TAO NAN SCHOOL

PRIMARY 5 SCIENCE MID-YEAR EXAMINATION 2011

Name : _____ ( ) Date : 12 May 2011

Class : P5 _____ Time : 8.00am-9.45am

BOOKLET A

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

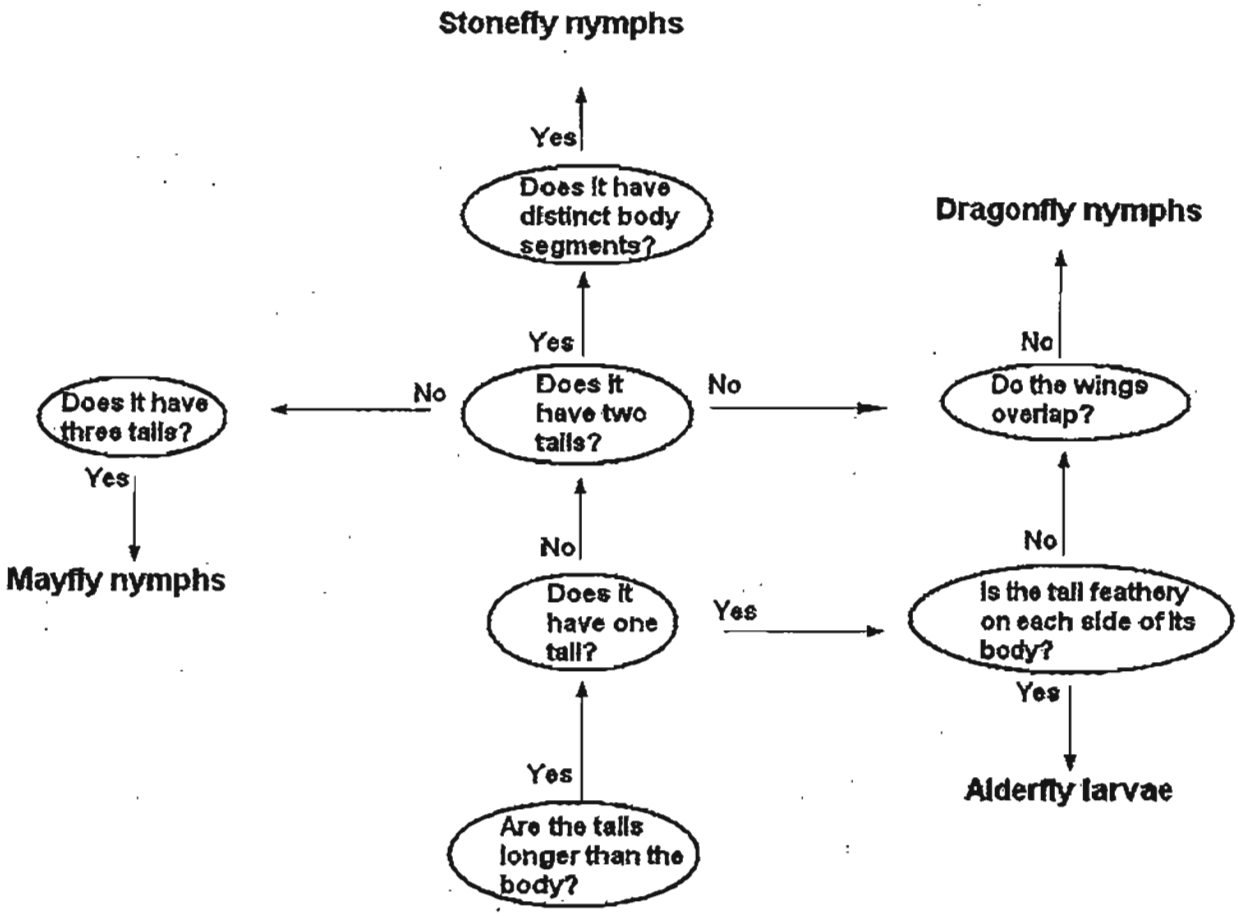
Answer all questions.

	Score	Marks
Section A		60
Section B		40
Total		100

Parent's signature: _____

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

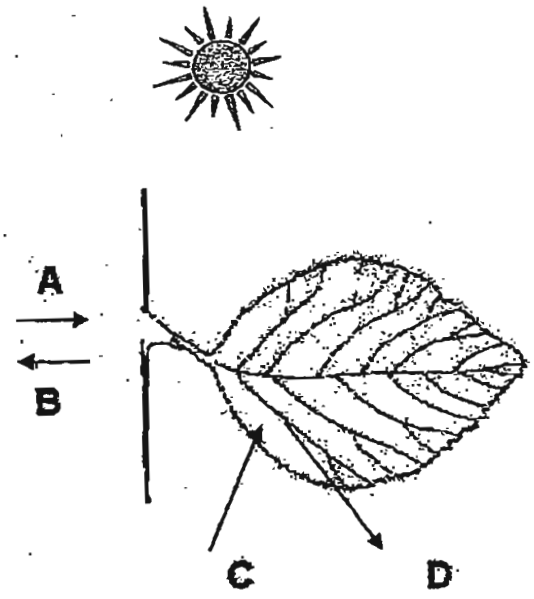
1. Study the flow chart below.



Based on the flow chart, which two organisms have two or more tails?

(1) Alderly larvae and Mayfly nymphs
(2) Stonefly nymphs and Mayfly nymphs
(3) Alderly larvae and Dragonfly nymphs
(4) Dragonfly nymphs and Stonefly nymphs

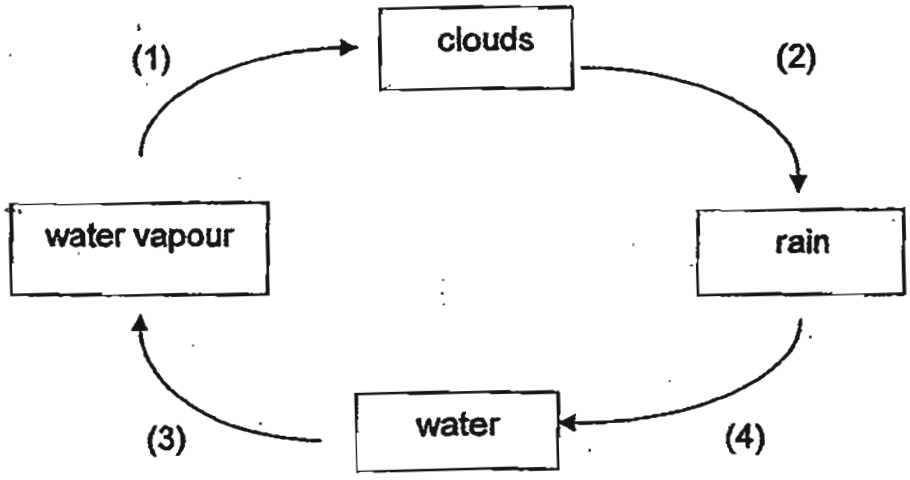
2. The diagram below shows a green leaf.



What do the arrows A, B, C and D in the above diagram represent?

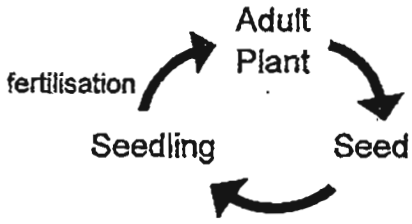
	A	B	C	D
(1)	food	water	oxygen	carbon dioxide
(2)	water	food	carbon dioxide	oxygen
(3)	food	water	carbon dioxide	oxygen
(4)	water	food	oxygen	carbon dioxide

3. The diagram below shows how water is recycled on Earth. The arrows show the different processes of the water cycle. Which part of the water cycle shows the process of condensation?

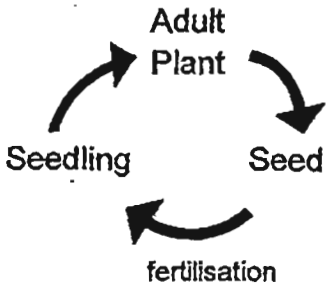


4. Which of the following shows the correct life cycle of a long bean plant?

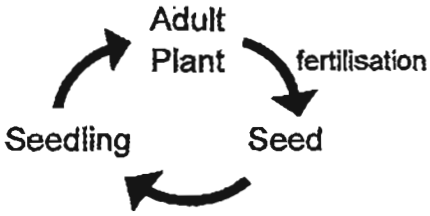
(1)



(2)



(3)



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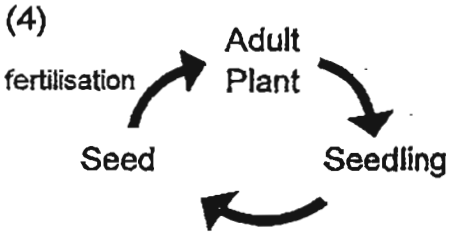
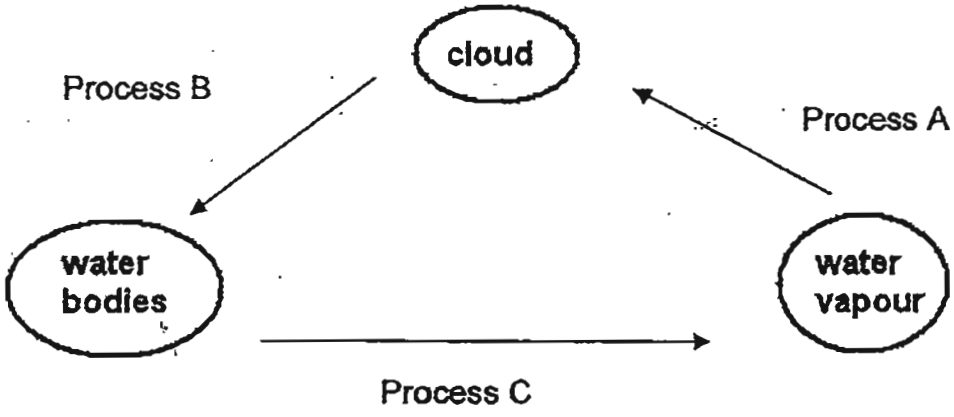


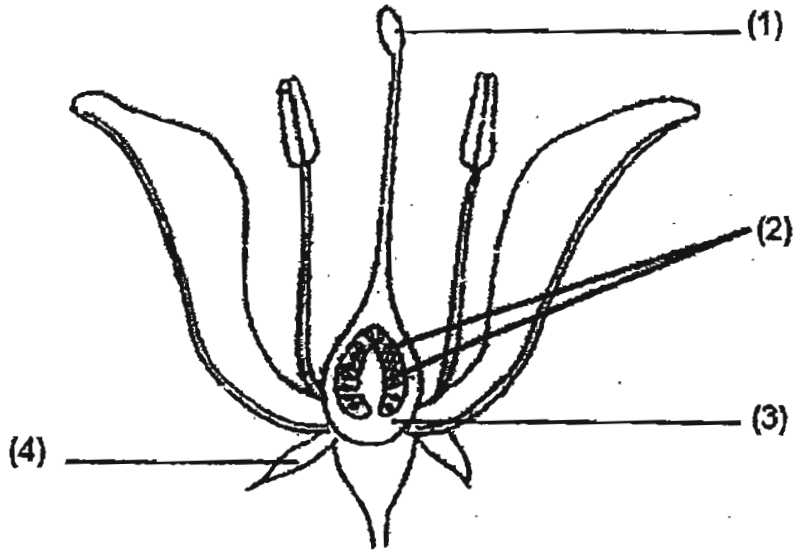
5. The diagram below shows the water cycle with processes A, B and C involved.



Which of the following statements about the water cycle is **incorrect**?

(1) Heat is lost during Process A.
(2) Heat is gained during Process B.
(3) Heat is gained during Process C.
(4) The sun's energy is required for all the processes to occur.

6. Study the cross-section of the flower below. Which part of the flower develops into a fruit after fertilisation?



7. Qing Qing carried out an investigation using four plastic pots of different sizes. She carried out the following steps.

Steps:
1) Fill the pots with the same amount of garden soil.
2) Plant the same number of sunflower seeds in each pot.
3) Place the pots side by side in the garden.
4) Water each pot with the same amount of water daily.

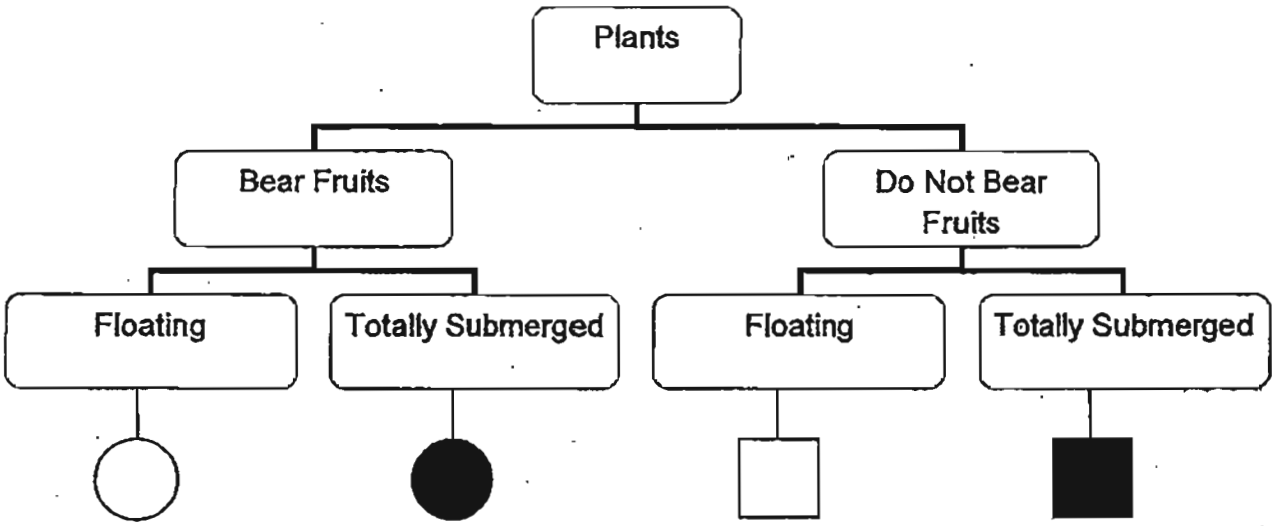
What is the aim of Qing Qing's experiment?

(1) To find out if overcrowding affects the growth of plants.
(2) To find out if the amount of water affects the growth plants.
(3) To find out if the presence of sunlight affects the growth of plants
(4) To find out if the amount of garden soil affects the growth of plants.

8. The following table provides information on four plants, A, B, C and D, based on three characteristics. A tick (√) indicates the presence of the characteristics in the plants.

Plants / Characteristics	A	B	C	D
Has flowers	√		√	√
Grows in water	√	√		√
All parts of the plants takes in dissolved oxygen in water		√		√

Using the information provided, how should the plants A and B be classified in the table below?

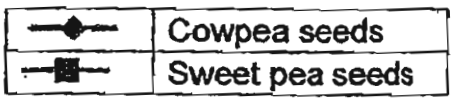


	Plant A	Plant B
(1)	●	□
(2)	○	□
(3)	●	■
(4)	○	■

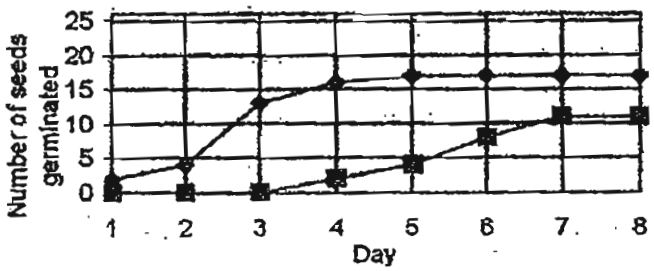
9. Nicole wanted to compare the rate of germination of cowpeas and sweet peas. She planted 25 seeds of each type and recorded the following information.

Day	1	2	3	4	5	6	7	8
Number of Cowpea seeds that germinated	3	4	12	18	24	24	24	24
Number of Sweet pea seeds that germinated	0	0	0	2	4	8	11	11

Nicole plotted a graph based on the information. Which one of the following graphs represents the data?



(1)



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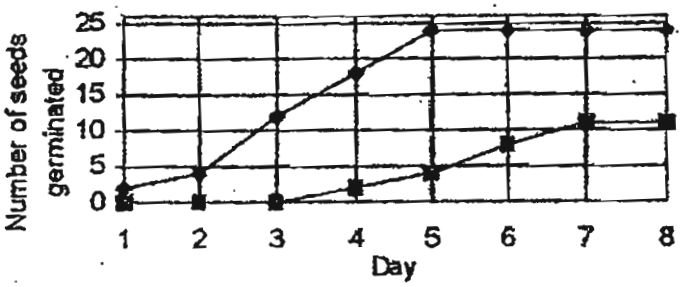

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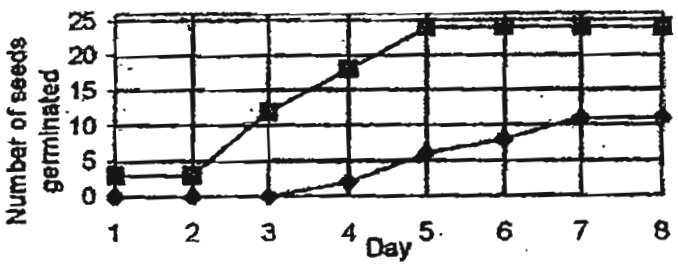
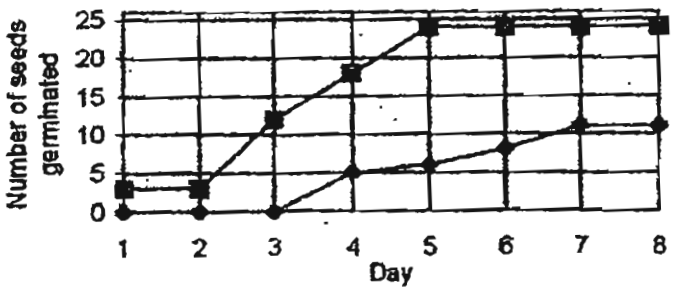
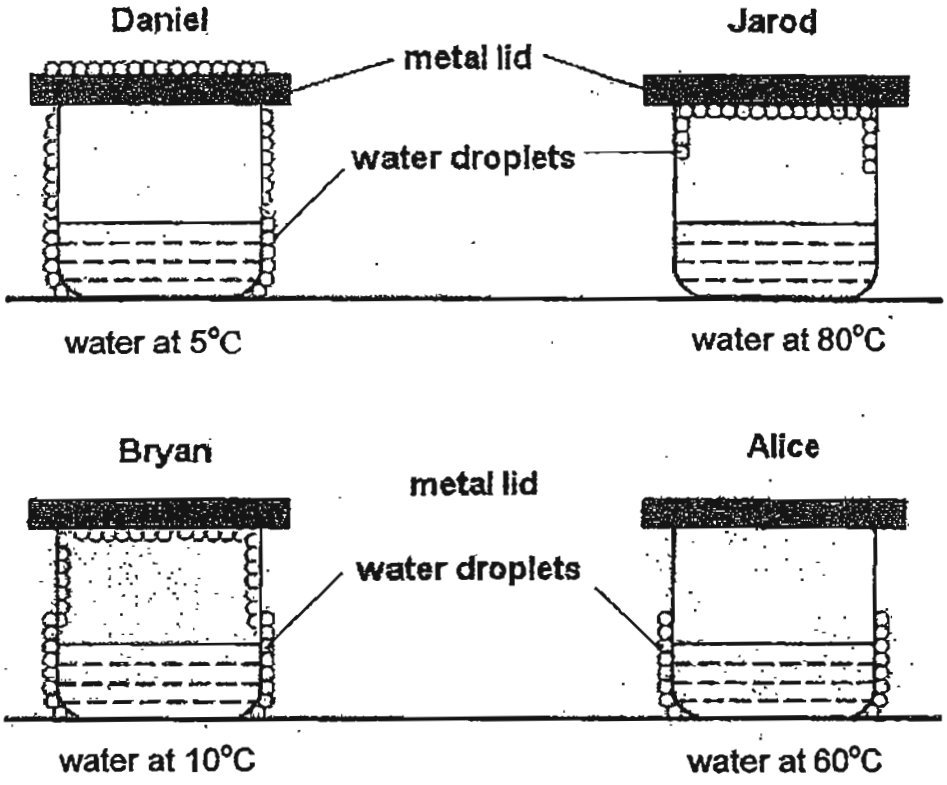


(4)



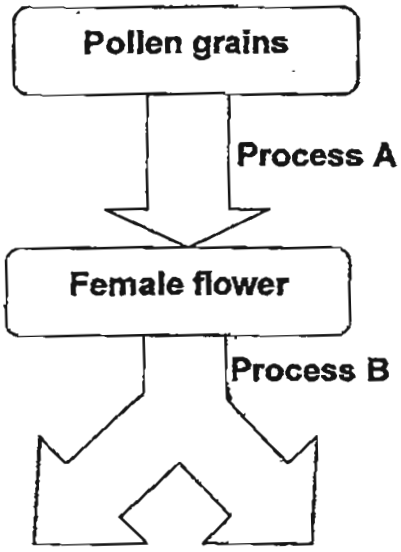
10. Four pupils were given a beaker of water with different temperatures. All the beakers were placed in a room at 26°C. They drew what they observed in the diagrams below after ten minutes.



Who had drawn the diagram correctly?

(1) Daniel
(2) Jarod
(3) Bryan
(4) Alice

11. Study the flow chart below.

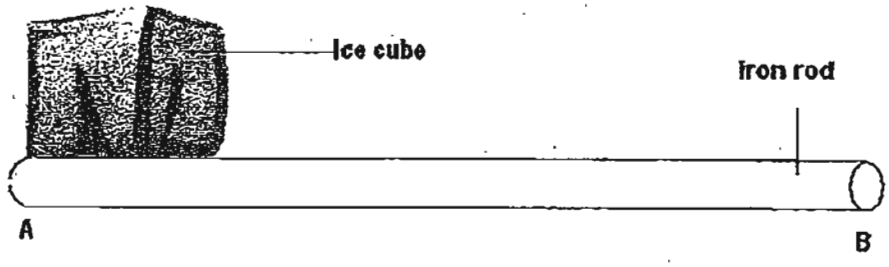


Ovule becomes X **Ovary becomes Y**

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

	Process A	Process B	X	Y
(1)	fertilisation	pollination	seed	fruit
(2)	pollination	fertilisation	fruit	seed
(3)	pollination	fertilisation	seed	fruit
(4)	fertilisation	pollination	fruit	seed

12. The diagram below shows an iron rod. Its ends are labelled A and B. An ice cube is placed at the end labelled A and after a while it starts to melt.



What caused this to happen?

(1) The ice loses heat to the rod.
(2) The heat flows from the ice cube to the surroundings only.
(3) The rod gained heat from the ice cube and surroundings.
(4) The heat flows from the rod and surroundings to the ice cube.

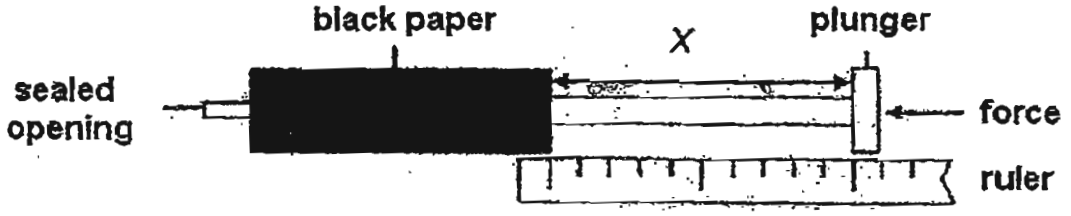
13. James added a bucket of ice to a pot of water, at boiling point, till it reaches room temperature. The table below shows the temperature of four pots of water over ten minutes.

Time (minute) / Pots	2	4	6	8	10
A	80°C	60°C	38°C	32°C	32°C
B	100°C	50°C	39°C	32°C	32°C
C	80°C	70°C	65°C	50°C	45°C
D	100°C	80°C	70°C	60°C	50°C

Which pot of water belongs to James?

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

14. Four children filled two identical syringes each, one with air and the other with water, and covered them with black paper as shown below.



They pushed each plunger as hard as they could and measured distance, *x*. Their results are recorded in the table below.

Set-up	Syringe with water Distance *x* (cm)	Syringe with air Distance *x* (cm)
A	8	5
B	0	9
C	10	3
D	7	9

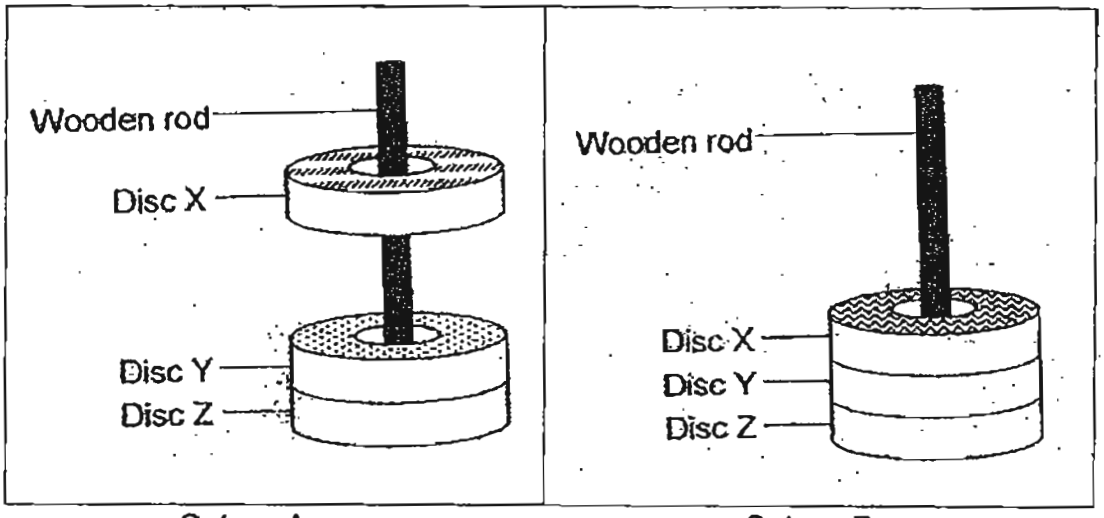
Based on the results in the table above, which set-up shows the right results?

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

15. Which of the following statements about the systems in the human body is **correct**?

	[illegible]	[illegible]
(1)	Circulatory	Consists of blood vessels, water and heart.
(2)	Digestive	Digestive juices are released in the large intestine.
(3)	Respiratory	The windpipe connects the nose and mouth to the lungs.
(4)	Skeletal	Works alone to move the human body.

16. The diagram below shows two set-ups. Disc Y has been turned around in Set-up B.



Set-up A Set-up B

Based on the two set-ups, what can you conclude about Disc X, Disc Y and Disc Z?

A Disc X is a magnet.
B Disc Y is a magnet.
C Disc Y is magnetic.
D Disc Z is a magnet.

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

17. It was observed that whenever there was a prolonged period of haze, more trees were found to be dying.

Which of the following is/are the reason(s) why the trees are dying?

A: Photosynthesis will be affected as sunlight is blocked by the haze.
B: Gaseous exchange cannot take place as the stomata are being blocked by the haze.
C: The trees will not be able to have enough warmth in the haze.

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

18. Peter wants to find out the effect of overcrowding on the growth of a chilli plant. He prepared 6 pots as shown below.

Pot	Number of chilli seeds	Type of soil	Size of pot
A	20	garden soil	big
B	10	garden soil	small
C	10	clayey soil	medium
D	10	garden soil	medium
E	10	garden soil	big
F	5	clayey soil	small

Which three pots should he use to carry out a fair test?

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

19. Two plants crossed-pollinated and produced a plant with the flower shown below.

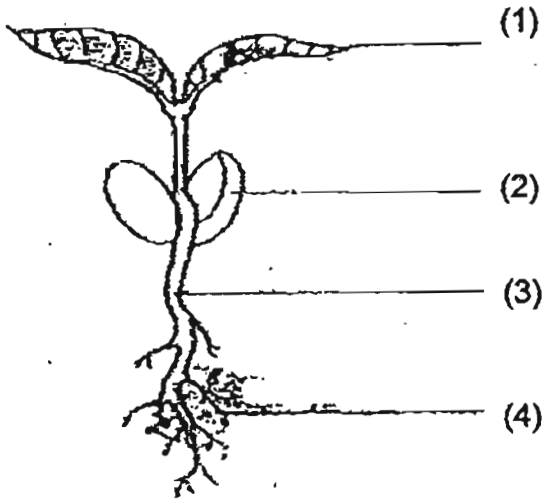
Purple and White Flower

	Colour of Parent Flowers	
	Male	Female
A	Purple	White
B	White	White
C	Purple and white	Purple
D	Purple	Purple

Which of the following pair(s) of flowers is/are likely to be from the parent plants?

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

20. The diagram below shows a bean seedling. Which part of the plant becomes smaller as the seedling grows?



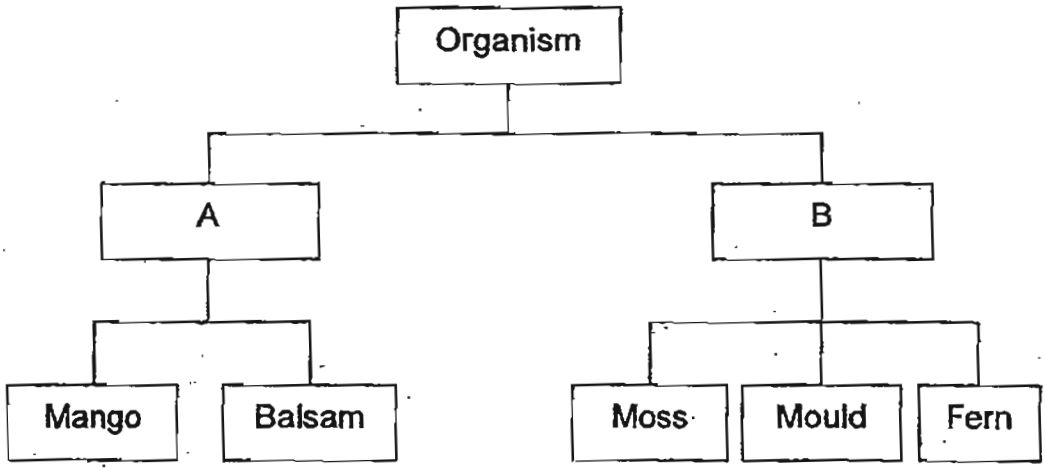
21. The table below shows the freezing and boiling points of substances P, Q and R.

Substance	Freezing point (°C)	Boiling point (°C)
P	5	15
Q	50	220
R	8	50

Which of the following is **true** about the properties of the substances at 20°C?

(1) Substance P has definite shape.
(2) Substance P has definite volume.
(3) Substance P and R have no definite shape.
(4) Substance Q and R have no definite volume.

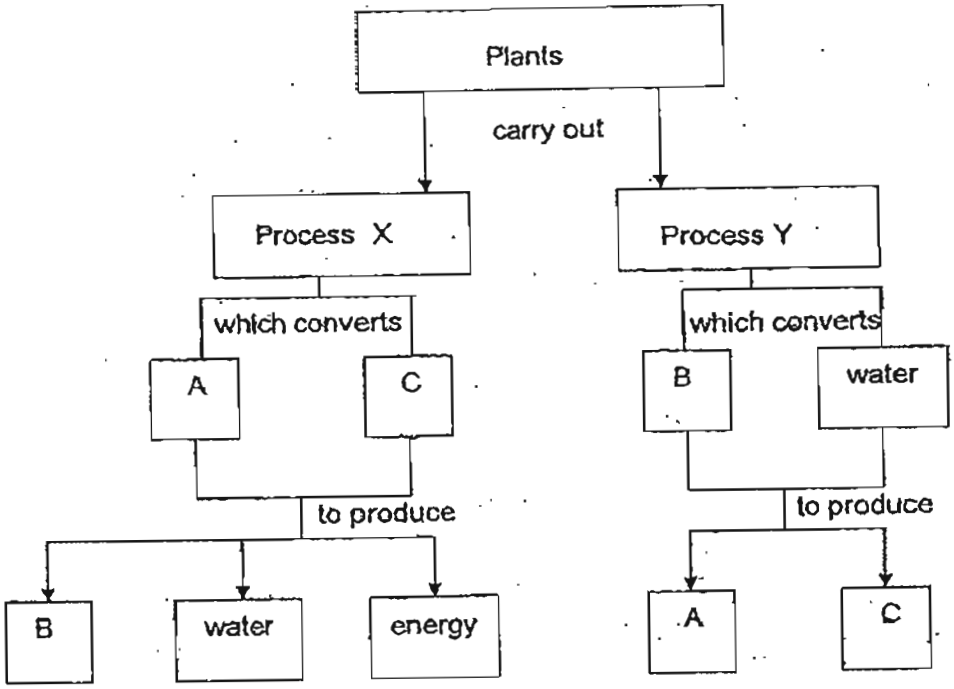
22. A classification chart is shown below.



What are the headings for A and B?

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

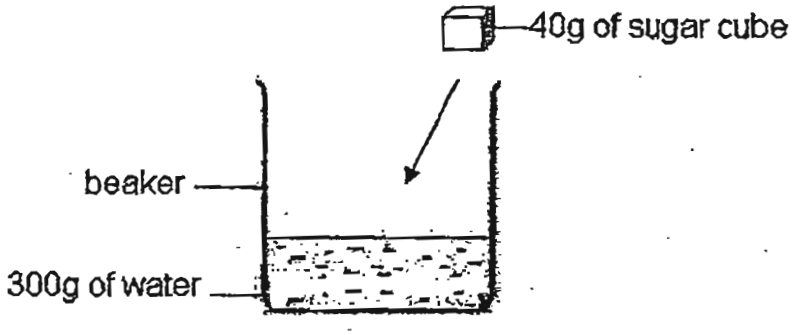
23. Study the concept map below.



Which one of the following **correctly** represents Process X, Process Y, A, B and C?

	Process X	Process Y	A	B	C
(1)	respiration	photosynthesis	carbon dioxide	oxygen	food
(2)	respiration	photosynthesis	oxygen	carbon dioxide	food
(3)	photosynthesis	respiration	carbon dioxide	food	oxygen
(4)	photosynthesis	respiration	oxygen	food	carbon dioxide

24. A beaker contained 300g of water. A cube of sugar which weighs 40g was placed in the water and stirred until it dissolved completely.



After one day, it was found that only 330g of the solution was left in the bowl. What would the remaining solution most likely contain?

(1) 330g of water
(2) 330g of sugar
(3) 290g of water and 40g of sugar
(4) 300g of water and 30g of sugar

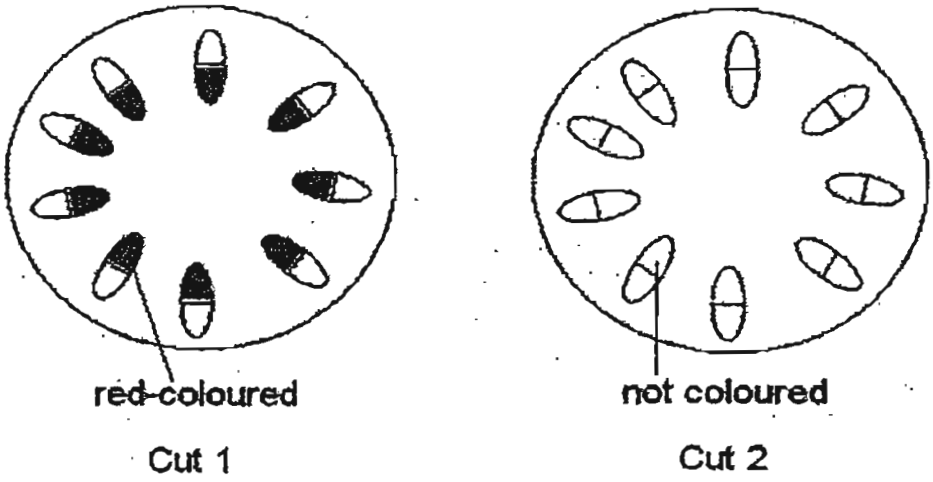
25. Five pupils observed the cells of some organisms under a microscope. They recorded their observations and conclusions in the table below.

Name of pupil	Observations on cell parts seen	Conclusion on type of cell
Ahmad	cytoplasm, nucleus, cell membrane	Animal
Nelson	cell membrane, cell wall, nucleus, cytoplasm	Animal
Mary	nucleus, cell wall, cell membrane, chloroplasts	Plant
Melvin	cell membrane, cell wall, nucleus	Plant
Ee Yin	cell membrane, nucleus, chloroplasts	Fungi

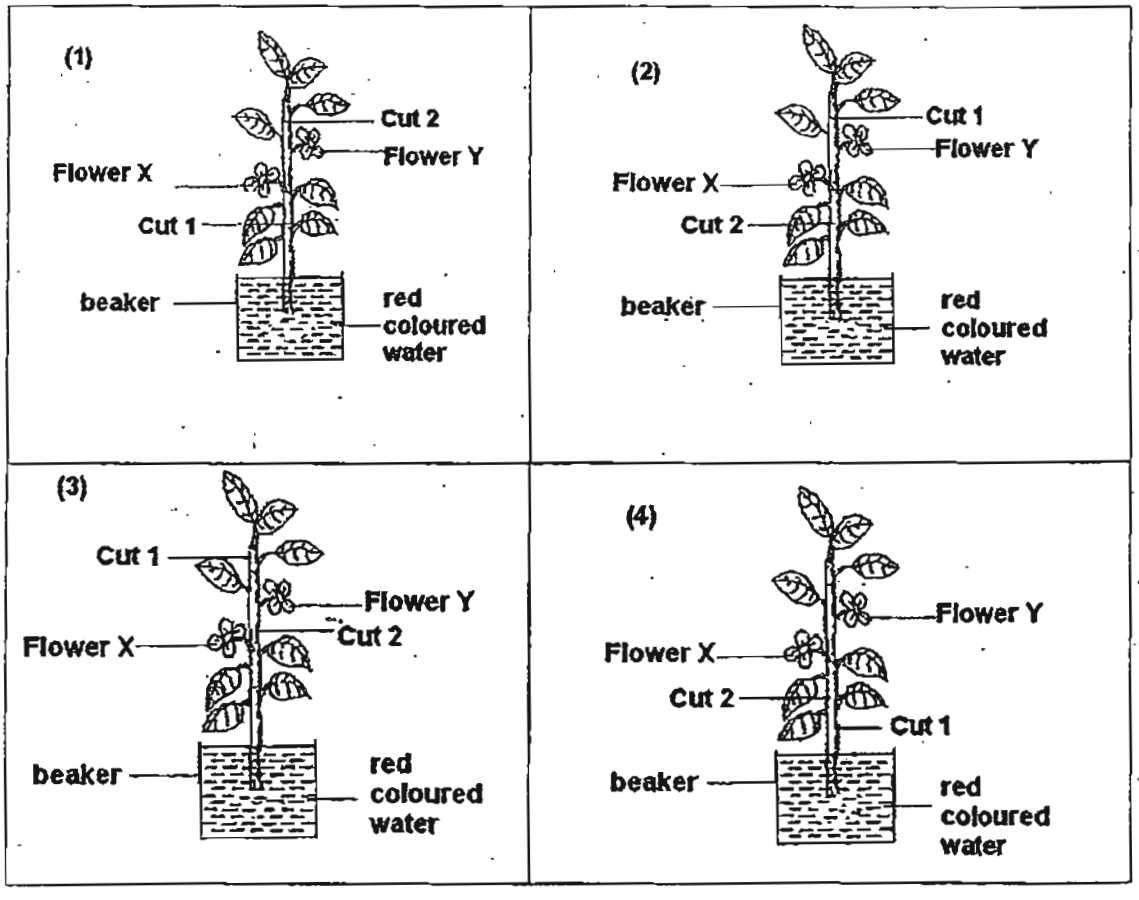
Who made the **correct** conclusion?

(1) Ahmad, Mary and Melvin
(2) Ahmad, Ee Yin and Melvin
(3) Mary, Ee Yin and Nelson
(4) Ee Yin, Melvin and Nelson

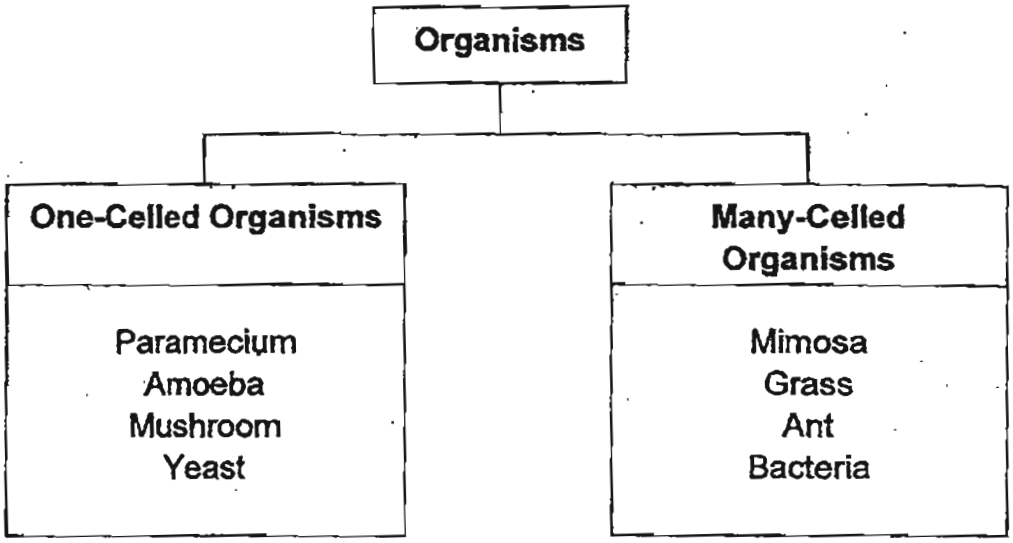
26. A plant with two white flowers, X and Y, was placed into a beaker filled with red-coloured water as shown in the diagram below. After two hours, Flower X turned red while Flower Y remained white. Two cuts, 1 and 2, as shown below, were immediately made at two sections of the plant.



Which of the plants shows the correct position of the cuts that matches the cross section of the stems at Cut 1 and Cut 2?



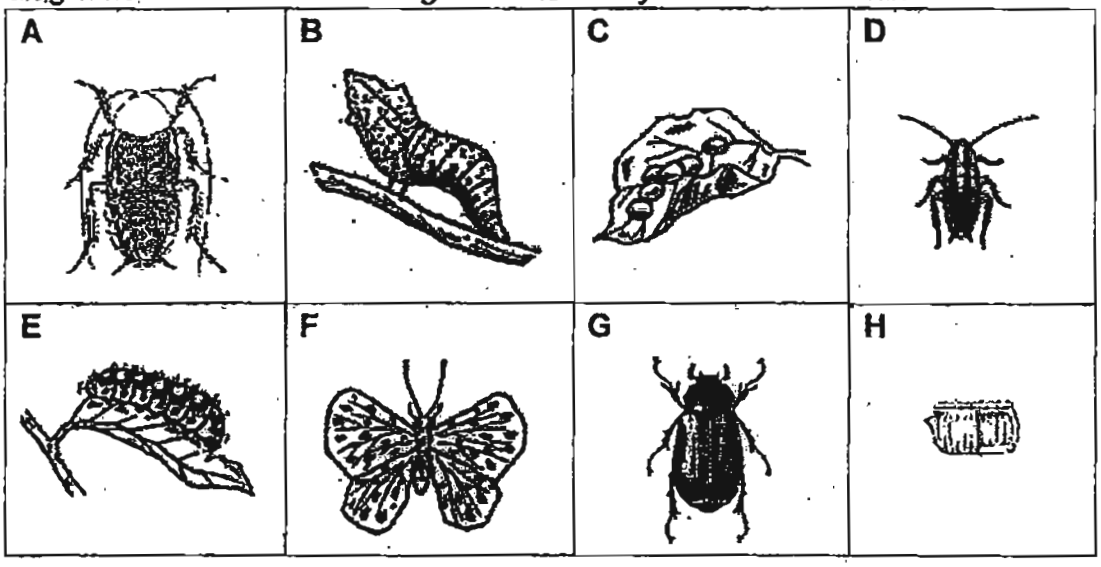
27. Study the classification chart below.



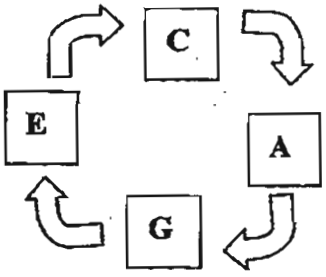
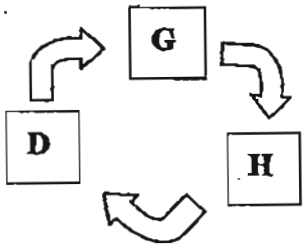
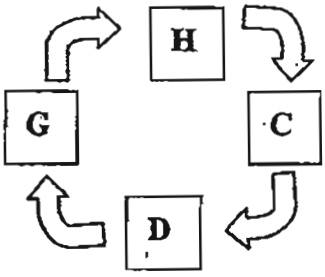
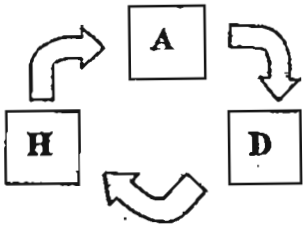
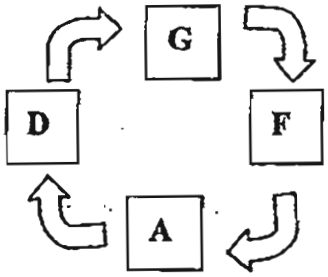
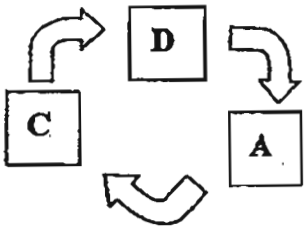
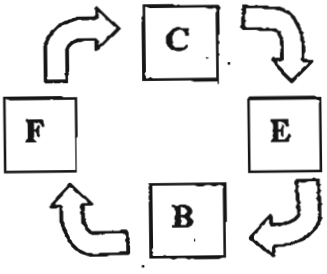
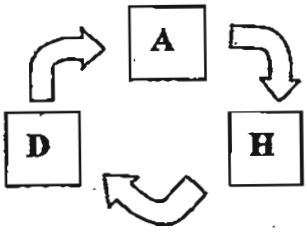
Which of the following organisms have been classified **incorrectly**?

(1) Yeast and Mimosa
(2) Amoeba and Grass
(3) Paramecium and Ant
(4) Mushroom and Bacteria

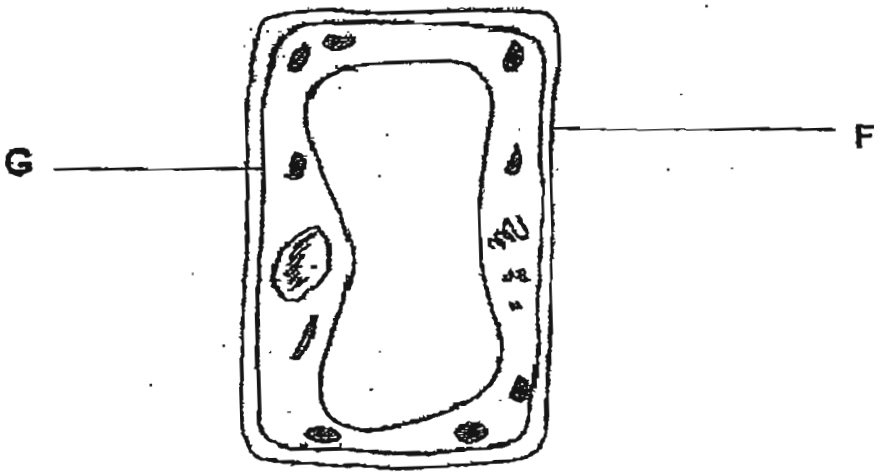
28. The diagrams below show the stages in the life cycles of some animals.



Identify the life cycle of the butterfly and cockroach in the correct order.

	Life cycle of butterfly	Life cycle of cockroach
(1)		
(2)		
(3)		
(4)		

Study the diagram below and answer the Questions 29 and 30.



29. Identify the Part F and its main function.

	Part	Function
(1)	Cell membrane	Allows only certain substances to pass through.
(2)	Nucleus	Controls all the activities in the cell.
(3)	Chloroplast	Makes food in the presence of sunlight.
(4)	Cell wall	Supports the cell and gives it a fixed shape.

30. Which of the following statements about Part G are true?

A: It controls all the activities in the cell.
B: It holds the cytoplasm inside the cell.
C: It controls the movement of substances in and out of the cell.
D: It helps the plant to make food.

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

TAO NAN SCHOOL

PRIMARY 5 SCIENCE MID-YEAR EXAMINATION 2011

Name: _____ ( ) **Date: 12 May 2011**

Class: P5 _____ **Time: 8.00am-9.45am**

BOOKLET B

INSTRUCTIONS TO CANDIDATES

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

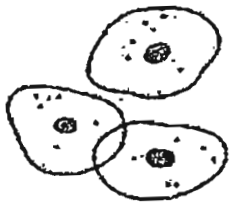
Answer all questions.

	Score	Marks
Section B		40

Section B (40 marks)
For the questions, 31 to 46, write your answers in the spaces provided.

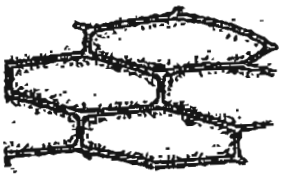
31. Below are diagrams of four different types of cells labeled W, X, Y and Z. State in the spaces provided if it is a "Plant Cell" or an "Animal Cell'.

(2m)



W : _____

X : _____



Y : _____

Z : _____

32. Three plants, X, Y and Z are found along a river bank as shown in Figure 1 below.

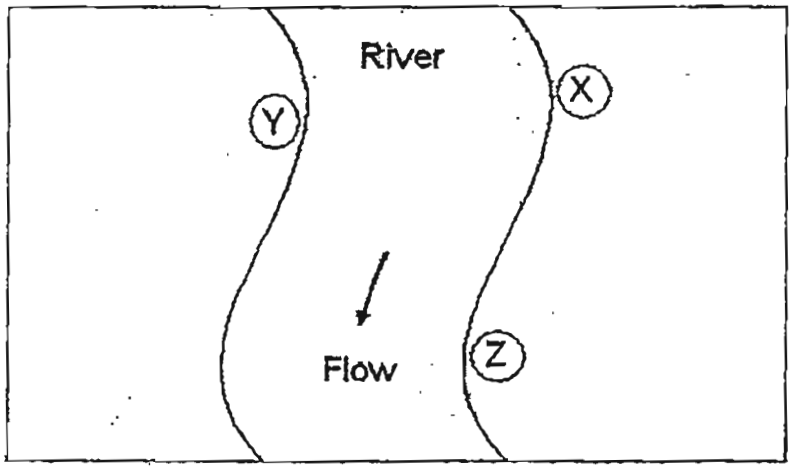


Figure 1

A year later, the locations of the young plants, X, Y and Z, in relation to their parent plants as shown in Figure 2 below.

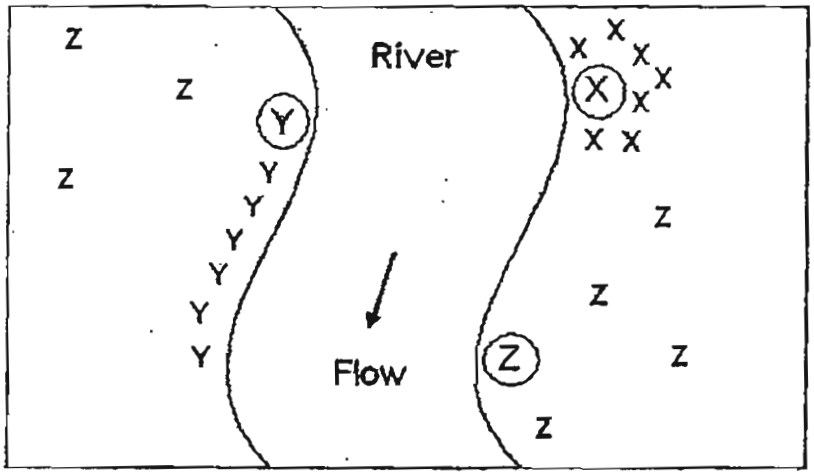
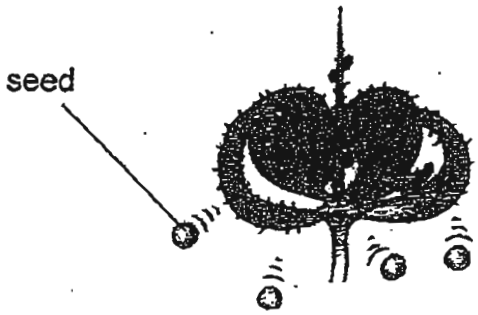


Figure 2

(a) Based on the location of the plants in Figure 2, which of the plants, X, Y or Z is dispersed by water? List a characteristic of the seeds dispersed by water. (1m)

_____

_____



(b) Based on the diagram above, which of the plants, X, Y or Z, could the seed belong to? Explain your answer. (1m)

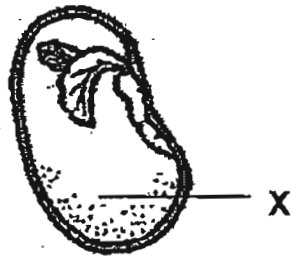
33. A substance has to pass through various parts of a plant cell before reaching the nucleus.

(a) Use the words given below to write the correct order in which the substance has to pass through. (1m)

Cell membrane	Cytoplasm	Cell wall

(b) Which part of the plant cell helps it to make food? (1m)

34. The diagram below shows a germinating seed.



(a) Name the part labelled X. (1m)

_____

(b) What is the primary function of X? (1m)

_____

_____

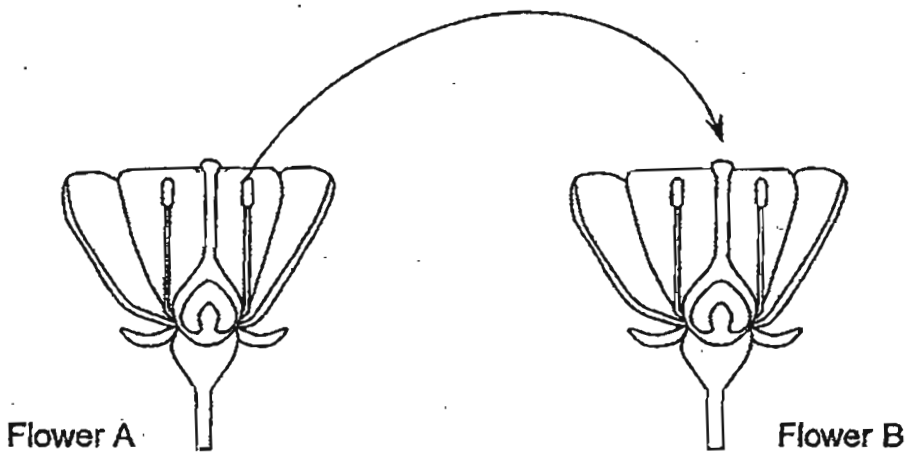
(c) "Only sunlight, water and air are needed for germination", said Mark.

Is Mark correct? Explain your answer. (1m)

_____

_____

35. The diagram shows two flowers. Some substances have been transferred from one flower to another as shown by the arrow below.



(a) Describe the process of pollination that is shown above. (1m)

_____

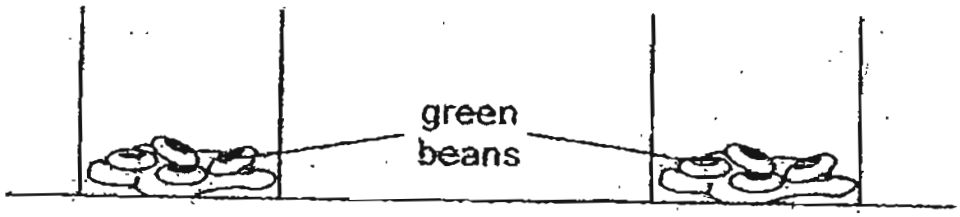
_____

(b) State two observable changes in the flower after pollination. (2m)

_____

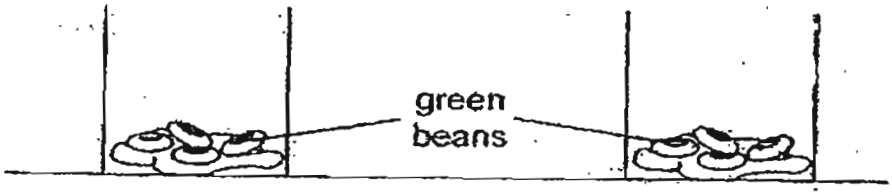
_____

36. Four identical containers with equal number of green beans were set up as shown below.



Container W
-dry cotton wool
-placed near the window

Container X
-moist cotton wool
-placed near the window



Container Y
-moist cotton wool
-placed in the refrigerator

Container Z
-moist cotton wool
-placed in the cupboard

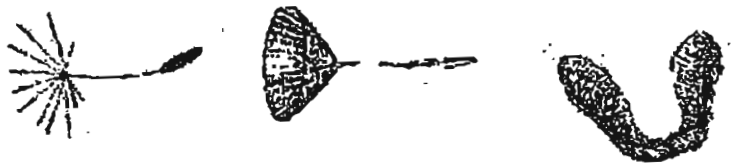
(a) Which green beans in the container(s) will not germinate? (1m)

_____

(b) Nicholas wanted to conduct an experiment to find out if water is needed for germination. Which containers should he use for his experiment? (1m)

_____

37. Brenda had three types of seeds dispersed by wind as shown below. She wanted to find out which seeds could be dispersed furthest from the parent plant. She took ten seeds of each type and mixed them together. Then she wrote down the first two steps of the procedure.



A B C

Step 1:	Place all the seeds 50 cm away from the fan.
Step 2:	Switch on the fan.
Step 3:	
Step 4:	Analyse the results and conclude.

(a) Brenda missed out Step 3. What should Step 3 be? (1m)

_____

_____

A table was tabulated to show the results of the experiment.

	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Average
A	13cm	14cm	15cm	13cm	15cm	14cm
B	8cm	7cm	6cm	8cm	6cm	7cm
C	10cm	8cm	8cm	10cm	9cm	9cm

(b) The experiment was repeated 4 more times and the average result was obtained. Why was it necessary to do so? (1m)

_____

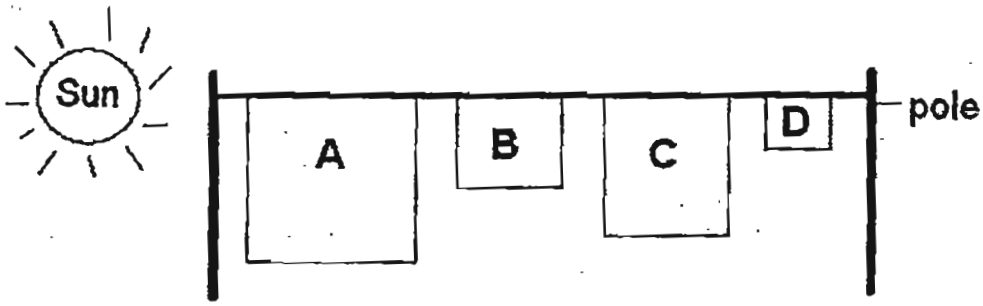
_____

(c) From the results shown, arrange the seeds according to the distance they are dispersed from the starting point, starting with the one dispersed furthest to the closest. (1m)

(d) To ensure that this is a fair test, put a tick (√) at the variable(s) that must be kept constant. (1m)

Variables	Tick (√) the constant variable(s)
(i) Position of all the seeds before the fan is turned on.	
(ii) Distance that the seeds travel once the fan is turned on.	
(iii) Shape of the seeds.	

38. Jimmy conducted an experiment to show how the exposed surface area of towels will affect the rate of evaporation of water. He used four identical towels of the same material and thickness but folded them into different sizes as shown below. He soaked the towels in water and measured the mass of the towels.



The results were tabulated in the table below.

Towel	0 min	30 min
A	200g	92g
B	200g	158g
C	200g	118g
D	200g	180g

(a) What is the relationship between the exposed surface area and the rate of evaporation? (2m)

_____

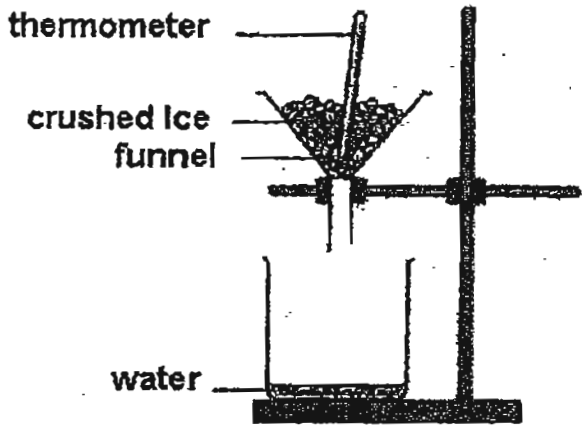
_____

(b) Other than the factor of exposed surface area, what **other** factors will increase the rate of evaporation? (1m)

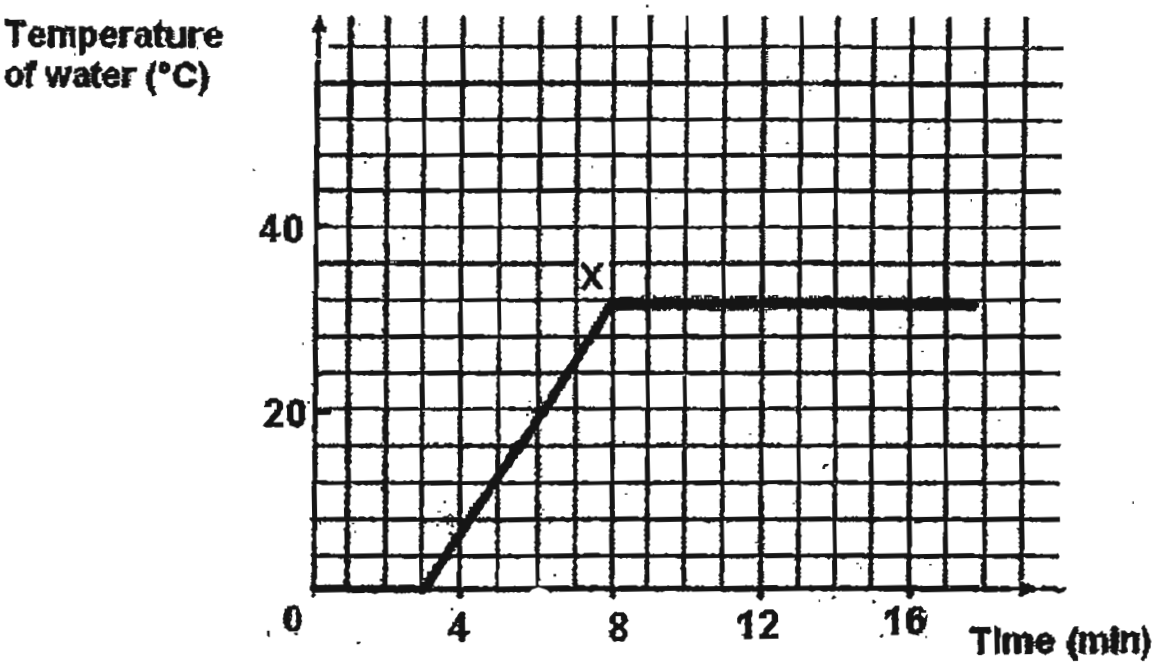
i) _____

ii) _____

39. An investigation was carried out to find out how long it takes for crushed ice to melt.



A line graph has been plotted as shown below.



(a) Complete the table using the information provided by the graph. (2m)

Time (min)	0	2	4	6	8	10
Temperature of water (°C)						

(b) What has happened to the ice at point X after the 8th minute? (1m)

_____

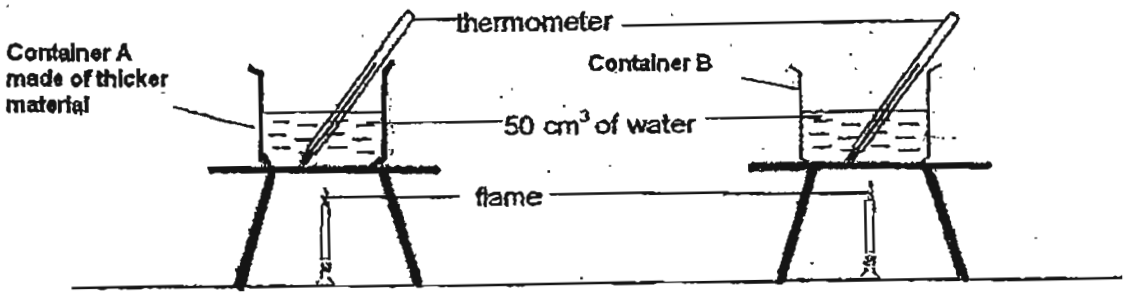
_____

(c) How could we slow down the ice from melting, without moving the set-up? (1m)

_____

_____

40. John conducted an experiment using two containers of identical size and made of identical material but with different thickness. He poured 50 cm^3 of water into each container. A thermometer was then placed in each container.



The water in the two containers were then heated to boiling point. The table below shows the time taken for the water to reach boiling point.

	Container A	Container B
Time taken to boil (min)	15	10

(a) State the aim of the experiment. (1m)

_____

_____

(b) Why must John use the same amount of water in both containers? (1m)

_____

_____

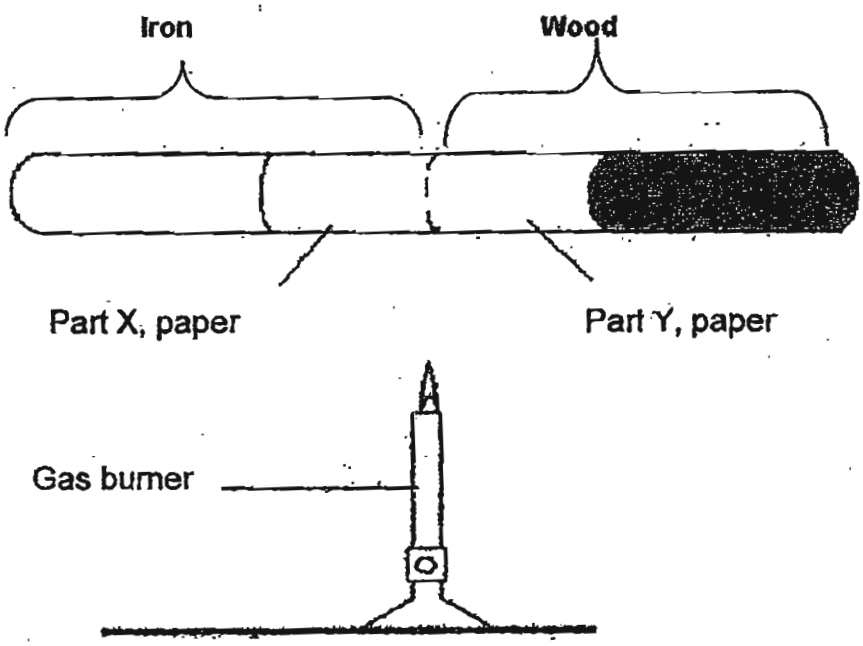
(c) Explain why water in Container B took a shorter time to boil. (1m)

_____

_____

41. The diagram below shows a rod. The shaded part is made of wood and the other part is made of iron.

A piece of paper was then wrapped around the rod in the middle.



(a) A gas burner was placed in the middle of the rod. Compare the changes to the paper that would be observed at Part X and Part Y. (1m)

_____

_____

(b) Explain your answer for: (2m)

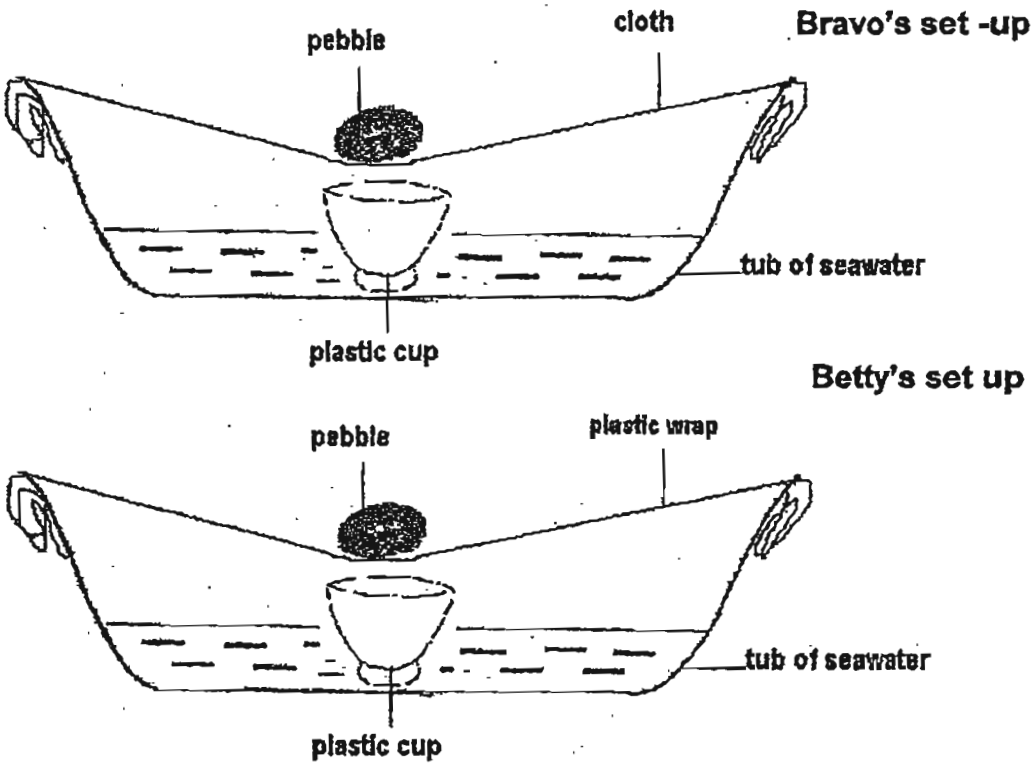
Part X: _____

_____

Part Y: _____

_____

42. Bravo and Betty were asked to complete a project to show how they can get water from seawater. They discussed and came up with two set-ups as shown below.



(a) Who was not able to collect water in the plastic cup successfully? Explain your answer. (1m)

_____

_____

(b) Explain how the water was collected in the plastic cup (2m)

_____

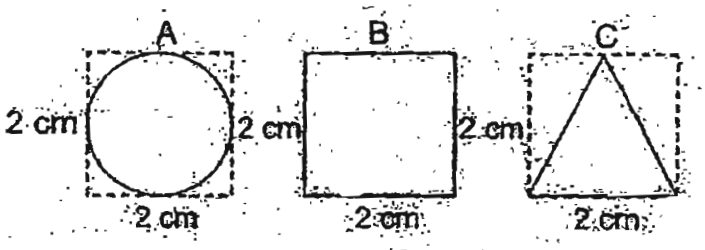
_____

(c) Is the pebble important in the whole process? Explain your answer. (1m)

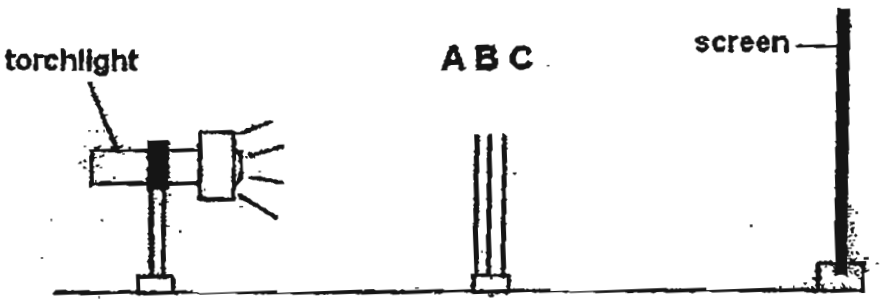
_____

_____

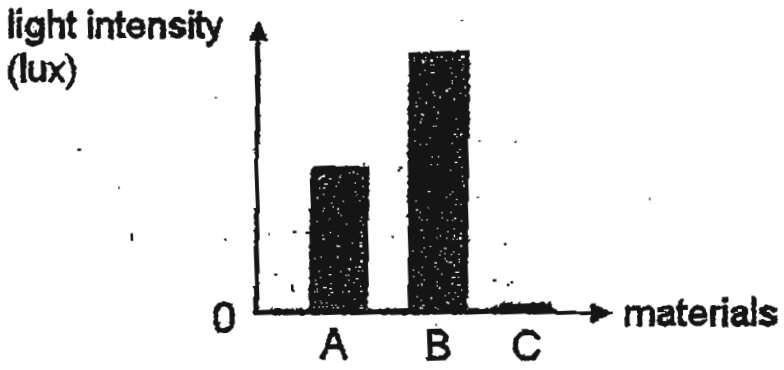
43. The diagram below shows three pieces of papers of different shapes, A, B and C. Each of them is made of different materials. The dimensions of the three papers are given below.



They are placed between a lighted torch and a screen as shown in the below.

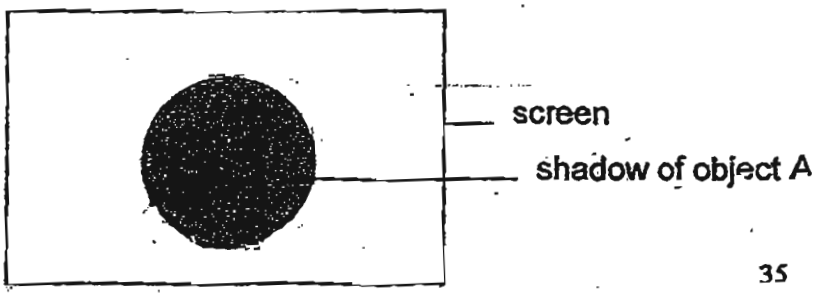


The graph depicted shows the amount of light that can pass through the three pieces of paper, A, B and C.

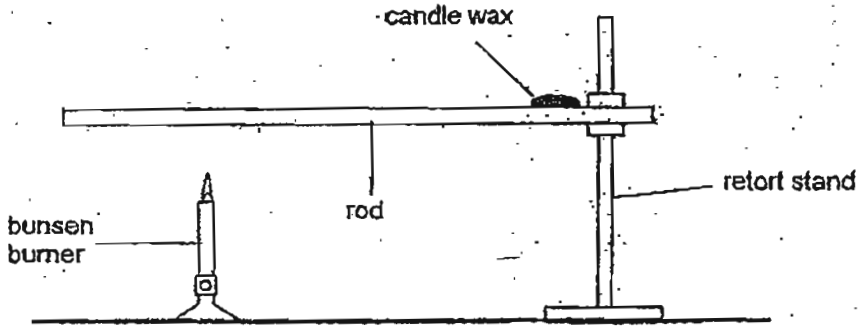


Based on the information, Eric drew an incomplete shadow of his observation.

Complete Eric's drawing, and **label** the shadow(s). (2m)



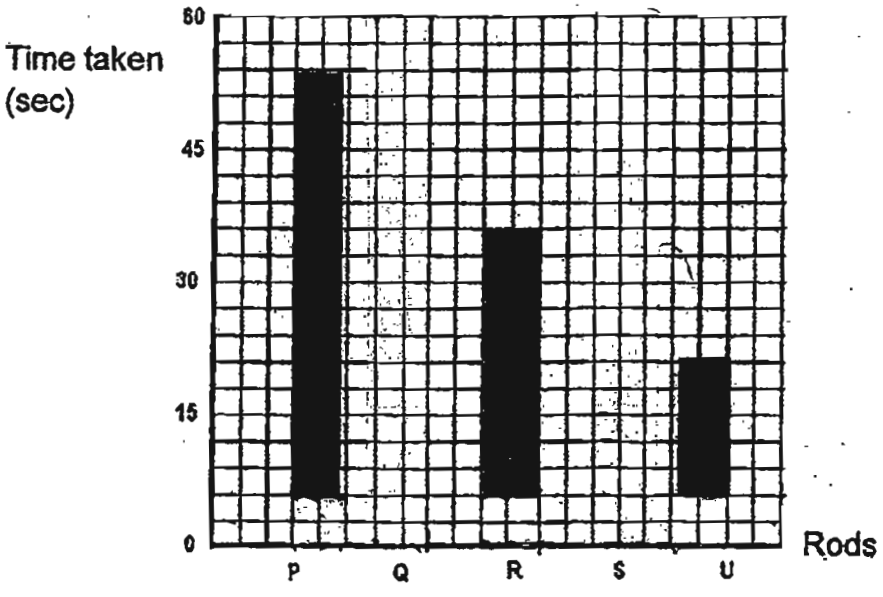
44 Five rods of similar sizes, P, Q, R, S and U, made of different material, are heated separately one at a time in the experiment as shown below.



The time taken for the candle wax on each rod to melt completely is recorded in the table below.

Rod	Time taken (seconds)
P	54
Q	60
R	35
S	45
U	15

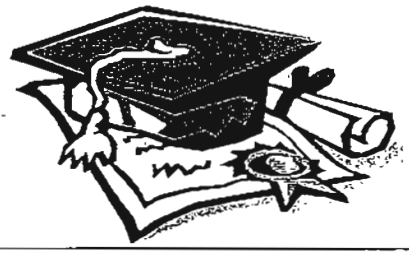
(a) Complete the bar graph using the information provided in the table above. (1m)



(b) Based on the information provided in the question, put a tick (√) in the correct boxes. (2m)

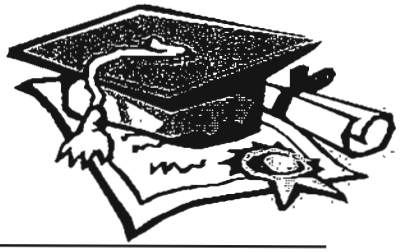
Statements	True	False	Impossible to tell
(i) Rod R is a better conductor of heat than Rod U.			
(ii) Rod Q is plastic and Rod S is copper.			
(iii) Rod U is the best conductor of heat.			
(iv) Rod Q is the most suitable material to be used for making the handle of a cooking pan.			

End-of-paper



ANSWER SHEET

EXAM PAPER 2011



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	2	1	3	2	3	1	4	2	2	3	4	1	3	3	3	1

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

31)W: Animal cell X: Animal cell Y: Plant cell Z: Animal cell

32)a)Plant Y has a fibrous husk and has waterproof outercouvering.
b)Group X. The plants grows in clusters.

33)a)Cell wall→Cell membrane→Cytoplasm
b)The chloroplast helps it to make food.

34)a)The part is the seed leaf.
b)X provides the seedling with food.
c)No, he is wrong. The seed does not need sunlight to make food.

35)a)The pollen grain from the anther of Flower A was transferred to the stigma of Flower B.
b)The changes are the petals dropping and the ovary swelling.

36)a)Container W and Y.
b)Container W and X.

37)a)Measure and record the distance travelled by the seeds.
b)It was to make sure that the results were reliable.
c)A→C→B
d)i)

38)a)The larger the exposed surface, the faster the rate of evaporation.
b)i)The presence of wind. ii)The less humidity of the air.

39) 0, 0, 7, 20, 32, 32

40)a)The aims is to find out if a thicker container affects the time that it is taken to boil.

b)It was to ensure that it was a fair test.

c)Container B was made of thinner material than container A so it took a shorter time for the heat to reach the water. Hence the water in container B took a shorter time to boil.

41)a)The paper at part Y will be more scorched than part X.

b)X: Iron is a good conductor of heat so the heat will be quickly conducted away from the paper.

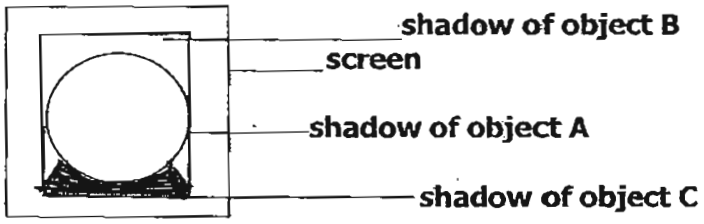
Y: Wood is a poor conductor of heat so the heat will be conducted away more slowly from the paper. Hence it will be more scorched than part X.

42)a)Bravo was not able to collect water. The cloth is porous and allows water vapour to escape.

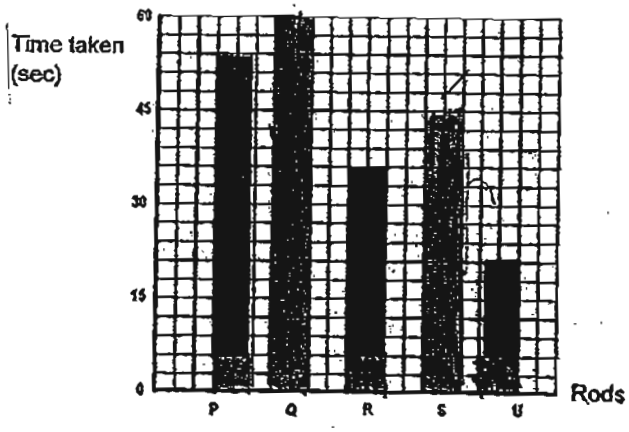
b)The heat will evaporate the water when the water vapour comes into contact with the cool plastic wrap it condenses. Then, it will flow down and drip into the plastic.

c)The stone causes the plastic wrap to slant down wards so the water droplets will drip into the cup.

43)



44)a)



b)i)F ii)Impossible iii)T iv)T