HENRY PARK PRIMARY SCHOOL

SECOND 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: 31 October 2017

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

Section	Marks
A	/ 56
B	/ 44
Total	/100

Parent's Signature: _____

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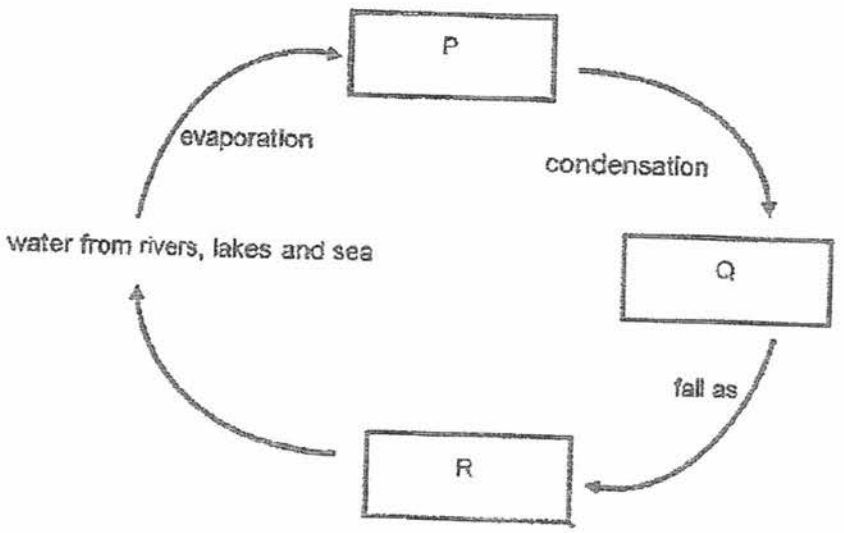
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Booklet A (56 marks)

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. The diagram below shows the water cycle.



What do the letters, P, Q and R in the boxes stand for?

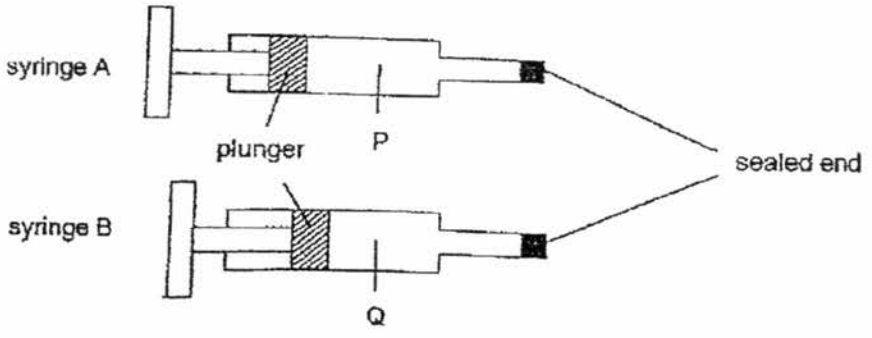
	P	Q	R
(1)	rain	clouds	water vapour
(2)	water vapour	clouds	rain
(3)	clouds	rain	water vapour
(4)	water vapour	rain	clouds

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2. Two syringes, A and B, contain the same amount of substances P and Q respectively.

The plunger in the syringe A could not be pushed in while the plunger in syringe B could be pushed in slightly as shown in the diagram below.



Which of the following substances are most likely to be P and Q?

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

3. Sarah filled two identical cups, P and Q, with 300 ml of water. She placed cup P in her garden during a sunny and windy day. Cup Q was left in an air-conditioned room.

After 8 hours, Sarah observed that both cups had less water. She also observed that cup Q had more water than cup P.

Based on the information given, which one of the following statements is not correct?

(1) Some of the water in both cups P and Q had evaporated.
(2) The wind in the garden caused more water in cup P to evaporate.
(3) The rate of evaporation of water in cup P was higher than that in cup Q.
(4) Only water in cup P evaporated as the surrounding temperature was higher.

4. Which one of the following activities worsens global warming?

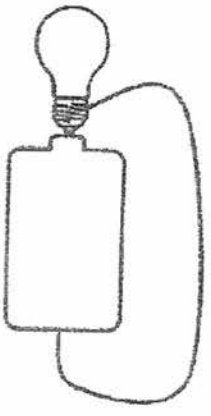
(1) John's parents drive their cars to work every day.
(2) John writes on both sides of his foolscap papers.
(3) John's sisters grow plants in their school gardens.
(4) John's brother switches off the fans in his room when not in use.

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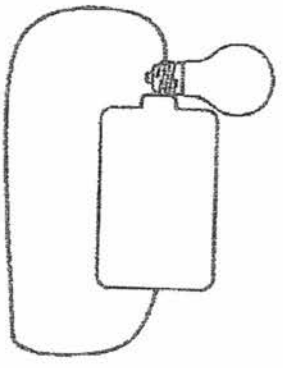
5. Which one of the following is not a way of conserving water?

(1) Using a hose to water the plants.
(2) Collecting rainwater to wash the corridors.
(3) Taking a short shower instead of a long bath.
(4) Brushing your teeth and rinsing your mouth with a mug.

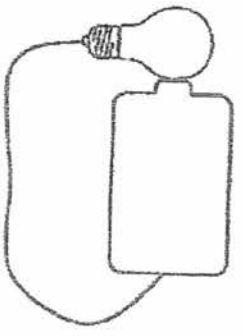
6. Study the six simple circuits, A, B, C, D, E and F shown in the diagram below.



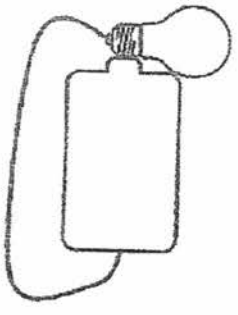
circuit A



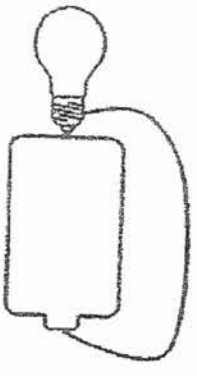
circuit B



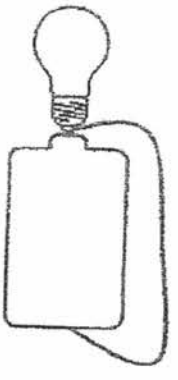
circuit C



circuit D



circuit E



circuit F

The bulbs and the batteries in the six circuits are identical.

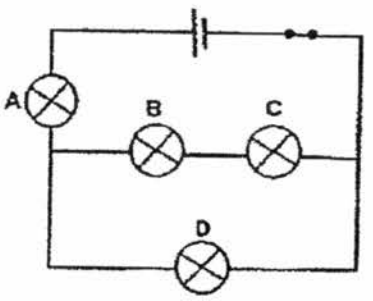
In which of the following circuits, will the bulb light up?

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

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7. Study the circuit diagram shown below.

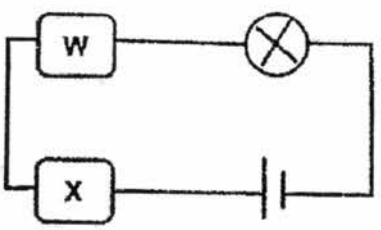


All the identical bulbs, A, B, C and D, lit up when the switch was closed.

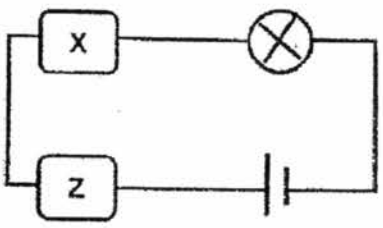
Which bulb, when removed from its bulb holder, will cause the rest of the bulbs to **not** light up?

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

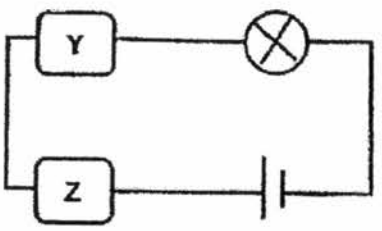
8. Study the circuits, 1, 2, 3 and 4, shown below.



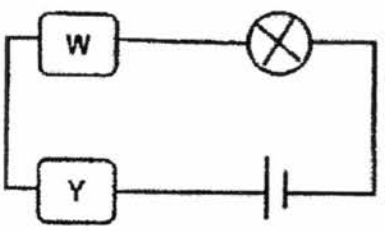
circuit 1



circuit 2



circuit 3



circuit 4

The bulb in circuit 2 lit up but the bulbs in circuits 1, 3 and 4 did not light up.

Based on this observation, which materials, W, X, Y and Z, are insulators of electricity?

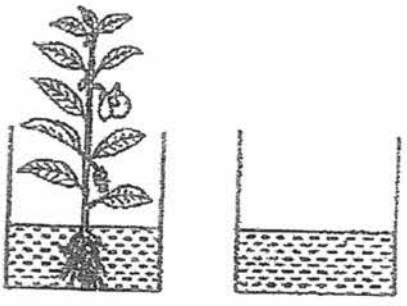
(1) X and Z only
(2) W and Y only
(3) W, Y and Z only
(4) W, X, and Y only

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9. Grace wanted to find out how much water the roots of a plant absorb in a day.

She prepared the set-ups shown in the diagram below and placed them in a Science room using identical containers.



set-up A set-up B

After a day, she recorded her findings in the table shown below.

	Amount of water in container (ml)	
set-up	start of experiment	end of experiment
A	500	200
B	500	450

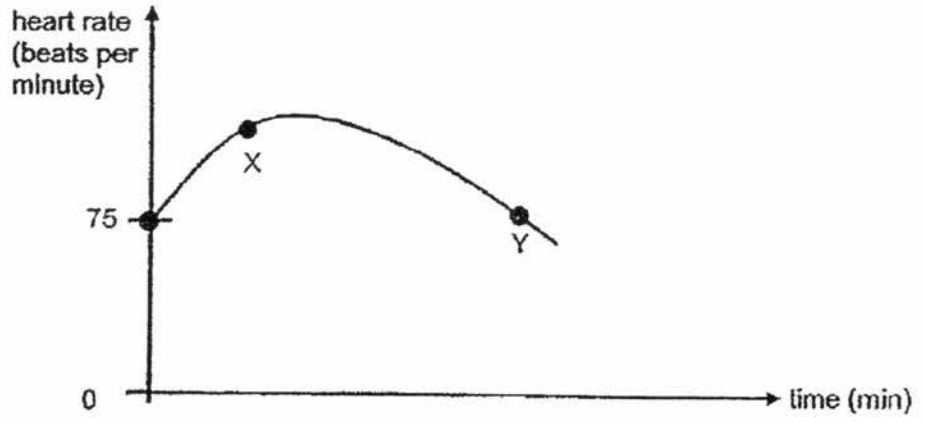
Which one of the following shows correctly how much water the roots of the plant had taken in?

(1) 50 ml
(2) 200 ml
(3) 250 ml
(4) 300 ml

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10. The graph below shows Peter's heart rate during a period of 30 minutes.

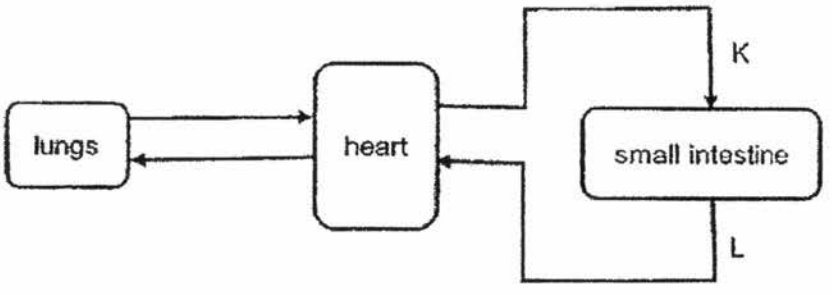


Peter's heart rate, when he is resting, is about 75 beats per minute.

Which of the following shows correctly Peter's activity at point X and Y on the graph?

	X	Y
(1)	running	resting
(2)	running	running
(3)	resting	running
(4)	resting	resting

11. The diagram below shows the blood flow in parts of a human body about 6 hours after a meal.

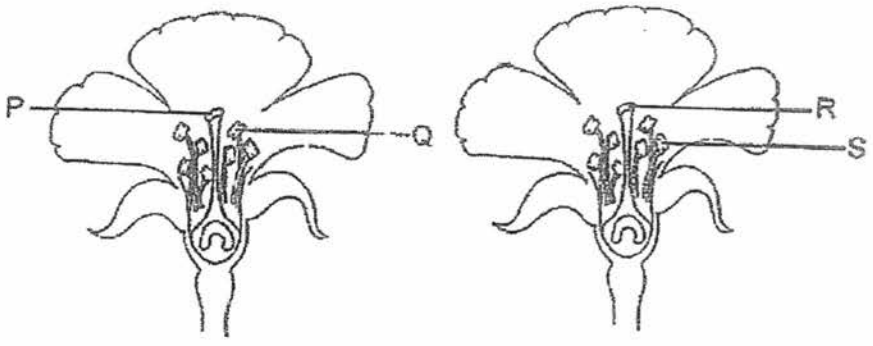


Which one of the following shows the correct amount of carbon dioxide and digested food in the blood at point L as compared to the blood at point K?

	Blood at point L	
	carbon dioxide	digested food
(1)	more	less
(2)	more	more
(3)	less	less
(4)	less	more

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12. The diagrams below show two flowers from the same type of plant.



Pollination between these two flowers occurs when pollen grains are transferred from _____.

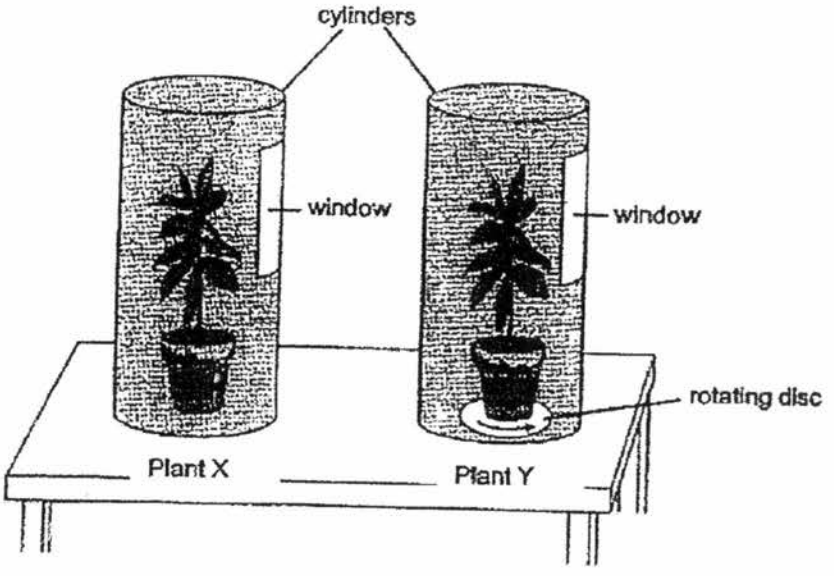
(1) P to R
(2) Q to R
(3) P to S
(4) Q to S

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13. The diagram below shows 2 similar plants that are covered by cylinders which have windows to let light in. The cylinders are made of a material that does not allow any light to pass through. Both set-ups were placed near an open window.

Only plant Y is rotated continuously on a disc.



Which one of the following shows how the plants will look like when the cylinders are removed 2 weeks later?

(1)



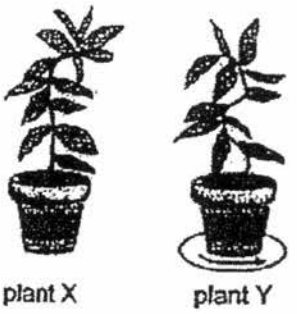
(2)



(3)

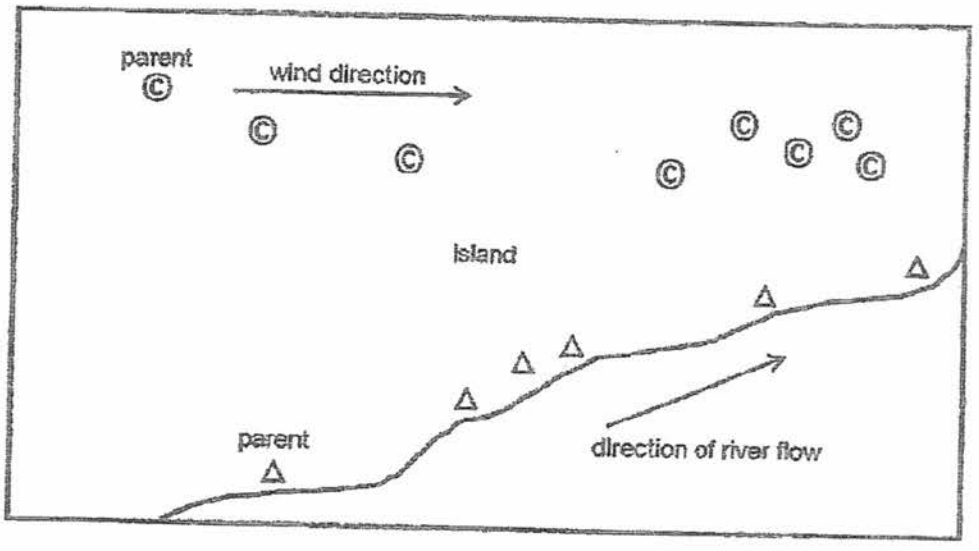


(4)



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14. The diagram shows part of an island where two types of plants (△, ©) are growing.

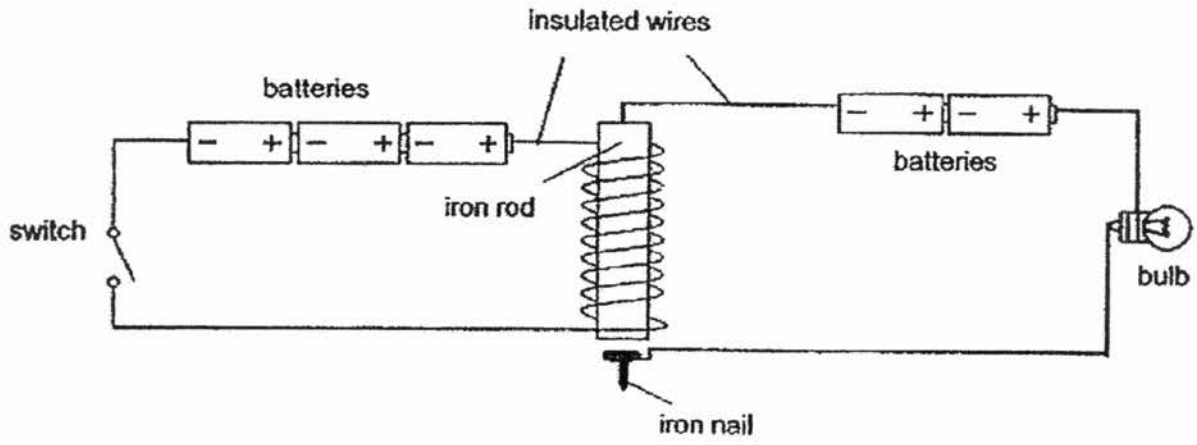


How are the fruits or seeds of each type of plant most likely dispersed?

	©	△
(1)	wind	animal
(2)	animal	water
(3)	wind	water
(4)	water	wind

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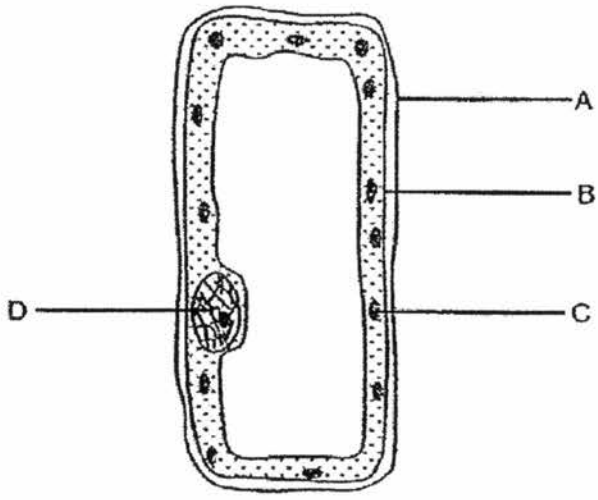
15. Jenny set up the circuit shown below.



Which statement is correct when the switch in the above circuit is closed?

(1) The iron nail does not move but the bulb lights up.
(2) The iron rod attracts the iron nail and the bulb lights up.
(3) The iron rod heats up and the iron nail moves away from it.
(4) The iron nail moves away from the iron rod and the bulb does not light up.

16. The diagram below shows a plant cell.

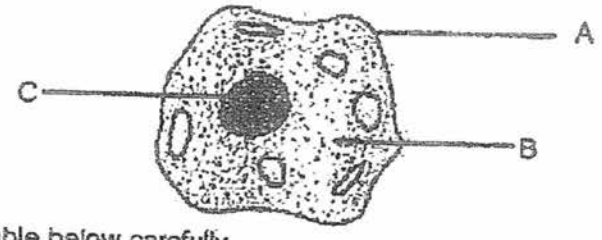


Which of the following parts, A, B, C or D, are not found in an animal cell?

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

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17. The diagram below shows parts (A, B and C) of a cheek cell.



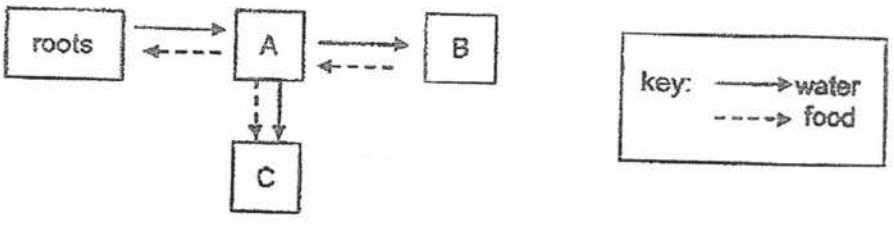
Study the table below carefully.

Part	Function
A	gives the cell its shape
B	controls the movement of substances in and out of the cell
C	controls the activities in the cell

Which of the parts have the functions not correctly stated?

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

18. The diagram below shows how water and food are transported to and from different parts of a plant.



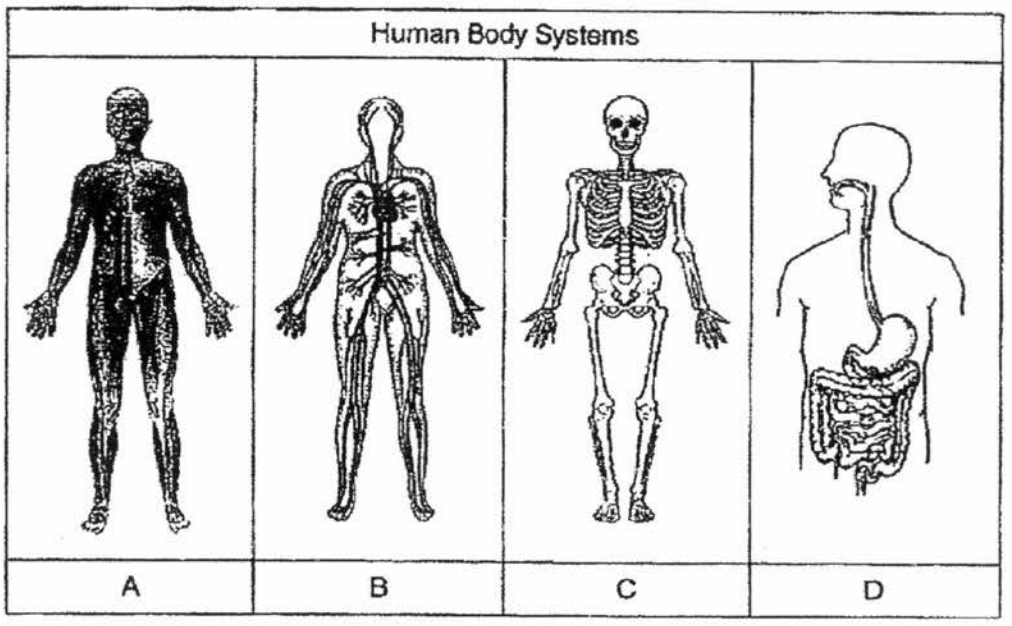
Which one of the following shows correctly the stem and the leaf of the plant?

	Leaf	Stem
(1)	A	B
(2)	A	C
(3)	B	A
(4)	C	A

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19. Study the diagrams shown below.

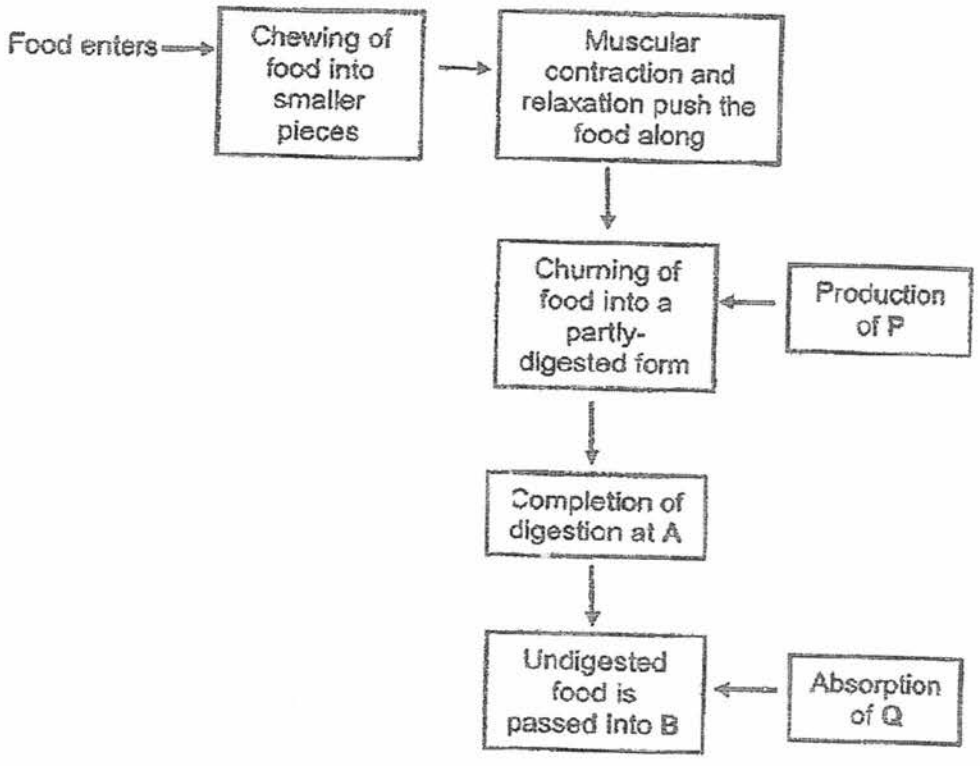


Which two systems work closely together to help a person bend, stretch and move?

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

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20. The flow diagram below shows the process of digestion in the human body.



Which one of the following correctly shows what the letters A, B, P and Q stand for?

	A	B	P	Q
(1)	mouth	gullet	saliva	water
(2)	stomach	small intestine	digestive juice	waste
(3)	small intestine	large intestine	digestive juice	water
(4)	large intestine	anus	saliva	waste

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21. Sam placed a balloon filled with air in a container of water. The balloon was floating on the water.

Sam then pushed the balloon downwards and he observed that water in the container overflowed as shown in Figure 2.

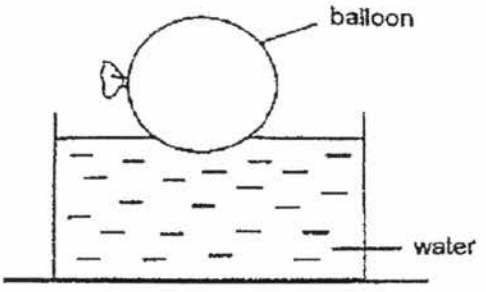


Figure 1

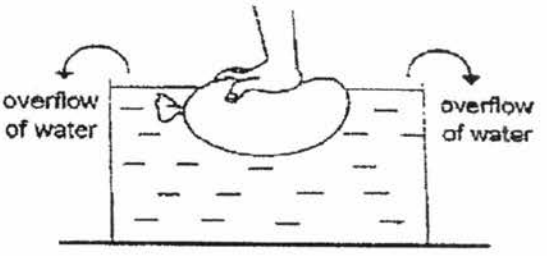


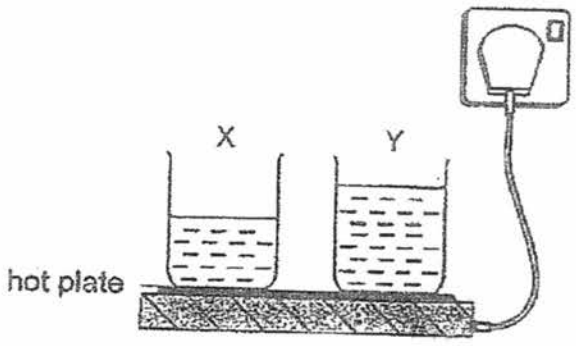
Figure 2

Which one of the following best explains why the water in the container overflowed?

(1) Air has mass.
(2) Air occupies space.
(3) Air has no definite shape.
(4) Air has no definite volume.

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22. David uses an electrical hot plate to boil two similar beakers of water.



	Beaker X	Beaker Y
Volume of water (ml)	150	200
Temperature of water before heating (°C)	32	32

Water boils at 100°C.

Based on the information given, which of the following statements is correct?

A: Water in beaker X will boil first.
B: More heat energy is required to boil the water in Beaker Y than in Beaker X.
C: The water in both beakers has the same amount of heat energy before heating.

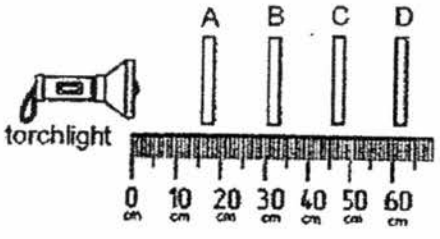
(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

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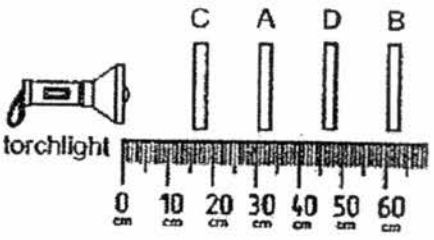
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23. Julie conducted an experiment to find out whether light can pass through four different materials, A, B, C and D.

The materials were arranged in two set-ups, P and Q as shown below.

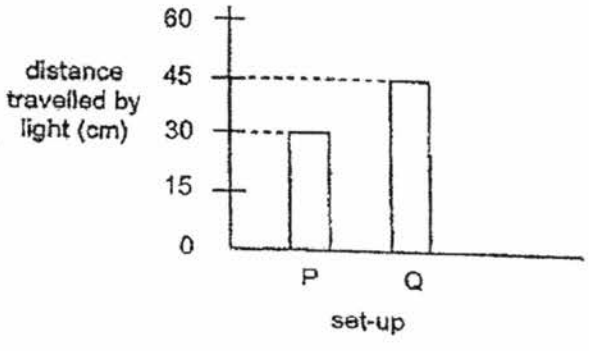


set-up P



set-up Q

The distance travelled by the light in each set-up was measured and shown in the bar graph below.



Based on the results given, which of the following statements is correct?

A: Material A allows light to pass through.
B: Material C does not allow any light to pass through.
C: Materials B and D do not allow any light to pass through.

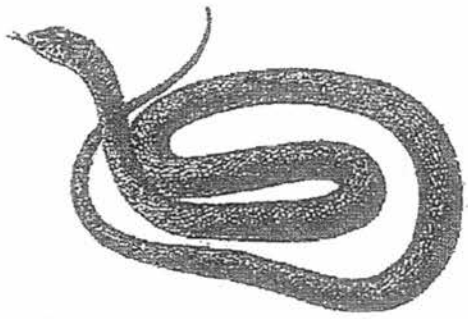
(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

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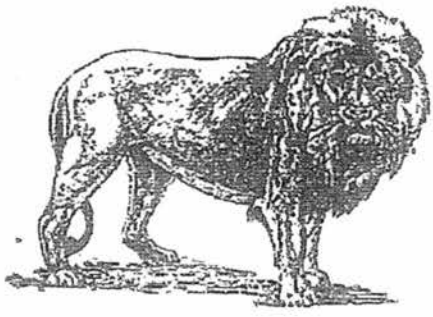
24. Ali had to classify four animals shown in the diagrams below.



Camel



Snake



Lion



Eagle

Which of the following characteristic(s) can he use to classify the animals into three groups?

A: Ability to fly
B: Outer covering
C: Number of legs

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

25. Which of the following statements about living things are correct?

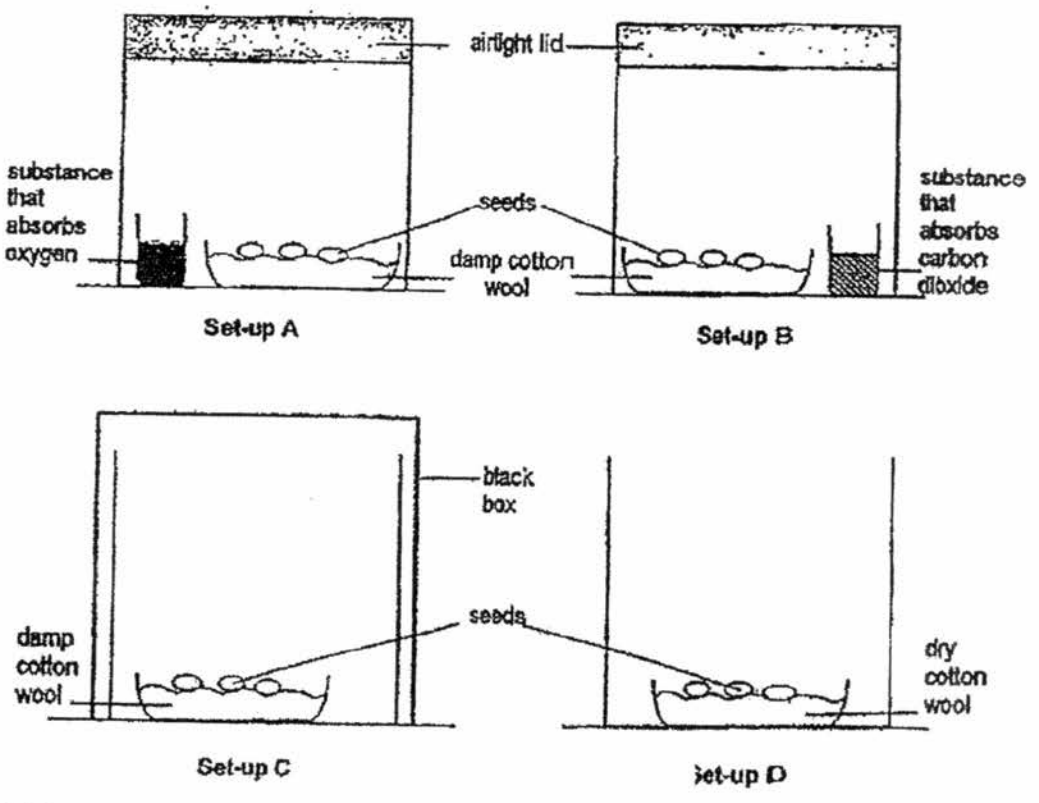
A: Ferns and mosses make their own food.
B: Bacteria are single-celled micro-organisms.
C: Moulds and mushrooms are classified as fungi.

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

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26. Fairoz wanted to investigate how different conditions affect germination of seeds. He set up the experiment as shown below. The containers were left in a room with a temperature of 28°C.



In which set-ups would the seeds germinate?

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

27. Which of the following statements are correct of a grasshopper and a cockroach?

A: Their youngs resemble the adults.
B: They have 3 stages in their life cycles.
C: Both their life cycles have an egg stage.

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

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28. The table below shows four objects, the materials they are made of and two properties that make them suitable for use.

Which of the following **correctly** explains the reason for the use of the material in making the following objects?

	Object	Material	Properties
(1)	Knife	Metal	▪ Strong ▪ Flexible
(2)	Clothes	Fabric	▪ Breaks easily ▪ Waterproof
(3)	Spectacle lens	Glass	▪ Breaks easily ▪ Flexible
(4)	Raincoat	Plastic	▪ Flexible ▪ Waterproof

End of Booklet A

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HENRY PARK PRIMARY SCHOOL

SECOND 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: 31 October 2017

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

Marks for Section B: _____

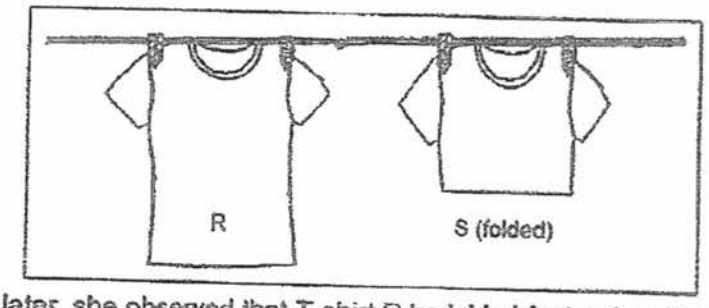
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Booklet B (44 marks)

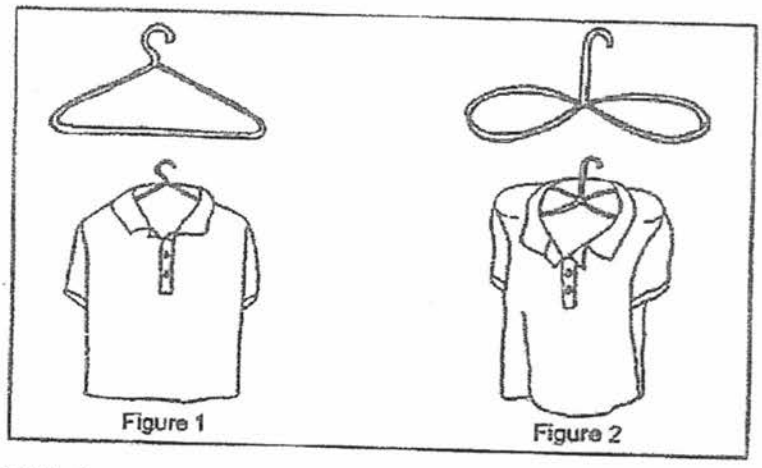
Write your answers to questions 29 to 41 in the spaces given.

29. Sarah poured the same amount of water on two identical T-shirts R and S and hung them out to dry in the same place as shown below.



a) 5 hours later, she observed that T-shirt R had dried faster than T-shirt S. Explain why. [2]

b) Sarah repeated the experiment with two identical shirts using different type of hangers to dry in the same place as shown in the diagram below.



The shirt in figure 2 dried faster. Explain why. [1]

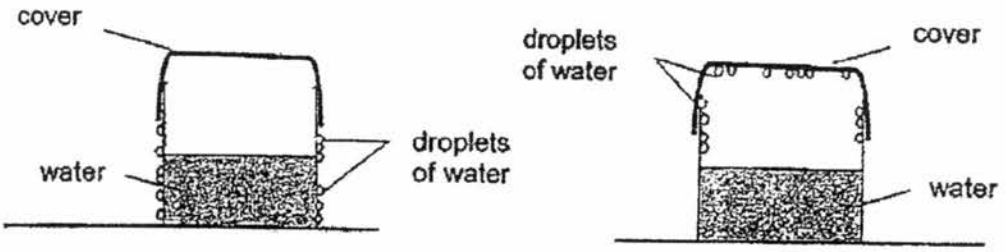
c) Sarah used the same place throughout the experiment. Give two reasons how using the same place helps to make the experiment a fair test. [2]

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30. Jack conducted an experiment by filling two identical beakers with equal amount of water. The temperature of the water in each beaker was different.

He covered the top of the beakers and left them on the table in a room. After 15 minutes, he made the observations shown in the diagrams below.



Set-up P Set-up Q

(a) Based on information given, put a tick (✓) in the correct boxes below to indicate which set-up contains cold water or hot water. [1]

	cold water	hot water
set-up P		
set-up Q		

(b) Suggest a change that can be made to the water in the beaker in set-up P to increase the number of water droplets formed on the beaker. Explain your answer.

Change to the water in the beaker in set-up P: [2]

_____

_____

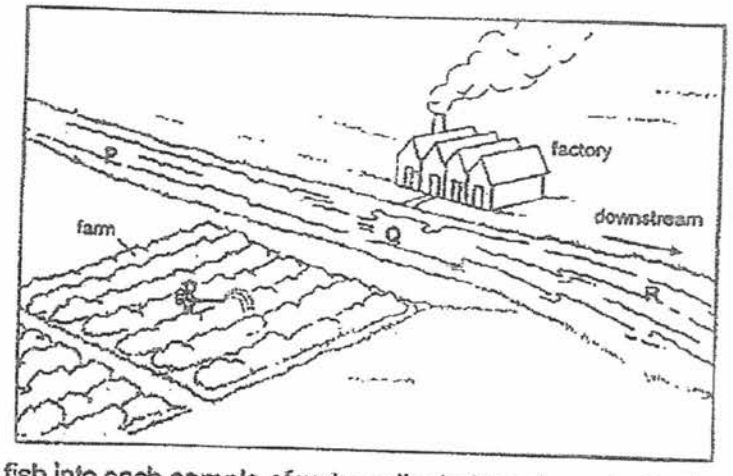
Explanation:

_____

_____

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31. The picture below shows a river flowing downstream towards the sea. Situated near the river is a factory and a farm. James collected 500 ml of samples of water at Point P, Q and R in the river.



James put 6 fish into each sample of water collected as shown in the diagram below.



Fish in the 500 ml water sample from the river

(a) After 3 days, James recorded his observations he has made on the fish in each set-up shown in the table below.

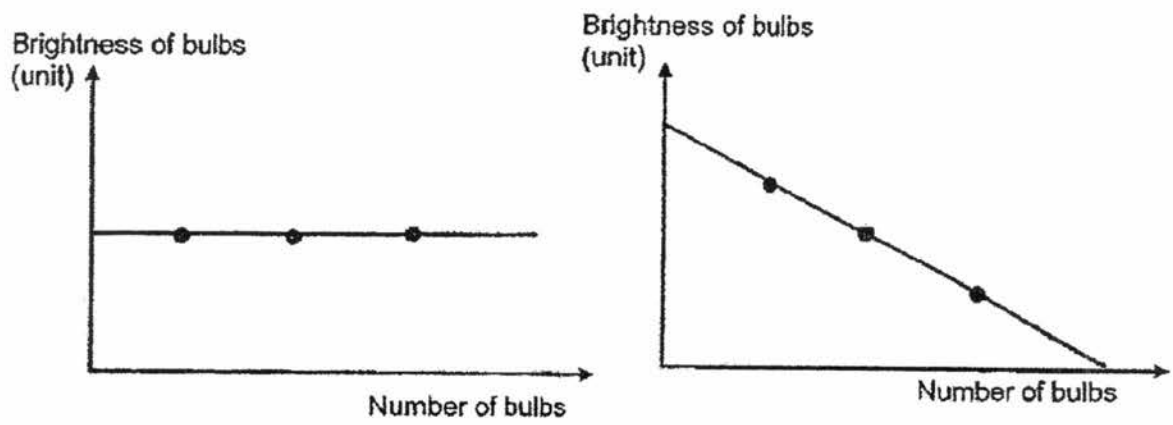
Water sample taken	Observation
point P	None of the fish died
point Q	2 fish died
point R	All the fish died

Based on the information given, which part of the river (P, Q or R) is the least polluted? Explain your answer. [2]

(b) Some farmers clear forests by burning down the trees. Explain how the loss of trees leads to global warming. [2]

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32. The graphs below show how the arrangement of the bulbs in a circuit can affect the brightness of the bulbs in each circuit when more bulbs are added.



Graph X Graph Y

a) Based on the information given, state how the bulbs are arranged (series or parallel) in the circuits represented by graph X and Y. [1]

Graph X : _____

Graph Y : _____

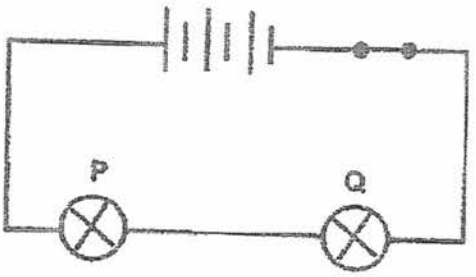
b) State how the brightness of the bulbs in each circuit can be measured accurately. [1]

_____

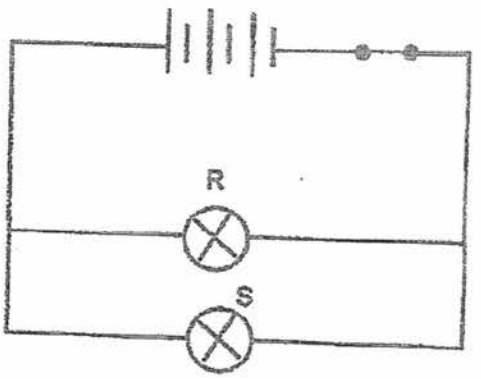
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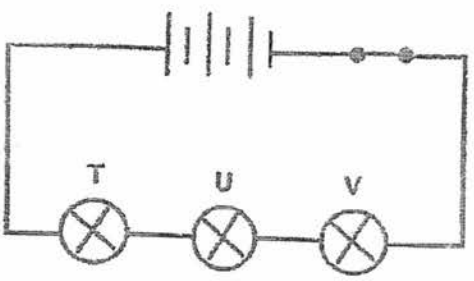
33. The diagrams below show three different circuits, A, B and C. All the batteries and bulbs are identical. All the bulbs light up when their switches are closed.



Circuit A



Circuit B



Circuit C

a) Based on the information given, arrange bulbs P, R and T in order of brightness, from the brightest to the dimmest. [1]

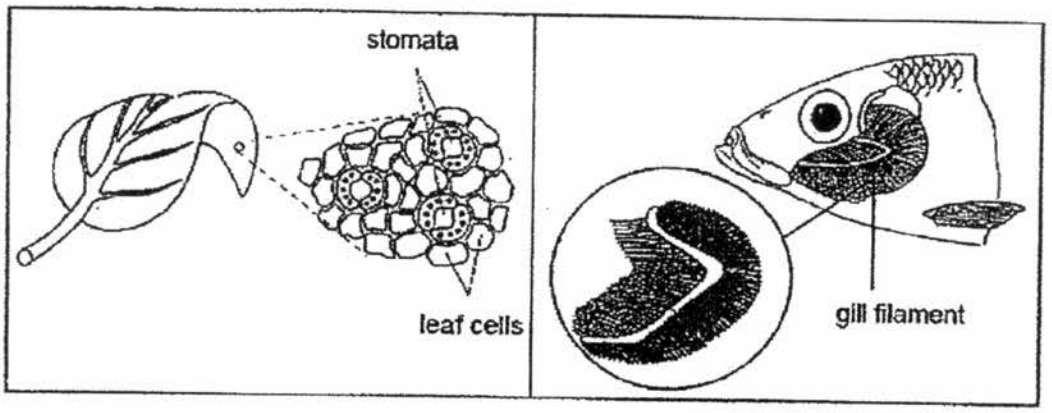
b) What would you observe about bulb S when bulb R is removed from the bulb holder in circuit B? [1]

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

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34. The diagrams below show the stomata found on the underside of a leaf and the gill of a fish.



a) State one similarity in the functions of both the stomata and the gill filament. [1]

_____

_____

b) The gill of the fish is made of numerous gill filaments. [1]

What is the advantage of having numerous gill filaments?

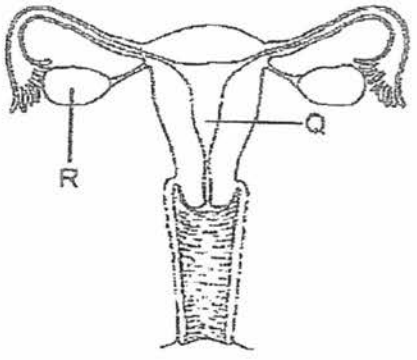
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35 The diagram below shows the female reproductive system of a human.



a) Name the parts R and Q. [1]

R : _____

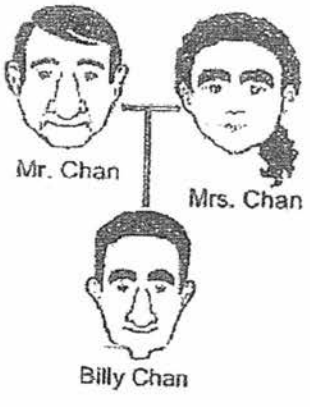
Q: _____

b) State the main function of part R. [1]

_____

_____

c) The diagram below shows Mr. Chan's family.



Explain why Billy resembles both his parents. [1]

_____

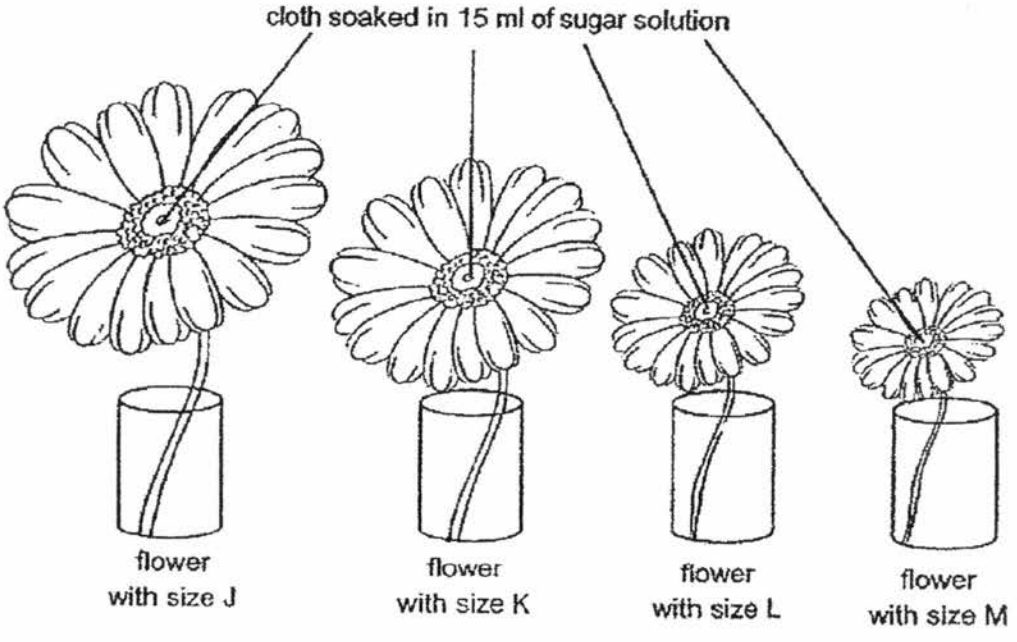
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36. John wanted to find out how the number of butterflies landing on flowers was affected by the size of the flowers. He made four identical flowers out of the same type of material but of different sizes.

He attached a ball of cloth soaked in 15 ml of sugar solution to the middle of each of the four flowers as shown in the diagram below.



John placed the four flowers in the garden and counted the number of butterflies that landed on each flower over a period of 3 hours.

John recorded his observations in the table below.

Size of flower	Number of butterflies landing on the flower		
	1st hour	2nd hour	3rd hour
J	8	9	10
K			
L			
M	1	2	1

a) Based on the results, explain how the size of the flower affects the number of butterflies landed on it. [1]

_____

_____

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b) John also wanted to find out if the colour of the flowers affect the number of butterflies visiting the flowers. [2]

Suggest two changes John has to make to his set-ups before conducting this experiment.

Change 1: _____

_____

Change 2: _____

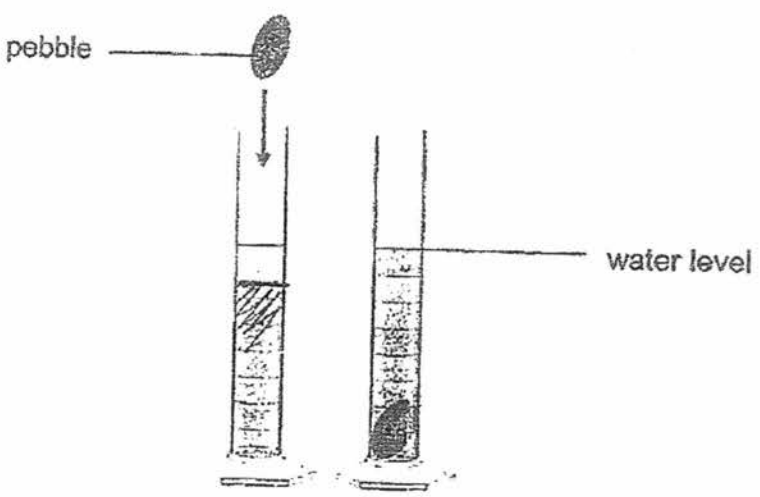
_____

c) Explain why it is important to the flowering plants that butterflies visit them. [1]

_____

_____

37. Beng Soon filled a cylinder with water. He then added a pebble into the cylinder and observed the water level.



(a) Beng Soon concluded that there was more water in the cylinder after the pebble was dropped in. [2]

Is Beng Soon correct? Explain your answer.

_____

_____

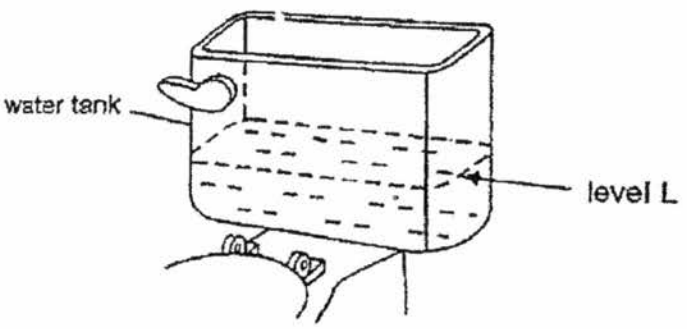
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He then added different number of identical pebbles and recorded the water level. He recorded his results in a table below.

Number of pebbles	Water Level (in units)
0	100
1	120
2	140

A water tank used for flushing a toilet bowl is shown below. After flushing, water enters and re-fills the tank. The tank will stop filling when the water reaches level L.

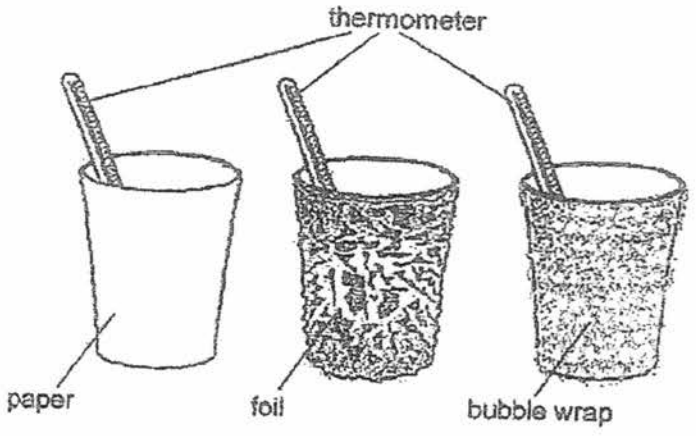


Beng Soon wanted to use less water to flush the toilet bowl. Megan suggested to put some pebbles into the water tank.

b) Based on the information given, explain how Megan's suggestion will help Beng Soon to conserve water. [2]

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38. Beatrix wanted to find out which material is able to keep her hot Milo hot for a very long time. She used three identical cups and wrapped each one with a different material as shown below. She poured the same amount of hot Milo in each cup.



She measured the temperature of the hot Milo in each cup using a thermometer. Temperature was measured every five minutes and recorded in a table shown below.

Material around the cup	Temperature of Milo (°C)				
	At the start	After 5 min	After 10 min	After 15 min	After 20 min
Paper	70	65	53	40	27
Foil	70	67	58	54	45
Bubble wrap	70	69	65	58	50

a) Based on her results, which material (paper, foil or bubble wrap) will keep her Milo hot for the longest period of time? Explain your answer. [2]

Beatrix repeated the experiment using a food wrap. The result is recorded in the table shown below.

Material around the cup	Temperature of Milo (°C)				
	At the start	After 5 min	After 10 min	After 15 min	After 20 min
Food wrap	70	63	25	45	30

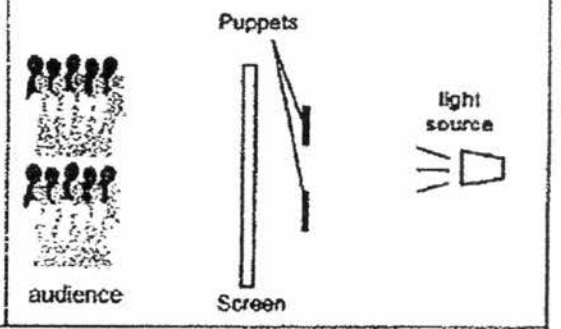
b) One of the readings in the table is not correct. Circle it. [1]
Suggest a possible reason why the reading you have circled is not correct.

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39. The diagram below shows a *wayang kulit* performance. Audience is treated to a display of dancing shadows formed on a screen using puppets, made of thin pieces of wood, on sticks which the audience cannot see.



How the shadows of the puppets appear on the screen as seen by the audience



Layout at a *wayang kulit* performance

a) Without changing the size of the puppets, what should the puppeteer do to the light source to create bigger shadows? [1]

b) Explain how the shadows of the puppets are formed. [1]

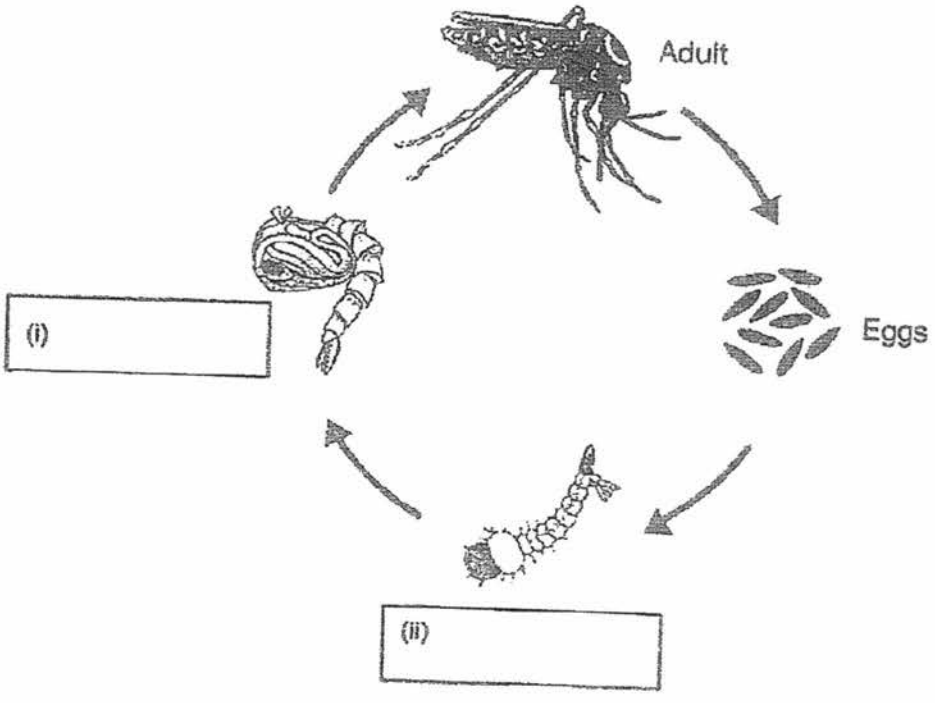
c) Mary stated that the screen is made of a material that allows most light to pass through. [1]

Is she correct? Explain your answer.

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40. The diagram below shows the life cycle of an Aedes mosquito.

a) Name the missing stages of the life cycle in the boxes provided. [1]



The table below shows the effect of temperature on the average time taken for an Aedes mosquito to hatch from an egg and develop into an adult.

Temperature (°C)	Average length of the life cycle of an Aedes mosquito (days)
16	43
22	25
28	13
33	12

b) Based on the information given, state the relationship between the temperature and the average length of the life cycle of an Aedes mosquito. [1]

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Question 40 continued

The Aedes mosquito spreads diseases like dengue fever. Chu Beng saw the following cautionary message from the NEA website.

'While current number of dengue cases are relatively low, warmer months of June to October could lead to higher transmission of dengue in Singapore.'

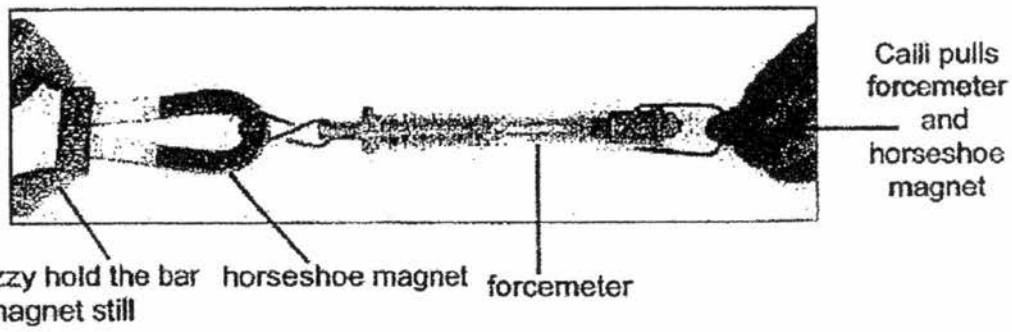
c) Based on the information given, explain why the dengue fever is expected to spread more widely during the warmer months. [2]

_____

_____

41. Caili and Izzy wanted to find out the amount of force needed to pull different bar magnets apart from a horseshoe magnet. They set up the experiment as shown below.

The forcemeter is used to measure the amount of force in units.



Caili and Izzy tested 4 bar magnets, A, B, C and D, and recorded their data in the table below.

Bar magnet	Length of bar magnet (cm)	Amount of force needed to pull the magnets apart (units)
A	2.5	3
B	6	1.5
C	8	8
D	9.5	4

a) Based on the results above, name the weakest bar magnet. [1]

Magnet _____

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Question 41 continued

b) Caili made the following hypothesis at the start of the experiment.

The longer the magnet, the more force is needed to separate them from the horseshoe magnet.'

Based on the results, explain why Caili hypothesis is not correct. [1]

_____

_____

c) Using only a steel paper clip and a ruler, describe another way the strength of the bar magnets can be measured. [2]

_____

_____

End of Booklet B

Setters: Mrs Liu Ying Hui and Mrs Priscilla Heng

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Year : 2017

Level : Primary 5

School : Henry Park Primary School

Term : SCIENCE SA2

Booklet A

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

Booklet B

Q29a) The surface area of wet T-shirt R was much more than the surface area of T-shirt S, so it had dried faster. Hence water in T-shirt R evaporates to the surroundings at a faster rate than T-shirt S.

b) The shirt in figure 2 had more surface area in contact with the surroundings than the shirt in figure one , hence it dried faster.

c) This is to ensure that it is a fair test where only one change variable which is the type of hanger is effecting the rate of evaporation the rate of evaporation of the shirts and not the location.

Q30a)

	Cold water	Hot water
Set-up P	√	
Set-up Q		√

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b) Put some ice with salt in it.

Explanation :

Salt will lower the melting point of ice so the ice will be colder and the water in Set-up P will lose heat to the ice, and the surface of the beaker will lose heat to the water, causing the surface of the beaker to be colder so more water vapour can lose more heat and condense into water droplets on it faster.

Q31a) P. There was no pollutants so none of the fish died, while the water at Q had some pollutants from the factory so two fish died, at point R, it had the most pollutants including from farming like pesticide, hence all the fish died

b) When burning trees, it produces substantial amounts of carbon dioxide. When less trees photosynthesize, it leads to more carbon dioxide in the air which traps heat on earth causing global warming.

Q32a) Graph X : Parallel

Graph Y : Series

b) It can be measured more accurately by placing a light sensor in front of each bulb.

Q33a) R , P , T

b) It would continue to light up.

c) Bulbs in parallel are on different paths, so even if one has blown or is removed, the other bulbs will continue to light up.

Q34a) They both allow gaseous exchange to take place.

b) it is to increase the surface area so the fish can take in and give out more oxygen or carbon dioxide.

Q35a) R : Ovary

Q : Womb

b) It is to produce female cells.

c) Billy received heredity information from both of his parents which were passed down to him so he resembles them

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Q36a) The larger the size of the flower the more the butterflies landing on it.

b) Change 1 : Change the size of the flowers for them to be equal

Change 2 : Change the flowers to difference colour.

c) The butterflies help to pollinate them.

Q37a) No. The water level increased as the pebble has volume so when it is dropped in the water, the total volume of material in the cylinder increases so the water level increases not that more water had been poured in.

b) The pebbles take up space so the volume of the water flowing into the tank will decrease as the problem also take up space so the water volume would be lesser when it reach level L.

Q38a) Bubble wrap. It allowed heat to pass through the slowest to the surroundings as it had the highest temperature of milo in the three set-ups after the experiment

b) Circle 25. It is unlikely for the temperature to decrease so suddenly and gain heat as once the milo loses heat it will remain constant at room temperature and not gain heat.

c) it is expected to spread more widely as it is a suitable environment for it to grow.

Q41a) Magnet B

b) When the length of the bar magnet is 2.5cm, it needs 3 units of force to separate it, when the length of magnet is 6cm, it only needs 1.5 units of force to separate it. Hence, Caili's hypothesis is not correct.

c) Place the paper clip on a table, use the magnet to attract it at a distance, use the ruler to measure the distance the longer the distance, the stronger the magnet.

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