



RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1) 2018

Section A	56
Section B	44
Your score out of 100	100
Parent's signature	

Name : _____ Index No: _____ Class: P 5 _____

8 May 2018

SCIENCE

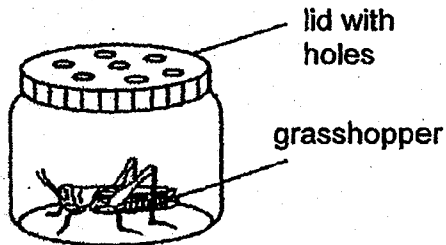
Attn: 1 h 45 min

SECTION A (28 X 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 on the Optical Answer Sheet.

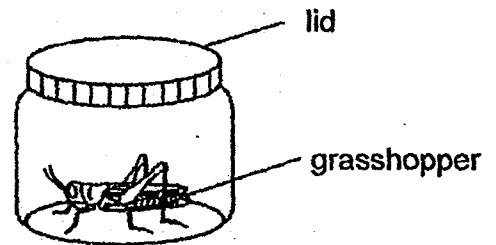
1. Roy caught a grasshopper and wanted to keep it. He prepared four set-ups, A, B, C and D, to try to keep it.

(1)



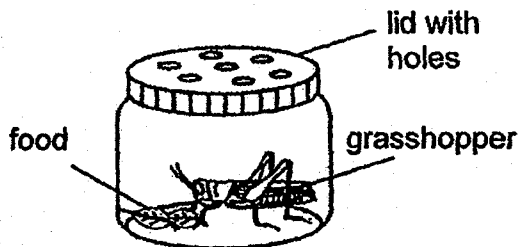
Set-up A

(2)



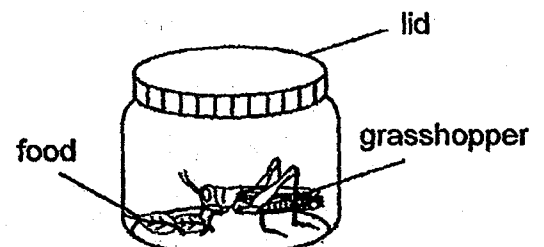
Set-up B

(3)



Set-up C

(4)

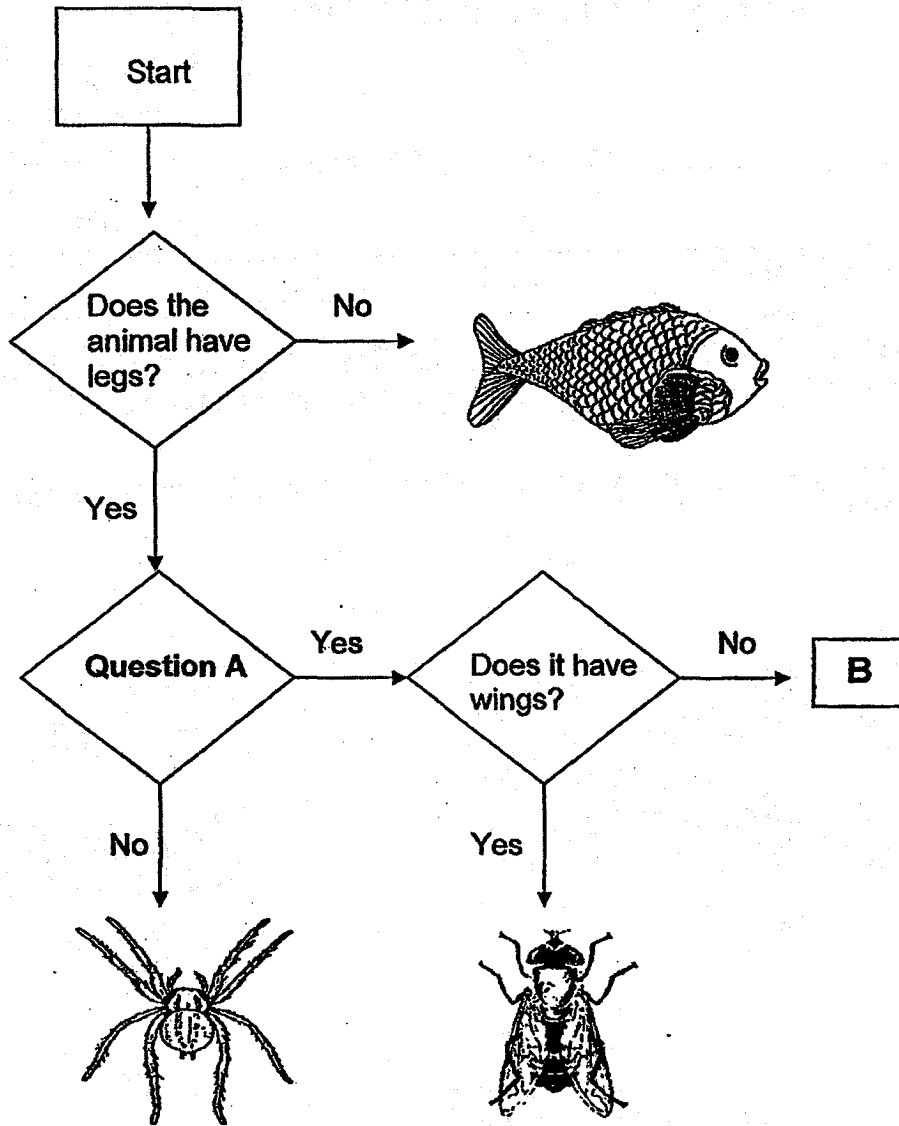


Set-up D





Which one of the set-ups, A, B, C or D, should he use to keep the grasshopper alive for the longest time?

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

2. Study the flow chart below.



Which one of the following is correct?

	Question A	B
(1)	Does it have 6 legs?	
(2)	Does it have 2 body parts?	
(3)	Does it have 2 body parts?	
(4)	Does it have 6 legs?	

3. The table below shows the characteristics of animals W, X, Y and Z.

Animal	Has outer covering of hair	Lays eggs	Has wings	Has 3 body parts
W		✓		✓
X	✓	✓		
Y	✓		✓	
Z		✓	✓	✓

Based on the table above, which of the following statement(s) is/are possibly true?

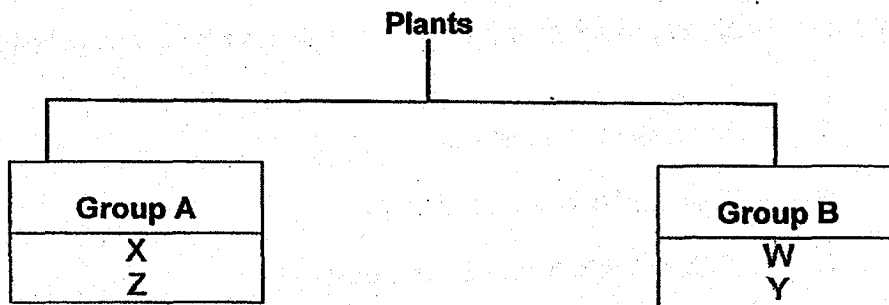
- A Animal W is an insect.
- B Only animal X is a mammal.
- C Both animals Y and Z are birds.
- D Animal W is an insect but animal Y is a mammal.

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

4. Plants W, X, Y and Z have common characteristics as shown in the table below. A tick (✓) in the box indicates the presence of such a characteristic.

Characteristic \ Plant	W	X	Y	Z
Produces flowers	✓		✓	
Bear edible fruits	✓			
Reproduces by spores		✓		✓

Using the information above, John grouped the plants in the classification table below.



What are the suitable sub-headings for Group A and Group B?

	Group A	Group B
(1)	moss	ferns
(2)	bears fruit	does not bear fruit
(3)	bears edible fruits	bears inedible fruits
(4)	non-flowering plants	flowering plants

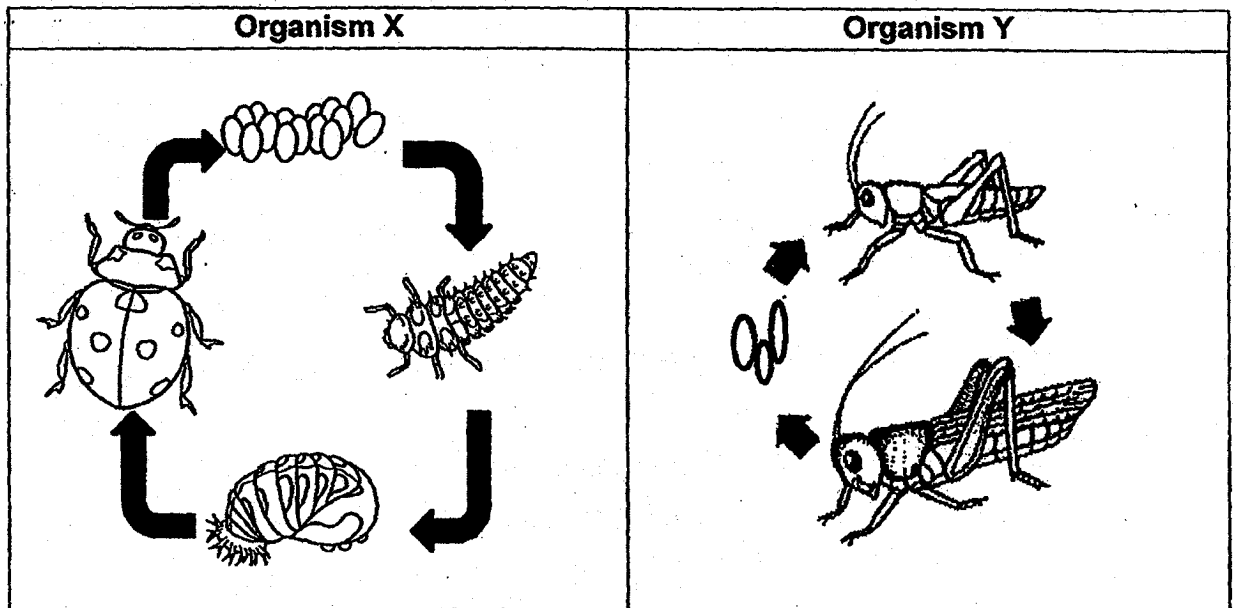
5. Which one of the following statements is ~~true~~ about micro-organisms?

- (1) Micro-organisms are not living things.
- (2) Some micro-organisms are useful to us.
- (3) All micro-organisms can make their own food.
- (4) Micro-organisms can only grow in an environment with a temperature of more than 25°C.

6. Which one of the following statements is true about life cycles?

- (1) All animals have three-staged life cycles.
- (2) A life cycle of an animal begins with an egg.
- (3) The young of an organism inherits characteristics from its parent.
- (4) The life cycle of a young of an organism is different from its parents.

7. The diagram below shows the life cycle of organisms X and Y.

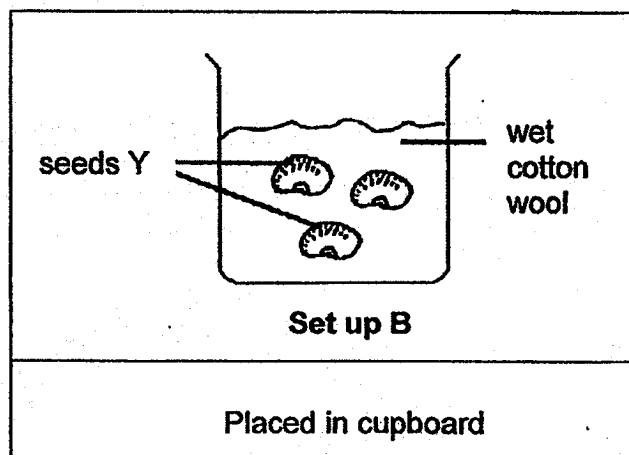
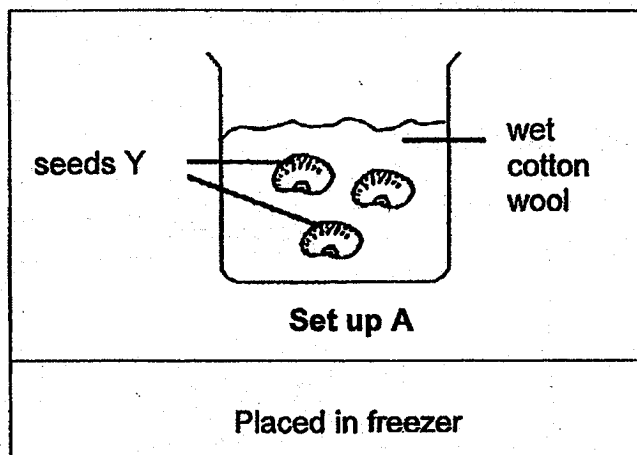


Based on the information in the diagrams above, which of the following statement(s) is/are true?

- A The adults of organisms X and Y live on land.
- B Organisms X and Y give birth to their young alive.
- C The young of organism X does not look like its parent.
- D Organisms X and Y go through the same stages in their life cycles.

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

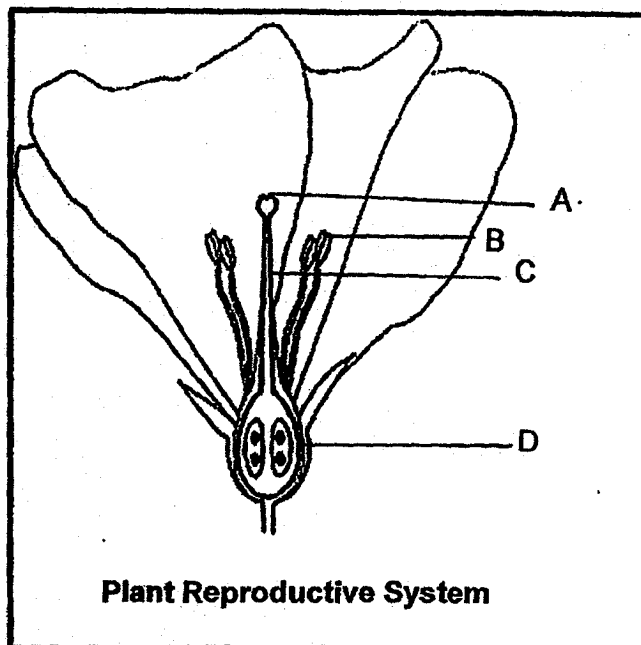
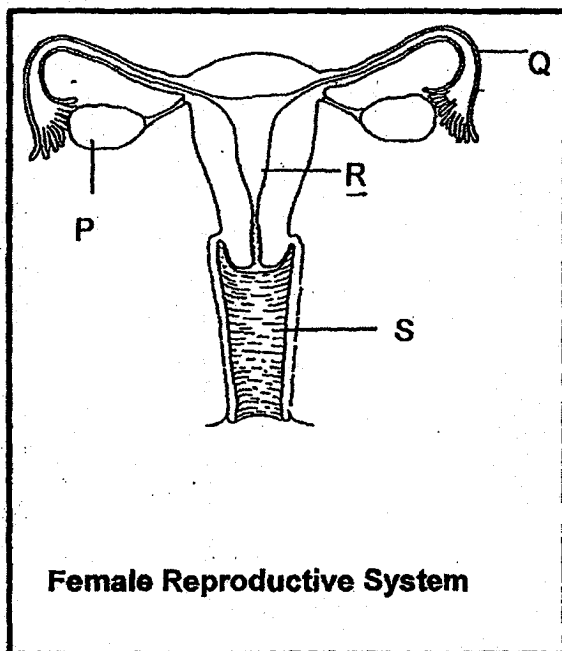
8. Chris prepared set-ups A and B using similar seeds Y and placed them in different locations as shown below.



Based on the information above, which of the following statement(s) is/are likely to be correct?

- A Seeds in set-up A will germinate because there is water.
 - B Seeds in set-up A will not germinate as there is no warmth.
 - C Seeds in set-up B will not germinate as there is no sunlight.
 - D Seeds in set-up B will germinate as there is water, oxygen and warmth.
- (1) A only
(2) D only
(3) A and C only
(4) B and D only

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



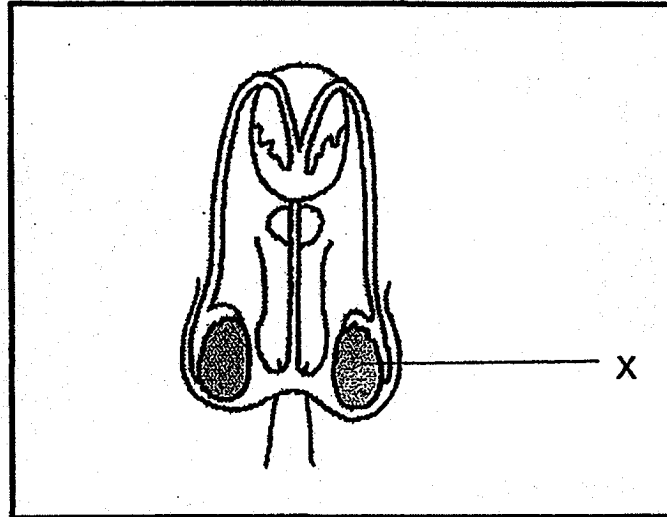
Based on the diagrams above, answer questions 9 and 10.

9. Which of the following represents the part where the fertilized egg will develop?

	Female Reproductive System	Plant Reproductive System
(1)	P	A
(2)	P	B
(3)	Q	D
(4)	R	D

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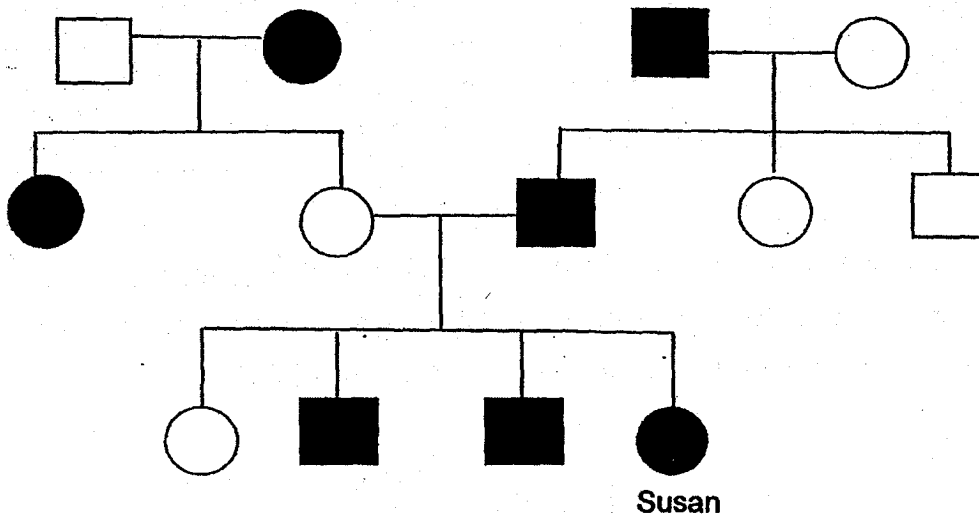
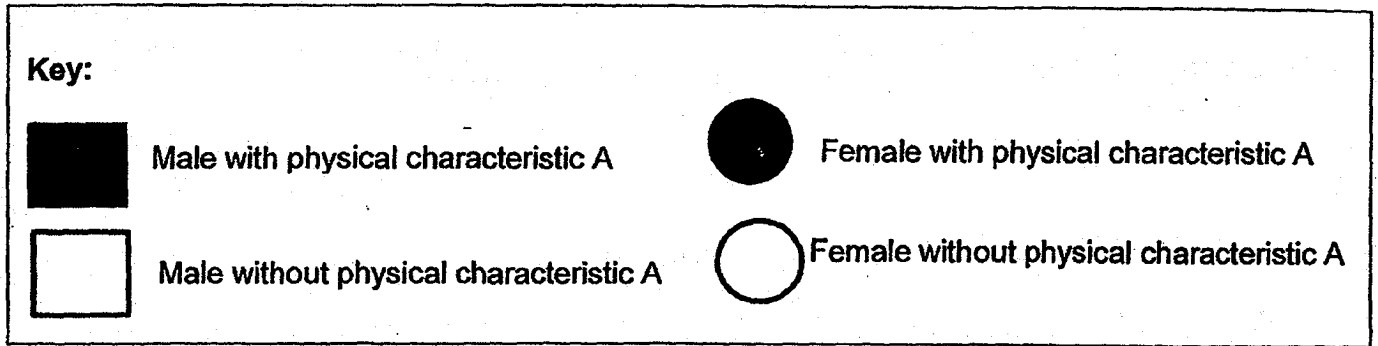
10. Which one of the following parts in the plant reproductive system has the same function as part X in the male reproductive system?



Male Reproductive System

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

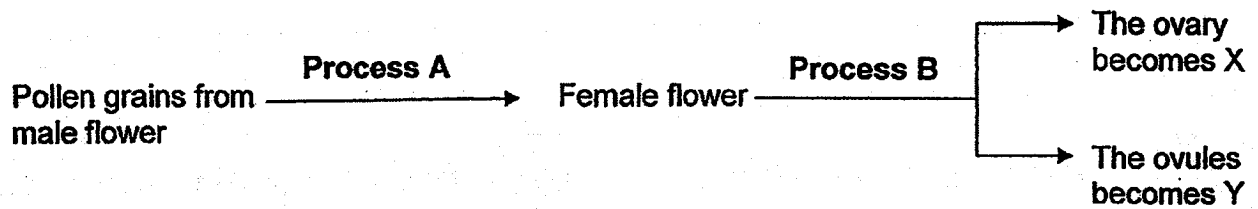
11. Study the family tree of Susan below. The family tree shows the members of the family who display physical characteristic A.



Based on the information above, which one of the following statements about the family tree is true?

- (1) All of Susan's siblings have characteristic A.
- (2) Susan's uncle has physical characteristic A.
- (3) Susan's aunts do not have physical characteristic A.
- (4) Susan inherited physical characteristic A from her father.

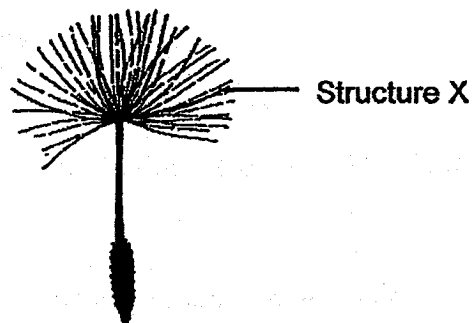
12. Study the diagram below.



Which of the following correctly identifies A, B, X and Y?

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

13. Lily wanted to find out how structure X of seed A below helps it to disperse. She dropped the seed from a height of ten metres and recorded the time taken for the seed to land on the ground. She then repeated the experiment with structure X removed.

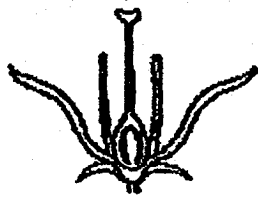


Seed A

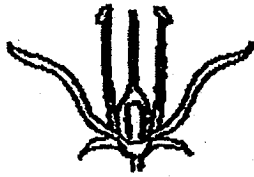
Which one of the following sets of results is most likely to be correct?

	Time taken for the seed to land on the ground (seconds)	
	Seed A (with structure X)	Seed A (without structure X)
(1)	7.5	5.8
(2)	7.5	7.5
(3)	5.8	7.5
(4)	6.0	6.5

14. Some pollen grains were dusted on flowers A, B, C and D grown on a plant.



Flower A



Flower B



Flower C



Flower D

Which of the following flowers would most likely to develop into a fruit?

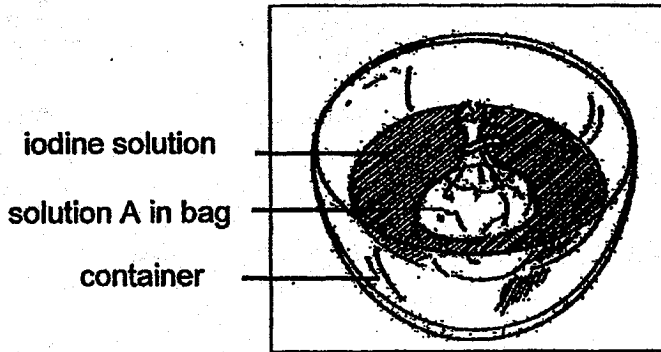
- (1) A and B only
- (2) A and C only
- (3) B and D only
- (4) B, C and D only

15. Which one of the following parts of a cell supports and protects the cell?

- (1) nucleus
- (2) cell wall
- (3) cytoplasm
- (4) cell membrane

16. Ali placed solution A into a plastic bag and fastened it securely. He placed the bag into a container of iodine solution as shown in the diagram below.

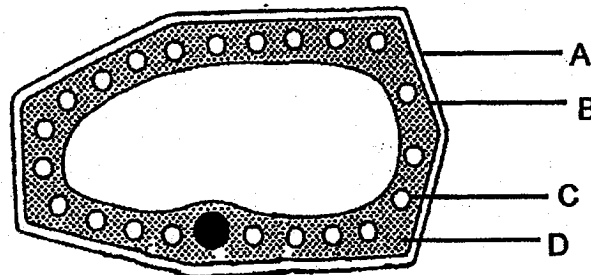
Iodine solution is a yellowish-brown solution which will turn blue-black when it interacts with starch.



He recorded his observations in the table below.

	At the start of the experiment	At the end of the experiment
Colour of Solution A in plastic bag	white	blue-black
Colour of iodine solution in container	yellowish-brown	yellowish-brown

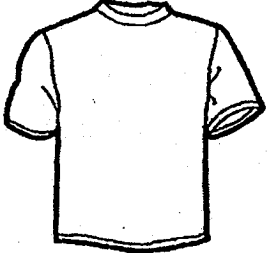

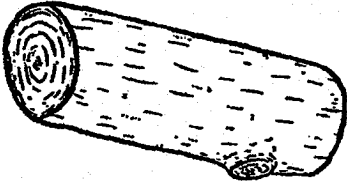

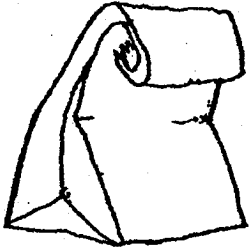
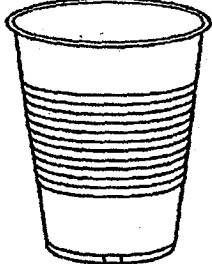
Which one of the following parts of a plant cell has the same function as the bag?



Plant cell

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

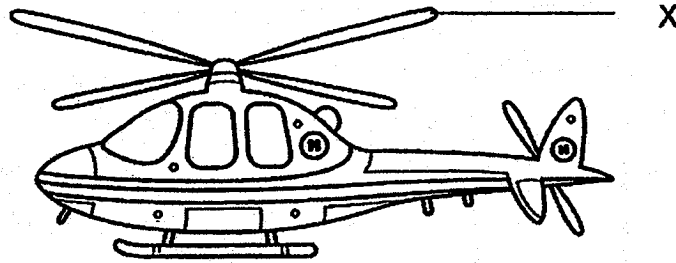
17. Six objects are classified into two groups as shown below.

Group 1	Group 2
 <p data-bbox="491 644 584 675">T-shirt</p>	
	<p data-bbox="1010 534 1145 565">safety pin</p>
<p data-bbox="512 934 564 965">Log</p>	
	<p data-bbox="1031 940 1126 971">marble</p>
<p data-bbox="469 1404 608 1435">paper bag</p>	
	<p data-bbox="1007 1425 1155 1456">plastic cup</p>

The objects are grouped according to whether they are _____.

- (1) flexible
- (2) waterproof
- (3) transparent
- (4) able to float in water

18. The diagram below shows part X of a helicopter.



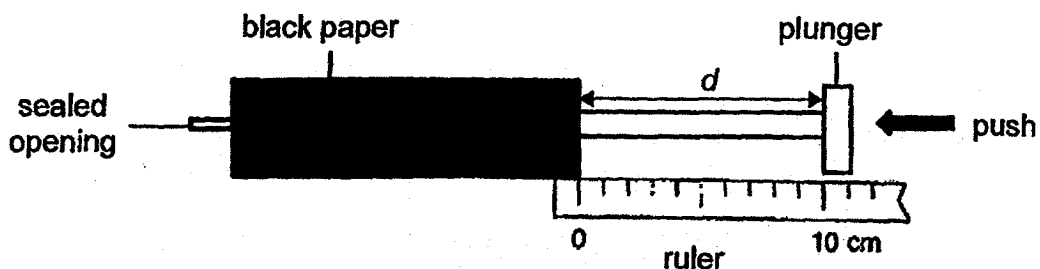
Study the properties of the following materials shown below.

Material	Property of material			
	Flexible	Waterproof	Strong	Floats on water
A	√	√	√	
B		√	√	
C	√	√		√
D		√		√

Which material is most suitable for making part X of the helicopter?

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

19. Eileen used two identical syringes and filled them up completely with substances X and Y respectively. Each syringe was covered with black paper as shown in the diagram below.



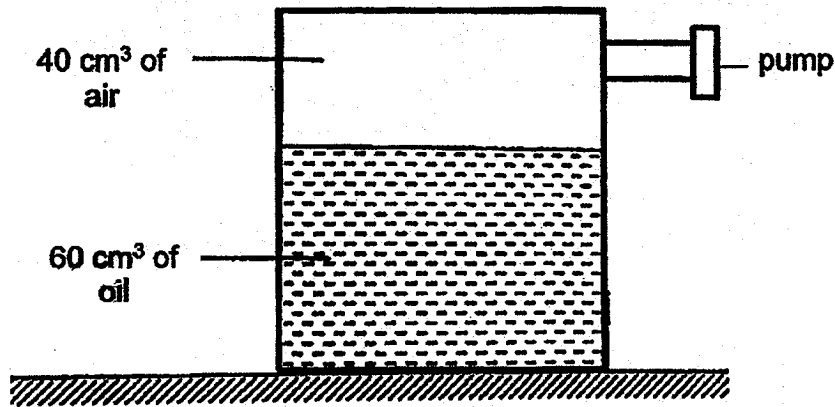
She pushed the plunger as hard as she could. She then recorded the distance, d , in the table as shown below.

Syringe filled with Substance	Distance, d (cm)	
	Before	After
X	10	4
Y	10	10

Which one of the following represents the states of matter of substances X and Y?

	X	Y
(1)	Liquid	Solid
(2)	Liquid	Gas
(3)	Solid	Gas
(4)	Gas	Liquid

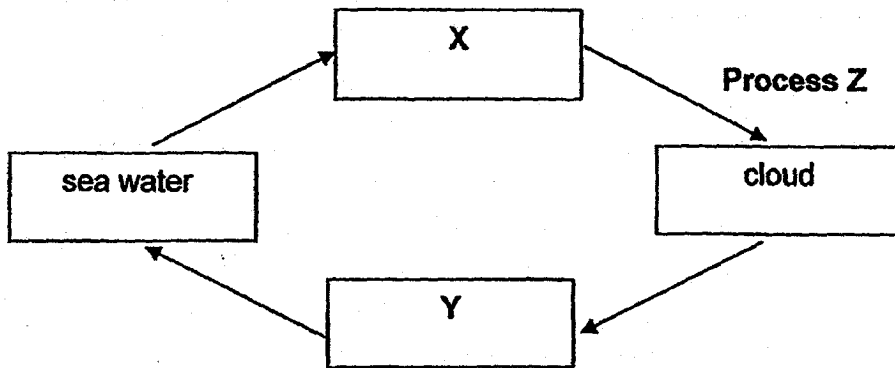
20. A sealed container holds 60cm^3 of oil and 40cm^3 of air as shown below. Another 10cm^3 of oil and 20cm^3 of air is added to the container through the pump.



What is the final volume of oil and air in the container?

	Volume of oil (cm^3)	Volume of air (cm^3)
(1)	70	60
(2)	60	40
(3)	70	40
(4)	70	30

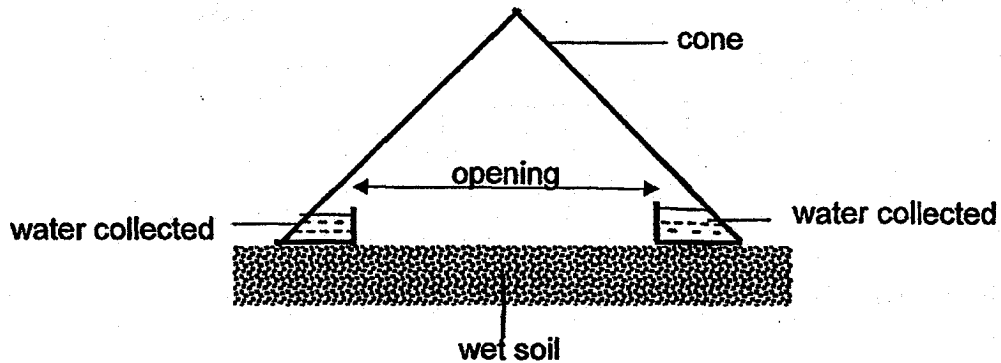
21. The diagram below shows the water cycle.



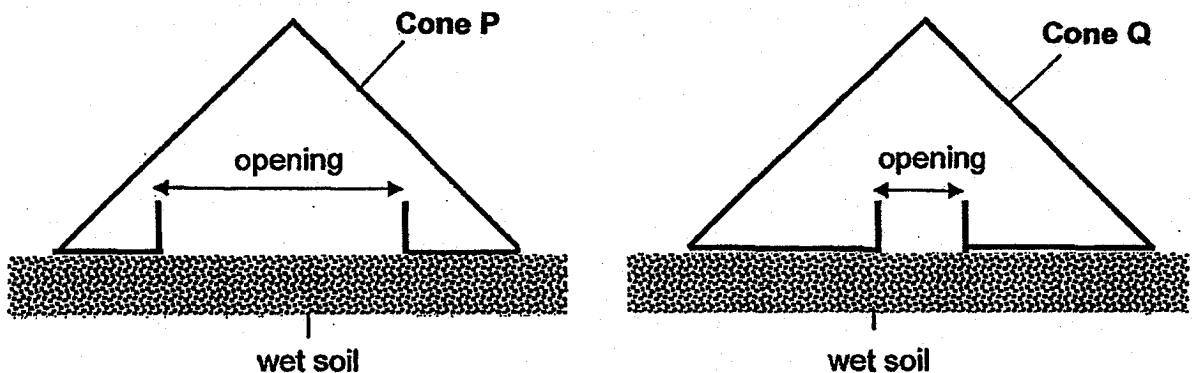
Which one of the following is correct?

	X	Y	Process Z
(1)	water vapour	rain	evaporation
(2)	rain	water vapour	condensation
(3)	rain	water vapour	evaporation
(4)	water vapour	rain	condensation

22. Hannah had a plastic cone that was used to collect water from the environment. The diagram below shows how the cone works.



On a hot day, Hannah placed two such cones, P and Q, on wet soil. Cones P and Q were similar but P had a larger opening at the base than Q. Hannah left the cones overnight and collected the water the following morning.



Based on the information above, which of the following statement(s) is/are likely to be true?

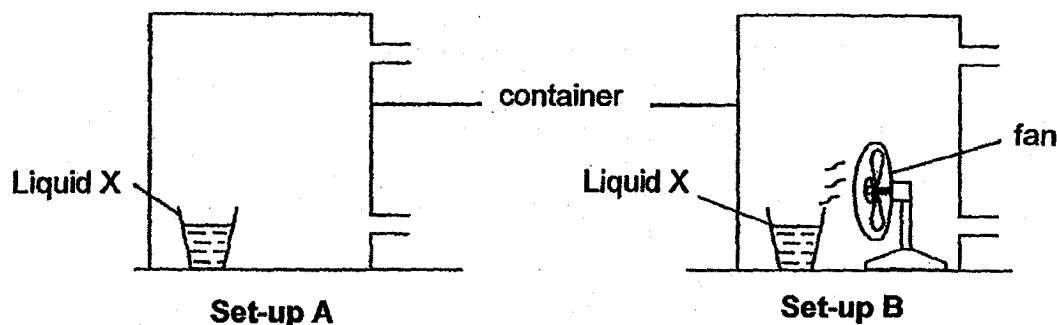
- A The air inside both cones lost heat and condensed.
- B The water vapour outside the cones condensed and collected in the cones.
- C There was more water vapour inside cone P which lost heat and condensed.
- D There was a smaller exposed surface area of water inside cone Q hence less water lost heat and condensed.

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

23. Substance X is a solid at 40°C and a liquid at 300°C.
Which one of the following shows the possible melting and boiling point of X?

	Melting point of X (°C)	Boiling point of X (°C)
(1)	25	170
(2)	30	400
(3)	50	250
(4)	65	310

24. Alvin carried out the experiment as shown below. 50 ml of Liquid X at 30°C was placed in the same room.



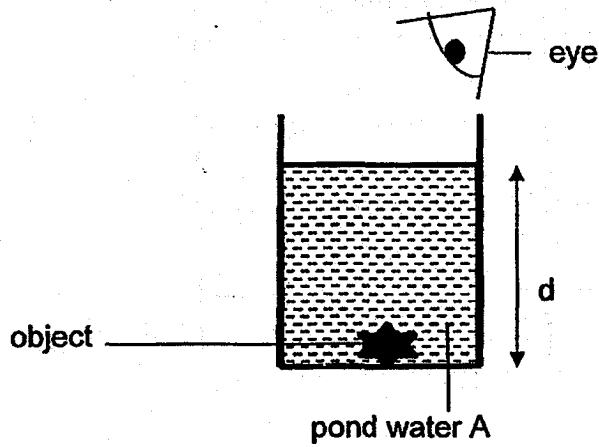
After five hours, Alvin compared the amount of liquid left in each glass. He observed that the two liquids were less than before.

Which of the following explain(s) his observations after five hours?

- A There was more water vapour in set-up B so liquid X evaporated faster.
- B There was lesser amount of liquid X left in set-up B than A as it evaporated faster due to the presence of wind from the fan.
- C There was less amount of liquid X left in set-up A then B as it gained more heat from the higher surrounding temperature and evaporated faster.

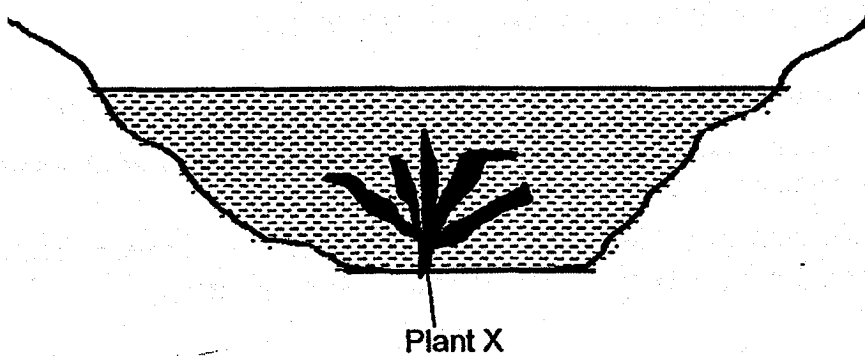
- (1) A only
- (2) B only
- (3) A and B only
- (4) A, B and C

25. Dolly collected water from four ponds A, B, C and D. She put an object into a beaker. Then she poured water from pond A slowly into the beaker until she could not see the object and recorded the water level, d , in the result table shown. She repeated the experiment with pond water B, C and D respectively.



Pond water	Water level, d (cm)
A	24
B	5
C	16
D	42

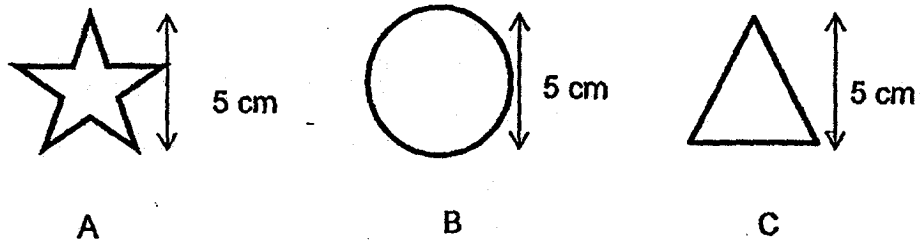
Plant X grows at the bottom of the pond. It requires plenty of sunlight in order to grow well.



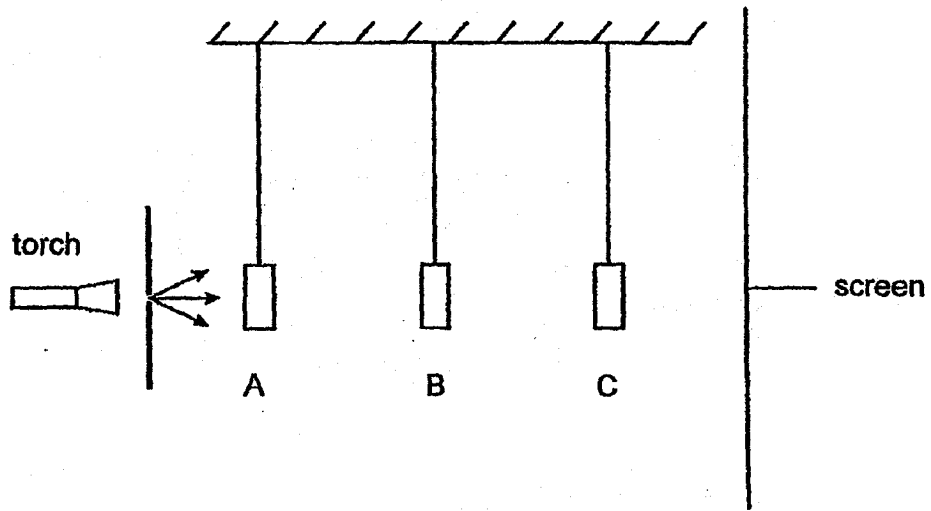
Based on the information above, in which pond would plant X most likely grow best in?

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

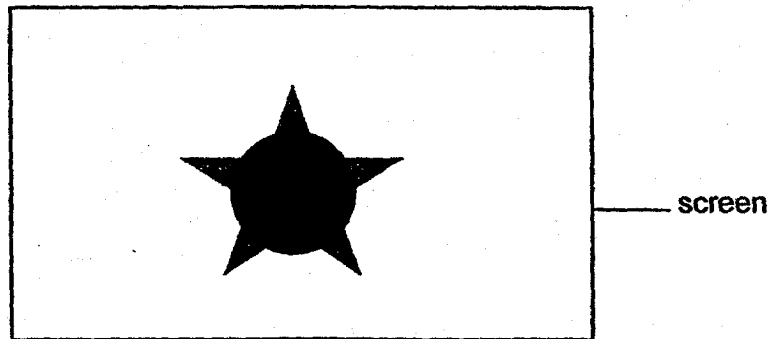
26. Tim cut out three shapes, A, B and C, which were made of different materials as shown below.



He hung the three shapes in different positions in the set-up below.



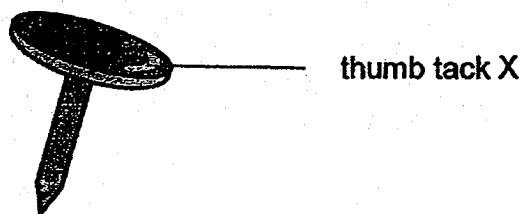
The following diagram shows the shadows formed on the screen when the torch was switched on.



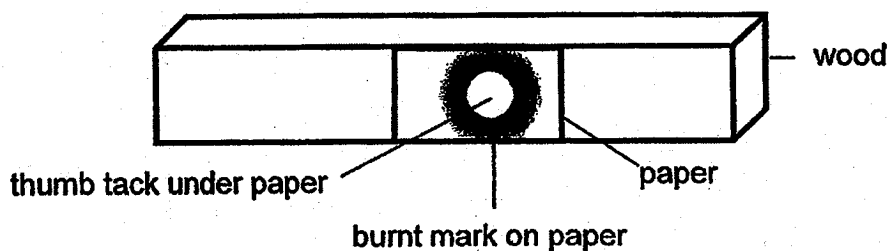
Based on the above observation, which one of the following most likely matches the shapes A, B and C to the properties?

	Opaque	Translucent	Not possible to tell
(1)	A	B	C
(2)	B	A	C
(3)	B	C	A
(4)	C	B	A

27. The diagram below shows a thumb tack.



Stan nailed thumb tack X to the wood as shown in the diagram below. He wrapped paper over the thumb tack. Then, he placed a candle flame near the thumb tack and recorded the time taken for the burnt mark to first appear on the paper. He repeated the experiment with similar thumb tacks, Y and Z, made of different materials.



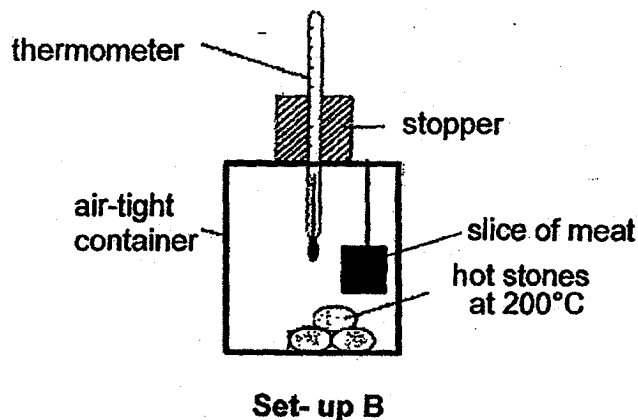
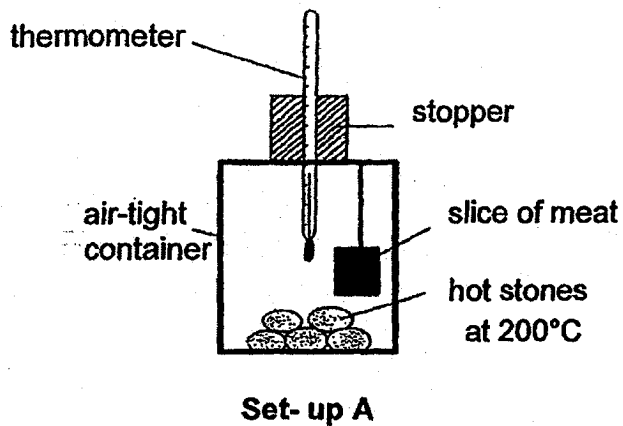
Stan recorded his results in the table below.

Material	Time taken for the burnt mark to first appear (seconds)
X	29
Y	12
Z	20

Based on the information above, which of the following correctly shows the 3 materials arranged from the best to the poorest conductor of heat?

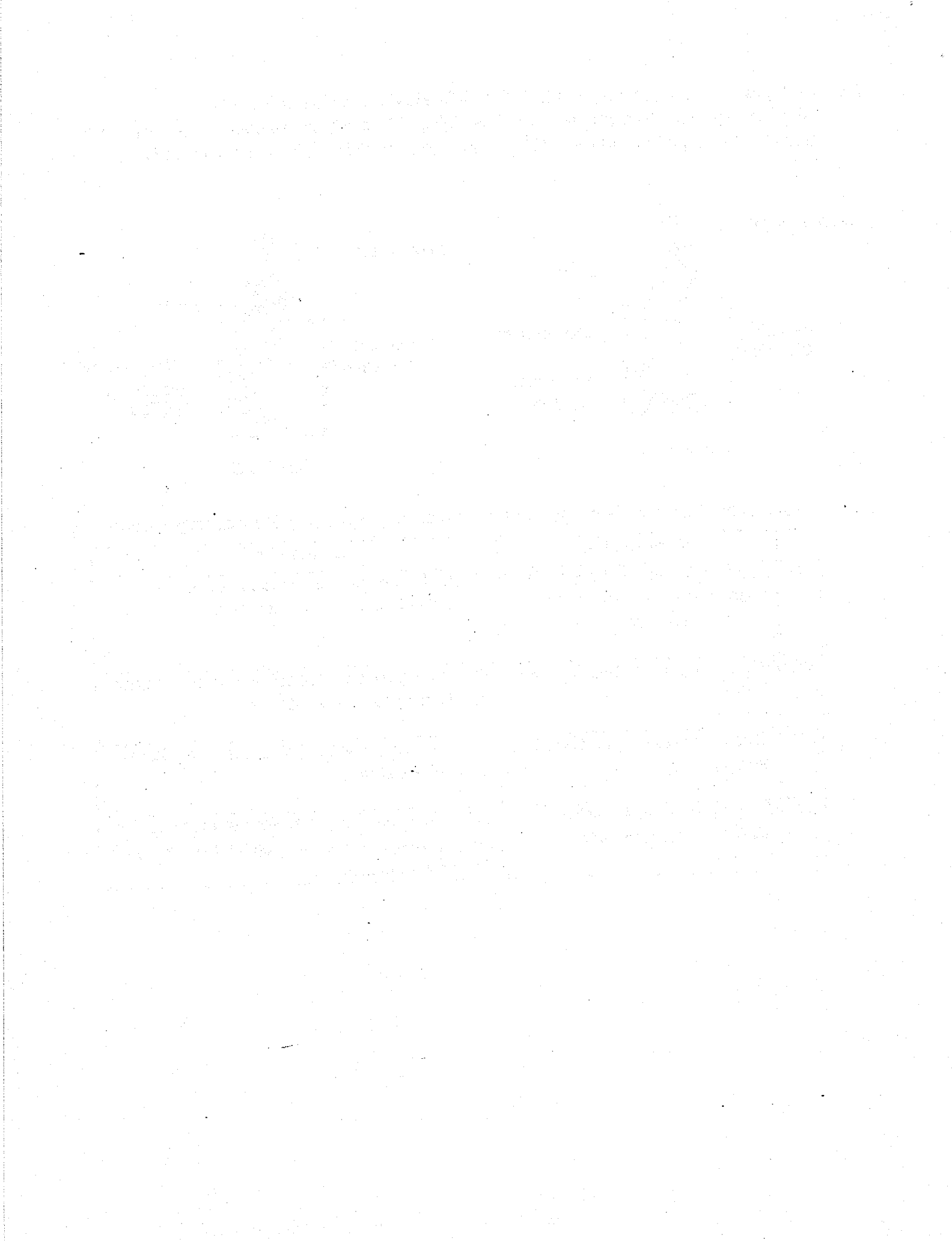
	Best conductor of heat \longrightarrow Poorest conductor of heat		
(1)	X	Y	Z
(2)	X	Z	Y
(3)	Y	X	Z
(4)	Z	X	Y

28. Sally prepared two set-ups, A and B. The air inside the container was 28°C. She hung identical slice of meat in each container. Then she placed some hot stones which were heated to 200°C and placed them inside each air-tight container as shown below.

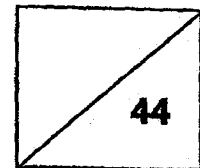


Which of the following observation and corresponding explanation is most likely correct?

	Observation	Explanation
(1)	The temperature of air in both containers would rise to the same temperature.	The air in each container gained the same amount of heat from the hot stones.
(2)	Slice of meat in set-up A cooked faster.	The meat gained more heat from the hot stones as it is closer to the hot stones.
(3)	Slice of meat in set-up B cooked slower.	The meat gained less heat as there was lesser mass of hot stones.
(4)	Both slices of meat will be cooked at the same rate	Both slices of meat gained the same amount of heat as the hot stones in each containers are of the same temperature.



Name: _____ Index No: _____ Class: P5 _____



SECTION B (44 marks)

For questions 26 to 38, write your answers clearly in the spaces provided.

The number of marks is shown in brackets [] at the end of each question or part question.

29. Tina wanted to find out the conditions that affected the growth of bread mould. She put water on different types of bread and recorded the conditions in the table below.

Set-up	Type of bread	Number of days before mould appears	Temperature of surrounding air (°C)	Amount of water on bread (mℓ)
1	A	9	30	0
2	B	8	5	4
3	C	7	0	4
4	D	4	30	20

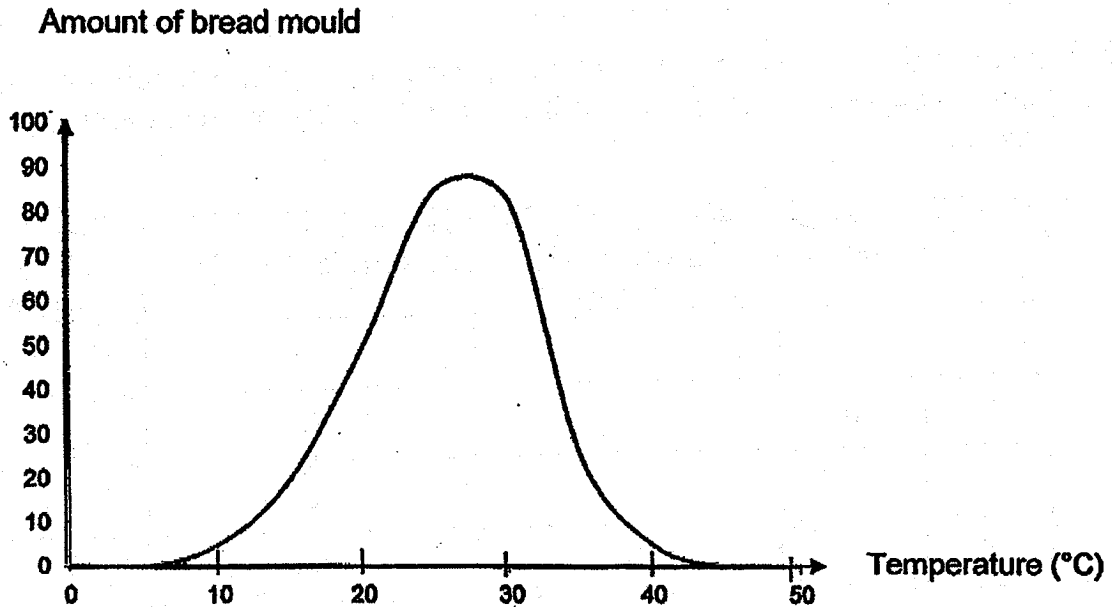
- (a) Which two set-ups should Tina compare to find out the effect of water on the growth of bread mould? [1]

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Tina plotted a graph which shows how the growth rate of bread mould changes with temperature below.

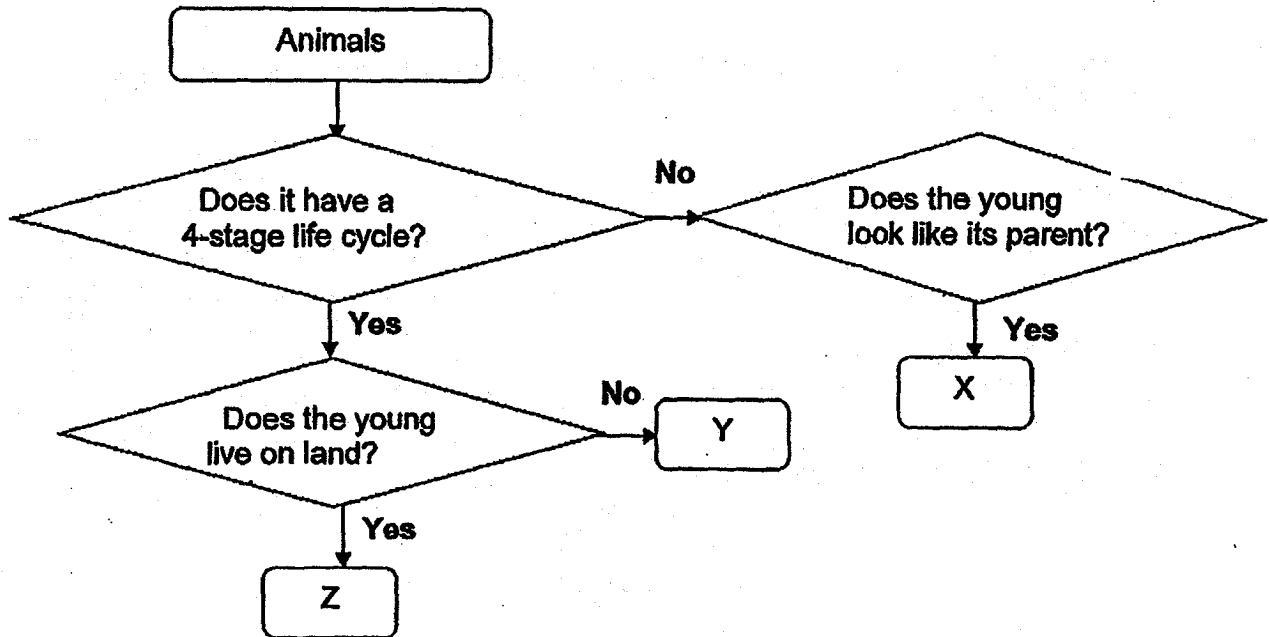


- (b) Based on the graph above, state the temperature that is most favourable for the bread mould to grow. [1]

- (c) How do mould and mushrooms reproduce? [1]

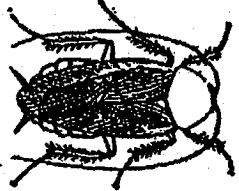

Score	2
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30. Siti classified three animals using the flow chart below.



(a) Fill in the blanks with letters X, Y or Z.

[2]

<p>(i)</p>  <p>cockroach</p>	
<p>(ii)</p>  <p>butterfly</p>	

Continue on next page

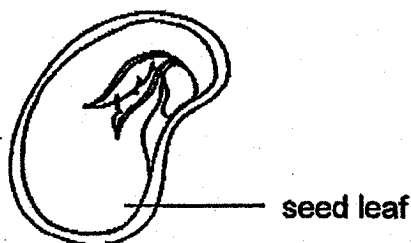
Score	2
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(b) Based on the flowchart, state one similarity and one difference between the animals Y and Z. [2]

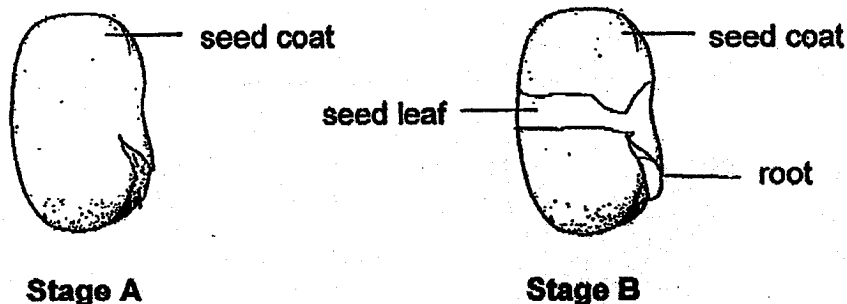
Similarity	
Difference	

31. Study the diagram below carefully.



(a) What is the function of the seed leaf? [1]

(b) Two stages, A and B, in the germinating process of a seed are shown below.



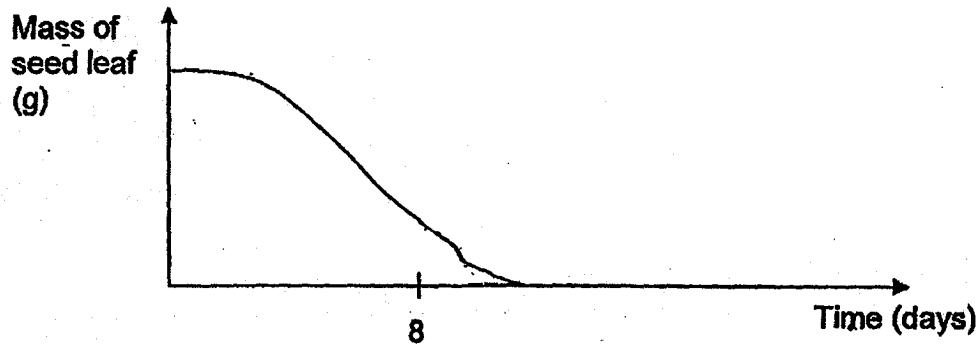
Give a reason for the increase in the mass of seed from Stage A to Stage B. [1]

Continue on next page

Score	4
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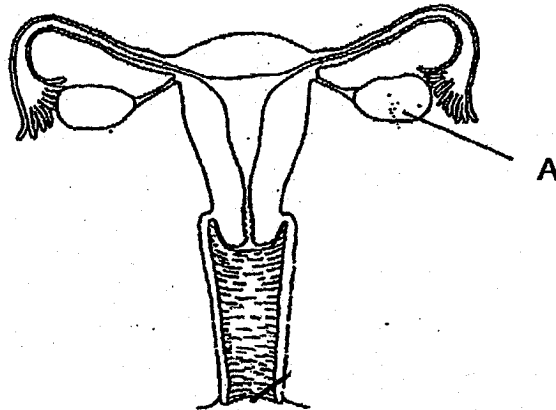
Continued from previous page

- (c) The following shows an incomplete graph showing the change in the mass of the seed leaf during its development.



It was observed that green leaves emerge on day 8. In the graph above, continue the graph to show the change in the mass of the seed leaf from day 8 onwards. [1]

32. The diagram below shows a female reproductive system.



- (a) If part A in the diagram above was removed, can the female still reproduce? Give a reason for your answer. [2]

- (b) Label with an 'X' in the diagram to show the part which receives the male reproductive cells. [1]

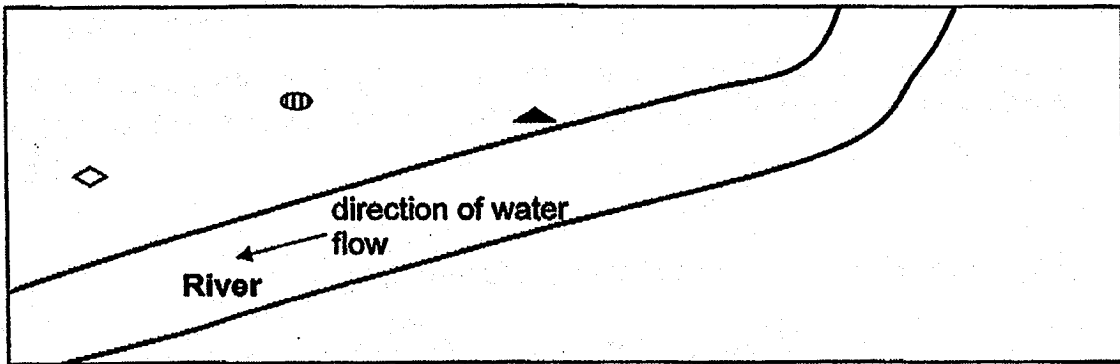
Score	4
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33. Hasan studied the distribution of plants P, Q and R in an area over a year. His observations are shown below.

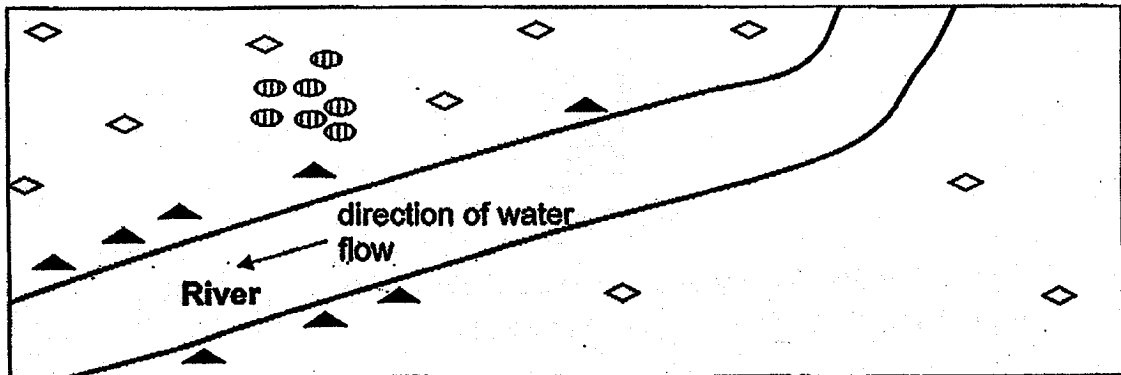
Key:

- ⊕ Plant P
- ▲ Plant Q
- ◇ Plant R

First observation



Observation one year later



- (a) Based on the diagram, state the method of seed dispersal of plants P, Q and R in the table below. [2]

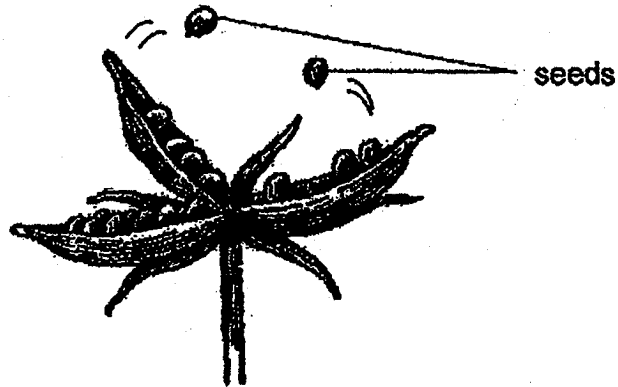
Plant	P	Q	R
Method of seed dispersal	By _____	By _____	By _____

Score	2
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The diagram below shows pod-like fruit X.



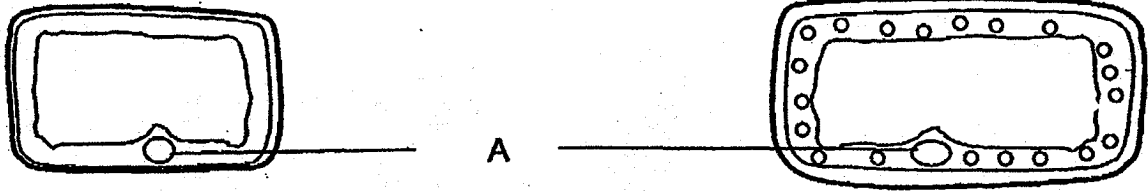
fruit X

- (b) Which of the plants, P, Q or R, would produce fruit X? Give a reason for your answer. [1]

- (c) The young of plant R grow healthier than those of plant P. Based on the information in the diagram, explain clearly why the method of seed dispersal of plant R has an advantage as compared to plant P. [2]

Score	3
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34. The diagrams below show two plant cells, X and Y.



Cell X

Cell Y

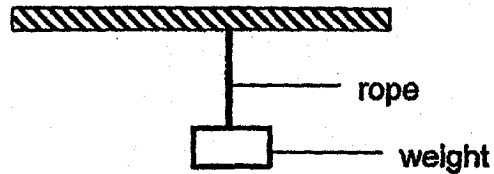
(a) What is the function of part A in Cells X and Y? [1]

(b) State one similarity between Cell X and Cell Y. [1]

(c) Which cell, X or Y, is taken from the leaf?
Give a reason for your answer. [1]

Score	3
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35. Mrs Lee tested the strength of three types of ropes, X, Y and Z, by hanging weights onto each of them . She added the weights hung onto the rope one by one until the rope started to break.



The maximum weight that the ropes could hold is shown in the table below.

Ropes	X	Y	Z
Maximum weight the rope can hold before it starts to break (kg)	13	100	80

- (a) Arrange the ropes, X, Y and Z, starting with the strongest rope. [1]

Strongest → Weakest

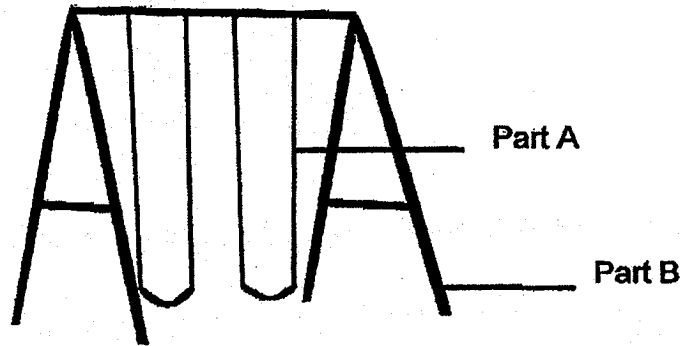
Rope ____	Rope ____	Rope ____
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Continue on next page

Score	1
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Continued from previous page

Mrs Lee wanted to make a pair of swings and placed them in her garden for her children of mass 20 kg and 14 kg respectively.



- (b) Which rope, X, Y or Z, should Mrs Lee choose to make part A of her swings? Explain your answer clearly. [2]

The properties of materials P, Q and R are as shown in the table below.
A tick (✓) shows the presence of the property.

Materials / Properties	P	Q	R
Strong	✓	✓	
Flexible	✓		
Waterproof	✓	✓	✓

- (c) Is material P suitable material to be made into part B of the swing? Explain your answer clearly. [1]

Score	3
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36. Harry prepared an experimental set-up as shown below.

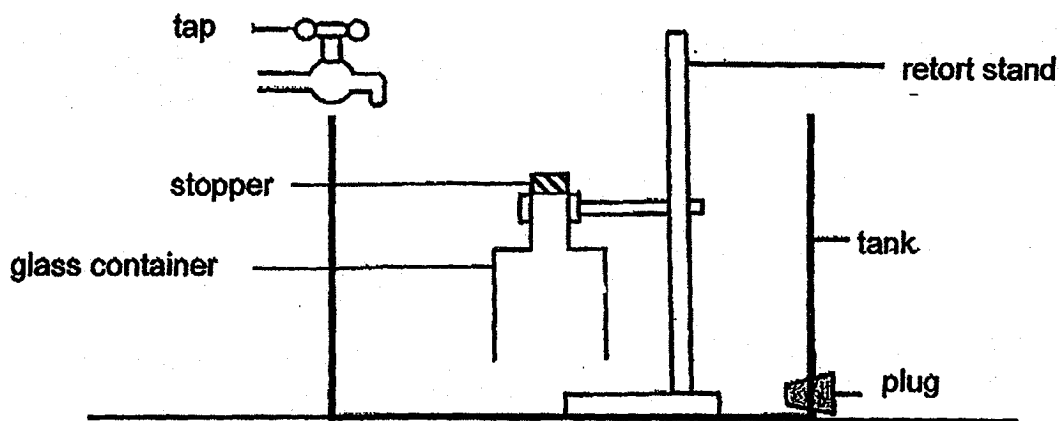


Diagram 1

At first, the tank was empty. Harry turned on the tap to fill the tank with water completely as shown in the diagram below.

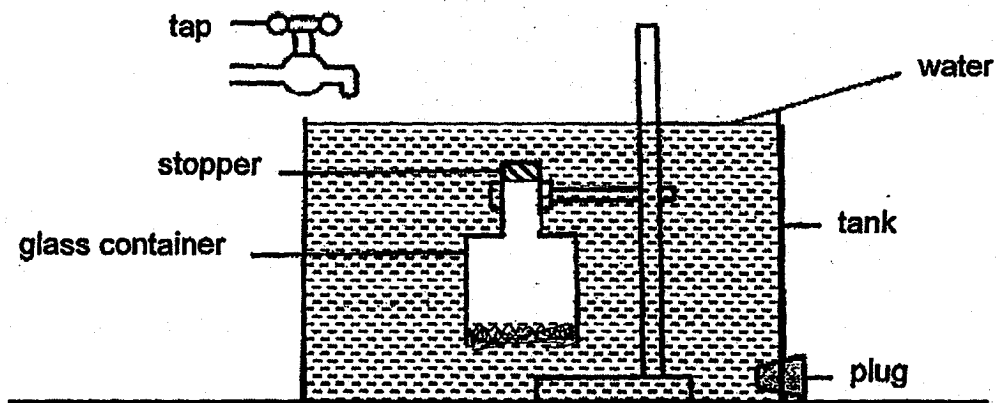


Diagram 2

(a) Harry observed that the water did not fill the glass container completely to the top where the stopper was. Explain his observation. [2]

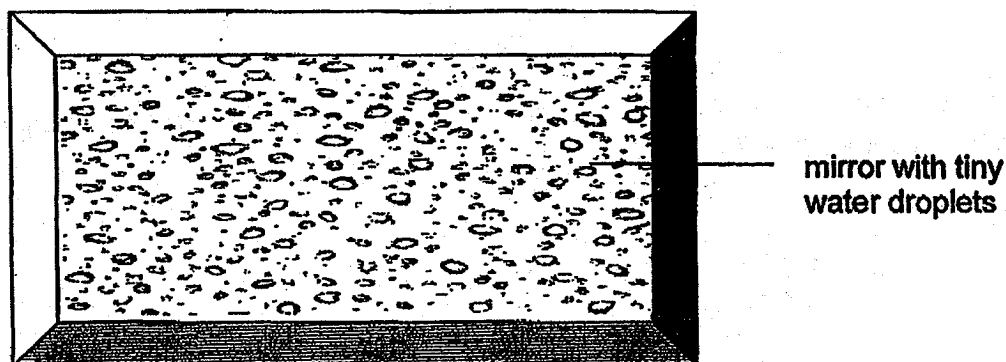
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Score	2
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- (b) Describe what would happen to the water level in the tank if the stopper on top of the glass container was removed. Explain your answer clearly. [2]

37. After John had a hot shower, he observed that the mirror in the bathroom was fogged up with tiny water droplets as shown in the picture below.

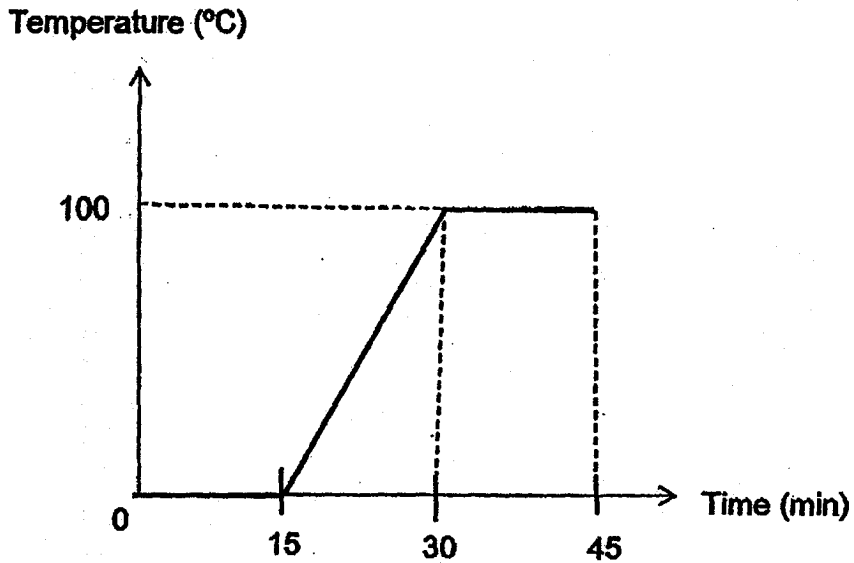


- (a) Explain how the water droplets on the mirror were formed. [2]

- (b) John used a hair dryer and blew on a part of the fogged up mirror. It was observed that part of the misty mirror that was blown on became clear again. Explain this observation clearly. [1]

Score	5
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38. Mary heated a beaker of ice over a period of time. The graph below shows the change in temperature of the ice as it was being heated.



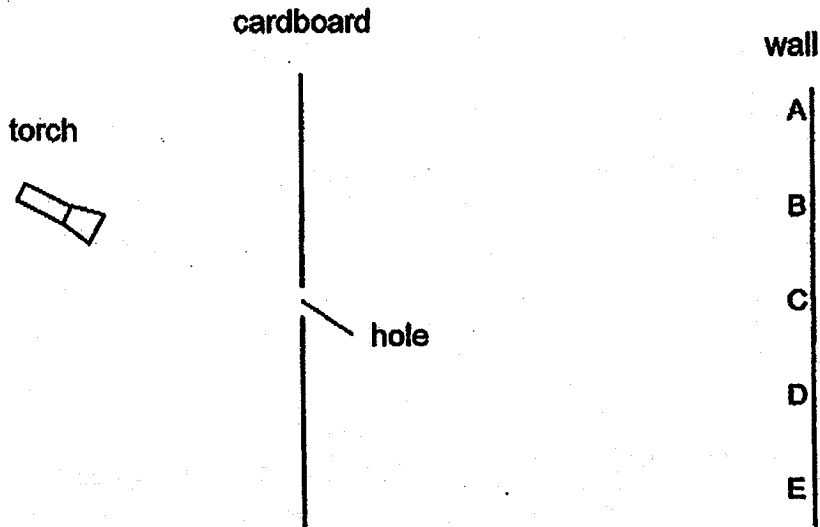
- (a) Based on the graph above, how long did it take for the ice to melt completely? [1]

- (b) What would happen to the temperature of the water if the beaker of water was removed from the heat source at 100 °C and placed on a table in the room after one day? [1]

- (c) Mary observed a decrease in the amount of water in the beaker after one day. Give a reason for her observation. [1]

Score	3
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39. Siew Lee prepared an experiment set-up shown below. Light from the torch passes through the hole in the cardboard and forms a bright spot on the wall.



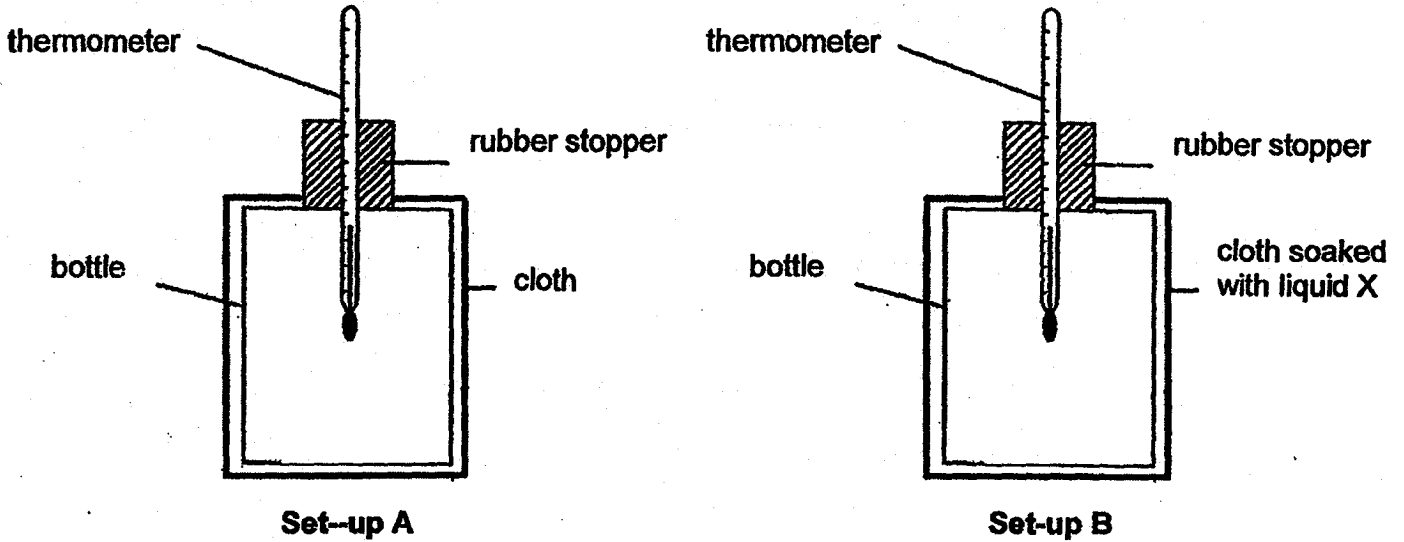
- (a) Which part on the wall, A, B, C, D or E, will a bright spot of light be formed? [1]

- (b) State a property of light that explains your answer in (a). [1]

- (c) Without moving the positions of items in the set-up above, suggest what Siew Lee could do so that a larger area of bright spot of light would be formed on the wall. [1]

Score	3
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40. Ashlyn set up an experiment as shown below. She wrapped the bottles with identical pieces of cloths.



She recorded the change in the temperature of air in Set-ups A and B in the table below.

Set-up	Temperature of air in the bottle (°C)	
	At first	After 20 minutes
A	30	30
B	30	25

- (a) Based on the information above, what happened to the temperature of air in bottle B after 20 minutes? [1]

Ashlyn wiped her hands with a piece of tissue paper which was soaked with liquid X. After a while, her hands felt cooler than before.

- (b) Explain why Ashlyn's hands felt cooler. [1]

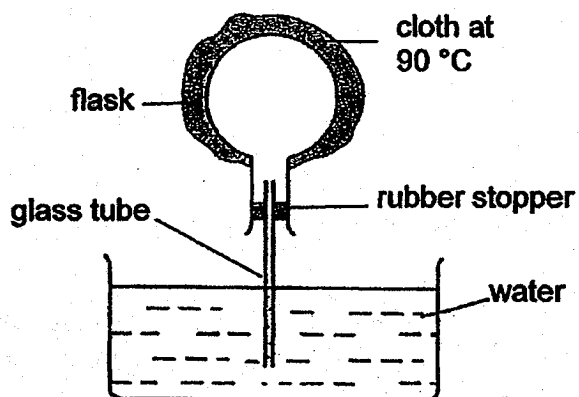
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Score	2
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- (c) Without using any equipment, what could Ashlyn do to increase the rate of evaporation of liquid X on her hands? [1]

41. Steven set up the experiment below.



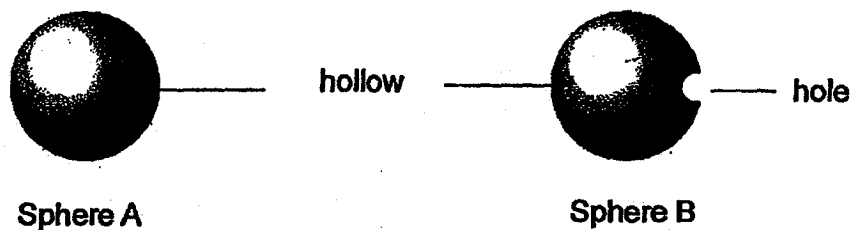
- (a) Steven observed bubbles escaping into the water from the glass tube after few seconds. Give a reason for his observation. [1]

Continue on next page

Score	2
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Steven moulded two pieces of clay into two hollow spheres as shown below.



He placed the two pieces of dried clay spheres into a kiln and fired them at high temperature. During the firing process, it was observed that one of the spheres cracked into pieces but not the other one.

(b) Which of the sphere, A or B, cracked? Explain your answer clearly. [2]

END OF PAPER

Setters: Miss Ho W.N., Mdm Rozi

Score	2
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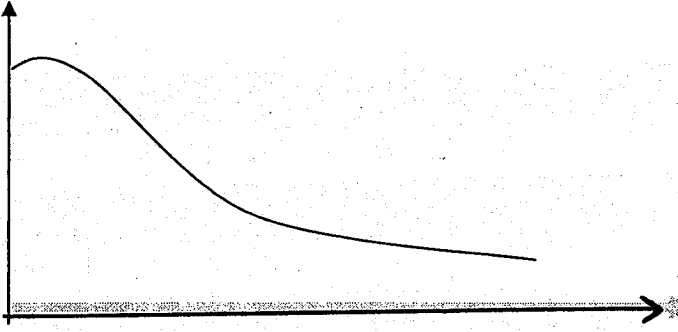
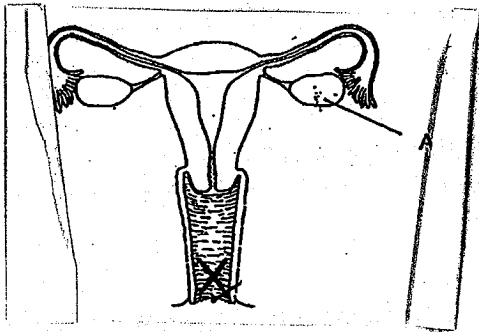
SCHOOL : RAFFLES GIRLS' PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	4	2	4	2	3	1	4	4	2
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	3	1	2	2	2	2	2	4	4
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	1	4	2	4	2	2	4		

SECTION B

Q29)	<p>a) Land 4</p> <p>b) 28 C</p> <p>c) They reproduce by sperms.</p>
Q30)	<p>a) i) X</p> <p>ii) Z</p> <p>b) Similarity – Both have a 4-stage life cycle.</p> <p>Difference – The young of Z lives on land but the young of Y does not.</p>

Q31)	<p>a) To provide food for the germinating seed.</p> <p>b) The seed started germinating as the root is starting to appear. It absorbed water to germinate.</p> <p>c)</p> 
Q32)	<p>a) The female will be able to reproduce. There is ovary left to produce an egg cell to be fertilised by a sperm cell.</p> <p>b)</p> 
Q33)	<p>a) P – by splitting Q – by water R – by animals</p> <p>b) P. Nearest to the parent plant</p> <p>c) Less overcrowding, less competition for light, water, space, nutrients</p>
Q34)	<p>a) It is to control all activities the cell is doing</p> <p>b) Both have a cell wall</p> <p>c) Y. It has chloroplast which contains chlorophyll that can trap light to photosynthesis.</p>
Q35)	a) Y – Z – X

	<p>b) It is the strongest, it can withstand the weight of both children without breaking.</p> <p>c) No. Because P is flexible . The structure will collapse.</p>
Q36)	<p>a) Air trapped in container and air occupies space. Some water can still enter because air can be compressed.</p> <p>b) It will decrease. The air that was trapped in the glass container will escape and the water will take up the space in the glass container.</p>
Q37)	<p>a) The surface of the mirror is cooler than the hot water vapour and the hot water vapour lost heat to the mirror and condensed.</p> <p>b) Water droplets gain heat from hot air and evaporated</p>
Q38)	<p>a) 15 minutes</p> <p>b) The temperature will decrease and become room temperature.</p> <p>c) Some of the water evaporation into water vapour.</p>
Q39)	<p>a) E</p> <p>b) Light travels in straight line.</p> <p>c) She could cut a bigger hole</p>
Q40)	<p>a) It lost heat to the liquid X in the cloth and so the temperature decreased.</p> <p>b) Ashlyn's hands lost heat as liquid X evaporates.</p> <p>c) She could blow her hands.</p>
Q41)	<p>a) The air in the flash in gained heat and expanded, so there will be air escaping the flask.</p> <p>b) A. Air trapped inside A gained heat and expanded.</p>

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY

REPORT OF THE
COMMISSIONERS OF THE
BOARD OF CHEMISTRY

FOR THE YEAR
1917

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1918

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