HENRY PARK PRIMARY SCHOOL

FIRST SEMESTRAL ASSESSMENT 2017

PRIMARY 5

SCIENCE

SECTION A (56 MARKS)

INSTRUCTIONS TO CANDIDATES

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

Name: _____ ( )

Class: Primary 5 ( )

Date: 12 May 2017

Total Time for Sections A and B: 1 h 45 min

Section	Marks
A	/ 56
B	/ 44
Total	/100

Parent's Signature: _____

Booklet A (56 marks)

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the **Optical Answer Sheet.**

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1. Tables A and B below show the characteristics of two dogs and their puppies.

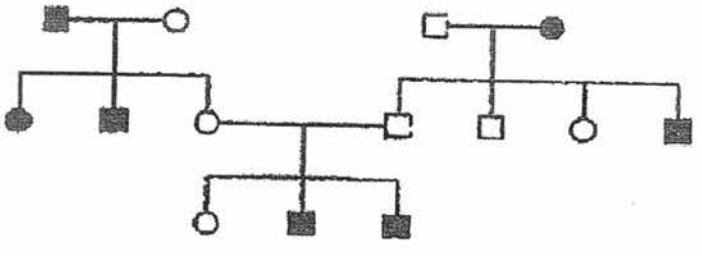
Table A	Characteristics		
Dog	Short hair	Black spots	Long ears
Male	Yes	Yes	No
Female	No	Yes	No

Table B	Characteristics		
Puppy	Short hair	Black spots	Long ears
A	Yes	Yes	No
B	No	Yes	No
C	Yes	No	Yes
D	Yes	Yes	No

Which puppy is least likely to be an offspring of the male and female dog?

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

2. Study the family tree of Jane below. It shows who are the tongue rollers and the non-tongue rollers.



Jane

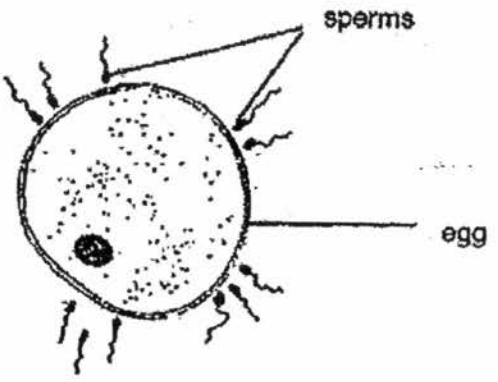
key

- male tongue roller
- female tongue roller
- male non-tongue roller
- female non-tongue roller

Which of the following statements about the family tree is correct?

(1) Jane's mother is a tongue roller.
(2) Jane has 2 sisters who are tongue rollers.
(3) Both Jane's grandfathers are non-tongue rollers.
(4) Jane's mother has a brother who is a tongue roller.

3. The diagram below shows a process in the human reproduction system.

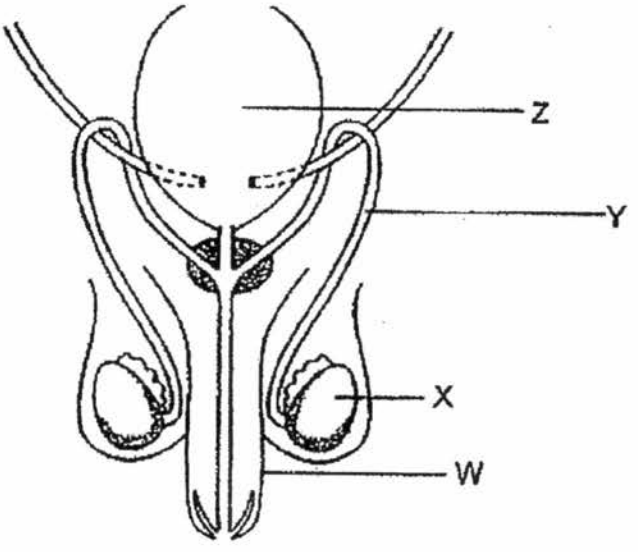


Which of the following statements are correct?

A: The egg will develop in the womb after this process.
B: This process takes place after pollination in humans.
C: Flowering plants also go through a similar process to reproduce.
D: The egg is produced in the ovaries of the female reproductive system.

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

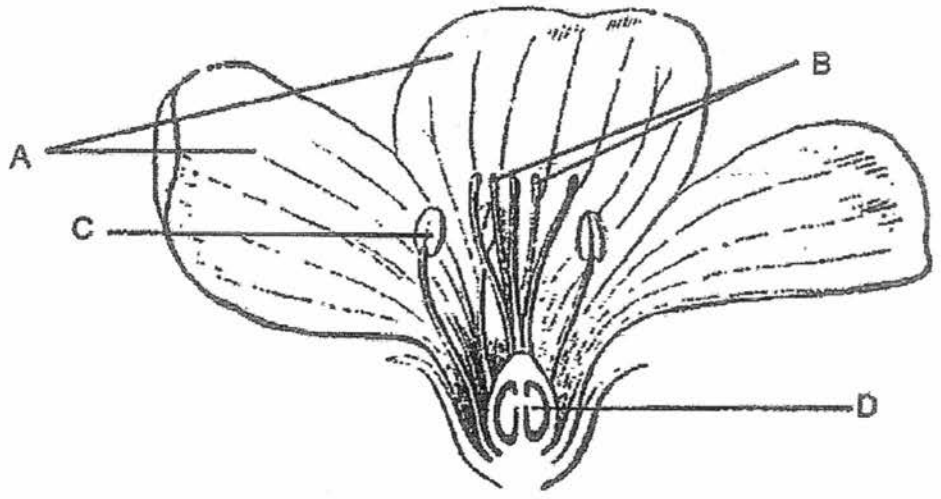
4. The diagram below shows part of the human reproductive system.



Which part produces the reproductive cells?

(1) W
(2) X
(3) Y
(4) Z

5. The diagram below shows the cross-section of a flower.



Jin Shin wanted to investigate if a flower will develop into a fruit if she cuts off different parts of the flower.

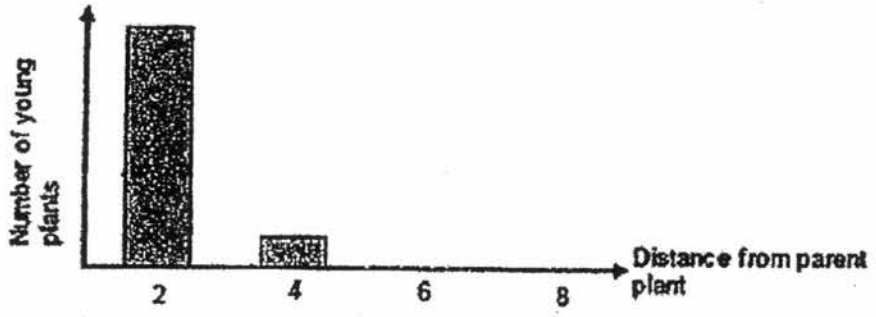
Which of the following is correct?

	Parts of flower cut off	Outcome
(1)	A only	Not possible to develop into a fruit
(2)	C only	Possible to develop into a fruit
(3)	B and D only	Possible to develop into a fruit
(4)	A, B and C only	Possible to develop into a fruit

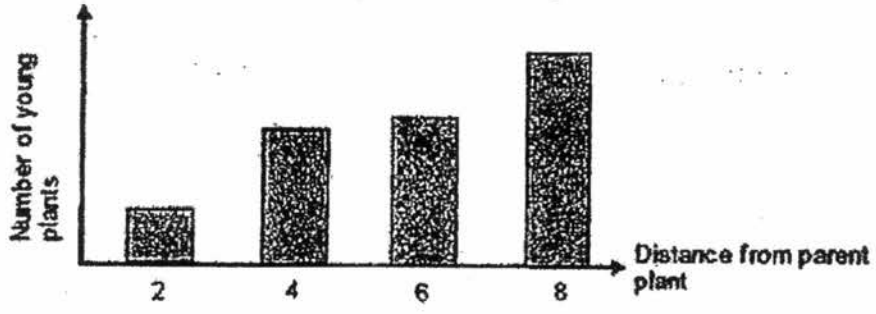
6. The diagram below shows how plant Y disperses its seeds.

Which of the following graphs represent the distance of the young plant from the parent plant Y?

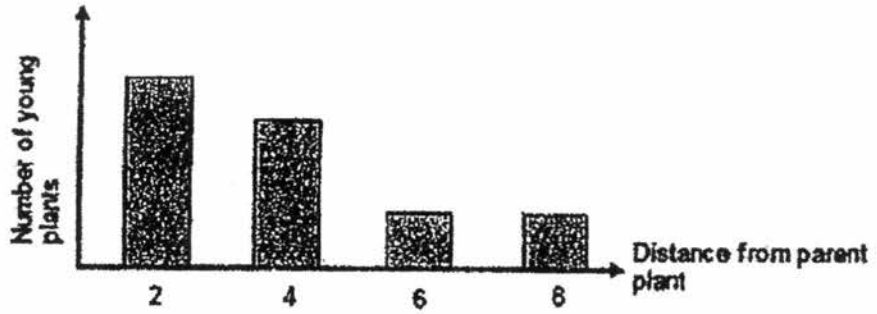
(1)



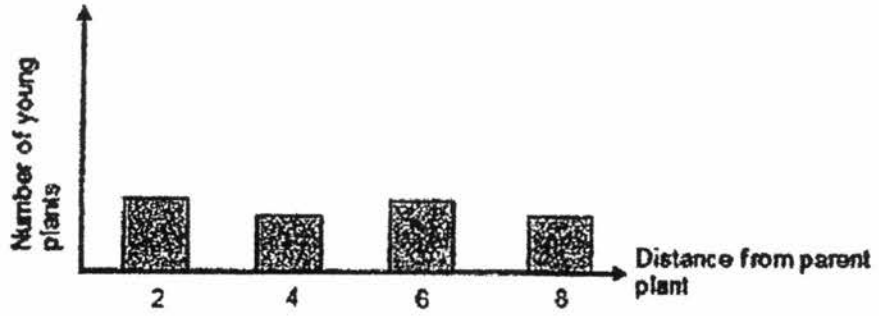
(2)



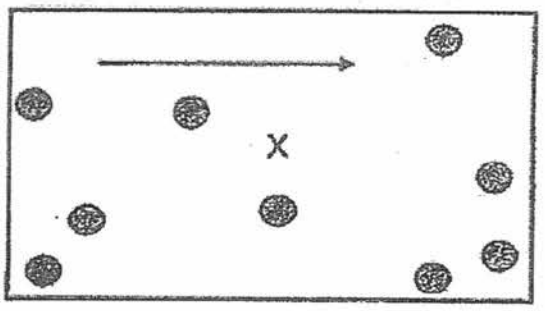
(3)

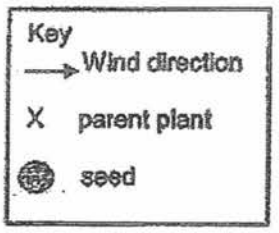


(4)



7. Shanthi sketched the dispersal pattern of a seed as shown below.





Which of the following is most likely the seed that has the dispersal pattern above?

(1)

(2)

(3)

(4)

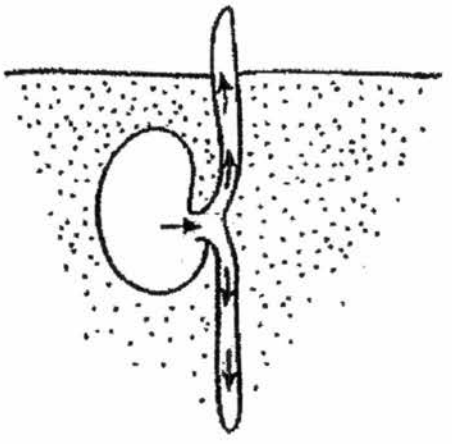
8. Study the table on the male reproductive cells of the plant and the human.

	Male reproductive cells	
	In Flowering Plants	In Humans
A:	produced in large numbers	produced in large numbers
B:	produced in the anther	produced in the testes
C:	fuses with the female reproductive cell in the stigma	fuses with the female reproductive cell in the ovary

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

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

9. The arrows in the diagram below shows how substance P moves in a germinating seed.

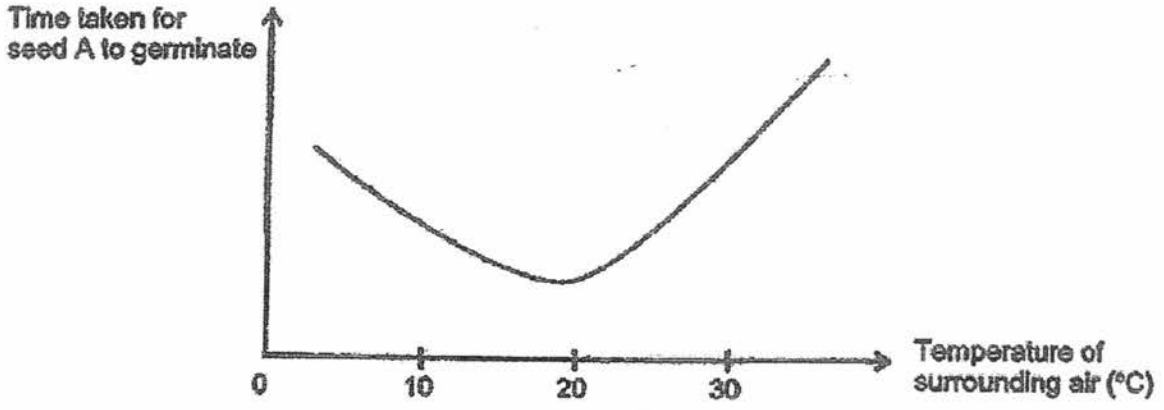


Which of the following represents substance P?

(1) air
(2) soil
(3) food
(4) water

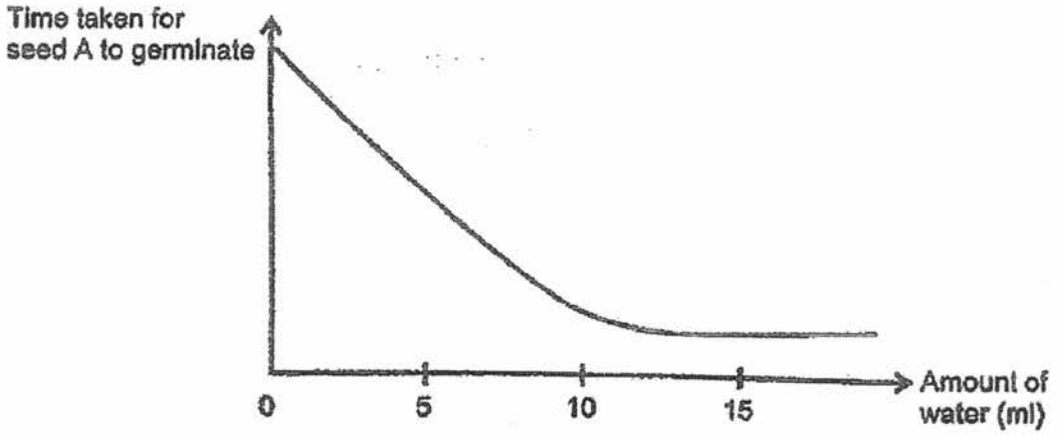
10. Jane conducted an experiment to investigate how temperature of the surrounding air affects the time taken by seed A to germinate.

The graph below shows the results of her experiment.



She then conducted another experiment to investigate how the amount of water will affect the time taken by seed A to germinate.

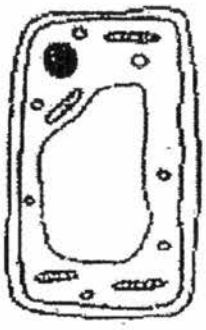
The graph below shows the results of her experiment.



Based on the results of Jane's experiments, which of the following conditions will help seed A to germinate the fastest?

	Temperature of surrounding air (°C)	Amount of water (ml)
(1)	10	10
(2)	20	15
(3)	20	5
(4)	30	15

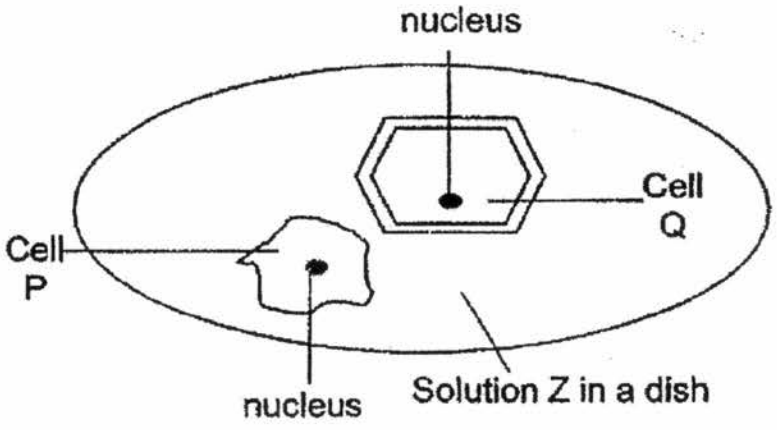
11. The diagram below shows a cell being observed under a microscope.



From which part of an organism could the above cell be taken from?

(1) skin of an animal
(2) cheek of an animal
(3) leaf of a plant
(4) leg of an animal

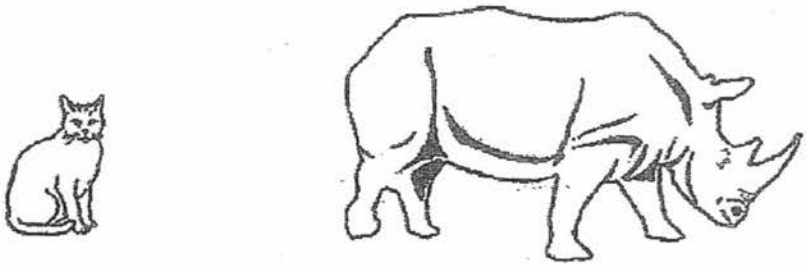
12. A student placed two cells, P and Q, in solution Z. Solution Z was absorbed into both cells. Soon, Cell P swelled up and burst but Cell Q remained the same.



What is a possible reason why Cell Q did not swell up like Cell P?

(1) Cell P has a nucleus which controls the movement of solution Z in the cell.
(2) Cell P has a cell membrane that prevents solution Z from entering.
(3) Cell Q has a cell wall that keeps its shape and prevents the cell from swelling up.
(4) Cell Q has a chloroplast that prevents solution Z from entering the cell.

13. The diagram below shows animals, P and Q.



Animal P

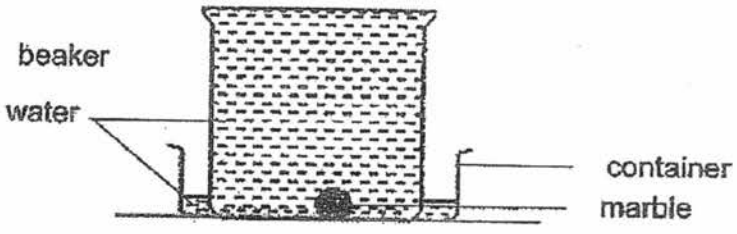
Animal Q

Which of the following about the cells found in these two animals are correct?

A: Animal Q has more cells than Animal P.
B: Both of them have more than one type of cell.
C: The cells of animal P have no cell wall.
D: The cells found in the animal Q have cell wall.

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

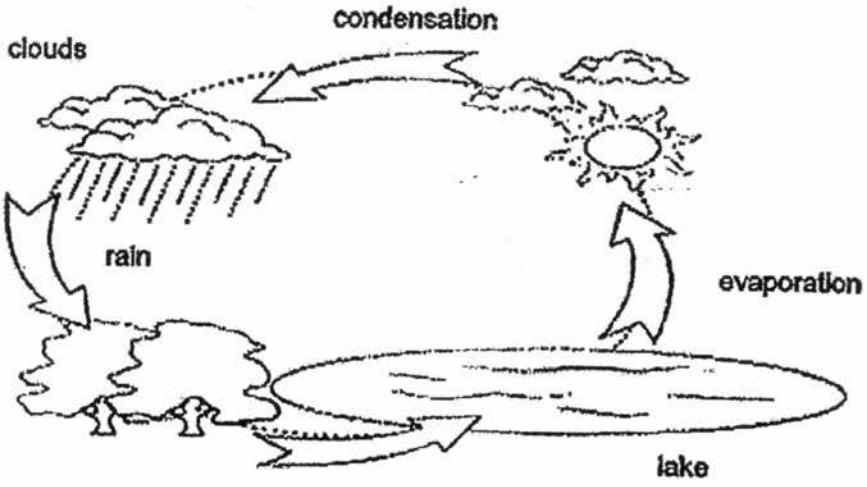
14. In an experiment, the volume of a marble was measured as shown in the diagram below.



Which one of the following would give the volume of the marble?

(1) Measure the amount of water left in the beaker.
(2) Measure the amount of water collected in the container.
(3) Measure the amount of water needed to fill up the beaker.
(4) Measure the amount of water needed to refill the container.

15. Max observed the water cycle diagram shown below.

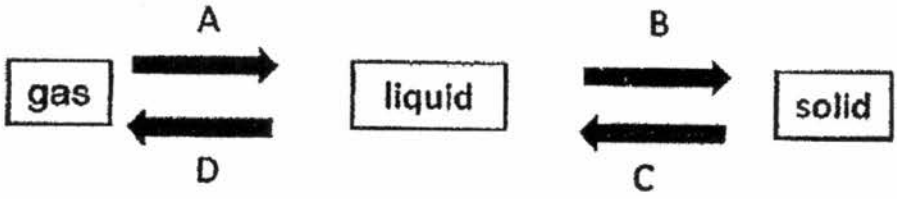


Max asked his classmates what is likely to happen when the surrounding temperature of the lake increases.

Which of the following statements by Max's classmates is **not** correct?

(1) The rate of evaporation of water in the lake will decrease.
(2) The rate of evaporation of water in the lake will increase.
(3) The water cycle will be affected by the changes in surrounding temperature of the lake.
(4) Water from the lake will still evaporate and condense to form the clouds.

16. The diagram below shows the changes in the states of water.



Which one of the following correctly describes the heat transfer involved in processes A, B, C and D?

	Heat gain	Heat loss
(1)	A and C	B and D
(2)	C and D	A and B
(3)	B and C	A and D
(4)	B and D	A and C

17. A student wanted to study the factors that affect the rate of evaporation of water. He used two of the set-ups as shown in the table below to conduct some investigations.

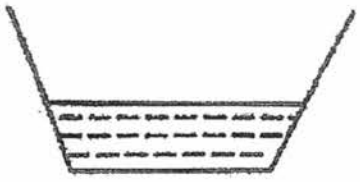
Set-up	Material of container	Exposed surface area (cm^2)	Original amount of water (ml)	Temperature of water at the start (°C)
P	plastic	200	500	50
Q	glass	200	250	50
R	plastic	400	500	50
S	glass	200	250	70

Which are the possible aims of his investigation?

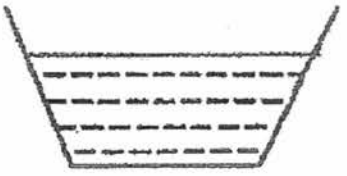
A: To find out if the material of container affects the rate of evaporation.
B: To find out if the exposed surface area of water affects the rate of evaporation.
C: To find out if the temperature of the water affects the rate of evaporation.

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

18. A student poured 500 ml of water into two identical containers, P and Q and left them outdoors. 6 hours later, he found that there was less water left in container P than container Q as show below.



Container P



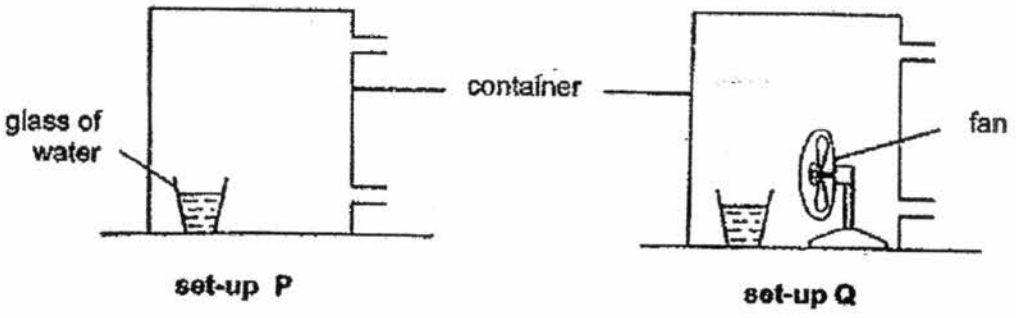
Container Q

Which of the following could explain the difference in the water level?

A: Container P was left at a place with more sunlight.
B: Container P was left at a brighter place.
C: Container P was left at a place with lower temperature.
D: Container P was filled with water at a higher temperature.

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

19. A student carried out an experiment using set-up P and set-up Q as shown. After 5 hours, the student compared the amount of water in each glass.



The amount of water left in the glass in set-up Q is _____.

(1) less because the water evaporates faster
(2) less because the water evaporates slower
(3) more because the water evaporates faster
(4) more because the water evaporates slower

20. A student set up four experiments A, B, C and D using water in containers made of the same material.
The table below shows the different conditions at the start of each experiment.

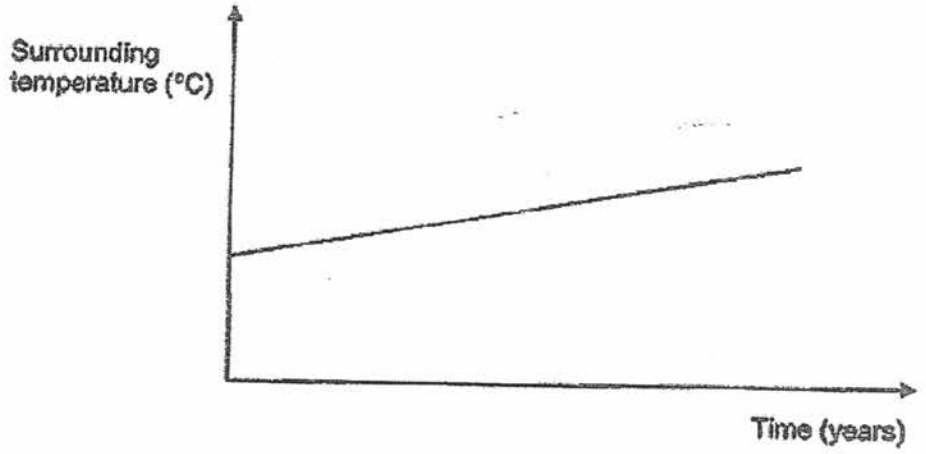
	Experiment			
	A	B	C	D
Room temperature (°C)	30	25	25	25
Exposed surface area of water (cm^2)	40	125	40	40
Volume of water (cm^3)	400	400	300	400

The student wanted to investigate how the rate of evaporation of water was affected by the exposed surface area.

Which of the following two experiments should the student compare?

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

21. The graph below shows the change in the surrounding temperature in a certain place over a period of time.



Which of the following activities contributed to the change in temperature over a period of time as shown in the graph?

A: There is an increase in the number of cars on the road.
B: People are recycling their waste products.
C: More trees are cut down for housing.
D: Land is burnt before new crops are cultivated.

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

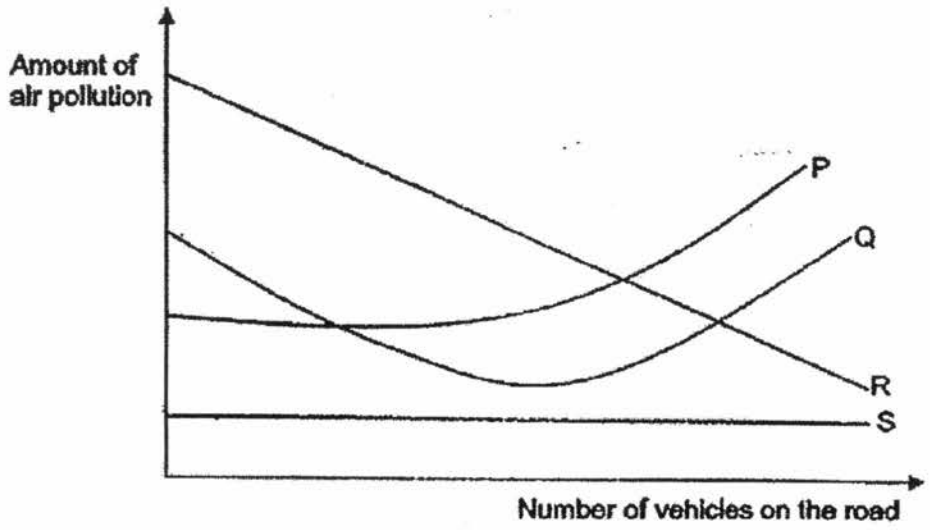
22. Deforestation is considered one major factor contributing to global climate change.

Which of the following are the impacts caused by deforestation?

A: More carbon dioxide is released into the atmosphere.
B: Plants and animals lose their habitat.
C: Soil erosion helps in plant growth.

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

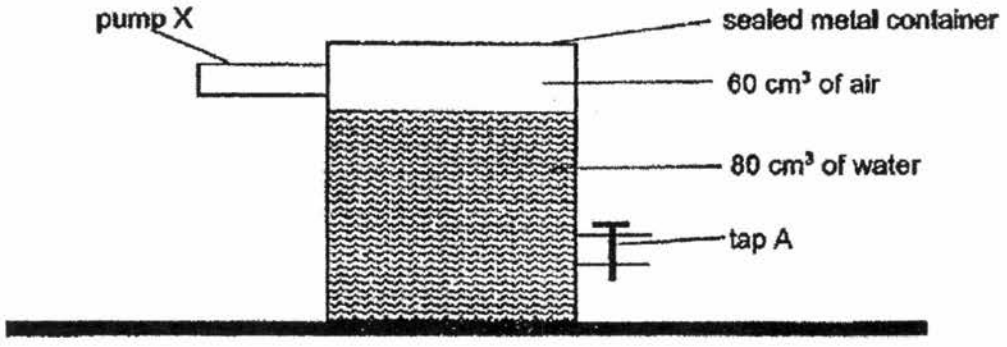
23. Look at the graph shown below.



Which line, P, Q, R or S, on the graph below shows the result of an increased number of vehicles on the road?

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

24. An experiment was set up using a sealed metal container which contains 80 cm^3 of water and 60 cm^3 of air as shown below.

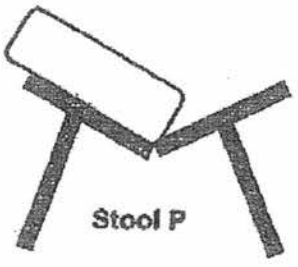


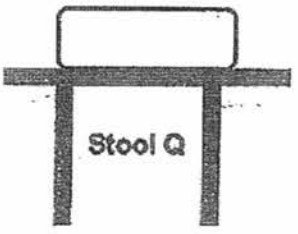
20 cm^3 of water was removed from the container through tap A and 40 cm^3 of air was then pumped in using pump X.

What would the final volume of the air in the container?

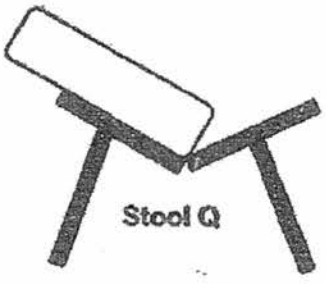
(1) 20 cm^3
(2) 40 cm^3
(3) 60 cm^3
(4) 80 cm^3

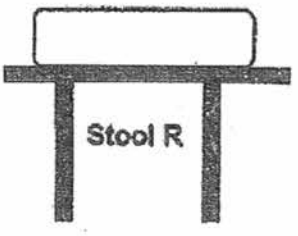
25. John placed two similar 5 kg metal blocks on two similar stools of different materials. Within a few minutes, he observed that stool P broke as shown in the diagram below.





After that, he placed two similar 8 kg metal blocks on stool Q and another similar stool, R, made of a different material. Within a few minutes, he observed that stool Q broke as shown in the diagram below.



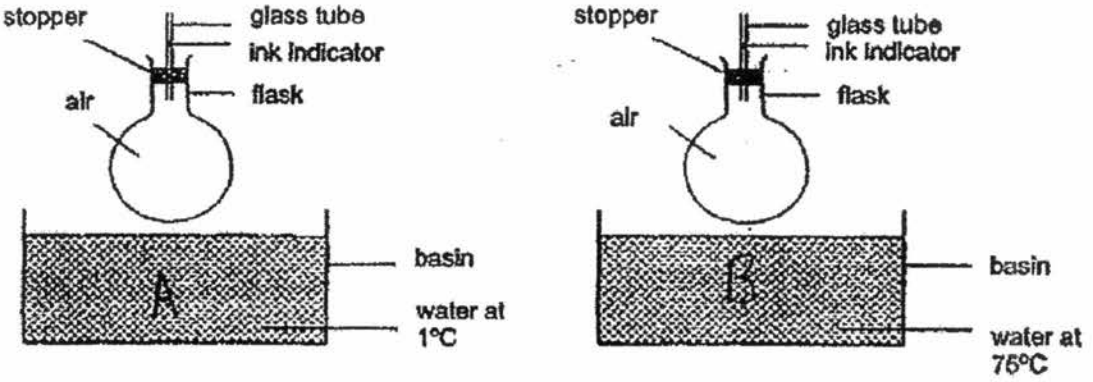


What conclusion(s) can John make based on his observations?

A: Stool P is made of the weakest material.
B: Stool Q is made of a stronger material than stool P.
C: Stool Q is made of a stronger material than stool R.
D: Stool R is made of the strongest material.

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

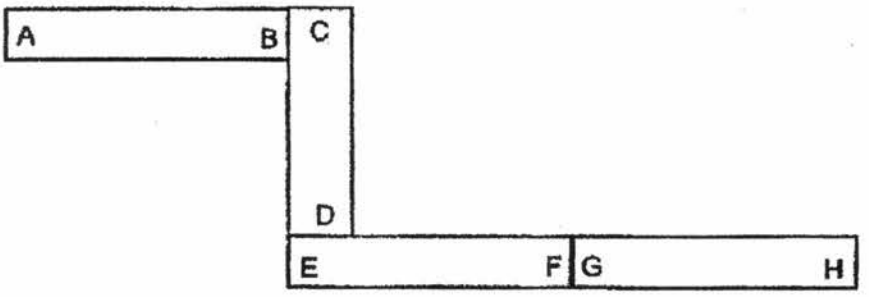
26. The following set-ups A and B below were placed in the Science Room with a room temperature of about 29°C.



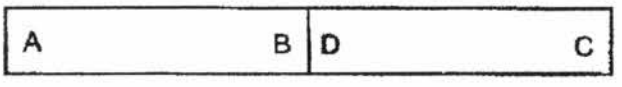
Which of the following could be observed 2 minutes after the flask was placed in the basin in set-ups A and B?

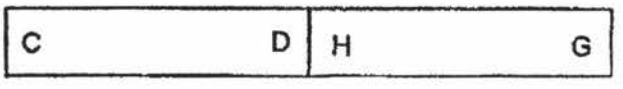
	Observations for A	Observations for B
(1)	The ink indicator will fall	The ink indicator will rise
(2)	The ink indicator will rise	The ink indicator will fall
(3)	The water level in the basin will fall	The water level in the basin will rise
(4)	The water level in the basin will rise	The water level in the basin will fall

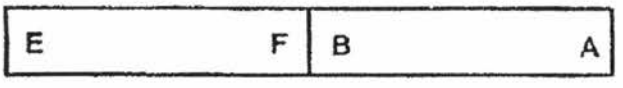
27. The diagram below shows four similar magnets with their poles labelled and arranged in the following way.



Which of the following shows a possible arrangement of the magnets?

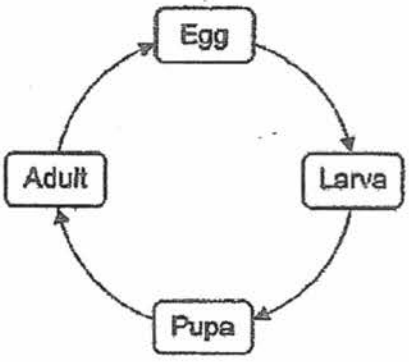
(1)


(2)


(3)


(4)


28. The diagram below shows the life cycle of an animal.



Which group(s) of the following animals has / have same life cycle as the animal shown above?

Group X	Group Y	Group Z
chicken cockroach	mosquito butterfly	frog mealworm beetle

(1) Group Y
(2) Group Z
(3) Groups X and Y
(4) Groups Y and Z

End of Booklet A

HENRY PARK PRIMARY SCHOOL

FIRST SEMESTRAL ASSESSMENT 2017

PRIMARY 5

SCIENCE

SECTION B (44 MARKS)

INSTRUCTIONS TO CANDIDATES

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.

Name: _____ ( )

Class: Primary 5 ( )

Date: 12 May 2017

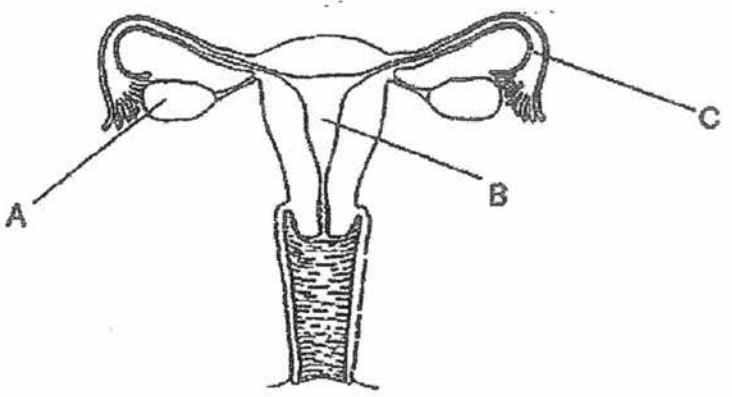
Total Time for Sections A and B: 1 h 45 min

Marks for Section B: _____

Booklet B (44 marks)

Write your answers to questions 29 to 40 in the spaces given.

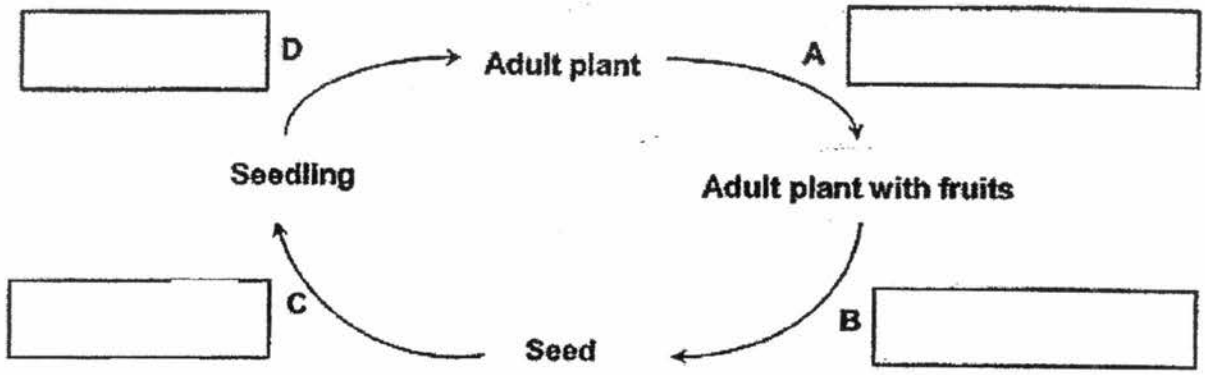
29. The diagram below shows the female reproductive system.



a) State the part (A, B or C) where the foetus develop and grows after fertilisation. [1]

b) Fertilisation cannot take place if part A stops functioning. Explain why. [1]

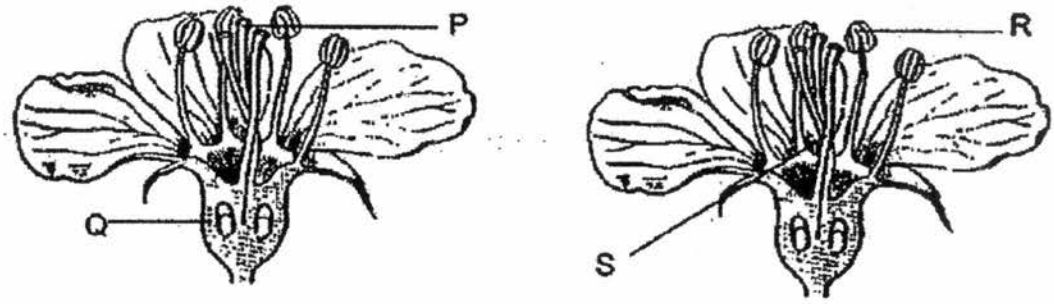
30. The diagram below shows processes A, B, C and D in the life cycle of a flowering plant.



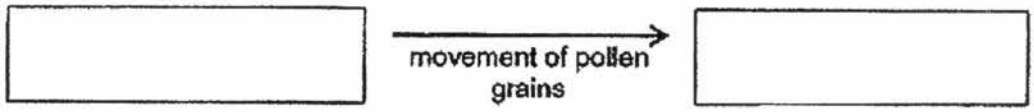
a) Write the helping words given below into the correct boxes shown above. [2]

Fertilisation	Germination

The diagram below shows two flowers and their respective parts.



b) Fill in the boxes below with P, Q, R and/or S to show the movement of pollen grains for pollination to be successful. [1]



c) In which part, P, Q, R or S, are ovules found? [1]

_____

31. The table below gives some information about plants P, Q and R.

Characteristics	Plants		
	P	Q	R
presence of ovules	✓		✓
dispersed by water	✓	✓	
dispersed by splitting			✓

a) Explain why plant P cannot be a fern. [1]

b) Based on the information given in the table above, state two characteristics of the seeds for plant Q. [2]

(i)

(ii)

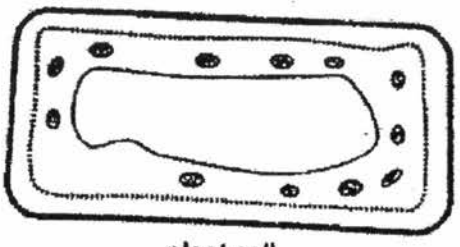
Sam counted and recorded the number of young plants that were found a certain distance from the parent plants Q and R in the table below.

Data set	Distance from parent plant				
	1m	2m	3m	4m	5m
1	5	7	6	4	3
2	7	1	0	0	0

c) Which young plant, Q or R does data set 2 represent? [1]

d) Explain why it is better for the seeds to be dispersed further away from the parent plant. [1]

32. The diagram below shows a plant cell.



plant cell

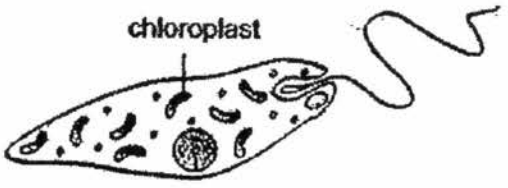
a) One part is missing in the cell. The missing part helps to control activities that take place in the cell. Name the missing part. [1]

_____

b) Name one part of the above cell that is not found in an animal cell. [1]

_____

A student found a one-celled organism taken from the school pond shown in the diagram below.

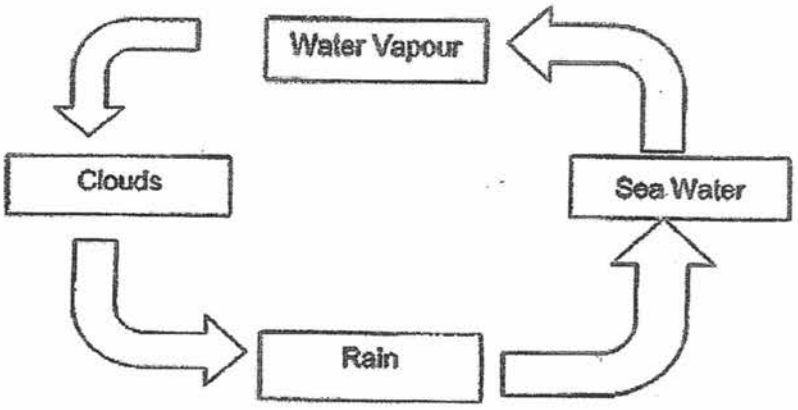


c) The student observes that the organism needs to move towards light for survival. Explain why. [2]

_____

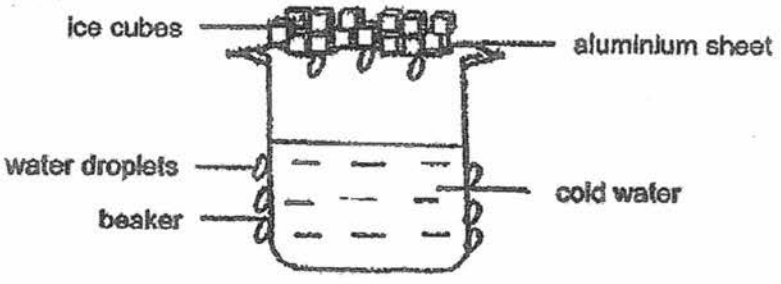
_____

33. Study the diagram of water cycle below.



a) Explain the importance of water cycle to living things. [1]

The diagram below shows a model of a water cycle set up by a student to demonstrate the formation of rain. The student noticed that there were only a few water droplets formed on the underside of the aluminium sheet.

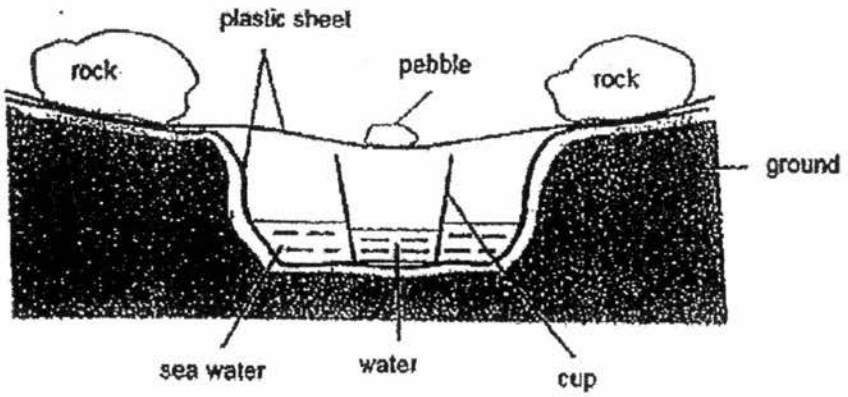


b) The student noticed that there were water droplets forming on the outer surface of the beaker. Explain how these water droplets were formed. [2]

c) Suggest what the student could do to the set-up so that more water droplets are formed on the underside of the aluminium sheet. Give a reason for your answer. [2]

34. A group of students went camping at a beach and was tasked to obtain drinking water from the sea. They dug a hole in the ground and lined it with a plastic sheet. They collected some sea water and poured it into the hole.

An empty cup was placed in the middle and another plastic sheet was used to cover the hole. They also placed rocks at the two sides and a pebble was placed as shown in the diagram below.



a) How will the water collected in the cup taste? Give a reason for your answer. [2]

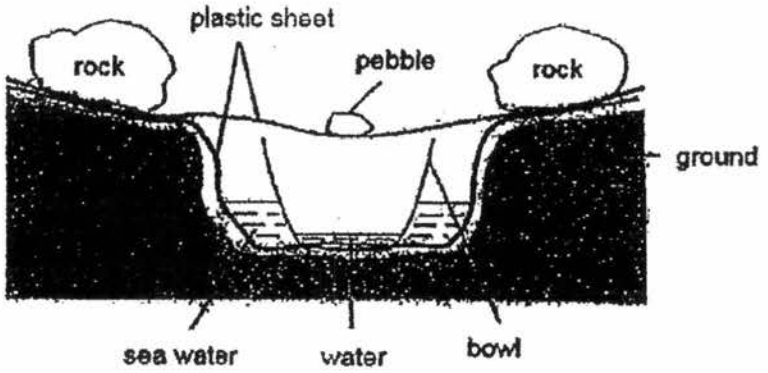
_____

_____

b) What difference would the students observe in the cup if the pebble on the plastic sheet in (a) was replaced with cold water? [1]

_____

Another group of students did a similar task with the same amount of sea water in the hole. Instead of using a cup, they used a large bowl to collect the water.

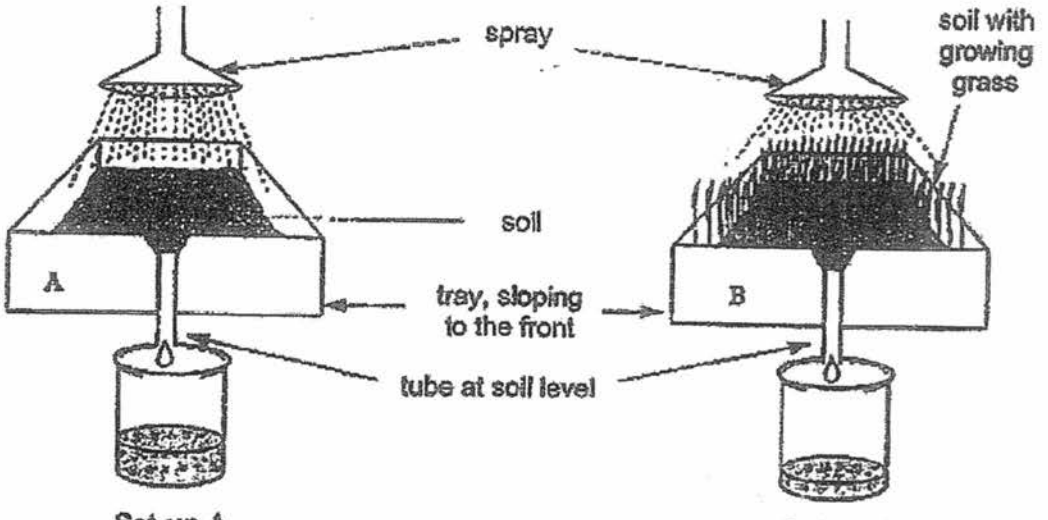


c) After another 6 hours, they found that less water was collected in the bowl. Explain what had happened. [2]

_____

_____

35. Ms Lee carried out an experiment to find out the effect of plants on soil erosion. She set up two identical set-ups as shown below. Set-up A does not have plants growing in the soil while set-up B has grass growing in the soil. An equal amount of water was poured into each tray. Water was collected in the two beakers below the trays.



Which beaker will have more soil at the end of the experiment?
Give a reason for your answer. [2]

_____

_____

36. Hashim placed three different substances into three identical containers as shown below.

a) Which substance is most likely to be a solid? Explain why. [2]

_____

_____

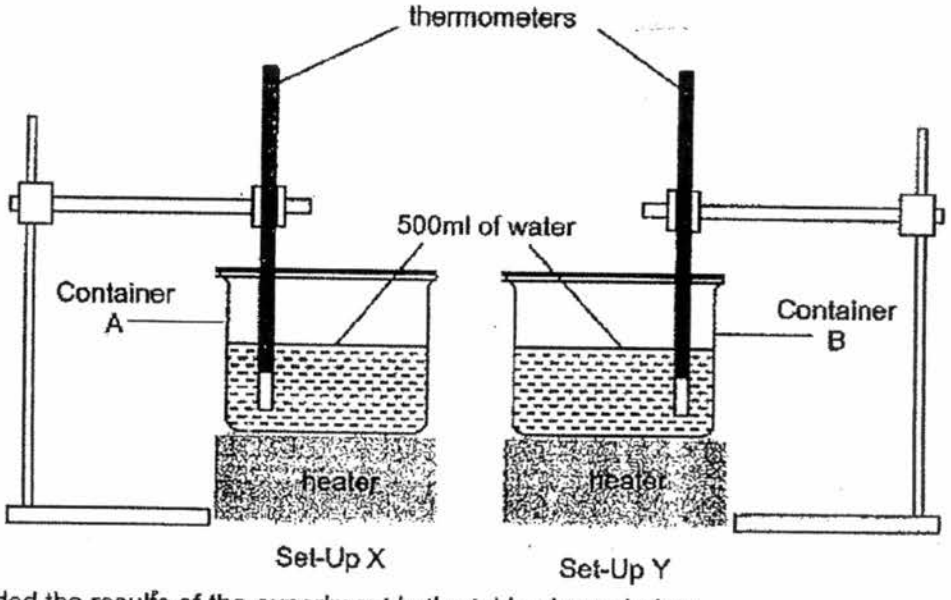
b) If Hashim wants to prove that substance A is a liquid, what should he do? Give a reason for your answer. [2]

_____

_____

37. Samy set up the experiment as shown below.

The two set-ups are identical except container A holding the water in Set-up X and container B holding the water in Set-up Y were made of different materials. The water in the containers were heated to 100°C.



He recorded the results of the experiment in the table shown below.

	Time taken for the water to reach 100°C (s)
Set-up X	80
Set-up Y	35

a) Based on the results, complete the table below stating the material, metal or glass, each container is made of in the above set-ups.

Container	Material of the container
A	
B	

[1]

b) Explain your reason of choice for the material you chose for Container A and Container B. [2]

_____

_____

c) The heater was switched off after the water in both containers reached 100°C. The water was left in the containers for 5 minutes.
In which set-up, X or Y, would the water be cooler? [1]

_____

_____

38. Tracy conducted several tests on materials A, B, C and D. She recorded her results in the table shown below.

Property	Materials			
	A	B	C	D
flexible	X	✓	X	✓
sinks in water	✓	✓	X	✓
waterproof	✓	X	✓	✓
allows most light to pass through	✓	X	X	✓

A tick (✓) indicates the presence of the property while a cross (X) indicates the absence of the property.

a) Which material should be used to make a float for beginning swimmers? Give a reason for your answer. [2]

_____

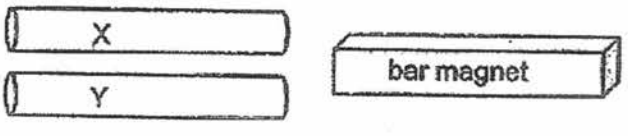
_____

b) Jenny concluded that both material B and C do not allow any light to pass through. Explain why Jenny could be wrong. [1]

_____

_____

39. Samy has two rods labelled X and Y and a bar magnet.



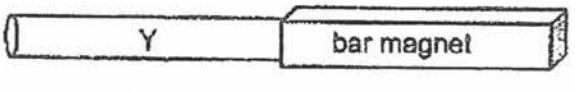
a) He carried out an experiment using the rods and bar magnet. From his experiment, he concluded that rod X is a magnet.

Explain what he did and the observations he made to come to the conclusion that Rod X is a magnet. [2]

_____

_____

b) Rod Y was attracted to the bar magnet as shown in the diagram below.

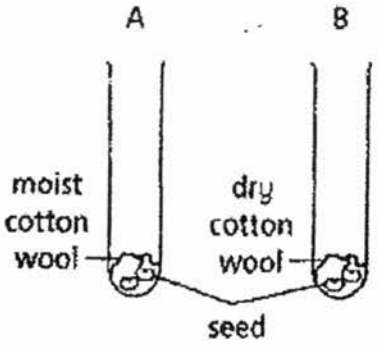


Can this observation be used to conclude that rod Y is a magnet? Explain why. [2]

_____

_____

40. An experiment was conducted to find out if water is needed for the germination of seeds.
Seeds were placed in each of the two identical test tubes as shown in the diagram.
The test tubes were placed near a window.



State two variables that must be kept the same in order for the experiment to be fair. [2]

i) _____

ii) _____

End of Booklet B

Setters:
Mrs Liu Ying Hui
Mr Low Seow Boon
Mrs Heng En Oi

P5 SC SA1 CORRECTIONS SHEET NAME _____

Q	Answer	CORRECTIONS
29.	a) B b) Egg cells will not be produced	
30.	A: Fertilisation ; C: Germination a) R to P b) Q	
31.	a) Ovules are not found in Ferns b) Fibrous husk or able to float / waterproof / light / small / disperse by water / not disperse by splitting c) Plant R d) The young plants will not compete / fight with the parent plants for sunlight / water / nutrients / space	
32.	a) nucleus b) cell wall / chloroplasts c) It needs to absorb light to make food.	
33.	a) Water cycle ensures continued supply of (fresh) water for living things to survive b) Water vapour in the surrounding air touched the cool surface of the beaker, lost heat and condensed. c) Add more ice / salt to ice	
34.	a) The water would be tasteless; only the water evaporated b) More water is observed c) The exposed surface area of (sea) water is smaller so rate of evaporation is slower	
35.	Beaker A. There are no plant roots to hold the soil together	
36.	a) Substance C. It has a definite shape / it is stuck to the top of the container.	

	b) Pour Substance A into different containers and see if substance A takes the shape of the containers.	
37.	a)A: Glass, B: Metal b) It takes a longer time for water in Container A to reach 100°C. Container A is conducted heat slower from the hot plate to the water. c) Set-Up Y / Y	
38.	a) C. It is does-not sink in water OR it is waterproof. b) Both B and C / B or C could be a translucent material.	
39.	a) He brought both ends of rod X to a/the pole of the magnet. One of the ends repelled the pole / magnet b) No, as rod Y could be made of a magnetic material and is only attracted to the magnet.	
40.	Any 2 of the following: number of seeds / type of seeds / mass of seeds / size of seeds / shape of seeds	

Booklet A

1.	3	11.	3	21.	3
2.	4	12.	3	22.	2
3.	4	13.	3	23.	1
4.	2	14.	2	24.	4
5.	2	15.	1	25.	3
6.	2	16.	2	26.	1
7.	1	17.	3	27.	4
8.	3	18.	3	28.	1
9.	3	19.	1		
10.	2	20.	3		