PRIMARY 5 MID-YEAR EXAMINATION 2016

Name : _____ ( )

Class : Primary 5 ( )

Parent's Signature : _____

Date: 12 May 2016

Time: 1 hour 45 minutes

Marks: _____ / 56

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.

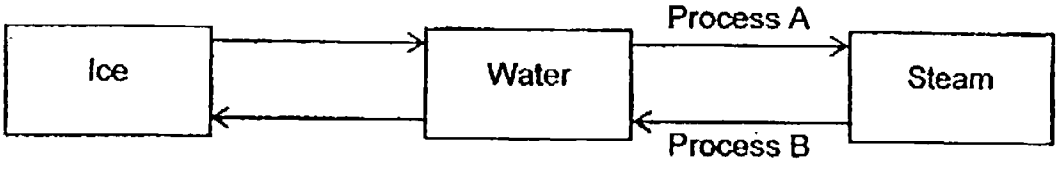
Follow all instructions carefully.

Answer all questions.

Section A (28 × 2 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.

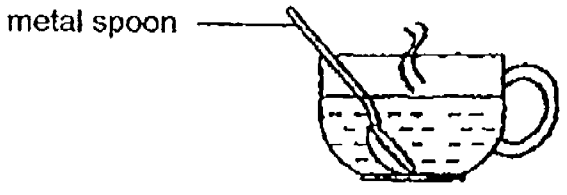
1. The diagram below represents the change of state of water.



Which one of the following are represented by Process A and Process B?

	Process A	Process B
(1)	Boiling	Condensation
(2)	Evaporation	Melting
(3)	Condensation	Freezing
(4)	Boiling	Evaporation

2. Emily placed a metal spoon that was left on a table into a cup of hot coffee.

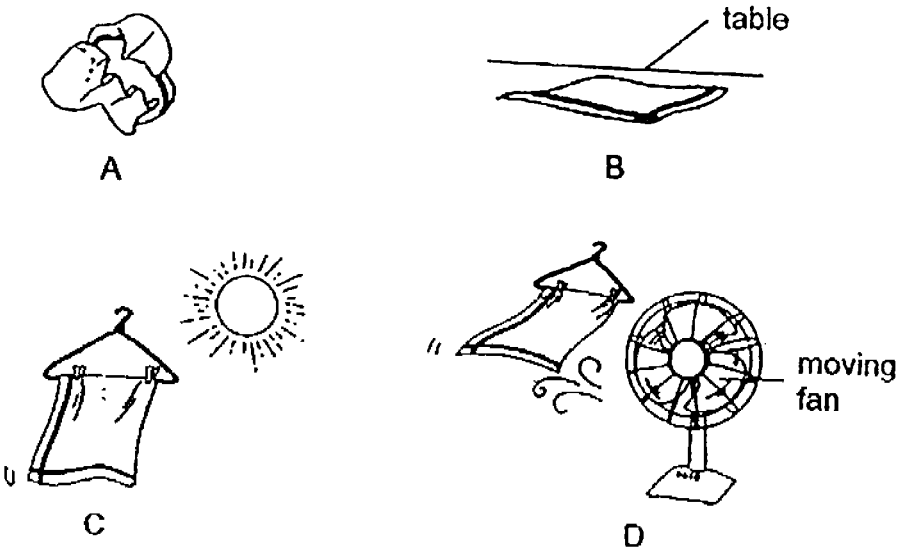


a cup of hot coffee

Which one of the following correctly describes what will happen next?

(1) The cup loses heat to the hot coffee.
(2) The spoon loses heat to the hot coffee.
(3) The hot coffee gains heat from the spoon.
(4) The spoon gains heat from the hot coffee.

3. Idris conducted an experiment using four identical cloths, A, B, C and D. He poured an equal amount of water onto each cloth and exposed them to different conditions as shown below.



Which cloth, A, B, C or D, will take the longest time to dry?

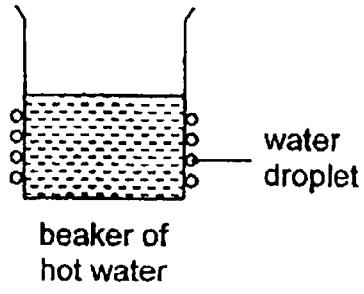
(1) A
(2) B
(3) C
(4) D

4. Which one of the following is an example of recycling water?

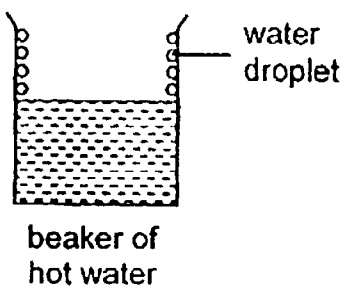
(1) Turn waste water into drinkable water.
(2) Use water from washing beans to water plants.
(3) Wash a car with a pail of water instead of a hose.
(4) Wash dishes in a tub of water instead of under a running tap.

5. Which one of the following correctly shows the condensation of water vapour in a room at 28°C?

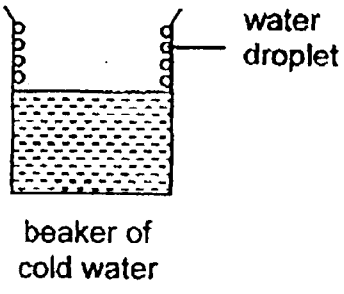
(1)



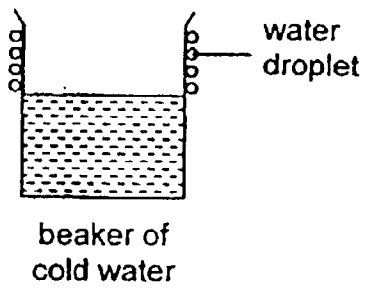
(2)



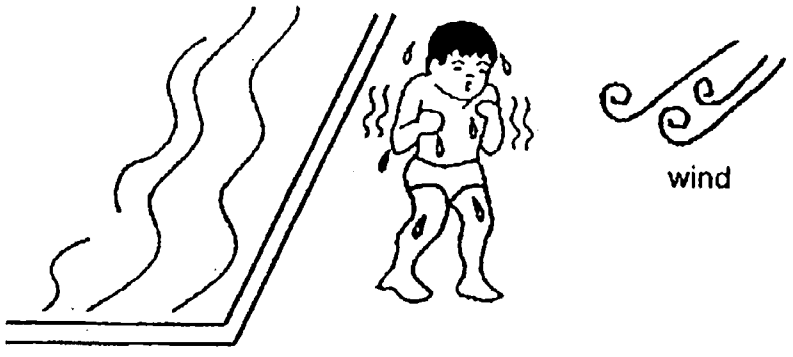
(3)



(4)



6. Ee Heng stepped out of a swimming pool. He was wet and he felt cold.

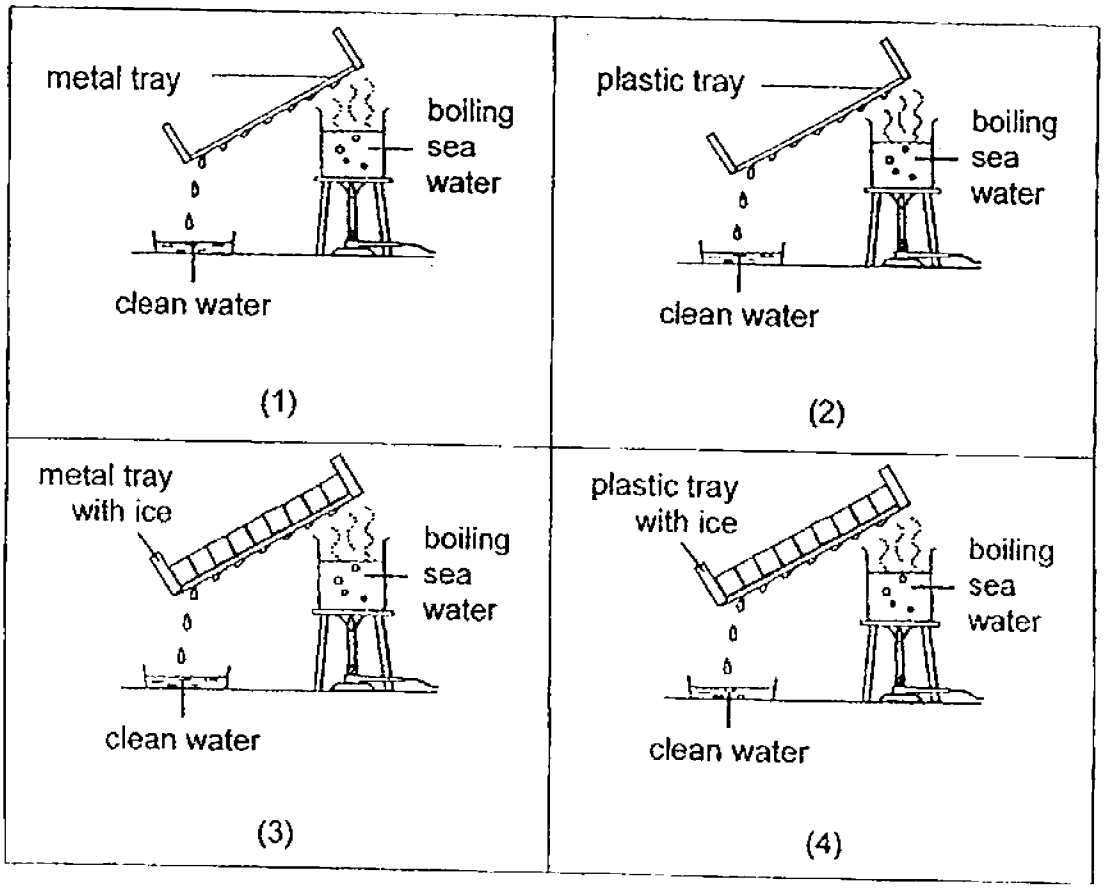


Which of the following correctly explain(s) why Ee Heng felt cold?

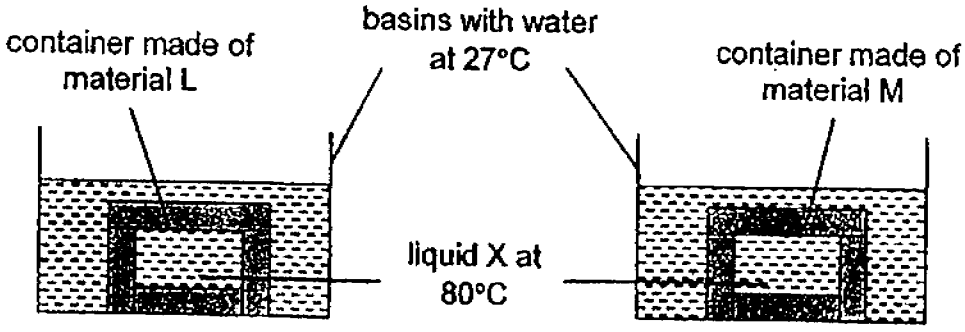
A: The water on his body evaporated.
B: The water vapour in the air condensed on his body.
C: The wind increased the rate of evaporation of water.

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

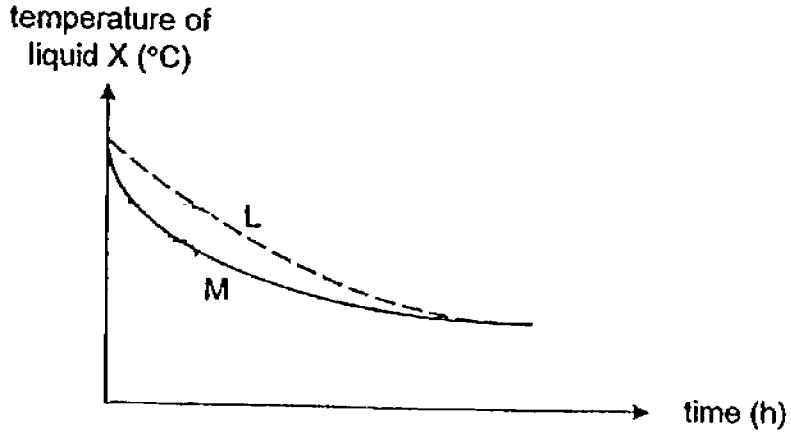
7. Study the diagrams below. Which one of the following set-ups should be used to collect the most amount of clean water within the shortest period of time?



8. Betty conducted an experiment using two identical basins of water at 27°C as shown below. The containers in the basins are identical but made of different materials, L and M. Containers L and M contain liquid X.



She measured the temperature of liquid X in the two containers over a period of time. Her results are shown in the graph below.



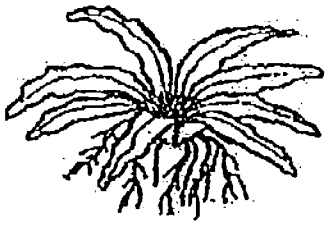
Betty planned to go for a picnic and she wanted to bring a large bottle of hot tea and pieces of cold sandwich. If she wants to use either of the two materials, L and/ or M, for the containers to keep her tea hot and her sandwich cold for a longer period of time. Which material(s) should she choose for each container?

	Material for container carrying	
	hot tea	**cold sandwich**
(1)	L	L
(2)	L	M
(3)	M	L
(4)	M	M

9. Which one of the following organisms reproduces by seeds?

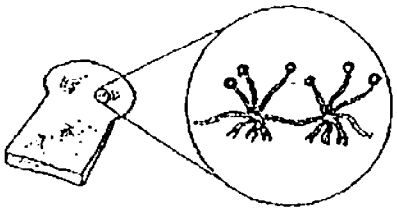
(1) Balsam

(2) Bird's nest fern

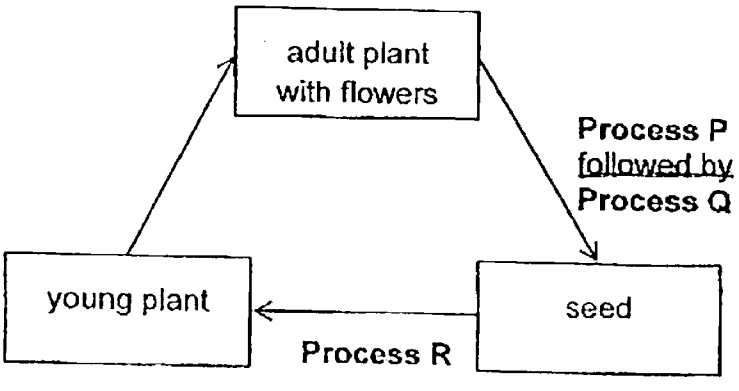


(3) Shiitake mushroom

(4) Bread mould



10. A flowering plant undergoes Process P, Process Q and Process R in its life cycle as shown below.

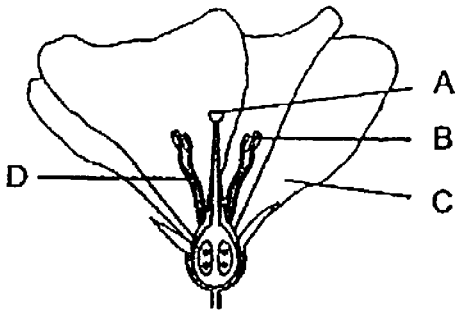


Which of the following correctly represents Process P, Process Q and Process R?

	Process P	Process Q	Process R
(1)	fertilisation	pollination	germination
(2)	germination	pollination	fertilisation
(3)	fertilisation	germination	pollination
(4)	pollination	fertilisation	germination

11. Fatimah conducted an experiment to find out the part of a flower that is needed to form a fruit. She removed 3 out of 4 parts of Flower P as shown below. She then dusted some pollen grains from another flower of the same plant to the remaining part of Flower P.

After some time, Flower P turned into a fruit.

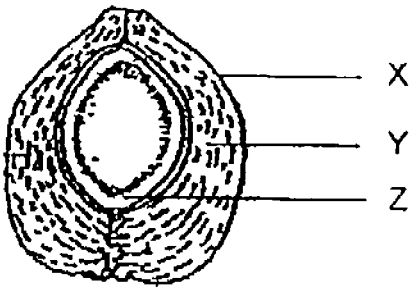


Flower P

Which one of the above parts, A, B, C or D, of Flower P was not removed?

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

12. The diagram below shows the cross-section of a coconut fruit and its parts, X, Y and Z.

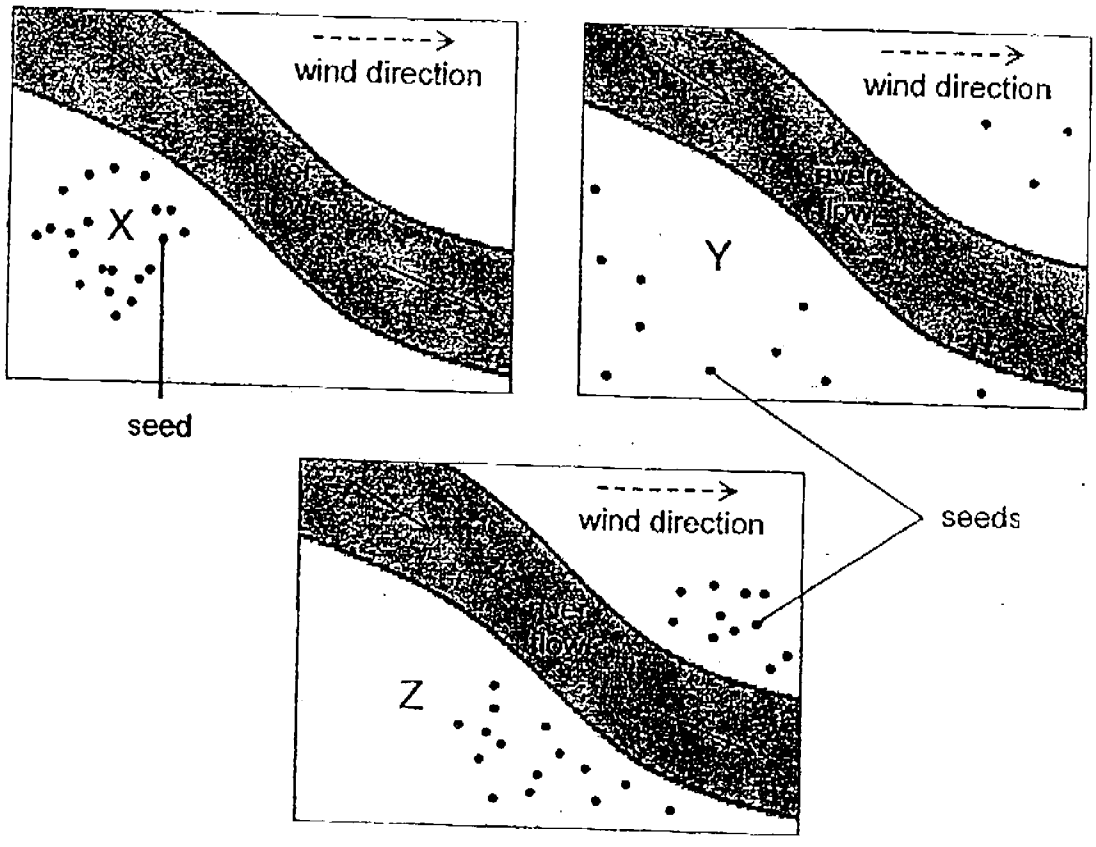


Which of the following characteristic(s) help(s) the coconut to be dispersed by water?

A: Y is fibrous and it has air spaces.
B: X is brown when ripe.
C: Z is sweet and juicy.

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

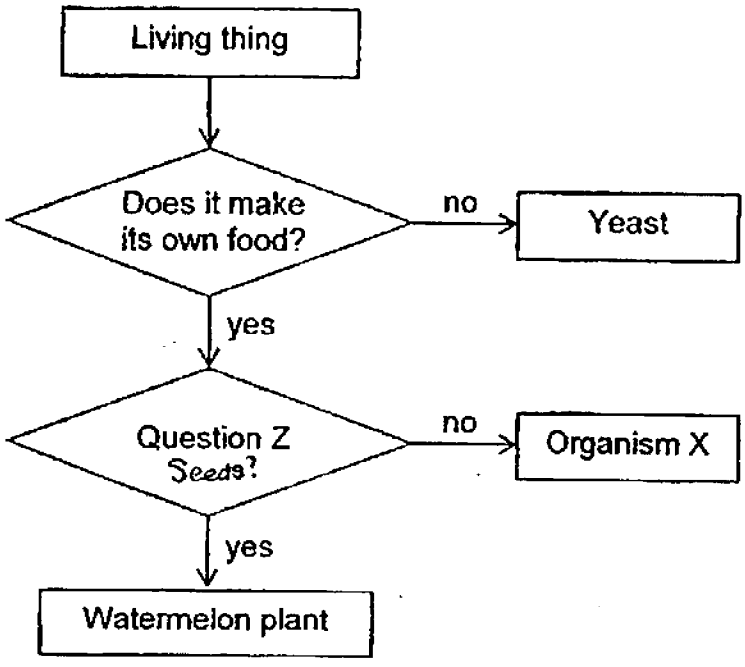
13. Study the seed dispersal by three different parent plants, X, Y and Z.



How are the seeds of X, Y and Z dispersed?

	X	Y	Z
(1)	By animals	By explosive action	By wind
(2)	By explosive action	By animals	By wind
(3)	By animals	By wind	By explosive action
(4)	By wind	By animals	By explosive action

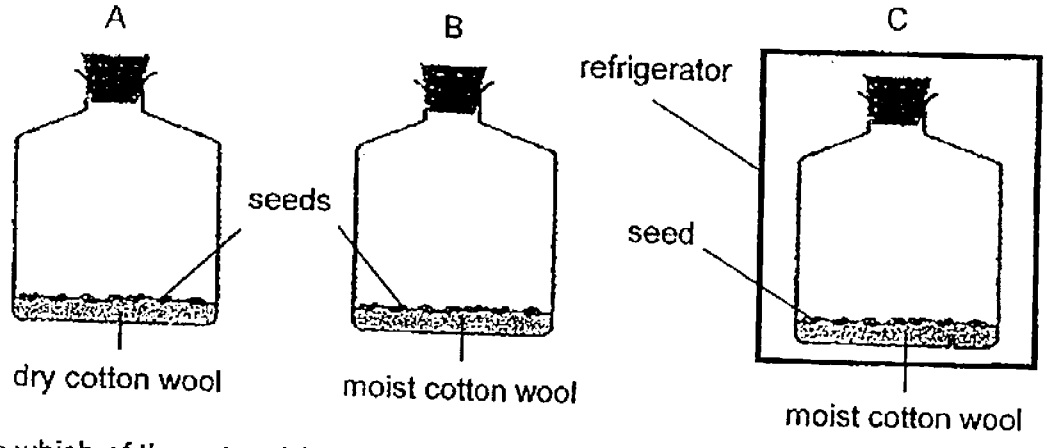
14. Study the flow chart below.



Which of the following represents Question Z and Organism X?

	Question Z	Organism X
(1)	Are the seeds dispersed by water?	Angsana
(2)	Are the seeds dispersed by animals?	Love grass
(3)	Does it produce seeds?	Staghorn fern
(4)	Does it produce spores?	Sunflower plant

15. In a classroom, seeds were placed in three identical bottles as shown in set-ups A, B and C below.

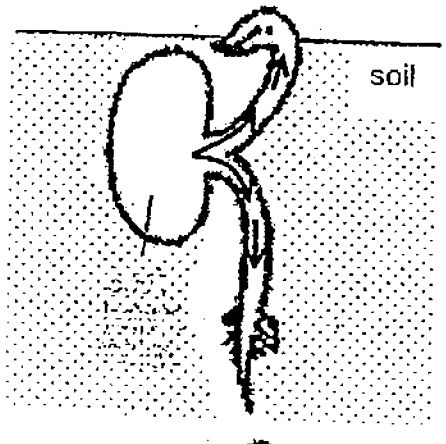


In which of the set-up(s) would the seeds most likely germinate?

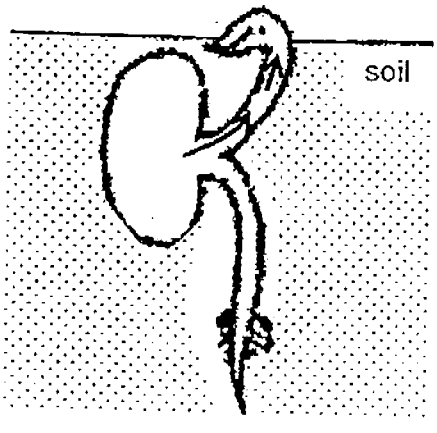
(1) A only
(2) B only
(3) A and C only
(4) B and C only

16. Which one of the following diagrams shows the correct movement of food in a seed that is germinating?

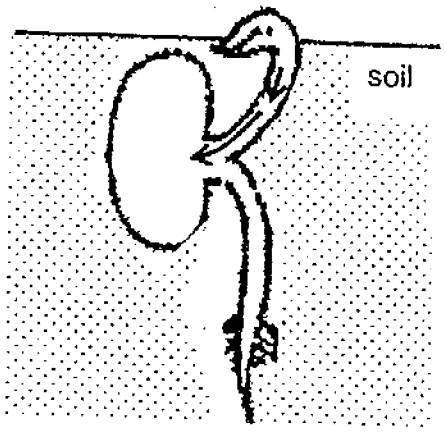
(1)



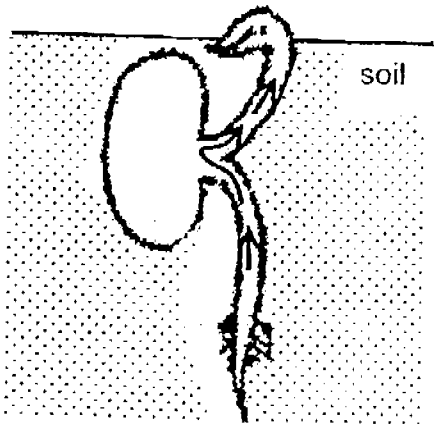
(2)



(3)



(4)



17. The diagrams below show the reproductive systems of a human and a plant.

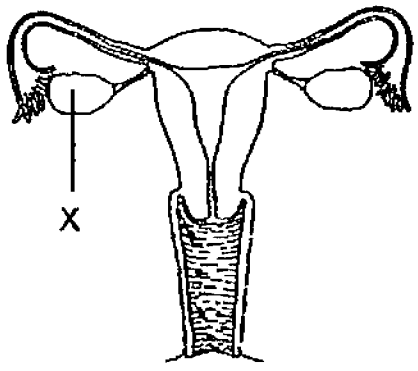


Diagram 1

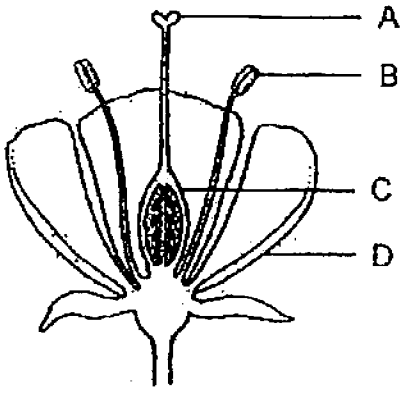


Diagram 2

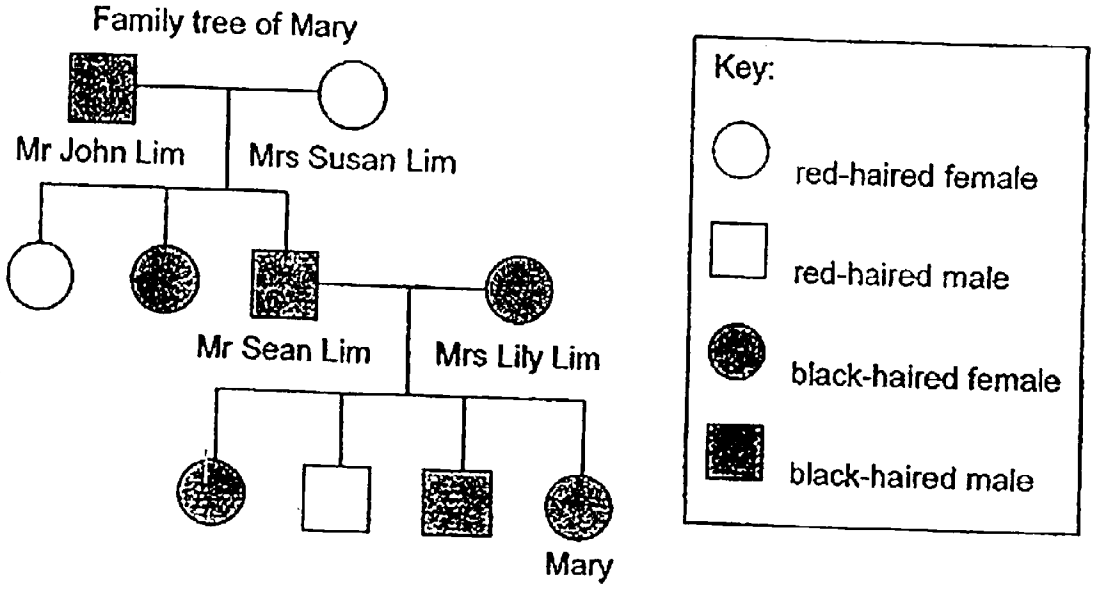
Which part, A, B, C or D, in diagram 2 has a similar function as part X in diagram 1?

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

18. Which one of the following is a correct statement in the sexual reproduction of humans?

(1) The sperm is produced in the penis.
(2) The fertilised egg develops in the stomach.
(3) The unfertilised egg develops in the womb.
(4) The developing baby obtains digested food from the mother.

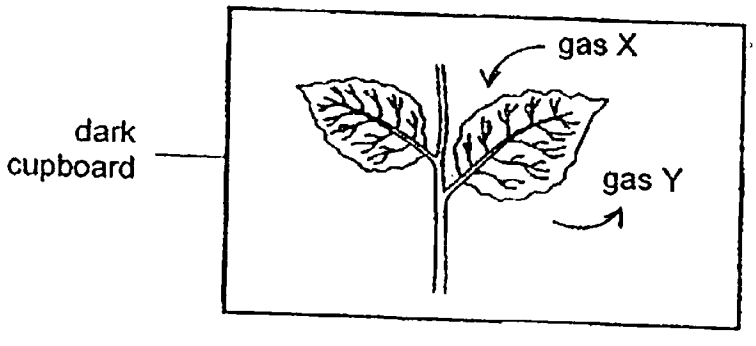
19. Hair colour is a characteristic that is passed on from parents to their young. The family tree of Mary is shown below.



Which one of the following statements about Mary's family is correct?

(1) Mary inherited her hair colour from Mrs Susan Lim.
(2) Mary's sister inherited her hair colour from her parents.
(3) Mary's father has the same hair colour as his two sisters.
(4) Mary's mother has passed on her hair colour to her sons.

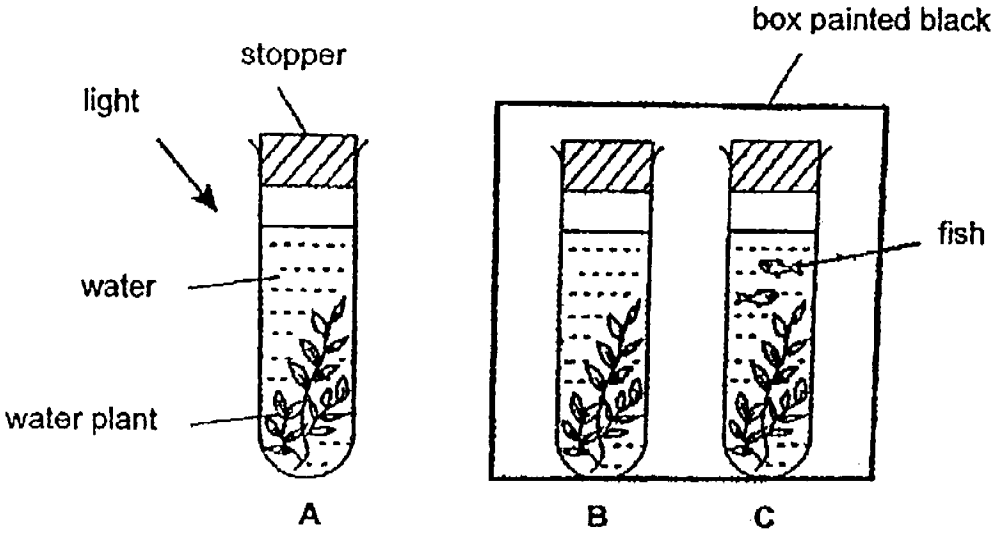
20. The diagram below shows the gaseous exchange taking place in the leaves of a plant placed inside a dark cupboard.



Which of the following represents gas X and gas Y?

	Gas X	Gas Y
(1)	Carbon dioxide	Oxygen
(2)	Oxygen	Carbon dioxide
(3)	Carbon dioxide	Water vapour
(4)	Water vapour	Oxygen

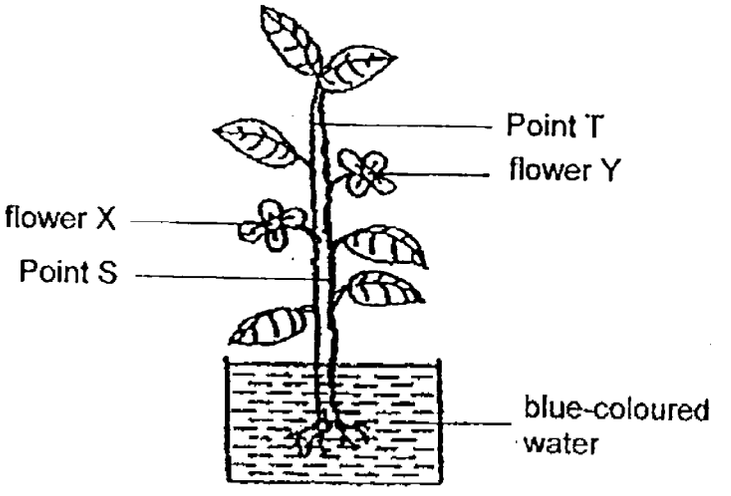
21. Keming conducted an experiment in a bright room with the set-ups, A, B and C, as shown below. The amount of carbon dioxide in the water in each of the 3 set-ups was at 40 units at the start of the experiment.



Which of the following is the most possible amount of carbon dioxide found in the water in each set-up after a few hours?

	Amount of carbon dioxide in set-up (units)		
	A	B	C
(1)	70	50	30
(2)	30	70	50
(3)	50	70	30
(4)	30	50	70

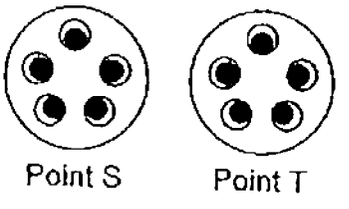
22. Wei Ming placed a plant with two white flowers, X and Y, into a beaker of blue-coloured water. After three hours, flower X turned blue while flower Y remained white.



He then made two cross-section cuts across the stem at Point S and Point T as shown in the diagram above.

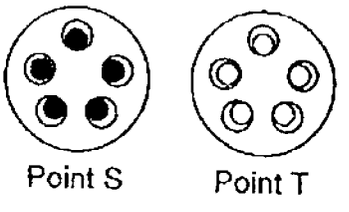
Which of the following diagrams shows what Wei Ming would observe when he looked at the cross-sections of Point S and Point T respectively?

(1)

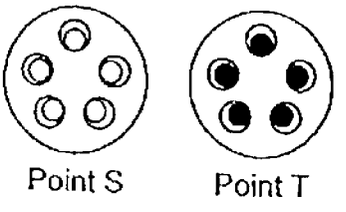


Key: coloured
uncoloured

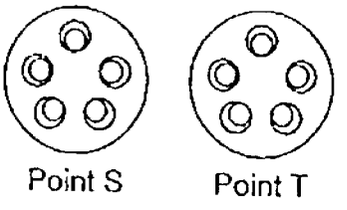
(2)



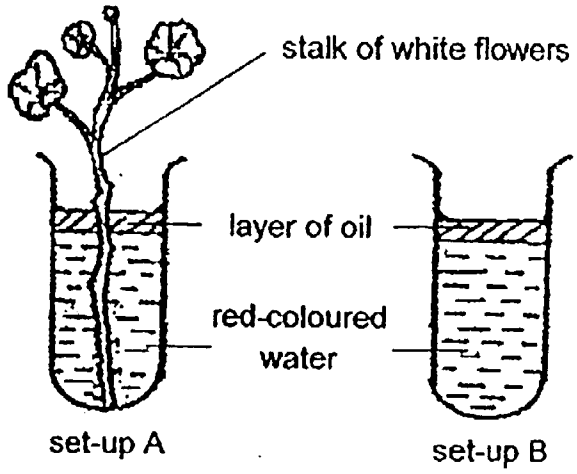
(3)



(4)



23. Devi set up an experiment as shown below to find out how water is transported in a plant. Set-ups A and B contained the same amount of red-coloured water and the same amount of oil.



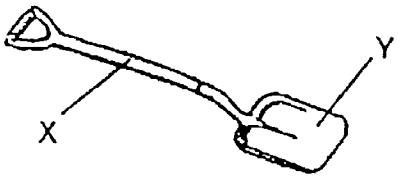
After some time, Devi recorded the amount of water left in each set-up in the table below.

Set-up	Amount of water (ml)	
	Start of experiment	End of experiment
A	100	80
B	100	100

Based on the results in the table, what can Devi conclude?

(1) Roots absorb water.
(2) The flower had taken in some water to make food.
(3) The stalk of white flowers had absorbed some of the water.
(4) The stalk of white flowers can absorb red-coloured water but not clear water.

24. The shovel shown below is used for digging, lifting and throwing of stones and rocks in a construction site.



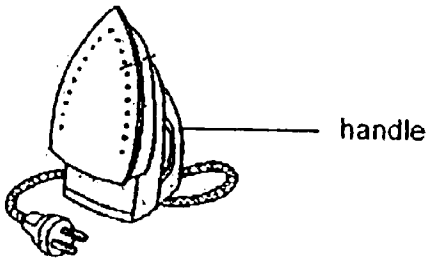
What material(s) is/ are X and Y likely to be made of?

	X	Y
(1)	wood	metal
(2)	glass	paper
(3)	metal	rubber
(4)	wood	plastic

25. The properties of four different materials, P, Q, R and S, are shown in the table below.

Material	Property of material	
	Can bend easily	Can conduct heat easily
P	yes	yes
Q	yes	no
R	no	yes
S	no	no

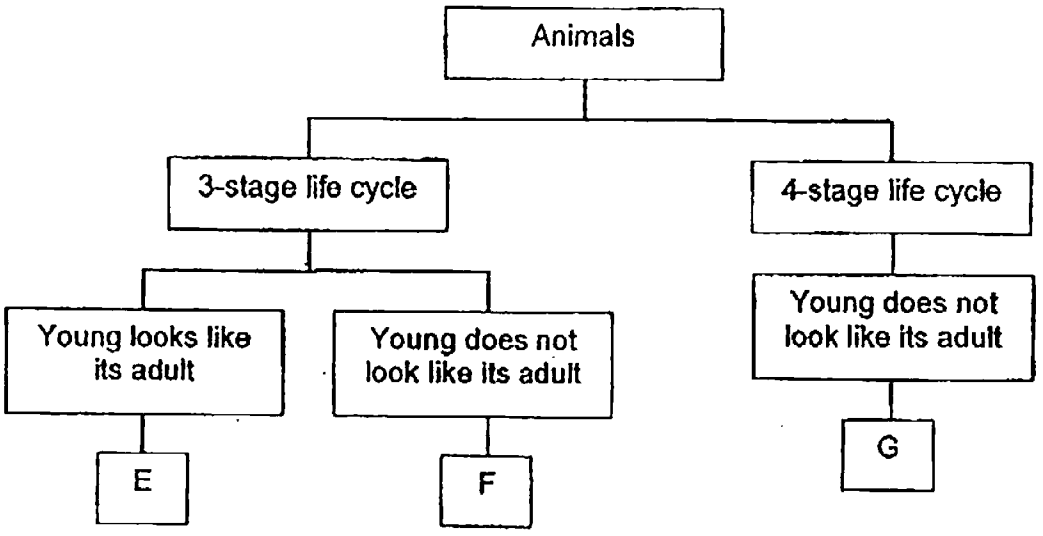
The diagram below shows an iron for the ironing of clothes.



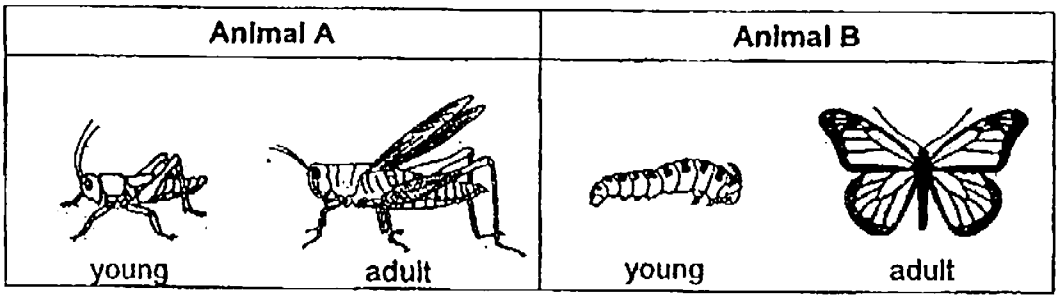
Which material, P, Q, R or S, is most suitable for making the handle of the iron?

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

26. Study the classification chart below.



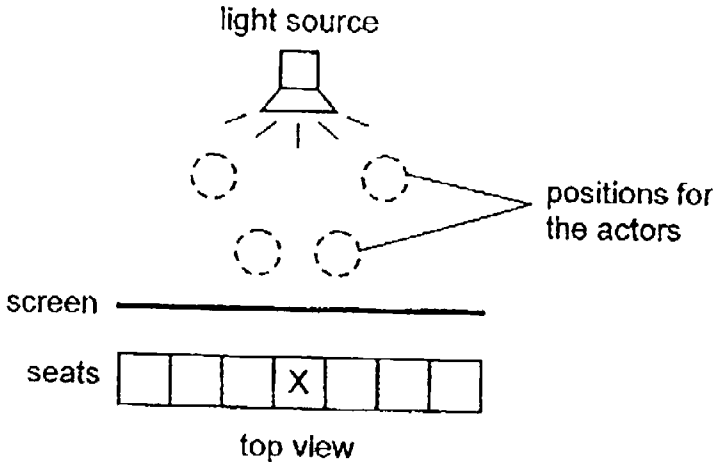
The diagram below shows Animal A and Animal B.



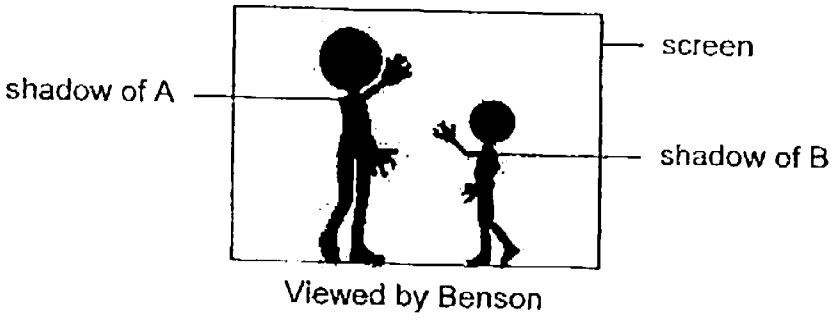
Which group, E, F or G, do Animal A and Animal B belong to?

	Animal A	Animal B
(1)	E	F
(2)	F	G
(3)	E	G
(4)	G	F

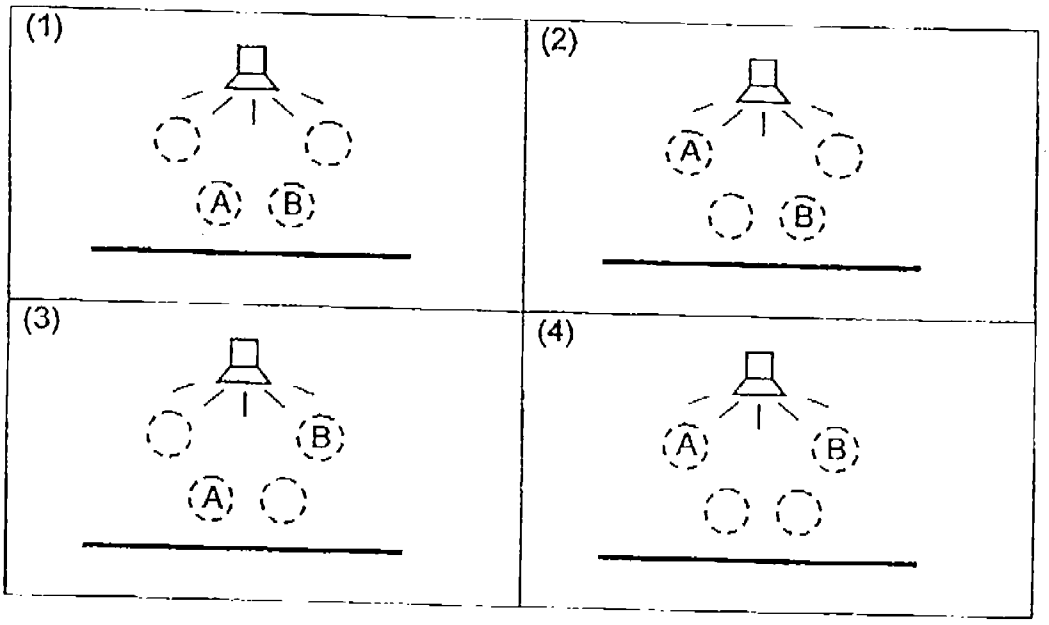
27. Benson was watching a shadow performance. The top view of the layout of the theatre is shown below.



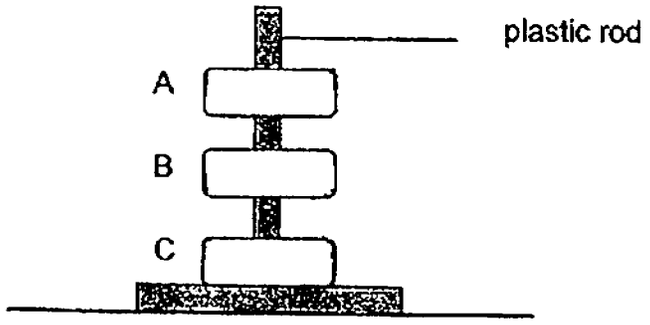
On the stage, there were two actors, A and B, who are of the same height. Benson was seated at X and he saw the shadows of the actors on the screen as shown below.



Which one of the following correctly shows the positions of actors A and B?



28. Janice had 3 rings, A, B and C, which are made of magnetic materials. She inserted them through a smooth plastic rod and pushed them all the way to the base. However, when she released them, the rings sprang up and seemed to "float" as shown below.



Based on the above observations, which one of the following statements is true?

(1) B is a magnet.
(2) C is a plastic ring.
(3) The unlike poles of B and C are facing each other.
(4) A is made of a magnetic material but it is not a magnet.

PRIMARY 5 MID-YEAR EXAMINATION 2016

Name : _____ _____ _____ ( )

Class : Primary 5 ( )

Parent's Signature : _____

Date: 12 May 2016

Duration: 1 hour 45 minutes

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.

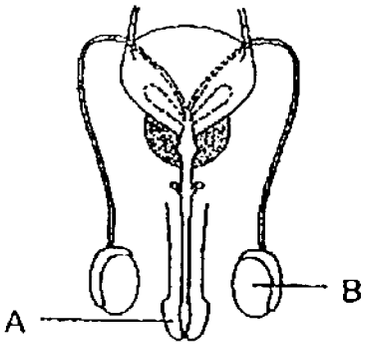
Answer all questions.

Booklet A	56
Booklet B	44
Total	100

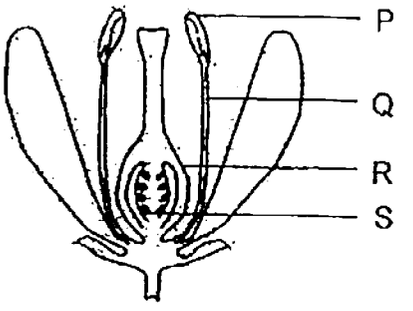
Section B (44 marks)

For questions 29 to 41, write your answers in the spaces provided.

29. The diagrams below show the reproductive parts of a human and a plant.



Reproductive system of a human



Reproductive system of a plant

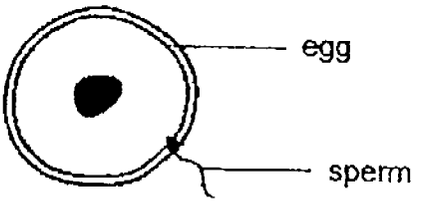
(a) Name the parts A and B. [1]

A: _____ B: _____

(b) Which part, P, Q, R or S, in the reproductive system of a plant has a similar function as part B in the reproductive system of a human? [1]

_____

Study the diagram of a process shown below.



(c) Name the process shown above. [1]

_____

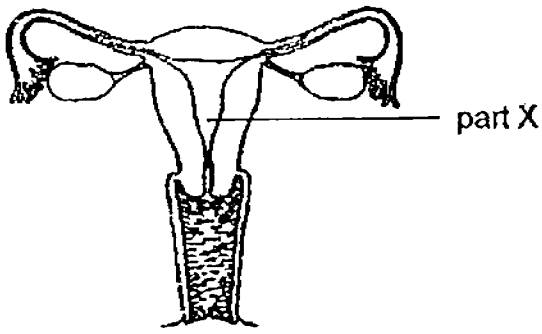
(d) The process in (c) also takes place in a flower. After this process had taken place, state what R and S in the flower shown above would develop into. [1]

R would develop into a _____.

S would develop into a _____.

4

30. The diagram below shows the cross section of the female human reproductive system.

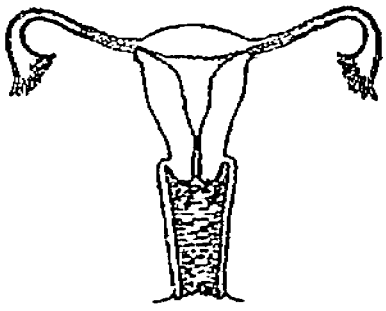


(a) What is the function of part X in the sexual reproduction in human after fertilisation? [1]

_____

_____

The diagram below shows a woman's reproductive system with part(s) missing.



(b) Name the part(s) that is/ are missing. [1]

_____

(c) Based on the diagram above, is this woman able to reproduce naturally? Explain why. [2]

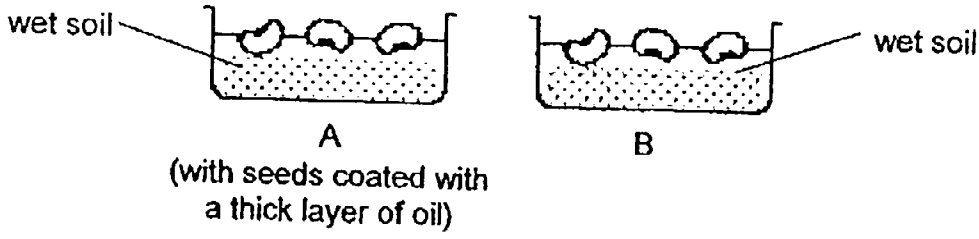
_____

_____

_____

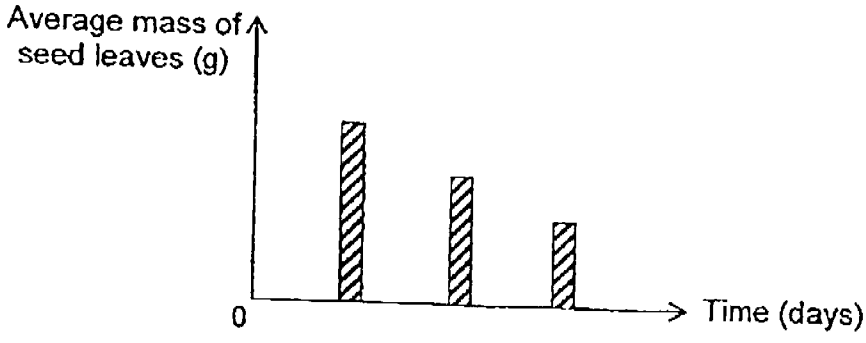
4

31. Ravi conducted an experiment using similar type of seeds in set-ups A and B as shown below. He coated the seeds in set-up A with a thick layer of oil and placed both set-ups in a cupboard.



(a) The seeds in set-up A cannot germinate. Explain why. [1]

The seeds in set-up B germinated. Ravi weighed the average mass of the seed leaves over a few days. The graph below shows his results.



(b) Explain why the mass of seed leaves decreases with time. [1]

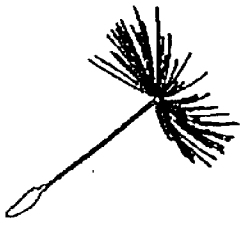
(c) If Ravi had cooked the seeds in set-up B, the seeds would not have germinated. Give a reason why. [1]

3

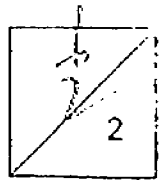
32. Peter counted the number of two different types of young plants, A and B, found at various distances from their parent plants in a garden. The results are shown below.

Distance from parent plant	1m	1.5m	2m
Number of young Plant A	20	8	5
Number of young Plant B	1	6	13

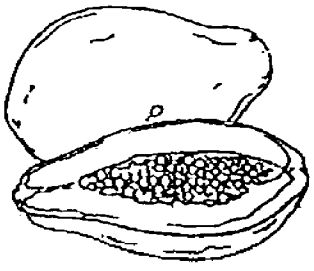
(a) Based on the above results, which one of the following is likely to be the fruit of Plant A? Choose your answer and tick (✓) in the correct box.



Explain your answer in (a). [2]

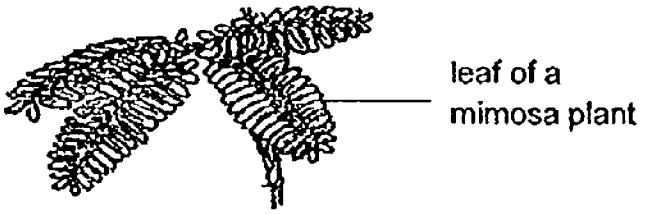


(b) In the table below, state the method of dispersal for each fruit and one characteristic of the fruit that helps in its dispersal. [2]

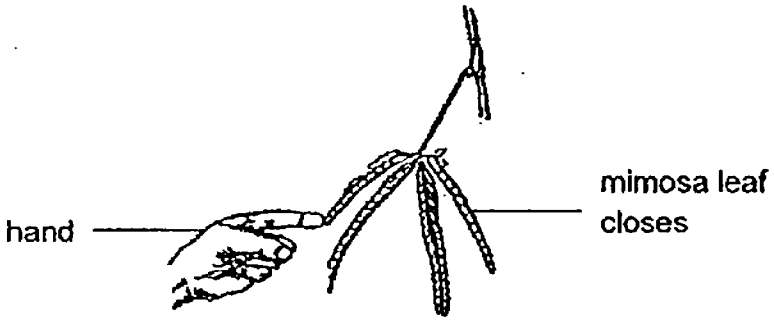
Fruit	Method of dispersal	One characteristic of the fruit
(i)  Papaya	By animals	It is fleshy.
(ii)  Shorea		
(iii)  Fruit of Sandbur grass		

2

(c) The diagram below shows the leaves of a mimosa plant.



When its leaves are touched, they close as shown below.



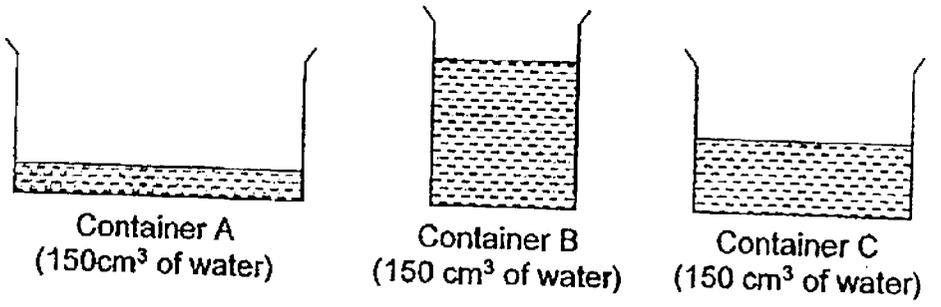
Based on the above, state the characteristic of a living thing. [1]

_____

_____

1

33. Rosie used the set-up below to study the rate of evaporation of water. All three containers, A, B and C, had an equal amount of water at first. They were placed in the sun.



Container A ($150cm^3$ of water) | Container B ($150\ cm^3$ of water) | Container C ($150\ cm^3$ of water)

(a) In which container, A, B or C, would the water be the first to dry? Explain why. [2]

Rosie carried out another experiment to compare the rate of evaporation of three different liquids, X, Y and Z. She poured 150 cm^3 of each liquid into three identical beakers separately.

She placed the beakers in a classroom and measured the time taken for each liquid to evaporate completely. She recorded the results in the table below.

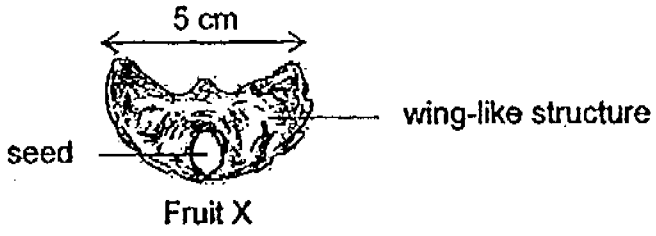
Liquid	X	Y	Z
Time (h)	2	3	1

(b) Arrange the liquids, X, Y and Z, in the correct order below, beginning with the liquid with the lowest rate of evaporation. [1]

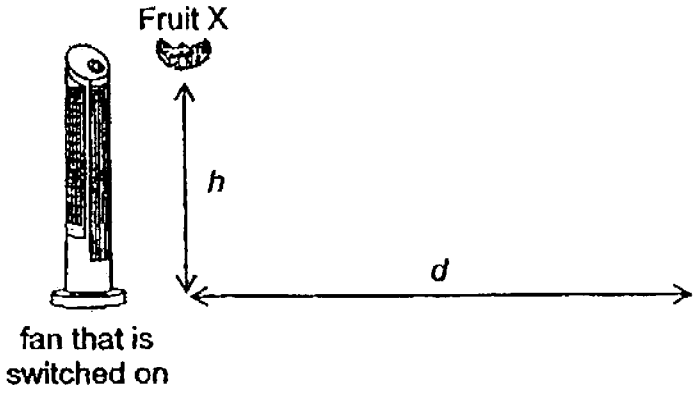
	lowest rate of evaporation ⟷ highest rate of evaporation		
Liquid			

3

34. Ann wanted to find out how the height at which Fruit X below is dropped affects the distance it travels. Fruit X has a 5 cm wing-like structure as shown.



She conducted the experiment by dropping Fruit X from a certain height, *h*, in front of a fan as shown below. She then measured the distance, *d*, travelled by the fruit.



Ann repeated the procedure with different heights, *h*. Her results are shown in the table below.

h (cm)	100	80	60
d (cm)	45	30	15

(a) Based on the results, what is the relationship between distance *d* and height *h*? [1]

1

(b) Ann ensured that the experiment is a fair test. Tick '✓' the following which she had kept constant. [1]

		Tick (✓)
(i)	Height from which Fruit X is dropped	
(ii)	Distance between the fan and where Fruit X is dropped	
(iii)	Duration of Fruit X in the air	
(iv)	Surface area of Fruit X	

(c) Ann has two other experiments she wants to carry out. The aim of each experiment is shown below. Draw lines to match each aim to the correct variable she needs to change. [1]

	Aims	Variable to change
(i)	To find out if the exposed surface area of the wing-like structure affects the distance travelled by the fruit	Size of the wing-like structure
		Distance travelled by the fruit
(ii)	To find out how the speed of wind affects the distance travelled by the fruit	Time taken for the fruit to reach a distance
		Speed of the fan
		Temperature of the surroundings

2

35. Irfan carried out an experiment as shown below in Diagram 1.

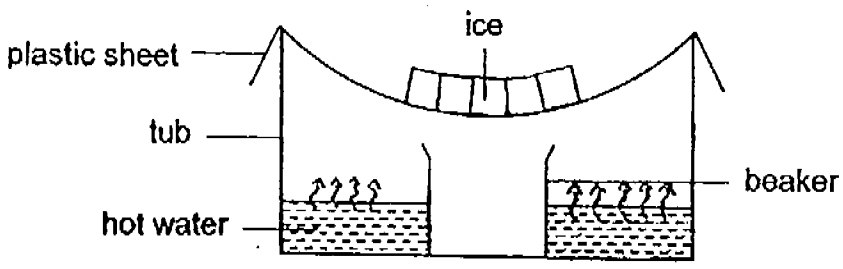


Diagram 1

(a) After an hour, he found that some water had collected in the beaker. Explain what had happened to the hot water and how clean water was collected in the beaker. [2]

Irfan then repeated the experiment using tap water instead of hot water as shown below in Diagram 2.

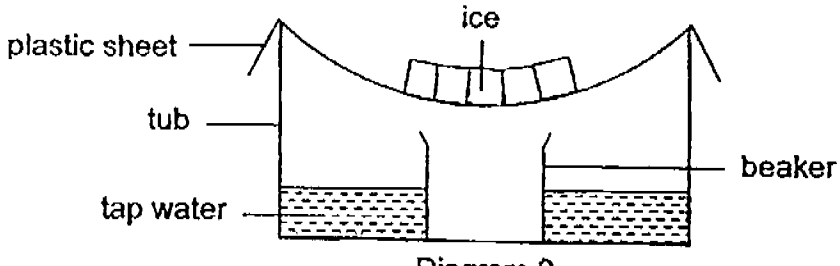


Diagram 2

(b) What is the difference between the volume of water collected in the beaker in Diagram 1 and that in Diagram 2? [1]

(c) Give a reason for your answer in (b). [1]

4

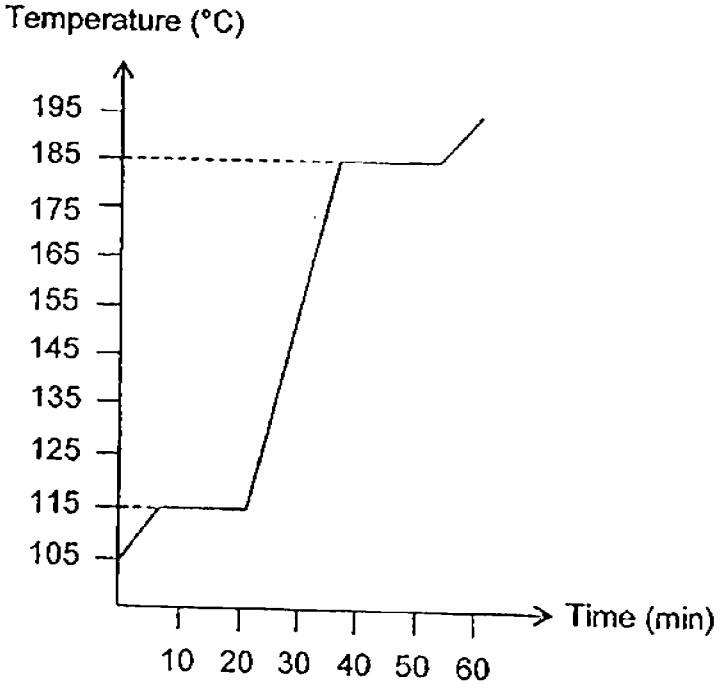
36. Aminah has three different substances, A, B and C. Their melting point and boiling point are shown below.

Substance	Melting point (°C)	Boiling point (°C)
A	24	175
B	11	330
C	0	100

(a) What state of matter are all three substances in at 80°C? [1]

_____

Aminah plotted a graph of another substance, D, showing its change of state at different temperatures as shown below.



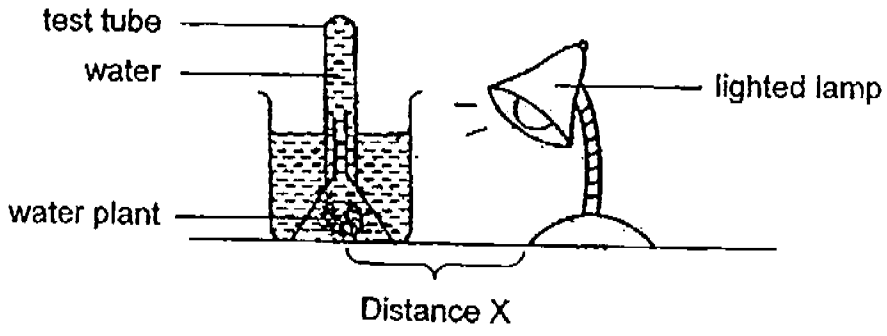
(b) State the melting point and boiling point of substance D. [2]

Melting point: _____ °C

Boiling point: _____ °C

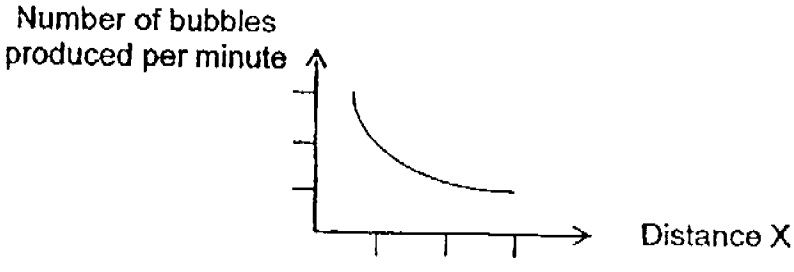
3

37. Judy set up an experiment as shown below in a dark room.



(a) She noticed the water level in the test tube drop after some time. Explain how the water level dropped. [1]

Judy noticed that when Distance X was changed, the number of bubbles produced by the plant was affected. She kept other variables constant. Her results are shown in the graph below.

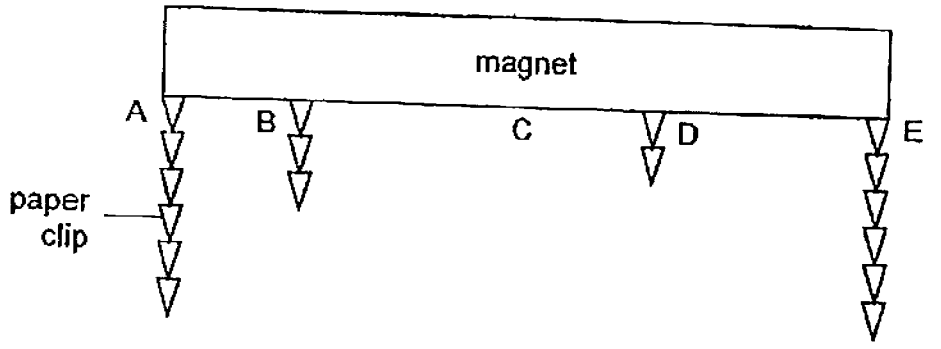


(b) From the graph, how does Distance X affect the number of bubbles produced per minute? [1]

(c) Judy repeated the experiment by adding some snails onto the plant. The number of bubbles produced by the plant per minute increased. Give a reason why this happened. [2]

4

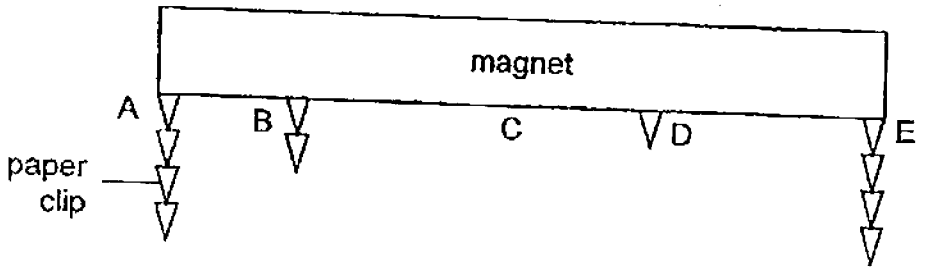
38. Josh wanted to see how many paper clips a magnet can attract at points A, B, C, D and E. He observed the result as shown below.



(a) State the property of the paper clips that allows them to be attracted to the magnet. [1]

(b) Based on Josh's observation, what could he conclude about the ends of the magnet, A and E, and the center, C? [1]

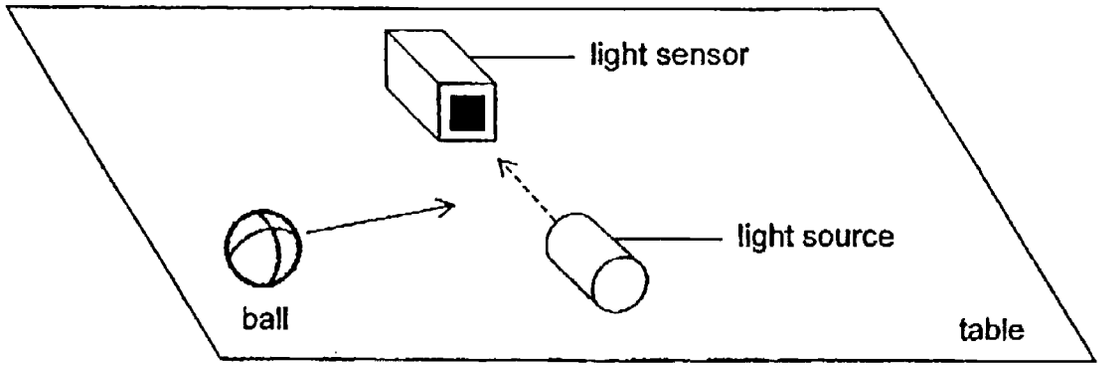
Josh dropped the magnet accidentally down a flight of stairs. When he used the magnet to attract the paper clips again, he had a different result as shown in the diagram below.



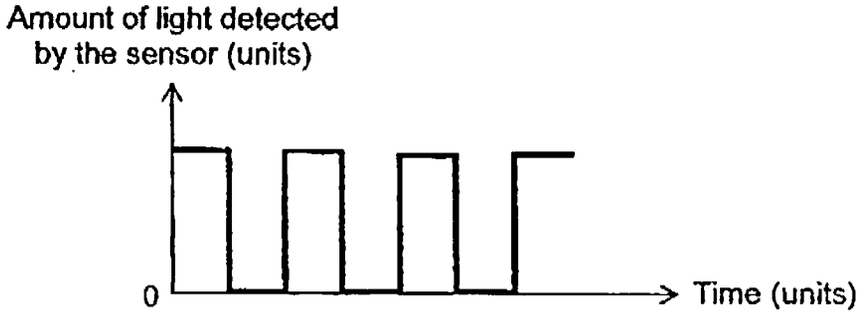
(c) What had happened to the magnet? [1]

3

39. Vishnu placed a light sensor opposite a light source. He rolled a ball across the table, passing it between light sensor and the light source several times as shown in the diagram below.



Study the line graph Vishnu had drawn for his results obtained.



(a) Based on the results above, how many times did the ball pass the light sensor? [1]

_____

(b) State a property of light that allows this experiment to be carried out. [1]

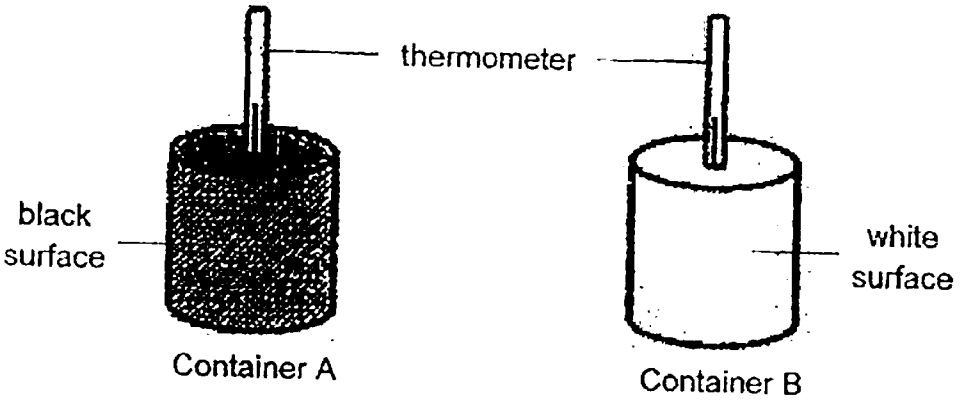
_____

(c) Based on the results above, which one of the following could the ball be made of? Put a tick ✓ in the correct box below. [1]

Type of ball	
Metal ball	
Frosted glass ball	
Clear plastic ball	

3

40. Dana conducted an experiment using two identical air-tight containers, A and B, filled with air as shown below. Container A had a black surface while container B had a white surface. The temperature in container A is the same as that in container B at the start of the experiment.



After Dana had placed the containers in the Sun for a few hours, she observed that the temperature in container A is higher than that in container B.

(a) Based on Dana's observation, what can she conclude about black and white surfaces? [1]

Dana has two shirts that are identical except one is black and the other is white as shown below. The shirts are made of the same material with similar thickness.

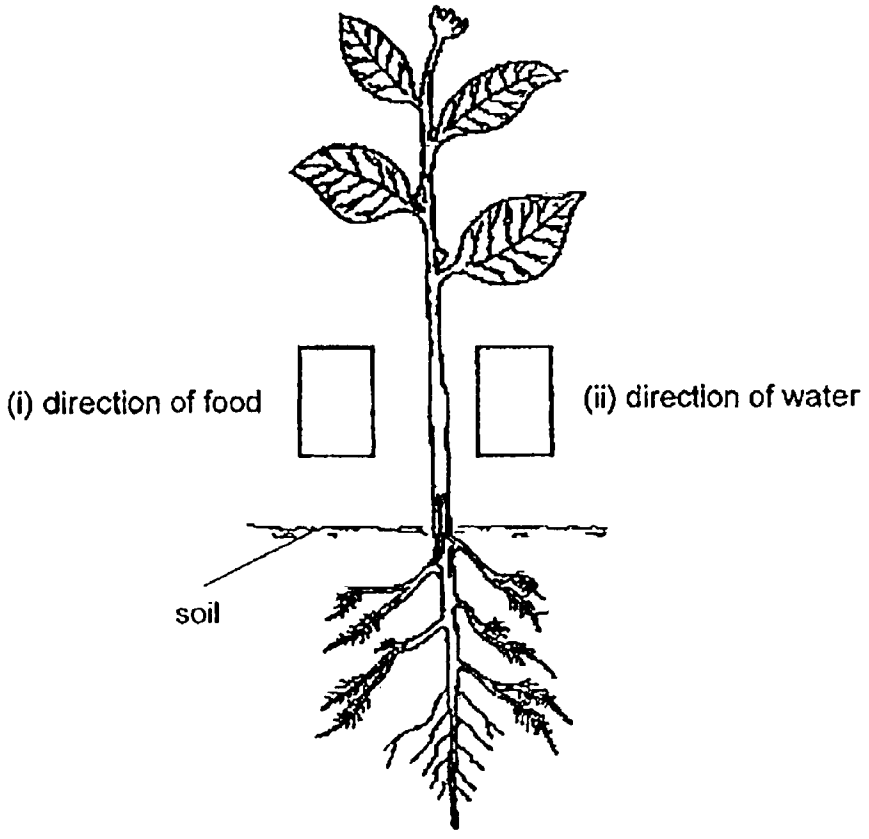
(b) Dana picks the white shirt instead of the black shirt to wear on a hot day as she feels cooler in it. Give a reason why. [1]

2

41. Tim has a plant in his garden as shown below.

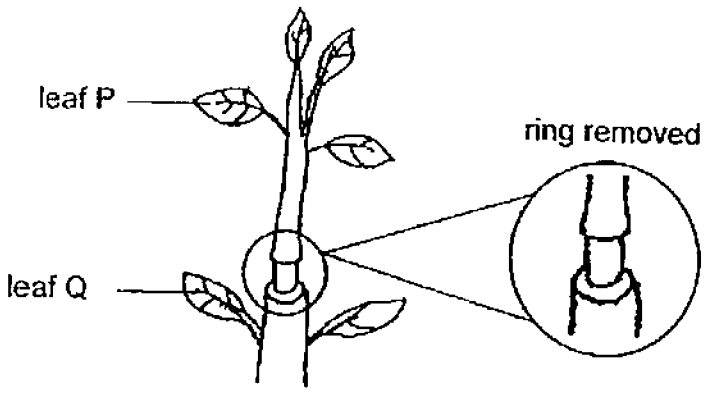
(a) Draw an arrow, ↑ or ↓, in each of the boxes below to show: [1]

(i) the direction of food transported in the plant and
(ii) the direction of water transported in the plant



1

Tim had another plant planted in his garden. He cut a ring around its stem, removing both the water-carrying tubes and the food-carrying tubes.



(b) Will leaf P and leaf Q be able to carry out photosynthesis? Explain your answer in the table below. [2]

Leaf	Will the leaf be able to carry out photosynthesis? (Yes / No)	Explain your answer.
P		
Q		

End-of-Paper

2

EXAM PAPER 2016 (P5)

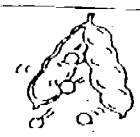
SCHOOL : TAO NAN

SUBJECT : SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	4	1	1	2	4	3	1	1	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1	1	2	3	2	1	3	4	2	1
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	2	3	1	4	3	2	1		

P5 SA1 SCIENCE Answers

Qn.	Answer
29a	A: Penis B: Testis
b	P
c	Fertilisation
d	R: Fruit(s) S: Seed(s)
30a	It is where the fertilised egg develops into a baby.
b	Ovaries
c	No. She cannot produce eggs. Thus, fertilisation cannot occur.
31a	The seeds cannot absorb water and oxygen.
b	The germinating seeds has used the food in the seed leaves for germination.
c	The seeds (embryo) have died.
32	 ✓
a	Fruit of Plant A is dispersed by splitting while the fruit of young plant B is dispersed by wind. Hence, seeds of young Plant A are dispersed nearer to the parent plant. (specify which plant for which dispersal and compare the distance of dispersal)
b	**Fruit** / **Method of dispersal** / **Characteristic** Shorea / By wind / • Has wing-like/ Light Sandbur / By animals / • Has stiff hairs
c	Living thing responds to changes.
33a	As height *h* increases, distance *d* increases.
b	(i) Height from which Fruit X is dropped. (ii) Distance between the fan and where Fruit X is dropped. ✓ (iii) Duration of Fruit X in the air. (iv) Surface area of Fruit X. ✓
c	(i) Size of the wing-like structure (ii) Speed of the fan
34a	Container A. The exposed surface area of water in container A is the greatest. So, the rate of evaporation is the highest.
b	YXZ

35a	The hot water evaporated into water vapour. When the water vapo. came into contact with the cooler surface of the plastic sheet, it lost heat and condensed into water droplets. When the water droplets gather and became heavier, they dripped down in the beaker.
b	The volume of water collected in the beaker is ~~decreased~~ more than Diagram 2. in Digram 1 is
c	The temperature difference between the water vapour and the plastic sheet is less. Thus, the rate of condensation is lower. (in Diagram 1)
36a	Liquid
b	Melting point: 115°C Boiling point: 185°C
37a	The water plant photosynthesises and produces oxygen. The gas occupies the space above the water and so displaces the water.
b	As Distance X increases, the number of bubbles produced per minute decreases.
c	As the snails give out carbon dioxide, the plant takes in **more** carbon dioxide. Thus, the rate of photosynthesis increases.
38a	The paper clip is a magnetic material.
b	The magnetic force at A and E is the strongest while that at C is the weakest.
c	The magnet has lost some of its magnetic force.
39a	3
b	Light travels in a straight line. /Light cannot pass through an opaque object.
c	**Type of ball** / Metal ball ✓
40a	Black surfaces gain more heat than white surfaces.
b	The white shirt gains less heat from the surroundings so Dana gains less heat from it.
41a	(i) direction of food ↓ ↑ (ii) direction of water
b	**Leaf** / **Will the leaf be able to carry out photosynthesis?** / **Explain your answer.** P / No (no mark) / It cannot receive water. Q / Yes (no mark) / It can receive water from the roots / water-carrying tubes.