2018 PRIMARY 5 SEMESTRAL ASSESSMENT 1

Name : _____ ( )

Class : Primary 5 ( )

Parent's Signature: _____

Date: 10 May 2018

Time: 8.00 a.m. - 9.45 a.m.

Duration: 1 hour 45 minutes

Marks: _____ / 56

SCIENCE

BOOKLET A

INSTRUCTIONS TO CANDIDATES

1. Write your name, class and register number.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

Booklet 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) and shade your answer on the Optical Answer Sheet.

(56 marks)

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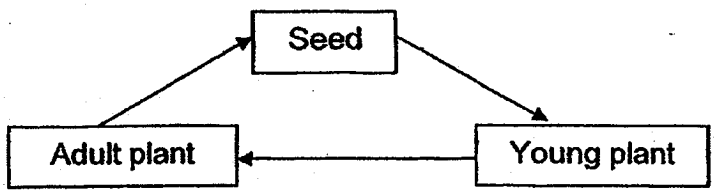
1. Look at the life cycle of the plant below.



Which of the following has a similar life cycle as shown above?

A	Fern
B	Moss
C	Bean plant
D	Lady's finger plant

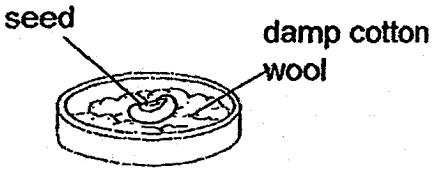
(1) A and B only

(2) C and D only

(3) A, C and D only

(4) A, B, C and D

2. Study the set-ups shown below.



Set-up A: Placed near a window

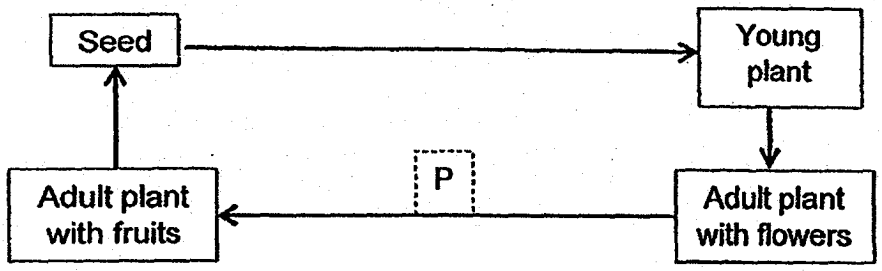
Set-up B: Placed in a refrigerator

Set-up C: Placed near a window

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

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

3. The diagram below shows the life cycle of a flowering plant.



What process(es) is/are happening at P?

A	Fertilisation
B	Seed Dispersal
C	Pollination

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

4. Three types of plants, A, B and C, were planted on an island near the sea as shown in Diagram A below.

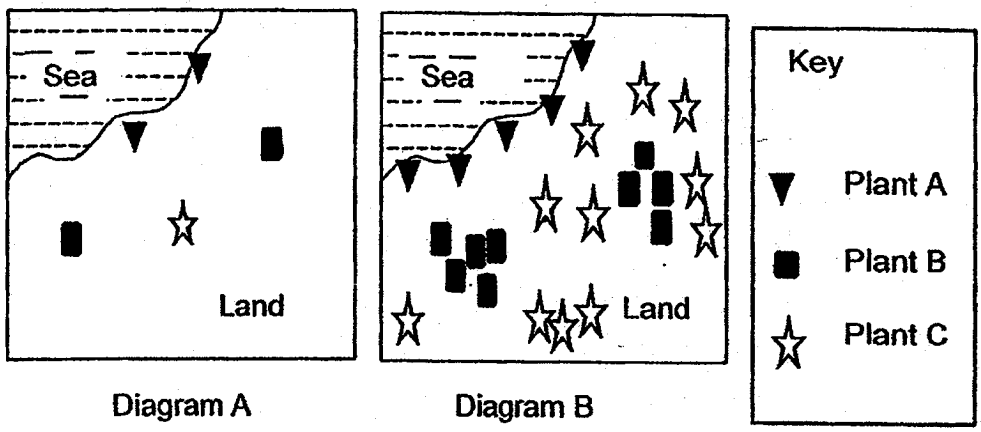
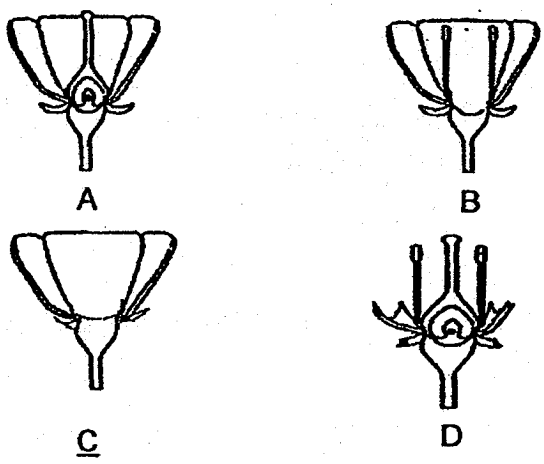


Diagram A Diagram B

A few years later, young plants of the three types of plants were found growing at different parts of the island as shown in Diagram B. Based on the information given above, how are the fruits or seeds of each type of plant dispersed?

	Plant A	Plant B	Plant C
(1)	By splitting action	By animals	By water
(2)	By animals	By wind	By splitting action
(3)	By water	By splitting action	By animals
(4)	By wind	By splitting action	By water

5. The diagram below shows four flowers, A, B, C and D, from the same plant. Certain parts of the flowers have been removed.



Which of the flowers are still able to develop into fruits?

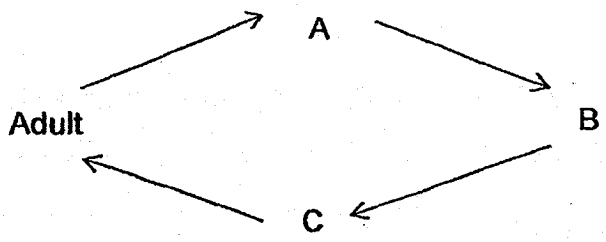
(1) A and B only

(2) B and C only

(3) C and D only

(4) A and D only

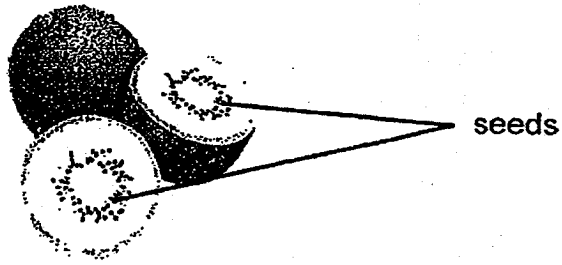
6. The diagram below shows the life cycle of an insect.



Which of the following shows the correct stages of its life cycle?

	A	B	C
(1)	Nymph	Egg	Larva
(2)	Nymph	Larva	Pupa
(3)	Egg	Larva	Pupa
(4)	Egg	Nymph	Pupa

7. The picture below shows the cross section of fruit X.



Based on the diagram, which of the following statements are definitely true about the flower of this fruit?

A	The flower is dull-coloured.
B	The flower is pollinated by wind.
C	Its ovary contains many ovules.
D	The flower has been pollinated.

(1) A and B only

(2) A and D only

(3) B and C only

(4) C and D only

8. Janet made the following statements about a fern, a mushroom and a moss.

A	They cannot make their own food.
B	They reproduce by spores.
C	They do not bear flowers.
D	They absorb the food of the tree they grow on.

Which of the above statements are correct?

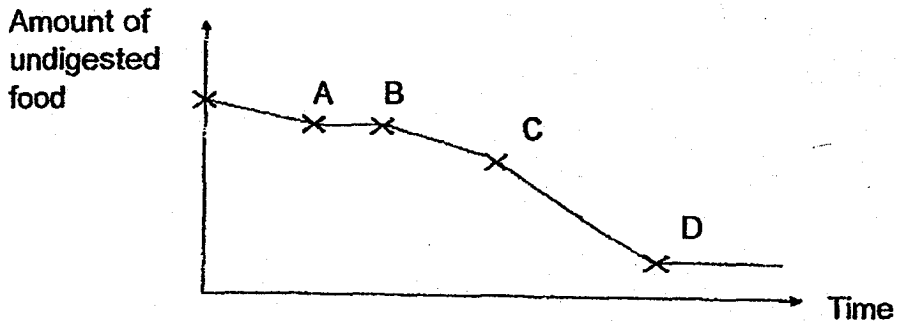
(1) A and B only

(2) A and D only

(3) B and C only

(4) C and D only

9. The graph below shows the amount of undigested food at various stages in our digestive system after a meal.



Which of the stages, A, B, C or D, represents the stage when the undigested food enters the small intestine?

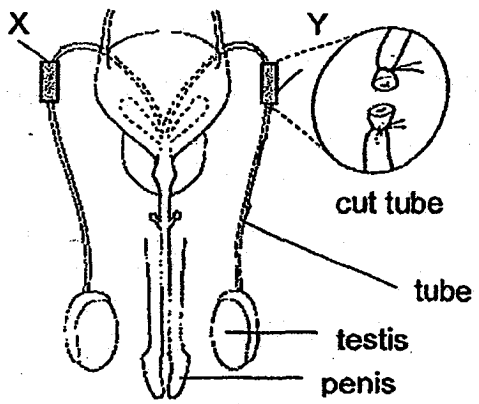
(1) Stage A

(2) Stage B

(3) Stage C

(4) Stage D

10. The diagram below shows Mr Chan's reproductive system.



Tubes at X and Y were cut off. Which of the following is the correct explanation why Mr Chan can no longer reproduce?

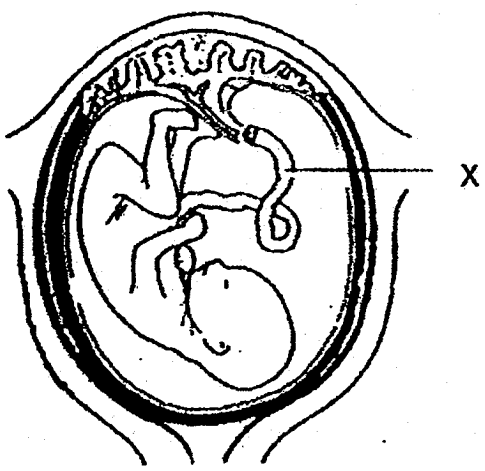
(1) The penis can no longer produce sperm.

(2) The testes can no longer produce sperm.

(3) The eggs can no longer be sent to fertilise the sperm.

(4) The sperm can no longer be sent to fertilise the eggs.

11. The diagram below shows an unborn baby.



Which of the following best describes the function of X?

(1) X sends nutrients to the mother.

(2) X sends oxygen to the unborn baby.

(3) X connects the unborn baby to the ovary.

(4) X helps to remove carbon dioxide from the mother's blood.

12. Which of the following characteristics is not passed on from parents to their young?

(1) dimples

(2) face shape

(3) hair length

(4) eye colour

13. Study the energy transfer between the Sun and the organisms below.

Sun → plant → grasshopper → bird

Which of the following is a correct statement of the energy transfer shown above?

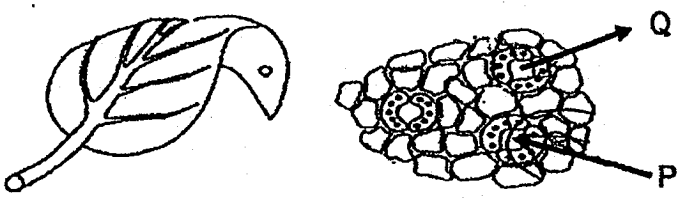
(1) The bird get its energy from the Sun indirectly.

(2) The grasshopper gets its energy from the bird.

(3) The bird gets its energy directly from the plant.

(4) The plant gets its energy from the grasshopper.

14. The diagram below shows a leaf of a plant under the Sun. The arrows show the movement of substances P and Q in and out of the leaf respectively.

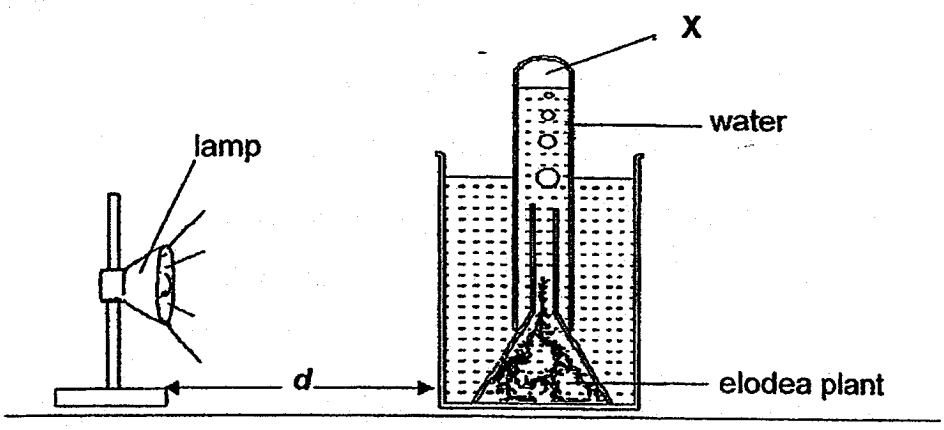


Magnified view of a section of the leaf

Which of the following substances are represented by P and Q, during photosynthesis?

	P	Q
(1)	carbon dioxide	oxygen
(2)	oxygen	carbon dioxide
(3)	oxygen	water vapour
(4)	water vapour	carbon dioxide

15. Ali used the setup below to find out how the intensity of light could affect the rate of photosynthesis.



Which of the following shows the correct relationship between the amount of gas X collected and distance *d*?

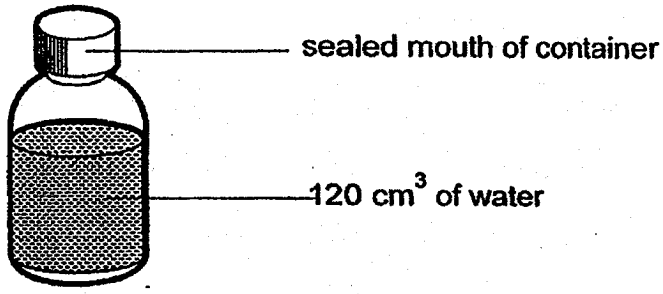
(1) As the amount of gas **X** increases, distance ***d*** decreases.

(2) As the amount of gas **X** decreases, distance ***d*** decreases

(3) As distance ***d*** increases, the amount of gas **X** decreases

(4) As distance ***d*** decreases, the amount of gas **X** decreases.

16. The container below has a capacity of 200 cm^3. It contains 120 cm^3 of water. 100 cm^3 of air was pumped in before the mouth of the container was sealed.



What is the final volume of air in the container?

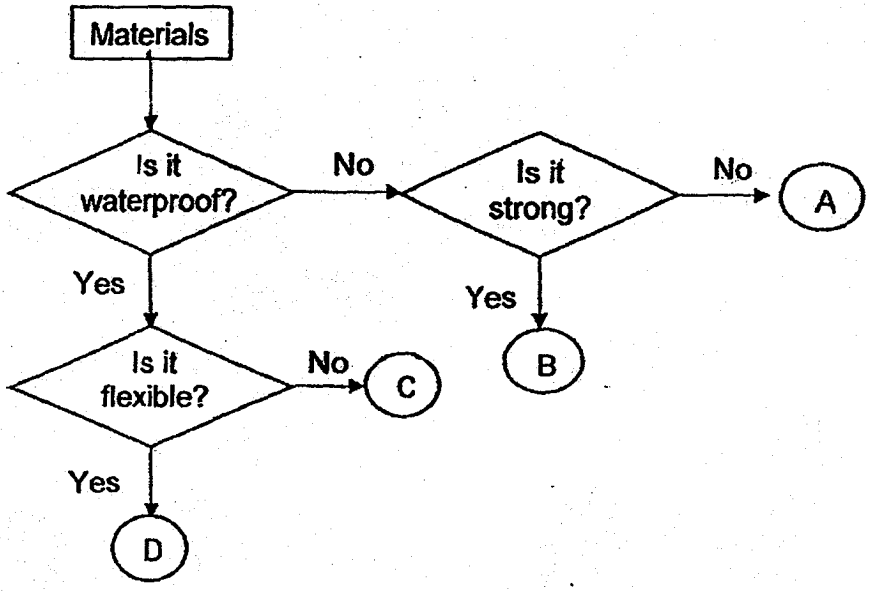
(1) 80 cm^3

(2) 100 cm^3

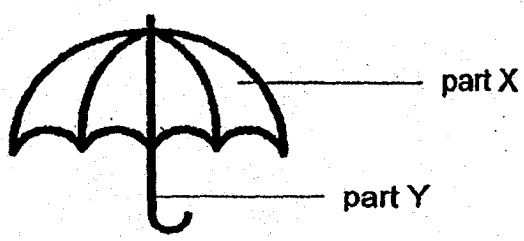
(3) 200 cm^3

(4) 220 cm^3

17. Study the flowchart below.



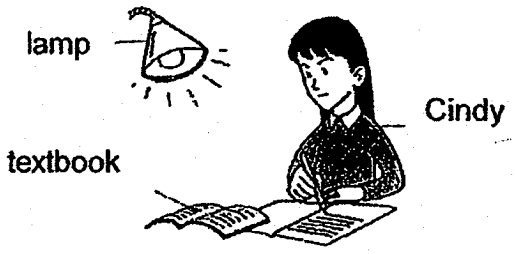
Adilah bought an umbrella to shelter herself from the rain.



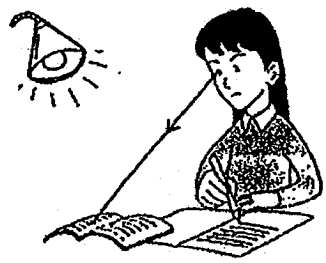
Which letter, A, B, C or D, best represents the material most suitable in making part X and part Y of the umbrella as shown in the diagram above?

	Part X	Part Y
(1)	A	B
(2)	D	B
(3)	C	D
(4)	D	C

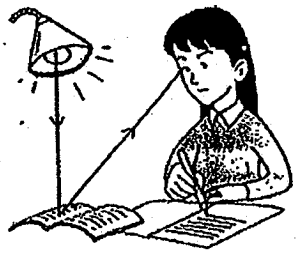
18. Cindy is reading from a book as she does her homework. Which of the following diagrams best shows how Cindy is able to see the textbook on the table?



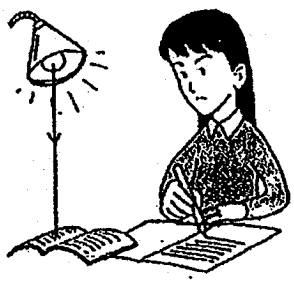
(1)



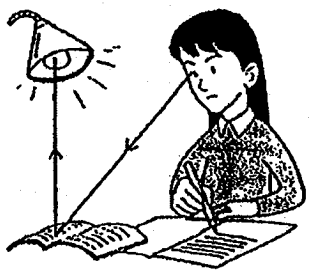
(2)



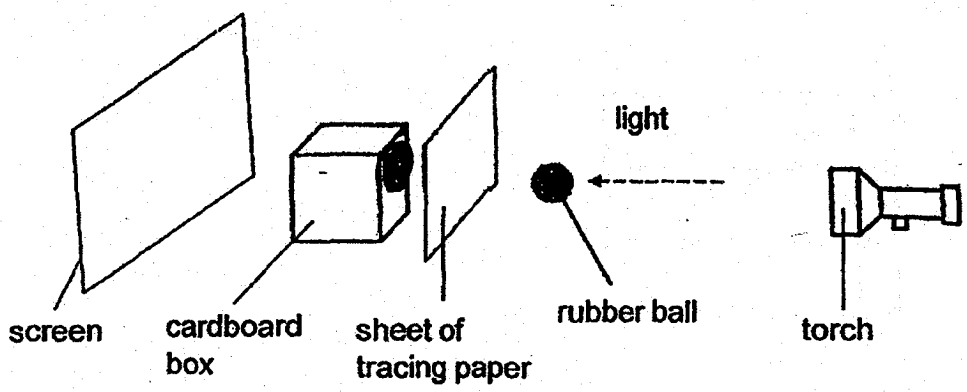
(3)



(4)

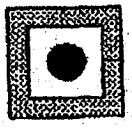


19. Melissa shone a torch on some objects as shown below. The objects were placed in a straight line



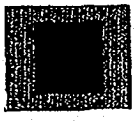
Which of the following images will be cast on the screen?

(1)



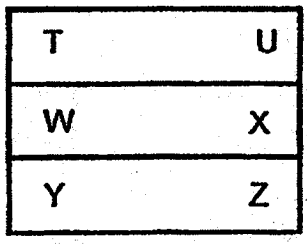
(2)

(3)

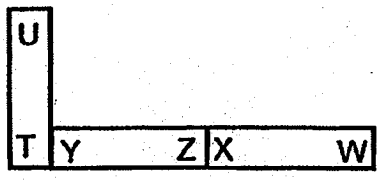


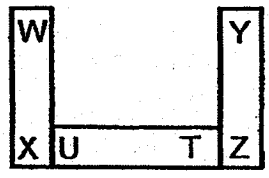
(4)

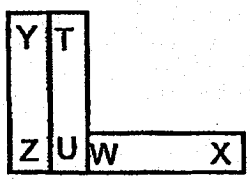
20. Three bar magnets can be arranged as shown below. Their poles are T,U,W,X,Y and Z.

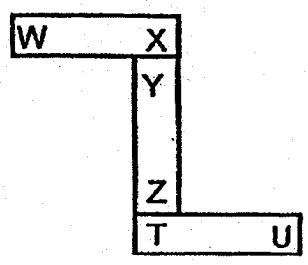


Which of the following is another possible arrangement for the magnets?

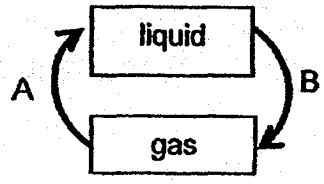
(1) 

(2) 

(3) 

(4) 

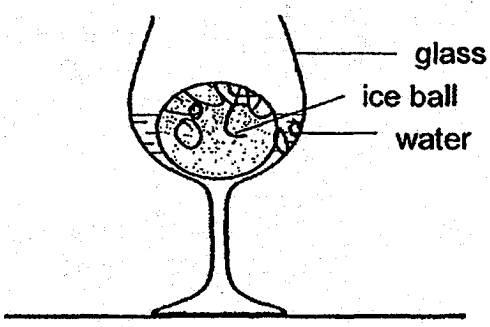
21. The diagram below represents the changes of state of water and the processes, A and B.



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

	A	B
(1)	freezing	boiling
(2)	evaporation	condensation
(3)	condensation	melting
(4)	condensation	evaporation

22. An ice ball and some water in a glass was left in a kitchen at a room temperature of 28°C as shown in the diagram below.



Which of the following statements is correct when the ice ball and water were both at 0°C?

(1) The ice ball would not melt as it remained at 0°C.

(2) The ice ball would not melt as it did not gain heat.

(3) The ice ball would melt as it gained heat from the water.

(4) The ice ball would melt as it gained heat from the surrounding air.

23. The following describes events in the water cycle:

A. Droplets of water form clouds
B. Earth's surface is warmed up by the heat from the Sun
C. Water droplets fall as rain when they get bigger and heavier
D. Water evaporates
E. Water vapour condenses

Which of the following describes events in the formation of rain in correct order?

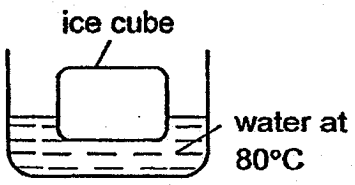
(1) C → B → D → A → E

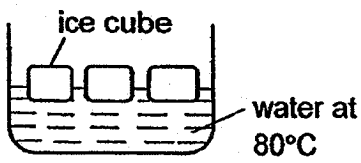
(2) B → C → D → E → A

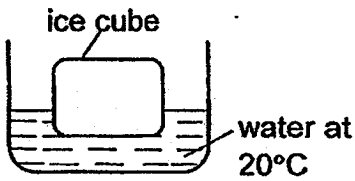
(3) B → D → E → A → C

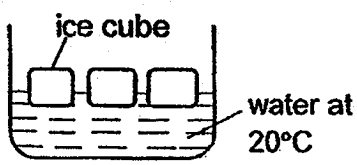
(4) D → E → A → B → C

24. Kumar placed some ice cubes into four similar beakers of 300 ml of water of different temperature. The total mass of ice cube(s) in each beaker is the same. Which of the following set-ups will the ice cube(s) be completely melted first?

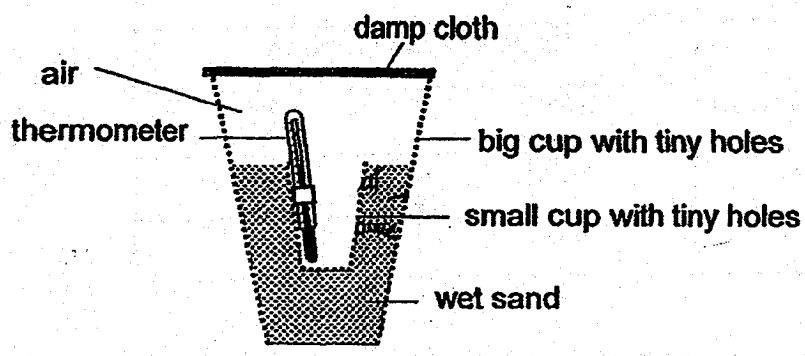
(1)


(2)


(3)


(4)


25. Amy set up an experiment as shown below.



She placed the set-up in a dry place and recorded the temperature of the air inside the small cup over a period of 20 minutes. Her results are shown below.

Time (minute)	Temperature (°C)
0	30
10	28
20	27

What caused the drop in temperature of the air inside the small cup?

(1) Water in the sand lost heat and evaporated.

(2) Water vapour condensed on the damp cloth.

(3) Water in the wet sand gained heat and evaporated.

(4) Heat in the cup was conducted to the thermometer.

26. Study the table below.

Substance	State of substance at	
	50°C	70°C
A	solid	solid
B	solid	liquid

Based on the table, which of the following is definitely true?

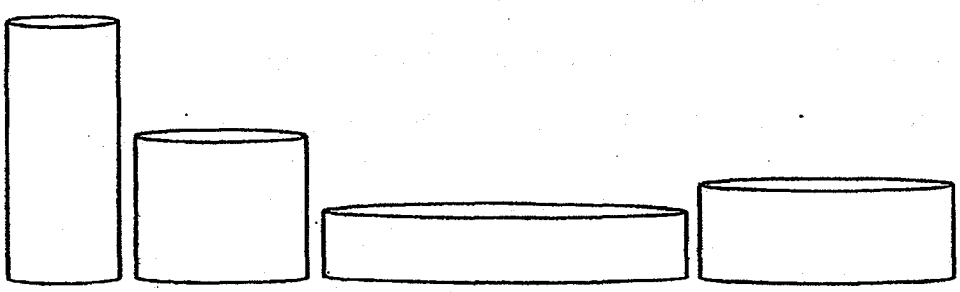
(1) The boiling point of substance B is at 70°C.

(2) The freezing point of substance A is lower than 70°C.

(3) Substance A has a higher melting point than substance B.

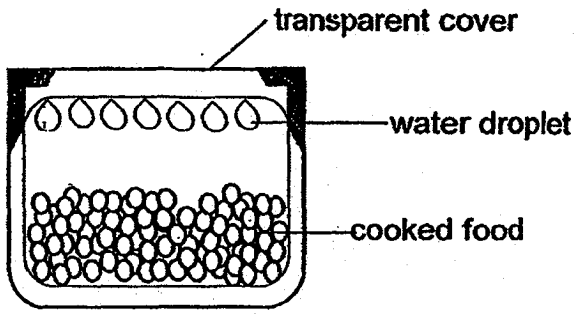
(4) The melting point of substance B is between 40°C and 70°C.

27. Alex filled four cylinders of different sizes, each with 200 ml of water and placed them at his balcony as shown below. Which of the following cylinders of water would evaporate the fastest.



(1) (2) (3) (4)

28. Doris packed a container of warm cooked food for her recess. Before she opened the container, Doris observed water droplets formed under the transparent cover of the enclosed container as shown in the diagram below.



Which of the statement below correctly explains how these condensed water droplets were formed?

(1) The water vapour from the cooked food gained heat from the container.

(2) The hot water vapour from the surrounding air lost heat to the container.

(3) The hot water vapour from the cooked food lost heat to the cooler cover.

(4) The water vapour from the surrounding air gained heat from the cooler cover.

End of Booklet A

2018 PRIMARY 5 SEMESTRAL ASSESSMENT 1

Name : _____ ( )

Class : Primary 5 ( )

Parent's Signature : _____

Date: 10 May 2018

Time: 8.00 a.m. – 9.45 a.m.

Duration: 1 hour 45 minutes

SCIENCE

BOOKLET B

INSTRUCTIONS TO CANDIDATES

1. Write your name, class and register number.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in the booklet.

Booklet A	56
Booklet B	44
Total	100

Booklet B (44 marks)

For questions 29 to 41, write your answers clearly in this booklet.

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

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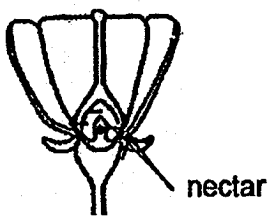
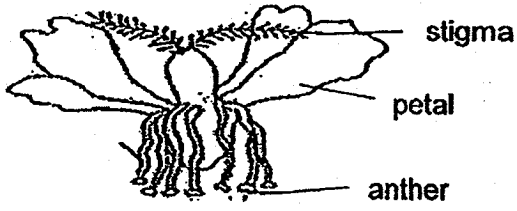
29. Peter studied the flowers of plant X and plant Y. Plant X has tiny brightly-coloured flowers. They have sweet nectar at the base of their petals and their pollen grains are sticky and rough.



flower of plant X



flower of plant Y

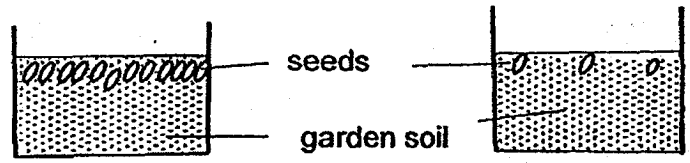
(a) How does having the nectar at the base of the flower of plant X help in insect pollination? [1]

(b) Based on the diagram of the flower of plant Y, what characteristics of this flower help it to be wind pollinated? [1]

(c) How does the flower of a plant help to ensure continuity of its kind? [1]

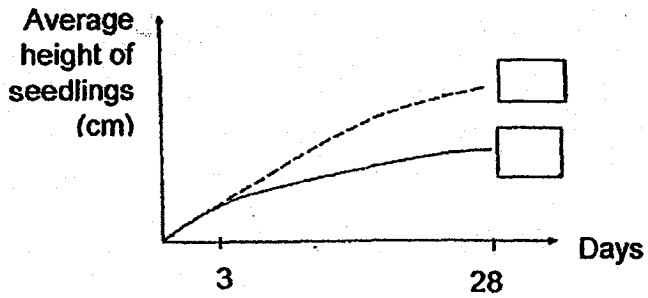
Score	/3

30. Chris set up different number of seeds of the same type in the 2 identical pots of garden soil as shown below.



Pot P with 12 seeds Pot Q with 3 seeds

He placed both pots in a field and watered them daily with the same amount of water. The average heights of the seedlings in the pots were recorded in the graph shown below.



(a) Fill in the boxes above with "P" and "Q" to indicate which lines represented the seedlings in Pot P and Pot Q respectively. [1]

(b) Explain the difference in the average heights of the seedlings in both pots. [1]

_____

_____

(c) Based on the results of the experiment, explain why dispersing seeds by animals ensures that the seedlings have a higher chance of survival than dispersal by splitting. [1]

_____

_____

Score	/3

31. The diagram below shows two similar fruits, S and T. Some parts of fruit T have been cut off.

S

T

The two fruits were dropped from the same height and the time they took to land on the ground was recorded. The table below shows three sets of readings from the experiment.

	Time taken for the fruit to land on the ground (seconds)		
	1st Reading	2nd Reading	3rd Reading
Set A	3.3	3.1	3.2
Set B	6.4	7.5	7.0

(a) What is the changed variable in this experiment? [1]

_____

_____

(b) Why must three sets of readings be taken? [1]

_____

_____

(c) Based on the information given in the table above, which set of readings, A or B, represents the readings for fruit S? Explain why. [2]

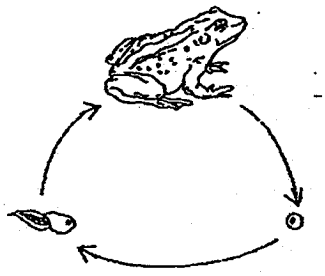
_____

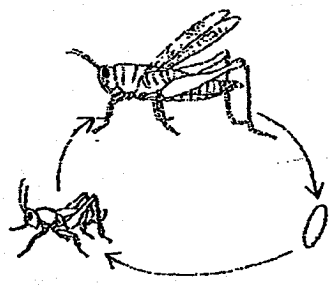
_____

_____

Score	/ 4

32. The diagrams below shows the life cycles of a frog and a grasshopper.





(a) Based on the diagrams above, state one similarity between the stages of the life cycles of a frog and a grasshopper. [1]

_____

_____

(b) Based on the diagrams above, state one difference between the stages of the life cycle of a frog and a grasshopper. [1]

_____

_____

(c) The animals in the table below have been grouped according to the number of stages in their life cycles. Complete the headings by filling in "3-staged" and "4-staged" in the blanks provided. [1]

Animals with _____ life cycle	Animals with _____ life cycle
Cockroach Chicken	Mosquito Mealworm beetle

Score	/ 3

33. The diagrams below show the reproductive parts of a flowering plant (Diagram 1) and humans (Diagrams 2 and 3).

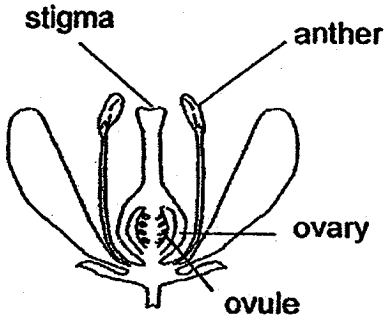


Diagram 1

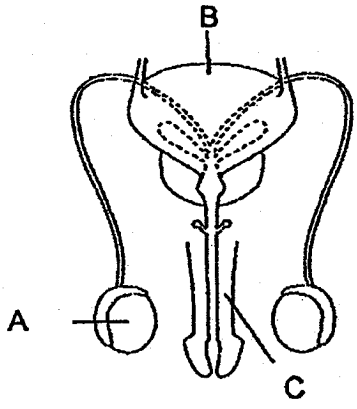


Diagram 2

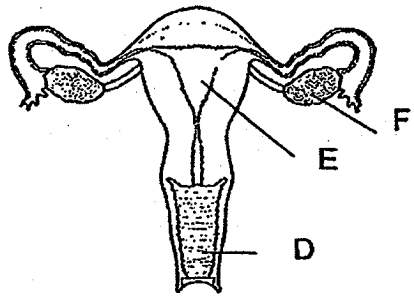


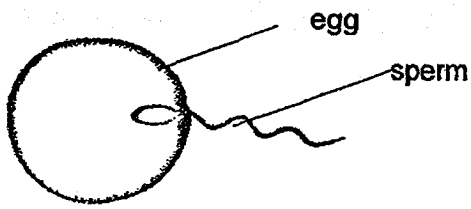
Diagram 3

(a) Write the letter representing the reproductive part of the human that has similar function as the plant reproductive part stated in the table below. [1]

	Plant reproductive part (Diagram 1)	Human reproductive part (Diagram 2 or 3)
(i)	Anther	
(ii)	Ovary	

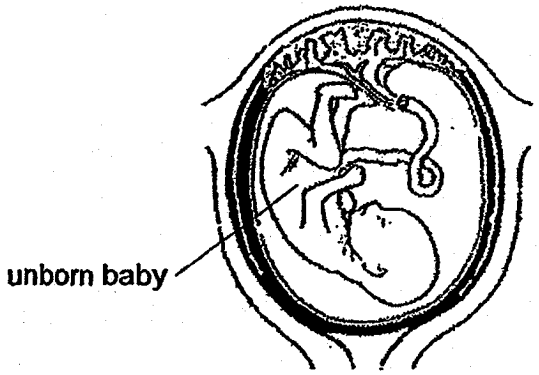
Score	/ 1

The diagram below shows a process in sexual human reproduction.



(b) Name the process. [1]

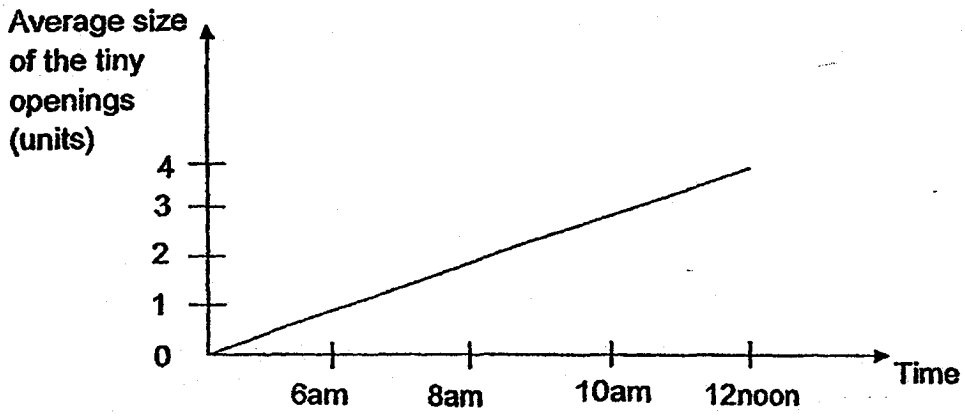
After the process mentioned in (b), an unborn baby will develop inside one of the reproductive organs as shown below.

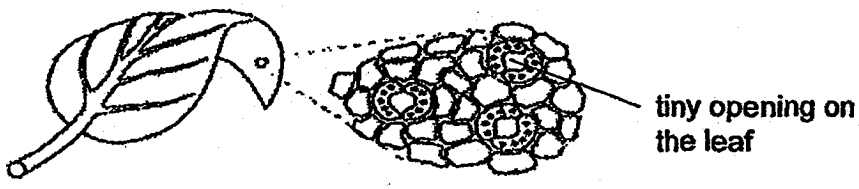


(c) Which part, D, E or F in Diagram 3 is this organ? Name the organ. [1]

Score	/ 2

34. Bala placed a pot of plant by a window and measured the changes in the size of the tiny openings of its leaves at different times of the day. The results were shown below.





(a) Based on his results, what effect does the intensity of light have on the size of the tiny openings? [1]

_____

_____

(b) How does the change in the size of the tiny opening in (a) help in photosynthesis? [1]

_____

_____

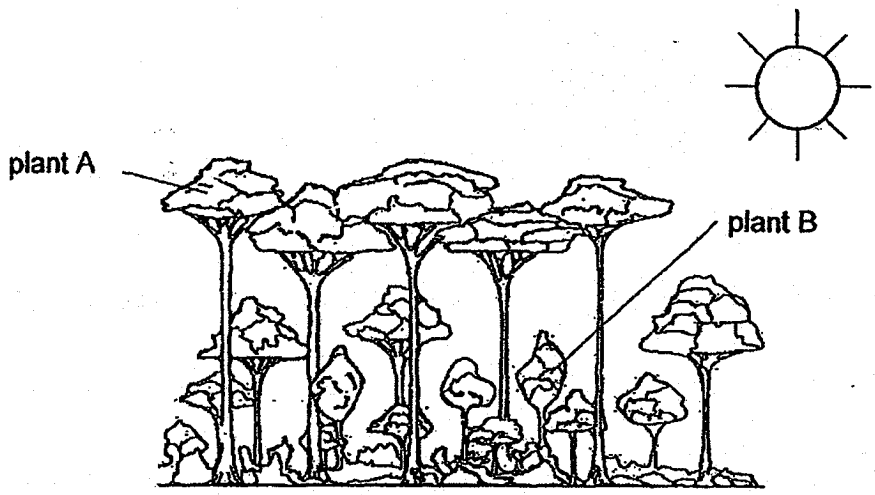
Score	/ 2

(c) Besides gaseous exchange, water also evaporates from the tiny openings of the leaves. The change in size of the tiny openings in the presence of light can also be a disadvantage to a plant. What is the disadvantage? [1]

_____

_____

The diagrams below show plant A, plant B in a forest and their leaves.



leaf of plant A

leaf of plant B

(d) Give a reason why plant B which grows below plant A has bigger leaves. [1]

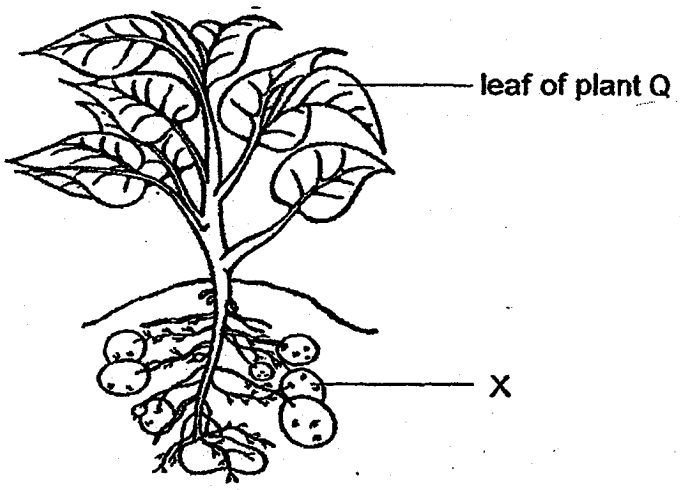
_____

_____

_____

Score	/ 2

35. Plant Q stores food in X as shown below.

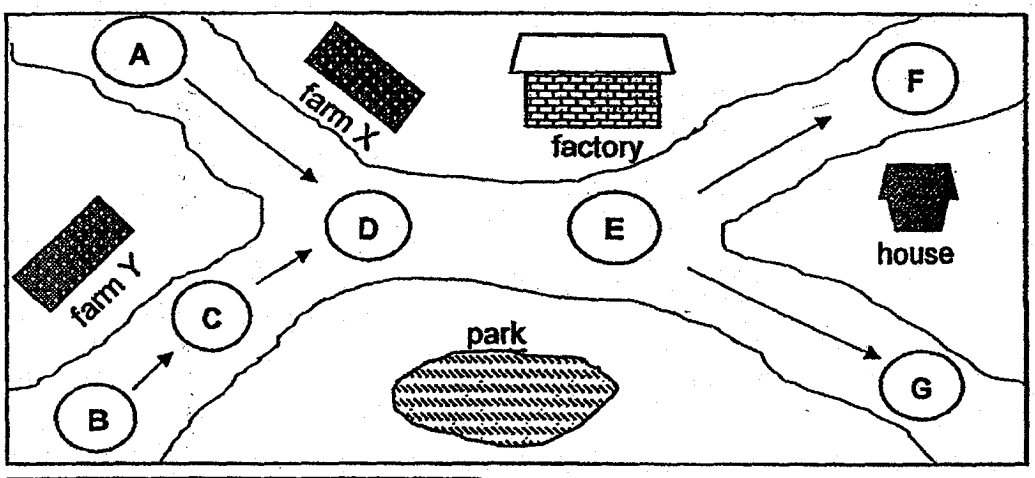


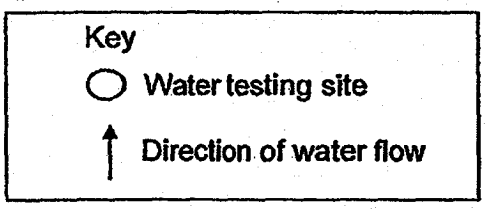
(a) Explain in detail how plant Q made its food and stored the excess in X. [2]

(b) At a farm, the farmers grow the plants in an area with a higher level of carbon dioxide in the air. Will the amount of food obtained from the plants be more, less, or the same as before? Explain your answer. [2]

Score	/ 4

36. The map below shows a river that had been polluted. Water was collected and tested for pollutants at parts of the river A, B, C, D, E, F and G.





Water samples tested from three test sites led to the conclusion that farm X was the only source of the pollution.

(a) Based on the diagram, which three test sites had the water samples been taken from to make this conclusion? [1]

_____

_____

(b) Will the farmers at farm Y be able to use the water at test site C for watering its crops? Explain why. [2]

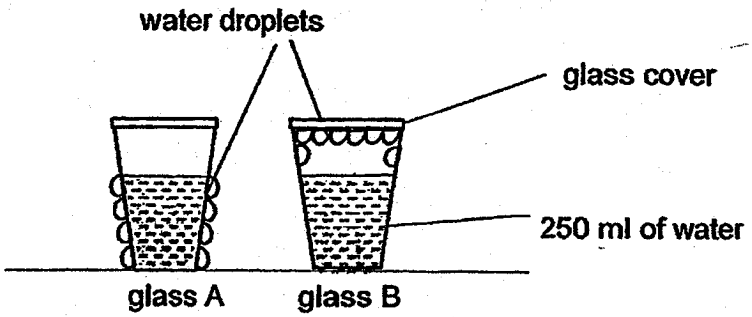
_____

_____

_____

Score	3

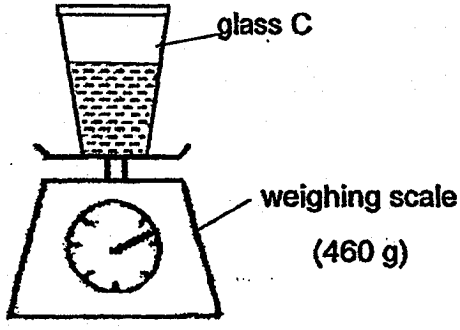
37. Mr Lee poured 250 ml of water of different temperature into two glasses and placed them on a kitchen top. Water droplets were soon observed forming on the two glasses in the diagram below.



(a) Based on the diagram above, indicate whether the temperature of the water in the glass is **'higher'** than, **'lower'** than or **'same as'** the room temperature by putting a (√) in the respective boxes provided below. [1]

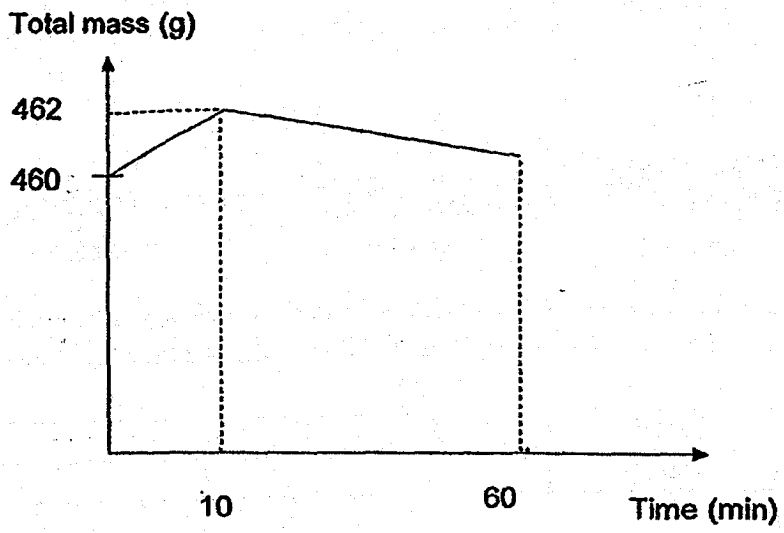
Glass	Temperature of water in the glass as compared to room temperature		
	Higher	Same as	Lower
A			
B			

Mr Lee poured some cold water into glass C. He placed glass C on a weighing scale as shown below.



Score	/ 1

He recorded the mass of glass C on the weighing scale at one-minute interval and plotted the results in the graph below.

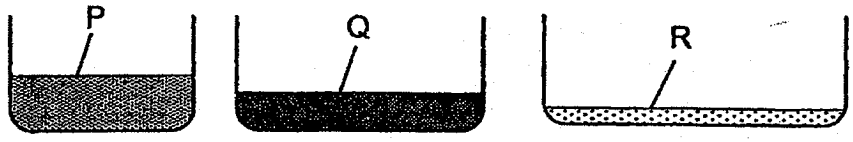


(b) Explain why the total mass of glass C increased during the first 10 minutes. [2]

(c) Explain why the total mass of glass C decreased after 10 min. [2]

Score	/ 4

38. Sam conducted an experiment to compare the rate of evaporation of different types of liquid P, Q and R. He poured the same amount of each liquid into three beakers of different sizes.



beaker 1 beaker 2 beaker 3

He placed the three beakers in the school field and measured the time taken for each liquid to evaporate completely. His results are shown below.

Liquid	P	Q	R
Time (h)	2	2	2

(a) Sam realised that his experiment were conducted unfairly after looking at his results. Explain why. [1]

After correcting his set-ups, Sam repeated his experiment and his results are shown below.

Liquid	P	Q	R
Time (h)	3	5	2

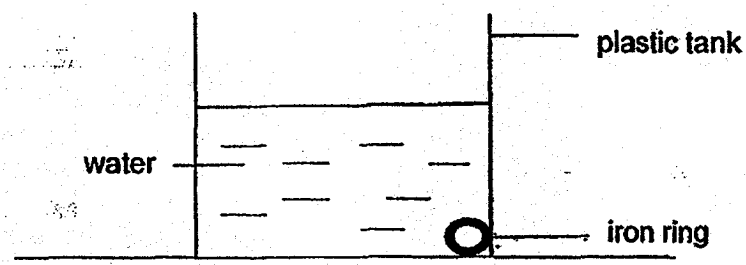
(b) Complete the table below with P, Q and R. [1]

	fastest ← rate of evaporation → slowest		
Liquid			

(c) Sam wanted to use one of the liquids to make perfume. Based on his new results, which liquid would he use so that he would be able to smell his perfume more quickly when applied on his skin? Explain your answer. [1]

Score 3

39. Sarah dropped an iron ring into a plastic tank filled with water as shown in the diagram below.

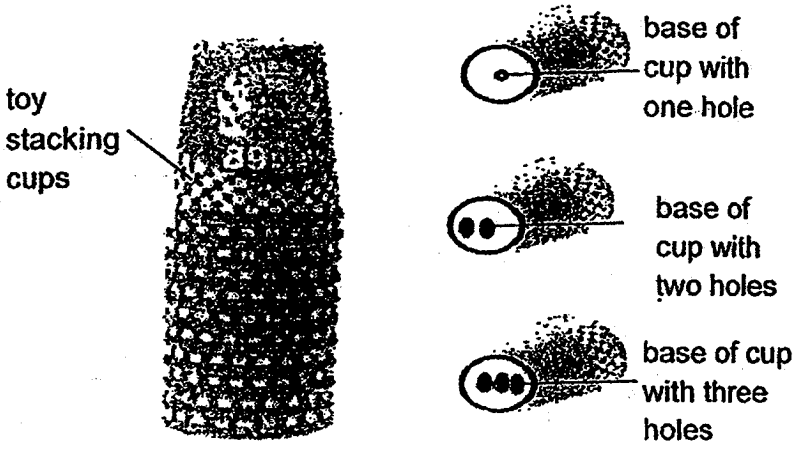


(a) She wanted to remove the iron ring from the plastic tank using a magnet. Describe how she can do so without getting the magnet wet or changing the set-up. [2]

(b) Joshua wanted to attract some copper coins placed in the same plastic tank using a strong magnet but was unable to do so. Give a reason for his observation. [2]

Score 4

40. Kumar carries out an investigation, on how the number of holes at the base of each cup affects the number of cups stacked within a minute.



His results are shown below.

Number of holes at the base of each cup	Number of cups stacked in a vertical pile in one minute
1	10
2	12
3	15

(a) Assuming Kumar is able to stack the identical cups consistently in the same manner, using the same amount of force, state one variable that he must keep constant to ensure a fair test. [1]

_____

_____

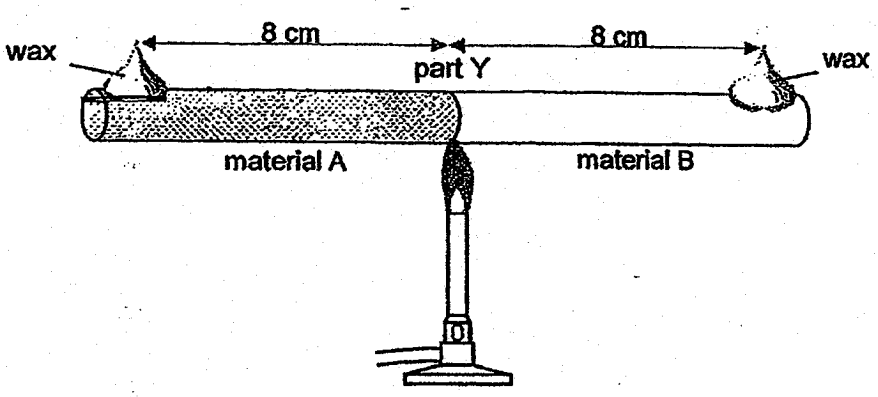
(b) What is the relationship between the number of holes and the speed at which the cups can be stacked? [1]

_____

_____

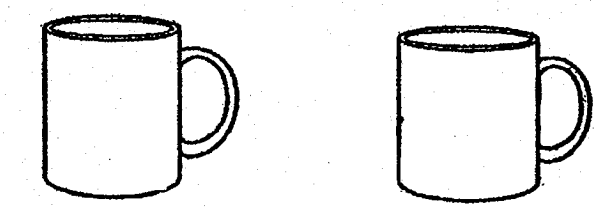
Score	/ 2

41. Two rods of the same size and thickness but made from different materials, A and B, are joined together at part Y. Same amount of wax is placed at one end of each rod. These rods are heated at part Y as shown below.



(a) The wax at the end of material A melted first. Explain why. [2]

Yong Xiang wants to keep his chilled pepsi drink cold for the longest period of time in one of the mugs made of material A and B as shown below.



mug

(b) Which mug should he use? Explain why. [1]

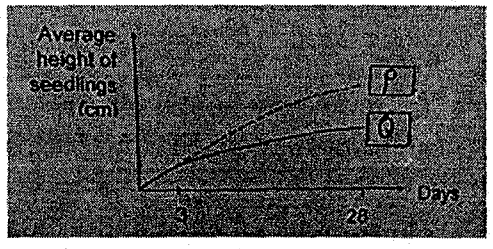
Score	3

SCHOOL : TAO NAN SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA1

SECTION A

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

SECTION B

Q29)	a) The nectar attracts insects so that they can help them pollinate. b) They are the hanging stigmas and the feathery stigmas. c) It produces seeds for the new plant of its kind to grow.
Q30)	a)  b) As there are many seeds in Pot Q, the seeds do not need to compete for sunlight so they do not need to grow as tall as possible. c) Dispersing seeds by animals would mean that seedlings are further from the parent plant and there will be less overcrowding.
Q31)	a) Presence of wing-like structure. b) It is to ensure that the readings are reliable. c) Set B. Fruit S has a wing-like structure which allows it to stay afloat for the longest time compared to set A.

Q32)	a) They both have the egg stage. b) The young of the grasshopper looks like the adult while the tadpole does not look like the adult. c) 3-staged , 4-staged
Q33)	a) i) A ii)F b) fertilisation c) E. Womb
Q34)	a) The higher the intensity of the light, the higher the average size of the tiny openings. b) The bigger stomata size allows more carbon dioxide to enter the plant for photosynthesis. c) The plant loses more water. d) As they are below the tall trees, they cannot absorb much sunlight. So they increase the surface area so that they can trap more sunlight for photosynthesis.
Q35)	a) The leaves trap sunlight and carbon dioxide and water are taken in to make food and stored excess food as starch. b) More. More carbon dioxide will be taken in by the plant and the rate of photosynthesis will be higher.
Q36)	a) A, C, D b) Yes. It has not flowed past farm X.
Q37)	a) A → Lower, B → higher b) Water in glass C is cooler than the surrounding air, the water vapour from the warmer surrounding air condensed on glass C, causing an increase in mass. c) The water droplets gained heat from the surroundings and evaporated.
Q38)	a) The surface area of the liquids are not the same so the amount of time taken for the liquids to evaporate may not be accurate. b) R, P, Q c) Liquid R. it is the fastest to evaporate so the nice smelling substance is quickly left on the skin.

Q39)	a) She can place the magnet at the side of the tank to attract the iron ring, then move up the magnet up. b) Copper is not a magnetic material.
Q40)	a) The type of cup. b) As the number of holes at the base of each cup increases, the number of cups stacked in a vertical pile in one minute increases.
Q41)	a) Material A is a better conductor of heat. Wax gained more heat from material A which conducted more heat from the flame. b) Material B. It is a poorer conductor of heat and pepsi will gain het slower from the surroundings.