



PRIMARY 5 MID-YEAR EXAMINATION 2012

Name : _____ () Date: 14 May 2012

Class : Primary 5 ()

Time: 8.00 a.m. - 9.45 a.m.

Duration : 1 hour 45 minutes

Parent's Signature : _____

Marks: _____ / 60

SCIENCE BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

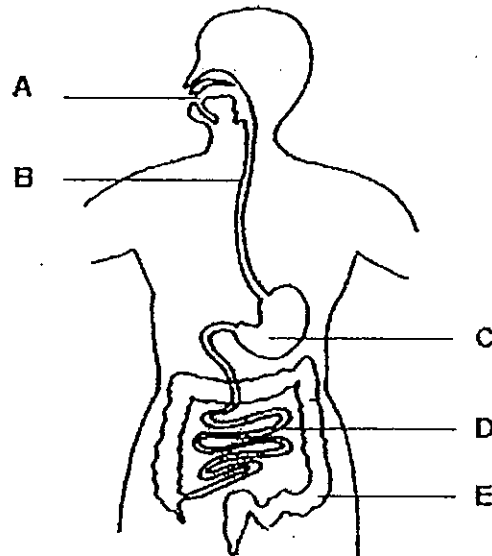
Follow all instructions carefully.

Answer all questions.

Section A (30 x 2 marks)

For each question, 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval, (1, 2, 3 or 4) on the Optical Answer Sheet.

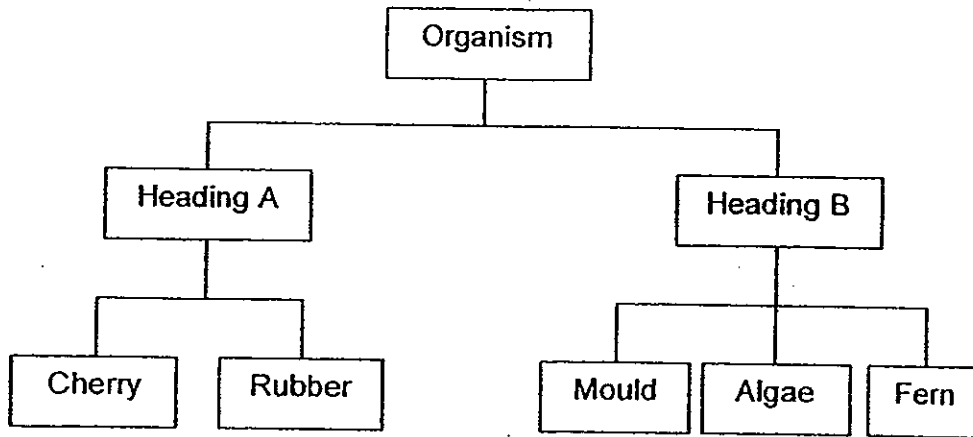
1. The diagram below shows the human digestive system.



Which of the following correctly shows the changes in the amount of undigested food when it leaves Parts A, B, C, D and E?

	Part A	Part B	Part C	Part D	Part E
(1)	Increases	No change	Increases	Decreases	No change
(2)	Decreases	No change	Decreases	Decreases	No change
(3)	Increases	Decreases	Increases	Decreases	Increases
(4)	Decreases	Increases	Decreases	Increases	Decreases

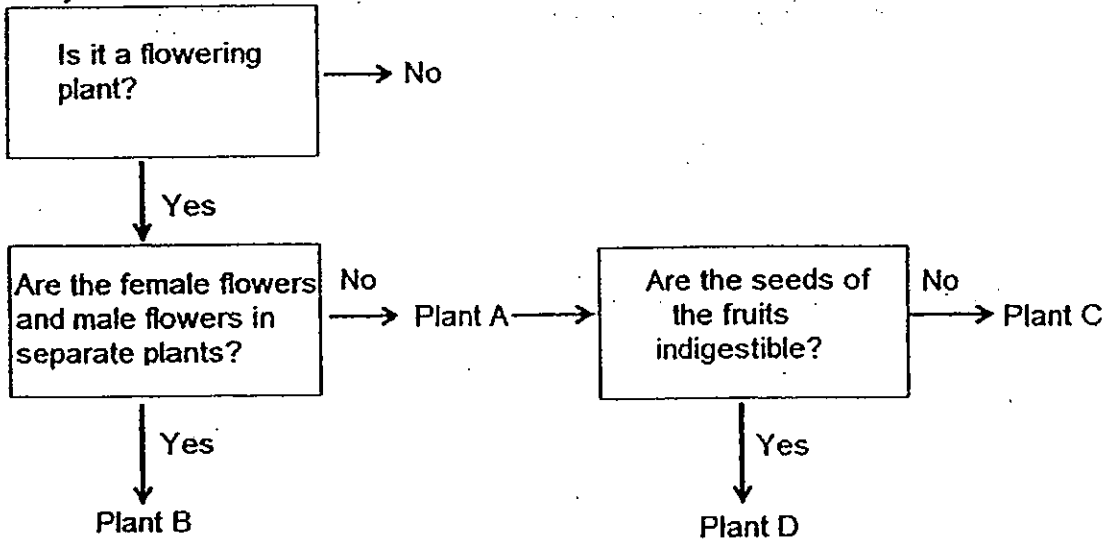
2. A classification chart is shown below.



What are Headings A and B?

	Heading A	Heading B
1)	Flowering plants	Non-Flowering plants
2)	Able to photosynthesise	Unable to photosynthesise
3)	Reproduce from seeds	Reproduce from spores
4)	Insect-pollinated	Wind-pollinated

Study the flow chart below and then answer questions 3 and 4.



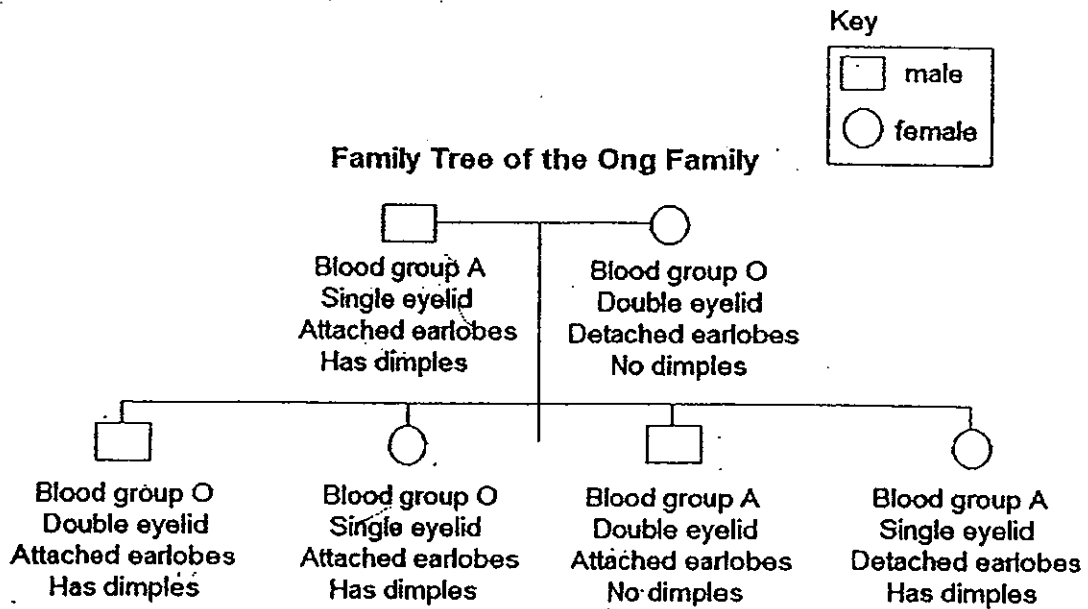
3. Which of the above could represent a flowering plant with the male flowers and female flowers in the same plant and has fruits with digestible seeds?

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

4. Which of the following is Plant B?

- (1) Grape vine
- (2) Papaya tree
- (3) Tomato plant
- (4) Lady's finger plant

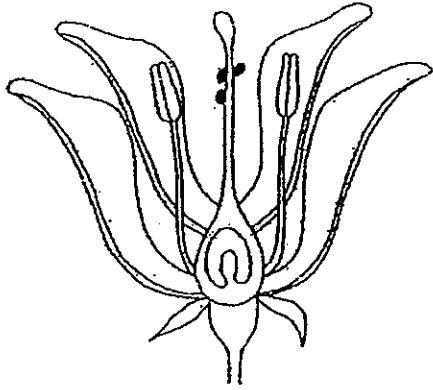
5. Study the family tree of the Ong family below.



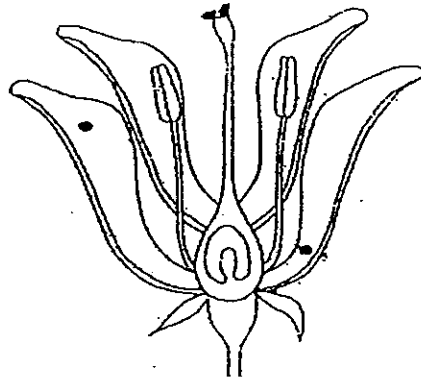
How many children of Mr and Mrs Ong inherited at least three characteristics from one of them?

- (1) 1
- (2) 2
- (3) 3
- (4) 4

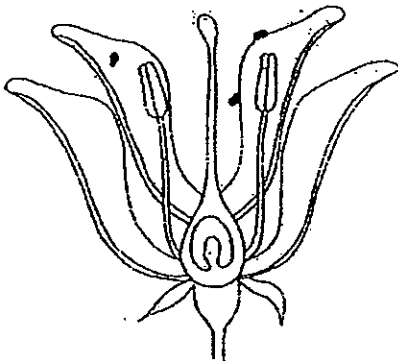
6. The pollen grains are represented by the black dots on the following flowers. Which of the following flowers was pollinated?



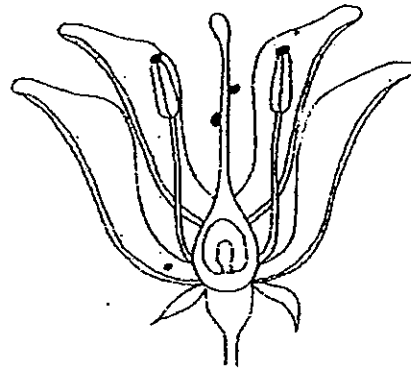
(1)



(2)

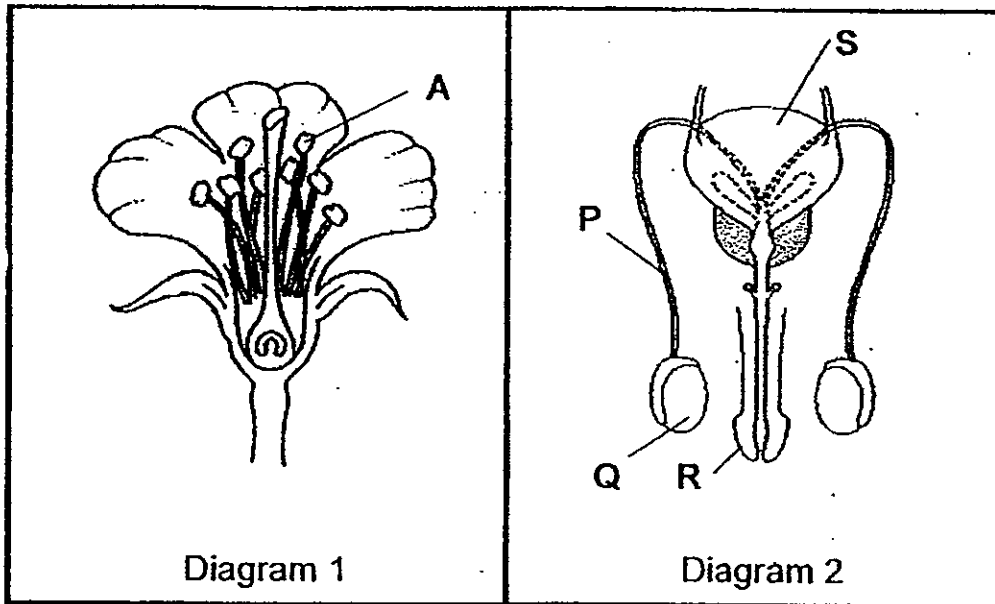


(3)



(4)

7. The diagrams below show the reproductive system of a plant and of a human.



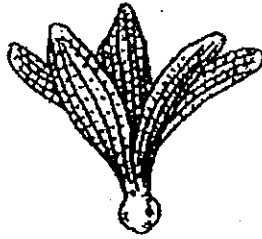
Which part, P, Q, R or S, in Diagram 2, has the same function as the part A, in Diagram 1?

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

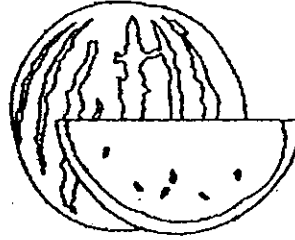
8. The following shows the fruits of three plants.



Fruit A



Fruit B



Fruit C

Each fruit is dispersed differently. The diagrams below show where the seeds of the three plants are dispersed.

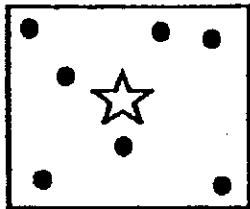


Diagram 1

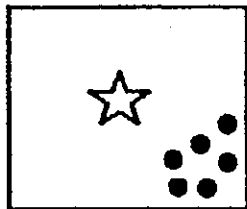


Diagram 2

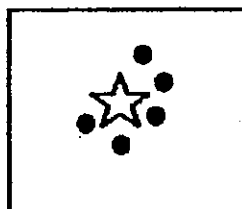
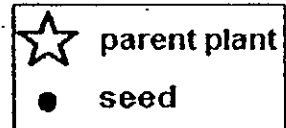


Diagram 3

Key



Which of the following shows how seeds A, B and C are dispersed?

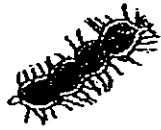
	Diagram 1	Diagram 2	Diagram 3
(1)	Fruit C	Fruit B	Fruit A
(2)	Fruit A	Fruit C	Fruit B
(3)	Fruit B	Fruit A	Fruit C
(4)	Fruit A	Fruit B	Fruit C

9. John was given some seeds and fruits as shown below. He grouped them according to the way they are dispersed. Which of the following is grouped wrongly?

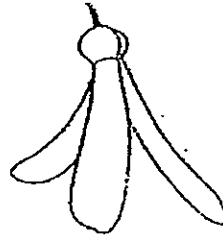
(1)



Angsana



Mimosa



Shorea

(2)



Pong pong



Nipah



Coconut

(3)



Papaya



Mango



Love grass

(4)



Balsam



Rubber

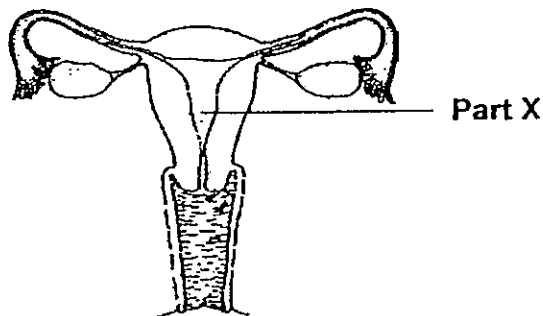


Flame of the Forest

10. Which of the following is not an inherited human characteristic?

- (1) Colour of skin
- (2) Length of hair
- (3) Type of ear lobe
- (4) Pattern in the iris of the eyes

11. The diagram below shows a cross section of a female human reproductive system.



What is the function of Part X in human reproduction?

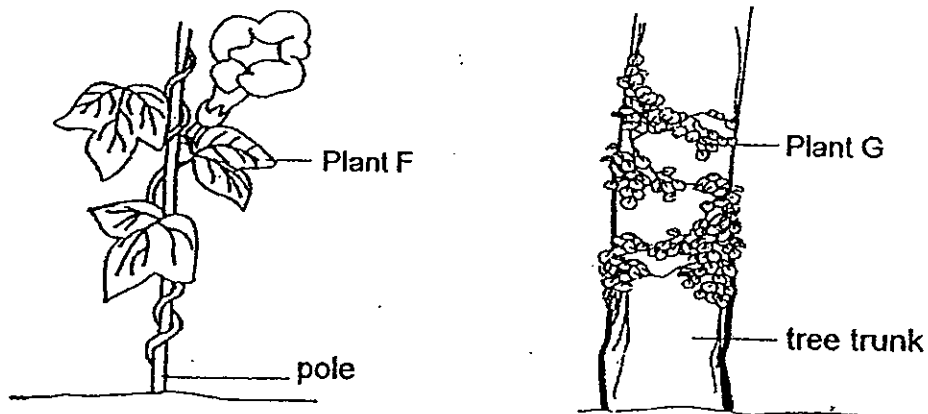
- (1) To fertilise the egg
- (2) To release the egg for fertilisation
- (3) To transport food from the mother to the foetus
- (4) To allow the fertilised egg to develop into a foetus

12. Plants take in water through their roots. Where is the water transported to?

- A : Stems
- B : Leaves
- C : Flowers
- D : Fruits

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

13. The pictures below show two green plants, Plant F and Plant G, growing in a garden.



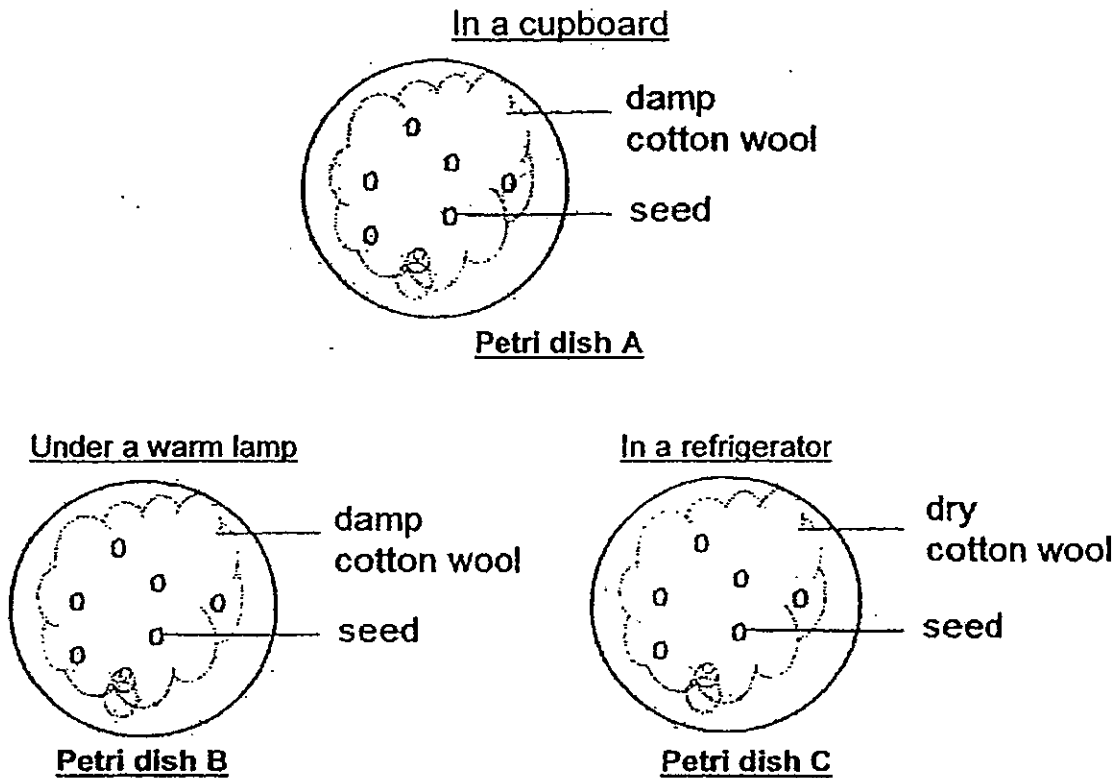
Based on the pictures, which of the following is true?

- (1) They have roots.
- (2) They reproduce by spores.
- (3) They need sunlight to grow.
- (4) They climb up a support for sunlight.

14. Which of the following is false?

- (1) A plant needs only sunlight to make food.
- (2) The main source of energy for photosynthesis comes from the sun.
- (3) An animal gives out carbon dioxide which is used by the plants to make food.
- (4) Oxygen produced during photosynthesis is used by the animals for respiration.

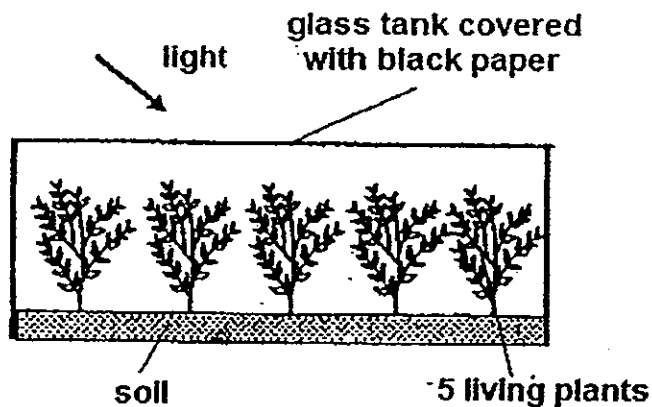
15. Charles set up an experiment as shown in the diagram below. After three days, he observed that the green bean seeds grew into seedlings in some petri dishes but not in others.



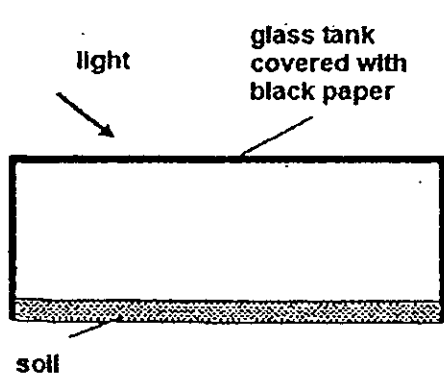
In which petri dish/ dishes would the seeds most likely grow into seedlings?

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

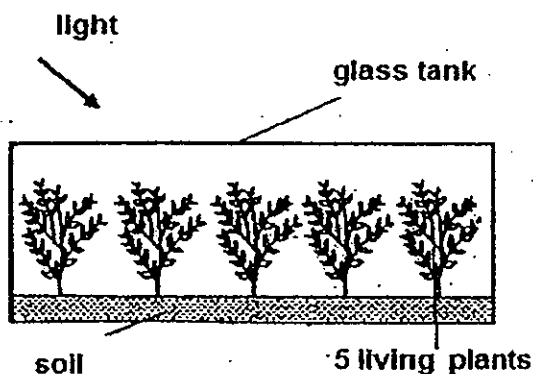
16. Margaret wanted to investigate how the amount of light affects the growth of a type of plant. The diagrams below show each of his set-ups in a clear glass tank.



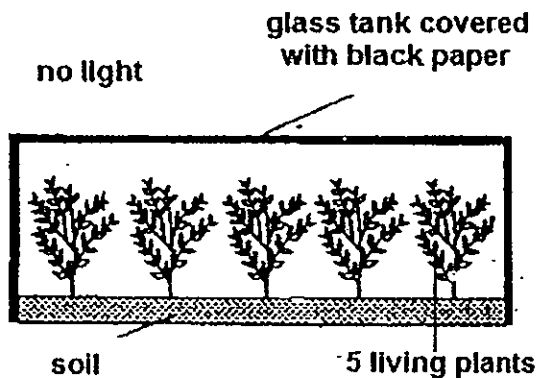
Which of the following could be used as a control for her experiment?



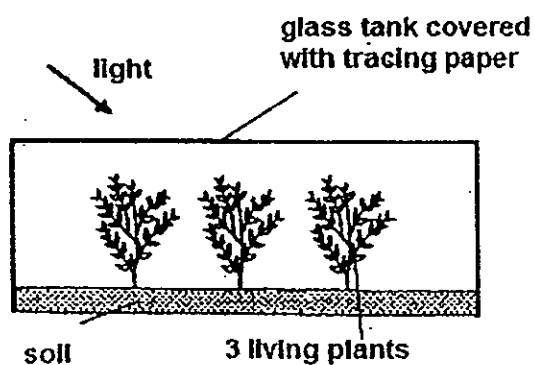
(1)



(2)

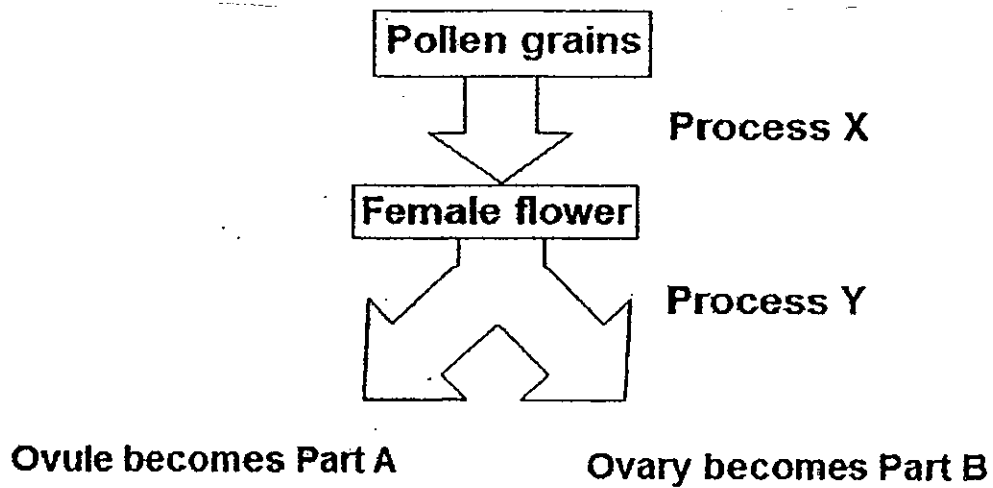


(3)



(4)

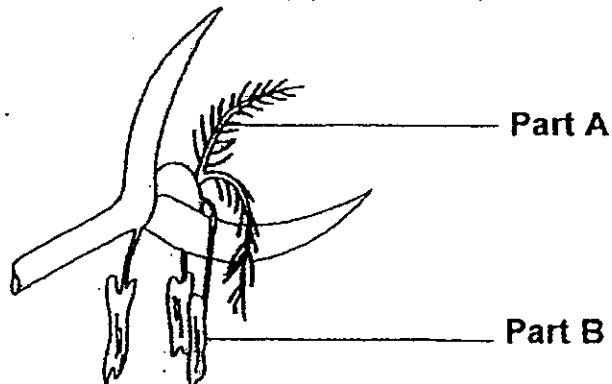
17. Study the flow chart below.



Which of the following matches Processes X and Y, and Parts A and B?

	Process X	Process Y	Part A	Part B
(1)	fertilisation	pollination	Seed	Fruit
(2)	pollination	fertilisation	Fruit	Seed
(3)	pollination	fertilisation	Seed	Fruit
(4)	fertilisation	pollination	Fruit	Seed

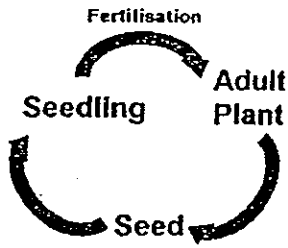
18. The picture below shows the side view of a flower.



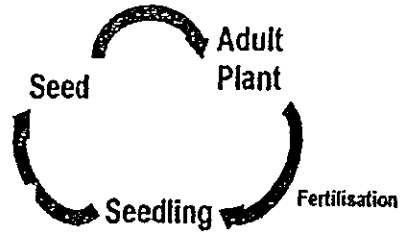
Which of the following are Parts A and B, and the flower's method of pollination?

	Method of Pollination	Part A	Part B
(1)	Wind	Male part	Female part
(2)	Wind	Female part	Male part
(3)	Animals	Male part	Female part
(4)	Animals	Female part	Male part

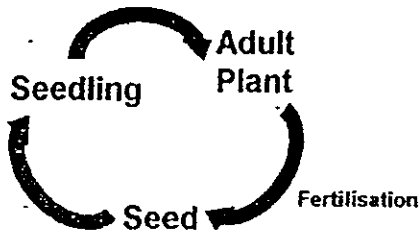
19. Which of the following shows the life cycle of a flowering plant?



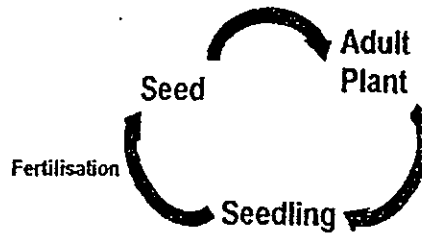
(1)



(2)

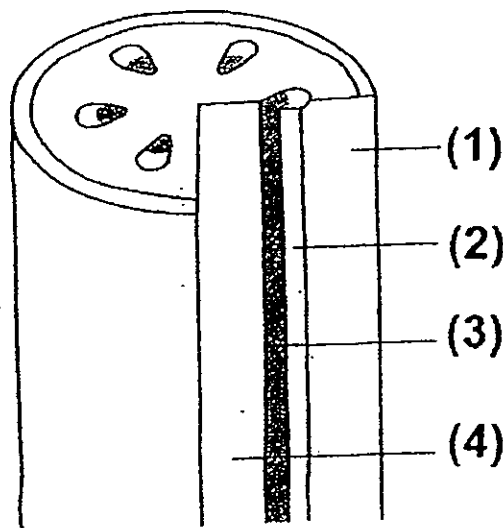


(3)



(4)

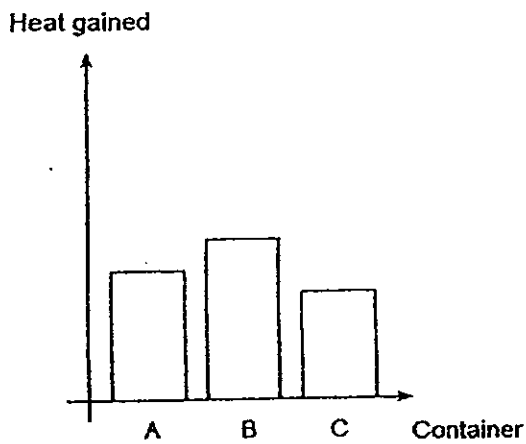
20. The diagram below shows part of a stem of a plant. Some insects feed on its plant juice to get energy. At which part, (1), (2), (3) or (4), would the insects insert their tubes to feed on the plant juice?



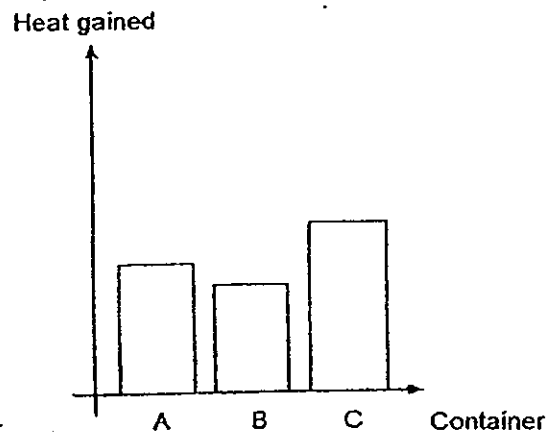
21. James heated three containers of water together for five minutes. He recorded the amount of water and the temperature of the water before it was heated and after it was heated, he recorded its temperature again as shown in the table below.

Container	Amount of water (ml)	Temperature of water at the start ($^{\circ}\text{C}$)	Temperature of water after 5 minutes ($^{\circ}\text{C}$)
A	300	30	45
B	200	30	50
C	400	30	40

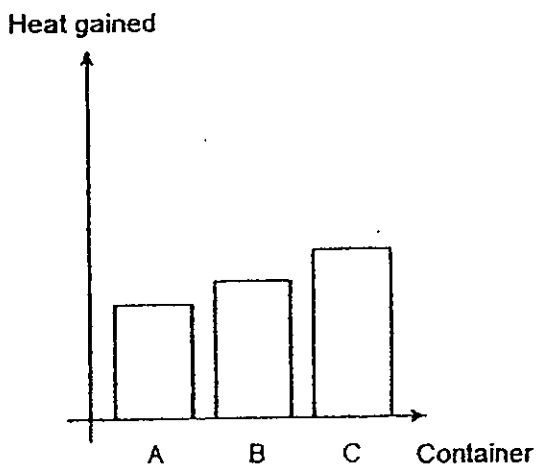
Which of the following graphs shows the amount of heat gained by the water in the containers after five minutes of heating?



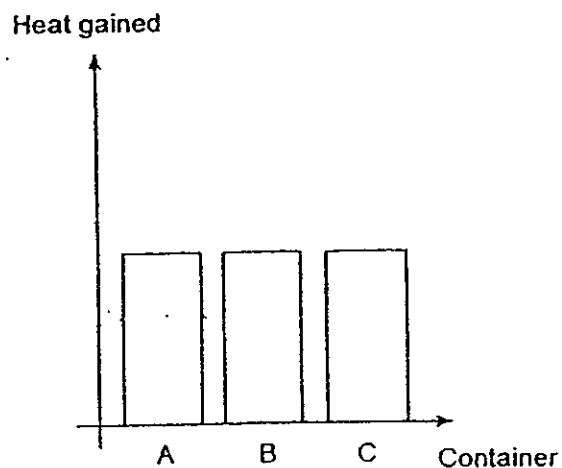
(1)



(2)



(3)



(4)

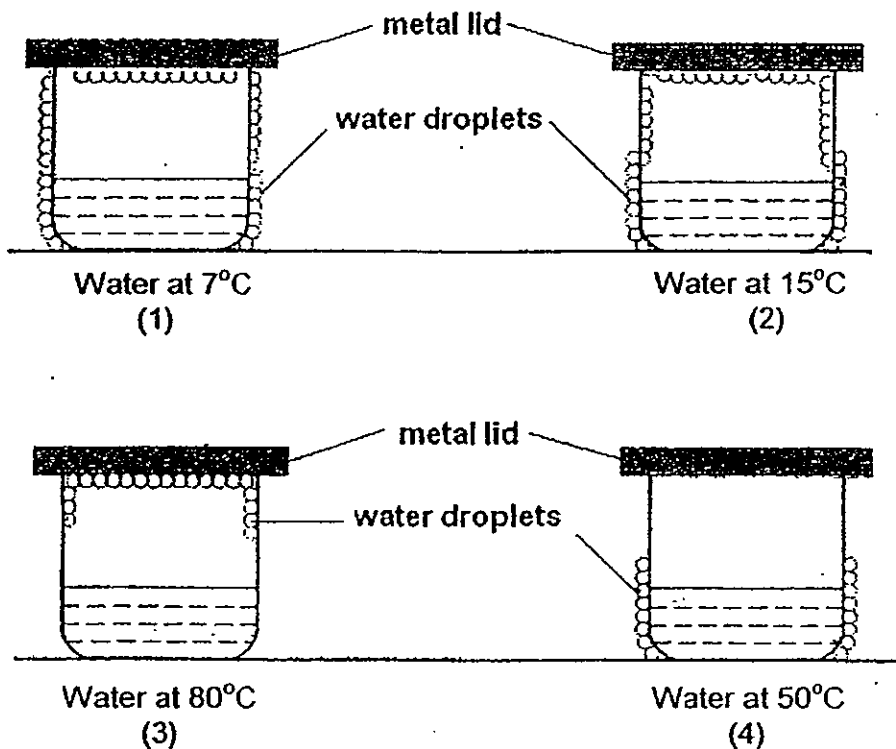
22. The table below shows the melting point and boiling point of Substance A and Substance B.

Substance	Melting Point ($^{\circ}\text{C}$)	Boiling Point ($^{\circ}\text{C}$)
A	10	85
B	30	95

Both Substance A and Substance B are solids at $P^{\circ}\text{C}$ and gases at $Q^{\circ}\text{C}$.
What do $P^{\circ}\text{C}$ and $Q^{\circ}\text{C}$ represent?

	$P^{\circ}\text{C}$	$Q^{\circ}\text{C}$
(1)	0	75
(2)	35	90
(3)	20	95
(4)	5	100

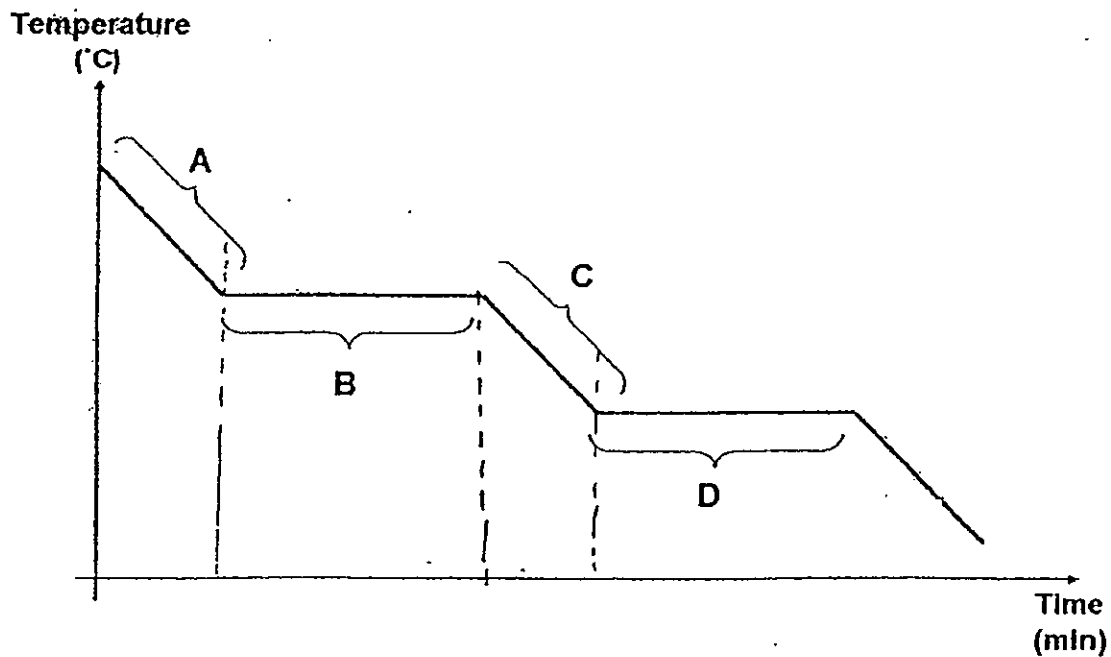
23. All the beakers below were placed in a room with a temperature of 28°C .
Which of the following diagrams shows the result after ten minutes?



24. Which of the following is an example of reusing water?

- (1) Taking a shorter time to shower
- (2) Collecting rainwater to water plants
- (3) Using a pail to wash the car instead of using a hose
- (4) Turning waste water into clean water for human consumption

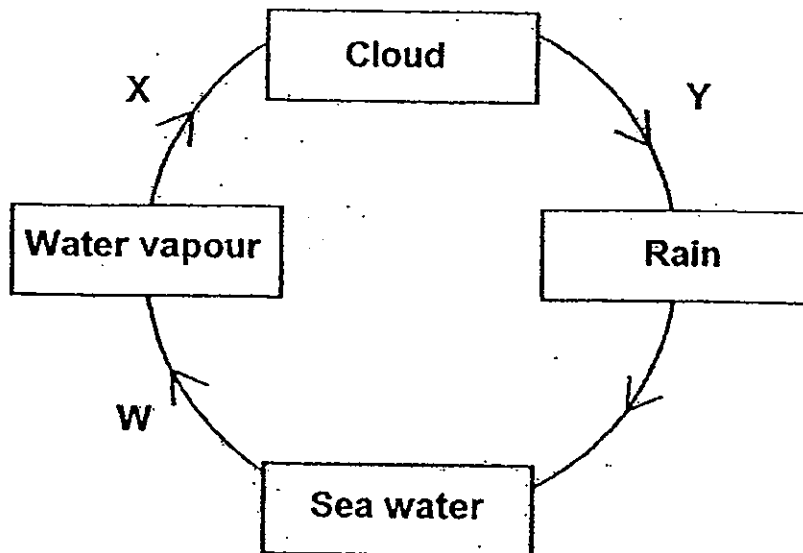
25. Substance X was cooled from its gaseous state to its solid state. The graph below shows the temperature change of Substance X over time during the cooling process.



Which part of the graph, A, B, C or D, represents the freezing process?

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

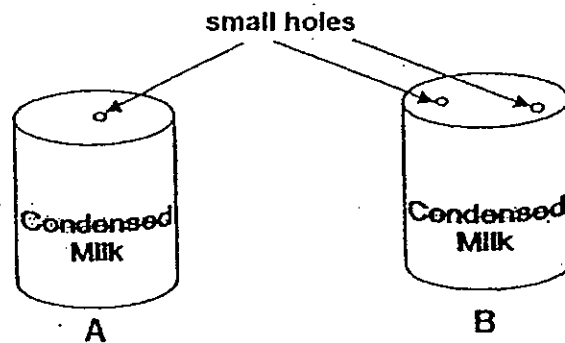
26. The diagram below illustrates a water cycle.



Which of the following represents evaporation and condensation?

	Evaporation	Condensation
(1)	W	X
(2)	W	Y
(3)	X	Y
(4)	Y	X

27. Small holes were pierced in two cans, A and B, as shown below.



Milk is poured from the cans. From which can would milk flow out faster, and why?

- (1) Can A, because air pushes the milk out.
- (2) Can A, because milk flows out from one hole only.
- (3) Can B, because air enters through both holes and milk flows out from both holes.
- (4) Can B, because air enters through one hole and milk flows out from the other hole.

28. A, B and C describe the three states of matter.

A
Definite volume Definite shape

B
Definite volume No definite shape

C
No definite volume No definite shape

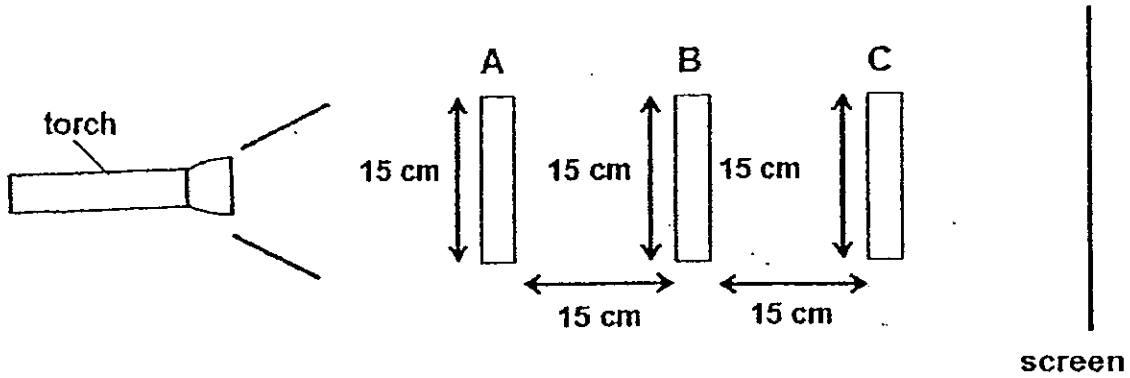
Some water was heated and cooled and the changes are shown below:

Water → Steam → Water → Ice

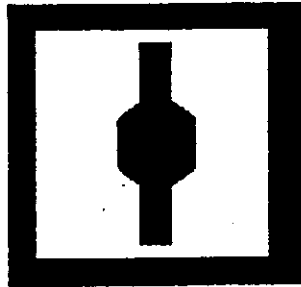
Which of the following shows A, B and C describing the above states of water?

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

29. 3 objects, A, B and C, made of similar materials are arranged in a straight line as shown below. (Note: The diagram below is not drawn to scale.)



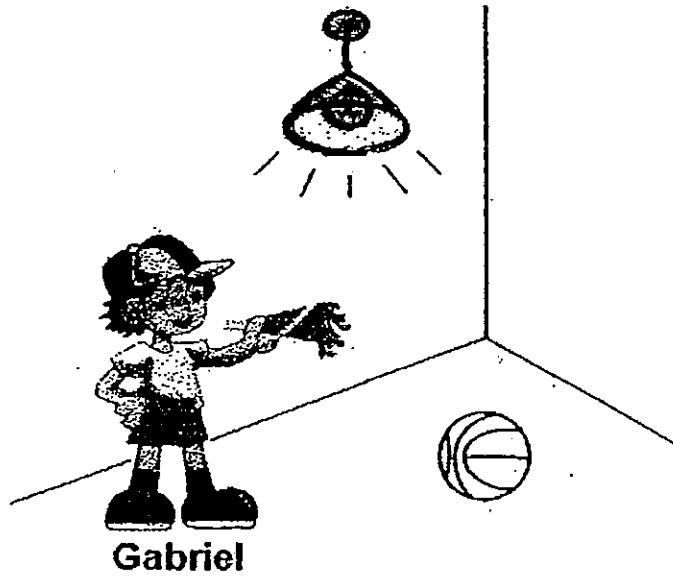
The diagram below shows the shadow formed on the screen.



What could most likely be the shape of A, B and C?

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

30. Look at the picture below.



Why is Gabriel able to see the ball?

- (1) The ball gives off light which is reflected into his eyes.
- (2) Gabriel's eyes give off light which is reflected by the ball.
- (3) Light from the surroundings is reflected by the ball into his eyes.
- (4) Light from the surroundings is reflected by his eyes onto the ball.



PRIMARY 5 MID-YEAR EXAMINATION 2012

Name : _____ () Date: 14 May 2012

Class : Primary 5 ()

Time: 8.00 a.m. - 9.45 a.m.

Duration : 1 hour 45 minutes

Parent's Signature : _____

Marks: _____ / 40

SCIENCE BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

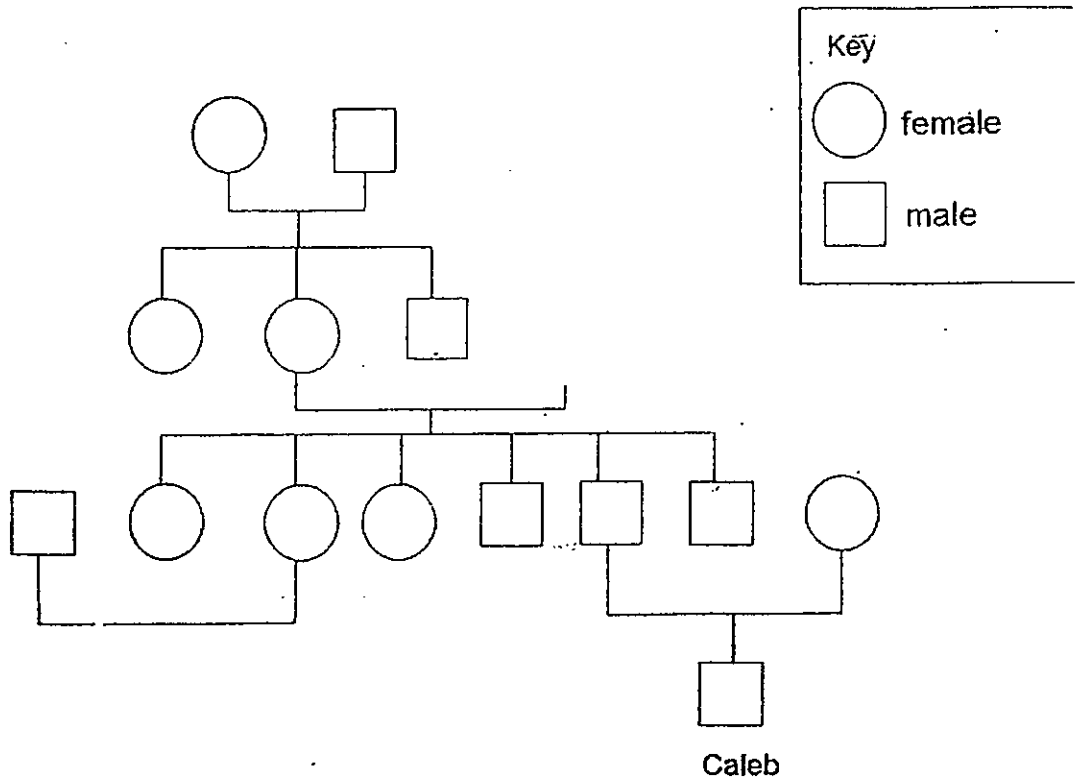
Follow all instructions carefully.

Answer all questions.

Section B (40 marks)

For the questions, 31 to 44, write your answers in the spaces provided.

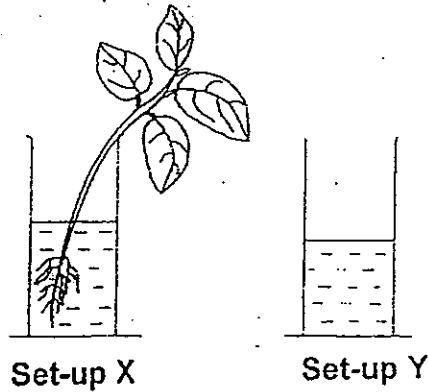
31. The diagram below shows the family tree of Caleb's paternal family.



(a) How many aunts does Caleb have altogether? [1]

(b) Shade the symbol that represents Caleb's grandfather. [1]

32. Pauline wanted to find out the volume of water taken in by a plant. She placed Set-up X and Set-up Y in the open for a week.



The table below shows the volume of water in Set-up X and Set-up Y on Day 1 and Day 8 of the experiment.

Set-up	Volume of water in cm ³	
	Day 1	Day 8
X	2000	1750
Y	2000	1850

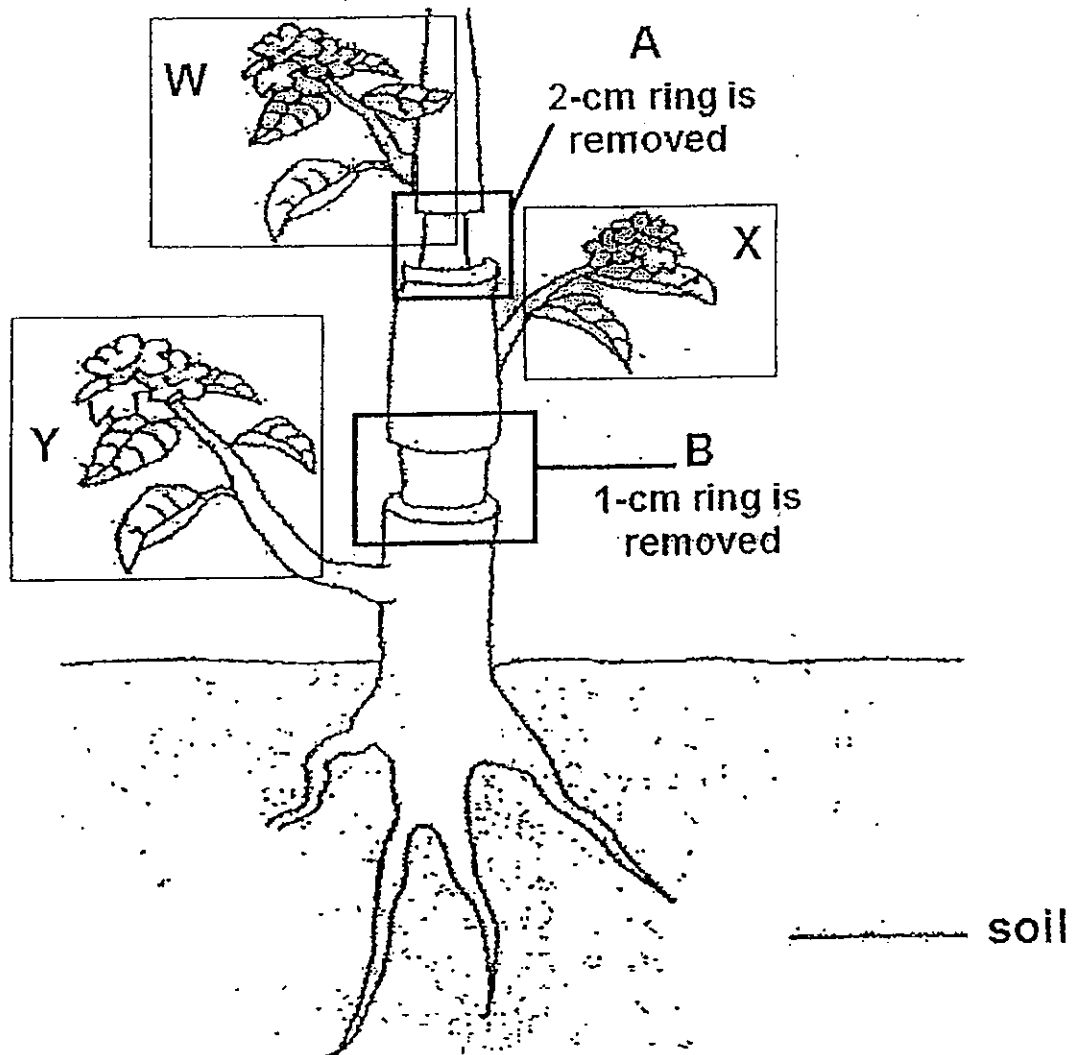
- (a) What was the purpose of Set-up Y? [1]

- (b) What was the volume of water taken in by the plant in Set-up X? [1]

- (c) If Pauline did not have Set-up Y, what could she do to Set-up X to obtain the same result? [1]

- (d) If Pauline placed another Set-up X out in the open with the current Set-up X, what is her purpose for doing so? [1]

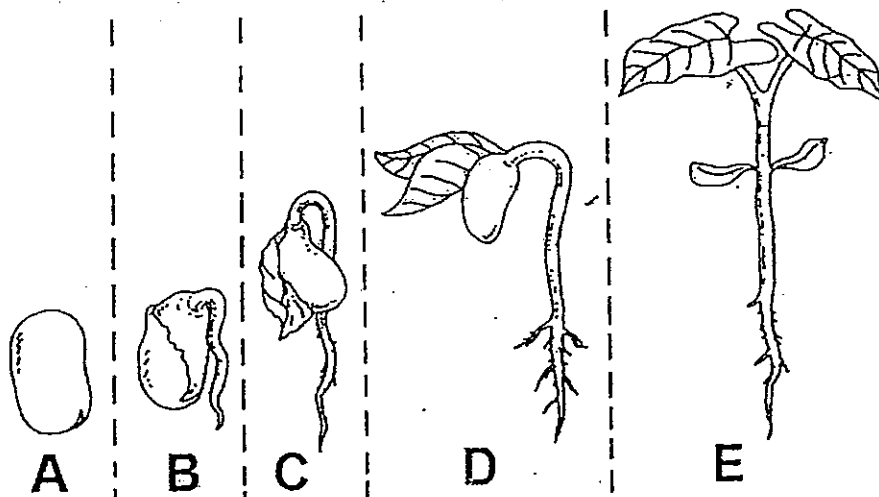
33. Two outer rings of the stem are removed. The tubes which carry food and the tubes which carry water at position A are removed while the tubes which carry food at position B are removed.



- (a) Which group of leaves, W, X and Y, will survive? [1]

- (b) Explain your answer in (a). [2]

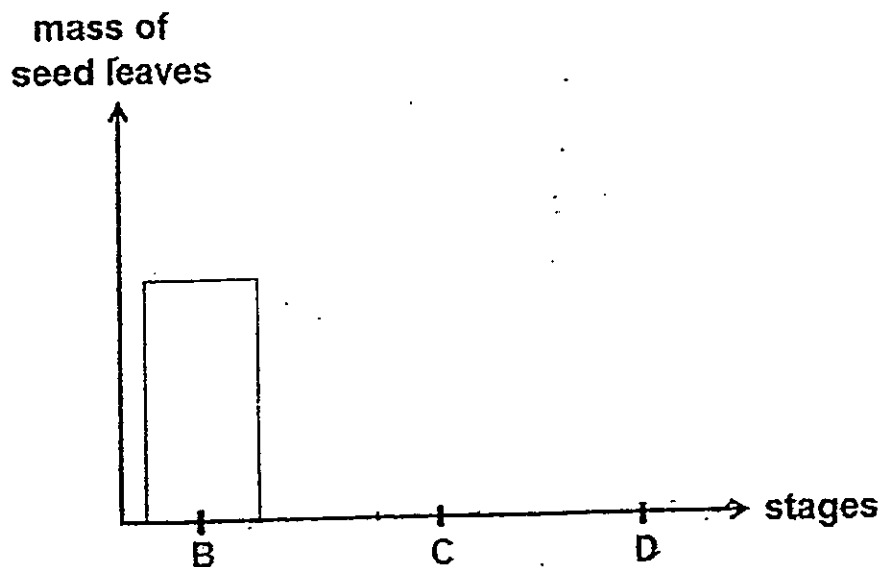
34. The diagram below shows the stages, A, B, C, D and E, of a germinating seed.



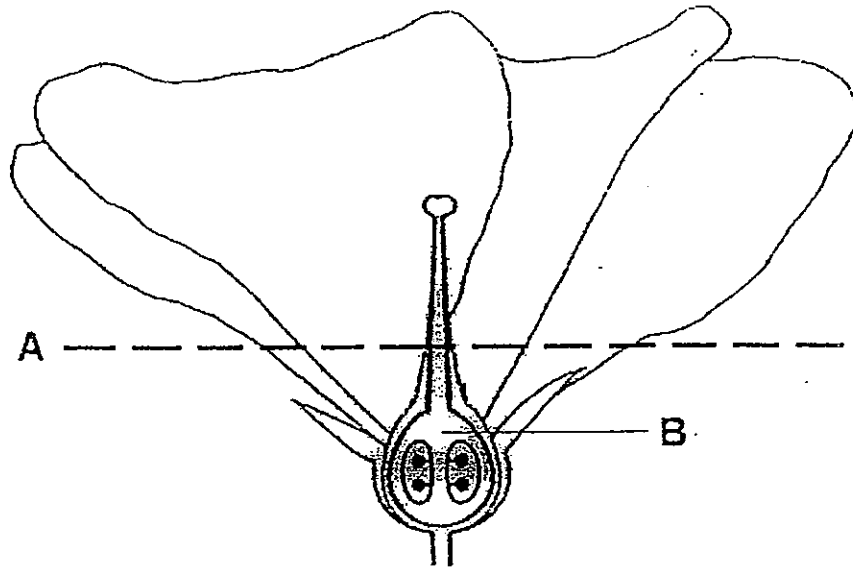
- (a) Which stage shows that the process of 'germination' has just taken place? [1]

- (b) At stage D, the seedling no longer requires the food stored in the seed leaves to grow. Explain why this is possible. [1]

- (c) Complete the bar graph below to show how the mass of the seed leaves changes as the seedling grows from stage C to stage D. [1]



35. Karen dusted some pollen grains onto the stigma of the flower to pollinate it. After three days, she cut the flower at A as shown below and continued to observe what happened to the ovary.

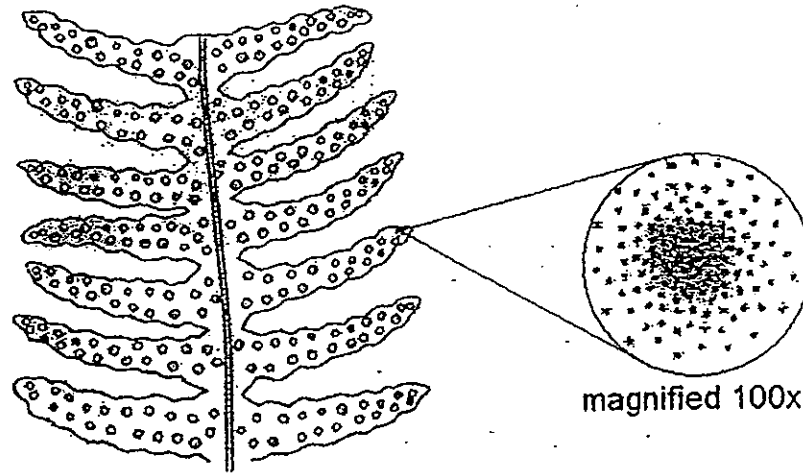


- (a) What was Karen trying to find out by cutting the flower at A? [1]

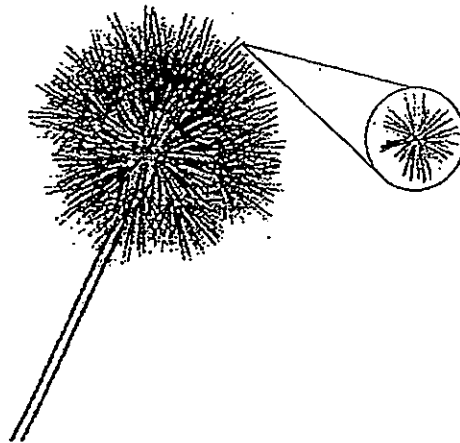
- (b) What will happen to part B if the flower is still growing on the plant [1]

- (c) Explain your answer in (b) [1]

36. The diagrams below show parts of a Fern and a Dandelion plant.



Fern

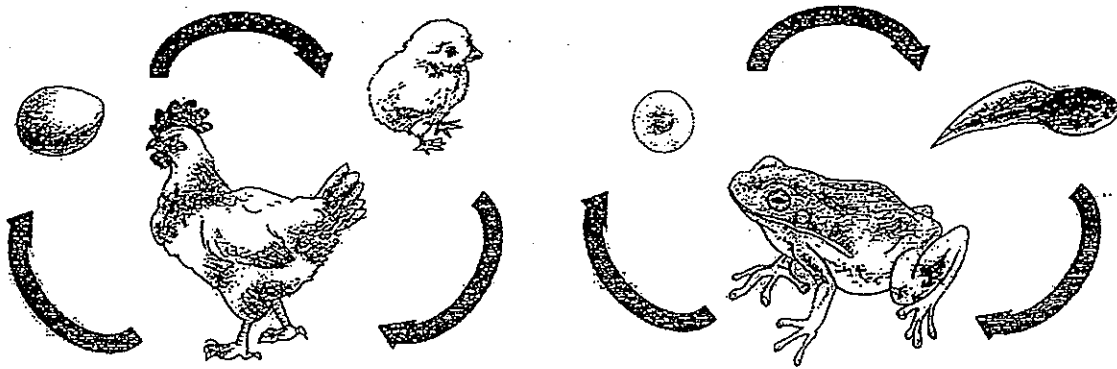


Dandelion

(a) Based on the diagrams, what is the most likely method of dispersal for both plants? [1]

(b) Based on your observations of the spores/seeds, which reproductive part would be dispersed further? Explain the feature(s) which help(s) it to do so. [2]

37. The diagrams below show the stages in the life cycles of a chicken and a frog.

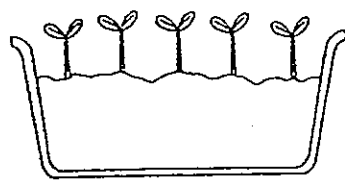


Two statements about the life cycles of the chicken and frog are given below. Study the diagrams and indicate whether each of the statements is True, Not True or Not possible to Tell. Put a tick (✓) in the correct box. [2]

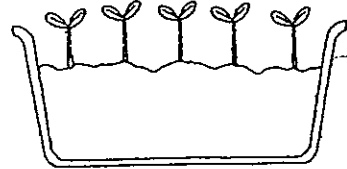
	Statement	True	False	Not Possible to Tell
(a)	Both the young resemble the adult.			
(b)	Both undergo a 3-stage life cycle.			

(c) Animals do not eat frog eggs because they are protected by layers of jelly that taste unpleasant. How are chicken eggs protected from being eaten? [1]

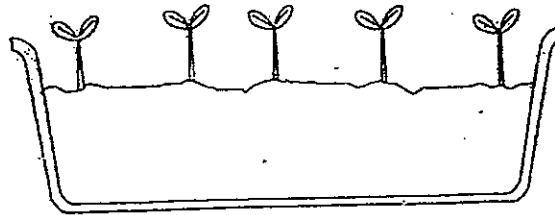
38. Andy wanted to find out how overcrowding can affect plant growth. He prepared six pots of plants and placed them in a sunny part of a garden.



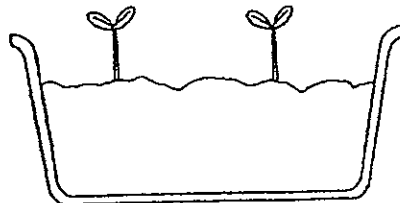
Pot A - Garden Soil



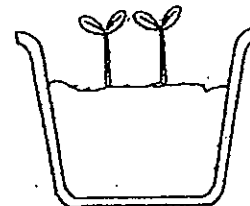
Pot B - Clayey Soil



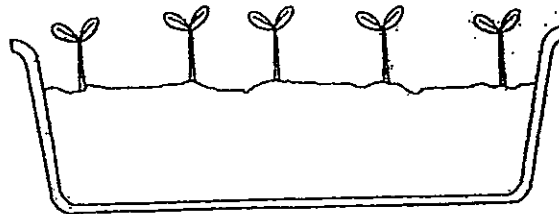
Pot C - Clayey Soil



Pot D - Sandy Soil



Pot E - Clayey Soil

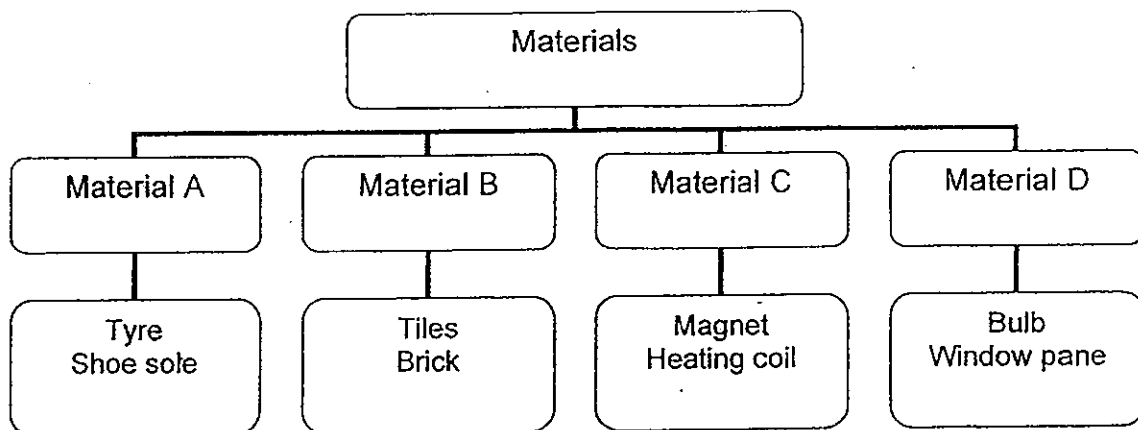


Pot F - Sandy Soil

- (a) Which two pots of plants should he observe to make a fair test? [1]

- (a) State two other variables related to plant growth not mentioned in the above that should remain unchanged. [2]

39. The diagram below shows how some objects are grouped according to the materials they are mainly made of.

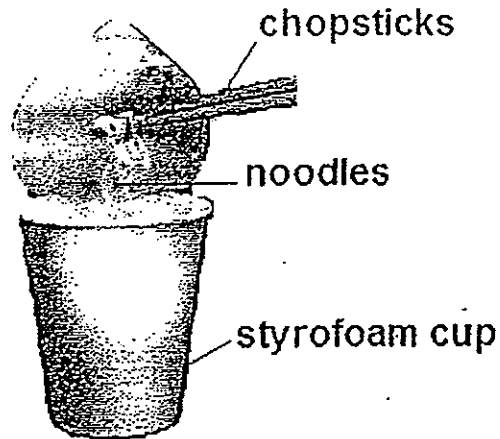


(a) Which material, A, B, C or D, would 'kitchen knife' be classified under? [1]

(b) Based on the chart above, identify Material A and Material B [1]

Material A	
Material B	

40. The diagram below shows a cup of instant noodles. Jane had poured hot water into the cup and kept it covered for five minutes. After five minutes, she observed that the noodles had softened and the soup was still hot.

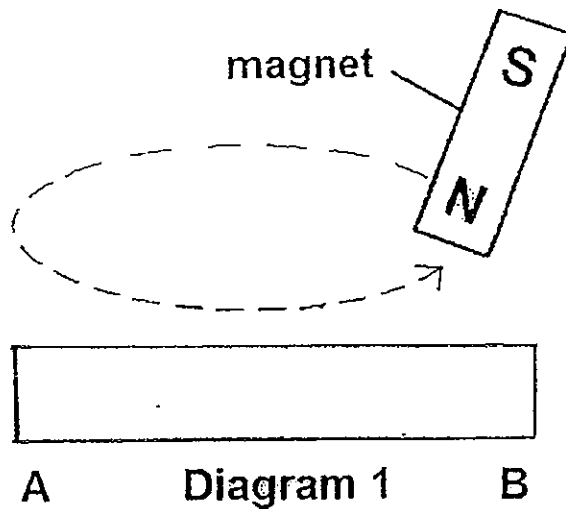


(a) How did the styrofoam cup keep the soup hot for five minutes? [1]

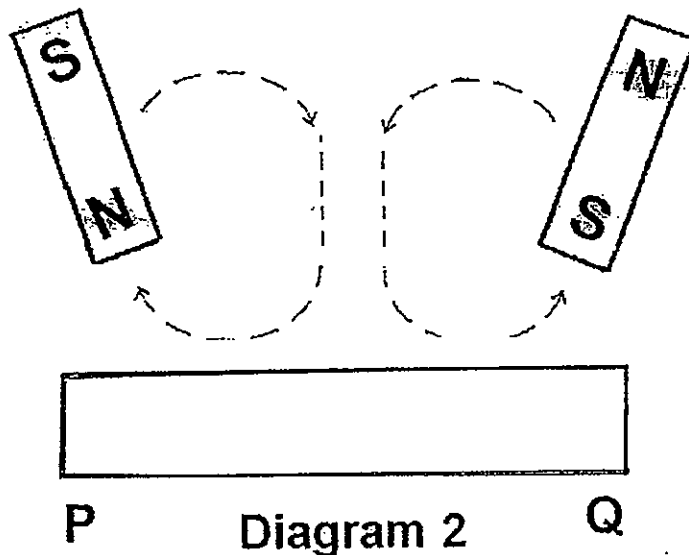
(b) After five minutes, Jane then held the noodles above the cup for a while with a pair of chopsticks as shown above. She also blew on the noodles.

How did her actions help to cool the noodles? [2]

41. A steel rod, AB, was magnetised using the 'stroking' method as shown below in Diagram 1.



Another steel rod PQ was also magnetised using the 'stroking' method with two magnets as shown in Diagram 2 below.

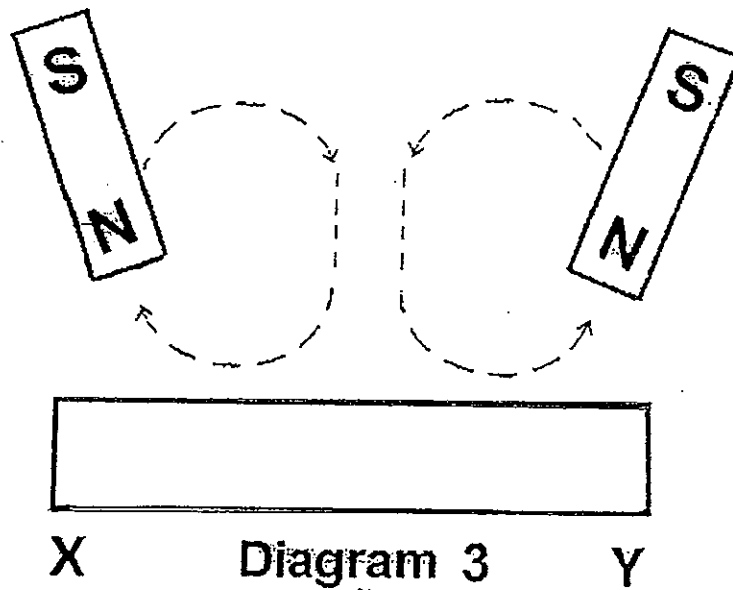


(a) State what the magnetic poles of the steel rod, PQ, would be at P and Q. [1]

(i) At P : _____

(ii) At Q: _____

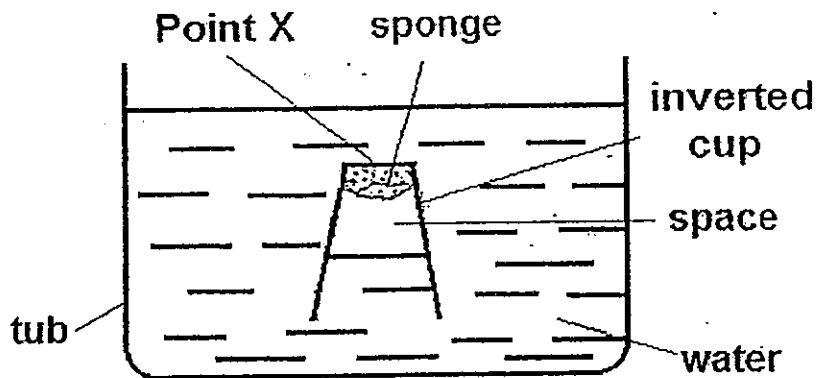
Paul wanted to magnetise a steel rod XY using the North poles of two magnets as shown in Diagram 3 below.



(b) Explain why the steel rod XY cannot be magnetised by Paul's method.

[1]

42. Shawna wanted to show that air occupies space. She placed a dry sponge into a cup. Then she pushed the inverted cup into the water. It was observed that the water did not fill the cup.



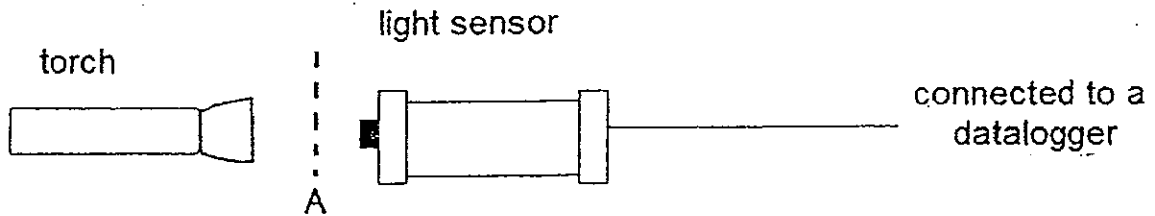
- (a) Explain why the water did not fill the cup. [1]

- (b) Later, Shawna used a thumbtack and made a hole at Point X.

- What happened to the sponge when she did that? [1]

- (c) Explain why this happened in (b). [1]

43. Vincent designed a set-up to count sheets of paper as shown below.



Degree of transparency of light For the Paper	Units
Opaque	0
Translucent	1 - 30
Transparent	31 and above

(a) When no paper is placed at position A, the light sensor shows a reading of 80 units. When a thin sheet of paper is placed at A, the reading becomes 30 units. What degree of transparency of light is the paper? [1]

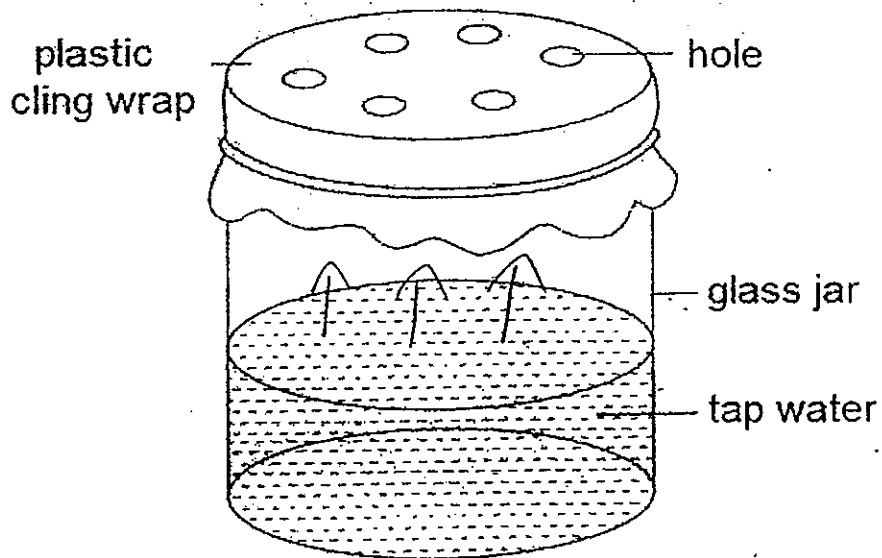
(b) Vincent repeated the experiment by increasing the number of sheets of the same type of paper. The table below shows his results.

Number of sheets	Amount of light (units)
0	80
1	30
2	12
3	X
4	3
5	2
6	1
7	0
8	0

Predict the amount of light that passes through when 3 sheets of paper are placed at A. [1]

(c) Suggest one change that Vincent can make to the set-up if he wants to count up to 9 sheets of the same type of paper. [1]

44. May was trying to make a model to illustrate the water cycle. She placed the model in a shady spot. However the model did not work.



(a) Explain why it did not work. [1]

(b) Suggest the changes needed for her model to work. [2]

---The End---

ANSWER SHEET

EXAM PAPER 2012

SCHOOL : TAO NAN
SUBJECT : PRIMARY 5 SCIENCE

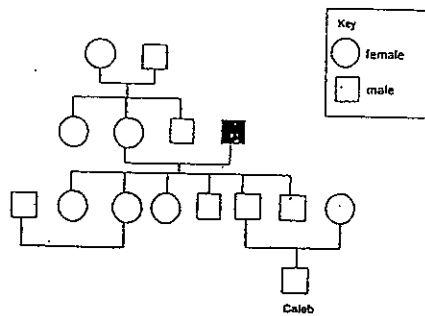
TERM : SA1

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

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

31)a)He has three aunties.

b)



32)a)Set-up Y serves as a control for the experiment. It measures the amount of water lost through evaporation.

b)It is 100cm³

c)She could put a layer of oil above the water.

d)Ensure reliability of results.

33)a)Group Y will survive.

b)Only the food carrying tube is removed. Group Y will receive water from the roots and its leaves can make food, hence it will survive.

34)a)Stage B.

b)At stage D. the seedling has used up all the food in the seed leaves, it has already grown leaves for photosynthesis.

35)a)She was trying to find out if the flower needed the Stigma and the petals for fertilization.

b)It will become a fruit.

c)After fertilization, the ovules will become the seeds and the ovary will become the fruit.

36)a)It is most likely to be by wind.

b)The spores. They are smaller than the seeds, hence they can float in the air a longer period of time and can be easily carried away by the wind.

37)a)F

b)T

c)They have a hard shell which protects the young.

38)a)Pot B and C.

b)Type of seedlings and amount of water.

39)a)It would be classified under material C.

b)Material A : rubber

Material B : ceramic

40)a)Styrofoam cup is a poor conductor of heat. It slows down the transfer of heat from the hot soup to the surroundings.

b)Holding the noodles above the cup helps to increase the exposed surface area of the noodles to the surroundings. Blowing of the noodles helps to remove the hot water vapour from the noodles.

41)a)i)South-seeking pole. ii)North-seeking pole

b)Both ends of the rod would be south-seeking poles.

42)a)Air in the cup occupies space so when the cup was inverted into the water the air in the cup prevented water from entering and wetting the sponge.

b)The sponge absorbed the water from the tub.

c)As there is a hole in the cup, the air escaped. The water went into the cup to take up the space, hence the sponge absorbed the water.

43)a) It is translucent.

b) I predict that it will be 6 units.

c) He could move the torch closer to the paper.

44)a) The water vapour escaped through the holes in the plastic cling wrap.

b) Cover the holes in the plastic cling wrap and place the set-up in a sunny place.

