De La Salle School | St Anthony's Primary | St Joseph's Institution Junior | St Stephen's School

CHRISTIAN BROTHERS' SCHOOLS

PRELIMINARY EXAMINATIONS

2019

SCIENCE

PRIMARY 6

BOOKLET A

NAME : _____ ( )

CLASS : St _____ 6

28 Questions
56 Marks

Instructions to candidates

- An Optical Answer Sheet is provided for answers to Questions 1 to 28.
- Do not waste time. If a question is difficult. go on to the next one.
- You are allowed 1 h **45 min** to answer all the questions in both the **Booklets A and B**.

BOOKLET	MARKS	
	POSSIBLE	ACTUAL
A	56	
B	44	
TOTAL	100	

This booklet has 23 pages including this cover page.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

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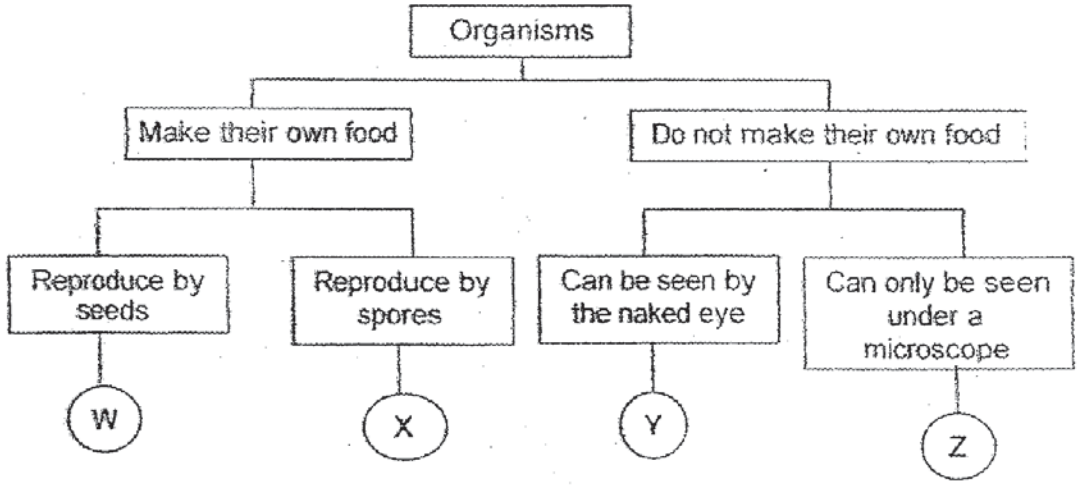
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Section A [56 marks]

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) and shade your answer on the Optical Answer Sheet.

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1 Study the classification chart below.



Which of the following represents the correct group of organisms for W, X, Y and Z?

	W	X	Y	Z
(1)	Flowering plants	Ferns	Fungi	Bacteria
(2)	Flowering plants	Ferns	Bacteria	Fungi
(3)	Ferns	Flowering plants	Fungi	Bacteria
(4)	Ferns	Flowering plants	Bacteria	Fungi

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2 The diagram below shows insects X and Y.

Insect X		Insect Y	
			
young	adult	young	adult

Which of the following shows the correct number of stages of life cycle for Insect X and Y?

	Insect X	Insect Y
(1)	3	3
(2)	3	4
(3)	4	3
(4)	4	4

3 Four students were discussing on how plants and fish take in oxygen differently. They made the following statements as shown below.

Raj	Fish take in oxygen into their blood through their gills.
Alice	Fish take in oxygen into their blood through their mouth.
Haikal	Plants have tubes that take in oxygen.
Jonathan	Plants have tiny openings on their leaves to take in oxygen.

Who made the correct statement(s)?

(1) Raj only

(2) Haikal only

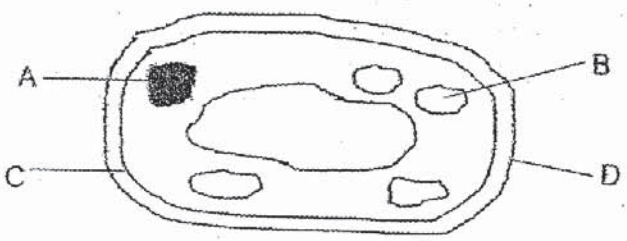
(3) Alice and Haikal only

(4) Raj and Jonathan only

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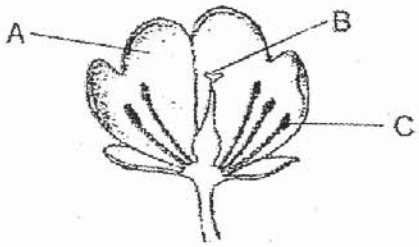
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4 Which part of the cell controls cell activities?



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

5 Rajes conducted an experiment using four similar flowers, W, X, Y and Z.



From each flower, she removed different parts of the flower.

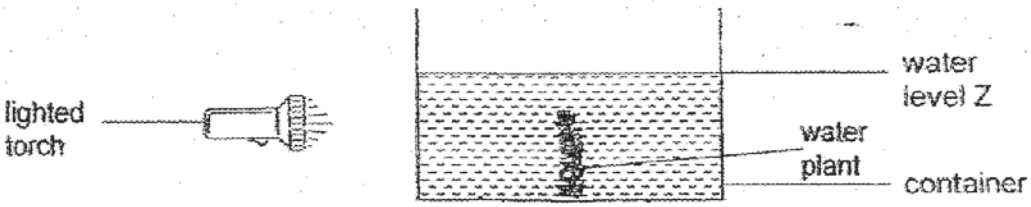
Flower	Part(s) removed
W	All of part C
X	All of parts A and C
Y	All of part B
Z	All of parts A and B

Which of the following flower(s) will continue to bear fruits?

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

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6 Rahim conducted an experiment as shown below.

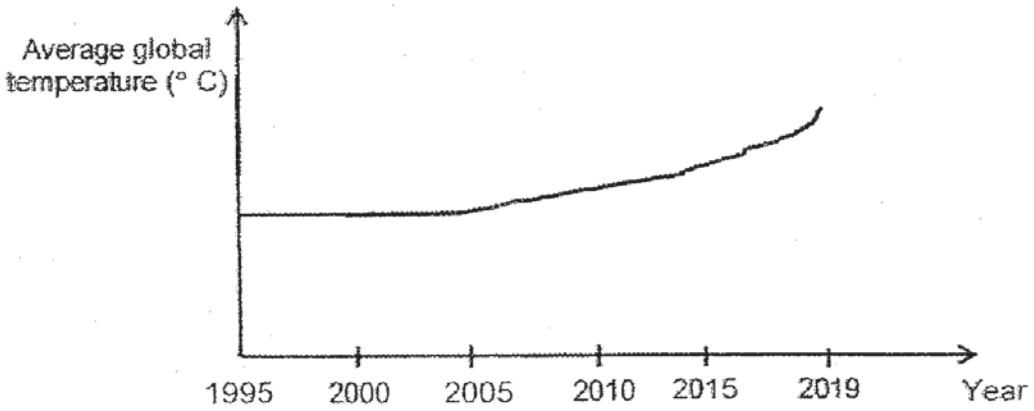


He switched on the torch and observed that water level Z in the container moved after some time.

In which direction did water level Z move and what was the reason for the movement?

	Direction which water level Z moved	Reason
(1)	↑	Plant gives out water during photosynthesis.
(2)	↑	Water evaporates from the container.
(3)	↓	Plant gives off oxygen in the water.
(4)	↓	Plant takes in water during photosynthesis.

7 The graph below shows the average global temperature in the atmosphere from 1995 to 2019.



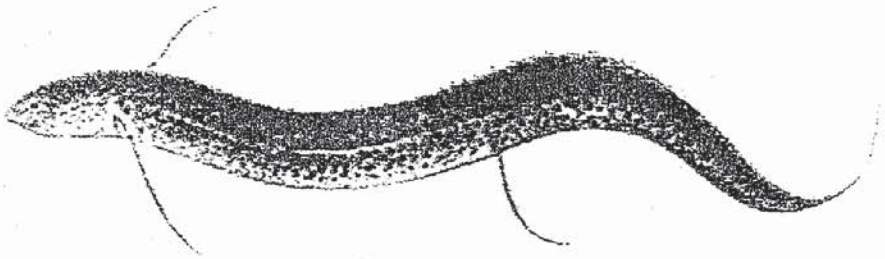
Which of the following actions could cause the graph as shown above?

A Air pollution
B Reforestation
C Deforestation
D Saving natural resources

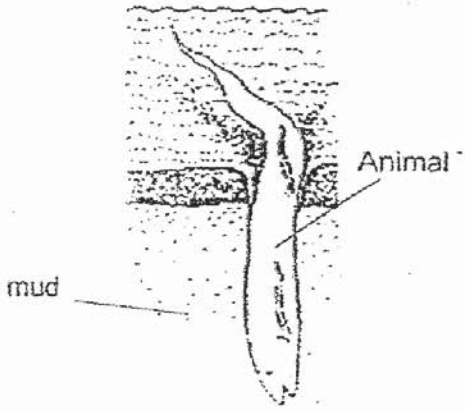
(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B, C and D

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8 Animal T, as shown in the diagram below, burrows into the mud at the bottom of streams when the weather becomes hot and dry. It will go into a deep sleep until the wet season returns.



Animal T



Which of the following is a structural adaptation that helps Animal T to burrow into the mud more easily?

(1) A long body

(2) A streamlined body

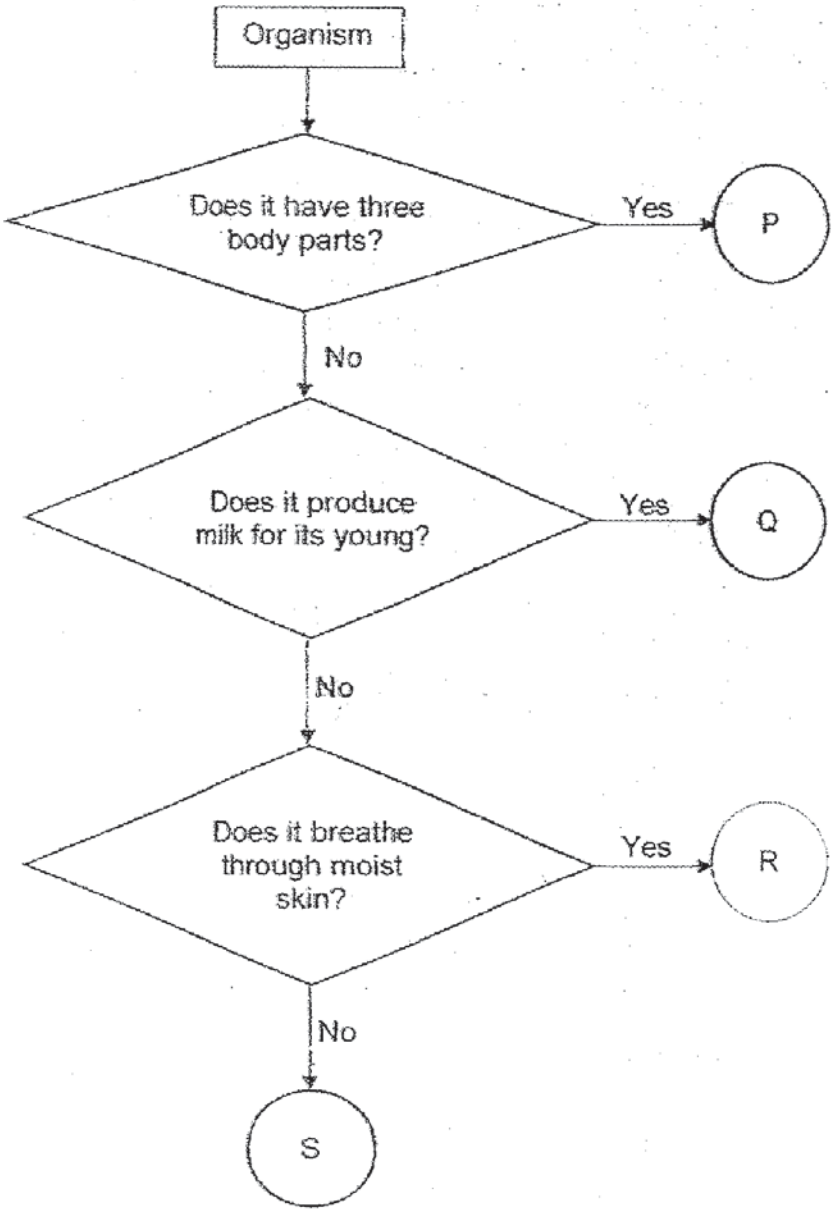
(3) Ability to go into a deep sleep

(4) Searches for darker places to burrow

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9 Study the flowchart below.



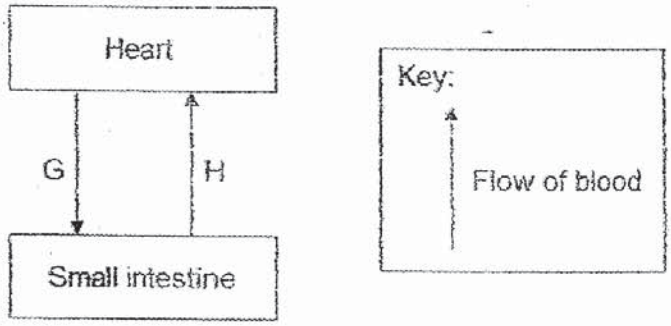
Which of the following shows the correct group of organisms for P, Q, R and S?

	P	Q	R	S
(1)	Mammal	Reptile	Amphibian	Insect
(2)	Mammal	Amphibian	Reptile	Insect
(3)	Insect	Mammal	Reptile	Fish
(4)	Insect	Mammal	Amphibian	Fish

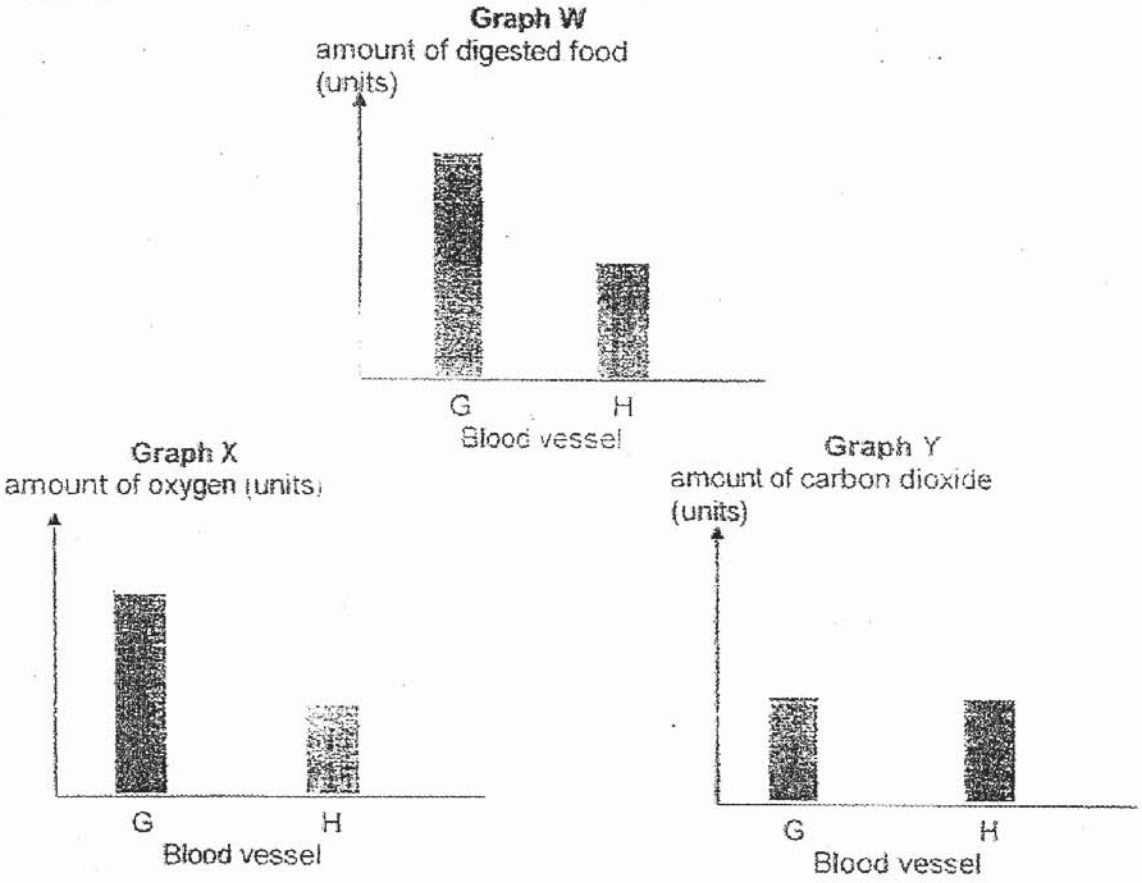
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10 Blood samples were collected from blood vessels, G and H, as shown below.



The blood samples were tested for amount of digested food, oxygen and carbon dioxide.



Which of the above graph(s) is/are correct?

(1) W only

(2) X only

(3) W and Y only

(4) X and Y only

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11 Diagram 1 shows Flower A which gives off a sweet scent when in full bloom. Diagram 2 shows a magnified view of two kinds of pollen grains, J and K.

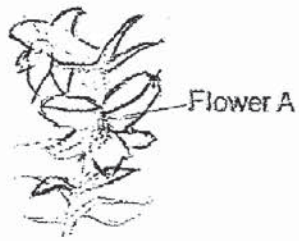
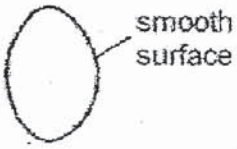


Diagram 1



pollen grain J



pollen grain K

Diagram 2

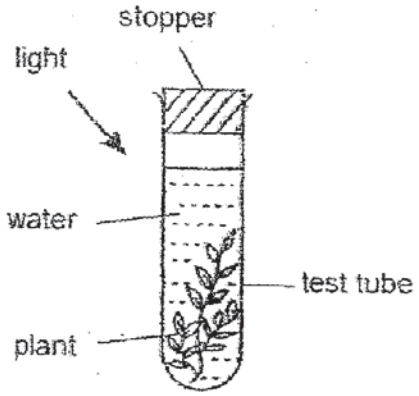
Which of the following shows the most possible pollen grain produced by Flower A and its pollination method?

	Pollen grain	Pollinated by
(1)	J	Wind
(2)	K	Wind
(3)	J	Insects
(4)	K	Insects

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12 Tom set up four test tubes, G, H, I and J in an experiment, each similar to the set up shown below.



He added different amounts of baking soda into the four test tubes and measured the amount of water that was taken in by the plant.
Note: Baking soda increases the amount of carbon dioxide in the water.

Test tube	Number of scoops of baking soda added	Amount of water taken in by the plant (ml)
G	1	20
H	3	28
I	5	34
J	7	36

What is the most possible aim of Tom's experiment?

(1) To find out if amount of light affects the rate of photosynthesis.

(2) To find out if amount of water taken in affects the rate of photosynthesis.

(3) To find out if amount of carbon dioxide affects the rate of photosynthesis.

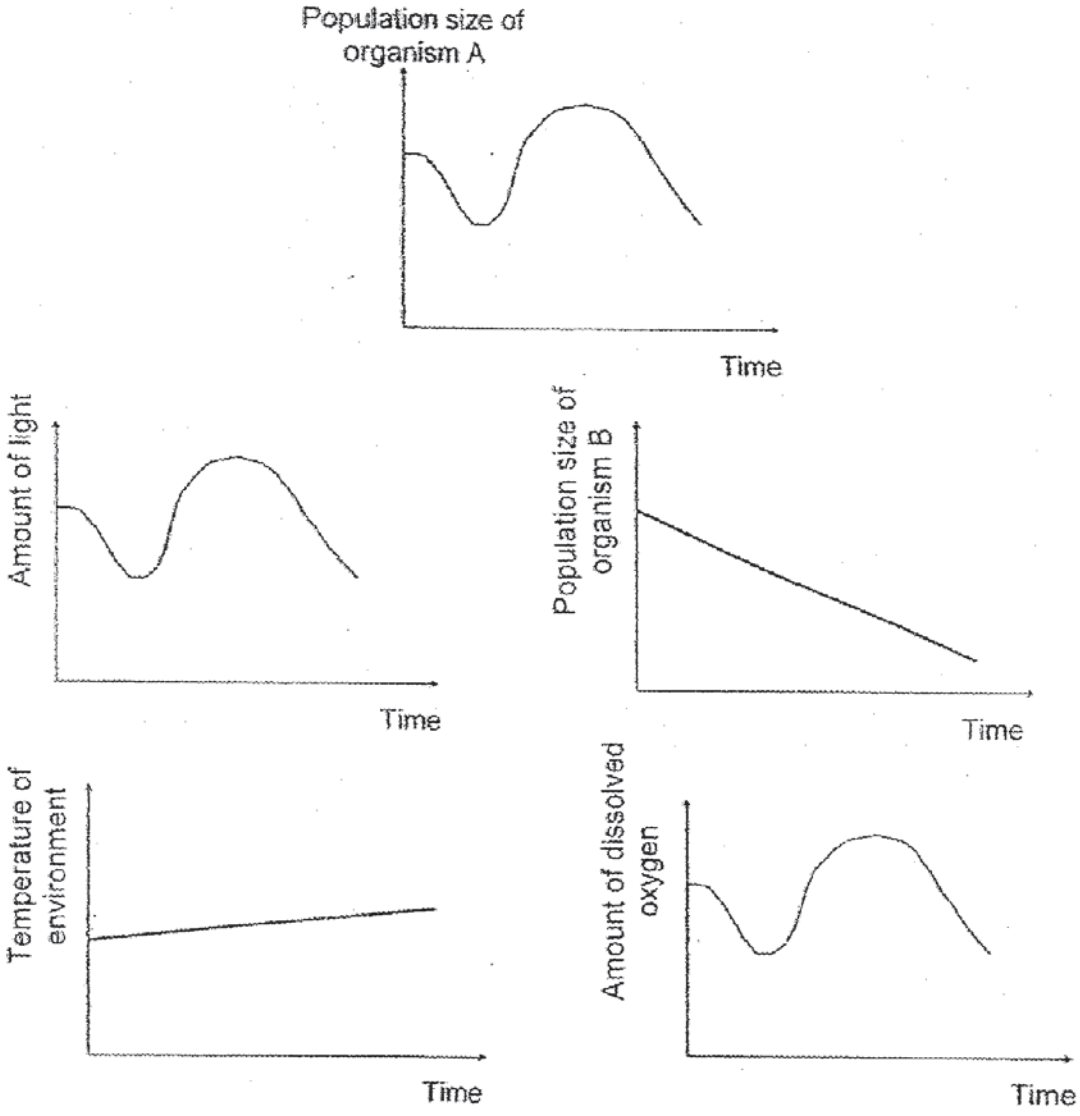
(4) To find out if amount of water taken in affects the number of scoops of baking soda.

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13 The graphs below show how the population of an aquatic organism, A, changes over a period of time, under the influence of four different environmental factors:

- amount of light
- amount of dissolved oxygen
- temperature of environment
- population of another organism B



The population of organism A is directly affected by _____.

(1) amount of light only

(2) population of organism B only

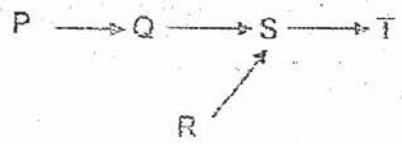
(3) amount of light and amount of dissolved oxygen only

(4) population of organism B and temperature of environment only

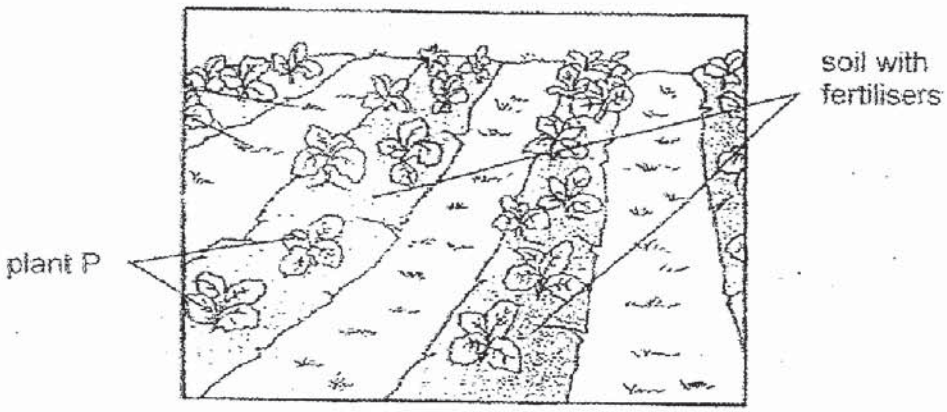
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14 Study the food web below



Mr Lim planted plant P in straight rows on a plot of land as shown below.



Which of the following actions can he take so that he can attract organism S into his garden to ensure that plant P grows well?

(1) Remove organism Q in his garden.

(2) Put plant R near plant P in his garden.

(3) Increase more organism T in his garden.

(4) Put less fertilisers in the soil for plant P in his garden.

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15 A boy is wearing a helmet that protects his head when he is skateboarding. The helmet is made of material E.



Which property of material E allows the helmet to perform the function as described?

(1) strength

(2) flexibility

(3) waterproof

(4) transparency

16 John carried out an experiment on four magnets, P, Q, R and S. He put each magnet into a pile of nails and counted the number of nails each magnet attracts.

Magnet	Number of nails attracted
P	10
Q	5
R	2
S	6

Based on the information above, which of the following statements is true?

(1) P is the weakest magnet.

(2) R is the strongest magnet.

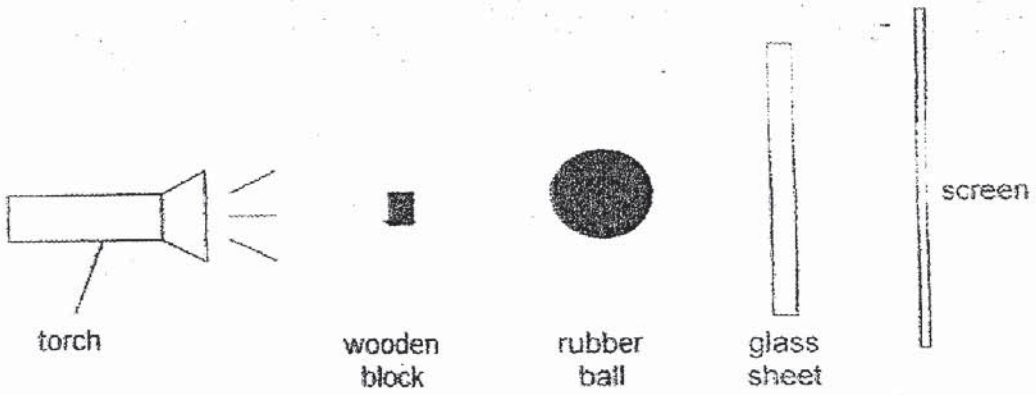
(3) Magnet Q is weaker than magnet R.

(4) Magnet P is stronger than magnet S.

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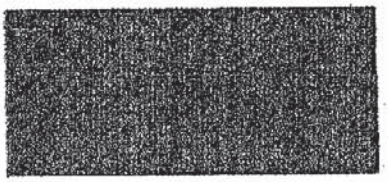
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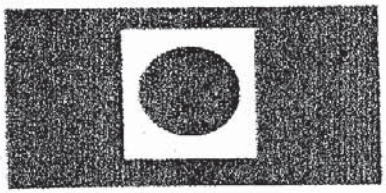
17 The diagram below shows an experiment set up by Ramesh. He ovserved the shadow formed on the screen when the torch was shone.

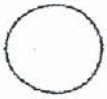


Which of the following best represents the shadow cast on the screen?

(1) 

(2) 

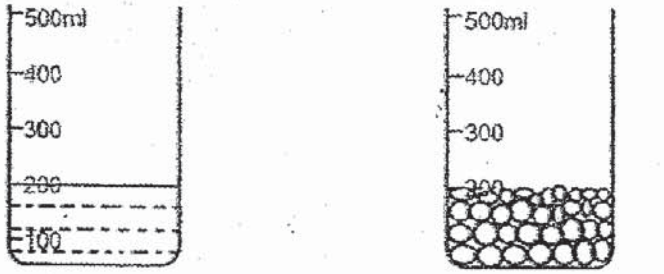
(3) 

(4) 

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18 Shuhui filled up identical beakers A and B with water and small stones as shown below.



A (with water) B (with small stones)

What would be the water level in beaker B when all the water in beaker A is transferred to beaker B?

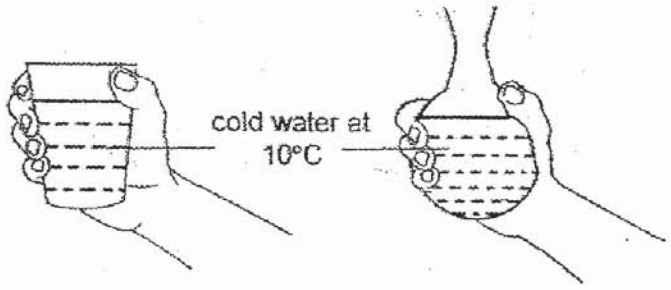
(1) 200 ml

(2) Between 300ml and 400ml

(3) 400ml

(4) More than 400ml

19 Peter put the same amount of cold water at 10°C into a styrofoam cup and a plastic vase. When he touched them, his hands felt that the plastic vase was colder than the styrofoam cup.



styrofoam cup plastic vase

Which of the following explains why Peter's hands felt that the plastic vase was colder than the styrofoam cup?

(1) The plastic vase gained heat slower than the styrofoam cup.

(2) The plastic vase conducted heat faster than the styrofoam cup.

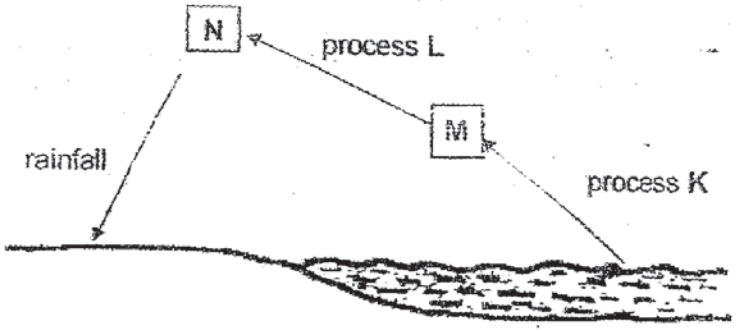
(3) The plastic vase had a lower temperature than the styrofoam cup.

(4) The plastic vase had more contact with the hand than the styrofoam cup.

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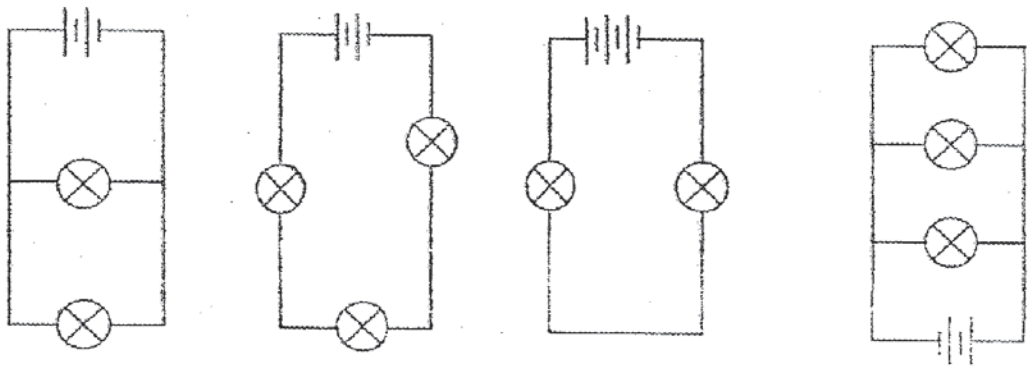
20 The diagram below shows the water cycle at a river.



Which of the following correctly identifies processes K and L and states of water M and N?

	Process		State of water	
	K	L	M	N
(1)	condensation	evaporation	gas	liquid
(2)	evaporation	condensation	liquid	gas
(3)	evaporation	condensation	gas	liquid
(4)	condensation	evaporation	liquid	gas

21 Norah was told to investigate if the arrangement of the bulbs in a circuit affects their brightness. She then set up four circuits as shown in the diagrams below. All the components are in good working condition.

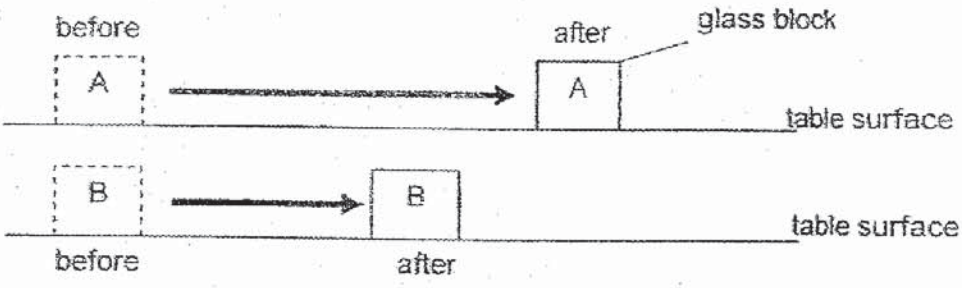


Which of the two circuits above should she use to ensure a fair test?

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

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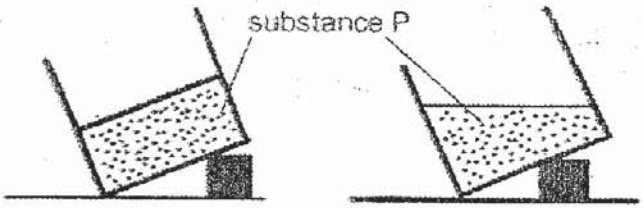
22 The diagram below shows two identical glass blocks, A and B. Samy pushed them with equal amount of force on a table. He found that block A travelled a longer distance than block B.



Which of the following statements is the most possible explanation?

	Surface on which block A was pushed	Surface on which block B was pushed
(1)	dry	wet
(2)	dry	smooth
(3)	rough	dry
(4)	smooth	rough

23 A beaker containing substance P was left in the classroom for an hour.



Which of the following statement about substance P is true after an hour?

(1) Substance P can be compressed.

(2) Substance P has a definite shape.

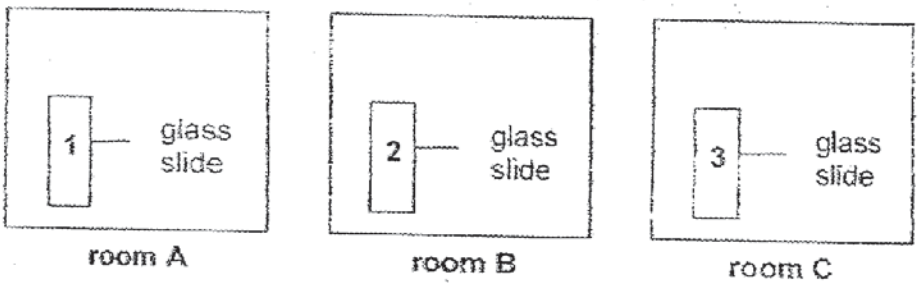
(3) Substance P has changed its state.

(4) Substance P has changed its volume.

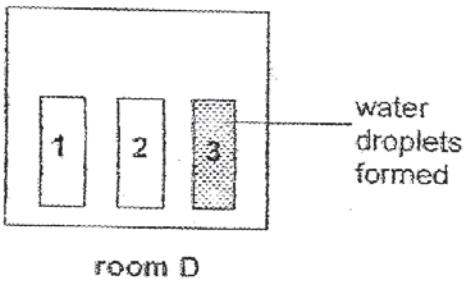
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24 Jansen left three similar glass slides in three rooms, A, B and C for an hour. The three rooms have different room temperatures.



The three glass slides were then moved to room D immediately. After five minutes, he noticed water droplets on the glass slide from room C but not on the glass slides from rooms A and B.



Which of the following statements could be true?

(1) Room C was warmer than room D.

(2) Rooms A and B were colder than room D.

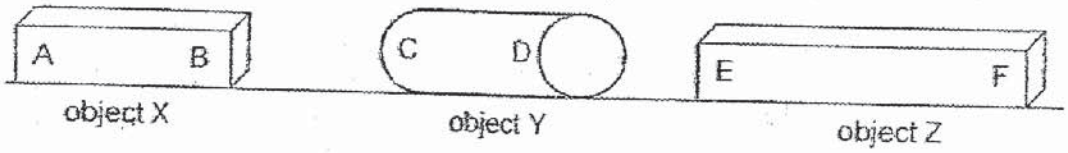
(3) Rooms A and B were warmer than room D.

(4) Room C had the same temperature as room D.

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25 Zaki carried out an experiment with three different objects. The ends of objects X, Y and Z are labelled as shown.



Firstly, he brought the ends of object X and object Y close to each other to test if they would repel or attract.

He recorded the result of his experiment in the table below.

		Object Y	
		C	D
Object X	A	Attract	Repel
	B	Repel	Attract

Secondly, he brought the ends of object Y and object Z close to each other to test if they would repel or attract.

He recorded the result of his experiment in the table below.

		Object Z	
		E	F
Object Y	C	Attract	Attract
	D	Attract	Attract

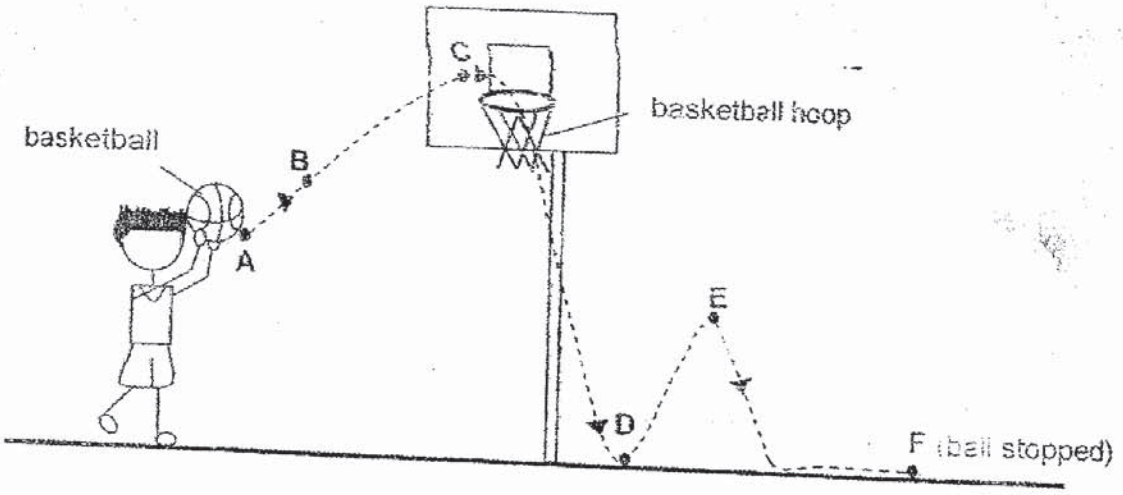
Based on the results given above, which of the following statement(s) below is/are true?

A Objects X and Y are magnets.
B Objects Y and Z are not magnets.
C When separated, all three objects, X, Y and Z are magnets.

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

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26 Study the diagram below.



Jordan aimed and shot a basketball into the basketball hoop. The dotted arrows in the diagram above show the path of the basketball from the time it was released at point A to the time it stopped at point F.

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

A The ball has no kinetic energy at point F.

B The ball has no potential energy at point A.

C The ball has the most gravitational potential energy at point C.

D The ball has more gravitational potential energy at point D compared to point B.

(1) A only

(2) B and D only

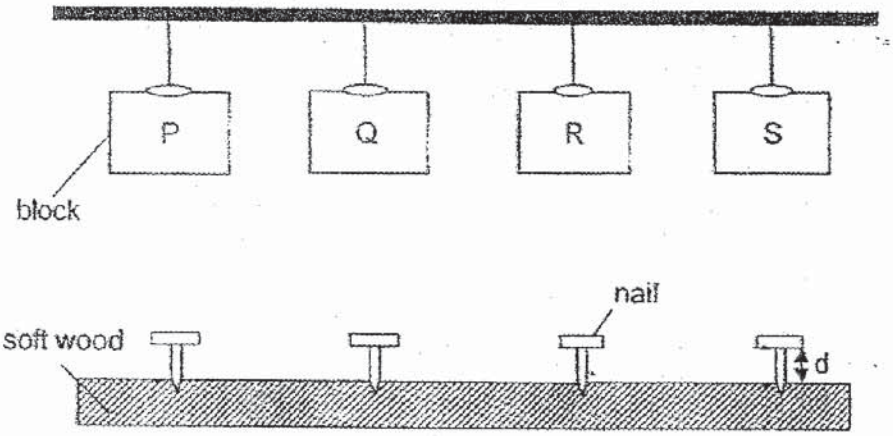
(3) A and C only

(4) A, B and C only

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27 Benjamin inserted four identical nails into a piece of soft wood. He dropped four blocks P, Q, R and S with different mass from same height onto each of the nails as shown below.



The length of nail that did not go into the wood (d) was measured and recorded in the table below.

Block	Length of nail that did not go into the wood d (cm)
P	1.5
Q	0.2
R	1.2
S	0.8

Which of the following statements is true?

(1) Block S is lighter than Block R and Block Q.

(2) Block P is lighter than Block R and Block S.

(3) Block P is heavier than Block Q and Block S.

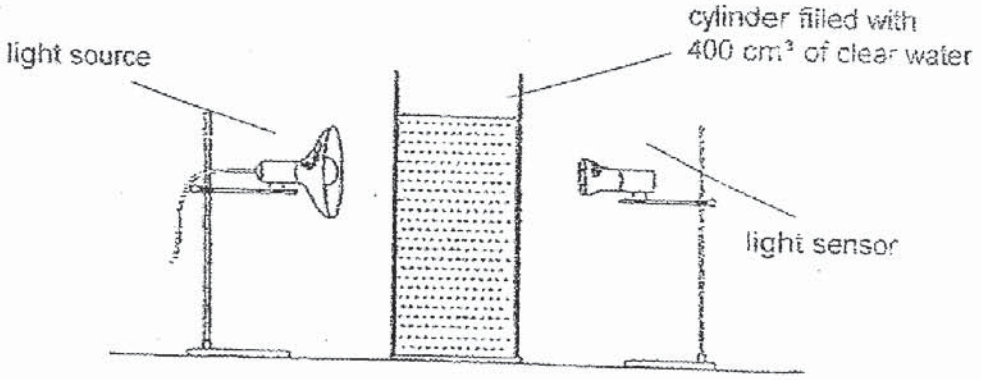
(4) Block R is heavier than Block P and Block Q

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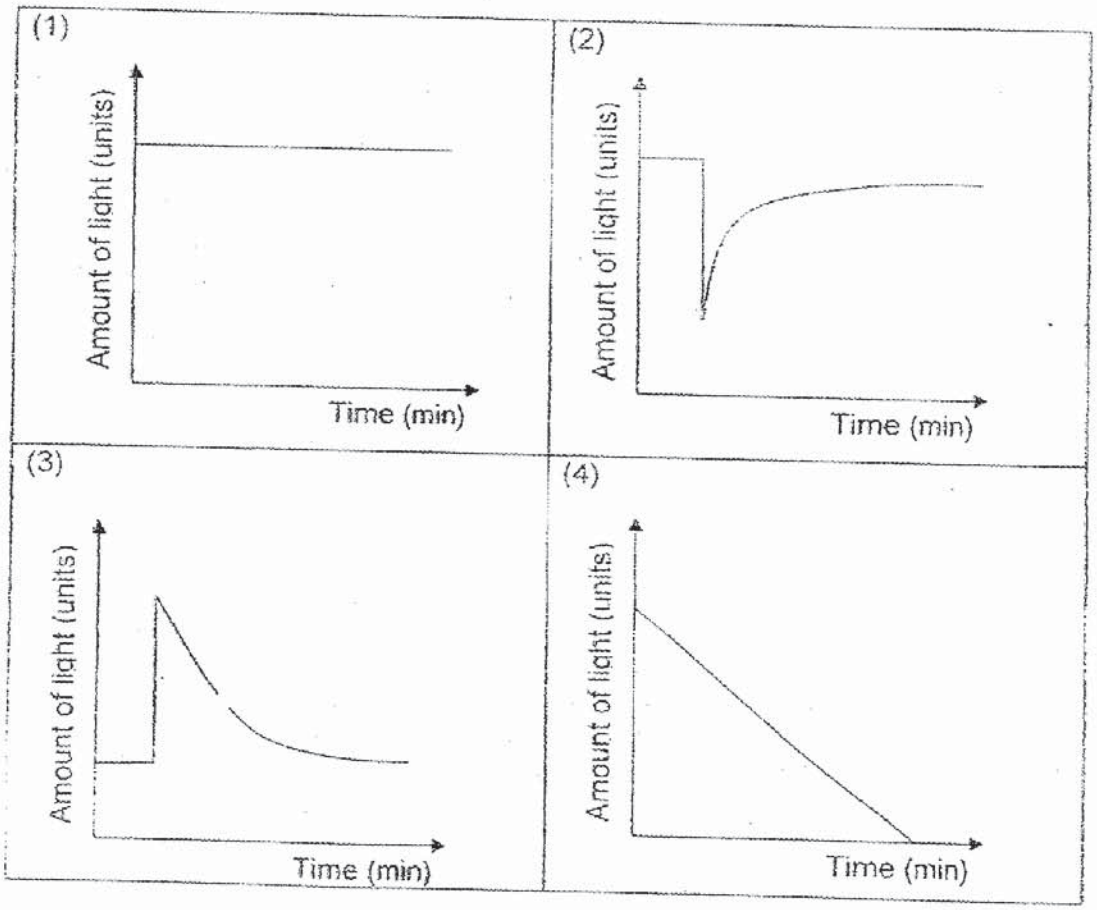
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28 The diagram below shows a cylinder filled with 400 cm³ of clear water. The light sensor can measure the intensity of light as it passes through the water.

One minute after the light is turned on, a mixture of 100 cm³ of garden soil and clay is poured into the cylinder. The mixture slowly sinks to the bottom of the cylinder.



Which one of the graphs below shows the change in the light intensity recorded throughout the experiment after the light is turned on?



End of Booklet A

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CHRISTIAN BROTHERS' SCHOOLS

PRELIMINARY EXAMINATIONS

2019

SCIENCE

PRIMARY 6

BOOKLET B

NAME : _____ ( )

CLASS : St_____6

12 Questions
44 Marks

Duration of Paper: 1 hour 45 minutes

BOOKLET	MARKS	
	POSSIBLE	ACTUAL
A	56	
B	44	
TOTAL	100	

This booklet has 16 pages including this cover page.

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FOLLOW ALL INSTRUCTIONS CAREFULLY.

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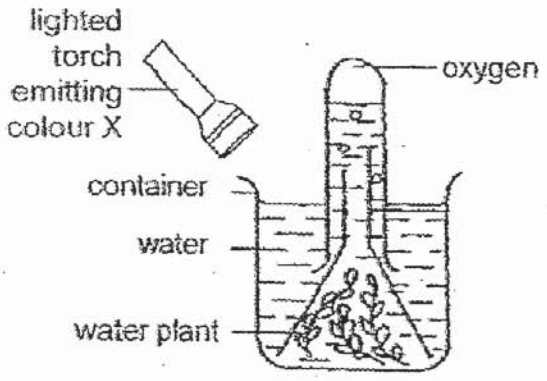
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Section B [44 marks]

For questions **29** to **40**, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

---

29 Muthu set up an experiment in a dark room as shown below. He wanted to find out if the colour of light affects the amount of oxygen given out by the water plant after three hours.



He repeated his experiment with colour Y and Z and recorded his results in the table below.

Colour of light	Amount of water at the start (ml)	Amount of oxygen produced by the plant (cm^3)
X	400	0.2
Y	400	0.5
Z	400	0.3

(a) Based on Muthu's results, which colour of light allows the water plant to have the highest rate of photosynthesis? Explain your answer. [1]

(b) Explain why Muthu set up the experiment in a dark room instead of the school field. [1]

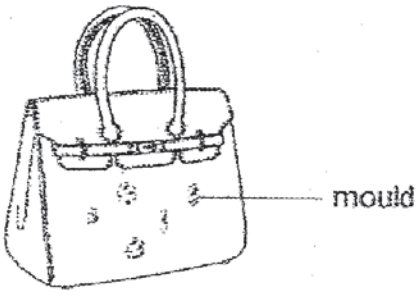
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SCORE / 2

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30 Judy kept her leather handbag in a dark and damp cupboard. When she took the bag out of the cupboard after one month, she saw mould growing on her bag.



Her brother told Judy to put her bag in a brightly-lit and sunny place so that mould will not grow on her handbag in the future.

(a) What conditions would allow the mould to grow on the bag? [1]

(b) Explain why her brother's suggestion will work. [1]

(c) In order to prevent mould from growing on her leather bag in the future, her brother told her to apply a layer of wax on the leather bag.
Explain how can applying a layer of wax on the bag can help in preventing the growth of mould on it. [1]

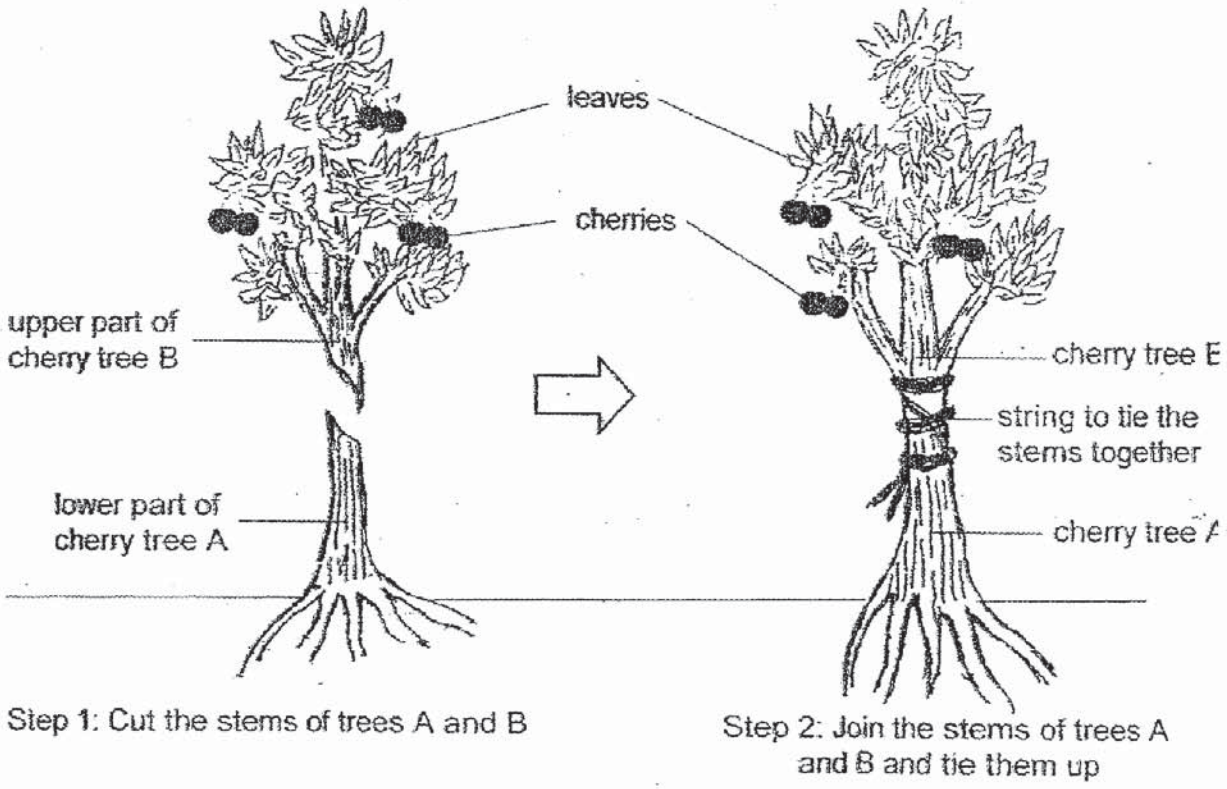
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SCORE	/ 3

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31 Farmer Tan wanted to grow a better species of cherry tree by using a special method of joining the parts from two different species of cherry trees. The diagram below shows how this method is done.



Step 1: Cut the stems of trees A and B

Step 2: Join the stems of trees A and B and tie them up

(a) Based on the cut stems, give two reasons why this method may fail. [2]

(b) Explain why:

(i) the upper part of cherry tree B was chosen. [1]

(ii) the lower part of cherry tree A was chosen. [1]

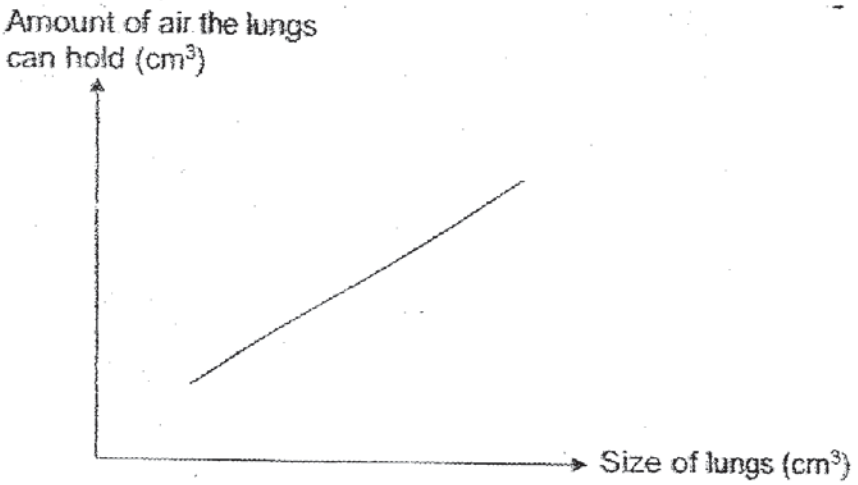
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SCORE 4

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32 The graph below shows the relationship between the size of lungs of a person and the amount of air it can hold in the lungs.



(a) Based on the graph, what is the relationship between the size of lungs of a person and the amount of air it can hold? [1]

Mr Lim had a bacterial infection which affected his lungs. The bacteria caused his lungs to be filled with water.
At the hospital, he found that his breathing rate was higher than when he was healthy.

	Breathing rate per min
When he was healthy	20
When he had a bacterial infection	32

(b) Explain why his breathing rate increased when he had a bacterial infection. [2]

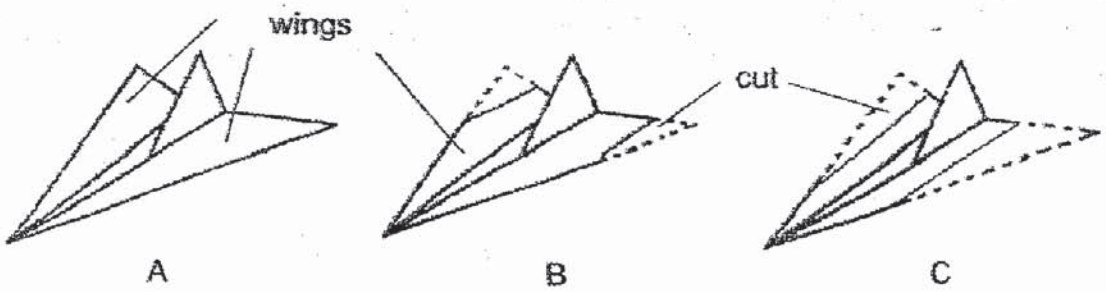
(c) The doctor noticed that Mr Lim's heart rate also increased when he had a bacterial infection. Besides getting more oxygen into the body, explain why his heart rate increased. [1]

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SCORE	– / 4

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33 Aiden conducted an experiment with three similar paper aeroplanes, A, B and C, as shown below. He cut the wings of B and C as shown below.



He launched the paper aeroplane from the same height and recorded the distance that the paper aeroplane travelled before reaching the ground.

Paper aeroplane	Surface area of wings (cm^3)	Distance travelled (cm)
A	100	32
B	80	25
C	50	16

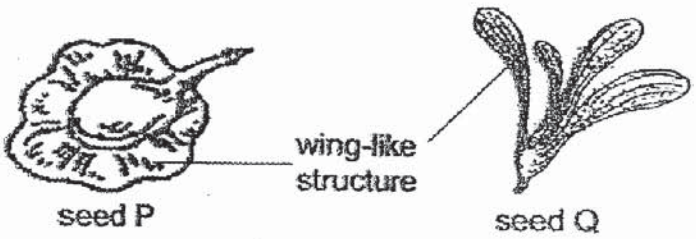
(a) State the aim of Aiden's experiment. [1]

(b) State the force that:

(i) caused the plane to fall to the ground: _____ [1]

(ii) caused the plane to slow down: _____ [1]

Aiden then compared seeds P and Q as shown below and observed their wing-like structures that help in their dispersal.



(c) Based on Aiden's observations and experiment above, can he conclude which seed, P or Q, can disperse a further distance? Give 2 reasons for your answer. [2]

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SCORE 5

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34 Diagram 1 shows how Animal F is often found resting and staying still near Animal G in the ocean.

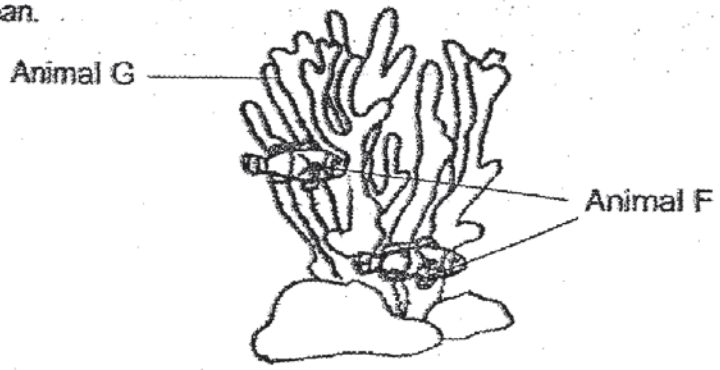


Diagram 1

(a) State one benefit for Animal F to be found near Animal G. [1]

Diagram 2 shows how plant H lives on Animal G. Plant H gives Animal G its colour when it lives on Animal G.

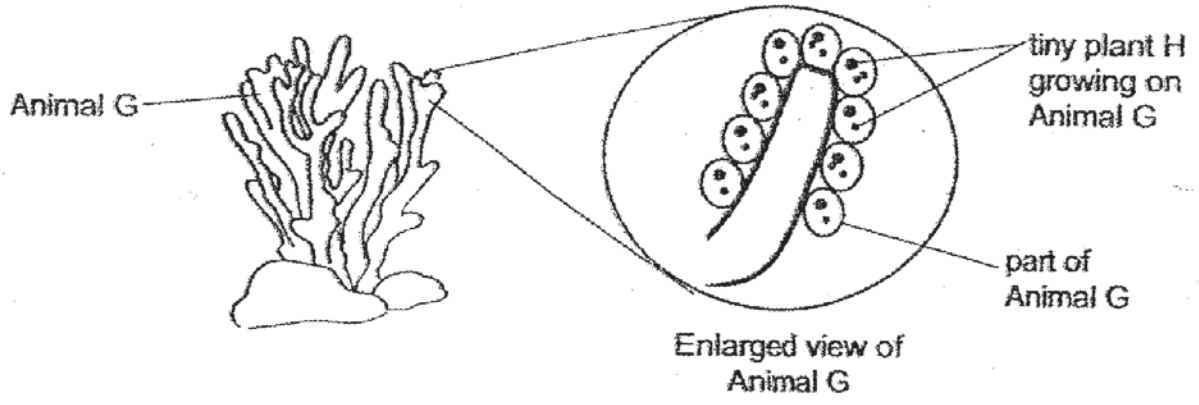


Diagram 2

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Diagram 3 shows what happens to Plant H and Animal G when the temperature of water becomes too high.

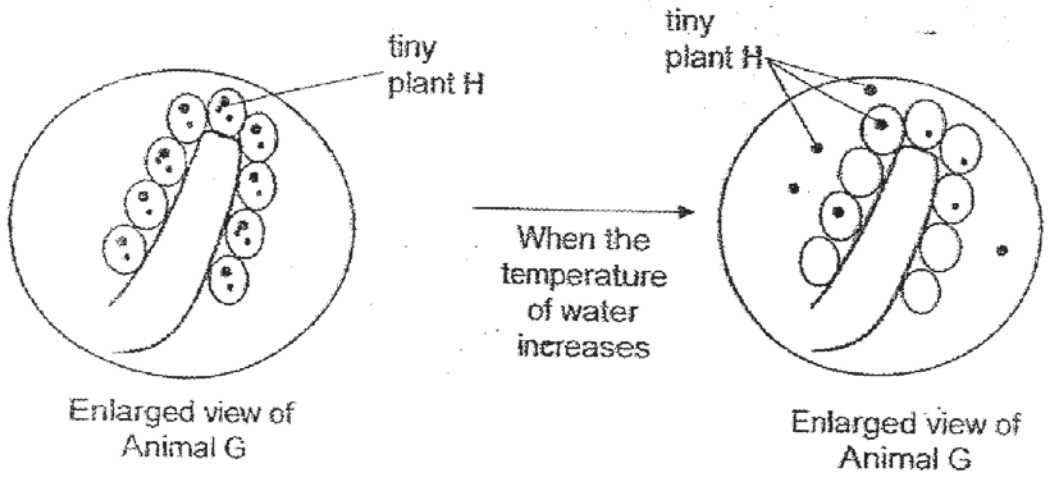


Diagram 3

(b) Explain how global warming causes Animal G to lose its colour. [2]

(c) Besides global warming, name another man's activity that can cause Animal G to lose its colour. Explain why. [2]

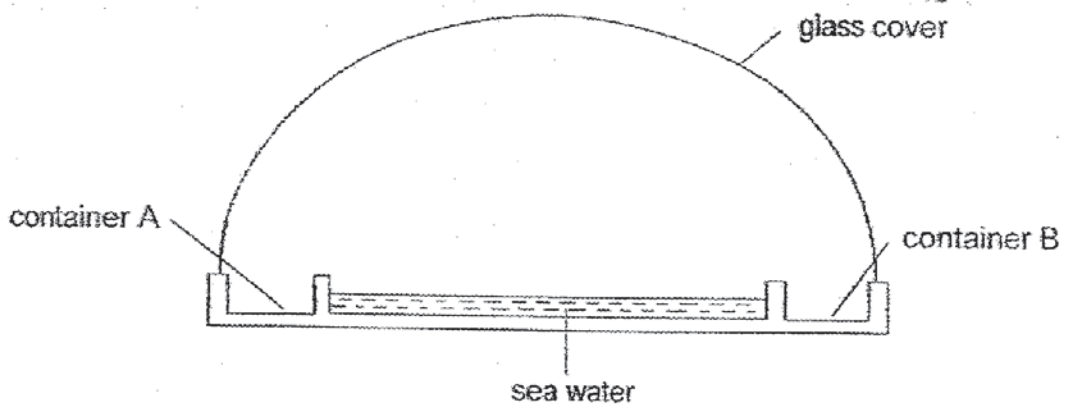
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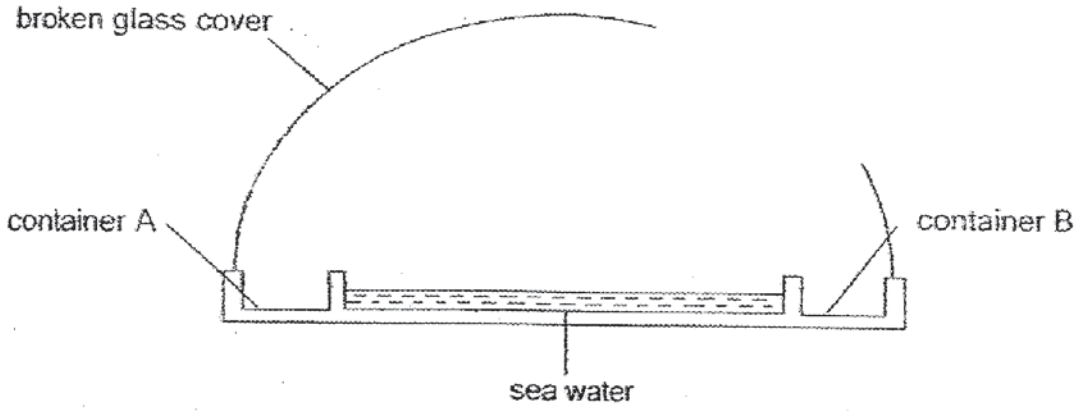
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35 Vasanthy set up the following model to collect pure water from sea water.
She placed the set-up under the shade in his garden.



(a) Explain how pure water is collected in containers A and B. [2]

Vasanthy dropped a stone accidentally on the set-up and the glass cover was broken.
She repeated the experiment and continued to leave the set-up in the garden and observed the amount of water collected in containers A and B.



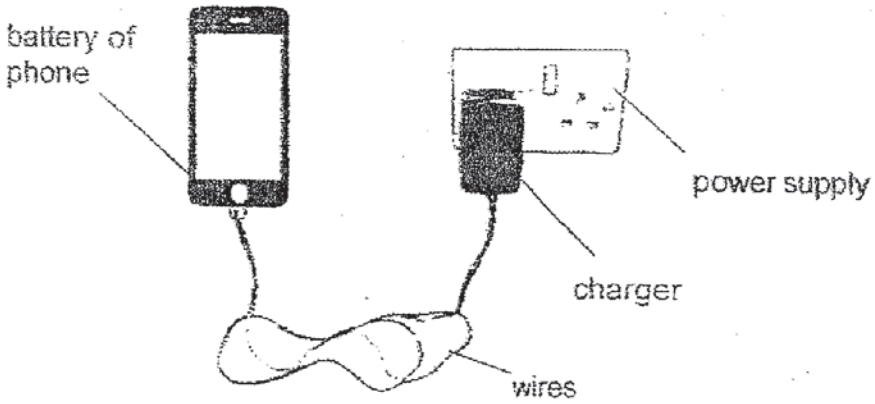
(b) Would the amount of water collected in containers A and B be less, same or more than her first attempt? Explain your answer. [1]

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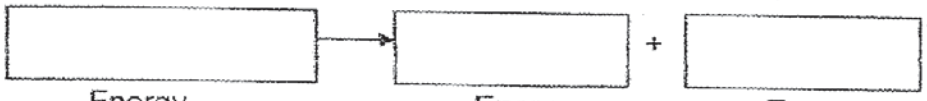
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36 Kelvin connected the battery of his phone to a charger with wires. The charger was then plugged into the power supply.



(a) Write down the energy conversion in the battery and wires when it is being charged. [2]



Kelvin studied how the temperature of the room affects the time it takes to charge the battery of his phone.

Room Temperature (°C)	Time taken for battery to be fully charged (minutes)
25	100
30	120
35	190

(b) Based on the table above, explain why it is best to keep the phone charging in a cooler place. [1]

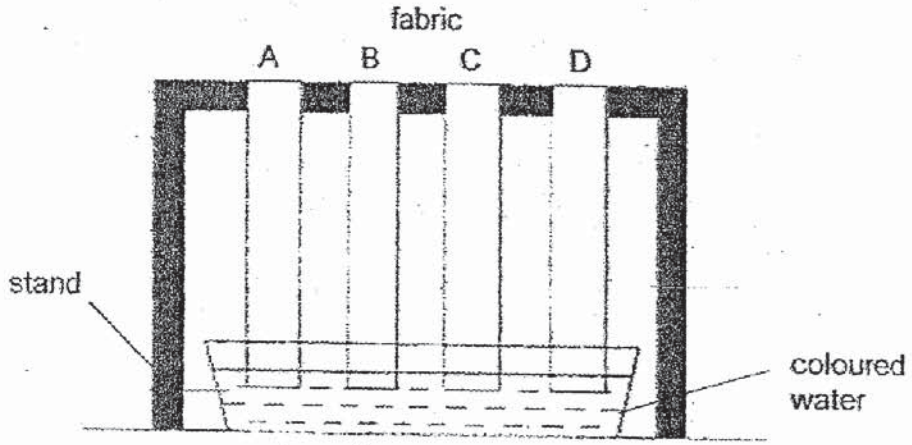
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SCORE 3

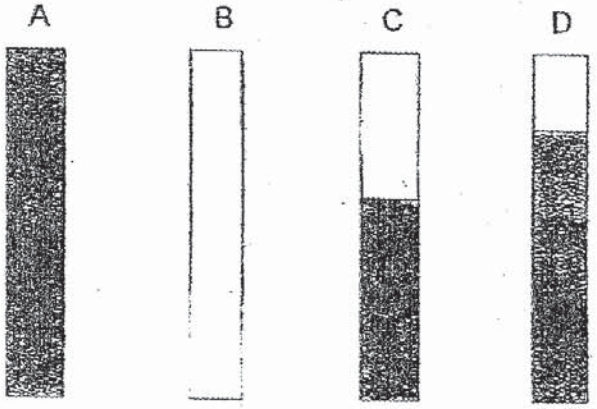
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37 Aaron set up the following experiment. Four strips A, B, C and D made of different fabric were hung from a stand such that the end of each strip was dipped into a container of coloured water.



The diagram below shows the four strips of fabric after three hours. The shaded parts indicate the absorption of coloured water by the four strips of fabric.



(a) Aaron wants to have a T-shirt made for his sister who sweats a lot so that she can wear it during an outdoor running race.

Based on the results of his experiment, which fabric should he use to make the T-shirt? Explain why. [1]

(b) Based on his experiment, state a property of Material B that he can conclude. [1]

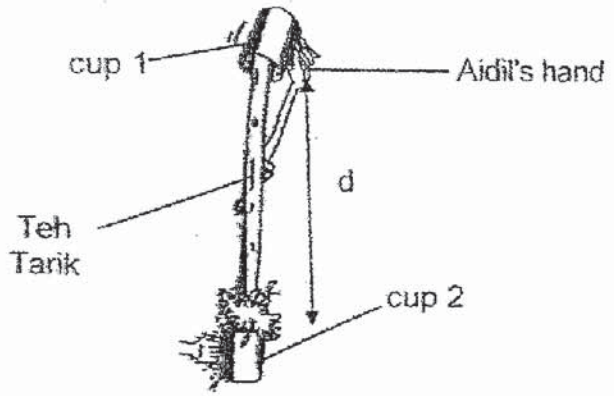
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SCORE	– / 2

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38 A Teh Tarik drink is hot tea poured from one cup to another repeatedly as shown below.



(a) Aidil measured the temperature of his Teh Tarik drink before and after he repeatedly poured it from one cup to another for ten times. What would Aidil observe about the temperature of the Teh Tarik drink? Explain why. [2]

(b) Aidil carried out another experiment by changing the distance, d, between cup 1 and cup 2. Each experiment started with the same amount of drink at 80°C. He recorded the results as shown below.

Experiment	Distance between cup 1 and cup 2, d (cm)	Temperature of drink (°C)
A	20	75
B	50	70
C	100	65

State a conclusion Aidil could make based on the results shown above. [1]

(c) Aidil left all the drinks from the three experiments, A, B and C, in the room for an hour.
State the temperature of the drinks when he returned. [1]

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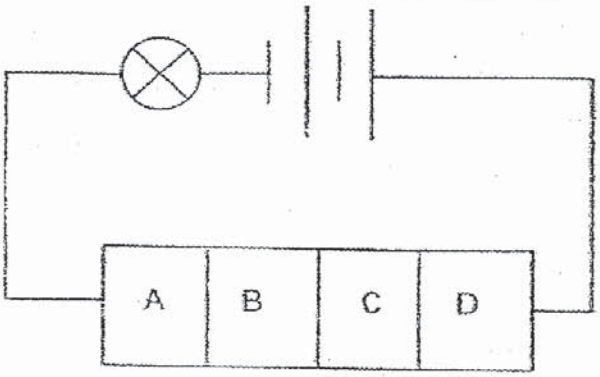
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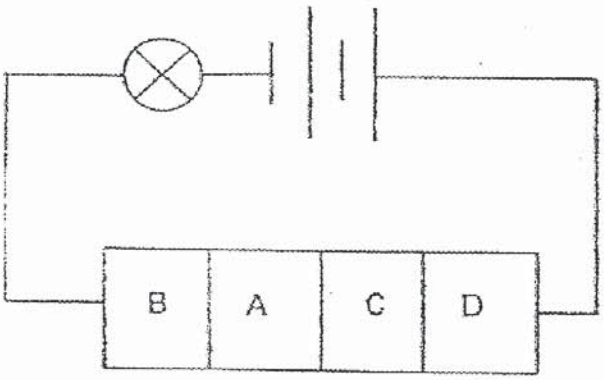
39 Angelica was given materials A, B, C and D as described below. To test whether they conduct electricity, she joined them together and connected them to an electric circuit as shown in the diagram below. The bulb, batteries and wire were in good working condition.

Material	Type of material
A	Plastic
B	Iron
C	Aluminium
D	Glass



Experiment 1

In experiment 1, she observed that the bulb did not light up. Keeping the rest of the circuit unchanged, she re-arranged the order of the materials in the circuit below.



Experiment 2

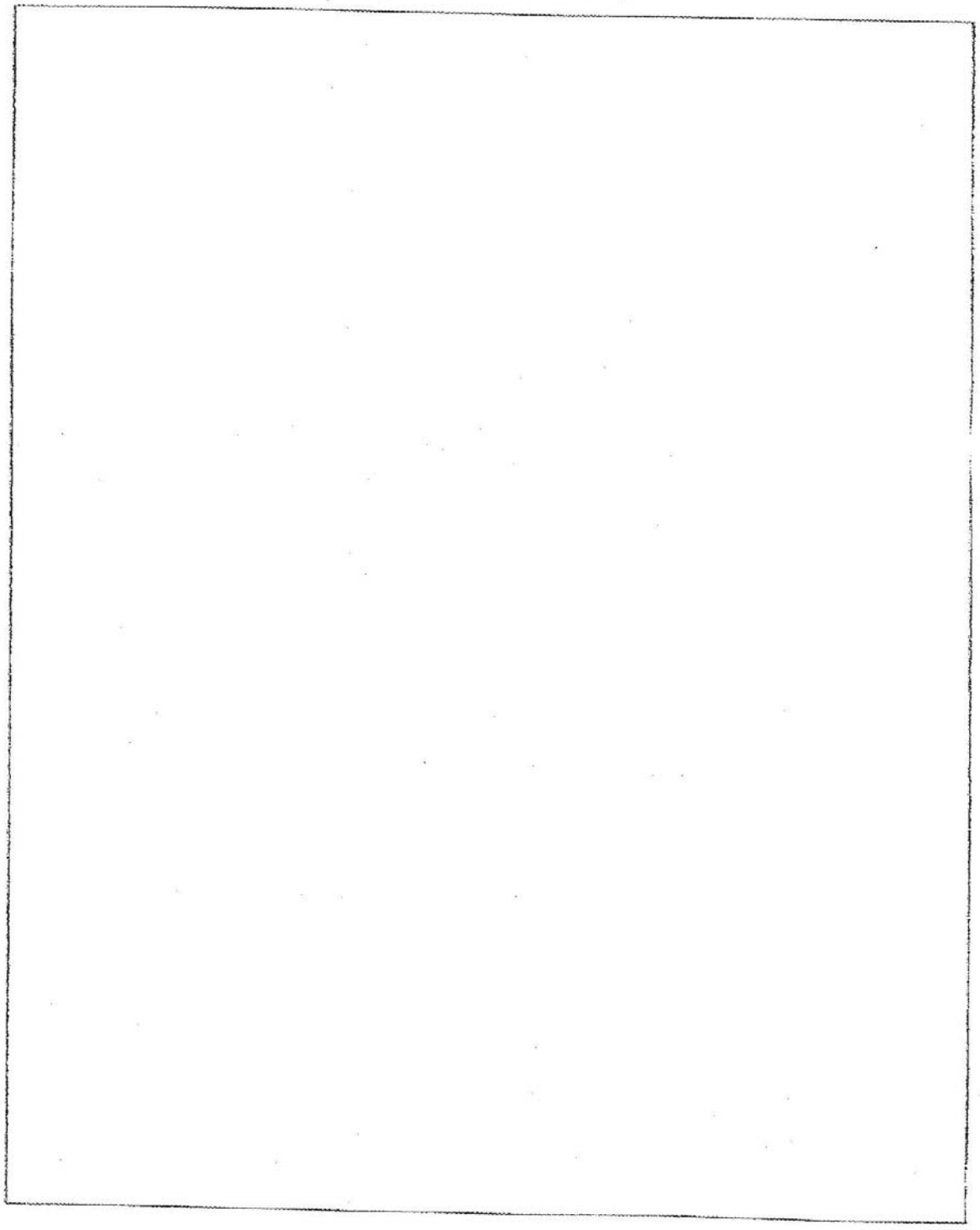
(a) Will the bulb in Experiment 2 light up? Explain why. [2]

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(b) Using two batteries, one bulb and all the four materials, A, B, C and D, re-arrange them in a circuit such that the bulb will light up. Complete the circuit so that it will work as described. [2]



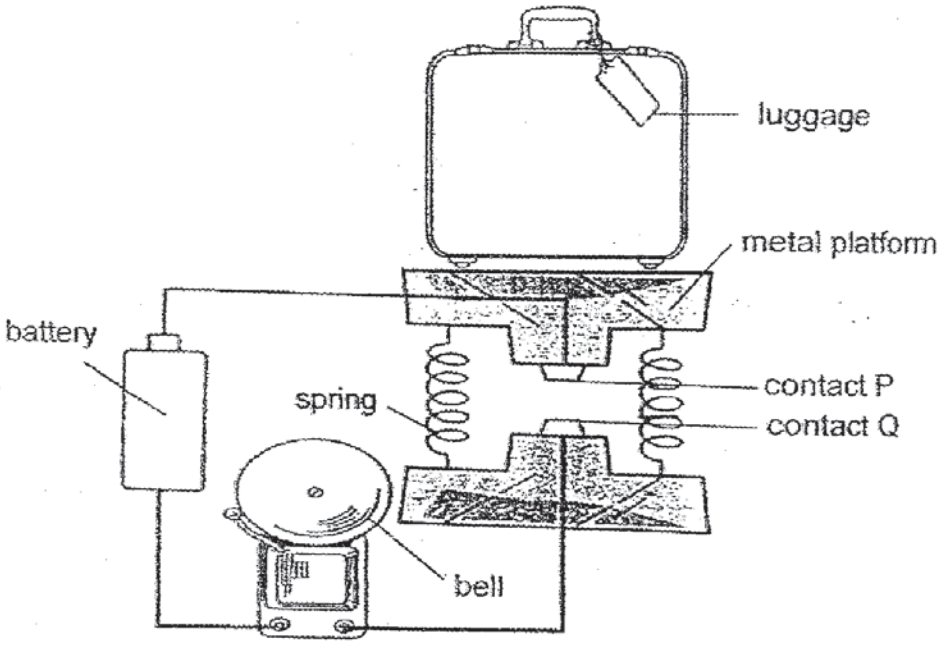
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SCORE	/ 4

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40 Mr Lim used the set-up as shown below to help airport staff check the mass of luggage of passengers. His set-up helps the airport staff to separate passengers' luggage that are less than 30kg from overweight luggage weighing 30kg or more. When the luggage is overweight, the bell will ring.



(a) Name two forces that are present in the set-up. [1]

(b) What property should the contacts P and Q have to ensure that the set-up works? [1]

(c) Explain how the bell would ring when a 40kg luggage is placed onto the metal platform. [2]

(d) Mr Lim wants to change his set-up so that it separates luggage that is below 40kg from those that are above 40kg. State the change to his set-up to achieve this. [1]

SCORE	/ 5

End of Booklet B

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ANSWER KEY

YEAR : 2019
LEVEL : PRIMARY 6
SCHOOL : Christian Brothers School
SUBJECT : Science
TYPE : Preliminary

Booklet A

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

Booklet B

Q29.

a) Y. The amount of oxygen produced by the plant was the most amongst the three colors of light showing that it photosynthesizes the best.

b) The light sources when in the school field can affect the amount of light entering the water plant but in a dark room, no other light sources can enter the water plant to affect the experiment.

Q30.

a) Water, darkness, air and warmth.

b) If it would be in a brightly lit room and sunny place, it will die as mould grows best at dark pla[illegible]s and the temperature might be too high thus causing the m[illegible]

c) The la[illegible] water from coming into contact with the bag [illegible]n there is no water.

Q31.

a) [illegible]ood carrying tubes may be damaged and cannot be connected properly, so food cannot be transported from the leaves to other parts of the plant. The water carrying tube may be damaged and cannot be connected properly so water cannot flow from roots to other parts of the plant.

b) The flowers of cherry tree B are more beautiful and will thus attract more pollinators.(i) The roots of cherry tree A are stronger to support the tree. (ii)

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Q32.

a) As the size of the lungs increases, the amount of air it can hold increases.
b) Water takes up space in the lungs so lesser oxygen is taken in so he needs to breathe faster to get the same amount of oxygen.
c) His heart needs to pump faster to transport blood with digested food.

Q33.

a) Aiden wanted to find out how the surface area of wings affects the distance travelled.
b) i) Gravitational force ii) Frictional force
c) He cannot tell as the surface area of the wing like structures are not known and these seeds are not of the same type.

Q34.

a) Animal G provides shelter for Animal F to hide from predators.
b) During global warming, the temperature of water increases which cause the plant H to detach.
c) Water pollution. It will prevent sunlight from reaching plant H and plant H will die and animal G will lose its color.

Q35.

a) The water in the sea water would gain heat and evaporate as water vapour. When the warmer water vapour from the sea water comes into contact with the inner cooler surface of the glass container, it will lose heat and will condense into tiny water droplets which will drip into container A and B.
b) There will be less ter than her first attempt. Water that has evapor- ape from the hole in the glass cover, causing less : inner surface of the glass cover, resulting in ..o containers A and B.

Q3t

a) Electrical energy -> Chemical potential energy + Heat energy
b) From the table, the lower the room temperature, the lesser time taken for battery to be fully charged. This shows that phones charge faster when the environment is cooler. As a result, it is best to keep the phone charging in a cooler place.

Q37.

a) A. It absorbs the most amount of colored water.

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b) Material B is water proof.

Q38.

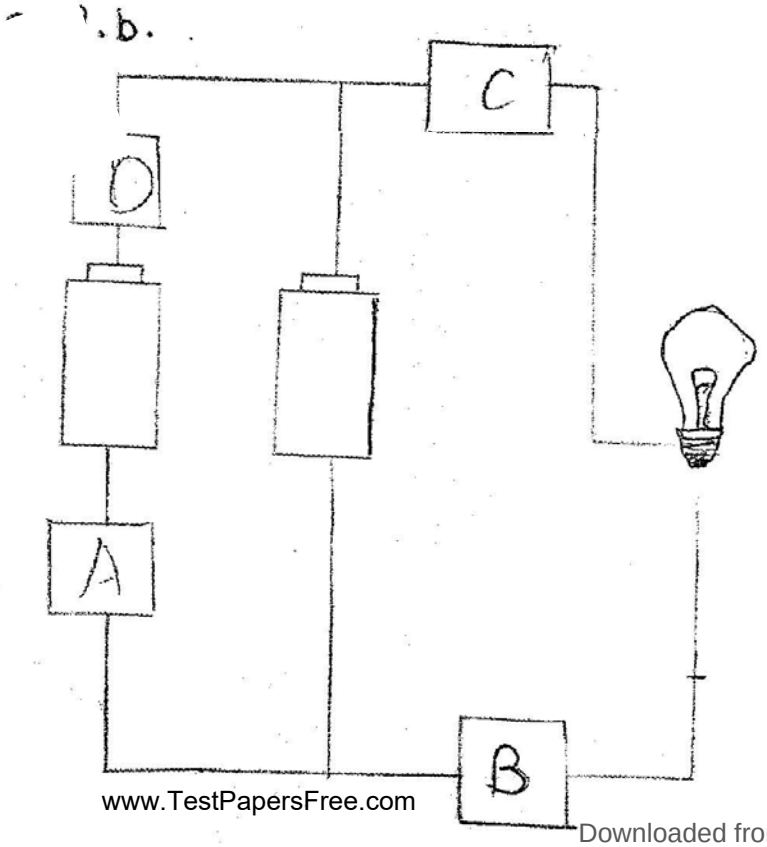
a) The temperature of the Teh Tarik drink will decrease. The Teh Tarik had more surface area to lose heat faster to the cooler surrounding air and reduce the temperature more quickly.
b) The temperature of the drink would decrease when the distance between cup 1 and cup 2 increases.
c) The drinks are at room temperature.

Q39.

a) No. Electricity cannot flow through the circuit as there is a gap in the circuit.
b) Points to note: 2 batteries and bulbs in parallel. D and A connect to outer-most battery. C and B connected between the light bulb and the center battery.

Q40.

a) Gravitational force and elastic spring force.
b) Contacts P and Q must be good conductors of electricity.
c) When the 40 kg luggage is placed onto the metal platform, the spring would compress causing the contact P and Q to come into contact. When they come into contact, this circuit would become closed to ring the bell. Electric current cannot flow through the circuit.
d) He should change the springs to be stiffer ones.



END.

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