NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 1
2017

BOOKLET A

Date : 8 May 2017

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 5 ( )

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

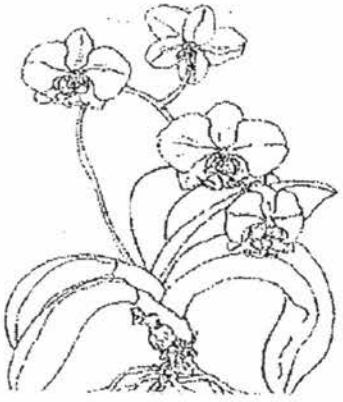
Booklet A consists of 23 printed pages including this cover page.

Section A (28 x 2 marks = 56 marks)
For each question from 1 to 28, 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 provided.**

1. Which one of the following plants reproduces by spores?

(1) Bird's nest fern

(2) Hibiscus plant



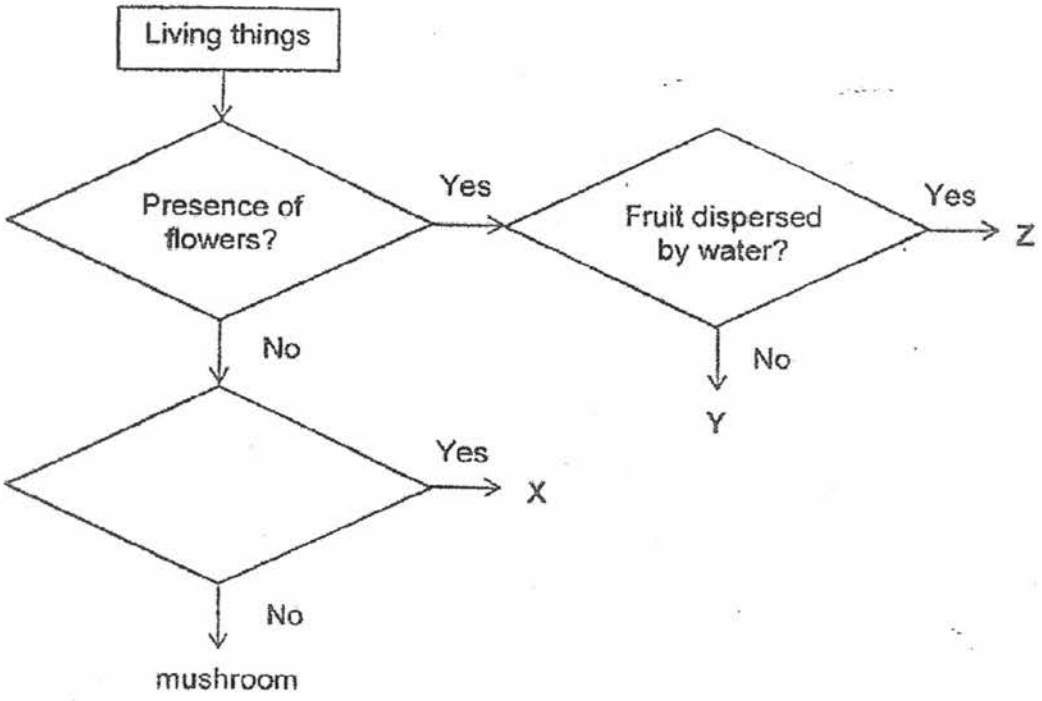
(3) Orchid plant

(4) Ixora plant

2. For an adult flowering plant to produce seeds, which process(es) must take place?

(1) Pollination only
(2) Germination only
(3) Pollination and fertilisation
(4) Pollination and germination

3. Study the flowchart below carefully.



Which of the following could represent X, Y and Z?

	X	Y	Z
(1)	bird's nest fern	papaya plant	coconut
(2)	coconut	papaya plant	bird's nest fern
(3)	bird's nest fern	coconut	papaya plant
(4)	coconut	bird's nest fern	papaya plant

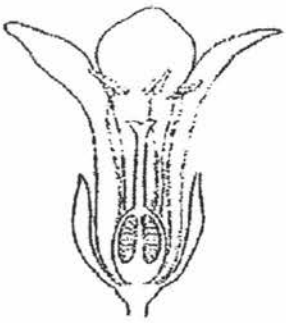
4. Irene planted Plant V on a plot of land. She noticed that the plants were not growing well. Her friend, Carina, commented that the presence of weeds has affected the growth of Plant V.

Which of the following explains why plant V is not growing well?

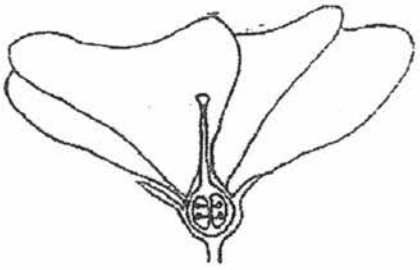
A There is not enough air for Plant V.
B There is not enough food for Plant V.
C There is not enough space for Plant V.

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

5. The diagrams below show the parts of two flowers, G and H, from different plants.



Flower G



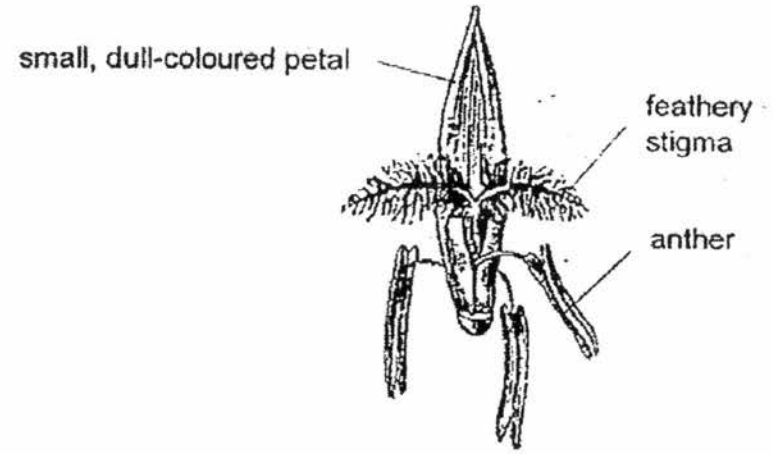
Flower H

Based on the diagrams, which of the following statements are correct?

A Flower G can pollinate itself.
B Only Flower H can develop into a fruit.
C Both flowers can develop into fruits after fertilisation.
D Both flowers can produce both male and female reproductive cells.

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

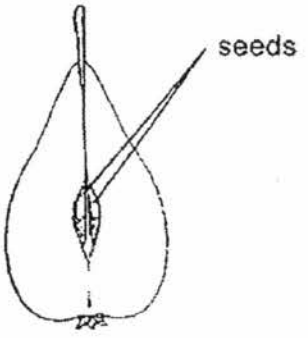
6. The diagram below shows a flower of a plant.



Based only on this diagram, which of the following best describes the way in which the flower is most likely pollinated?

(1) The feathery stigma can capture pollen floating in the air.
(2) The feathery stigma will be carried by the wind to the anther.
(3) The petals are dull-coloured to attract insects for pollination.
(4) The flower produces a sweet scent to attract insects for pollination.

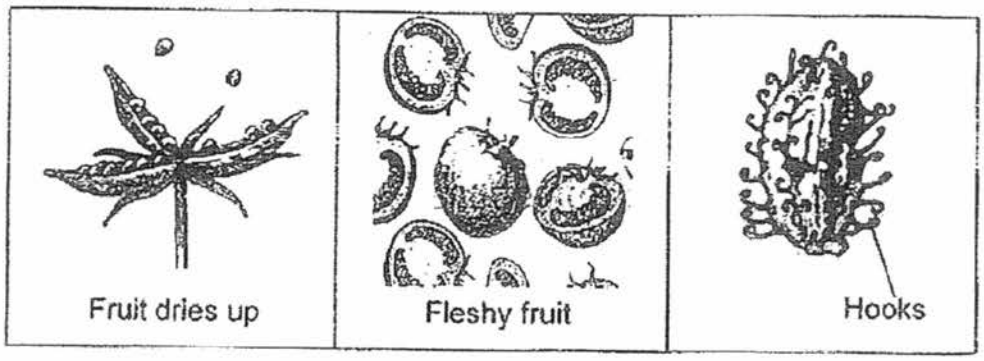
7. The diagram below shows a fruit that had been cut into half.



Based only on this diagram which one of the following statements is definitely true about the flower from which the fruit is developed from?

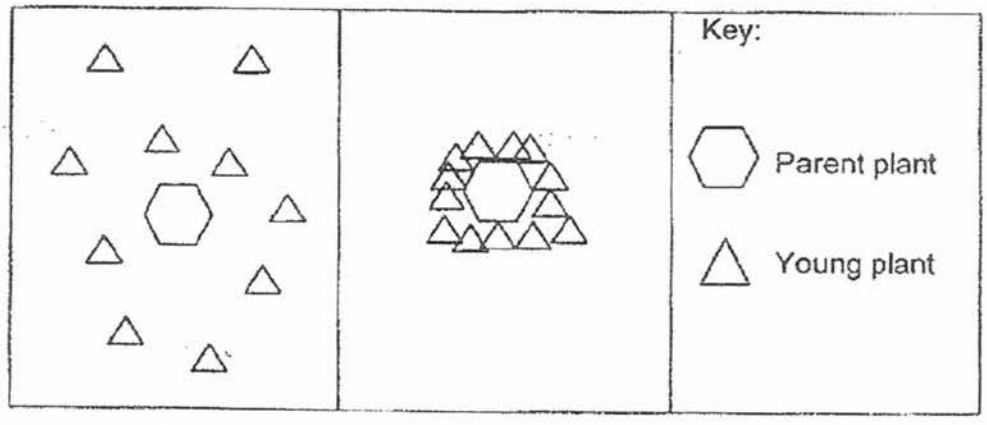
(1) The fruit developed from a male flower.
(2) There are at least two ovules present in the ovary.
(3) The flower has brightly coloured petals to attract animals.
(4) The stigma hangs out of the petals to capture pollen grains.

8. The diagram below shows the fruits of three different types of plants, X, Y and Z.



X Y Z

After three years, Karen observed the dispersal pattern of each plant. She recorded her observations as shown below.

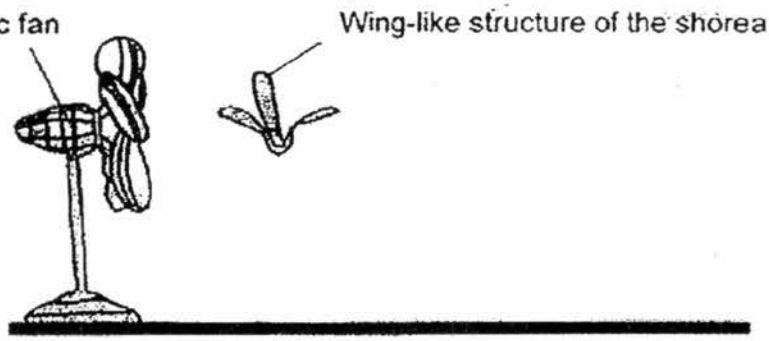


A B

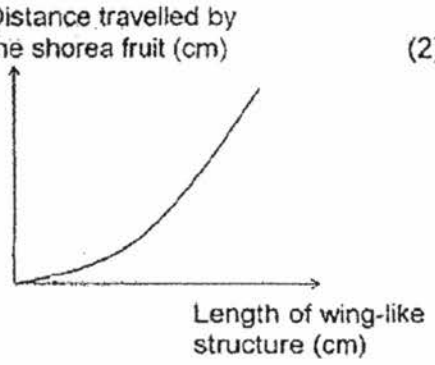
Which one of the following correctly matches the dispersal pattern of the seeds to their parent plants?

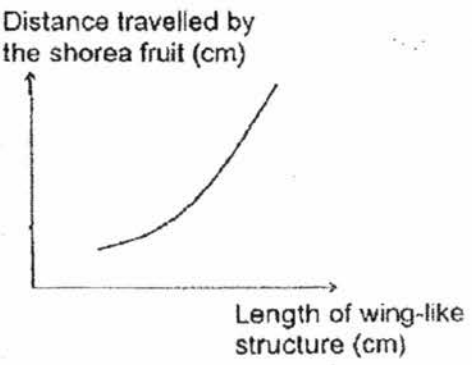
	A	B
(1)	Y	X and Z
(2)	X and Y	Z
(3)	X and Z	Y
(4)	Y and Z	X

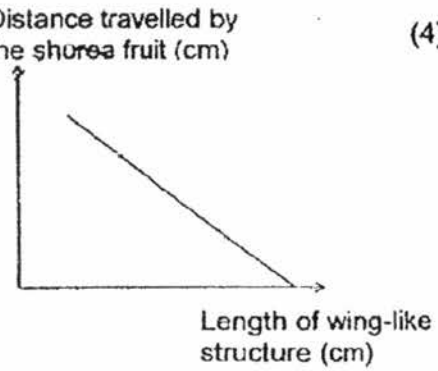
9. Emily carried out an experiment to find out how the length of the wing-like structure of a shorea fruit affects the distance travelled by it. The shorea fruit was released in front of an electric fan as shown below.

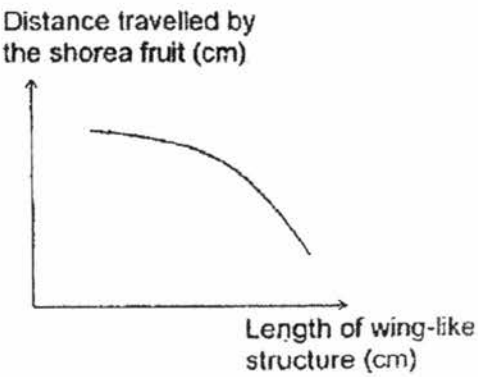


Which of the following graphs shows the most likely relationship between the length of the wing-like structure of the shorea fruit and the distance travelled by it?

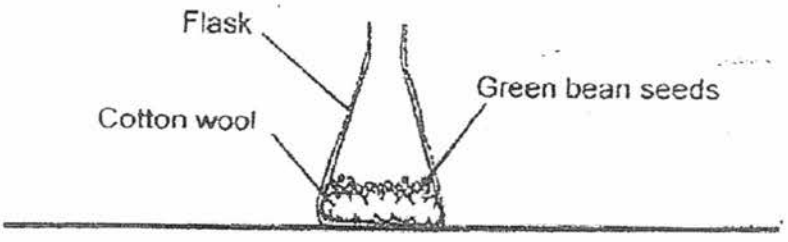
(1)


(2)


(3)


(4)


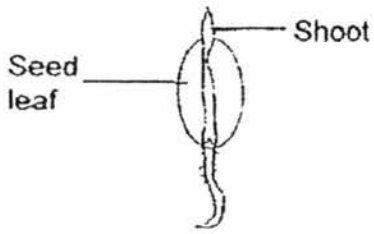
10. Megan set up the following experiment using green bean seeds.



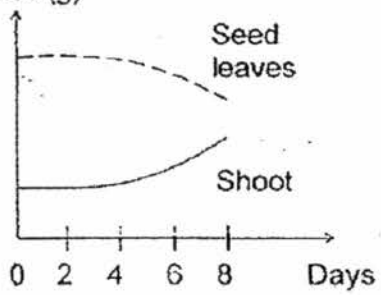
Which of the following conditions should she choose in order to have the thinnest and tallest seedlings at the end of her experiment?

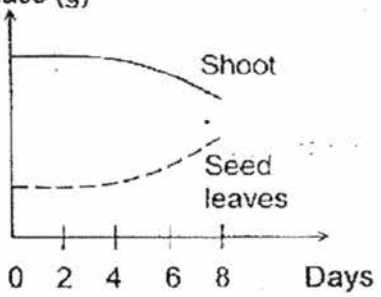
	Location	Type of cotton wool	Number of green bean seeds
(1)	in a dark cupboard	dry	40
(2)	in the garden	moist	5
(3)	in the refrigerator	dry	5
(4)	near the window	moist	40

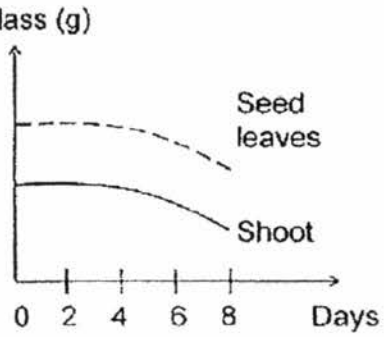
11. Gary observed a seed developing into a seedling over eight days as shown below. He then made a comparison between the mass of the seed leaves and the shoot.

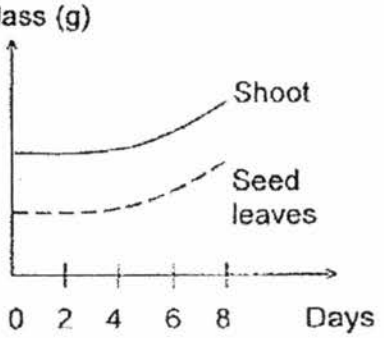


Which of the following graphs most likely shows the result of his experiment?

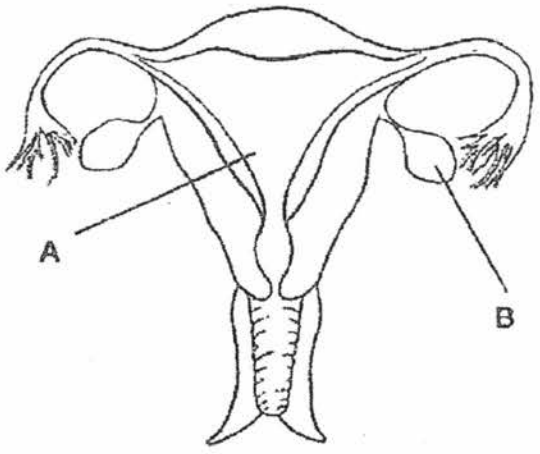
(1)


(2)


(3)


(4)


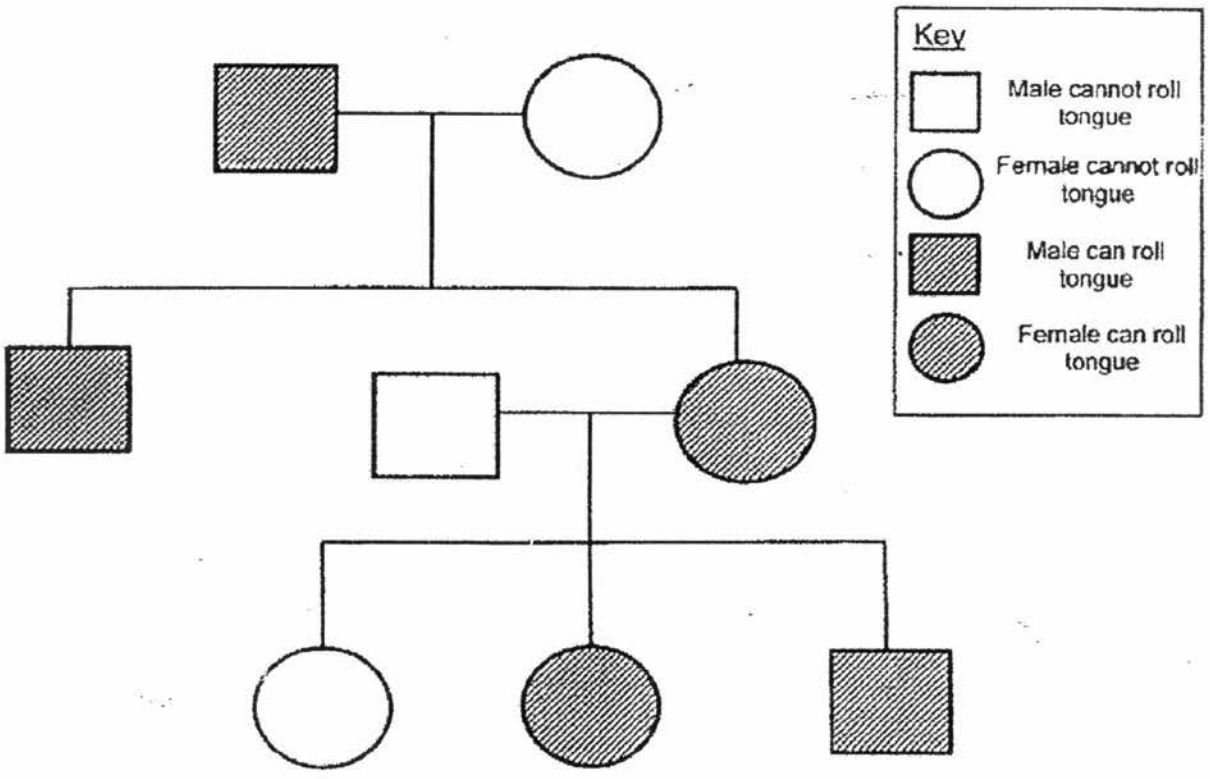
12. The diagram below shows the female human reproductive system.



Which of the following correctly identify parts A and B?

	A	B
(1)	womb	egg
(2)	womb	ovary
(3)	egg	womb
(4)	ovary	womb

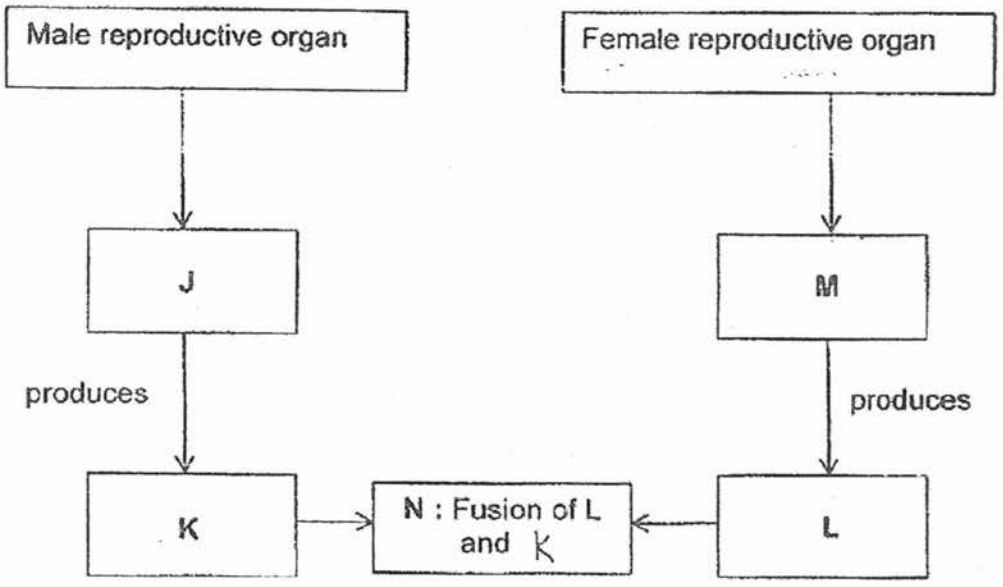
13. The diagram below shows Shinee's family tree.



Based on the family tree, which one of the following statements is **true**?

(1) Shinee's brother cannot roll his tongue.
(2) Both Shinee's grandparents can roll their tongues.
(3) Everyone in Shinee's family can roll their tongues.
(4) Shinee inherited her ability to roll her tongue from her mother.

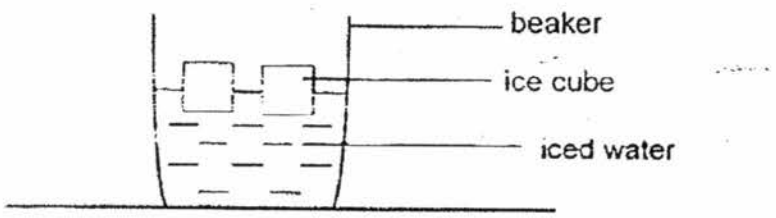
14. Study the flow chart below.



Which of the following could represent J, K, L, M and N?

	J	K	L	M	N
(1)	sperms	testis	ovary	eggs	fertilisation
(2)	testis	sperms	eggs	ovary	fertilisation
(3)	penis	sperms	ovary	eggs	fertilisation
(4)	sperms	penis	eggs	ovary	reproduction

15. A beaker of iced water was left on the table in a room.



Which of the following observations after 1 hour are **correct**?

A The water level in the beaker will increase.
B Water droplets will be formed on the inner side of the beaker.
C The temperature of the ice remains at 0°C until all the ice has melted.
D Formation of the water droplets is due to the condensation of water vapour on the cold outer surface of the beaker.

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

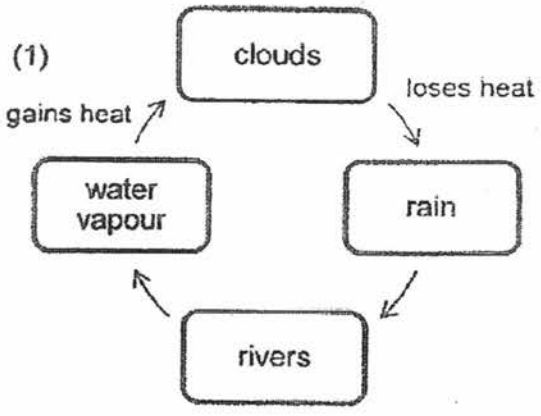
16. Which of the following activities are ways to help in conserving water?

A Take a shorter shower.
B Use full flush to flush the toilet.
C Use an energy-efficient refrigerator.
D Turn off the tap while soaping the dishes.

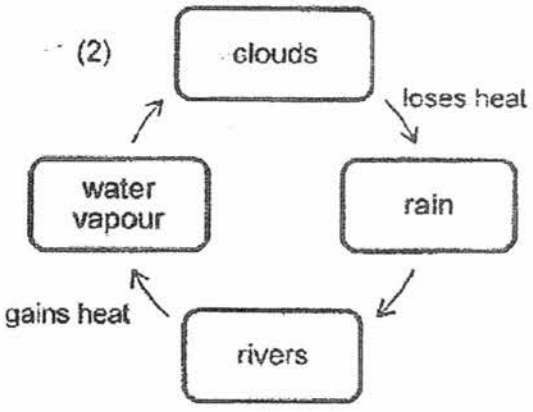
(1) A and D only
(2) B and C only
(3) A, B and D only
(4) A, C and D only

17. Which one of the following diagrams correctly represents the water cycle?

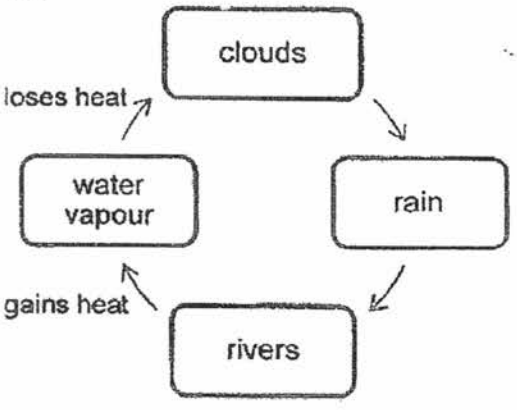
(1)



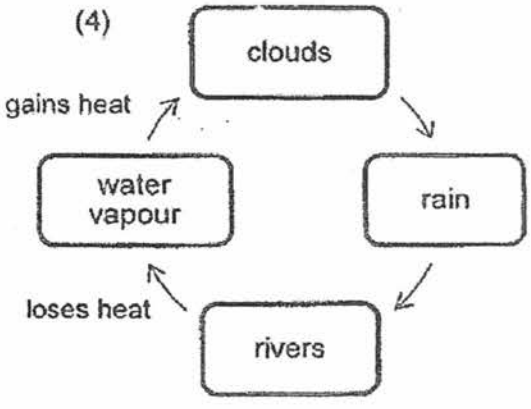
(2)



(3)



(4)



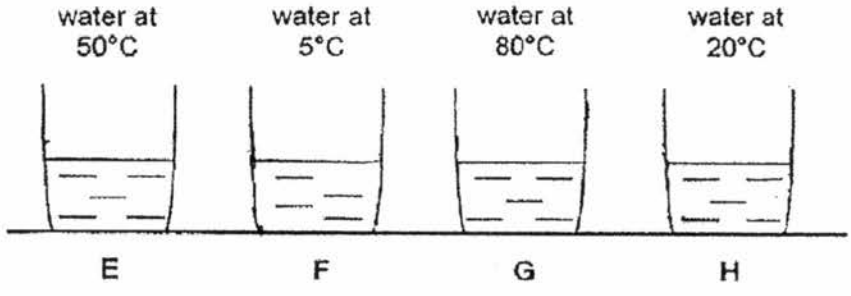
18. Ji Sub was conducting an experiment to find out how the temperature of the surroundings would affect the rate of evaporation of water. He placed one beaker in the classroom and the other beaker in the basketball court.

Which of the following variables must he keep the same in order for the experiment to be fair?

A Temperature of surroundings
B Amount of water in the beaker at first
C Exposed surface area of the water in the beakers
D Amount of water in the beaker at the end of the experiment

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

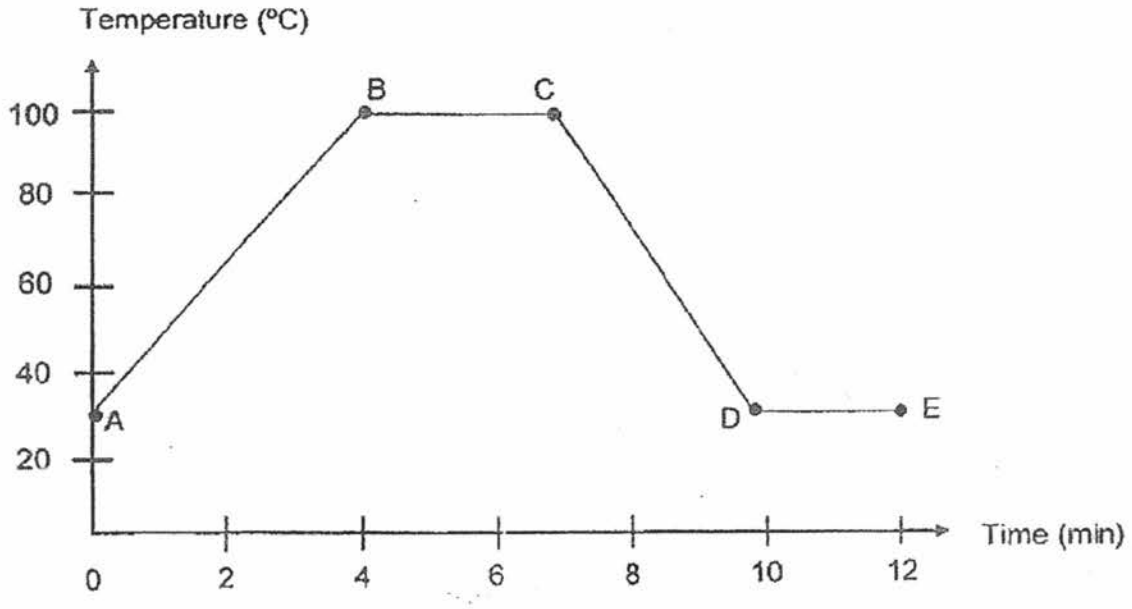
19. Four similar beakers, E, F, G and H, were each filled with 100ml of water at different temperatures. The beakers were placed in the same room at 28°C as shown in the diagram below.



Which beakers would have water droplets forming on their outer surfaces after some time?

(1) E and G only
(2) F and H only
(3) E, F and G only
(4) F, G and H only

20. Minho heated some water in a beaker until it boiled. He continued to allow the water to boil for some time. The beaker of water was then left on a table to cool. He recorded his results in the graph as shown below.

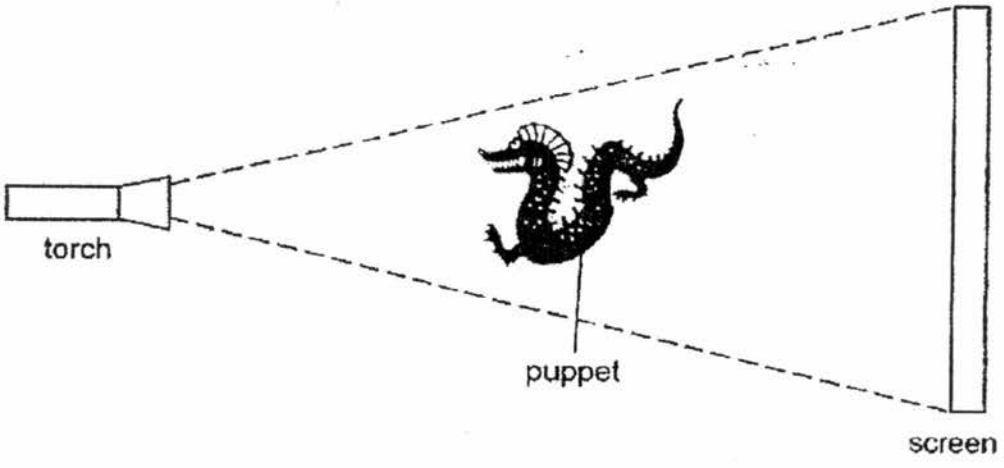


Which of the following statements below correctly explain what happened to the water at the different stages?

A Heat was lost from C to D.
B Evaporation took place from A to B only.
C Water exists in two states between B and C.
D The water had reached room temperature from D to E.

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

21. Fandi is planning to put up a shadow puppet performance. He placed the puppet between a torch and a screen as shown below.

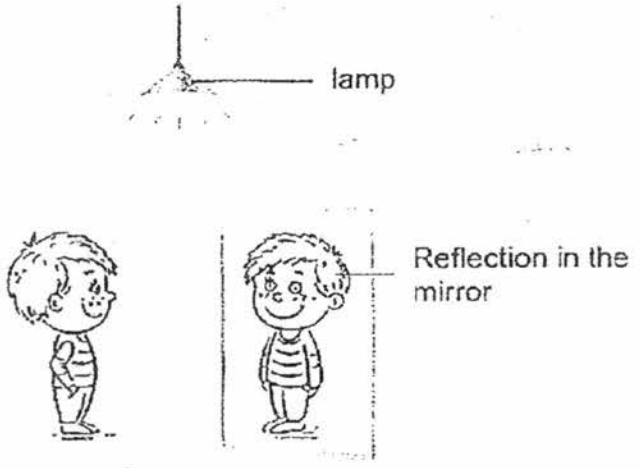


Fandi wants to get a bigger shadow of the puppet. Which of the following ways would allow him to get a bigger shadow?

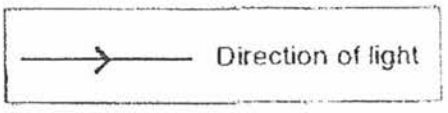
A Move the torch nearer to the puppet.
B Move the torch further away from the puppet.
C Move the puppet nearer to the screen.
D Move the puppet further away from the screen.

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

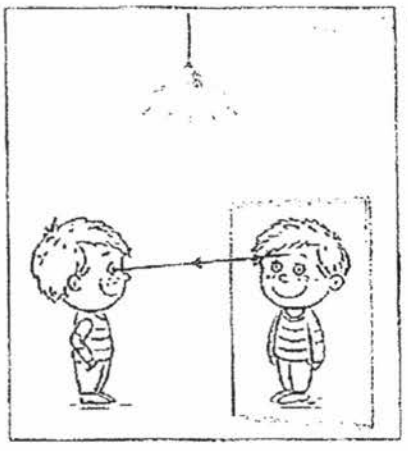
22. Ravi looked into a mirror and saw his own reflection.



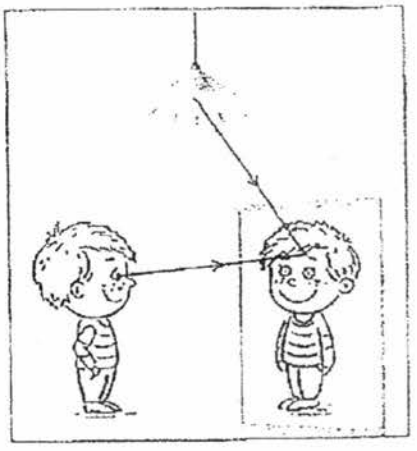
Which one of the following diagram shows the correct light ray to explain why Ravi could see his own reflection?



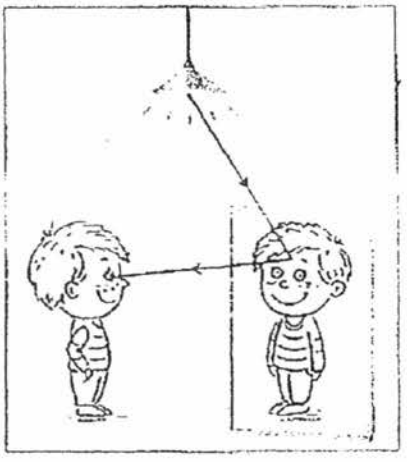
(1)



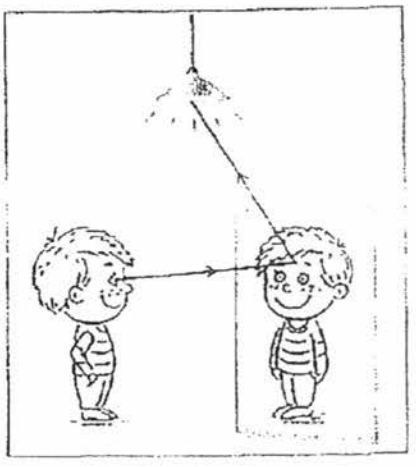
(2)



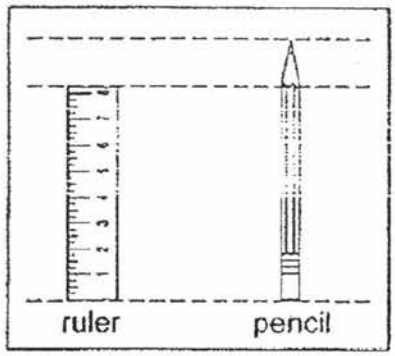
(3)



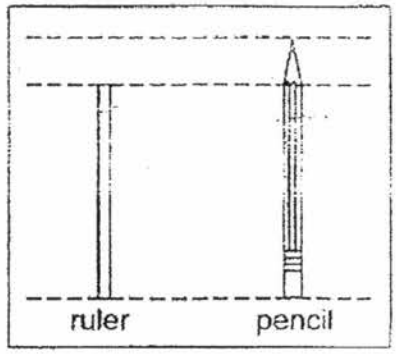
(4)



23. Sally had a pencil and ruler.

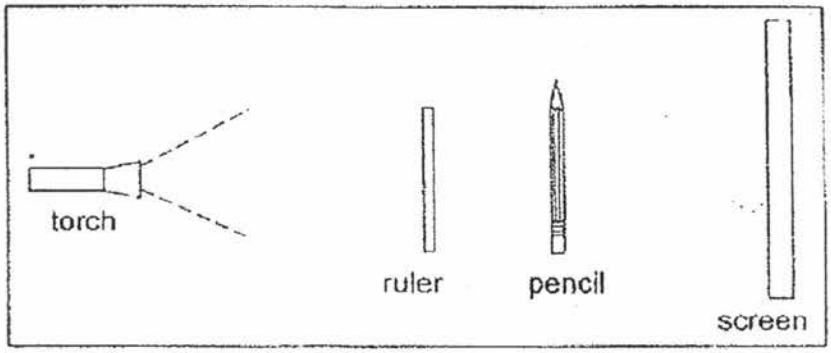


Front view



Side view

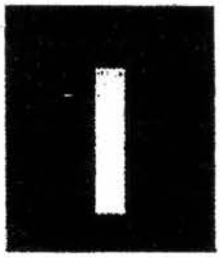
She placed the pencil and ruler between a torch and a screen as shown below. All the objects are arranged in a straight line.



Side view of the set-up

Which of the following shadow would she most likely observe on the screen?

(1)



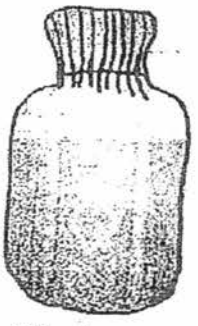
(2)

(3)

(4)

24. Eddie's grandmother knitted a wool cover for his water bottle which was made of metal. Eddie observed that the wool cover helped to keep the water in his water bottle warm for a longer period of time.

Water bottle



Wool cover

Which one of the following statements gives a correct explanation for his observation?

(1) The metal reduces heat loss from the water to the wool.

(2) The wool reduces heat gain from the surrounding to the bottle.

(3) The metal makes the water gain heat faster from the surrounding.

(4) The air in the wool reduces heat loss from the water bottle to the surrounding.

25. Two cubes of the same size were left on the table at room temperature. One cube was made of metal and the other cube was made of plastic. After 30 minutes, Rajan touched both the metal cube and the plastic cube. He realised that the metal cube felt cooler than the plastic cube.

Which one of the following statements is **true**?

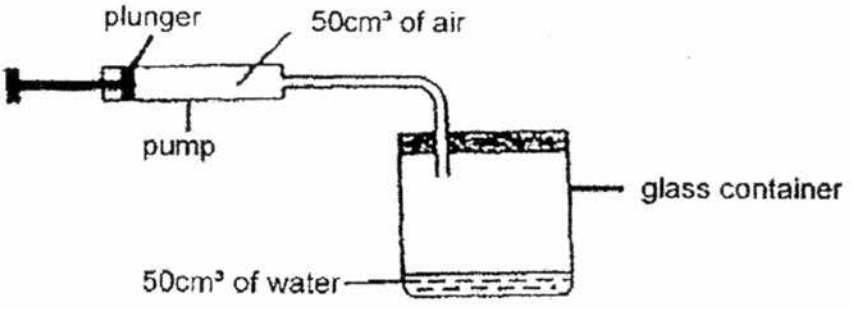
(1) The metal cube felt cooler because it has a higher temperature than the plastic cube.

(2) The metal cube felt cooler because it has a lower temperature than the plastic cube.

(3) The metal cube felt cooler because it conducted heat away from Rajan's hand faster than the plastic cube.

(4) The metal cube felt cooler because it conducted heat away from Rajan's hand slower than the plastic cube.

26. An experiment was set up using a pump which is connected to a glass container as shown below. The volume of the glass container is 300cm³ and it contained 50cm³ of water.



50cm³ of air was added into the glass container by pushing the plunger. It was observed that the final volume of air in the container was 250cm³.

What is the reason for the above observation?

(1) Air occupies space.
(2) Air has no definite volume.
(3) Liquid has no definite shape.
(4) Liquid has no definite volume.

27. Kumar has 2 objects, a 50 cent coin and a metal rod, as shown below.

50 cent coin

metal rod

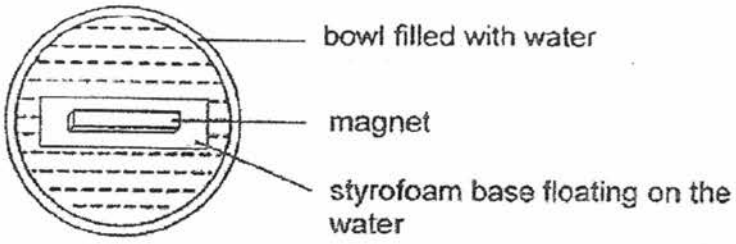
Which of the following statements made by Kumar is false?

(1) They are flexible.
(2) They are waterproof.
(3) They will not break when dropped.
(4) They do not allow light to pass through.

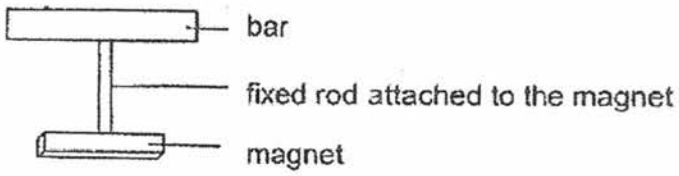
28. Fairuz has a bar magnet. He wants to find out which is the North-South direction inside the classroom.

Which of the following is/are method(s) that he could use?

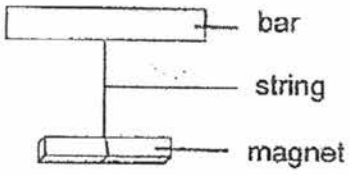
A



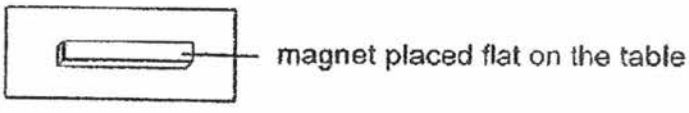
B



C



D



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

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 1
2017

BOOKLET B

Date : 8 May 2017

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary 5 ( )

Marks Scored:

Booklet A:		56
Booklet B :		44
Total :		100

Any query on marks awarded should be raised by 18 May 2017. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

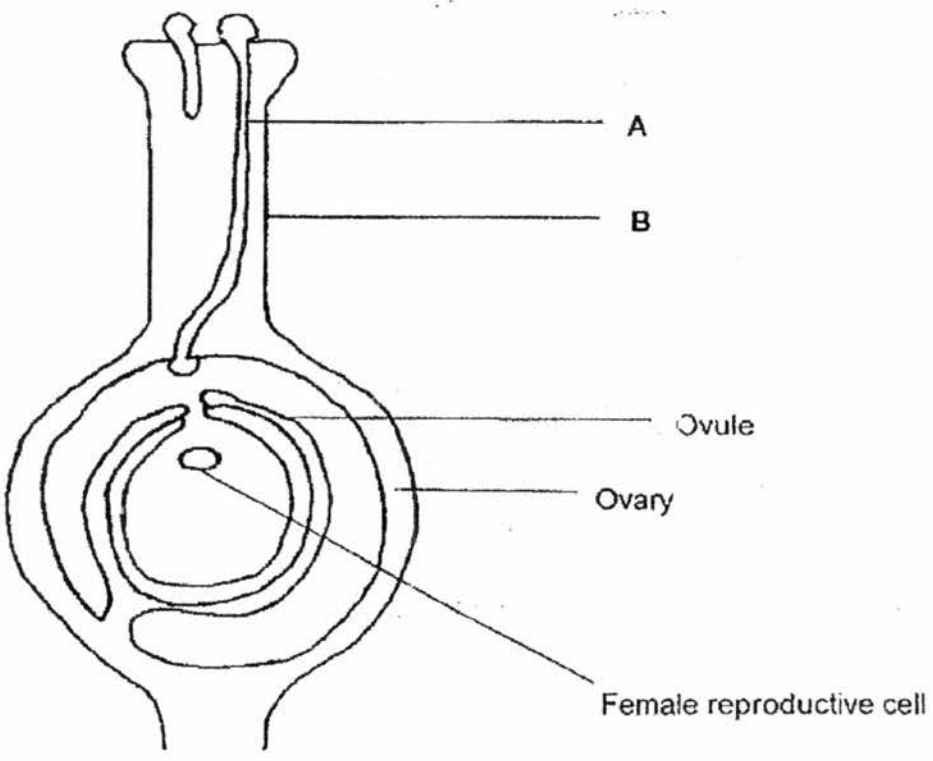
Parent's signature: .....

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet B consists of 16 printed pages including this cover page.

Section B (44 marks)
Write your answers to questions 29 to 41 in the spaces provided.

29. The diagram shows a section through the female parts of a flower.



(a) Name parts A and B. [1]

A: _____ B: _____

(b) Describe what happens during fertilisation. [1]

_____

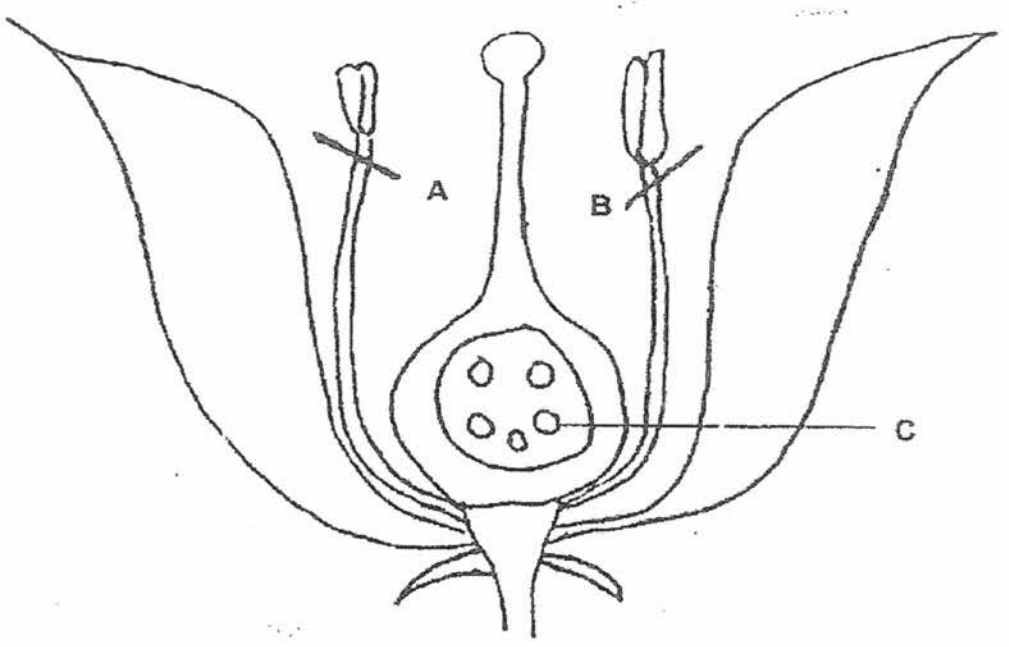
_____

(c) Based on the diagram above, explain how part A enables fertilisation to take place. [2]

_____

_____

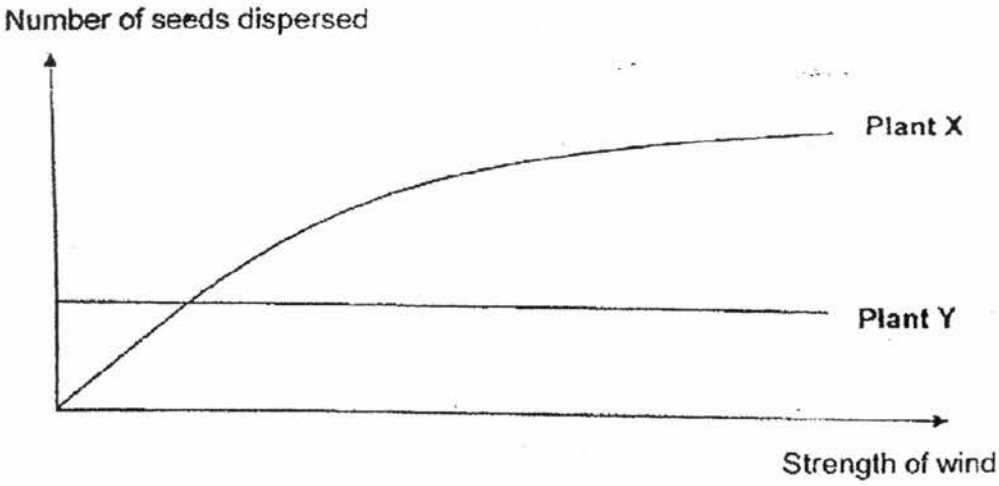
30. Jasmine cut away two parts, A and B, of a flower shown below and observed it for a week. At the end of the week, she was surprised to see a fruit developing from the flower.



(a) If no pollination had taken place before parts A and B were cut, explain why a fruit could develop from the flower? [2]

(b) What would happen to part C when the fruit developed from the flower? [1]

31. The graph below shows the number of seeds of Plant X and Y dispersed by wind.



(a) Give an example of Plant X. [1]

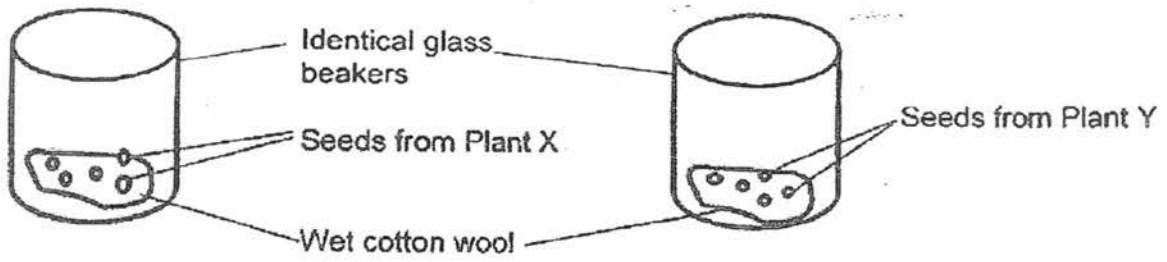
_____

(b) Based on the graph above, give the reason why Plant Y is not likely to be dispersed by wind. [1]

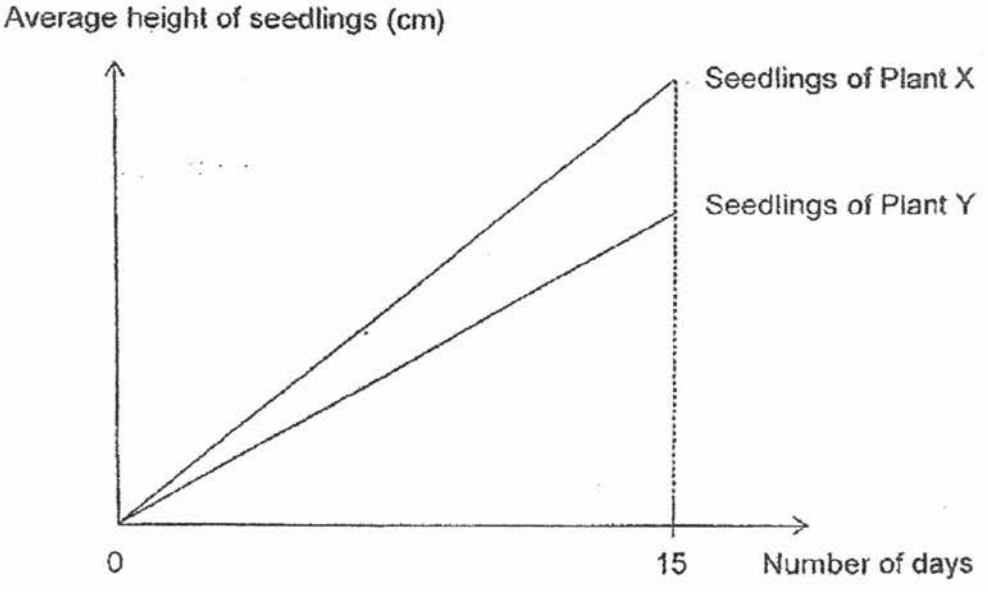
_____

_____

32. Alice set up an experiment to compare the growth of seeds from plants X and Y. The set-ups were put in her room by the window for 15 days as shown below.



She then recorded the changes in the average height of the seedlings over seven days in the graph shown below.

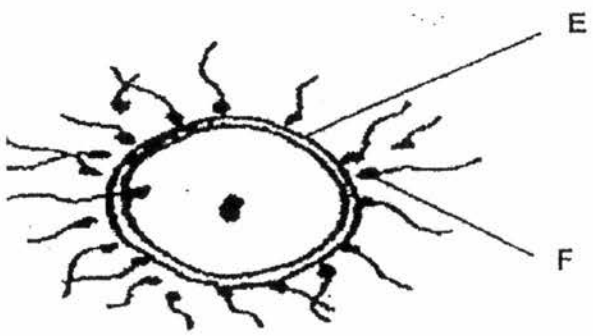


(a) Compare the changes in the average height of both seedlings over 15 days. [1]

(b) After 15 days, Alice went on a trip and left the seedlings unattended. When she came back 3 days later, she observed that all the seedlings in both beakers died. Suggest a possible reason why they died. [2]

(c) Identify another variable that must be kept constant in order to conduct a fair experiment. [1]

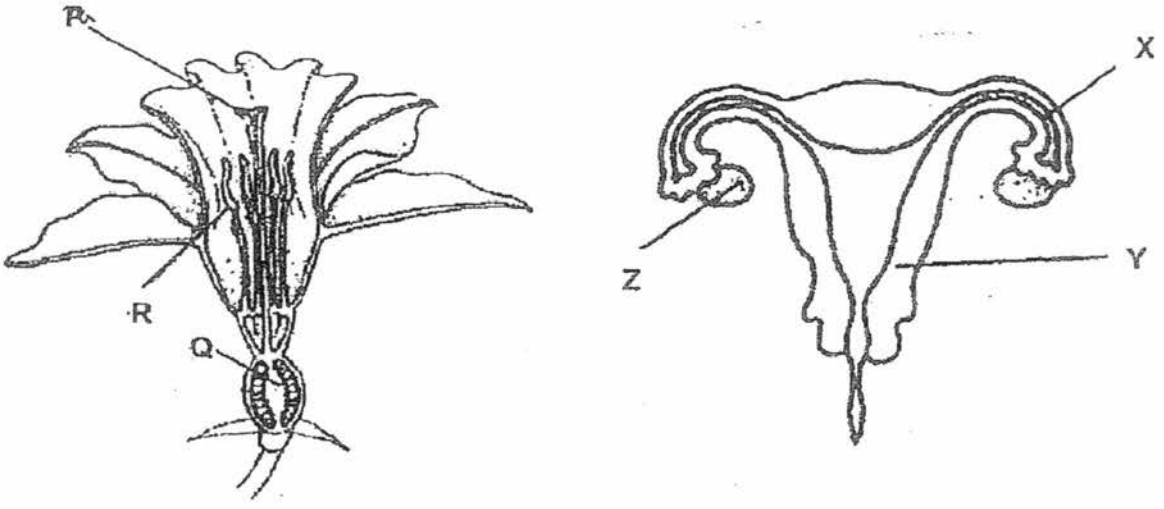
33. The diagram below represents the human fertilisation process. Cells E and F are necessary for fertilisation to take place.



(a) Identify cells E and F. [2]

E : _____ F : _____

The diagram below shows the parts of the reproductive system of a plant and human.



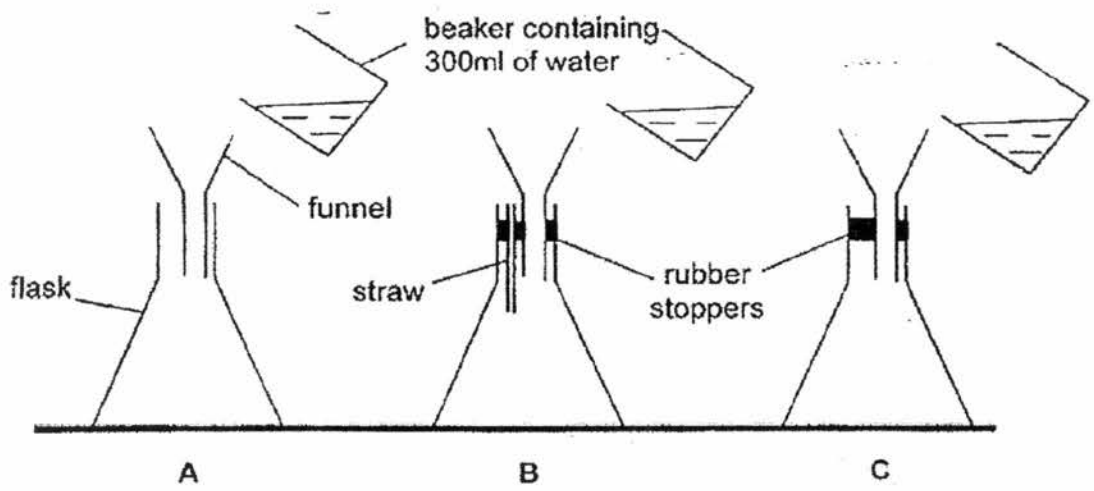
(b) Which part of the flower, R, P or Q, performs the same function as part Z? [1]

_____

(c) Identify the parts where fertilisation will take place in the plant and female human reproductive systems respectively. Write the letters, P, Q, R, X, Y or Z, that represent the parts in the boxes below. [2]

		Letter that represents the part
(i)	Reproductive system of a plant	
(ii)	Reproductive system of a human	

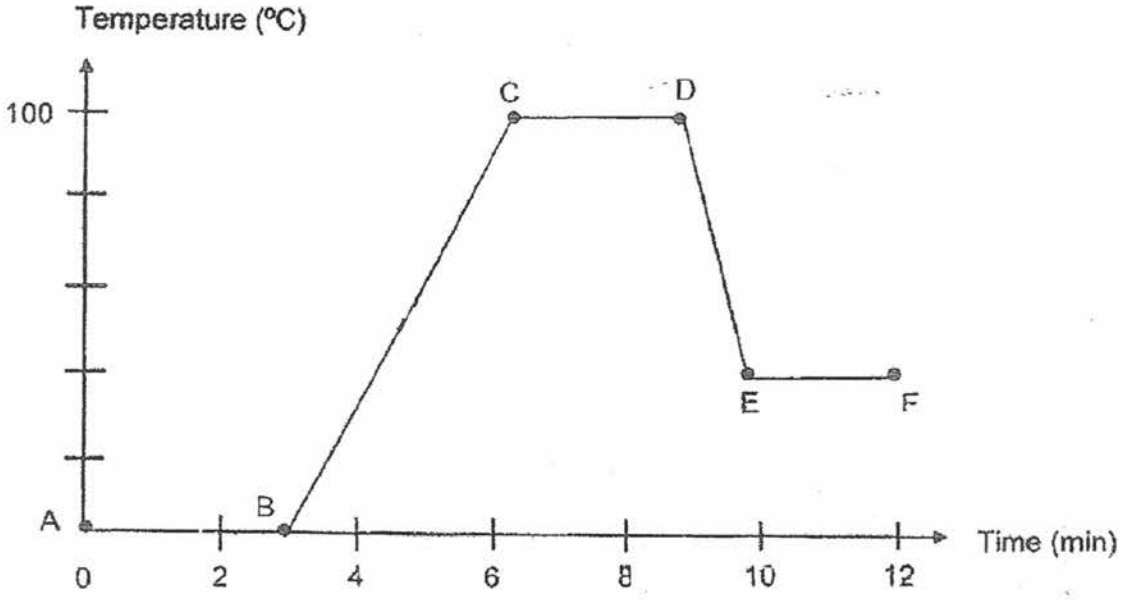
34. Bogum prepared 3 set-ups as shown below. He then poured 300ml of water into each flask.



(a) Based on the diagram above, which flask would collect the **most** amount of water in the shortest time? Explain your answer. [2]

(b) This experiment shows that liquids occupy space. State another property of liquids that could be observed based on the experiment above. [1]

35. Junjie heated a beaker of ice and recorded the change in its temperature over a period of time in the graph below.



(a) Which part of the graph shows a change in the state of water from solid to liquid? [1]

_____

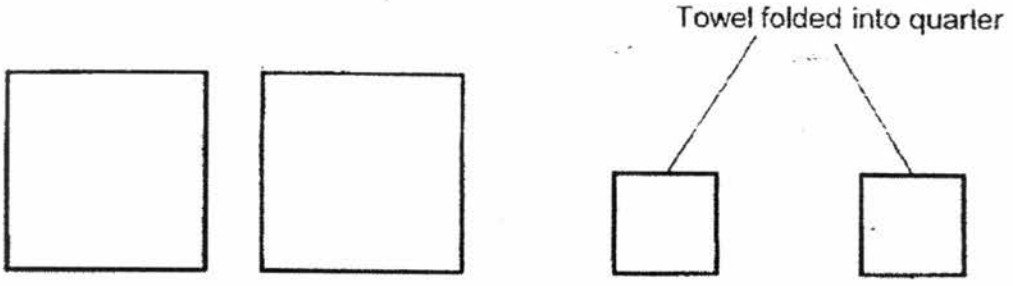
(b) Why does the temperature remain constant for the period E to F? [1]

_____

(c) What is the process that takes place from the period C to D? [1]

_____

36. Four identical towels, W, X, Y and Z, each containing the same amount of water, were left to dry under different conditions as shown below.



Condition 1
- Hot
- Windy

Condition 2
- Hot
- No wind

Condition 3
- Shady
- No wind

Condition 4
- Shady
- Windy

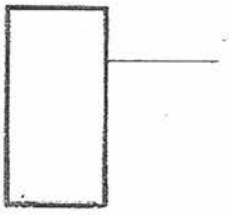
En Xi recorded the mass of each towel at the start of the experiment and again after 2 hours. The results are shown in the table below.

Towel	Mass of towel at the start of the experiment (g)	Mass of towel after 2h (g)
W	300	200
X	300	120
Y	300	80
Z	300	160

(a) Based on the results in the table above, match the towels (W, X, Y and Z) to the correct conditions that they were left out to dry. [2]

Conditions	Towels
1	
2	
3	
4	

Another identical towel containing the same amount of water was folded into half and left to dry under a windy and shady location.



Condition
- Shady
- Windy

(b) WhatLis the likely mass of the above towel after 2 hours? [1]

_____

(c) En Xi wanted to hang her wet clothes out to dry. **Other than hanging the clothes out in the sun**, suggest another 2 methods that would enable her wet clothes to dry the fastest. [2]

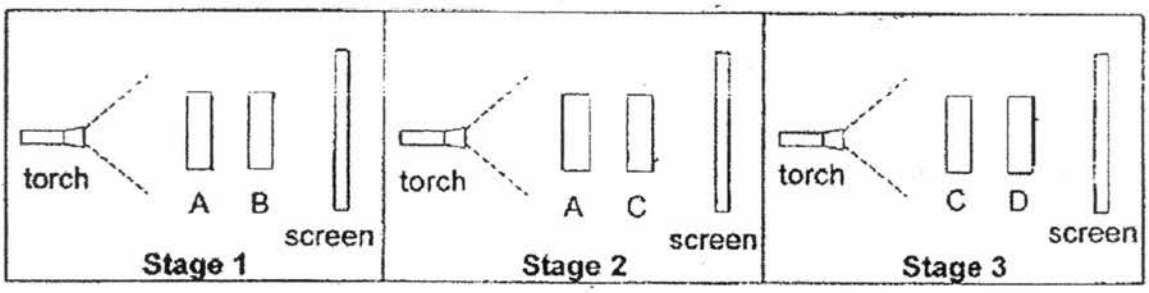
(i) _____

_____

(ii) _____

_____

37. Joyce set up an experiment below. She carried out the experiment in three stages to find out how different types of materials allow different amounts of light to pass through them. Objects A, B, C and D are of the same shape and size but are made of different types of materials.



Joyce recorded her results in the table below.

Stage	Objects	Observation
1	A and B	There was a very faint shadow formed on the screen.
2	A and C	A dark shadow was seen on the screen.
3	C and D	A dark shadow was seen on the screen.

(a) Put a tick (✓) in the appropriate boxes to indicate what conclusions she could draw based on her observations. [2]

Object	Allows most light to pass through	Does not allow light to pass through	Not possible to tell
A			
B			
C			
D			

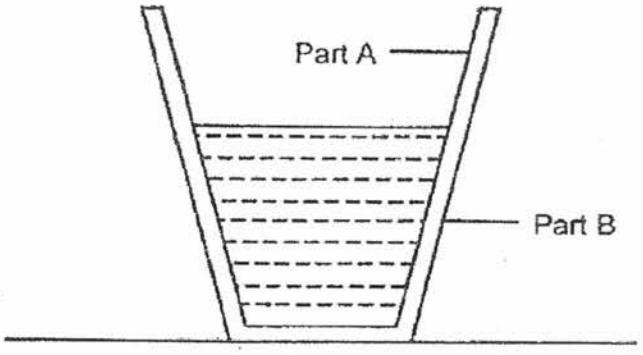
Joyce repeated the experiment with only Object E placed between the torch and the screen. She observed that a dark shadow was formed on the screen.

(b) Using the properties of light, explain how the shadow was formed. [1]

38. Keane had a glass bottle with a metal cap. He observed that it was easier to remove the metal cap after it was dipped into hot water for 5 minutes.

(a) Give a reason for his observation. [1]

Keane filled a glass cup with hot water quickly as shown in the diagram below.



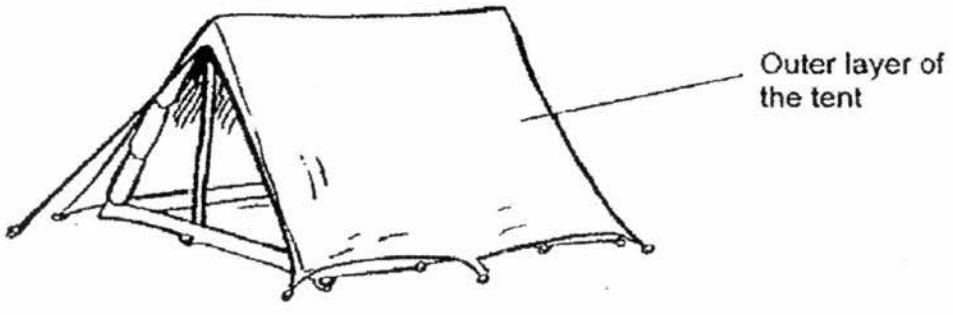
He observed that the glass cup cracked immediately.

(b) Explain why the glass cup cracked. [1]

(c) Suggest one way to prevent the glass cup from cracking when we pour the same amount of hot water into it. [1]

39. The table below shows the properties of materials, E, F, G and H, that are used to make a tent as shown in the table below.

Material	Strong	Waterproof
E	Yes	No
F	Yes	Yes
G	No	Yes
H	No	No



(a) Which material, E, F, G or H, is the most suitable for making the outer layer of the tent? Give 2 reasons for your answer. [2]

Material : _____

Reasons :

(i) _____

_____

(ii) _____

_____

(b) Name another property that the outer layer should possess in order to be used for outdoor camping. [1]

_____

40. Cindy had a box of four rods, A, B, C and D, made of different materials. She put a magnet into the box to find out which rods were made of magnetic materials.

Rod	Material
A	Aluminium
B	Iron
C	Steel
D	Copper

(a) Complete the table below by placing the four materials, A, B, C and D, under the correct headings. [1]

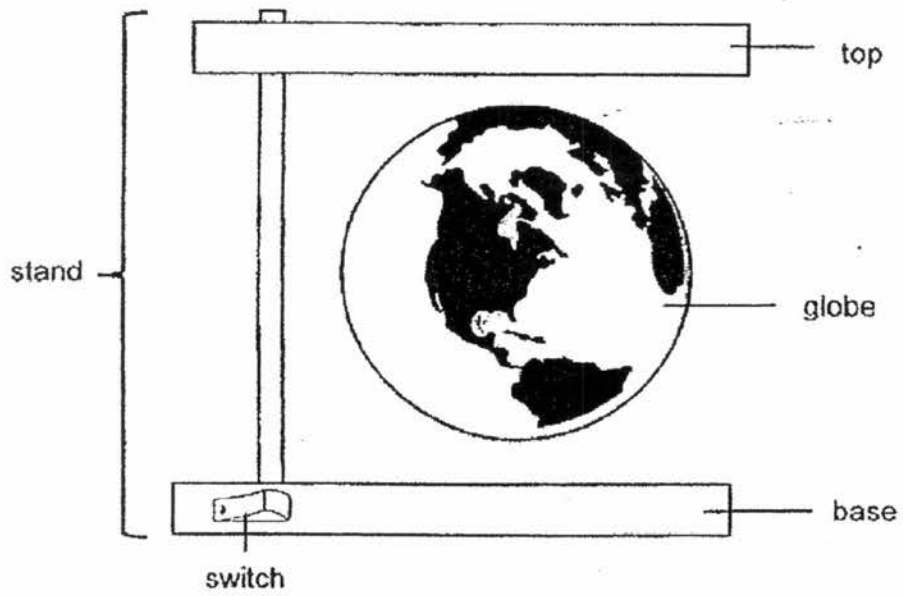
Attracted to the magnet	Not attracted to the magnet

(b) She was given rod E which was made of a magnetic material. Describe how she could use her bar magnet to turn rod E into a magnet. [1]

_____

_____

41. Chong Boon bought a "floating" globe toy as shown below.



(a) He observed that the globe was able to float. Using the concept of magnets, describe how the globe was able to float in the · [2]

Chong Boon placed the stand on the table which had some steel paper clips scattered around. Once he turned on the switch, he realised that some of the steel paper clips were attracted to the base of the stand.

(b) Suggest why the steel paper clips were attracted to the base of the stand when the switch was turned on. [2]

End of paper

SCHOOL : NANYANG PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : SA1

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	3	1	1	1	1	2	4	2	4

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	2	4	2	3	1	3	3	2	3

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
2	3	4	4	3	2	1	2

SECTION B

Q29)	(a) A:Pollen tube B:Style (b) Male reproductive cell will enter from the stigma to the ovary to fuse with the female reproductive cell. (c) It allows the male reproductive cell to reach the ovary to fuse with the female reproductive cell.
Q30)	(a) As the stigma is still intact, pollen grains from a flower of the same species can still pollinate the flower and fertilisation can hence take place.

	(b) It will turn into seeds of the fruit.
Q31)	(a) Shorea / Angsana /Dandelion (b) As the strength of the wind increased, the number of seeds dispersed remains the same.
Q32)	(a) Seedlings of Plant X grew taller than seedlings of Plant Y. (b) The water in the cotton wool had been absorbed by the plant so it has not enough water to survive. (c) The number of seeds planted.
Q33)	(a) E: egg F: sperm (b) Q (c) (i) Q (ii) X
Q34)	(a) A. The most amount of air in A has escaped from the flask via the two tubes compared to B and C, hence water flows into the flask to occupy the space previously occupied by the water displacing the air. (b) Water has no definite shape.
Q35)	(a) A to B (b) It has reached room temperature. (c) Boiling
Q36)	(a) Y, X, W, Z (b) 140g (c) (i) Use a hair dryer to dry it (ii) Put it in a dryer
Q37)	(a) A → Allows most light to pass through B → Allows most light to pass through C → Does not allow light to pass through D → Not possible to tell (b) Light travels in a straight line so when it is blocked, it forms a shadow.
Q38)	(a) The cap gained heat and expanded. (b) A expanded faster than B. (c) Pour the hot water into the cup slowly.
Q39)	(a) Material: F (i) It needs to be strong to block fallen branches from hitting the people inside the tent. (ii) It needs to be waterproof so that the camper inside the tent will not get

	wet. (b) It must be flexible.
Q40)	(a) B, C → Attracted to the magnet A, D → Not attracted to the magnet (b) Stroke rod E at least 20 times with a bar magnet in the same direction with the same pole of the magnet each time.
Q41)	(a) The globe and the stand had magnets that the like poles are facing each other to repel. (b) When he turned on the switch, the base of the stand became an electromagnet. Hence, the base attracted the paper clips which were made of magnetic material.