CATHOLIC HIGH SCHOOL

END-OF-YEAR EXAMINATION (2024)

PRIMARY FIVE

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 5 - _____

Date: 24 October 2024

28 questions

56 marks

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

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

This booklet consists of 18 printed pages, excluding the cover page.

Booklet A (28 × 2 marks)

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet. (56 marks)

1 The table shows the characteristics of four things, A, B, C and D.
A tick (✓) indicates the presence of the characteristic.

Thing	Needs air, food and water	Can make its own food	Can respond to changes	Has four legs
A	✓		✓	✓
B				✓
C	✓		✓	
D	✓	✓		

Which of the following correctly represents A, B, C and D?

	A	B	C	D
(1)	fly	rose plant	chair	zebra
(2)	zebra	chair	rose plant	fly
(3)	chair	fly	zebra	rose plant
(4)	zebra	chair	fly	rose plant

2 Dan made the following statements about an organism.

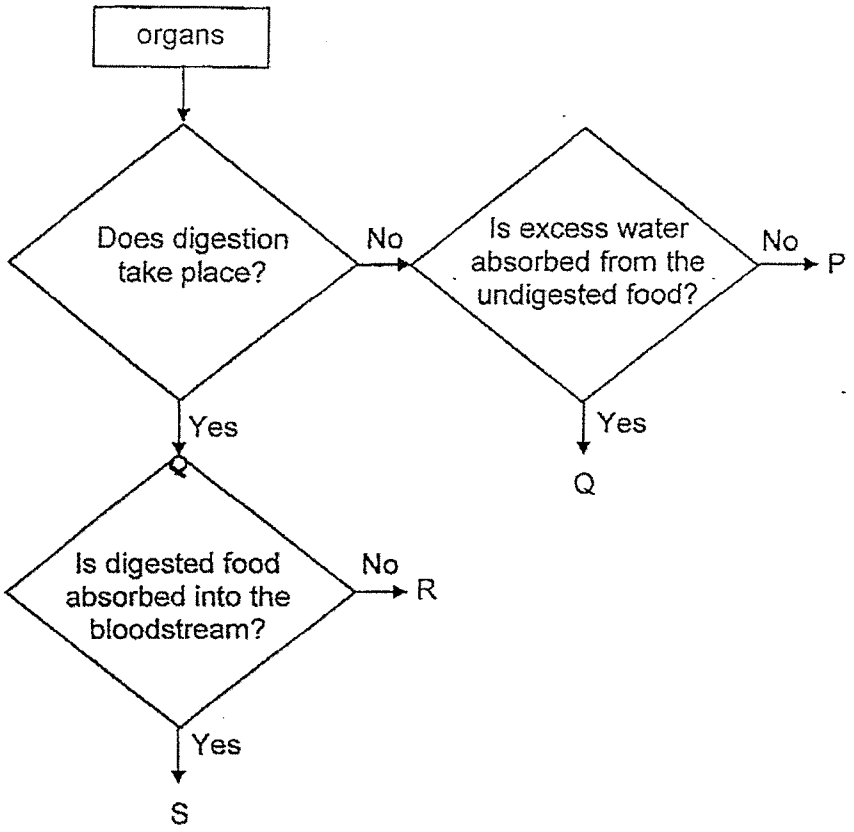
- It cannot make its own food.
- It cannot move from place to place.
- It produces spores for reproduction.
- It helps to break down dead organisms into simpler substances.

Which organisms are Dan describing?

A bacteria
B mushroom
C bread mould
D bird's nest fern

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

3 Study the diagram.



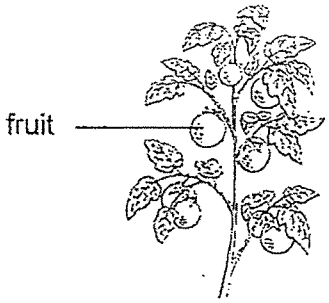
Which of the following best represents P, Q, R and S?

	P	Q	R	S
(1)	gullet	large intestine	mouth	small intestine
(2)	mouth	small intestine	gullet	stomach
(3)	mouth	small intestine	stomach	large intestine
(4)	stomach	large intestine	mouth	small intestine

4 Which plant part is matched correctly to its function?

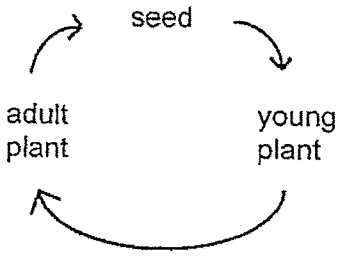
	Plant part	Function
(1)	seed	to grow into a fruit
(2)	leaf	to grow towards sunlight
(3)	root	to hold the plant firmly to the ground
(4)	stem	to take in water and mineral salts from the soil

5 The diagram shows a plant.

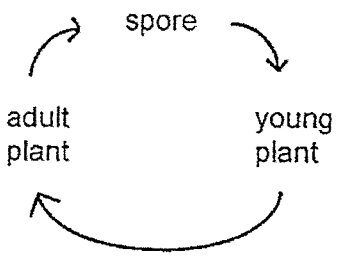


Which of the following correctly shows the stages in the life cycle of a plant?

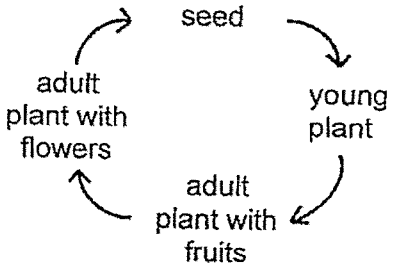
(1)



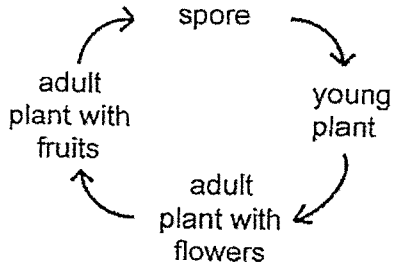
(2)



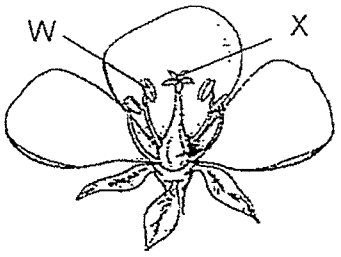
(3)

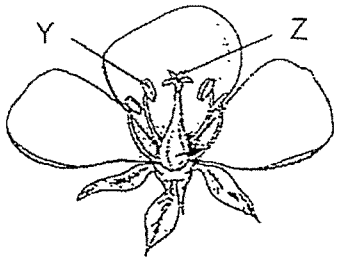


(4)



6 The diagram shows two flowers of the same kind.





Pollination takes place when pollen grains are transferred from _____.

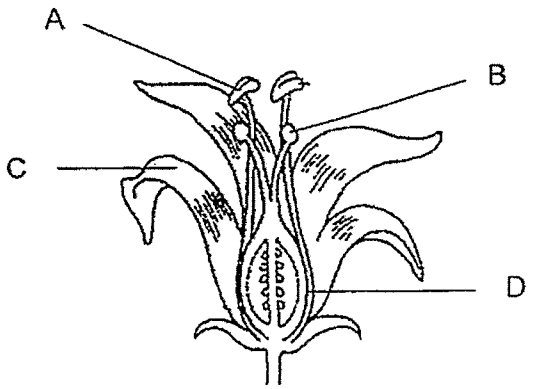
(1) W to Y and W to X

(2) W to Z and Y to Z

(3) X to Y and X to W

(4) X to Z and Y to X

7 Junjie removed two parts from a flower as shown before pollinating it. After some time, the flower developed into a fruit.



Which two parts of the flower did Junjie remove at the start?

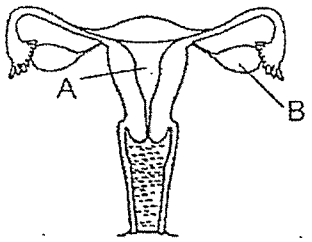
(1) A and B

(2) A and C

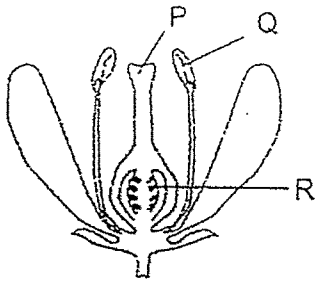
(3) B and D

(4) C and D

8 Study the diagrams.



human reproductive system



plant reproductive system

Which statement is correct?

(1) Parts A and Q allow the egg to develop.
(2) Parts B and Q contain male reproductive cells.
(3) Parts B and R contain female reproductive cells.
(4) Parts A and P are where fertilisation takes place.

9 The table shows some physical traits of the Chen family.

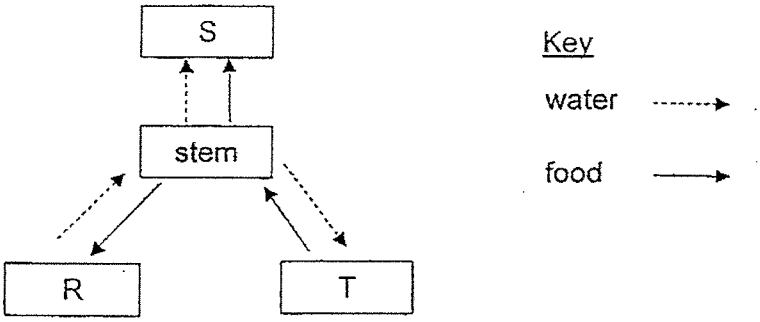
	Has dimples	Type of earlobes	Length of hair
Mr Chen	no	attached	short
Mrs Chen	yes	detached	long
Ben	yes	detached	short
Jenny	no	attached	long
Karl	no	detached	short

Based on the information, which statement(s) is/are correct?

A Ben and Karl are twins.
B Ben inherited more than two traits from Mrs Chen.
C Karl is the only child who inherited Mr Chen's traits.
D Jenny did not inherit any of the traits from Mrs Chen.

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

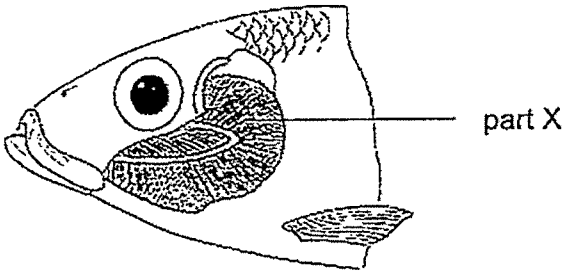
10 The diagram shows how water and food are transported in a plant.



Which of the following correctly shows the parts of the plant?

	R	S	T
(1)	roots	flowers	leaves
(2)	roots	leaves	flowers
(3)	flowers	leaves	roots
(4)	flowers	roots	leaves

11 The following diagram shows the respiratory system of a fish.



Which statement is correct about part X?

(1) It allows water to be taken in.

(2) It releases oxygen into the water.

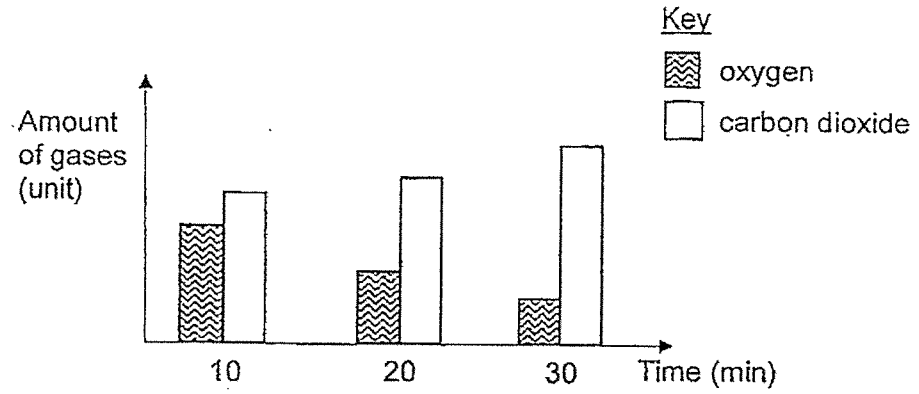
(3) It absorbs water containing carbon dioxide.

(4) It has a rich supply of blood vessels for gaseous exchange.

12 Some people were trapped in a lift for thirty minutes. No fresh air entered the lift.

Which graph shows the correct change in the amount of gases at different time intervals?

(1)



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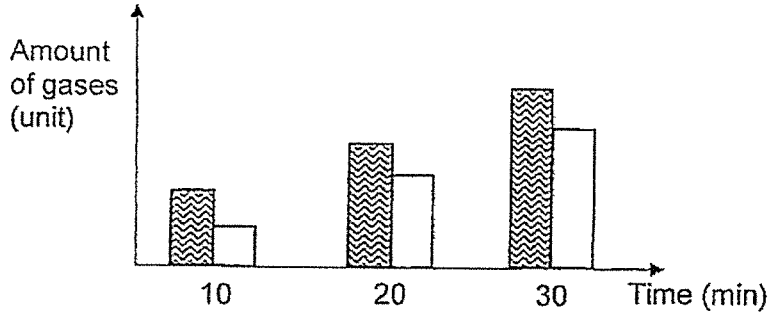

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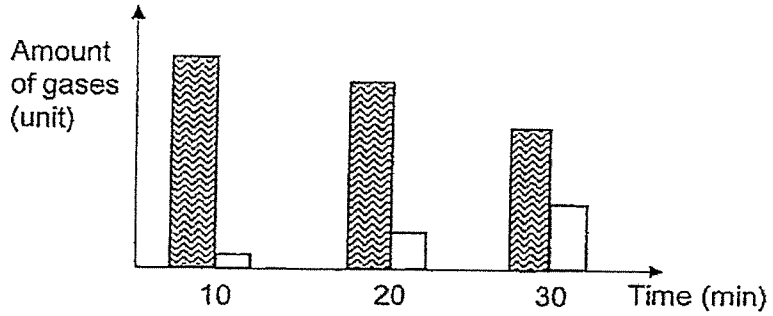
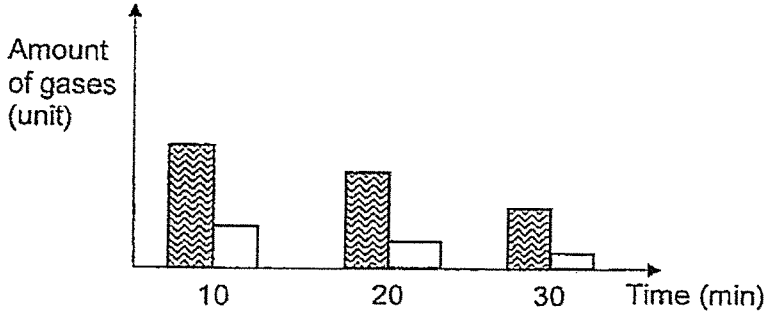


(4)



13 Which of the following correctly shows the basic unit of life for a dog and a sunflower plant?

	Dog	Sunflower plant
(1)	egg	seed
(2)	cell	cell
(3)	nucleus	nucleus
(4)	puppy	flower

14 The table shows the characteristics of three cells, X, Y and Z.
A tick (✓) indicates the presence of the characteristic.

Parts of the cell	Cell X	Cell Y	Cell Z
cell wall	✓		✓
nucleus	✓	✓	✓
chloroplast			✓
cell membrane	✓	✓	✓

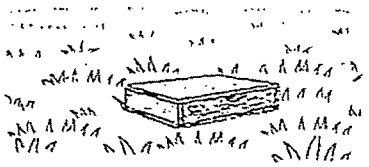
Which of the following correctly identifies cells X, Y and Z?

	Cell X	Cell Y	Cell Z
(1)	cheek cell	root cell	leaf cell
(2)	leaf cell	cheek cell	root cell
(3)	root cell	leaf cell	cheek cell
(4)	root cell	cheek cell	leaf cell

15 The main source of energy that is passed on from one living thing to another comes from the _____.

(1) Sun
(2) nutrients
(3) chlorophyll
(4) carbon dioxide

16 Navi placed a wooden cover on a field as shown. After a month, she noticed that the grass patch under the cover turned yellow.



The grass patch turned yellow because there was not enough _____ for the grass.

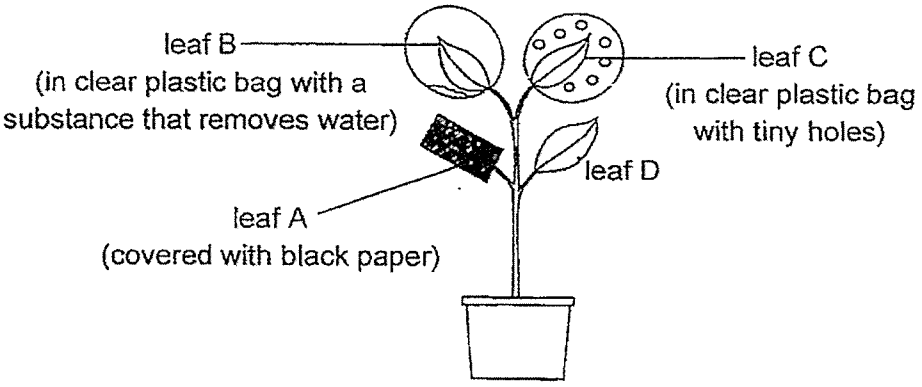
(1) water

(2) oxygen

(3) sunlight

(4) carbon dioxide

17 Study the set-up as shown. The potted plant is watered daily and placed under bright light for several hours.



Which leaves will be able to produce oxygen?

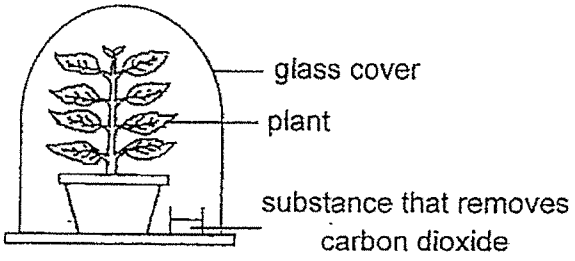
(1) A and B only

(2) C and D only

(3) A, B and C only

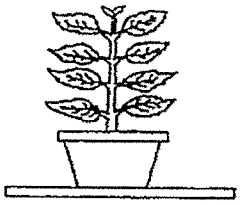
(4) B, C and D only

18 Salehah carried out an experiment to find out if carbon dioxide is needed for photosynthesis. She used the set-up as shown.

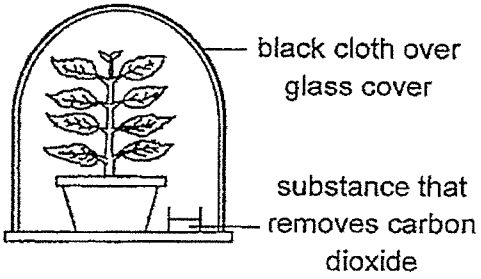


Which of the following should Salehah use as a control for her experiment?

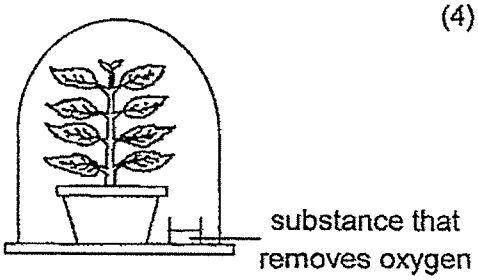
(1)



(2)



(3)



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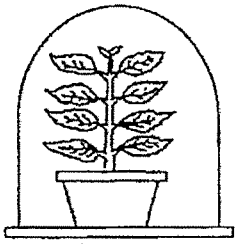
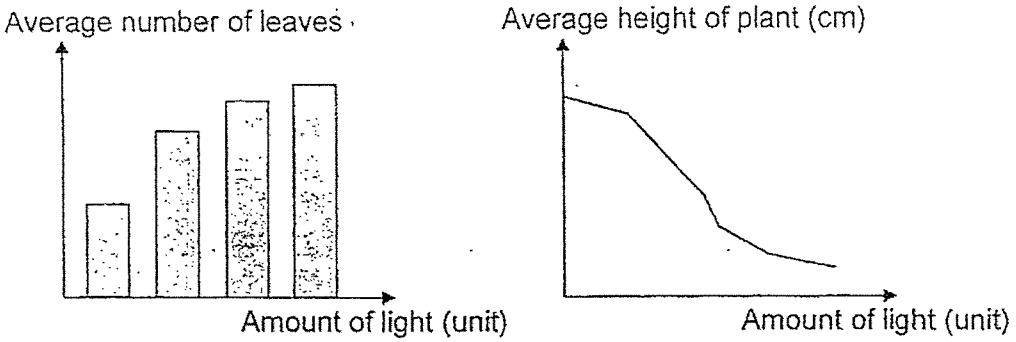
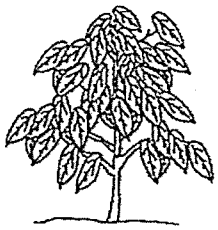


19 Tricia studied the effect of light on plant S. Her observations are as shown.

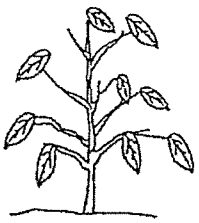


Which of the following would Tricia most likely observe when plant S was grown under different amounts of light?

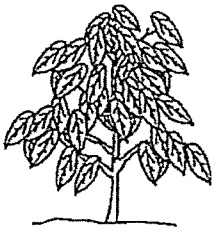
(1)

Low amount of light	High amount of light
	

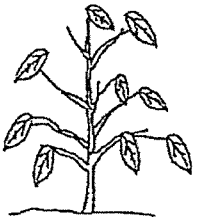
(2)

Low amount of light	High amount of light
	

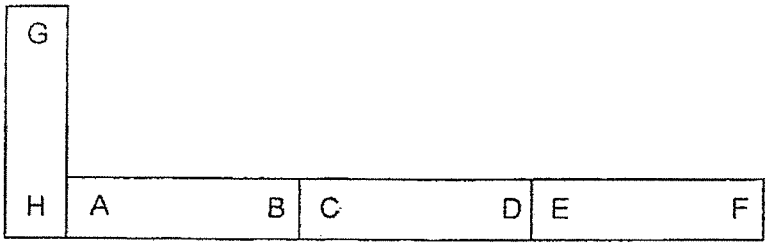
(3)

Low amount of light	High amount of light
	

(4)

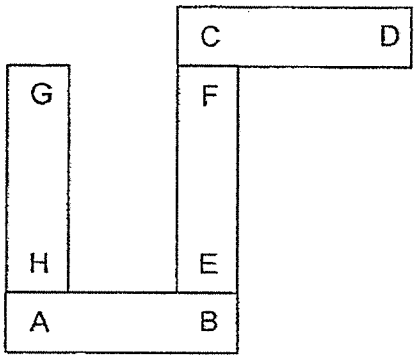
Low amount of light	High amount of light
	

20 Four magnets are arranged as shown.

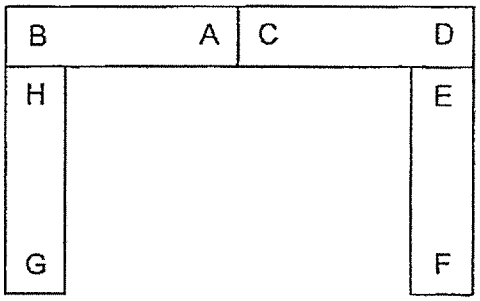


Which arrangement is possible?

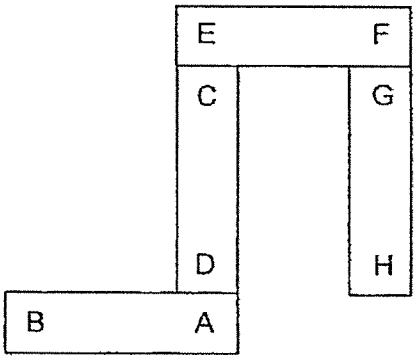
(1)



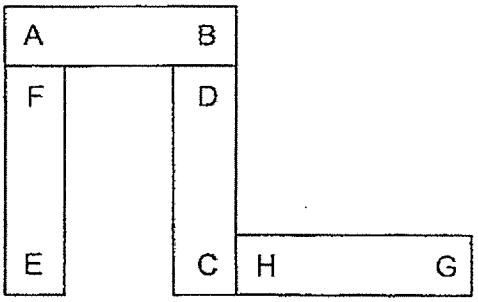
(2)



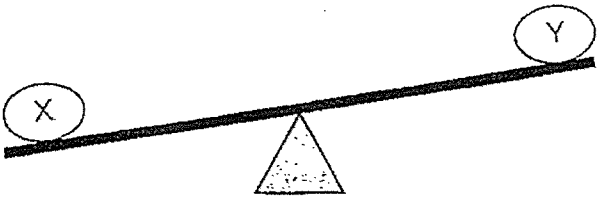
(3)



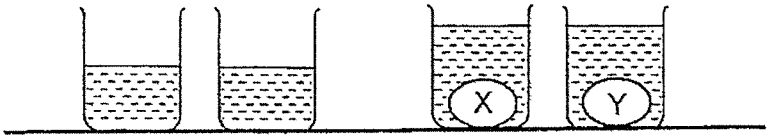
(4)



21 Aisha used the following set-ups to find out more about objects X and Y. First, she placed both objects on the balance.



She then placed both objects into two similar beakers containing 150 ml of water as shown.



Based on the observations, what could Aisha conclude about objects X and Y?

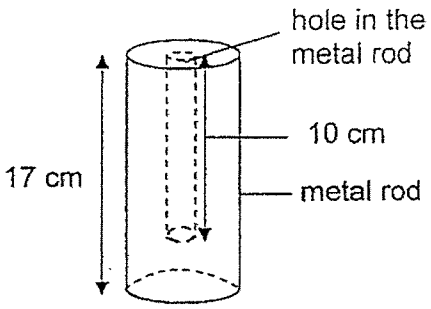
(1) Objects X and Y are not matter.

(2) Objects X and Y have similar mass.

(3) Objects X and Y have similar volumes.

(4) Object X have a smaller mass than object Y.

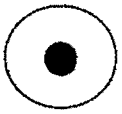
22 Raju drilled a 10-cm hole into a 17-cm metal rod.



Which shadows can be cast by the metal rod?

A 

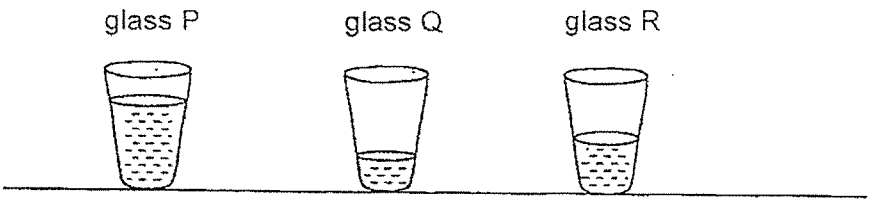
B 

C 

D 

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

23 Three similar glasses containing different amounts of hot tea at 70 °C were placed on a table.



Which statement(s) is/are correct?

A The hot tea in glass P had the most amount of heat energy.
B The hot tea in the three glasses had the same amount of heat energy.
C The hot tea in the three glasses would lose heat to the cooler surrounding air.

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

24 The table shows the melting and boiling points of substances L, M and N.

Substance	Melting point (°C)	Boiling point (°C)
L	44	79
M	27	62
N	56	85

At which temperature will the three substances be in the same state?

(1) 33 °C
(2) 60 °C
(3) 72 °C
(4) 80 °C

25 Xinyi used four set-ups, W, X, Y and Z, to find out how temperature affects the rate of evaporation of water.

Conditions at the start of experiment	W	X	Y	Z
volume of water (ml)	200	200	200	200
temperature of water (°C)	50	70	50	70
temperature of surrounding (°C)	26	21	26	26
speed of fan (unit)	2	2	3	3

Which two set-ups should Xinyi use to ensure a fair test?

(1) W and X

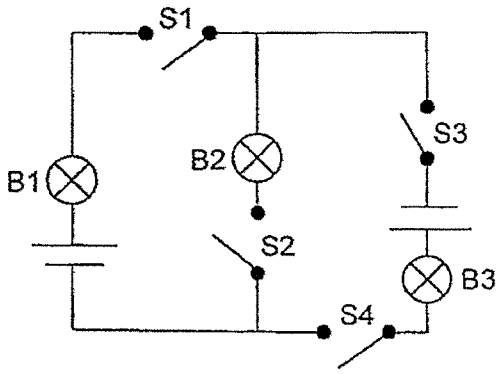
(2) W and Z

(3) X and Y

(4) Y and Z

26 Tom set up a circuit as shown. All the batteries and the bulbs were in working condition.

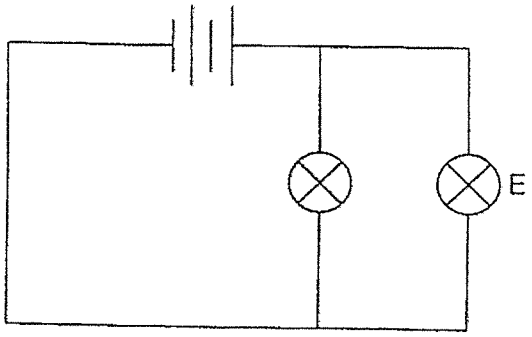
He closed some switches.



What is the minimum and maximum number of switches that should be closed so that only two bulbs will light up at the same time?

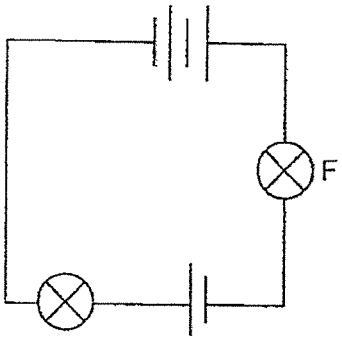
	Minimum	Maximum
(1)	one	three
(2)	two	four
(3)	two	three
(4)	three	four

27 A circuit is set up using identical batteries and bulbs in working condition.

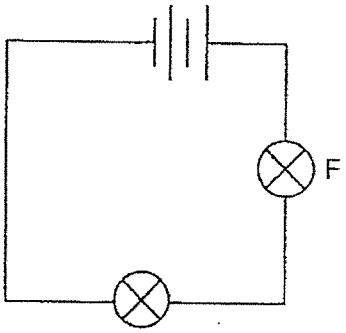


In which circuit will bulb F have the same brightness as bulb E?

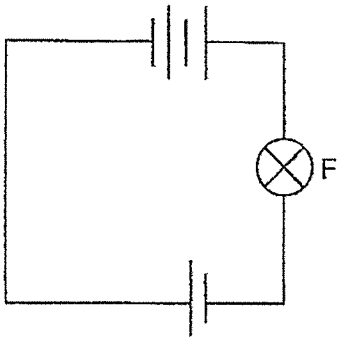
(1)



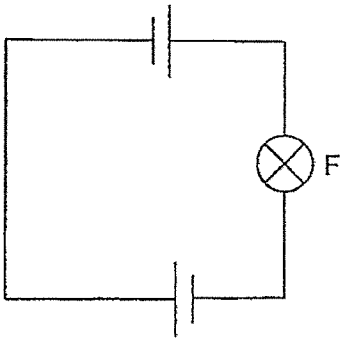
(2)



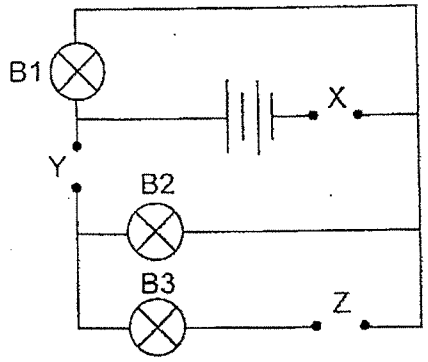
(3)



(4)



28 De Hong placed three rods, A, B and C, made of different materials, at positions, X, Y and Z, as shown in the circuit. All the batteries and the bulbs were in working condition.



The results are as shown.

Position	X	Y	Z
Rod	A	B	C
Bulb	B1	B2	B3
Did the bulb light up?	yes	yes	no

He repeated the investigation by placing the rods at different positions as shown.

Position	X	Y	Z
Rod	B	C	A

Which of the following correctly shows what De Hong would observe?

	B1	**B2**	**B3**
(1)	lit	unlit	unlit
(2)	lit	lit	unlit
(3)	unlit	lit	unlit
(4)	unlit	lit	lit

End of Booklet A

CATHOLIC HIGH SCHOOL

END-OF-YEAR EXAMINATION (2024)

PRIMARY FIVE

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 5 - _____

Date: 24 October 2024

Parent's Signature: _____

Booklet A	56
Booklet B	44
Total	100

12 questions

44 marks

Total Time for Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

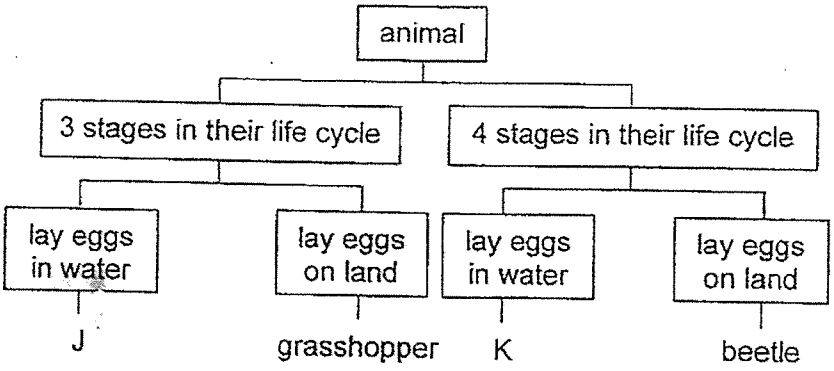
Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

This booklet consists of 15 printed pages, excluding the cover page.

Booklet 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.
(44 marks)

29 Study the diagram.



(a) Based on the diagram, state one similarity and one difference between animals J and K. [2]

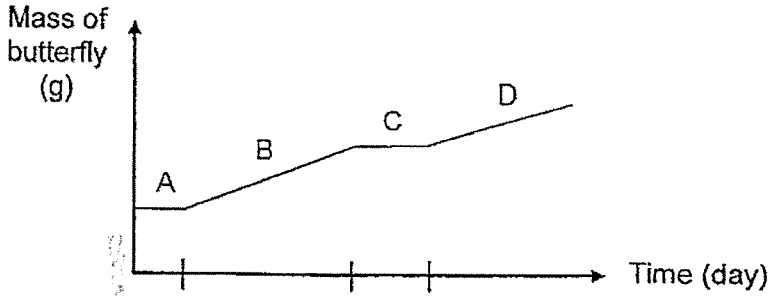
(i) Similarity: _____

_____

(ii) Difference: _____

_____

The graph shows the mass of a butterfly at different stages of its life cycle.



(b) Name stage C of the life cycle of the butterfly. Give a reason why there is no gain in mass during stage C. [1]

_____

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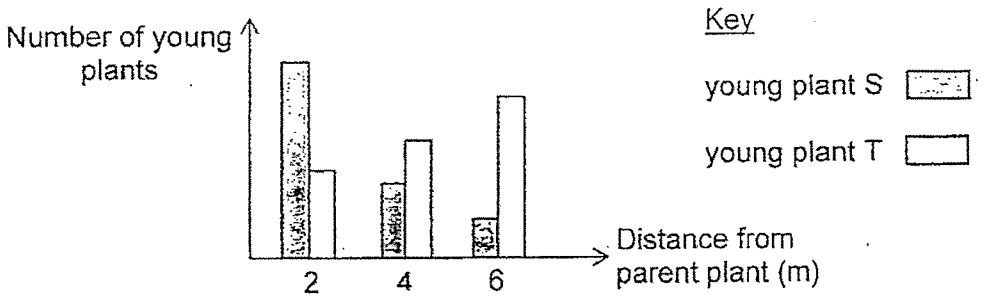
SCORE	3

30 Siti counted the number of two different types of young plants, S and T, at various distances from their parent plants. The results are as shown.



(a) State the relationship between the distance from the parent plant and the number of young plants for plant T. [1]

_____

_____

(b) Which of the following is most likely to be the fruit of plant T? Choose your answer and put a tick (✓) in the appropriate box. [1]

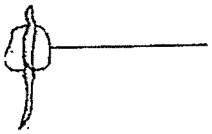
☐ ☐

(c) Describe the method of dispersal in (b). [1]

_____

_____

(d) The seed started growing into a young plant after dispersal.



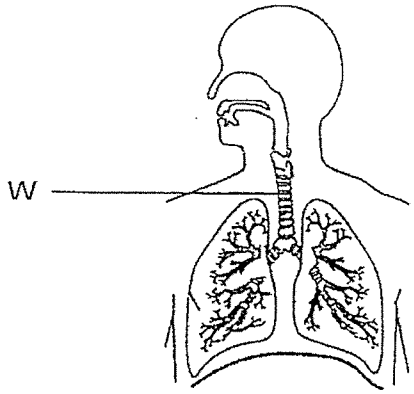
State all the conditions needed for the above process to take place. [1]

_____

(Go on to the next page)

SCORE	/ 4

31 The diagram shows one of the human body systems.

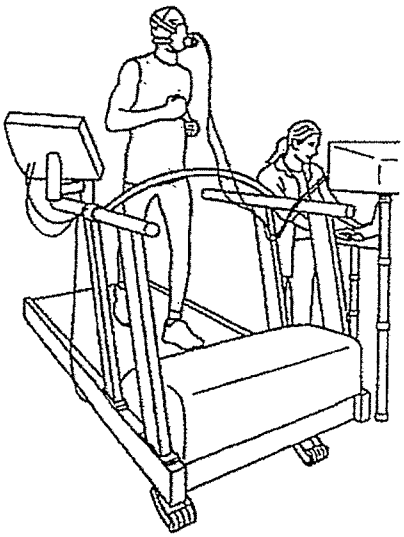


(a) Identify the system and name part W. [1]

System: _____

Part W: _____

Joe is an athlete who uses a machine to track the amount of oxygen his body uses.



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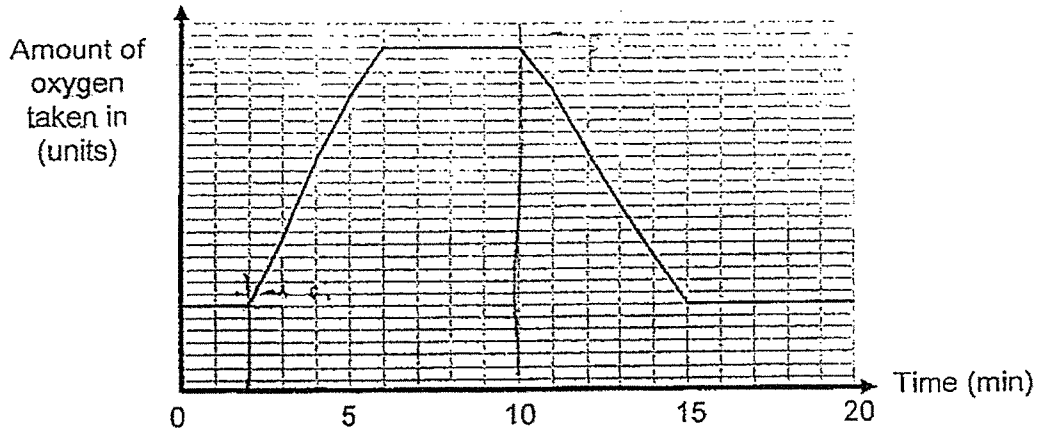
SCORE	/ 1

Continue from Question 31

The graph shows the amount of oxygen Joe takes in over a period of 20 minutes.



(b) At which minute does Joe stop exercising? [1]

_____

(c) State what happens to the amount of oxygen taken in when he is exercising. Explain why. [2]

_____

_____

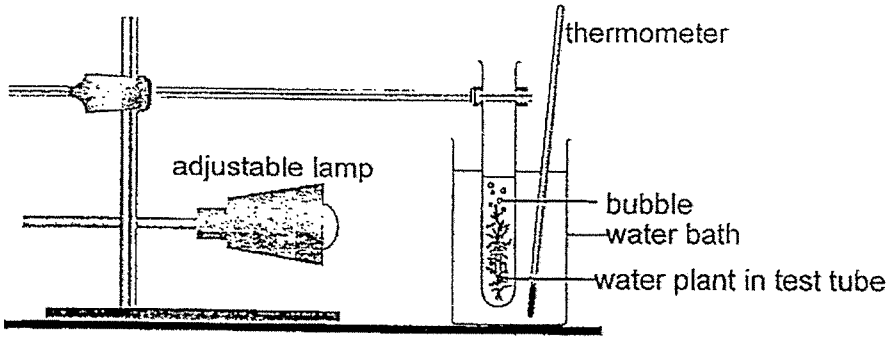
_____

(Go on to the next page)

SCORE	/ 3

32 (a) Describe the process of photosynthesis in green plants. [1]

Lin wanted to find out how temperature affects the number of bubbles produced by a water plant by using the set-up as shown.



When the temperature of the water was 10 °C, the water plant did not produce any bubbles. She increased the temperature of the water in the water bath to 20 °C and the water plant started to produce bubbles. The temperature was increased to 30 °C and 40 °C subsequently.

The results are as shown.

Temperature (°C)	Number of bubbles produced in a minute
10	0
20	8
30	22
40	19
50	9

(b) Based on Lin's results, state how temperature affected the rate of photosynthesis. [2]

(Go on to the next page)

SCORE 3

Continue from Question 32

Lin also wanted to find out if the amount of light affects the number of bubbles produced.

(c) Describe how Lin should carry out the experiment without changing any apparatus in the set-up. [2]

_____

_____

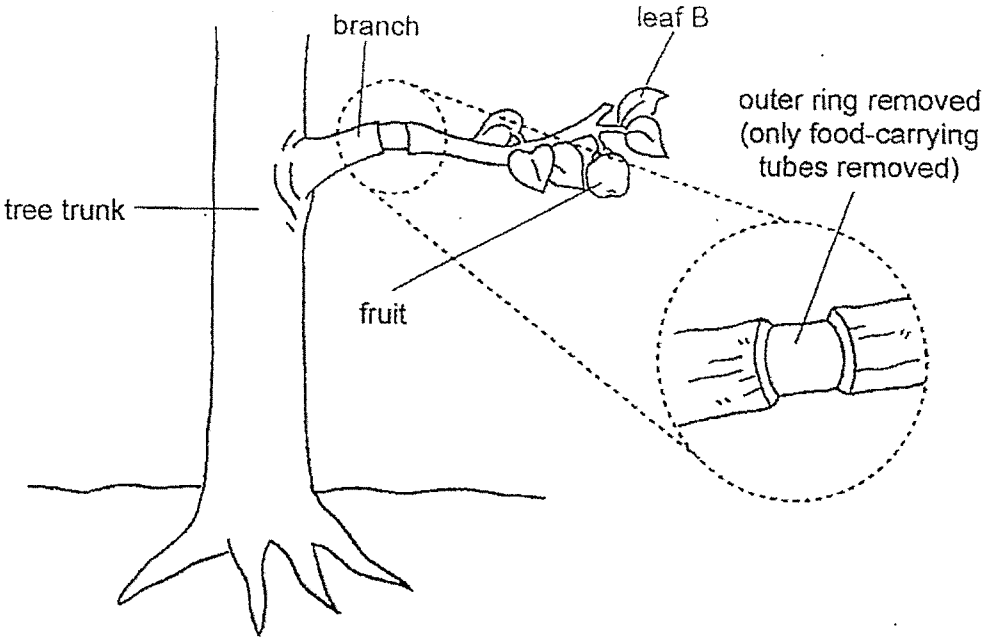
_____

_____

(Go on to the next page)

SCORE	2

33 Farmers often remove an outer ring from the branches with fruits on them. This method allows farmers to produce bigger fruits on these branches.



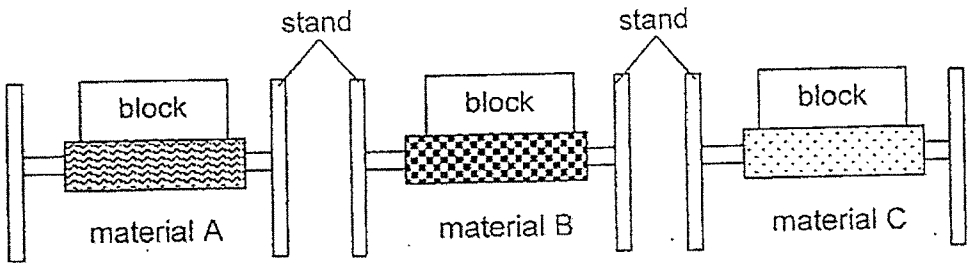
(a) Give a reason why leaf B can still survive. [1]

(b) Explain how this method helps to produce bigger fruits on the tree. [2]

(Go on to the next page)

SCORE 3

34 Ahmad conducted an experiment by putting similar blocks of different masses onto three materials, A, B and C.



He recorded the mass that each material could hold before it broke.

Material	Mass of blocks the material could hold before it broke (g)
A	1000
B	2300
C	500

(a) State the property that Ahmad was testing. [1]

_____

(b) Put a tick (✓) in the box(es) to indicate the changed variable. [1]

Variable	Changed
type of material	
mass of blocks	
thickness of material	

(c) Based on Ahmad's results, which material, A, B or C, is most suitable to make a table? Explain why. [1]

_____

_____

(Go on to the next page)

SCORE	3

35 Chitra wanted to make a magnet using the 'Stroke' method.

(a) Chitra knew that she needed a nail and a bar magnet. Name a suitable material for the nail. [1]

_____

(b) Describe how Chitra could magnetise the nail using the bar magnet. [2]

_____

_____

_____

After stroking the magnet on the nail, Chitra wanted to find out if it had really become a magnet.

She placed a magnet near the nail as shown. The nail was attracted to the magnet so she concluded that the nail had become a magnet.

(c) Her teacher told her that her conclusion might be wrong. Give a reason. [1]

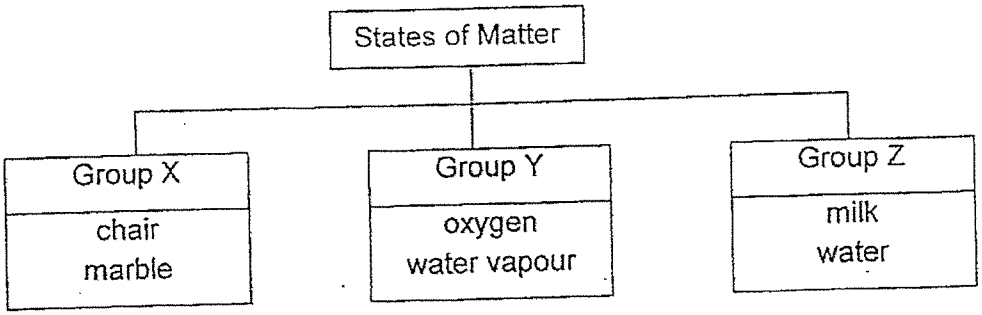
_____

_____

(Go on to the next page)

SCORE	4

36 Study the diagram.



(a) Give a suitable heading for groups Y and Z. [1]

Group Y: _____

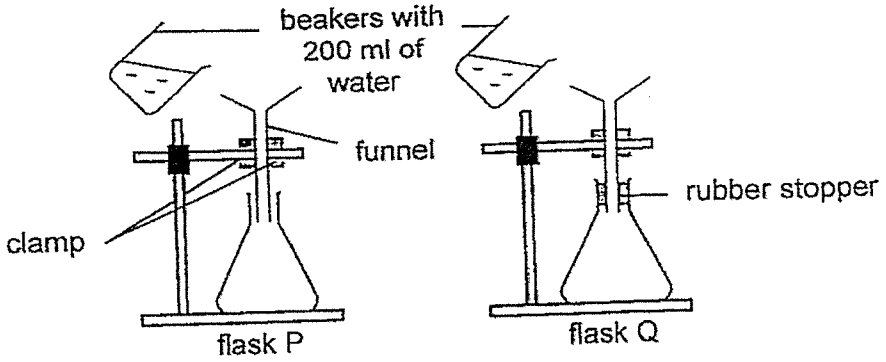
Group Z: _____

(b) State one difference in the property of matter in groups X and Y. [1]

_____

_____

Siva prepared two set-ups as shown. He poured 200 ml of water into each flask.



(c) Based on the diagram, which flask would collect lesser amount of water in three minutes? Explain why. [1]

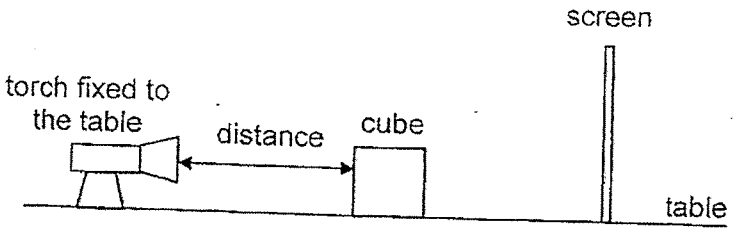
_____

_____

(Go on to the next page)

SCORE	/3

37 Study the diagram.



The results are as shown.

Distance between torch and cube (cm)	Length of shadow on the screen (cm)
10	21
15	16
20	11

(a) Based on the results, state the relationship for the distance between the torch and cube and the length of the shadow [1]

_____

_____

(b) State how using the same cube helps to make the experiment a fair test. [1]

_____

_____

(c) Without moving the screen, what can be done to make the shadow of the cube appear bigger? [1]

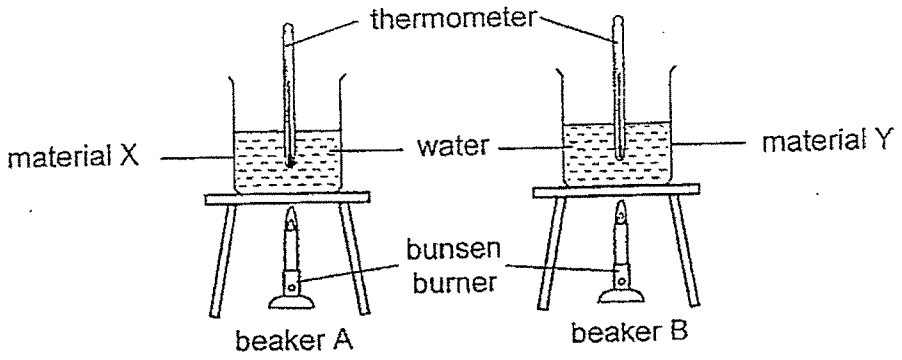
_____

_____

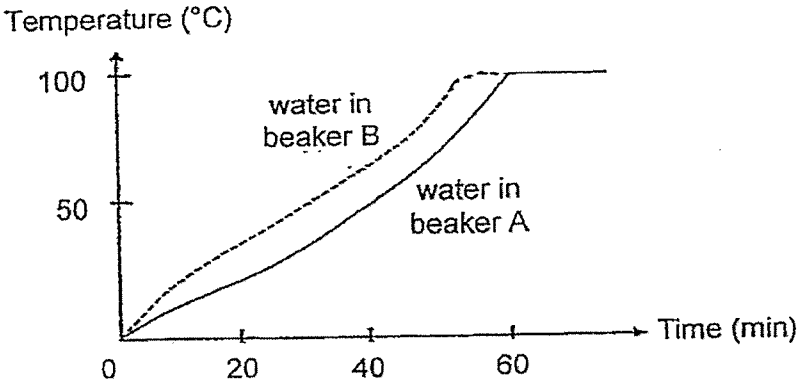
(Go on to the next page)

SCORE 3

38 Zonglin conducted an experiment using two beakers, A and B, made of different materials, X and Y. Both beakers were filled with 200 cm^3 of water at 0 °C and heated over two similar bunsen burners.



The temperature of water in beakers A and B were recorded every minute for some time. The results are as shown.



(a) Based on the results, which material, X or Y, can be used to make a pot to cook soup in a shorter time? Explain why. [2]

_____

_____

_____

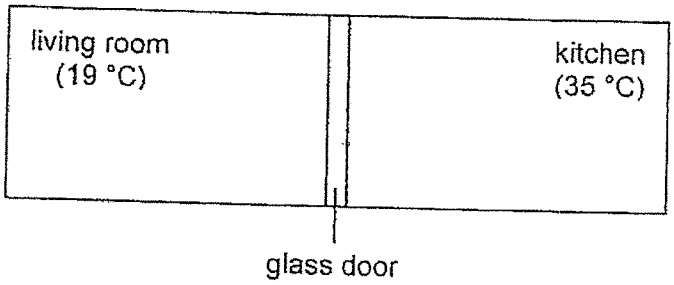
(b) State the temperature of the water in both beakers at the 65th minute. [1]

_____

(Go on to the next page)

SCORE	
	3

39 There is a glass door separating Huimin's kitchen and living room in the diagram. Huimin was in the living room with the air conditioner turned on at 19 °C while her mother was in the enclosed kitchen cooking dinner. The temperature in the kitchen was 35 °C and the glass door was completely closed.



(a) After 30 minutes, Huimin observed that there were water droplets on the glass door. In the diagram above, draw the water droplets on the correct side of the glass door. [1]

(b) Explain your answer in (a). [2]

_____

_____

_____

On another day, the temperature in the kitchen was 26 °C.

(c) It was observed that there were less water droplets formed on the glass door. Explain why. [1]

_____

_____

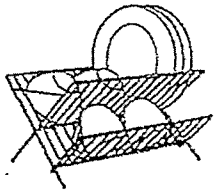
(Go on to the next page)

SCORE	/ 4

Continue from Question 39

After dinner, Huimin's mother washed the dishes and placed them in two different ways as shown.

plates in a stack



plates on a rack

(d) State which way, placed in a stack or on a rack, would the plates dry faster. Explain why. [1]

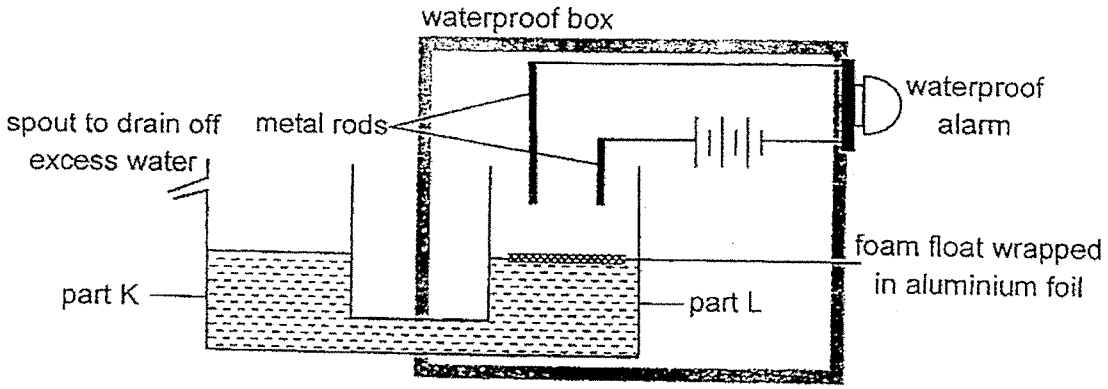
_____

_____

(Go on to the next page)

SCORE	/ 1

40 Si Ling studies the set-up of a simple flood warning device as shown.



When it rains, water is collected in part K. When there is a long heavy downpour, the alarm will sound to alert of a possible flooding.

(a) Describe and explain how a long heavy downpour will cause the alarm to sound.

[2]

(b) State a property of aluminium foil that allows the set-up to work properly.

[1]

(c) Suggest a reason why most of the circuit is placed inside the waterproof box.

[1]

End of Booklet B

SCORE	
	4

EXAM PAPER 2024

LEVEL : PRIMARY 5

SCHOOL : CATHOLIC HIGH SCHOOL

SUBJECT : SCIENCE

TERM : END OF YEAR EXAMINATION

BOOKLET A

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

BOOKLET B

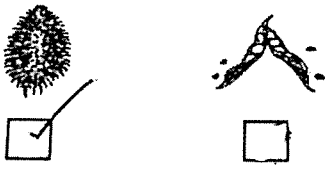
Q29. a) (i) Similarity: Both J and K lay eggs in water.

(ii) J has a three-stage life cycle but K has a four-stage life cycle.

b) C is the pupa stage. The pupa does not need to eat and will not grow.

Q30. a) The further the distance from the parent plant to young plant T, the higher the number of young plant T.

b)



c) The fruit has hair-like structures that allows it to cling onto the fur or hair of animals. As the animals travel away from the tree, the fruits start to fall off and are dispersed.

d) Water, warmth and oxygen.

Q31. a) System: Respiratory system
Part W: Windpipe

b) 10 minutes

c) As he exercises, he breathes at a faster rate to take in more oxygen, to produce more energy. The heart pumps faster to transport oxygen around the body.

Q32. a) It is the process by which carbon dioxide and water are taken in to produce oxygen and food, in the presence of sunlight and chlorophyll.

b) As the temperature increased from 10°C to 30°C, the rate of photosynthesis increases, because the number of bubbles produced per minute increased from 0 to 22. As the temperature increased from 30°C to 50°C, the rate of photosynthesis decreased, because the number of bubbles produced per minute decreased from 22 to 9

c) She should keep the temperature of the water at 30°C throughout the experiment. She can count the number of bubbles per minute, and then repeat the experiment with a higher light intensity.

Q33. a) The water carrying tubes were not removed so water could be transported from the roots to leaf B. Since it makes its own food, the leaf has food and water for it to survive.

b) Removing the outer ring removes the food carrying tubes, which prevents food made by the leaves from being transported to other parts of the tree except for the fruits. Hence, the fruits get more food and can grow bigger.

Q34. a) Strength of material

b) Type of material

c) B. It held the most mass before breaking, indicating that it is the strongest material among the three. A table needs to be strong enough to withstand a lot of mass, hence B is the most suitable material.

Q35. a) Iron

b) She can use a pole of the magnet to stroke the nail multiple times in one direction until it is magnetised.

c) She needed to test if the nail could repel the magnet, because only magnets can repel one another.

Q36. a) Group Y : Gas
Group Z : Liquid

b) Group X has a definitive volume, but Group Y has an indefinite volume.

c) Flask Q. The rubber stopper prevents air from escaping. Since air occupies space, the water cannot enter the flask until the air escapes.

Q37. a) The further the torch from the cube, the shorter the length of the shadow.

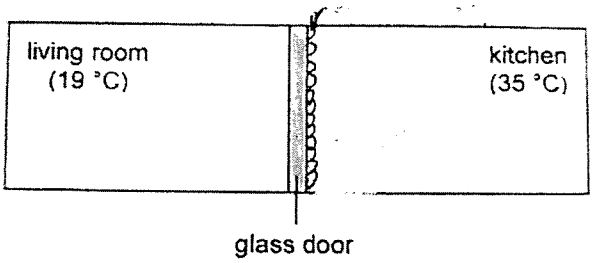
b) The distance between the torch and the cube is the only variable that is changed.

c) Move the cube towards the torch.

Q38. a) Material Y. The water in B reached 100°C earlier than the water in A, making it a better conductor of heat than material X. Material Y will gain heat at a faster rate from the fire and allow the soup to cook faster.

b) 100°C

Q39. a)



b) The water vapour in the kitchen will gain heat from the heat of the cooking. The glass door loses heat to the cooler air in the living room. The warm water vapour in the kitchen comes into contact with the cool surface of the glass door. It cools and condenses into water droplets. Hence water droplets formed on the kitchen side of the glass door.

c) Since the kitchen is cooler, the water vapour is cooler and the rate of condensation will decrease.

d) Plates on the rack. The plates have more exposed surface area for all of the water to gain heat and evaporate.

Q40. a) Water first enters into part K, it flows into part L and causes the water level to rise. The water level will continue to rise and eventually the foam float wrapped in aluminium foil will come into contact with the metal rods. This forms a closed circuit, where electricity can flow through the circuit and sound off the alarm.

b) It is a conductor of electricity.

c) The box protects the circuit from water and prevents it from short circuiting.

END