RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1) 2019

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

Name : _____ **Index No.:** ____ **Class: P5** ___ **Date:** _____

15 May 2019 **SCIENCE** **ATT: 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 (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

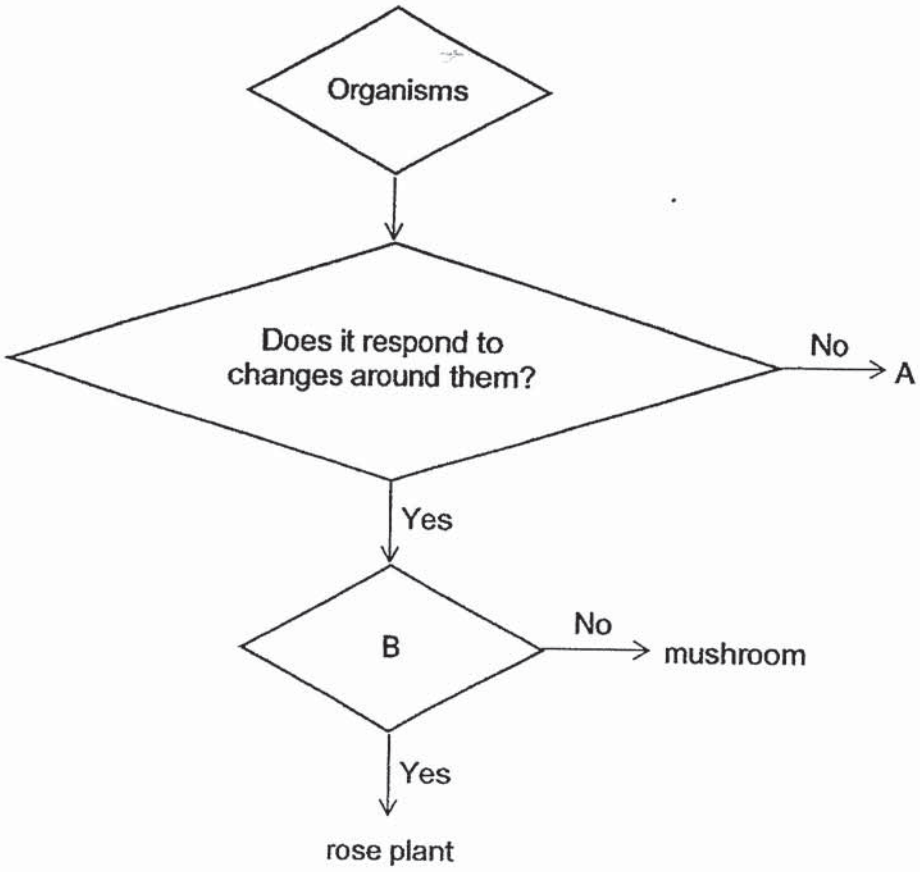
1. The table below shows the characteristics of animals W, X, Y and Z.
A tick (√) shows the presence of the characteristic.

Characteristic	Animal W	Animal X	Animal Y	Animal Z
Lays eggs		√	√	√
Has hair	√			
Has scales		√	√	
Breathe through lungs only	√		√	
Lives on land and water				√

Which of the following correctly shows the animal groups for animals W, X, Y and Z?

	Amphibian	Fish	Mammals	Reptile
(1)	X	Z	Y	W
(2)	Z	X	W	Y
(3)	W	Y	X	Z
(4)	Y	W	Z	X

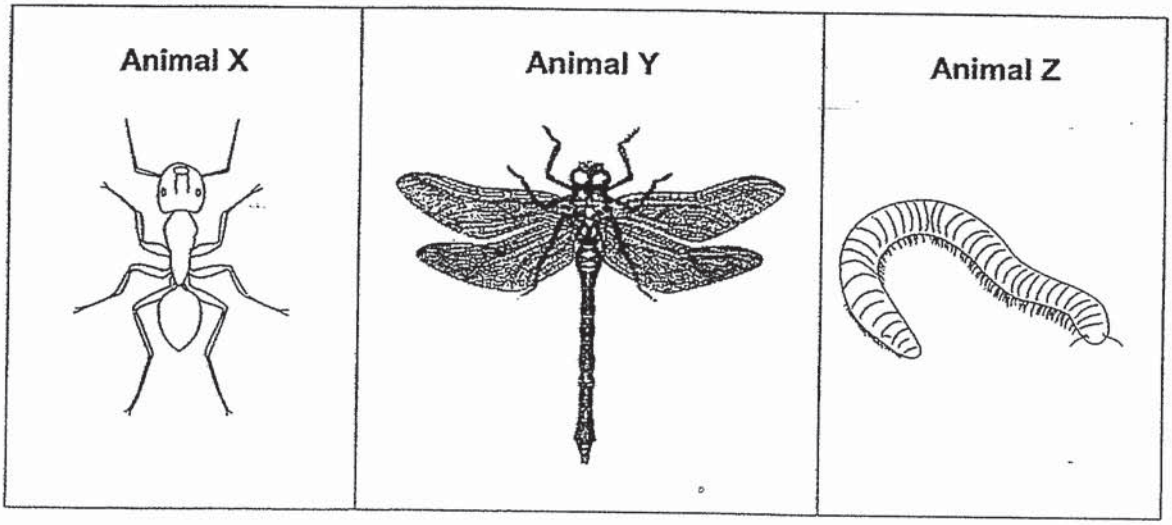
2. Study the chart below.



Which of the following is correct?

	A	B
(1)	ant	Is it alive?
(2)	tree	Is it a flowering plant?
(3)	rotting log	Does it make food?
(4)	bread mould	Is it poisonous?

3. The diagrams below show animals X and Y.

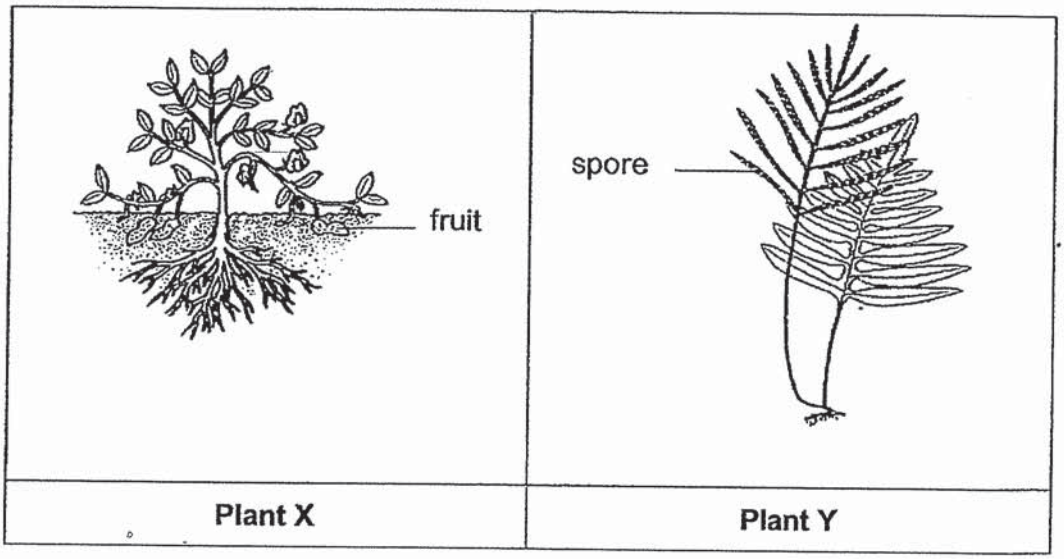


Based on the observations above, which of the following statements are correct?

A All animals have six legs.
B All three animals have three body parts.
C Animal X and Y are insects but not animal Z.
D Animal Y can fly but not animal X and animal Z.

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

4. The diagram below shows two plants growing in the garden.

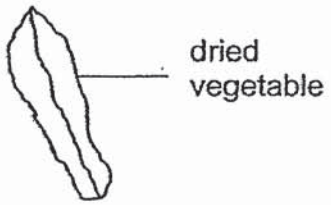
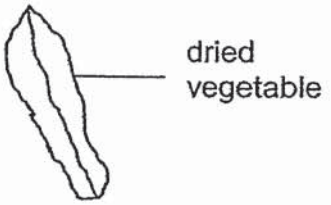
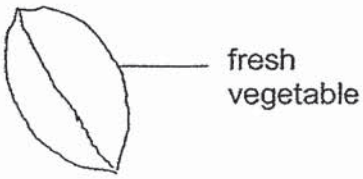
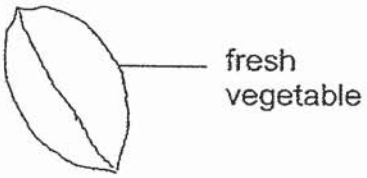


Which of the following statement(s) is/are correct?

A Both plant X and Y can make food.
B Both plant X and Y are flowering plants.
C Plant X is a flowering plant but not plant Y.

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

5. Tom wanted to find out if the presence of water has an effect on the growth of mould. He prepared four set-ups and placed them in various locations as shown below.

	
Set-up A **Location: Warm room**	**Set-up B** **Location: Refrigerator**
	
Set-up C **Location: Warm room**	**Set-up D** **Location: Refrigerator**

After sometime, he observed that mould was found growing in set-ups A, C and D.

Which of the following correctly explains his observation?

A Mould was growing in set-up A as there was moisture in the air.
B No mould was growing in set-up B as there was no oxygen in the fridge.
C Mould was growing in set-up C as there was moisture in the air and in the vegetable.
D Mould was growing in set-up D as there was moisture in the vegetable.

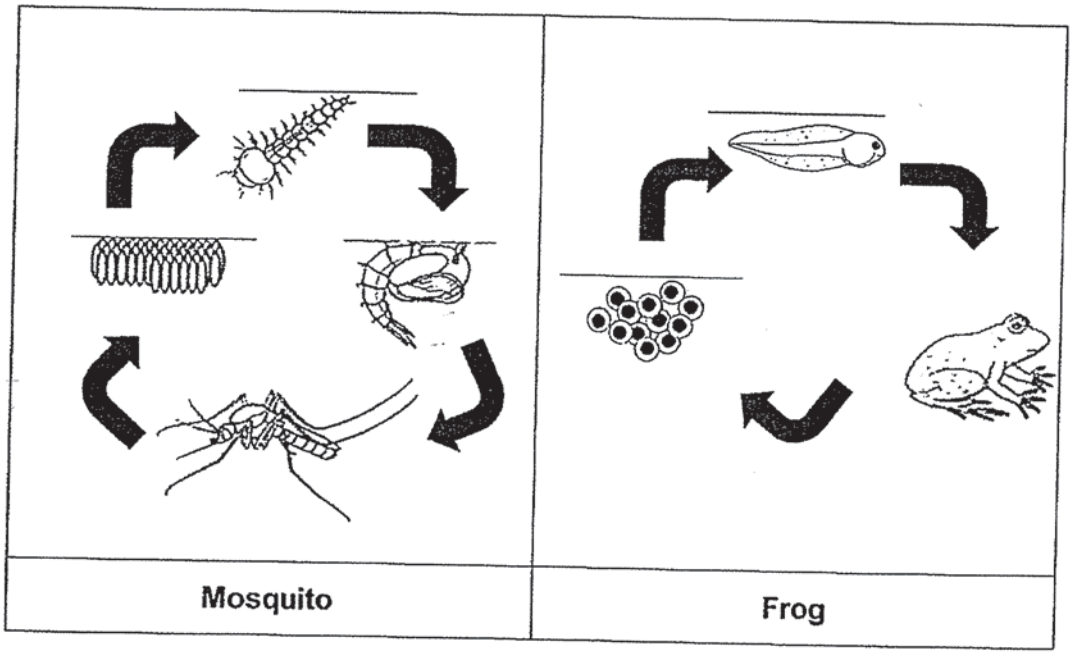
(1) B only
(2) A and B only
(3) C and D only
(4) A, C and D only

6. Which of the following statements are true of a cockroach and butterfly?

A Their eggs are laid on land.
B Their young do not have wings.
C Their young resemble the adult.
D They have four stages in their life cycle.

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

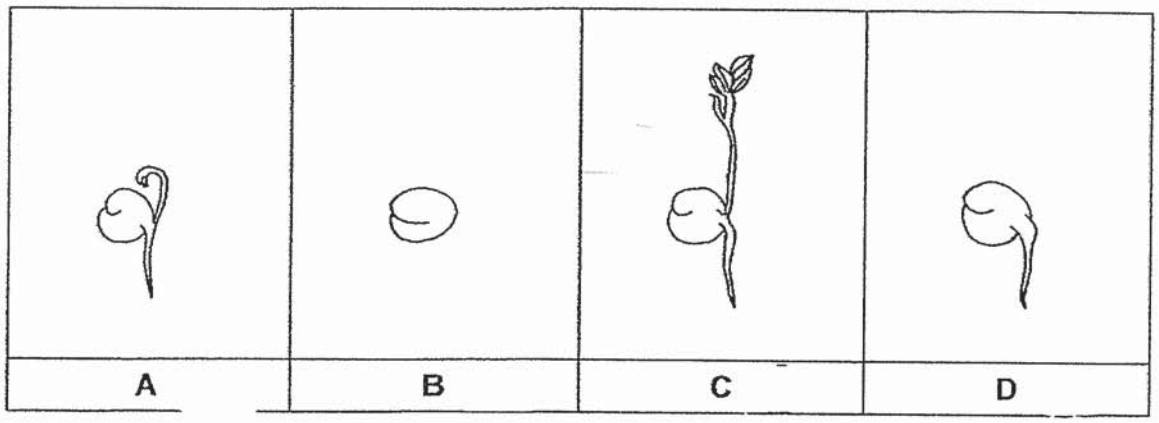
7. The diagram below shows the life cycle of a mosquito and a frog.



Based on the diagrams above, which of the following statements is correct?

(1) Both organisms have 4-stage life cycle.
(2) The young of both organisms live in water.
(3) Both the young of the organisms look like their adults.
(4) The adult of both organisms live on land and in water.

8. The diagrams below show the stages of development of a seed.



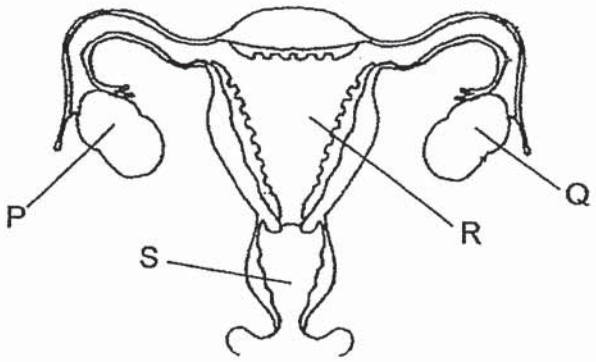
Which of the following shows the correct arrangement of the stages of development of a seed?

(1) BADC
(2) BCAD
(3) BDAC
(4) BDCA

9. Which of the following statement about sexual reproduction in animals is correct?

(1) Fertilisation occurs when the sperm fuses with the egg.
(2) Fertilisation occurs at the organ where the foetus eventually develops.
(3) Traits of the male parent are passed onto the offspring through the sperm and egg.
(4) The testes produce the male sex cells while the uterus produces the female sex cells.

10. The diagram below shows the female reproductive system.



Which of the following statements below is correct?

(1) The egg cells are only stored at R.
(2) No egg cell can be produced if Q is removed.
(3) Sperm enters at S to swim towards the egg cell.
(4) Sperms released from P fuses with the egg cell.

11. A student made three statements, A, B and C, about sexual reproduction in plants and animals:

A Pollen grains are transferred from the anther to the stigma.

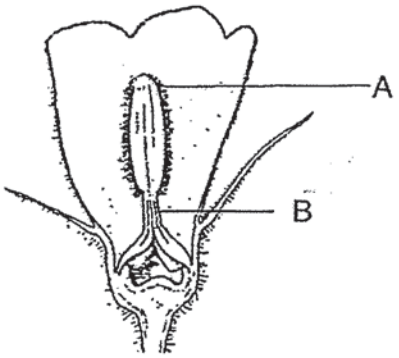
B Fertilisation occurs in a female reproductive part.

C Fertilised egg is developed into a foetus in the womb.

Which of the following statements are grouped under the sexual reproduction in plants and humans correctly?

	Plants	Humans
(1)	A	B, C
(2)	B	A, C
(3)	A, B	B, C
(4)	A, B	A, C

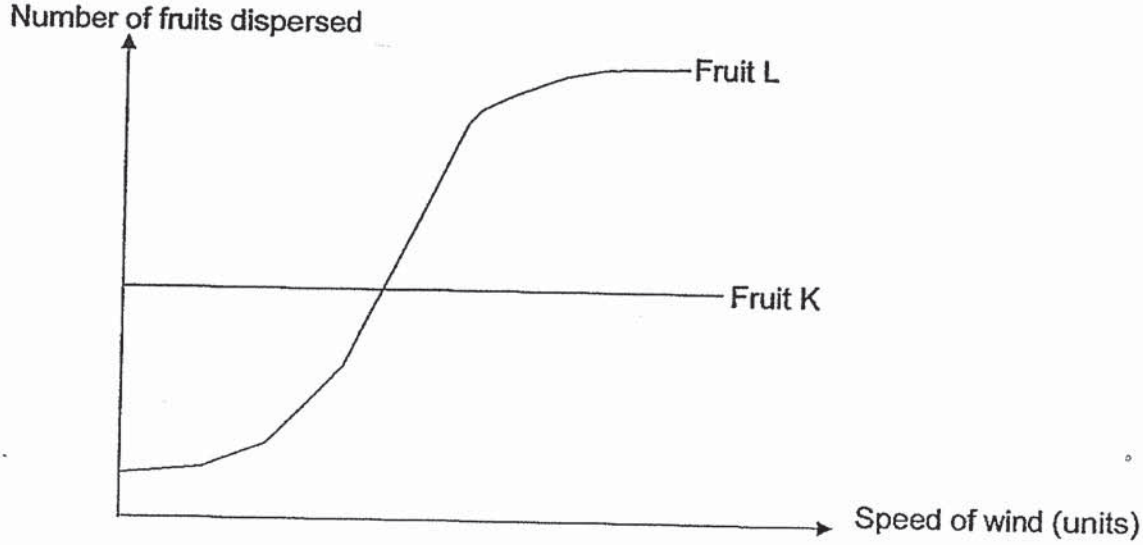
12. The diagram below shows a cross section of a male flower on a plant.



Which of the following identifies part A and part B correctly?

	A	B
(1)	stigma	style
(2)	style	stigma
(3)	anther	filament
(4)	filament	anther

13. The graph below shows how the speed of wind affects the number of fruits K and L are dispersed from their respective parent plants.



Based on the information above, which of the following statements are correct?

A Fruit K has more wing-like structures than fruit L.
B Wind speed affects the dispersal of fruit L but not fruit K.
C A greater number of fruit L can be found along the river bank.
D A greater number of fruit L will be dispersed during windy condition.

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

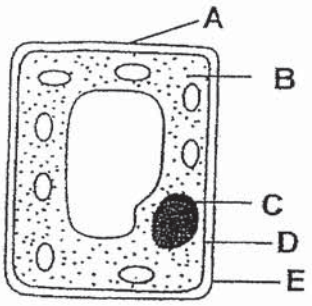
14. Cheryl wanted to find out if warmth is needed in the germination of seeds. She prepared the following set-ups.

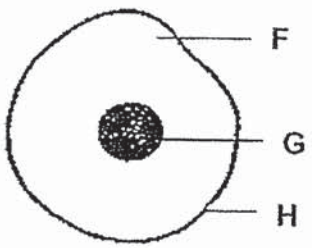
Set-up	A	B	C	D
Amount of light provided (units)	0	0	300	300
Amount of water given (ml)	50	0	50	50
Temperature (°C)	2	30	2	30

Which of the following set-ups should she use to ensure a fair experiment?

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

15. The two cells shown below are examined under a microscope.

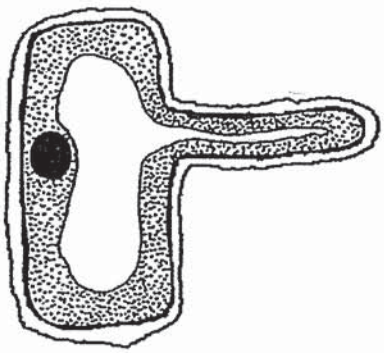




Which of the following parts of the cells are matched correctly to their functions?

	Parts of the cell	Function
(1)	E, H	They keep the cells firm.
(2)	D, H	They control substances that go in or out of the cells.
(3)	C, F	They control the activities that happen inside the cells.
(4)	B, G	They allow food and oxygen to move around with the cells.

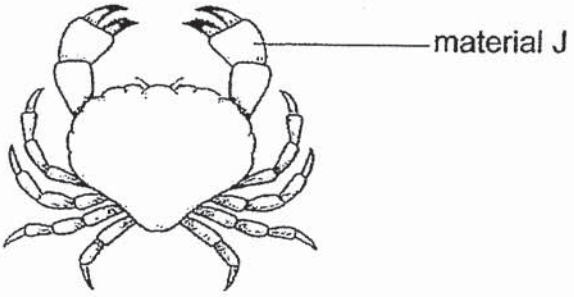
16. The diagram below is a cell viewed under the microscope.



Which of the following is correct?

	Type of cell	Explanation
(1)	Cell from leaf	The cell contains chloroplast.
(2)	Cell from leaf	The cell contains cell wall and chloroplast.
(3)	Cell from root	The cell contains cell membrane.
(4)	Cell from root	The cell contains cell wall and no chloroplast.

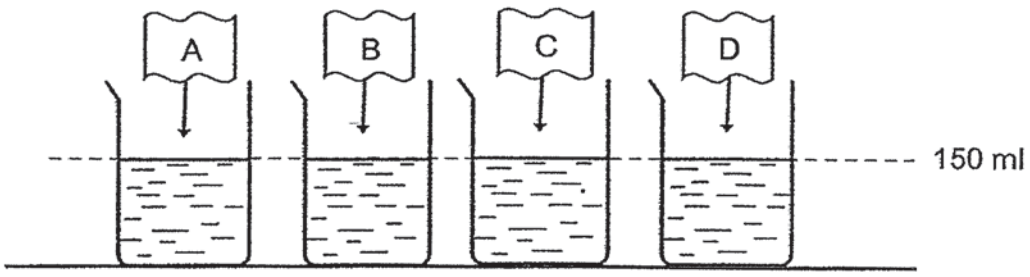
17. An animal is covered in a shell that supports its body and protects its internal organs. The shell is made of material J.



Which property of material J allows the shell to perform the functions described?

(1) strength
(2) flexibility
(3) waterproof
(4) ability to sink

18. Cassandra placed four different materials, A, B, C and D, of the same size into four identical beakers. Each beaker contained 150 ml of water as shown below.



She removed the materials after ten minutes. She measured the remaining water in each beaker and recorded it in the table below.

Beaker	Volume of water left in the beaker after ten minutes (ml)
A	20
B	145
C	90
D	55

Based on the observations above, which material will be most suitable to make the canopy of an umbrella?

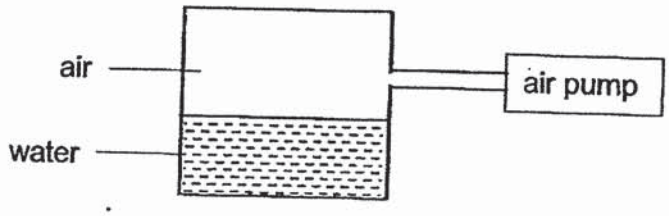
(1) A
(2) B
(3) C
(4) D

19. Ahmad placed some objects on a balance as shown below.

Based on the observations above, which one of the following statements is most likely to be correct?

(1) A has a greater mass than B and C.
(2) C has a greater mass than A and B.
(3) A has a greater volume than B and C.
(4) C has a greater volume than A and B.

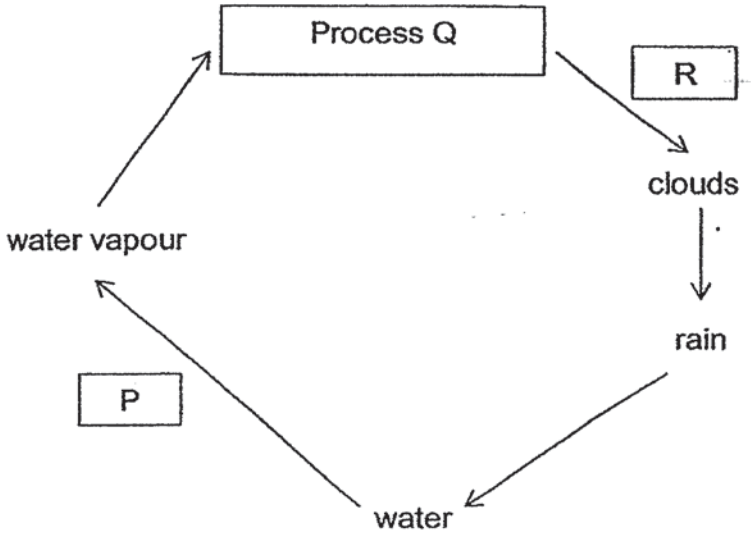
20. The diagram below shows a container filled with air and water.



If more air was pumped into the container, which of the following statements is likely to be correct?

(1) The total mass of the container would increase.
(2) The total mass of the container would remain the same.
(3) The volume of air in the container would increase as it had been compressed.
(4) The volume of air in the container would decreased as it had been compressed.

21. The diagram below shows the water cycle.

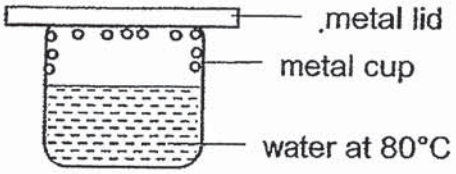


Which of following is correct?

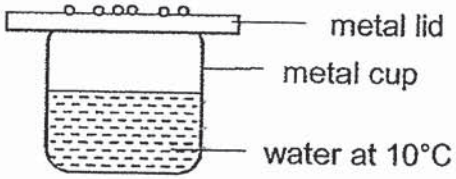
	P	Process Q	R
(1)	lose heat	evaporation	gain heat
(2)	gain heat	condensation	gain heat
(3)	lose heat	evaporation	lose heat
(4)	gain heat	condensation	lose heat

22. Which of the following correctly shows where water droplets would form on the metal lid after a short while?

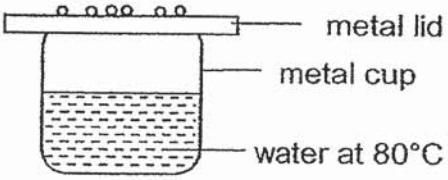
(1)



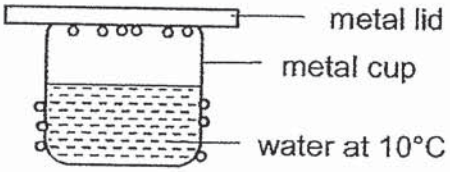
(2)



(3)



(4)

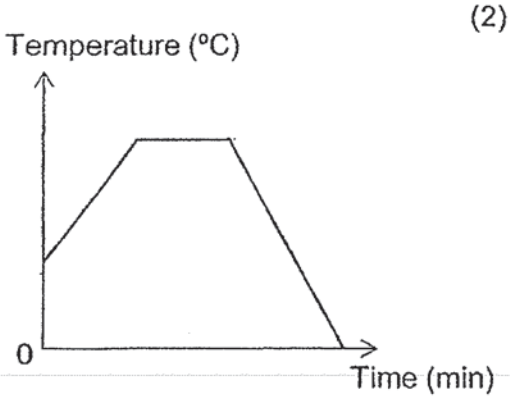


23. Substance P freezes at 55°C and boils at 200°C.
Which of the following shows the correct state of substance P?

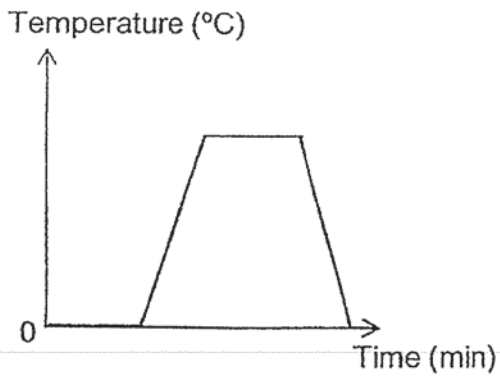
	State of substance P at	
	60°C	**165°C**
(1)	solid	liquid
(2)	solid	gas
(3)	liquid	liquid
(4)	liquid	gas

24. Mother heated a pot of water until it started to boil. Then she continued to let it boil for another ten minutes before she took it off the stove. After that, she placed it in the refrigerator. Which of the following graphs below shows the changes in the water temperature correctly?

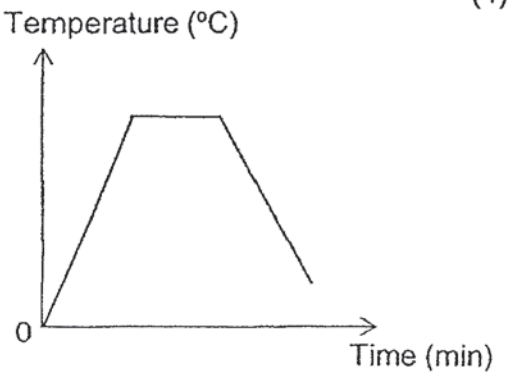
(1)



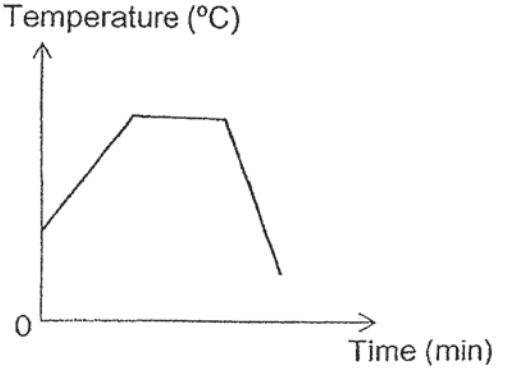
(2)



(3)

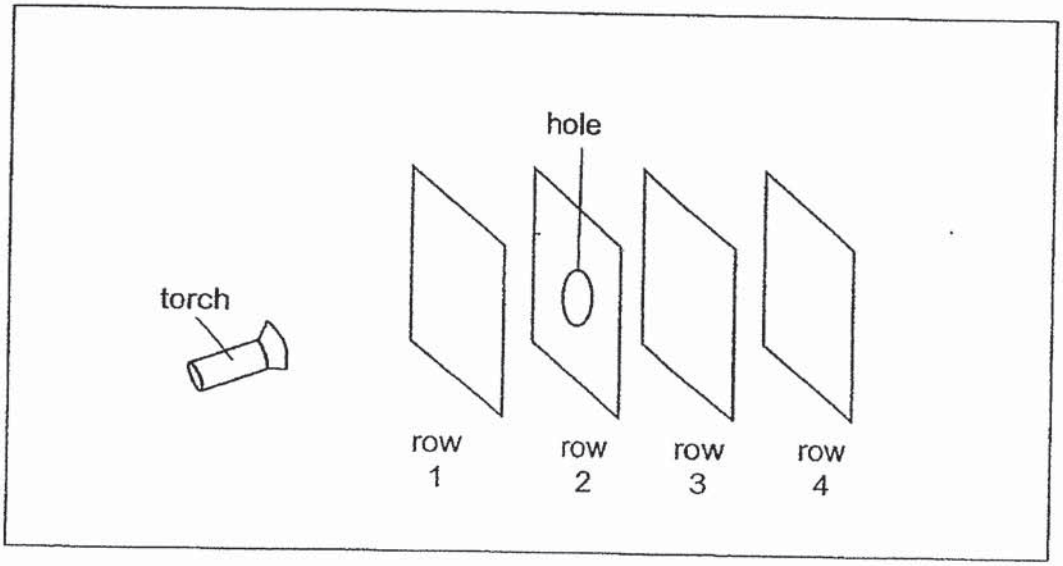


(4)



25. Sakinah set up an experiment in a dark room using a torch and four sheets made of different materials. The sheet in row 2 had a hole cut out. The properties of the four sheets of materials are shown in the table below.

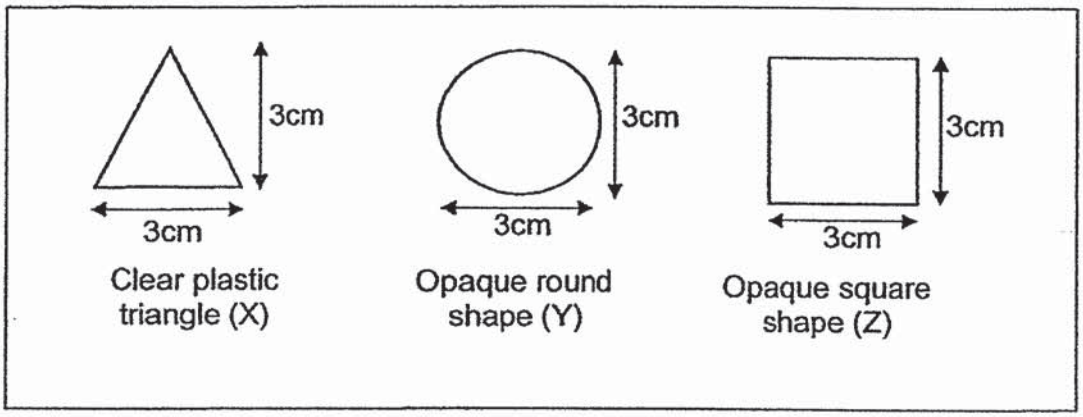
Property of materials	Materials
Does not allow light to pass through	A, B
Allow light to pass through	C, D



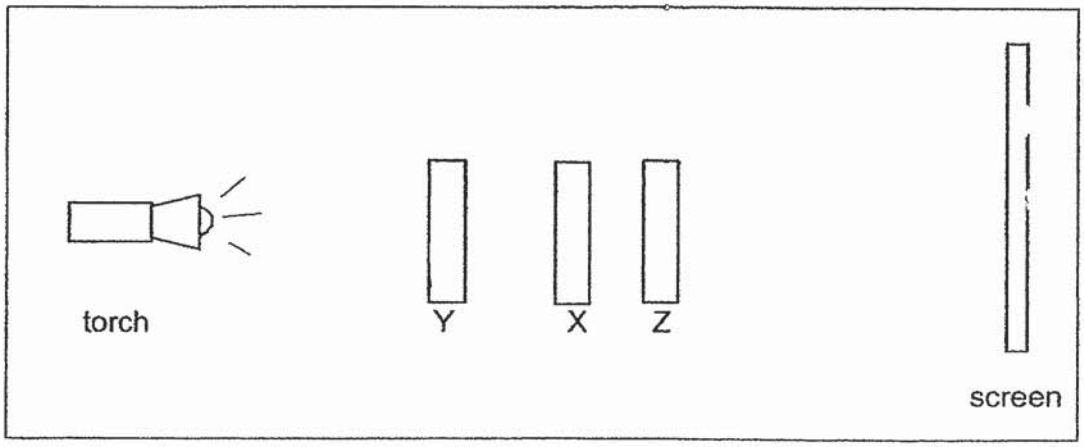
Suggest how she should arrange the sheets if she wanted a bright circular patch of light to appear on the sheet in row 4?

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

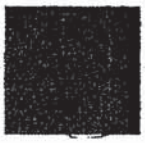
26. The diagram below shows three objects.

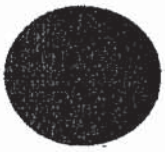


The three objects were placed between a torch and a screen as shown below.



Which of the following most likely shows the shadow casted on the screen?

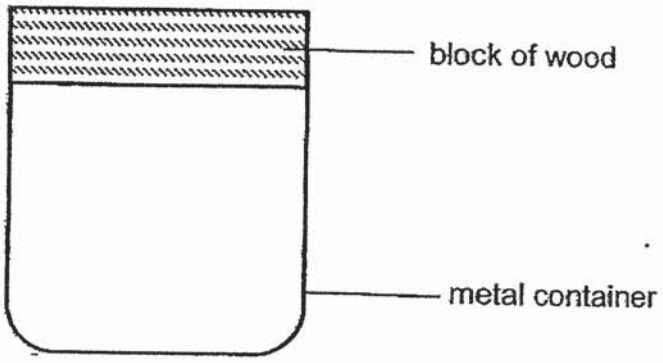
(1) 

(2) 

(3) 

(4) 

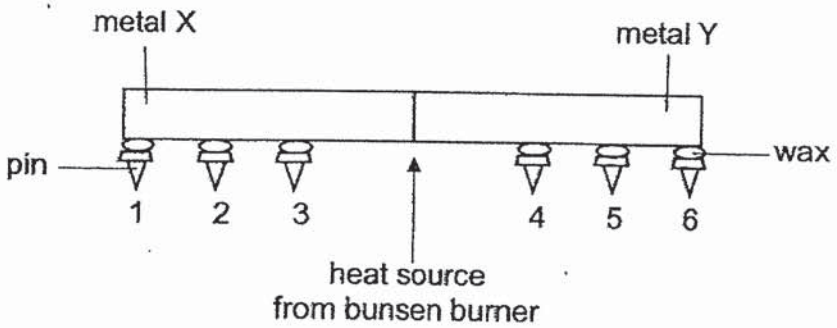
27. Weiming found a block of wood stuck in a metal container.



Which of the following options would allow him to remove the wooden block from the metal container?

(1) Heat the metal container.
(2) Heat both the metal container and block of wood.
(3) Place the metal container in a container filled with ice.
(4) Invert the container and place the portion with the block of wood in a container filled with ice.

28. Six pins were stuck onto a metal rod with the same amount of wax in the diagram below. The metal rod was made of two different type of metals, X and Y. When the metal was heated in the middle, the pins dropped off in order of 4, 5, 3, 6, 2 and 1.



Which of the following most likely explains the above observation?

(1) Heat travelled from metal X to metal Y.
(2) Heat travelled from metal Y to metal X.
(3) Metal X conducted heat better than metal Y.
(4) Metal Y conducted heat better than metal X.

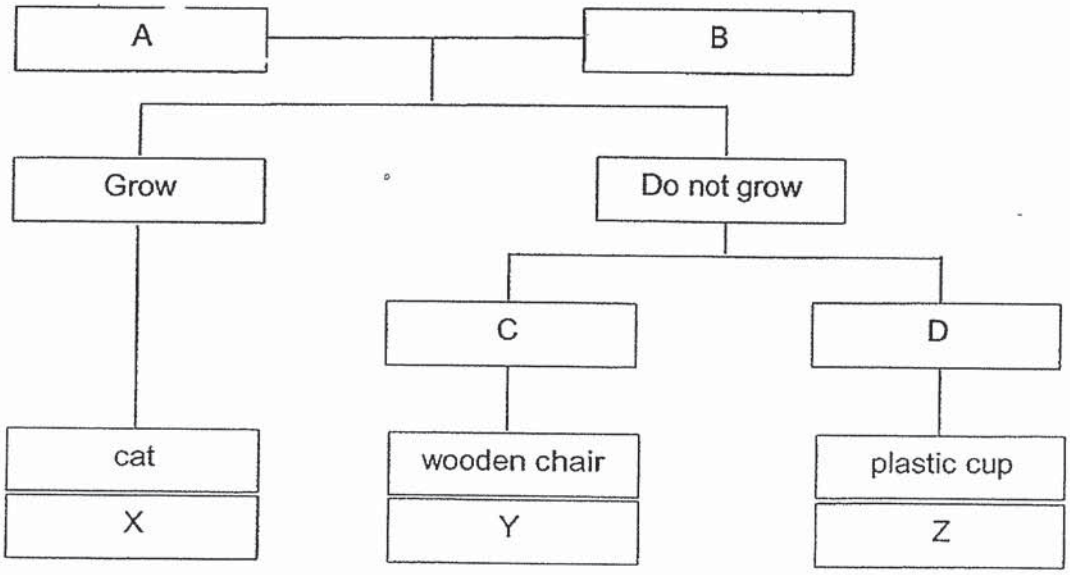
Name: _____ Index No: _____ Class: P5 ____

44

SECTION B (44 marks)

For questions 29 to 41, 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. Study the classification table below.



(a) Fill in a suitable heading for A, B. C and D. [2]

(i) A: _____

(ii) B: _____

(iii) C: _____

(iv) D: _____

(b) Which item (X, Y or Z) best represents a woollen sweater in the above classification table? [1]

_____

Score / 3

30. The table below shows the effect of temperature on the length of life cycle of *Aedes* mosquitos which spread dengue fever.

Temperature (°C)	Average length of life cycle (days)
16	38.8
22	23.4
28	13.1
33	12.5
36	9.3

(a) What is the relationship between temperature and the average length of life cycle of the *Aedes* mosquito? [1]

The table below shows the average temperature recorded for five months.

Months	Average temperature (°C)
January	26.5
February	27
March	27.3
April	27.8
May	28.3

(b) During which month would there be the greatest number of dengue fever cases? Explain your answer clearly. [2]

Score	
	3

31. The table below shows the temperature range required to germinate seeds X, Y and Z.

Seed	Temperature of soil for seed germination (°C)		
	Minimum soil temperature	Most favourable soil temperature range	Maximum soil temperature
X	15.6	23.9 to 29.4	29.4
Y	4.4	15.6 to 29.4	35.0
Z	1.7	15.6 to 23.9	29.4

Based on the table above, answer the following question:

(a) Which seed(s) is/are most likely able to germinate at 2°C? [1]

_____

(b) Singapore's average daily temperature is around 28°C. Which seed(s) will be most suitable to be grown in Singapore so that they can germinate well? Explain your answer. [2]

_____

_____

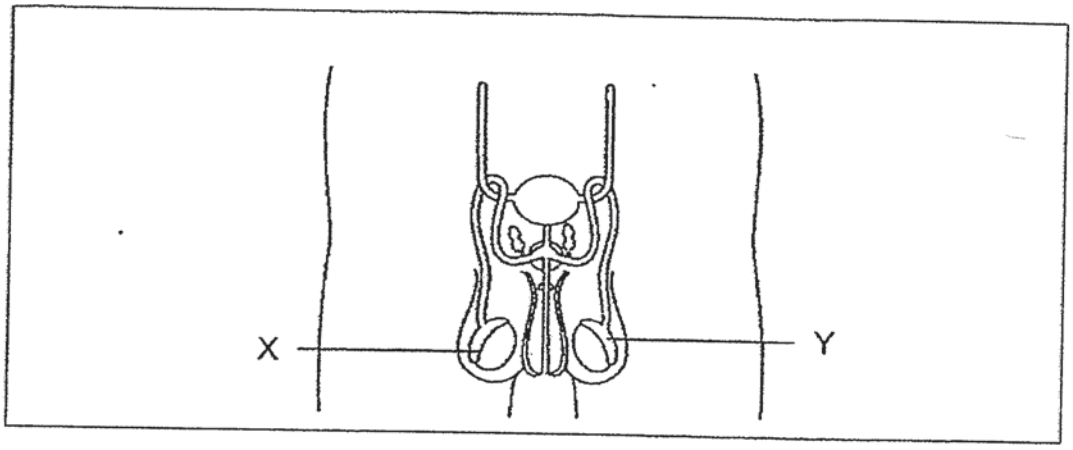
(c) If the temperature of the soil fell below 15.6°C for seed X, would the seed be able to germinate? Give a reason for your answer. [1]

_____

_____

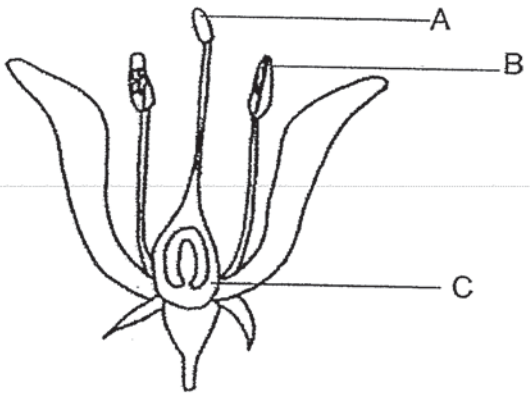
Score	/ 4

32. The diagram shows the male reproductive system of Mr Lim.



(a) Could Mr Lim have any offspring if only part X was removed? Explain your answer. [2]

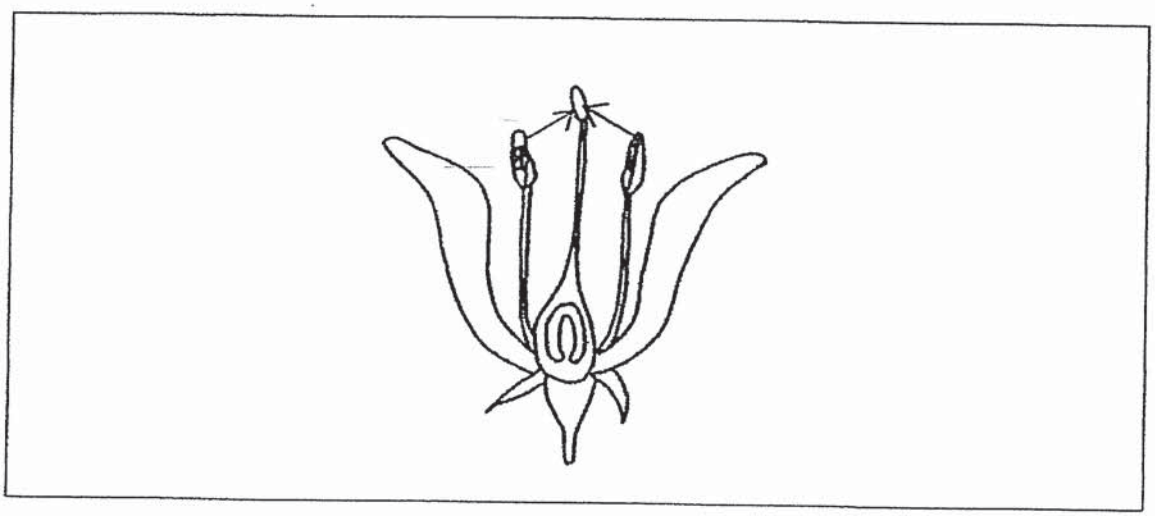
The diagram below shows the reproductive system of a plant.



(b) Which part of the flower, A, B or C, performs the same function as part X? [1]

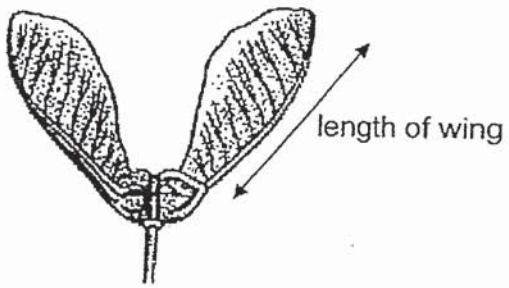
Score	3

33. The diagram below shows a cross section of a flower from plant E.



(a) Draw arrow(s) to represent the process of pollination in the diagram above. [1]

Plant E produced the seed as shown below. The seed is dispersed by wind.



Clara carried out an experiment to find out if the length of the wings of the seed would affect the distance travelled by the seed.

Clara recorded the results in the table below.

Length of wings (cm)	Distance it travelled by the seed (cm)
2.0	10
2.2	18
2.4	25
2.6	38

Score	/ 1

Continue on next page

Continued from previous page

(b) Based on Clara's results, what is the relationship between the length of the wings and the distance travelled by the seed? [1]

_____

_____

(c) Seeds with shorter wing length has a lower survival rate due to competition of resources. State one important resource that the plants would be competing for. [1]

_____

_____

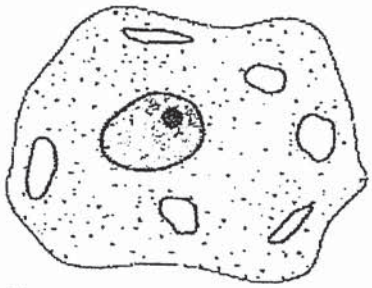
(d) Clara also wanted to find out if the height at which the seed from plant E is dropped affects the distance it travels. Suggest two variables that she has to keep constant when conducting this experiment. [2]

_____

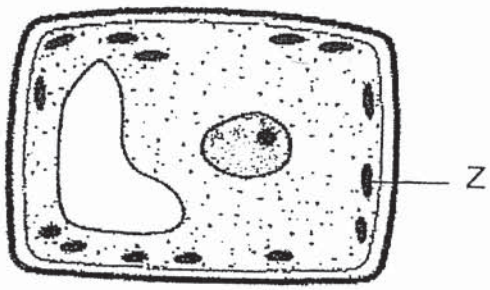
_____

Score	/ 4

34. The diagrams below show two different type of cells.



Cell A



Cell B

(a) State 2 similarities observed in the 2 different cells. [2]

(i) _____

(ii) _____

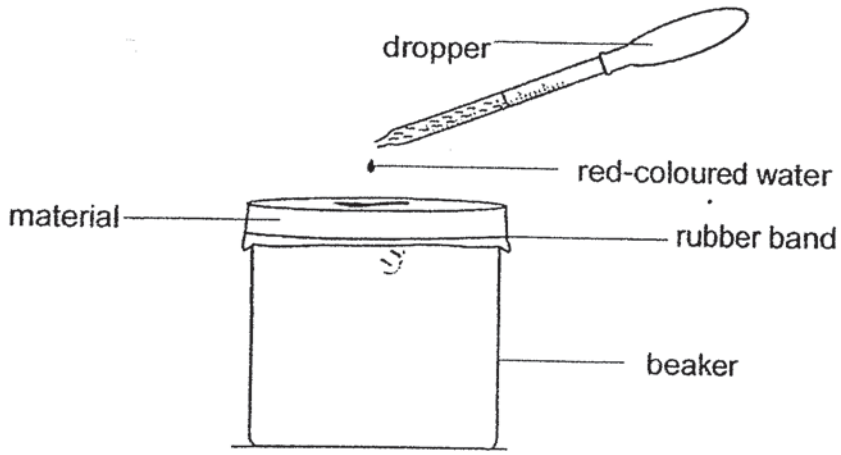
(b) It was observed that Z had the presence of greenish pigment under the microscope. State the function of part Z. [1]

_____

_____

Score	/ 3

35. Jolyn conducted an experiment as shown to investigate the property of three different materials.



She dropped 10 ml of red-coloured water onto material W using a dropper and measured the amount of red-coloured water collected in the beaker after five minutes. She repeated the experiment with materials, X and Y, and recorded her results in the table below.

Material	Amount of water collected in the beaker after five minutes (ml)
W	6
X	0
Y	9

(a) What property of the material was Jolyn investigating? [1]

_____

(b) Explain how the change in the thickness of material would affect Jolyn's results. [1]

_____

_____

Continue on next page

Score 2

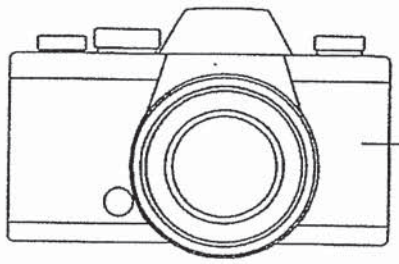
Continued from previous page

(c) Apart from thickness of the material and the duration of the experiment, state another variable that should be kept constant to ensure a fair experiment was conducted. [1]

_____

_____

Diagram below shows an underwater camera casing. The casing serves to keep the camera dry while the diver is underwater capturing images.



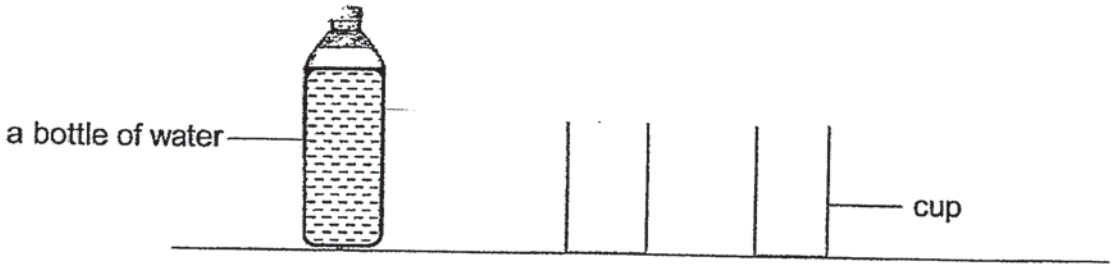
(d) Which material, W, X or Y, is most suitable for making the underwater camera casing? Give a reason for your answer. [1]

_____

_____

Score	/ 2

36. Chee Meng bought a bottle of water to share with his younger brother.



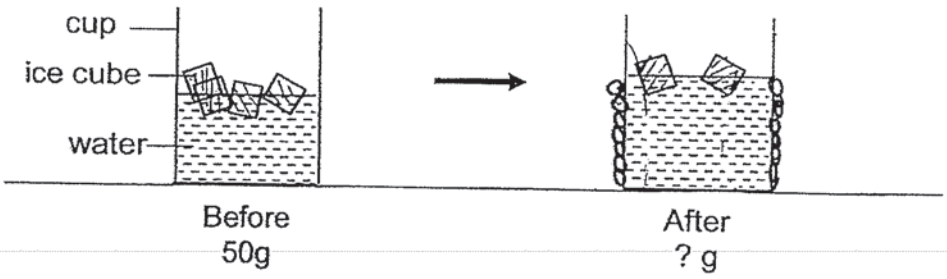
When he distributed the water equally into two cups, the cups were only half filled with water.

(a) After he had added ice cubes into each of the cups, the cups were filled with water to the brim. Explain his observations clearly. [2]

_____

_____

(b) He observed water droplets formed on the cup after a while. Draw the water droplets observed on the cup below labelled 'after'. [1]



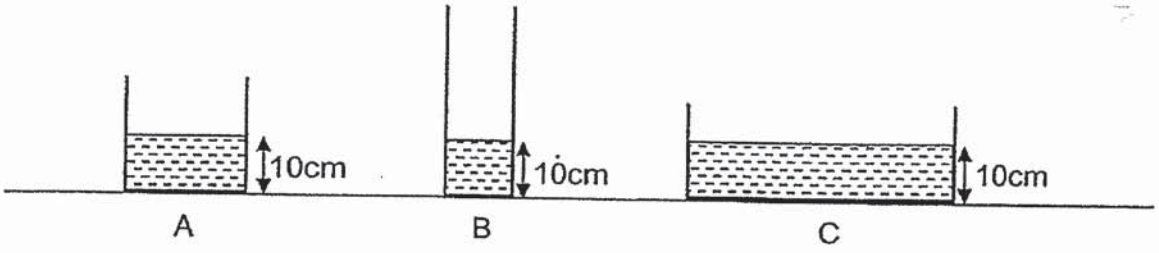
(c) Would the mass of the cup containing the water be more, less or remain the same at 50g after all the ice had melted? Give a reason for your answer. [1]

_____

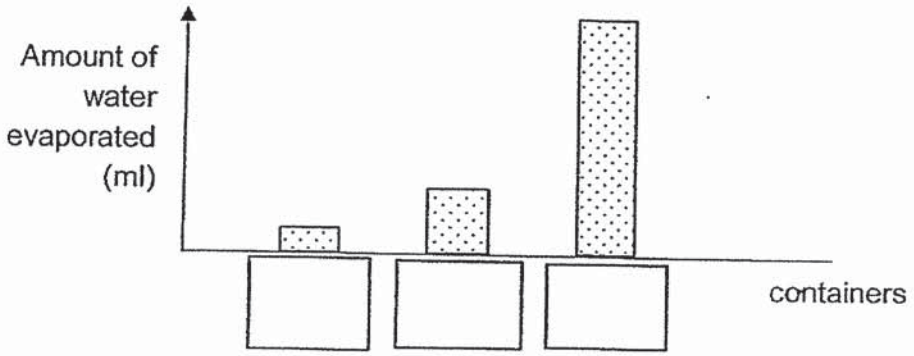
_____

Score	/ 4

37. Abigail conducted an experiment using containers A, B and C shown below. She filled the containers with different volume of water at room temperature water and placed them in a room.

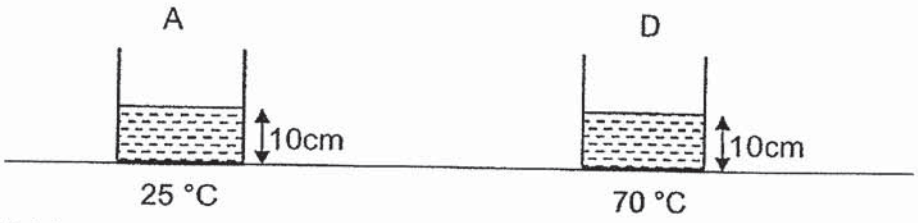


After thirty minutes, she measured the amount of water evaporated in the containers and recorded her results in the graph below.



(a) In the above graph, write A, B and C in the correct boxes showing the amount of water evaporated in their container. [2]

She then carried out another experiment to compare how the temperature of water affected the rate of evaporation of water. She filled two identical containers, A and D, with the same amount of water but of different temperature.



(b) Which set-up, A or D, will there be a greater rate of evaporation? Give a reason for your answer. [1]

_____

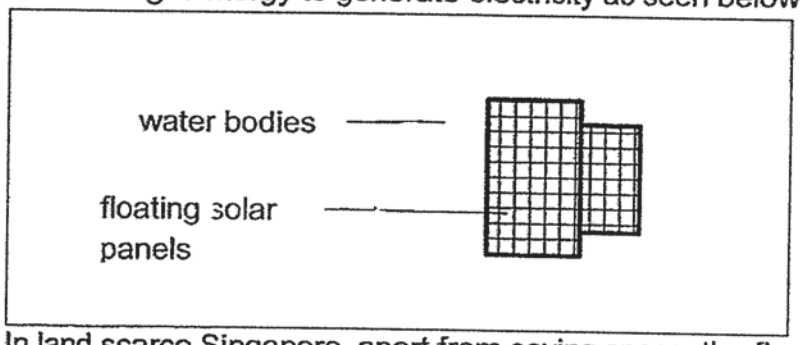
_____

Continue on next page

Score

Continued from previous page

(c) In some countries, solar floating panels are built on reservoirs to capture heat and light energy to generate electricity as seen below.



In land scarce Singapore, apart from saving space, the floating solar panel on reservoirs can help to conserve the water resource by slowing down the rate of evaporation. Do you agree? Give a reason for your answer. [1]

38. Peter went to school in an air-conditioned bus. When he got off the bus, his glasses immediately misted up with tiny water droplets as seen below.

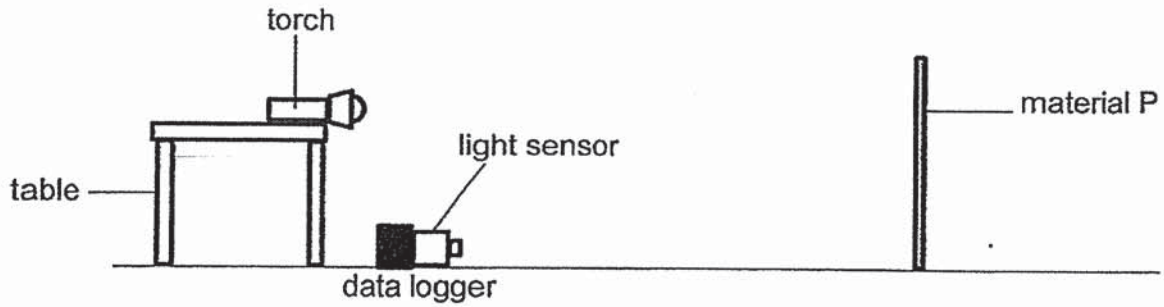
(a) Explain why his glasses became misted up after he got off the bus. [2]

After a while, he noticed that the tiny water droplets started to disappear.

(b) Give a reason why the tiny water droplets started to disappear from his glasses. [1]

Score	/4

39. Siti set up the following experiment in a room.

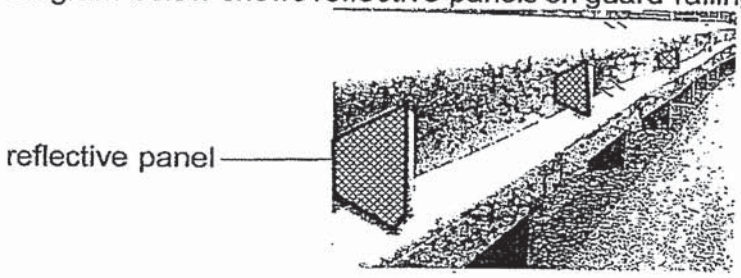


She shone light onto material P and the amount of light received by the light sensor was measured. She then repeated the experiment with materials Q, R and S. The results are shown in the table below.

Material	Reading on light sensor (units)
P	36
Q	12
R	100
S	57

(a) Explain how the light sensor was able to measure the amount of light from the torch even though the light sensor was placed in front of the material. [1]

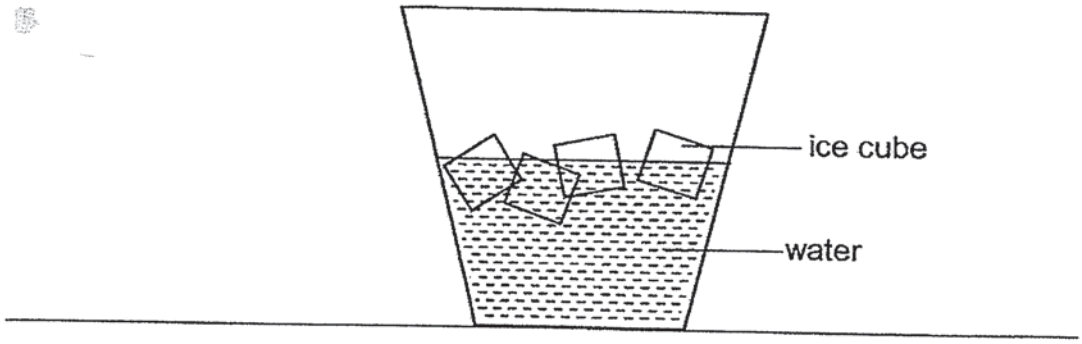
Diagram below shows reflective panels on guard railings on the roads.



(b) Based on Siti's results, which material should be most suitable to make the reflective panels on guard railings to warn drivers of approaching bends at night? Explain your answer clearly. [2]

Score / 3

40. Stacey added four ice cubes to a glass of water as shown below.



(a) The initial temperature of the water in the glass was 25°C.
What would happen to the temperature of the water after the ice cubes were added into water in the glass? [1]

_____

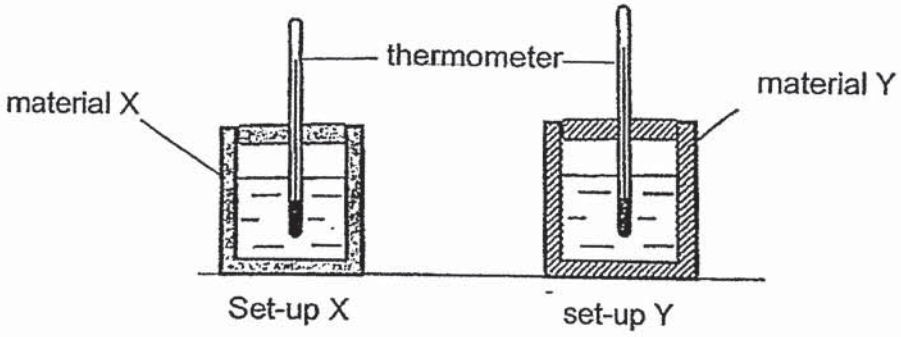
(b) Would there be a greater change in temperature of water when more ice cubes were added into the glass above? Give a reason for your answer. [1]

_____

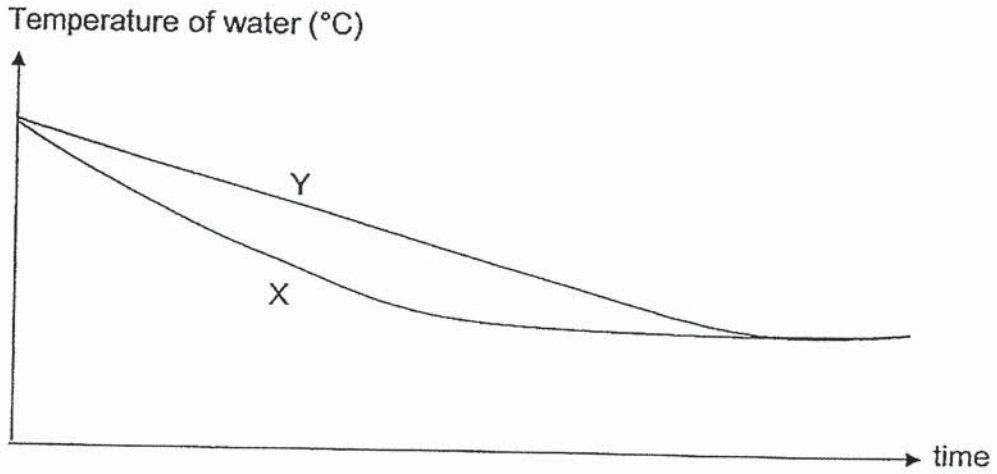
_____

Score	2

41. Containers in set-ups X and Y below were of the same size and thickness but made of different materials. The containers were filled with the same volume of water at 100°C and left on the table for twenty-four hours.



The graph below shows the temperature in each set-up over the period of twenty-four hours.



(a) Based on the results, what can be concluded about the heat conductivity of the materials? [1]

_____

_____

(b) Material Y had small air spaces inside it. Explain how the air spaces in material Y would help to keep a person warm in winter. [2]

_____

_____

Score	3

End of Paper

ANSWER KEY

YEAR : 2019
LEVEL : PRIMARY 5
SCHOOL : RAFFLES GIRLS' PRIMARY
SUBJECT : SCIENCE
TERM : SA 1

SECTION A

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

SECTION B

Q29a **A: Living things B: Non-living things**
C: Natural materials D: Man-made materials

Q29b) Y

Q30a) The higher the temperature is, the shorter the average length of life cycle.

Q30b) May. It has the highest temperature. Thus, the life cycle from egg to adult will be the shortest.

Q31a) Seed Z

Q31b) X and Y. As the average temperature in Singapore is 28°c, it falls in the most favourable optimum soil temperature range of seeds X and Y to get enough warmth to germinate.

Q31c) No. Seeds require air, water and warmth. Warmth is the most important for the seed to germinate, 15.6°c is the lowest required soil temperature. Hence, if the temperature of soil falls below that, the seed will not germinate.

Q32a) Yes. He still has part Y to produce the male reproductive sex cell, the sperm, which is required to fertilise the ovum during sexual reproduction, leading to offspring.

Q32b) B

Q33a)

Q33b, ... longer the length of the wings, the further the distance it travels.

Q33c) Water

Q33b) The length of wings and the location where the experiment is held.

Q34a) i: They both have a nucleus.
ii: They both have a cell membrane.

Q34b) The function of Z is to trap sunlight to photosynthesise.

Q35a) Absorbency

Q35b) The thicker the material, the lesser the amount of water collected in the beaker after 5 minutes.

Q35c) Type of beaker

Q35d) X. It did not absorb any water from the experiment.

Q36a) The ice cubes are solid and takes up space. When the cubes are added, the water level rises as it makes space for the cubes.

Q36b) *DRAW DROPLETS ON THE OUTER SIDES OF BEAKER

Q36c) Mass of the cup containing the water would increase as the water vapour condenses into water droplets on the outer surface of the cup.

Q37a) B > A > C

Q37b) D. It is warmer, and evaporation takes place best in a warm environment.

Q37c) C. Because it is on the water surface, there will be less exposed surface area of the water to the surrounding air, resulting in a slower rate of evaporation.

Q38a) The water vapour in the surrounding air lost heat to the cooler surface of his glasses and condenses to form tiny water droplets.

Q38b) The tiny water droplets on his glasses gained heat from the warmer surrounding air and evaporated.

Q39a) The material reflected light to the light sensor.

Q39b) R. It reflected the most light shown on the table, meaning it will reflect the most light from car headlights into the eyes of the driver to help them see the bend ahead.

Q40a) Temperature of the water would decrease faster as the water in the glass would lose more heat to the ice.

Q40b) Yes. The temperature would decrease more as the water in the glass would lose heat to the ice faster.

Q41a) X. It is a better conductor of heat than Y.

Q41b) Air is a poor conductor of heat and decreases rate of heat loss from the person's body to the cooler surroundings.

END

4

8