PAYA LEBAR METHODIST GIRLS' SCHOOL (PRIMARY)

PRELIMINARY EXAMINATION 2025

PRIMARY SIX

SCIENCE

BOOKLET A

NAME : _____( )

CLASS : P6 _____

DATE : 21 August 2025

TOTAL TIME FOR BOOKLETS A & B: 1 hour and 45 minutes

INSTRUCTIONS TO PUPILS

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ANSWER ALL QUESTIONS.

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Section A (28 x 2 = 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.

1 Which of the following is the correct function of a system in our body?

	System	Function
(1)	Muscular	supports and gives shape to the body
(2)	Digestive	pumps blood around the body
(3)	Circulatory	transports carbon dioxide to all parts of the body
(4)	Respiratory	takes in and gives out air

2 Which of the following does **not** reproduce by spores?

(1) mushroom
(2) rose plant
(3) bread mould
(4) bird's nest fern

3 Which of the following characteristics can be used to differentiate between amphibians and mammals?

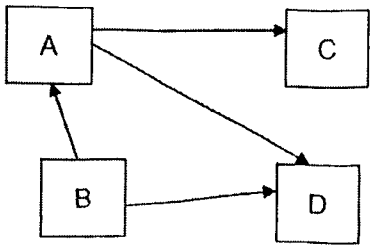
(1) body covering
(2) number of legs
(3) type of food they eat
(4) number of stages in their life cycle

4 For an adult plant to produce fruits, which process(es) must take place?

(1) pollination only
(2) germination only
(3) pollination and fertilisation
(4) pollination and germination

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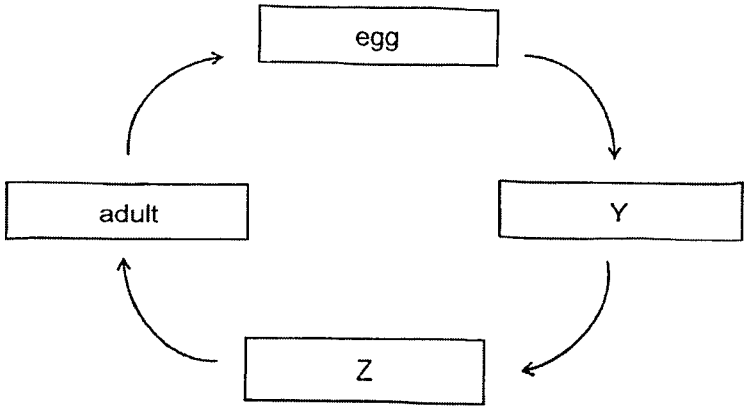
5 Study the food web with organisms A, B, C and D.



Which of the following organism is a food producer?

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

6 The diagram shows the stages in the life cycle of a butterfly.

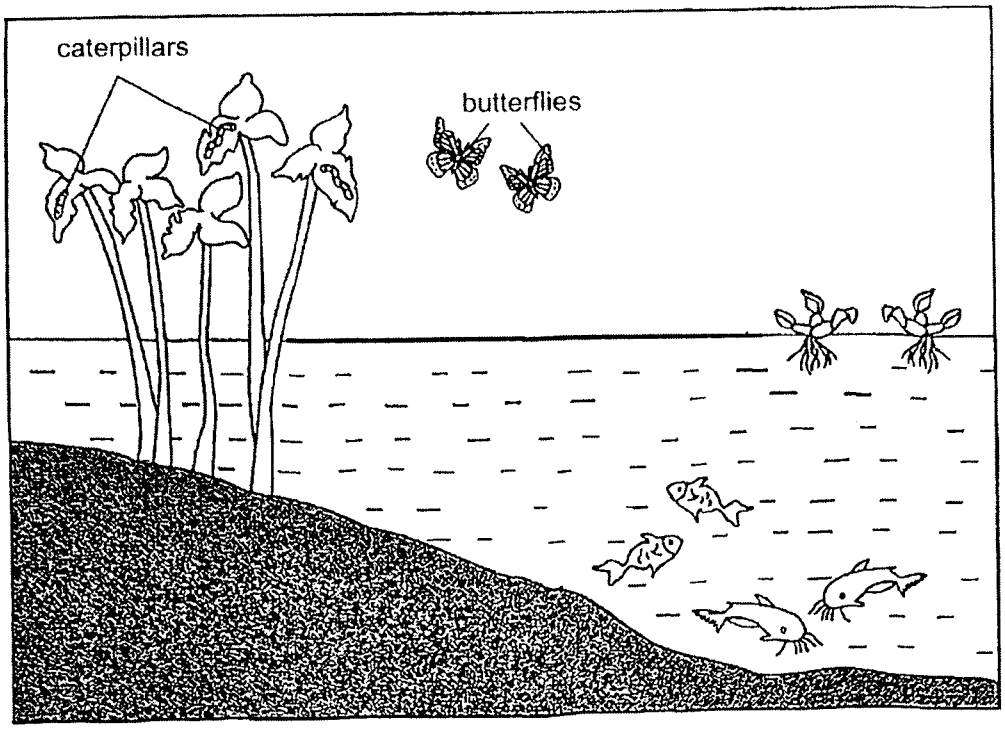


Which of the following correctly describes the organism at stages Y and Z?

	Stage Y	Stage Z
(1)	does not look like adult	lives in water
(2)	lives on land	does not look like adult
(3)	lives in water	able to fly
(4)	unable to fly	looks like adult

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7 The diagram shows a pond habitat.



Which of the following statements is true?

(1) The total population size in the habitat is five.
(2) There are five populations in the habitat altogether.
(3) There are five communities in the habitat altogether.
(4) There are seven populations in the habitat altogether.

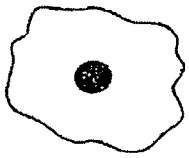
8 Scientists have observed that the increase in Earth's air temperature in recent years has slowed down.

Which of the following could have contributed to the improvement?

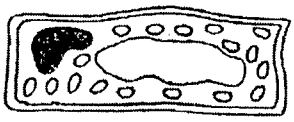
(1) An increase in the number of vehicles on the road
(2) An increase in the use of air-conditioners to cool down more places
(3) An increase in the clearing of forests to build more houses for people
(4) An increase in the use of alternative energy sources like solar, wind and running water

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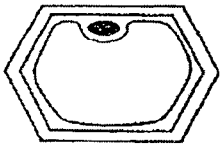
9 Tim, Suriah and Joanne observed the following cells, A, B and C, and made the following statements.



A



B



C

Tim: Both cell A and C are animal cells as they do not have chloroplast.

Suriah: Both cell B and C are plants cells as they have cell walls.

Joanne: Only cell B can make food.

Which statement(s) is/are true?

(1) Tim only
(2) Joanne only
(3) Suriah and Joanne only
(4) Tim, Suriah and Joanne

10 Mrs Lim prepared three different set-ups, A, B and C to find out if seeds will germinate under different conditions. Identical seeds were used in the set-up. The different conditions in the three set-ups were shown below.

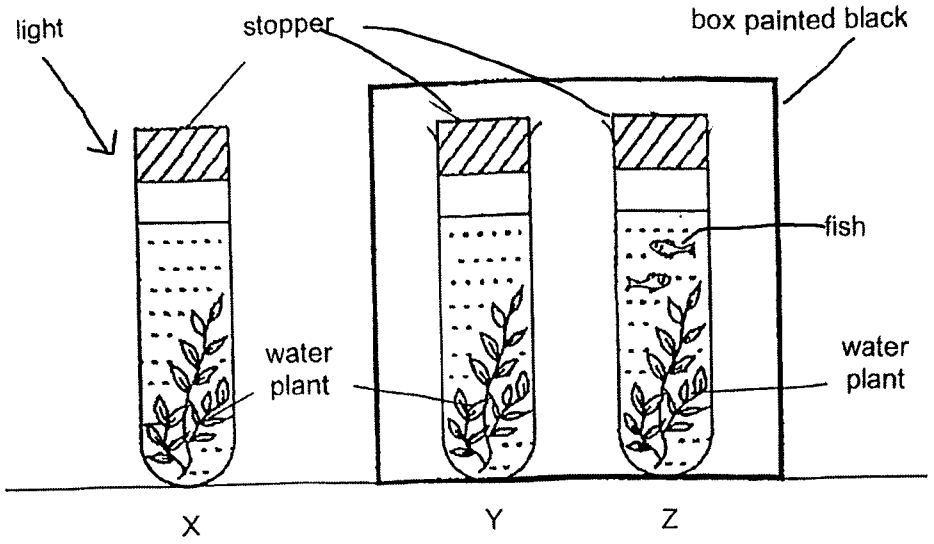
Conditions	Set-ups		
	A	B	C
Water	✓	✓	✓
Oxygen	✓	✓	✓
Light		✓	✓
Suitable temperature	✓	✓	

In which set-ups will the seeds germinate?

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

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11 Jessica conducted an experiment with the following set-ups.

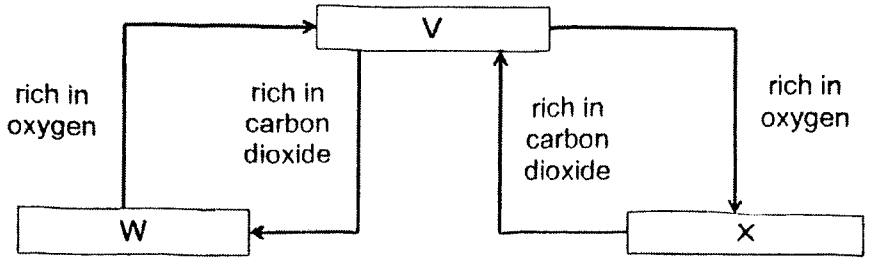


What are the likely changes in the amount of gases after a few hours?

	Amount of gases in set-up		
	X	Y	Z
(1)	increase in oxygen	increase in oxygen	increase in carbon dioxide
(2)	increase in carbon dioxide	decrease in oxygen	increase in carbon dioxide
(3)	decrease in oxygen	increase in carbon dioxide	decrease in oxygen
(4)	decrease in carbon dioxide	increase in carbon dioxide	increase in carbon dioxide

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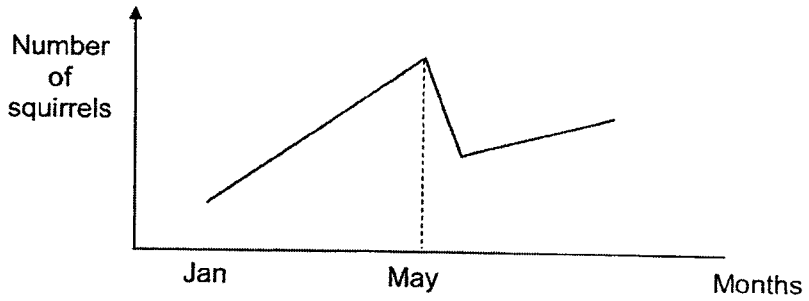
12 The diagram shows the direction of blood flow in some parts of the body.



What do V, W and X represent?

	V	W	X
(1)	lungs	heart	other parts of the body
(2)	heart	other parts of the body	lungs
(3)	lungs	other parts of the body	heart
(4)	heart	lungs	other parts of the body

13 The graph below shows the population of squirrels in a forest community over a period of time.



Based on the graph above, what could have caused the drop in the squirrel population in May?

A Increase in the amount of food for the squirrels
B New predator of the squirrels was introduced into the forest
C Increase in deforestation

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

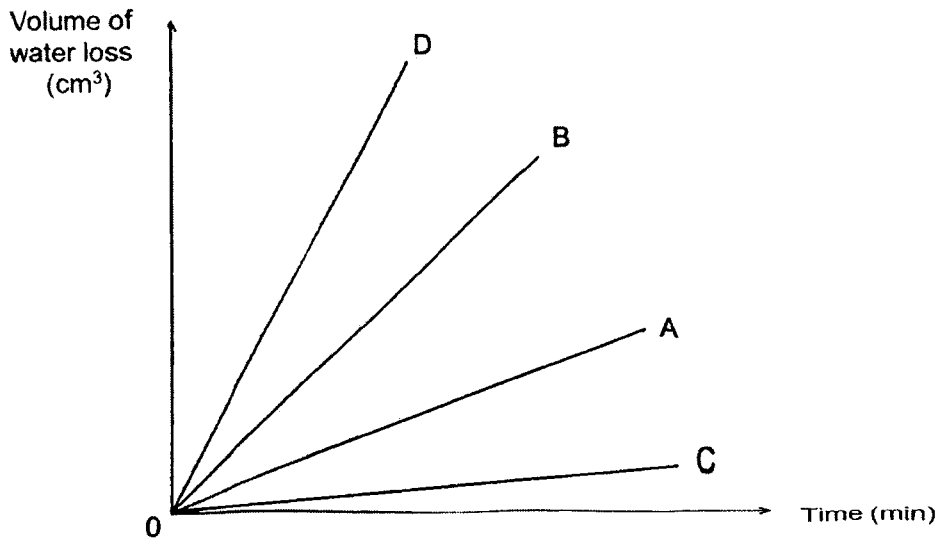
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14 Amy set up an experiment using four similar leaves, A, B, C and D on the same plant. These leaves have tiny openings on both their upper and lower surfaces.

She coated some surfaces of the leaves with oil as shown in the table.

Leaf	Coated with oil	
	Upper surface	Lower surface
A	no	yes
B	yes	no
C	yes	yes
D	no	no

The plant was under bright sunlight for two hours. Amy measured the volume of water loss at regular time intervals. Her results are shown in the graph below.



Based on her results, what can Amy conclude about the tiny openings on the leaves of the plant?

(1) The tiny openings on the lower surfaces are smaller.

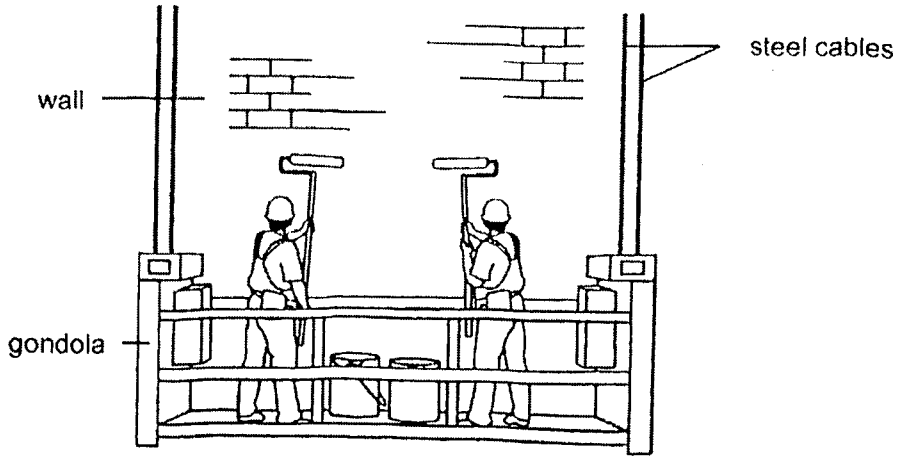
(2) There are more tiny openings on the lower surfaces.

(3) There are more tiny openings on the upper surfaces.

(4) There are equal number of tiny openings on the upper and lower surfaces.

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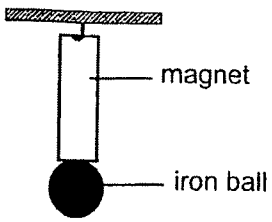
15 The diagram shows two men on a gondola.



To hold the weight of the gondola, steel cables are used because steel is _____.

(1) flexible
(2) magnetic
(3) strong
(4) waterproof

16 The diagram shows a magnet with an iron ball attracted to it.



Which force(s) is/are acting on the iron ball?

(1) magnetic force only
(2) gravitational force only
(3) gravitational and frictional force
(4) magnetic and gravitational force

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17 Diagram 1 shows a toy with a rolled paper tube. When Belle blew air into it, the paper tube straightened as shown in Diagram 2.

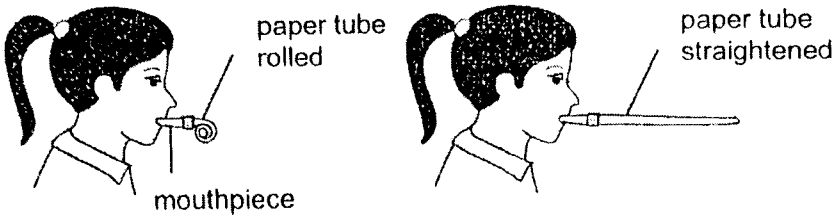
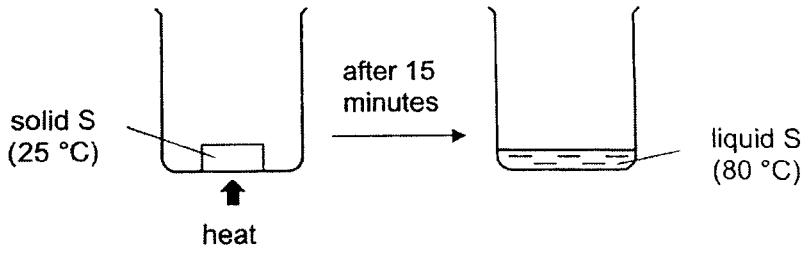


Diagram 1 Diagram 2

Which of the following best explains why the paper tube straightened?

(1) Air takes up space.
(2) Air can be compressed.
(3) Air gains heat and expands.
(4) Air does not have a fixed shape.

18 Casey conducted an experiment by heating substance S. At the start, S was a solid at 25 °C. After 15 minutes of heating, S reached a temperature of 80 °C as shown.



Based on Casey's experiment, which of the following is possible?

	Melting point of S (°C)	Boiling point of S (°C)
(1)	15	85
(2)	20	80
(3)	25	75
(4)	30	90

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19 Which one of the following is <u>not</u> an example of energy conversion?

(1) cooling hot water in a cup

(2) toasting bread in a toaster

(3) climbing down a flight of stairs

(4) generating electricity in a power station

20 Daniel pasted a sticker on a toy truck. Some air bubbles were trapped under the sticker as shown in Diagram 1.

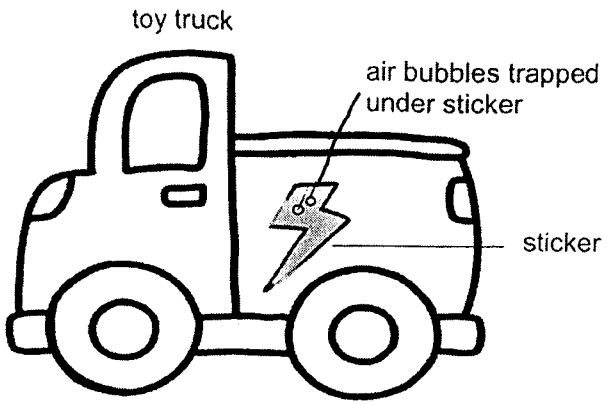


Diagram 1

The toy truck was left in the sun. After a few hours, the air bubbles became larger as shown in Diagram 2.

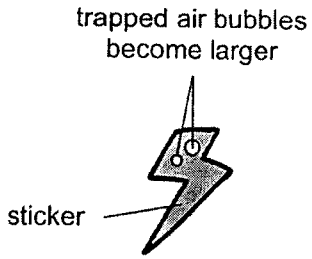


Diagram 2

Which of the following explains why the air bubbles became larger?

(1) The sticker expands.

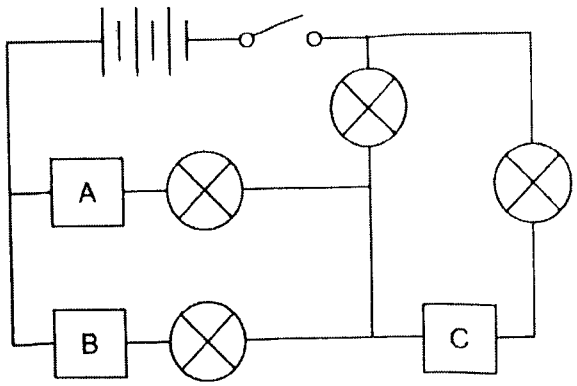
(2) The toy truck expands.

(3) Air expands when heated.

(4) More air entered the sticker.

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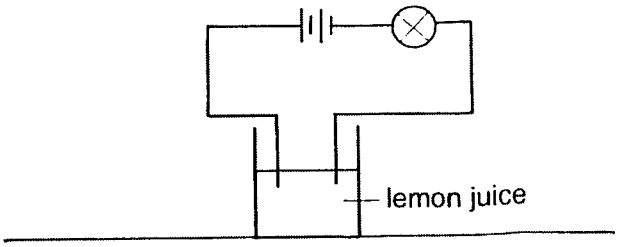
21 Kelly sets up the circuit below using materials A, B and C. She does not know whether the materials are electrical conductors or insulators.



Which of the following is possible when Kelly closes the switch?

	Number of electrical insulators	Number of bulbs that light up
(1)	1	1
(2)	2	2
(3)	2	1
(4)	3	1

22 Beth set up the electrical circuit below. She set up another similar electrical circuit and added one more battery to it. She observed the brightness of the bulbs in both set-ups.



What was the hypothesis tested in this experiment?

(1) Lemon juice is a conductor of electricity.

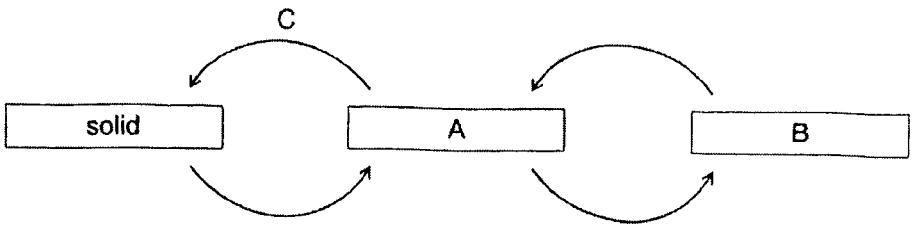
(2) Lemon juice is an insulator of electricity.

(3) More batteries will increase the brightness of the bulb.

(4) More lemon juice will increase the brightness of the bulb.

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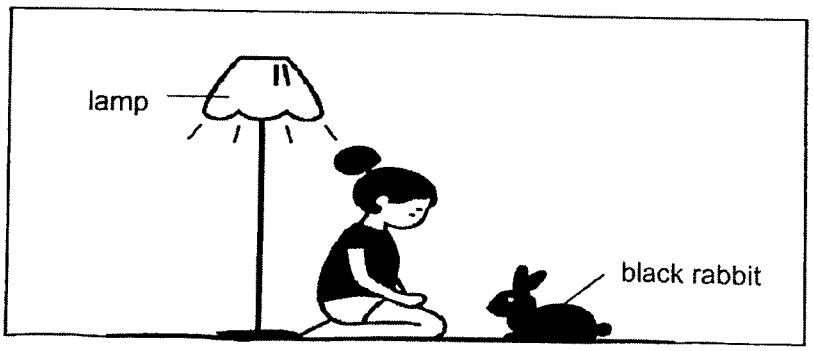
23 The diagram shows how water changes from one state to another.



Which of the following correctly describes A, B and C?

	A	B	C
(1)	liquid	gas	heat loss
(2)	liquid	gas	heat gain
(3)	gas	liquid	heat loss
(4)	gas	liquid	heat gain

24 Ella and her black rabbit were in a dimly lit room.

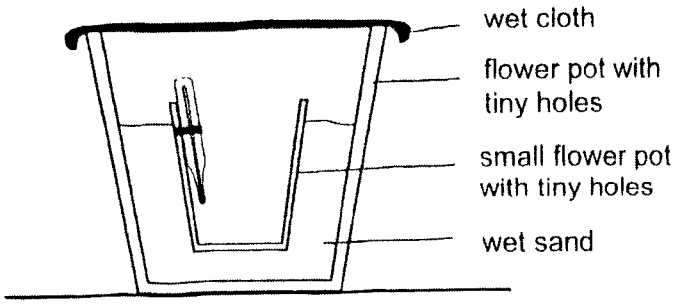


Which one of the following statements correctly explains why she could see the rabbit's eyes clearly?

(1) Ella's eyes were sources of light.
(2) The rabbit's eyes were sources of light.
(3) Light was reflected from the rabbit's eyes to Ella's eyes.
(4) Light was reflected from Ella's eyes to the rabbit's eyes.

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25 Delia set up an experiment.



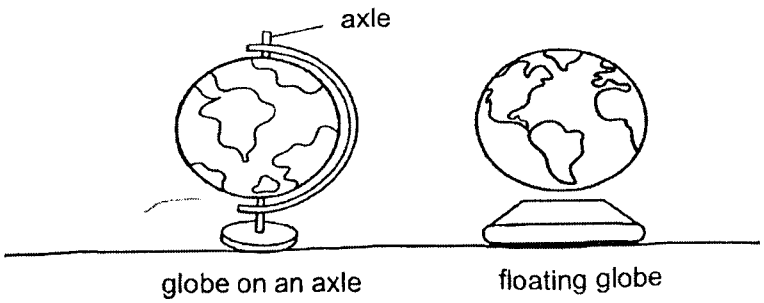
She placed the set-up in a dry place. She recorded the temperature of the air inside the small pot. Her results are shown below.

Time (minutes)	Temperature (°C)
0	32
10	30
20	29

What is the reason for the decrease in temperature of the air inside the small pot?

(1) Water evaporated from the wet sand.
(2) Heat was conducted to the thermometer.
(3) Water vapour condensed on the wet cloth.
(4) Wet sand acted as a poor conductor of heat.

26 Study the diagrams below.

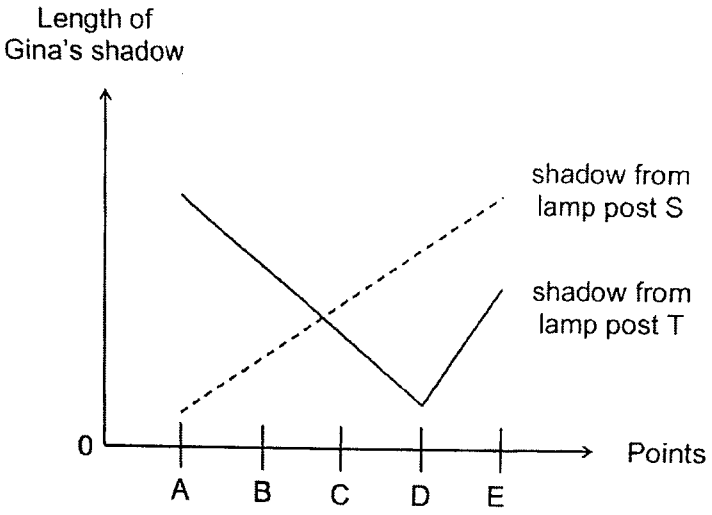


The floating globe is easier to spin because it has less _____.

(1) elastic spring force
(2) frictional force
(3) gravitational force
(4) magnetic force

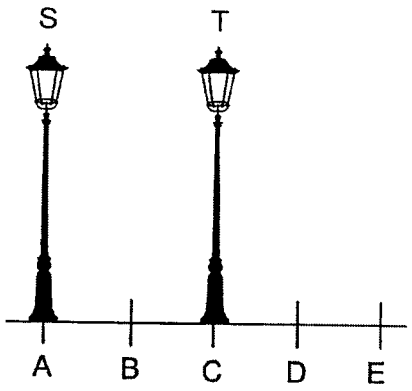
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27 In an experiment, Fatin measured the lengths of Gina's shadows from two lighted lamp posts, S and T, as Gina walked along a straight path from A to E.

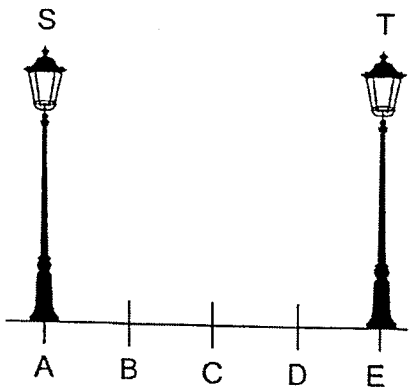


Based on the graph, which one of the following correctly shows the positions of lamp posts S and T?

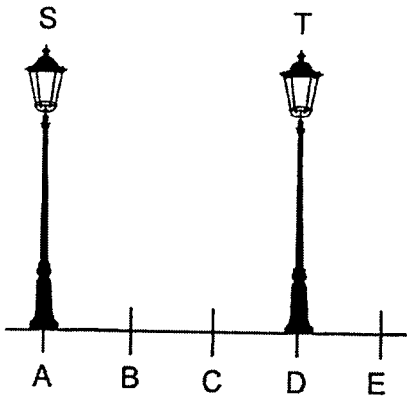
(1)



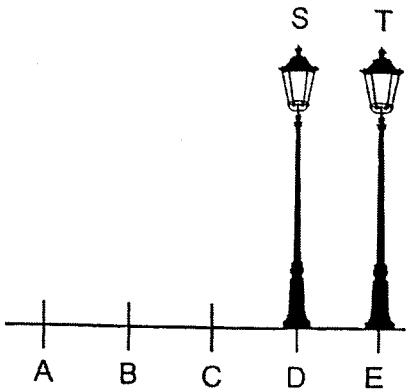
(2)



(3)

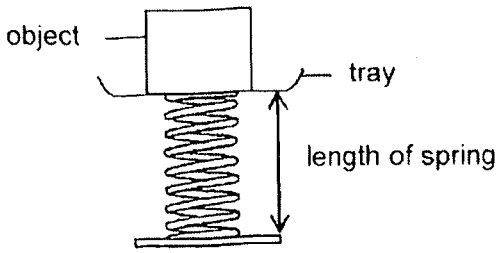


(4)

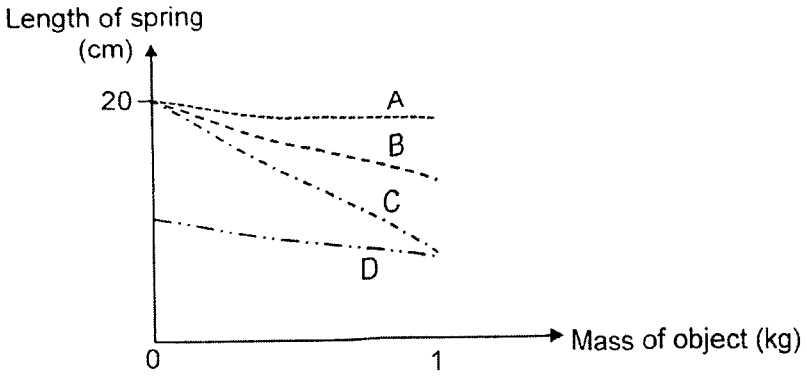


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28 Ali used the set-up below to study four types of springs, A, B, C and D.



He placed objects of different mass on each spring and measured the length of the spring. The results are shown in the graph below.



Using the same set-up, Ali wanted to compare the mass of two apples below.



Which spring, A, B, C or D, is the most suitable for his set-up?

(1) A

(2) B

(3) C

(4) D

END OF BOOKLET A

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PAYA LEBAR METHODIST GIRLS' SCHOOL (PRIMARY)

PRELIMINARY EXAMINATION 2025

PRIMARY SIX

SCIENCE

BOOKLET B

NAME : _____( )

CLASS : P6 _____

DATE : 21 August 2025

TOTAL TIME FOR BOOKLETS A & B: 1 hour and 45 minutes

BOOKLET A	/ 56
BOOKLET B	/ 44
TOTAL	/ 100

Parent's Signature: _____

INSTRUCTIONS TO PUPILS

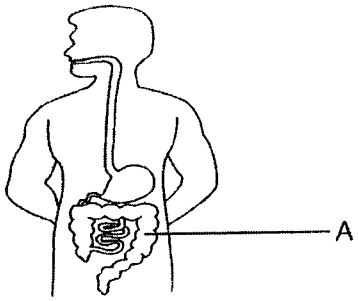
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
Answer all questions.

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SECTION B: 44 Marks

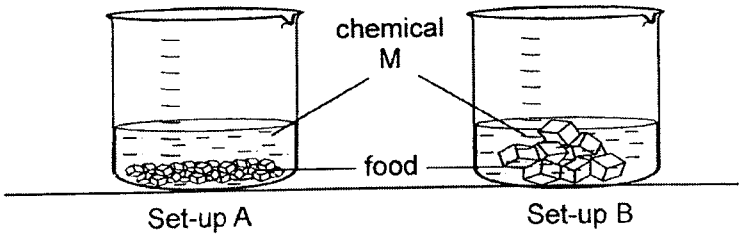
For questions 29 to 40, write your answers in the spaces provided.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

29 The diagram shows some parts in a human system.



(a) Name part A and state one of its functions. [2]

Lina conducted an experiment to find out if the size of food affects the speed of digestion. She used equal amount of chemical M to digest the same type of food, which was cut into different sizes, in two separate set-ups.



After 10 minutes, she measured the remaining solid food in each set-up.

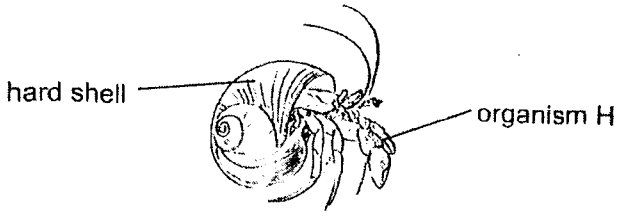
	Start	End
Mass of food in solid state in set-up A (g)	30	10
Mass of food in solid state in set-up B (g)	30	20

(c) Based on the results above, explain why there was less food left in solid state in set-up A than in set-up B? [2]

SCORE	/ 4

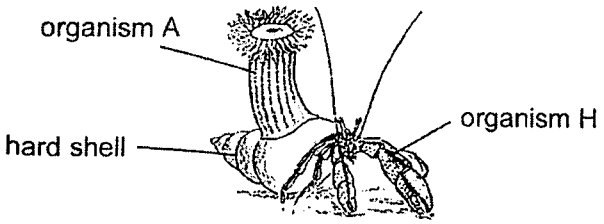
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30 Organism H stays in its hard shell when resting and moves around with it.



(a) How does organism H protect itself from predators? [1]

Organism A has a poisonous sting and feeds on tiny micro-organisms. It can be found on the hard shell of organism H.

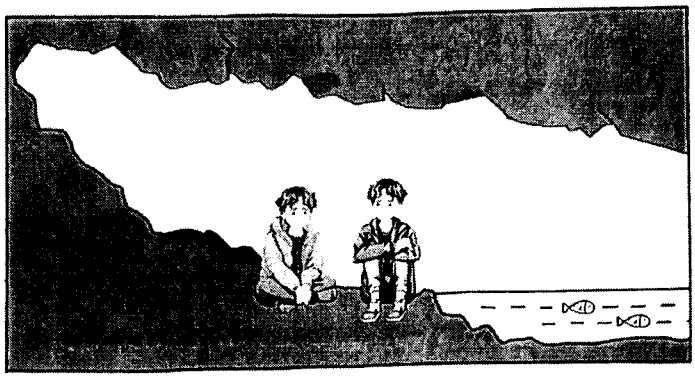


(b) How do organism A and organism H help each other survive in the ocean environment? [2]

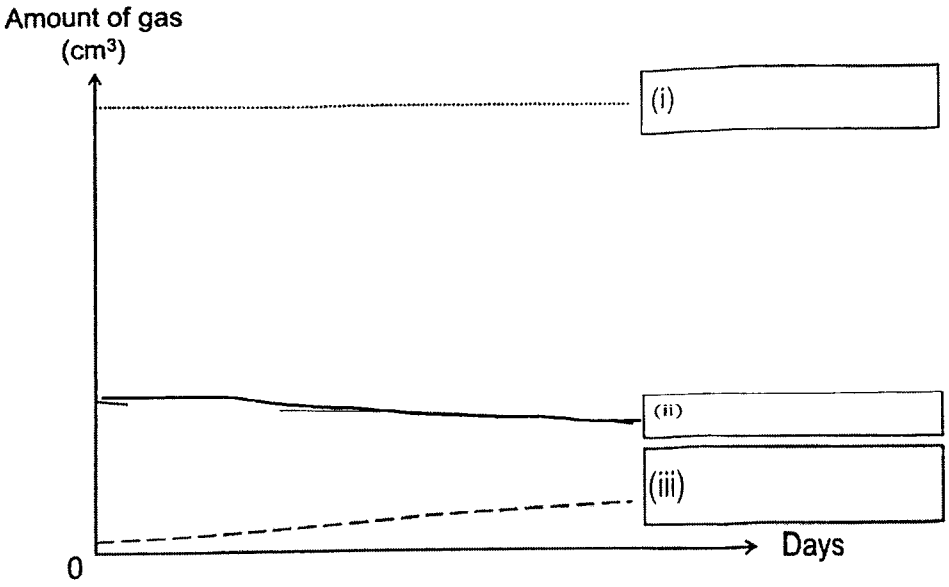
SCORE	3

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31 Two boys were trapped in a cave for two days.



(a) The graph shows the amount of three gases in the cave after two days.
Label each line with the correct gas: ***carbon dioxide***, ***oxygen***, or ***nitrogen***. [1]



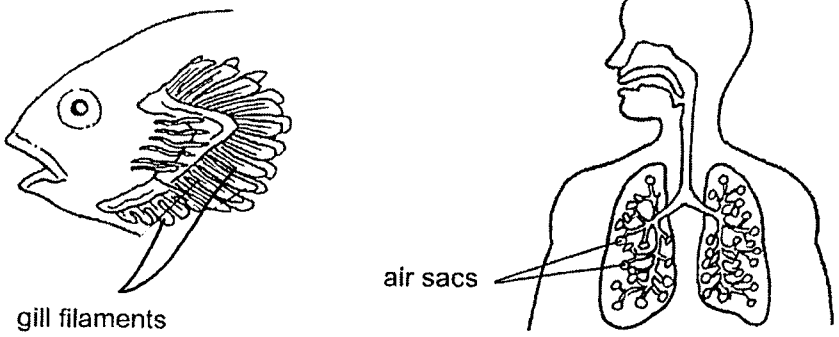
(b) Describe how oxygen from the surroundings enters the lungs of the boys. [1]

_____

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The diagrams show part of the respiratory systems of a fish and a human.



(c) State a similarity between the gill filaments of a fish and the air sacs of a human that help in gaseous exchange. [1]

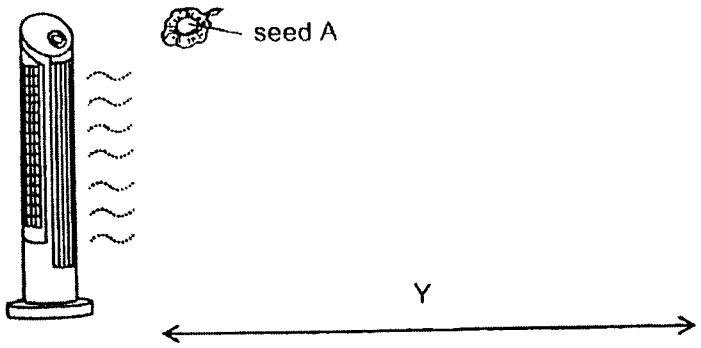
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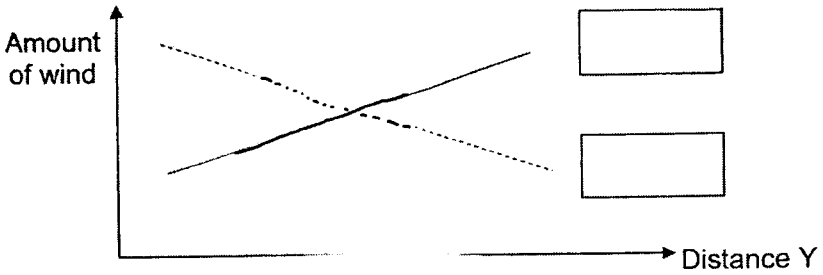
SCORE	3

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32 Jessica conducted an experiment on seed A to investigate how the amount of wind can affect distance Y travelled by the seed as shown.



She made her observations and plotted the graph as shown below.



(a) Which line correctly represents her observation for seed A? Put a tick (✓) in the box. [1]

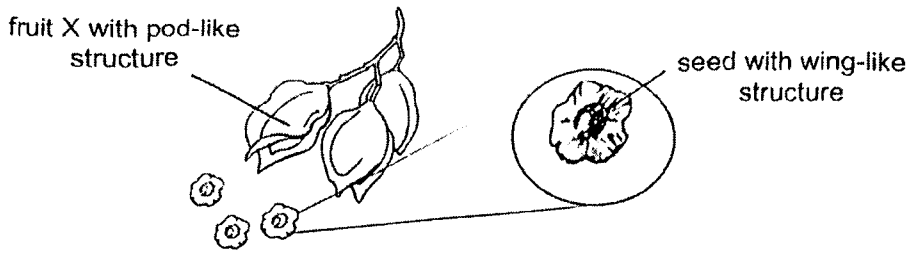
(b) To ensure a fair investigation, the same type of seed was used each time. Explain why. [1]

_____

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Jessica found fruit X which has a pod-like structure. When she opened up the fruit, she found many tiny seeds with wing-like structure as shown.



(c) State two advantages of how the structure of fruit X and its seeds help to disperse its seeds. [2]

_____

_____

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SCORE	/ 4

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33 Brenda conducted an experiment to find out the temperature at which organism C prefers to live in. Twenty similar organism C were placed in three identical tanks, J, K and L with the same amount of water but different temperatures.

After a few weeks, she recorded the number of surviving organism C in each tank.

	Tank		
	J	**K**	**L**
Temperature of water (°C)	10	20	30
Number of organism C	15	20	10

(a) Based on the table above, which temperature is most favourable for organism C to survive? [1]

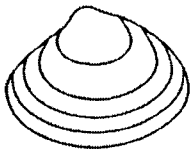
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(b) Air contains carbon dioxide. State one process that releases carbon dioxide into the air. [1]

_____

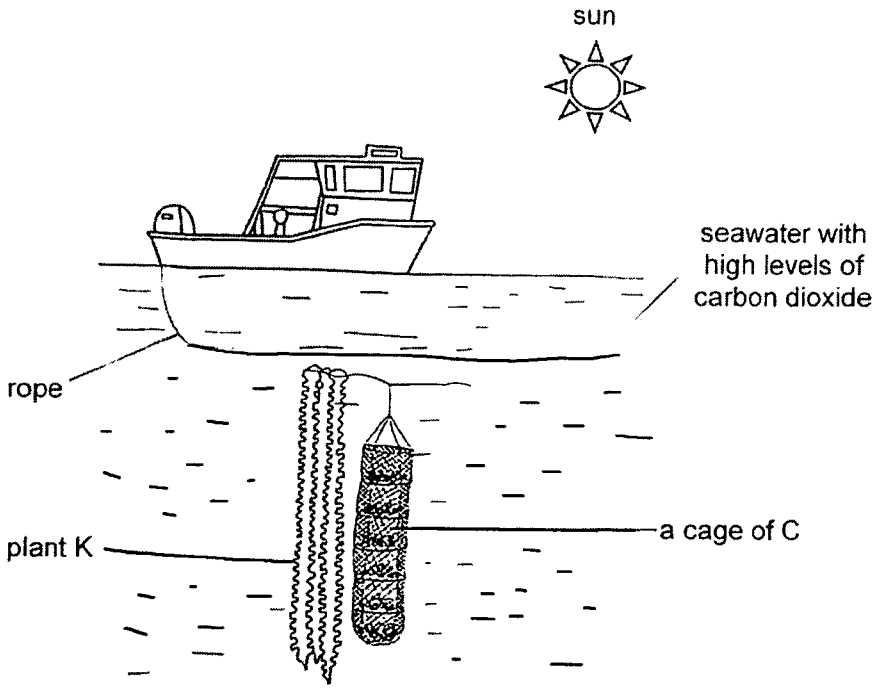
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In seawater with high levels of carbon dioxide, organism C grows poorly.



organism C

To grow well, fishermen tied plant K next to a cage of C in the sea as shown.



(c) Explain how plant K helps C to grow well in seawater with high levels of carbon dioxide.

[2]

SCORE 4

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34 Study the information below about organisms P, Q, R and S.

P	Q	R	S
eats S	eats S	eats P	depends on P and R to disperse its seeds

(a) Draw a food web to show the food relationship among organisms P, Q, R and S. [2]

(b) When the population of P decreases, how will it affect the population of R? Explain. [1]

(c) The statements below describe the behaviours of organism P and R.

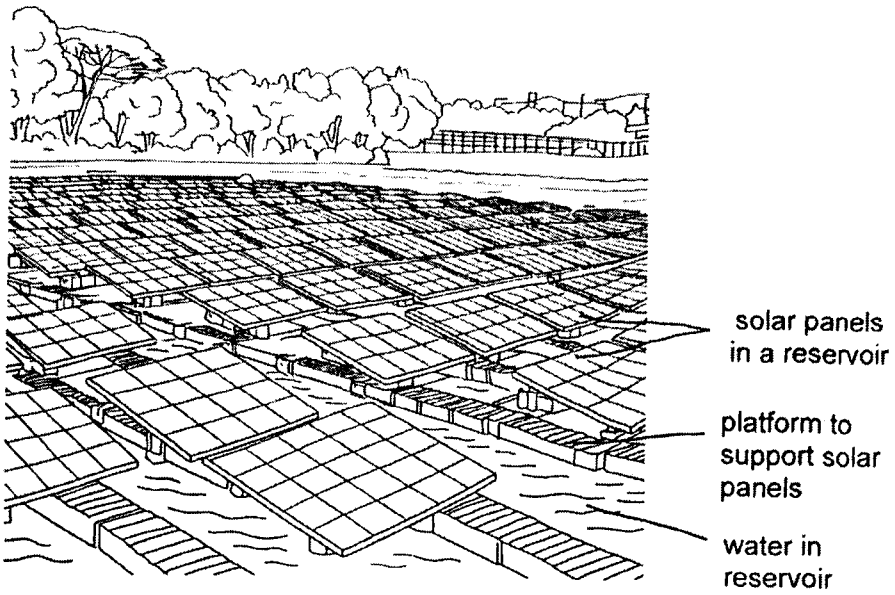
- P eats the whole fruit of S including the seeds but cannot digest its seeds.
- R eats only the flesh of P but leaves the remains of P's body behind.

Explain how R's action helps organism S to grow. [1]

SCORE	/ 4

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35 In Country S, solar panels are placed on top of reservoirs. These panels not only harness energy from the sun but also help slow down the decrease in water level.



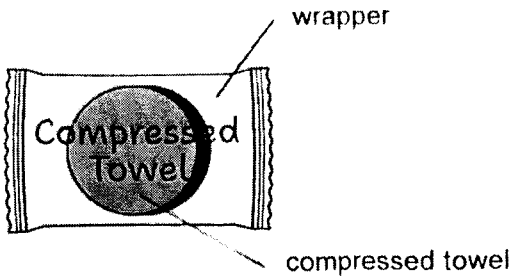
(a) Besides being waterproof, state another property the platform must have to be able to support the solar panels on the reservoir. [1]

(b) Explain how the solar panels help slow down the decrease in water level. [1]

SCORE	/ 2

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36 Compressed towels are compact and designed for use by travellers to minimise packing space in their luggage.



(a) What property must the towel have so that it can be compressed and placed in the wrapper? [1]

_____

Isabelle placed the compressed towel into a beaker of water as shown in Diagram 1. Next, she removed the towel from the beaker as shown in Diagram 2.

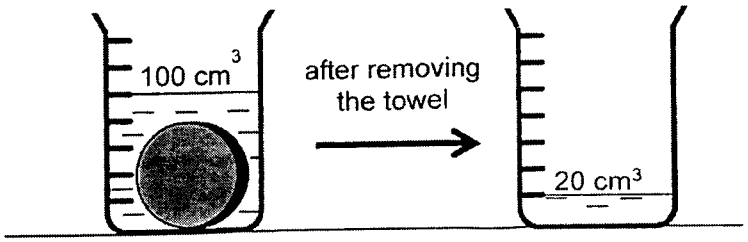


Diagram 1 Diagram 2

(b) (i) What is the volume of the towel? Put a tick (✓) in the correct box below. [1]

	20 cm^3
	80 cm^3
	100 cm^3
	Not possible to tell

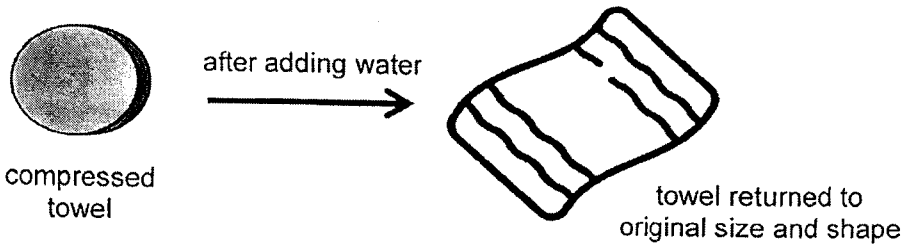
(ii) Explain your answer in b(i). [1]

_____

_____

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The diagram below shows the compressed towel after adding water.



(c) Based on Isabelle's observation, what is the state of matter of the compressed towel? Give a reason for your answer. [1]

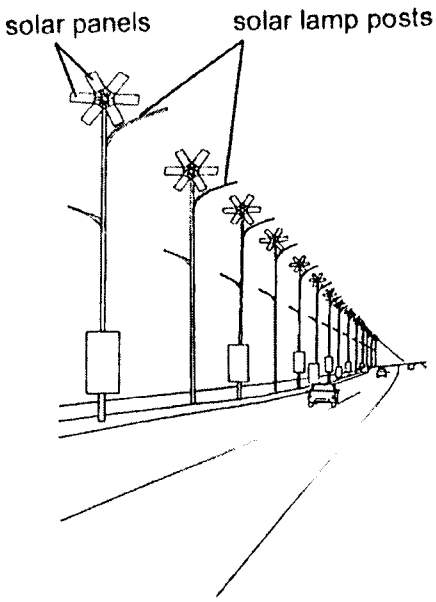
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SCORE	4

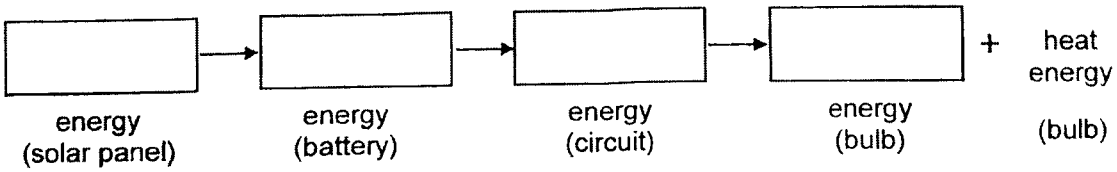
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37 Solar lamp posts can be commonly seen in City Y.



During the day, solar panels on the lamp posts help charge a battery, which then powers the lamp post at night.

(a) Fill in the boxes to show the energy conversion in the solar lamp post. [2]



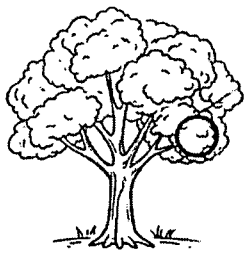
(b) A layer of dirt covered the solar panels. Explain using energy conversion how this affects the amount of energy generated. [1]

_____

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During the day, trees with green leaves undergo photosynthesis.





green leaves

(c) Based on their functions, state a similarity between a solar lamp post and a tree. [1]

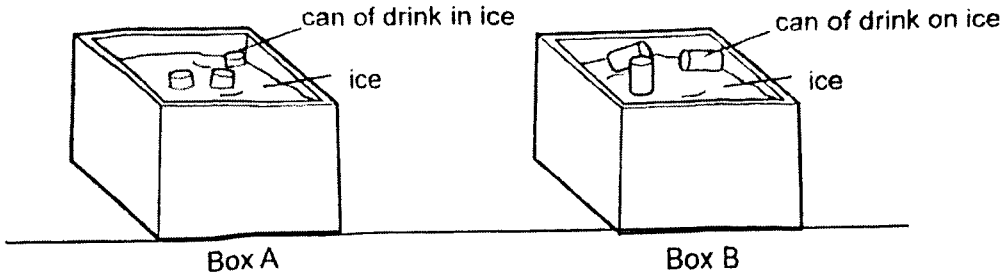
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SCORE	/ 4

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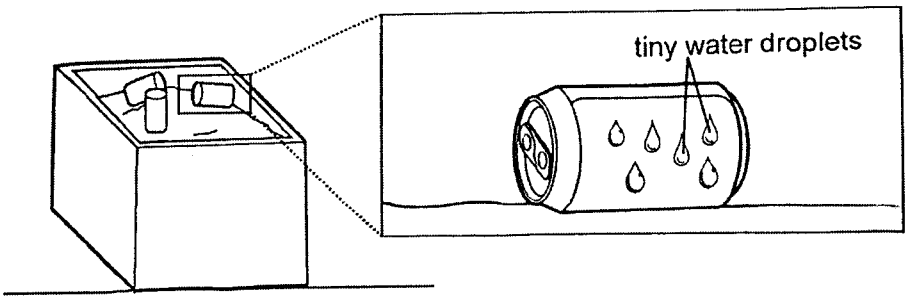
38 Mr Chong placed cans of drinks into two boxes shown below.



(a) Explain how the drinks are kept cold. [1]

(b) In which box will the drinks become cold faster? Explain your answer. [2]

Mr Chong observed that there were tiny water droplets on the can.

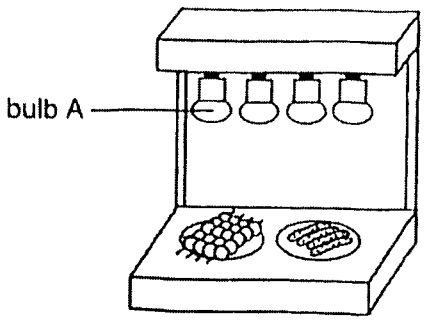


(c) Explain how the water droplets are formed. [1]

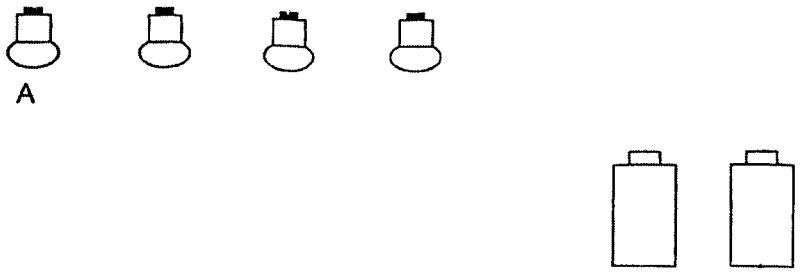
SCORE	4

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39 Mr Tan used four identical bulbs to heat up food. He observed that when a new bulb is added to the circuit each time, the brightness of bulb A became dimmer than before.



(a) Using the observation, **complete the circuit in the diagram below** to show how the bulbs were connected. [2]



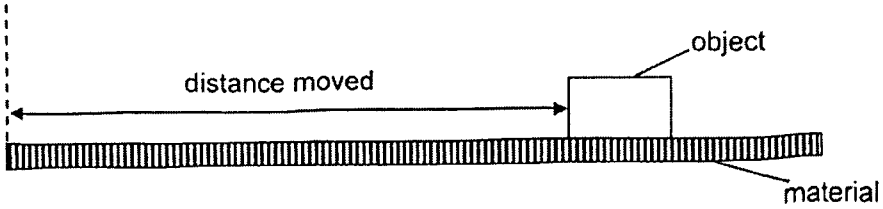
(b) Using the same materials, what can Mr Tan change in the set-up to ensure the bulbs produce the most amount of heat? Explain your answer. [2]

SCORE / 4

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40 **(a)** State what a force is. [1]

Jane conducted an experiment to study the distance moved by an object over different materials, A, B and C. For each material, she gave the object a push with the same amount of force.



The distances moved are recorded in the table.

Material	Distance moved by object (cm)
A	5
B	10
C	14

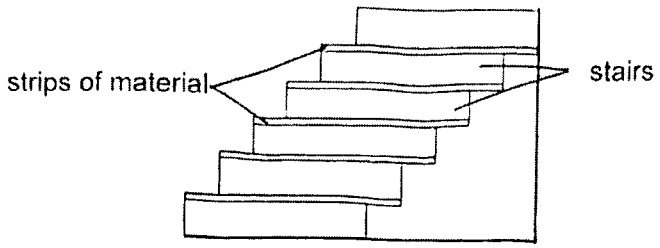
Jane wants to find a suitable material to cover the edge of each step to prevent falls.



(b) Which material, A, B or C, should she use? Explain your answer. [2]

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The diagram below shows a flight of stairs with strips of material pasted on the edge of each step.



(c) Jane found that it is more difficult to climb up the stairs than to go down. Explain why. [1]

_____

_____

END OF BOOKLET B

SCORE	4

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SCHOOL : Paya Lebar MGS
LEVEL : PRIMARY SCHOOL
SUBJECT : PRIMARY 6
TERM : SCIENCE
PRELIM 2025

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

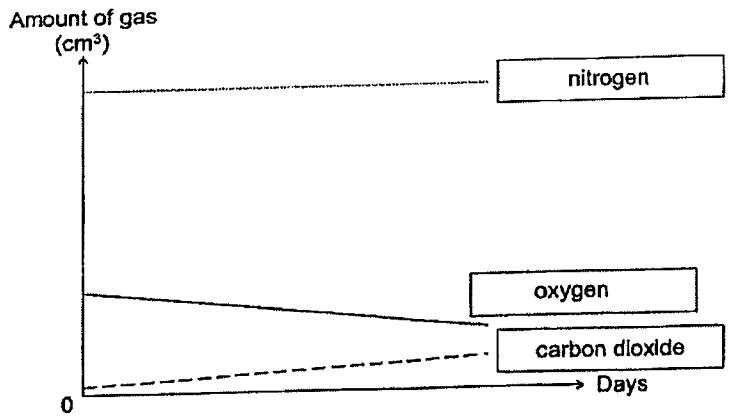
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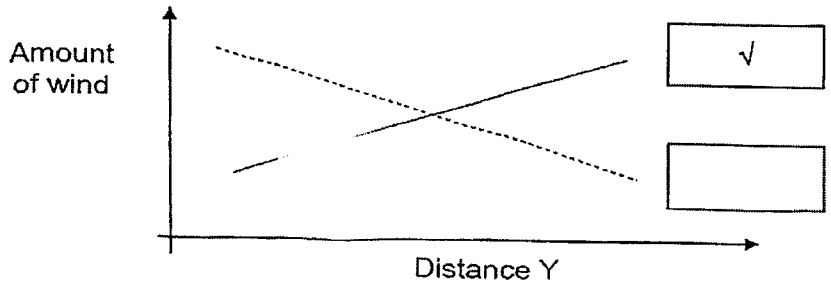
Class: 6 _____

PAYA LEBAR METHODIST GIRLS' SCHOOL (PRIMARY)
PRIMARY 6 SCIENCE 2025
PRELIMINARY EXAM BOOKLET B CORRECTIONS

Total: 44 marks

29a	Large intestine Absorbs water from undigested food
29b	There was a greater surface area of food exposed to chemical M in set-up A. More food digested by chemical M at a faster rate.
30a	It will hide inside the hard shell to protect itself from predators.
30b	Organism ~~A~~ A can move to other places for food by attaching itself to organism ~~X~~ H Organism ~~H~~ A can help to fend off predators of organism ~~X~~ H with its sting.
31a	

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31b	Air enters his nose when he breathes in. Air enters his windpipe (into the air tubes) and oxygen enters the air sacs in his lungs.
31c	Any below: • Both have larger surface area for greater absorption of oxygen into blood. • Both have more blood vessels surrounding them for efficient gaseous exchange.
32a	
32b	Any one below: • Same type of seed has the same mass. OR • Same type of seed has the same (physical) characteristics. (e.g. wingspan)
32c	***Pod-like structure (By splitting)*** Any one below: • Seeds can be dispersed by itself. • Seeds do not need external factor for dispersal. • Does not need water, wind or other living things to disperse the seeds. • Does not rely on other mechanisms for dispersal. ***Wing-like structure (By wind)*** • Seeds are dispersed further away from the parent plant Any one below: • to prevent overcrowding • Reduce competition for either one of the following: light, space, water and minerals

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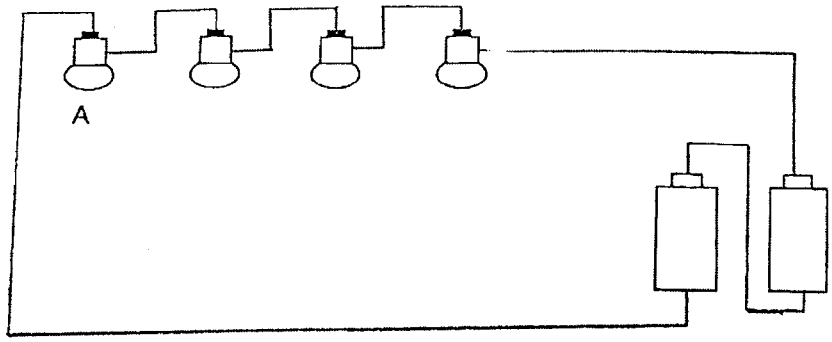
33a	20 °C
33b	Any one below: • Decomposition • Respiration • Burning of fuels / Combustion
33c	Plant K will take in carbon dioxide to photosynthesis and give out oxygen. This decreases the amount of carbon dioxide in the seawater so C can grow well.
34a	S → Q S → P → R
34b	The population of R will decrease. R has less food. / R has less P to feed on.
34c	The remains of P's body, act as mineral salts /nutrients for organism S, helping its young plant to ~~germinate/~~ grow.
35a	Any one below: • Ability to float or sink (on water) • Strength /strong
35b	The solar panels reduce the exposed surface area (of the water) in the reservoir which decreases the rate of evaporation of water and slows down decrease in water level.

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<table>
<tr><td>36a</td><td>Flexible / Flexibility</td></tr>
<tr><td>36bi</td><td>
<table>
<tr><td></td><td>20 cm³</td></tr>
<tr><td></td><td>80 cm³</td></tr>
<tr><td></td><td>100 cm³</td></tr>
<tr><td>✓</td><td>Not possible to tell</td></tr>
</table>
</td></tr>
<tr><td>36bii</td><td>The towel is water absorbent / not waterproof /absorbs water from the beaker.</td></tr>
<tr><td>36c</td><td>A solid

Any one below:
• The shape of the towel remains unchanged/ fixed unless a force is applied.
• The towel has a definite/fixed shape.</td></tr>
<tr><td>37a</td><td>light energy (solar panel) → potential energy (battery) → electrical energy (circuit) → light energy (bulb in lamp)</td></tr>
<tr><td>37b</td><td>The layer of dirt causes less light to reach the solar panel. Less light energy (of the solar panel) will be converted to less potential energy (to be stored in the battery) which is converted to less electrical energy generated in the circuit.</td></tr>
<tr><td>37c</td><td>Energy Conversion
Any one below:
• Both take in/use/trap light energy from the Sun in the day. OR
• Both convert light energy (from the Sun) to potential energy (in battery and in leaf).
• Both convert the potential energy (stored in battery and in leaf) into other forms of energy at night.</td></tr>
</table>

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	Energy Storage Any one below: potential Both chemical ~~(potential)~~ energy to be used later (life processes and light up lamp at night).
38a	Any one below: • (Warmer) Can drinks lost heat to the ice. • Heat transfer from the can drinks to the ice, keeping the drinks cold.
38b	C: Box A E: The cans in Box A have a greater surface area exposed to ice than the cans in Box B. R: More heat is lost / Heat is lost faster from the can drinks to the ice.
38c	(Warmer) Water vapour from the surrounding air touches/ comes into contact with the cooler outerside of the can, loses heat and condenses to form tiny water droplets.
39a	

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39b	Change the bulbs arrangement to parallel. The brightness of the bulbs will be the greater therefore the amount of heat generated will be greater.
40a	A force is a push or pull.
40b	C: Material A E: The distance moved by the object is the shortest. R: The amount of frictional force between the object and material is the greatest.
40c	Any one below: • She is going against the direction of the gravitational force. • Some of Jane's kinetic energy is converted to (gravitational) potential energy.

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