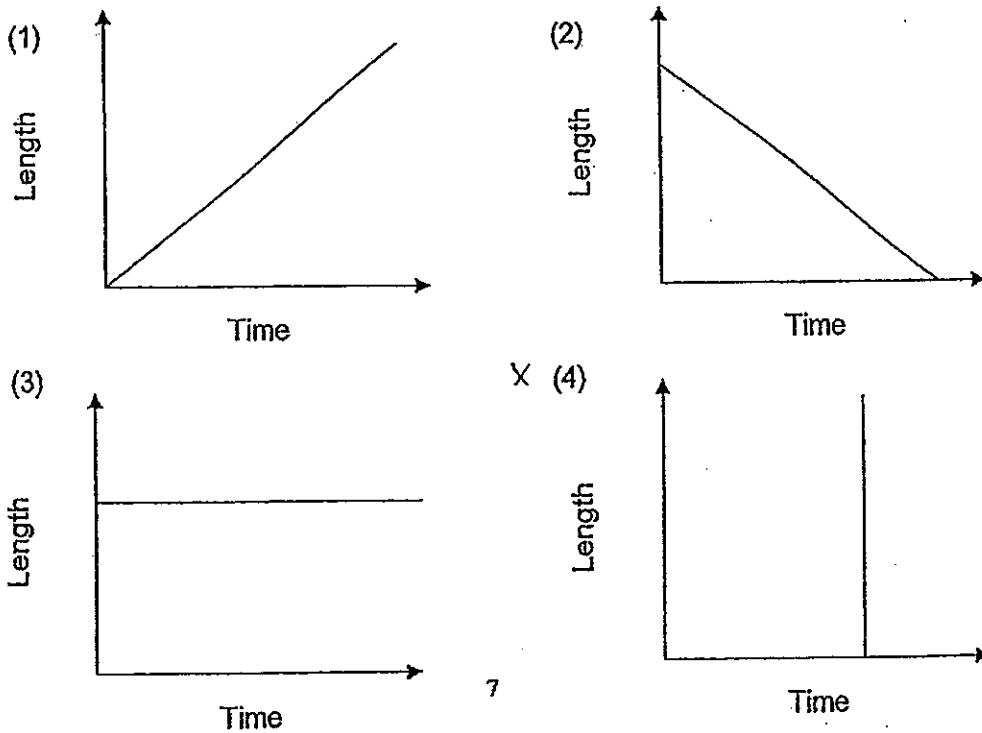
From the options below, which two set-ups, A and B, should Vivian use for her experiment?

	Set-up A			Set-up B		
	Amount of water (ml)	Duration of light exposure (hr)	Type of soil	Amount of water (ml)	Duration of light exposure (hr)	Type of soil
(1)	30	3	sandy	50	3	sandy
(2)	50	3	garden	50	6	garden
(3)	30	6	garden	30	6	sandy
(4)	50	3	sandy	50	3	sandy

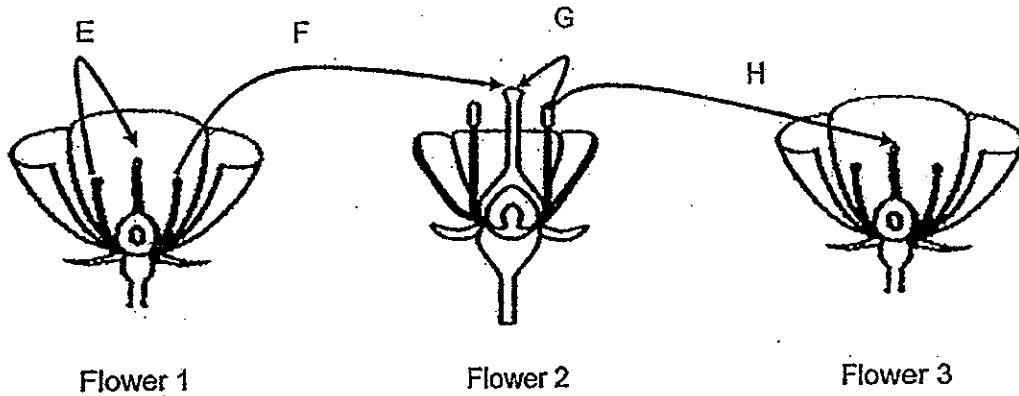
13. The diagram below shows a shorea fruit.



Which one of the following graphs below shows the relationship between the length of the shorea's wing-like structure and the duration of time the shorea fruit can remain floating in the air?

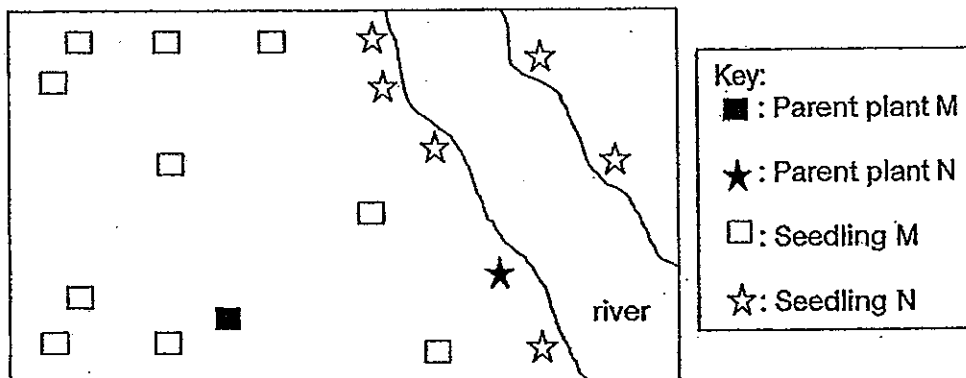


- 14 The diagram below shows the cross-section of 3 flowers. The arrows show the movement of the pollen grains during pollination.



Which of the following arrow(s) show(s) how the wind could have pollinated Flower 2?

- (1) F only
 (2) E and H only
 (3) F and G only
 (4) F, G and H only
15. Two plants, M and N were planted on a plot of land near a river. After a period of time, their seedlings were found to be scattered on the land as shown in the diagram below.



Which of the following characteristics would the fruits or seeds of Plant M and N most likely have?

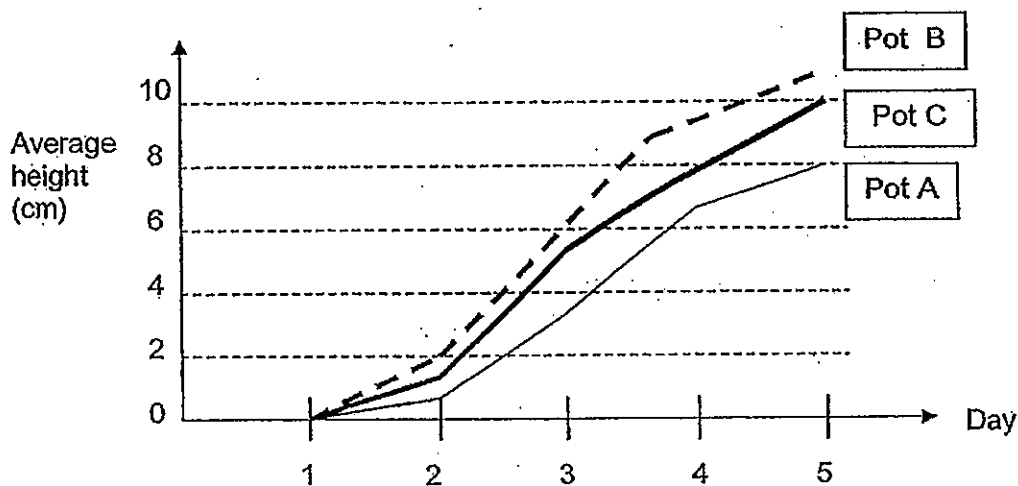
	Fruit / Seed M	Fruit / Seed N
(1)	Has wing- like structure	Has stiff hairs
(2)	Is pod-like	Is fleshy with small seeds
(3)	Is fleshy with small seeds	Has fibrous husk
(4)	Has fibrous husk	Has wing-like structure

Use the information below to answer Questions 16 and 17.

Gopal planted some tomato seeds in 3 different pots of similar size in his garden. He watered the pots of seeds daily with the same amount of water. The table below shows the number of seeds planted in each pot.

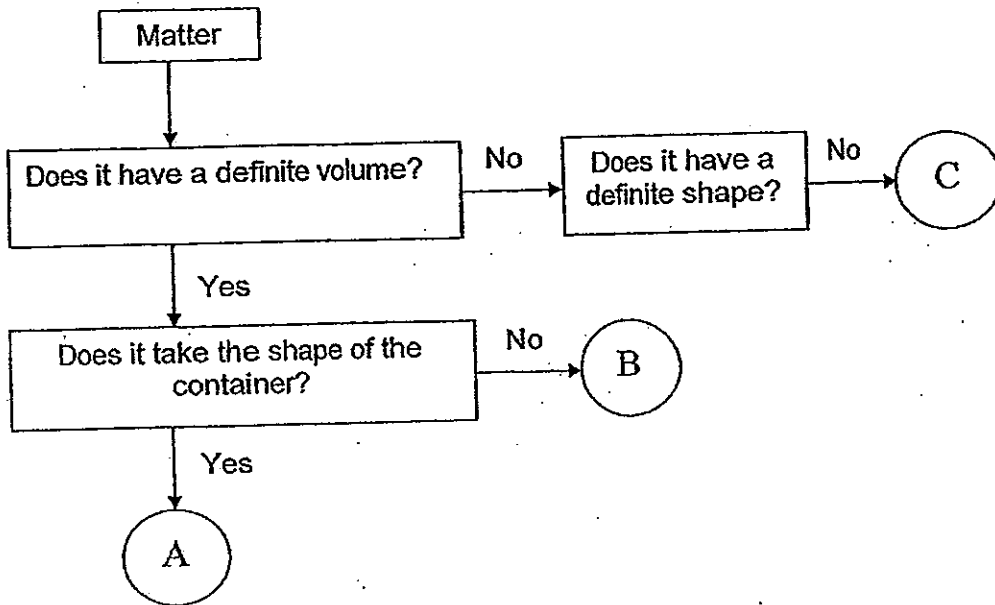
Pot	A	B	C
Number of seeds	2	10	6

After 5 days, he plotted the average height of the seedlings for each pot as shown in the graph below.



16. What do you think is the aim of Gopal's experiment?
- (1) He wanted to find out if the type of seeds affects the height of the seedlings.
 - (2) He wanted to find out if the size of the pots affects the height of the seedlings.
 - (3) He wanted to find out if the number of seeds affects the height of the seedlings.
 - (4) He wanted to find out if the amount of water given to the seeds affects the height of the seedlings.
17. Why are the plants in pot B taller and thinner than the plants in pot A and C?
- (1) The plants in pot B have more space.
 - (2) The seeds in pot B are of better quality.
 - (3) The plants in pot B have more water and nutrients.
 - (4) The plants in pot B are competing to obtain more sunlight.

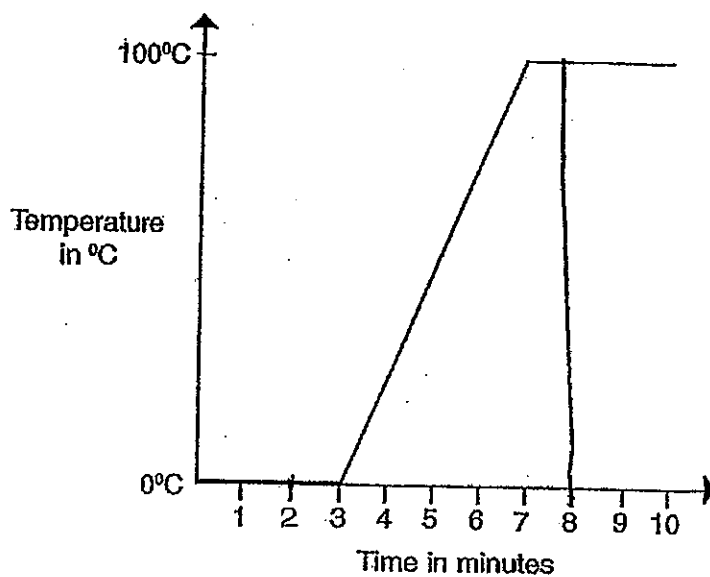
18. The flow chart below shows the properties of Matter A, B and C.



How is Matter C similar to Matter A?

- (1) They have definite shape.
- (2) They have indefinite shape.
- (3) They have definite shape and volume.
- (4) They have indefinite shape and volume.

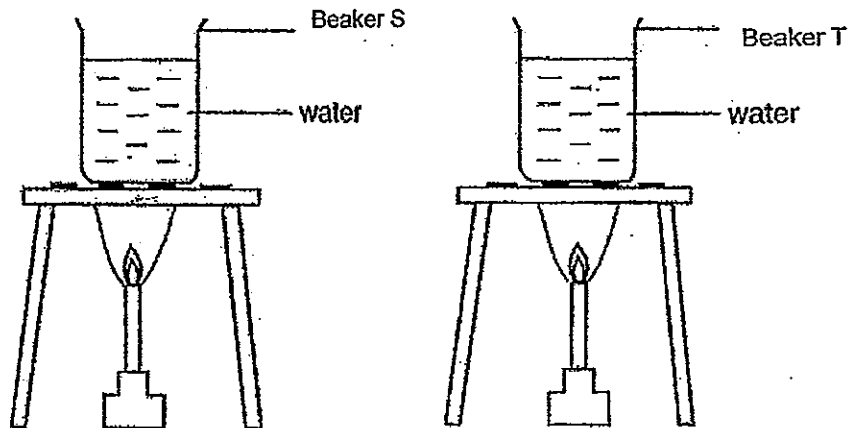
19. An enclosed container filled with ice completely was heated over a period of time. The graph below shows how the temperature of the contents changed with time.



Which one of the following most likely shows the contents in the container at the 2nd and 8th minute?

	2 nd minute	8 th minute
(1)	ice only	water only
(2)	ice and water	steam only
(3)	ice only	water and steam
(4)	ice and water	water and steam

20. Two beakers, S and T, containing 500ml of water each, were heated as shown in the diagrams below. The water in S was heated 5 minutes earlier than in T.



It was observed that the water in Beaker T reached the boiling point earlier than the water in Beaker S. Which of the following could be possible reasons for this observation?

- A: The flame used in heating Beaker T was stronger.
- B: Some salt had been added to the water in Beaker T.
- C: The initial temperature of the water in Beaker T was higher.

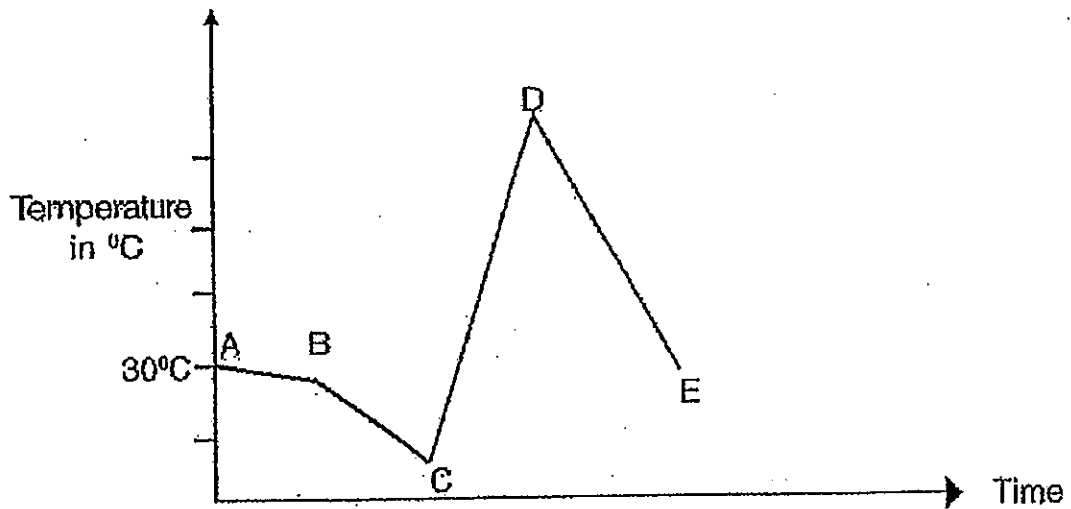
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C

21. Which of the following statements about the water cycle is/are true?

- A: The water cycle is a continuous movement of water on Earth.
- B: The sun is the source of energy and the driving force of the water cycle.
- C: The water cycle can take place because water can change from one state to another.
- D: The water cycle ensures that there is a never-ending supply of fresh water for the survival of Man and animals only.

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

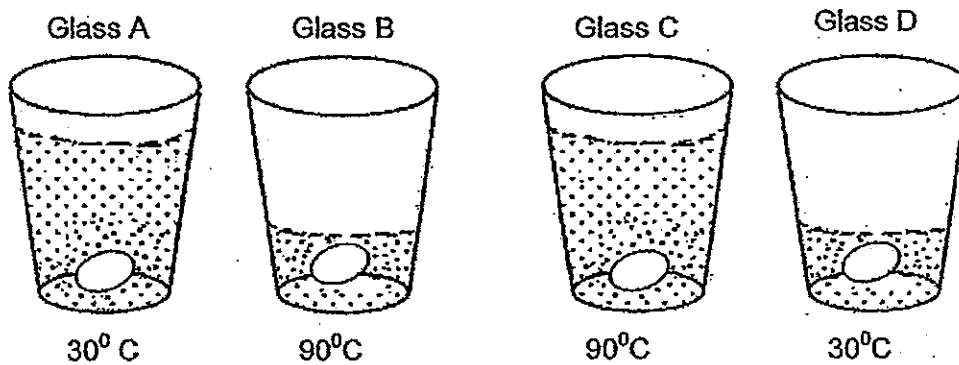
22. Gary conducted a few activities using a beaker of 600ml of tap water. He recorded the temperature of the water as shown in the graph below.



Which one of the following activities is wrongly matched with the result indicated on the graph?

	Line	Activity
(1)	AB	Stirring the water with a spoon
(2)	BC	Adding some ice cubes into the water
(3)	CD	Putting a hot iron ball into the water
(4)	DE	Pouring away 400ml of the tap water

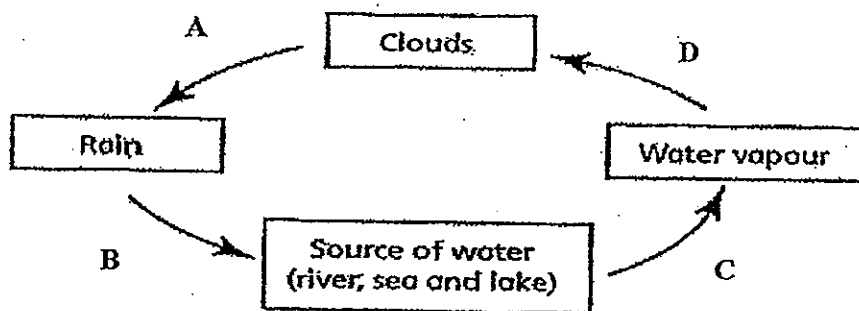
23. Kathy put four eggs into four different glasses of water as shown below. After 5 minutes, she observed that only two of the eggs, X and Y, were cooked and Egg X was more cooked than Egg Y.



In which glasses had the two eggs, X and Y, been placed respectively?

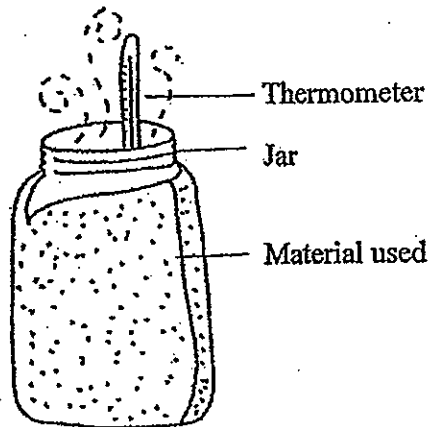
- (1) Glasses B and A
 (2) Glasses C and D
 (3) Glasses C and B
 (4) Glasses A and D

Study the water cycle below to answer Questions 24 and 25.



24. At which point in the water cycle will the surrounding air gain heat?
- (1) A
 (2) B
 (3) C
 (4) D
25. At which point in the water cycle will there be a change of state from a liquid to a gas?
- (1) A
 (2) B
 (3) C
 (4) D

26. Kim carried out an experiment using four different materials. She used four similar-sized jars, each filled with the same amount of water at 60 °C. She then wrapped each of the jars with a different kind of material. After 10 minutes, she took the temperature of the water in each jar and recorded it in the table below.

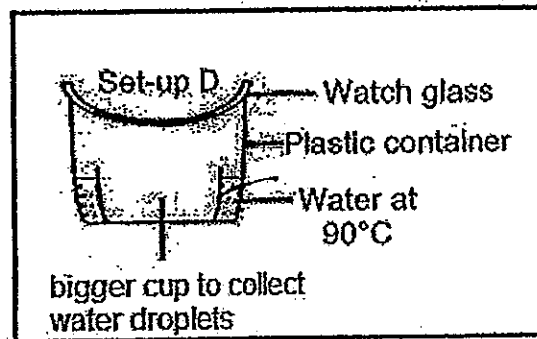
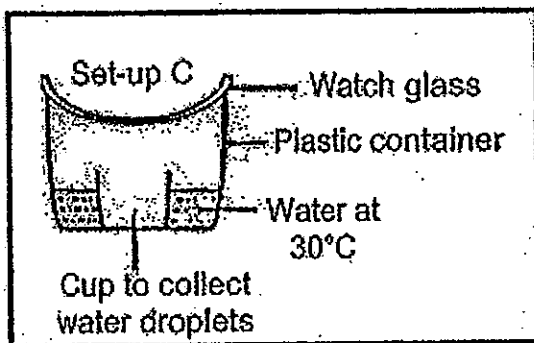
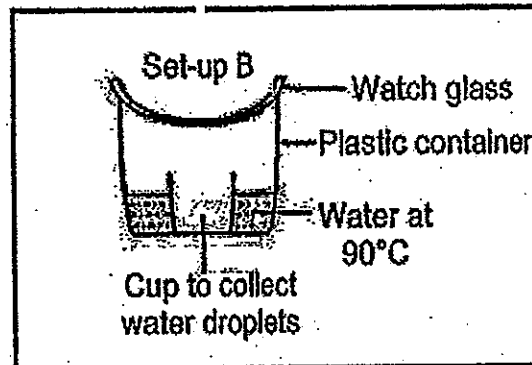
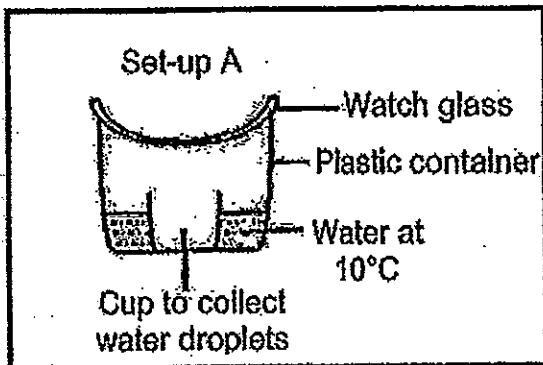


Material Used	Temperature of water after 10 minutes
W	40°C
X	45°C
Y	50°C
Z	55°C

Based on her findings, which material should she use to wrap an ice cream container so that the ice cream inside will melt the slowest?

- (1) W
(2) X
(3) Y
(4) Z
27. Which one of the following processes requires heat loss?
- (1) Boiling
(2) Melting
(3) Freezing
(4) Evaporation

28. Study the experimental set-ups below. Four similar plastic containers with equal amounts of water at different temperatures were set up.



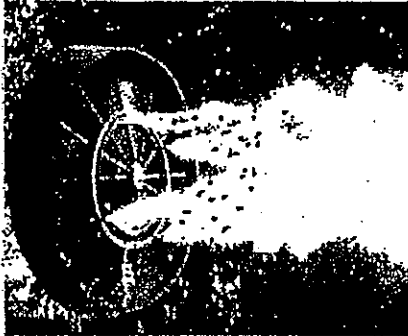
If the room temperature is 30°C, in which set-up will there be the most water in the cup at the end of 30 minutes.

- (1) A
- (3) C

- (2) B
- (4) D

29. When Peter stood in front of a misting fan on a hot day, he felt cooler than when he stood in front of a normal fan. The misting fan releases water droplets which are propelled by the air flow from the fan.

Misting fan

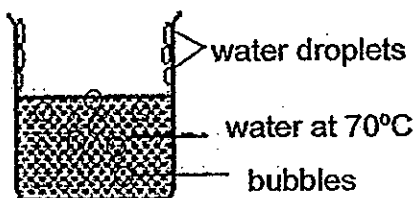


Which one of the following statements explains why the misting fan caused him to feel cooler?

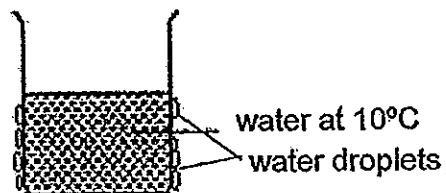
- (1) The water droplets lost heat to his skin.
- (2) The water droplets gained heat from his skin.
- (3) The water droplets cooled the sweat on his skin.
- (4) The surrounding air lost heat and condensed to form more water droplets.

30. Siti set up Beaker G and Beaker H as shown below.

	Beaker G	Beaker H
Volume of water	500ml	500ml
Temperature of water	70°C	10°C



Beaker G



Beaker H

Both beakers were then placed in a room at a temperature of 30°C. After some time, Siti observed some water droplets on both beakers as shown in the diagram above.

Which of the following statement/s explain/s why the water droplets appear on different parts of the beakers?

	Beaker G	Beaker H
A:	The bubbles rise to the surface of the beaker and gather on the top inner surface of the beaker.	The water in the beaker condenses on the outer surface of the beaker.
B:	The water vapour from surrounding air condenses as water droplets on the cooler surface of the beaker.	The water vapour from the surrounding air gains heat from water to form water droplets.
C:	The water vapour rises and condenses on the cooler surface of the beaker.	The water vapour from the surrounding air loses heat to the cooler surface of the beaker.

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

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

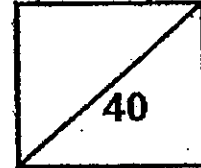
End of Part I



Rosyth School
First Continual Assessment for 2013
SCIENCE
Primary 6

Name: _____

Total
Marks:



Class: Pr 6-

Register No. _____

Duration: 1 h 45 min

Date: 4 March 2013

Parent's Signature: _____

Booklet B

Instructions to Pupils:

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

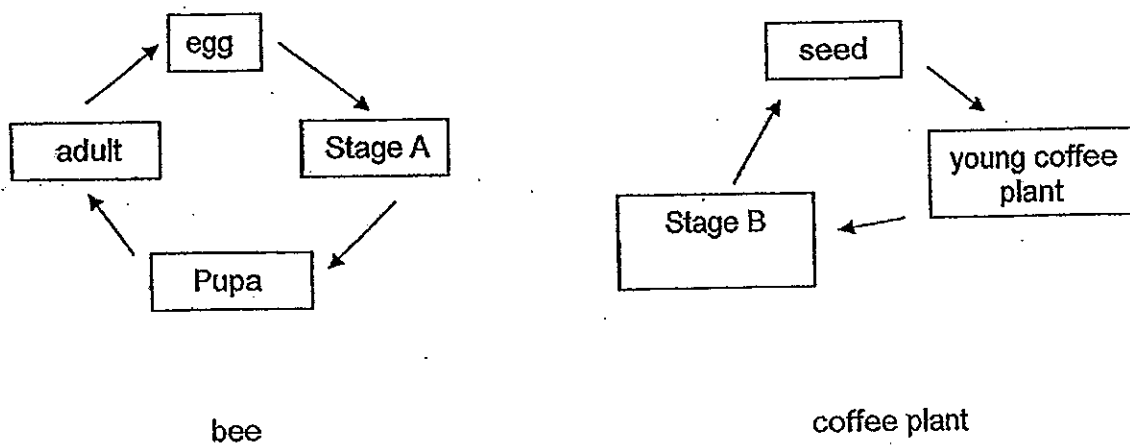
* This booklet consists of 15 pages.

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Part II (40 marks)

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

31. Tom studied the life cycle of a bee and a coffee plant as shown below.



(a) Name the stages A and B in the above life cycles. (1m)

Stage A: _____

Stage B: _____

Farmers who grow coffee plant want the bee keeper to place the bee hives in their farms.

(b) Describe how the presence of bees is useful for the coffee farmers. (2m)

32.

- (a) Draw the human male and female reproductive cells in the space provided below. (1m)

Male Reproductive cell	Female Reproductive cell

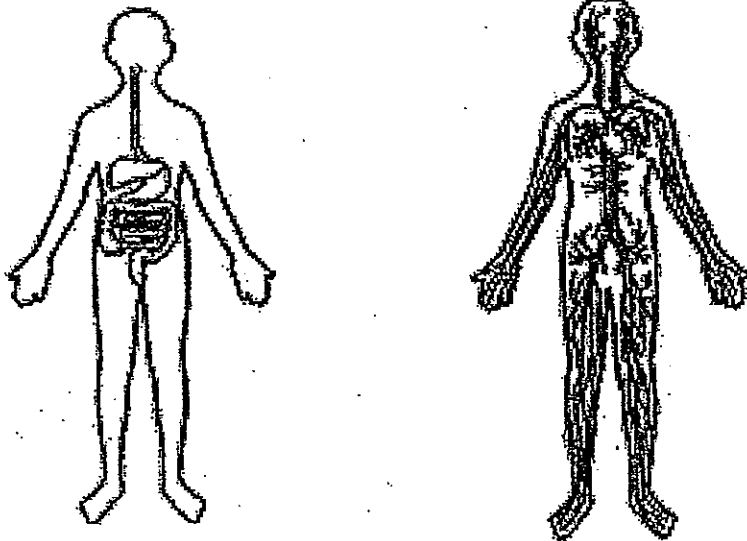
- (b) State a difference between the two cells and give a reason for it. (2m)

(i) Difference:

(ii) Reason :

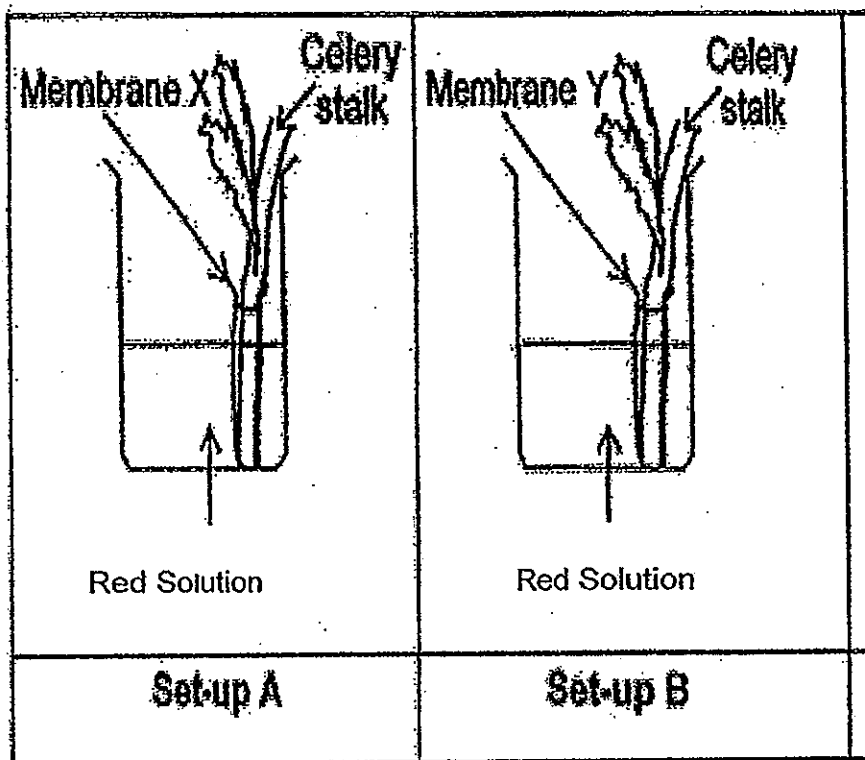
- (c) When the sperm fuses with the egg, the fertilised egg is formed which will begin to divide to form many cells.
Which part of the cell controls the above activity? (1m)

33. Study the two systems shown below.



-
- (a) Name the systems in the blanks provided above. (1m)
- (b) Describe how the two systems in a pregnant female body help the foetus to obtain food for its development. (2m)

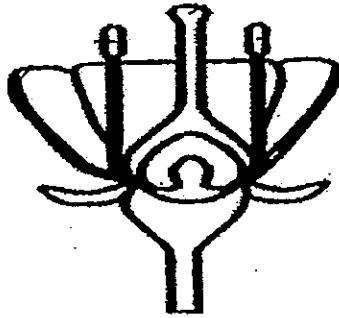
34. The base of the celery stalks in set-ups, A and B, were wrapped with membranes, X and Y, respectively. They were then placed into a beaker of red solution.



Three days later, the observations were recorded in the table as shown below.

Set-up A	Set-up B
Leaves are red and firm	Leaves are yellowish and wilted

35. David observed the stigma and the anthers of a certain type of flowers in his garden.



(a) Label the stigma and the anther of the above flower. (1m)

(b) i State the function of a stigma. (2m)

(b) ii State how the stigma is adapted to carry out its function as stated in (b) (i).

(c) He observed that the anthers ripened and released their pollen grains before the stigma of the same flower is ripened.

Give an explanation for the above observation. (1m)

- (a) Explain what has caused the observations in the two set-ups. (2m)

Set-Up A:

Set-Up B:

- (b) Which part of a cell do membranes, X and Y, represent? Explain why. (1m)

36. Vivian planted two seeds in a container. She observed the growth and development of the roots and shoots. She measured and recorded the lengths of the roots and shoots in the table below.

Day	Part A (mm)		Part B (mm)	
	Seed 1	Seed 2	Seed 1	Seed 2
1	0	0	0	0
2	0	0	0	0
3	0	0	2	1
4	0	0	3	3
5	3	4	7	6
6	5	6	9	10
7	9	8	12	11

- (a) Which part, A or B, is the shoot? Support your choice. (1m)

- (b) Vivian noticed that the seedlings did not have any green leaves. Where did the seedlings get their nutrients for growth? (1m)

- (c) State how Vivian can make her experimental results to be reliable. (1m)

37. In a plot of land, there were two plants of the same kind, A and B, with different characteristics as shown below in the table.

Plant A	Plant B
Flowers are bright red	Flowers are yellow
Fruits are sweet	Fruits are sweet
Seeds are small	Seeds are big

After a certain period of time, young plants of the same kind were found in the plot. Soon after, the young plants became new adult plants with the following characteristics.

Flowers are yellow
Fruits are sweet
Seeds are small

- (a) Do you think the new adults plants were produced through sexual reproduction by the two plants, A and B? Give a reason for your choice. (1m)

- (b) State the four processes of plant reproduction in a correct sequence. (1m)

i _____

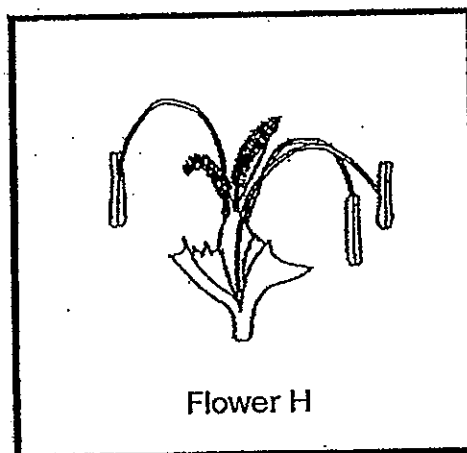
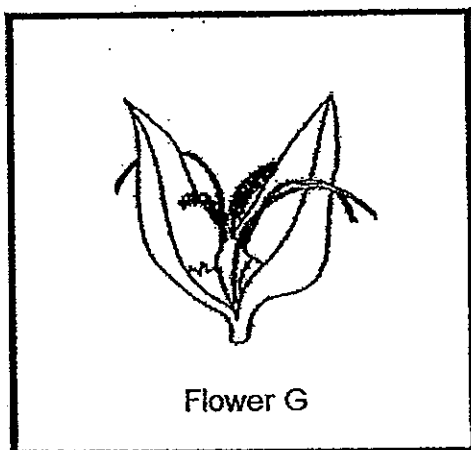
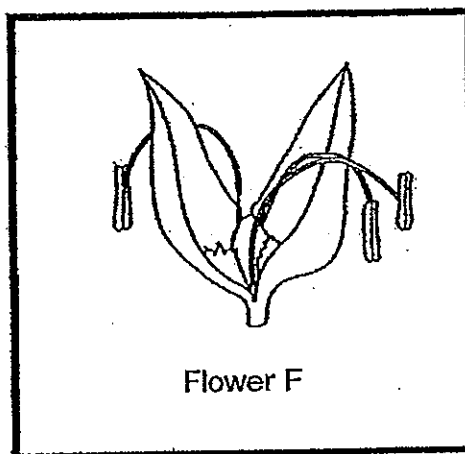
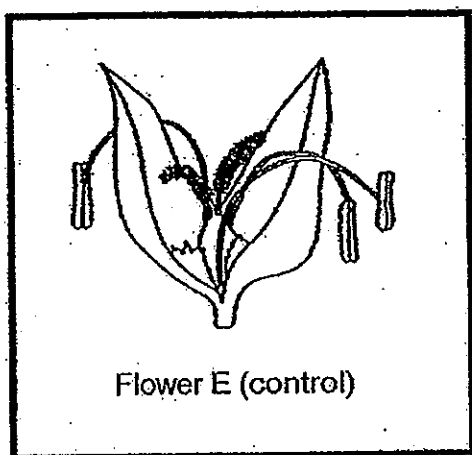
ii _____

iii _____

iv _____

38. Hazel selected four potted plants of the same kind for her experiment. She placed the four pots in an individual enclosed space.

She used the flowers from plant E to act as a control to prove that the presence of anther is needed for pollination to take place. She then removed one part of the flowers in plants F, G and H as shown below.

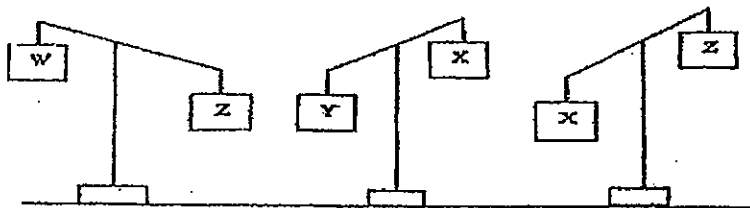


- (a) Which plant above should Hazel observe for her experiment? Explain your choice. (1m)

- (b) Why do you think the experiment was carried out in an individual enclosed space? (1m)

- (c) Describe what happens when a suitable pollen grain lands on the stigma. (2m)

39. Ben hung four boxes, W, X, Y and Z on a lever balance as shown in the diagram below and compared their masses.



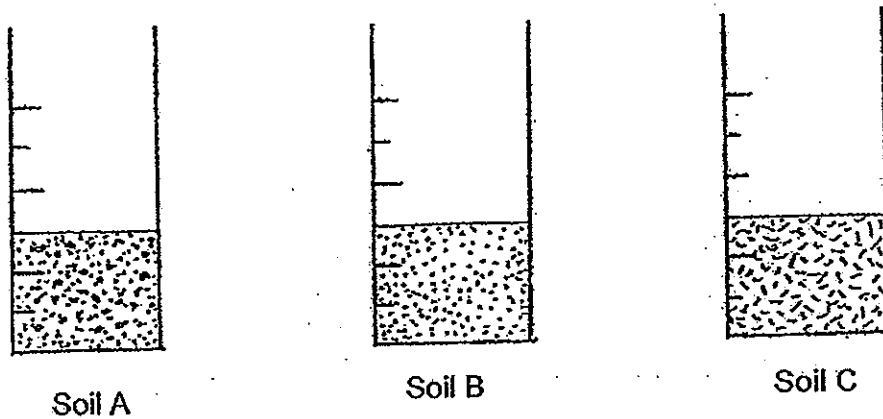
- (a) Complete the following: (1m)

(i) Box _____ has the smallest mass.

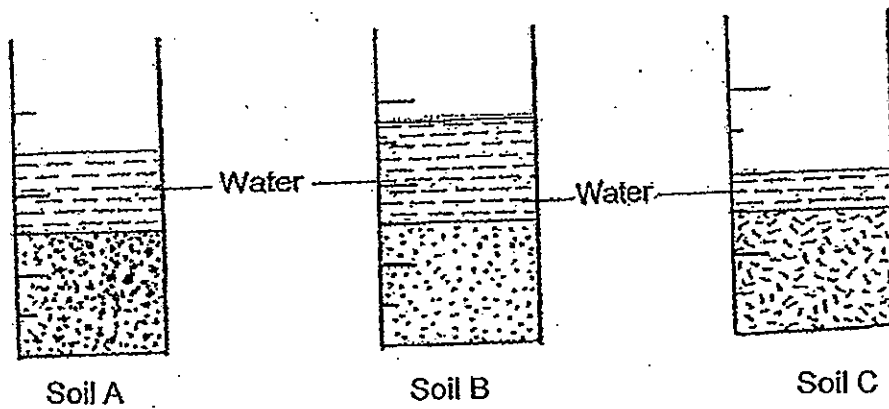
(ii) Box _____ has the biggest mass.

- (b) Give a reason why the boxes have different masses although they have the same volume. (1m)

40. David had same amount of soil in three cylinders as shown below.



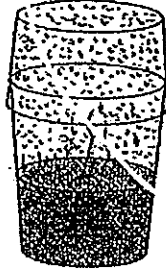
He poured equal amount of water into each of the cylinder. As he poured the water, he saw bubbles escaping from the soil. He observed the volume of soil and water as shown below in the measuring cylinders.



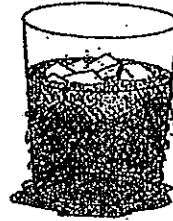
(a) In which soil would the roots of a plant grow the best? Explain why. (1m)

(b) State the property of matter that can be deduced from this experiment? (1m)

41. The diagram below shows two containers filled with water at different temperatures. The containers were left on a table in the classroom for the next hour.



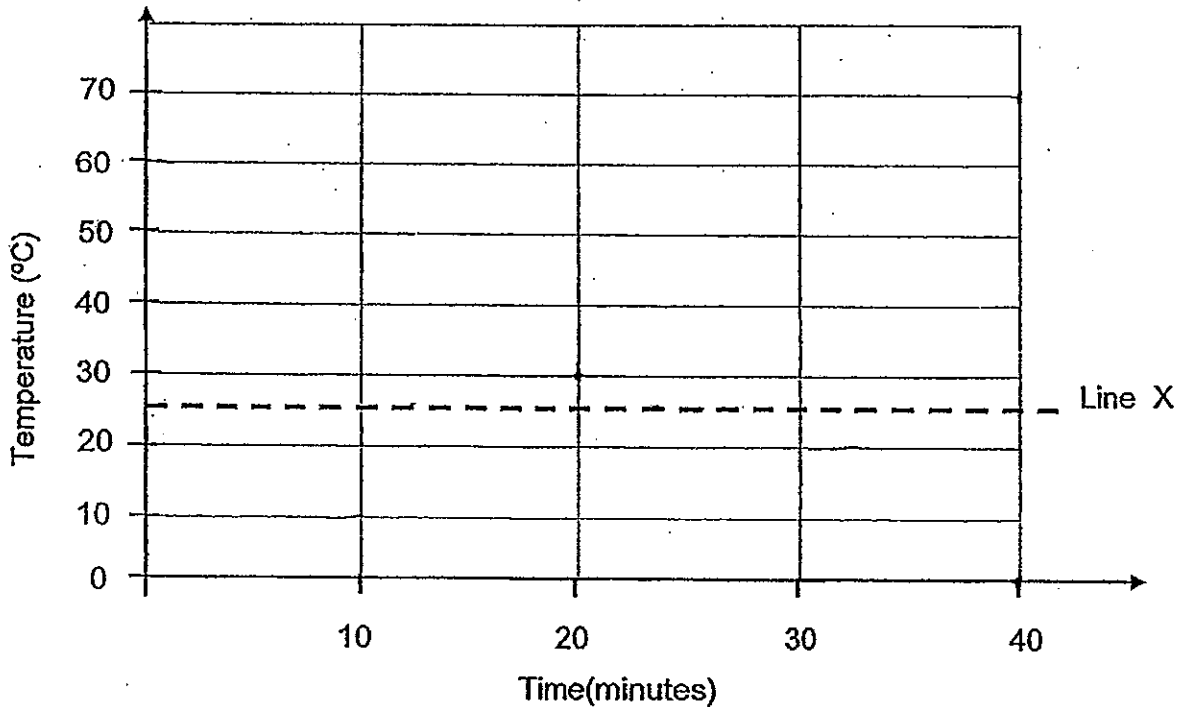
Container A with water at 60°C



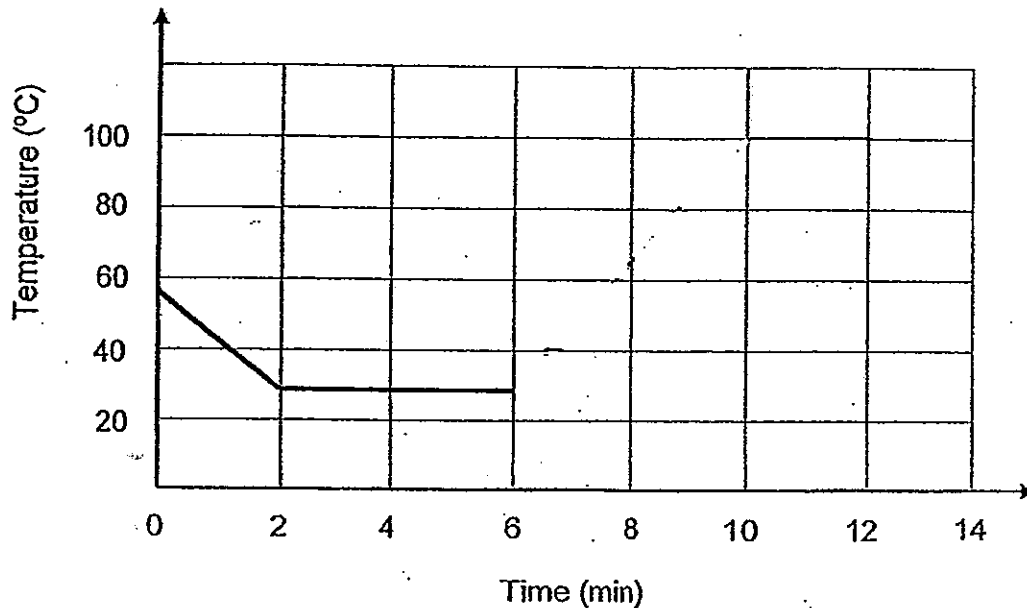
Container B with water at 5°C

- (a) State the process(es) that is/are taking place in the above set-ups? (1m)

- (b) Draw and label the graphs for containers A and B below, to show the change in temperature of the two containers of water over 40 minutes. Line X denotes the room temperature of the classroom. (1m)



42. The graph below shows the temperature change of pure water in a beaker that was left on a table in a room over a period of time.

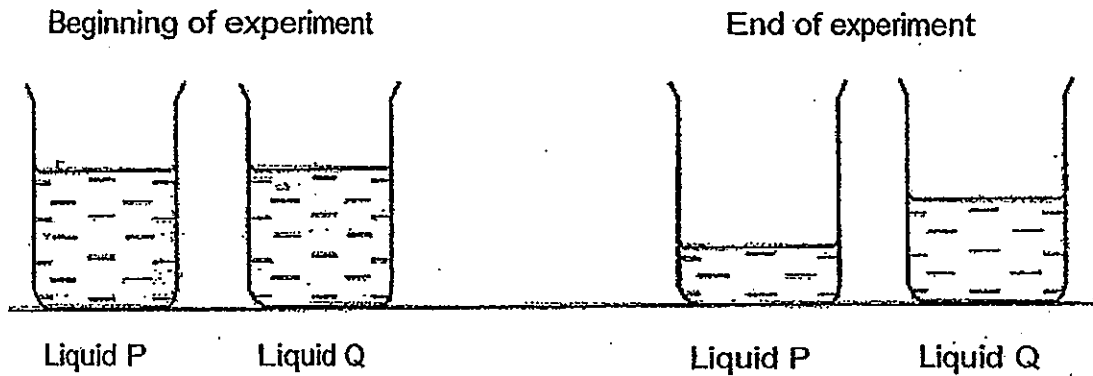


Based on the graph above, answer the following questions:

- (a) Explain why the temperature of water stopped decreasing after the 2nd minute. (1m)

- (b) A heat source was introduced at the 6th minute. The water boiled after heating for four minutes. Complete the graph until the 12th minute. (1m)

43. Zailani filled two similar beakers, each with 100ml of liquid P and Liquid Q respectively. He left the beakers in the sun. Three hours later, he observed the amount of liquid left in each beaker.

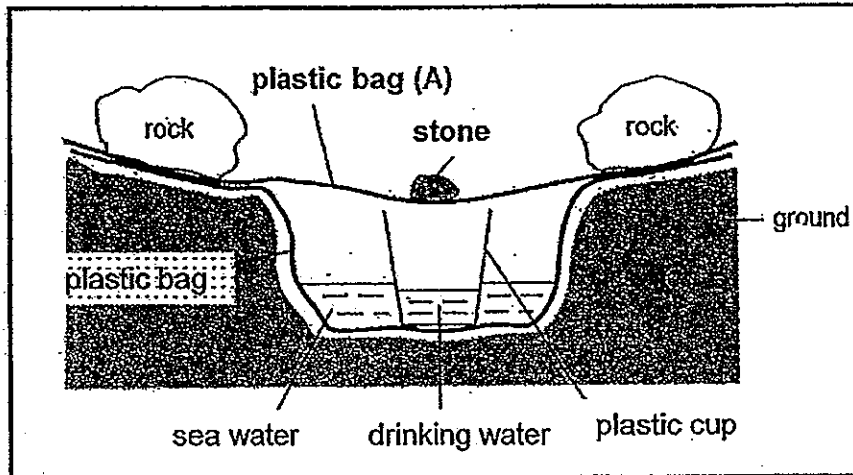


- (a) What do you think is the aim of Zailani's experiment? (1m)

- (b) What conclusion can he draw from the results of his experiment? (1m)

- (c) Which of the above liquids should Zailani apply on his arm in order to feel a cooling sensation faster. Explain why. (1m)

44. A shipwrecked sailor was trapped on a hot, deserted island that had no rivers. He needed to get drinking water from the sea water. He dug a hole on the ground and set up some items as shown below to obtain drinking water.



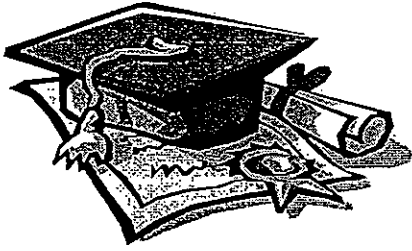
- (a) State the purpose of the plastic bag A. (1m)

A: _____

- (b) Using the above set-up, explain how drinking water was obtained. (2m)

End of Paper





ANSWER SHEET

EXAM PAPER 2013

SCHOOL : ROSYTH

SUBJECT : PRIMARY 6 SCIENCE

TERM : CA1

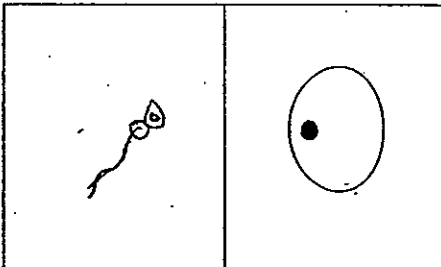
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	2	4	1	4	2	4	3	4	3	2	2	1	3	3	3	4

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

31)a)A: Larva B: Adult coffee plant

b)The bees will increase the chance of pollination which allows fertilization to take place to form coffee seeds.

32)a)



b)i)The male reproductive cell has a tail while the female reproductive cell does not have a tail.

ii)The sperm needs to have a tail in order for it to swim towards the egg.

c)Nucleus.

33)a) Digestive system Circulatory system

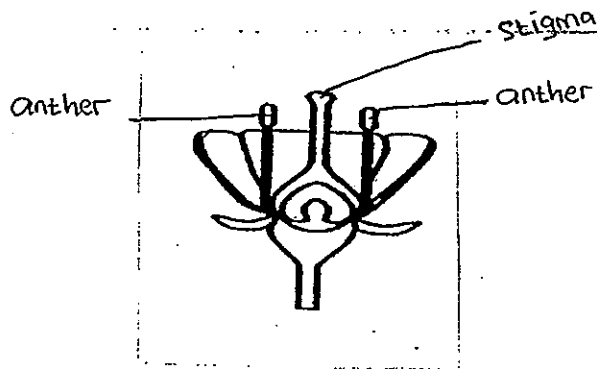
b) Digestive system digests the food and the digested food is absorbed into the blood. Circulatory system transports the blood to the foetus.

34)a) Set-up A: The red solution was able to pass through membrane XZ and be transported to the leaves through the celery stalks, causing the left cells to be firm and stained red.

Set-up B: The red solution was not able to pass through membrane Y to reach the leaves. The leaf cells became dehydrated causing them to wilt and turn yellow.

b) Cell membrane. The cell membrane controls the substances to enter and exit the cell.

35)a)



b)i) The stigma receives pollen grains from the anther.

ii) It has a sticky surface to catch the pollen grains from the air.

c) To prevent pollens to pollinate the same flower.

36)a) Part A is the shoot as it only starts to grow after part B which is the roots start to grow and obtain enough water for the shoot to grow.

b) The seedlings got their nutrients from the seed leaves.

c) Repeat the experiment to obtain average results.

37)a) Yes. The new plants have inherited the characteristics from both plants A and B as in sexual reproduction inheritance is from both parents.

b)i) Pollination ii) Fertilization iii) Dispersal iv) Germination

38)a) In G, the anther is removed and she can find out if the anther is needed for pollination.

b) To prevent cross pollination from happening.

c) The pollen will develop a pollen tube and travel through the style to the ovary. The pollen grain will enter the ovules for fertilization.

39)a)i)W ii)Y

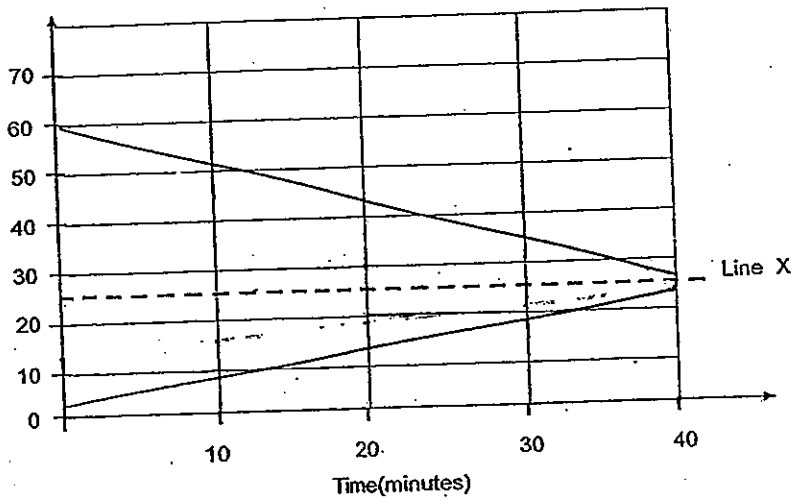
b)They are made of different materials.

40)a)Soil C. It contains the most amount of air spaces for healthy root growth.

b)Matter occupies space.

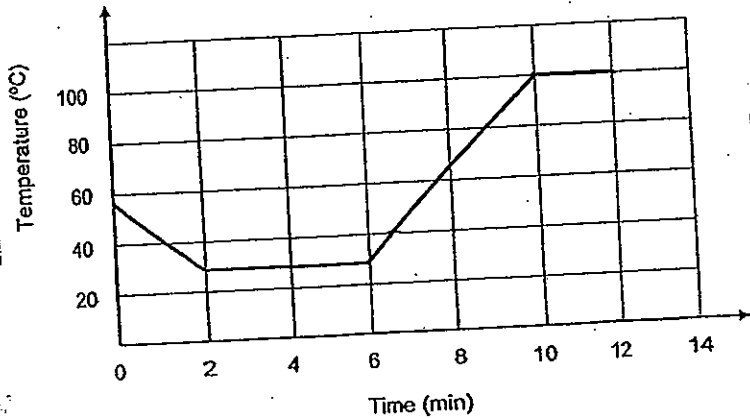
41)a)Evaporation, condensation and Melting.

b)



42)a)It to room temperature.

b)



43)a)To find out if the type of liquid affects the rate of evaporation.

b)Liquid P had evaporated the most.

c)Liquid P. P evaporates faster and thus will remove heat faster from the arm.

44)a)To gain heat from the water vapour in order to allow for condensation to occur.

b)Water from sea water in the hole gained heat and evaporated. Water vapour rose to the cooler surface of the plastic A and lost heat to condense into water droplets.