Anglo-Chinese School (Junior)

END-OF-YEAR EXAMINATION (2024)

PRIMARY 5
SCIENCE
(BOOKLET A)

24 October 2024

Name: _____( ) Class: 5.( )

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

INSTRUCTIONS TO CANDIDATES

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

This booklet consists of 22 printed pages.

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.

(56 marks)

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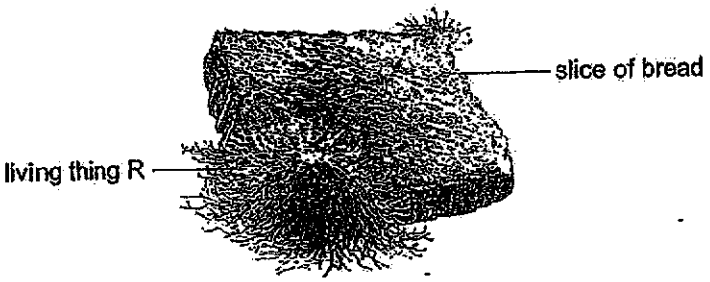
1 The diagram shows living **thing** R growing on a slice of bread.

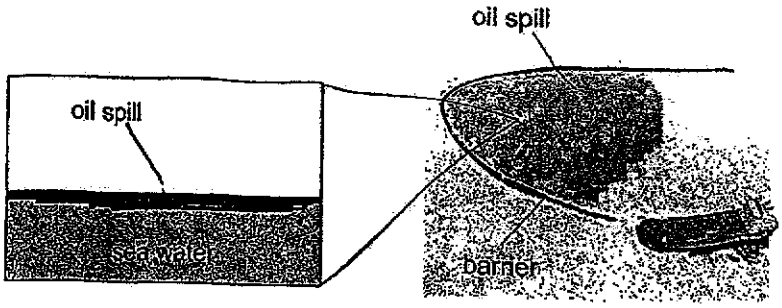


Which two of the following **living** things belong to the same group as R?

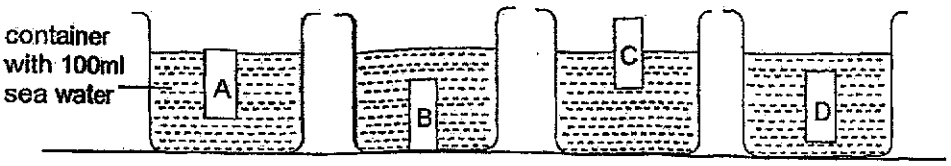
A Fern
B Yeast
C Bacteria
D Mushroom

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

2 A barrier is used to contain an oil spill at sea.



The diagram shows the results when four different materials of identical size were placed into similar containers with 100ml of sea water.



Which material, A, B, C or D is most suitable for making the barrier?

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

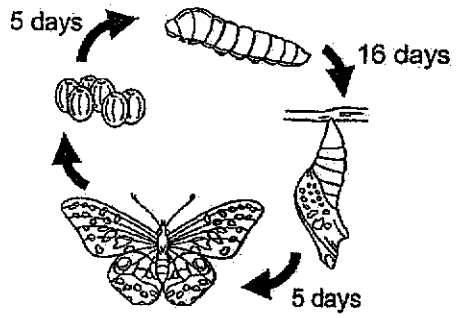
3 Farhan grew three identical seeds each on four trays inside a room.
The experimental conditions and results are as shown.

Tray	Soil	Presence of light	Appearance of seeds on Day 6
A	dry	yes	
B	wet	yes	
C	dry	no	
D	wet	no	

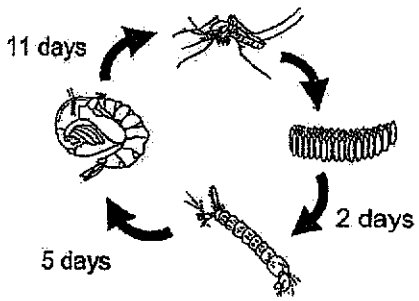
Based only on the results, what can Farhan conclude about the germination of the seeds?

(1) light is required
(2) water is required
(3) light, water and air are required
(4) air, water and warmth are required

4 The diagrams show the life cycle of organisms X and Y and the number of days they spend at some of their stages.



Organism X



Organism Y

Based on the information above only, which of the following statement(s) is/are true?

A The young of Y resembles its adult but the young of X does not.

B The young of Y feeds on leaves only but the young of X does not.

C The pupa of Y takes a longer time to develop into an adult than the pupa of X.

D The larva of Y takes a longer time to develop into an adult than the larva of X.

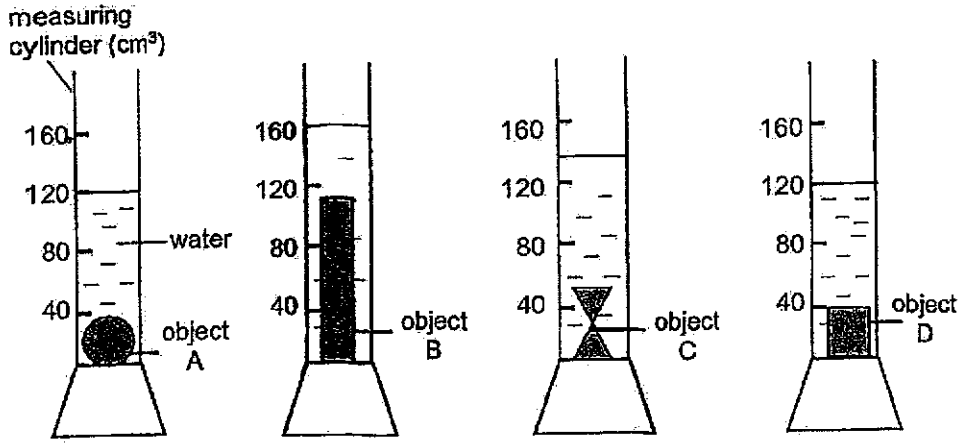
(1) C only

(2) D only

(3) A and C only

(4) B and D only

5 Shanti conducted an experiment by placing four different objects, A, B, C and D, gently into each of four measuring cylinders with 40cm^3 of water as shown.



Which of the following statements is correct?

(1) Object A has the smallest volume.

(2) Object B has a volume of 160 cm^3.

(3) Objects A and D have the same volume.

(4) Object C has smaller volume than object D.

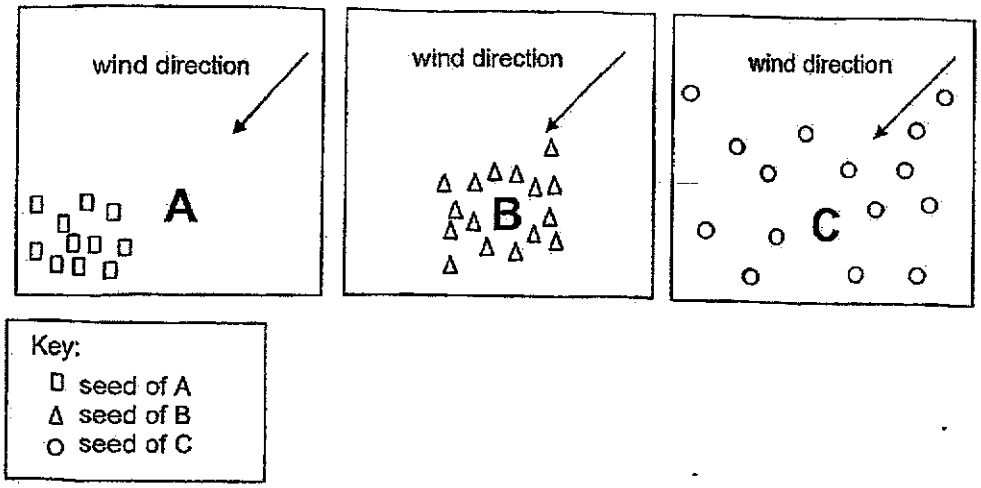
6 The table shows some parts of the human and plant reproductive systems that have similar functions.

Reproductive System	
Human	**Plant**
ovary	X
Y	pollen grain
Z	anther

Which of the following shows the correct representation of X, Y and Z?

	X	Y	Z
(1)	ovary	sperm	penis
(2)	ovule	sperm	testes
(3)	ovule	testes	penis
(4)	ovary	sperm	testes

7 The diagrams show the dispersal of seeds by parent plants A, B and C.

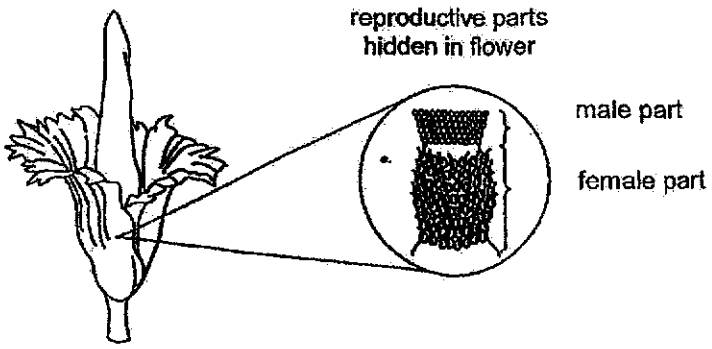


Key:
- seed of A
- seed of B
- seed of C

Which of the following characteristics do the fruits or seeds of plants A, B and C have?

	Plant A	Plant B	Plant C
	wing-like structure	fibrous husk	hooks
(2)	fibrous husk	hooks	pod
(3)	hooks	wing-like structure	fibrous husk
(4)	wing-like structure	pod	hooks

8 The diagram shows a flower of plant P. The reproductive parts are hidden in the flower.



flower of plant P

The flower gives off a sweet smell. A gardener observes that the female part of the flower opens first for two days and then dies, before the male part opens and dies.

How is plant P pollinated?

	method	within one flower or between two flowers
(1)	insect	one flower
(2)	wind	one flower
(3)	insect	two flowers
(4)	wind	two flowers

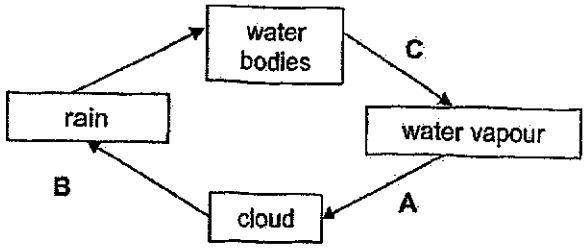
9 The table shows the freezing and boiling points of substance A.

Substance	Freezing point (°C)	Boiling point (°C)
A	17	290

Which of the following shows the correct states of substance A at 10°C and 230°C?

	State of substance A at	
	10°C	230°C
(1)	solid	gas
(2)	solid	liquid
(3)	liquid	gas
(4)	liquid	liquid

10 The diagram shows the water cycle.



Which of the following represent the processes of evaporation and condensation?

	Evaporation	Condensation
(1)	A	B
(2)	B	A
(3)	C	A
(4)	C	B

11 Which of the following does **not** help to conserve water?

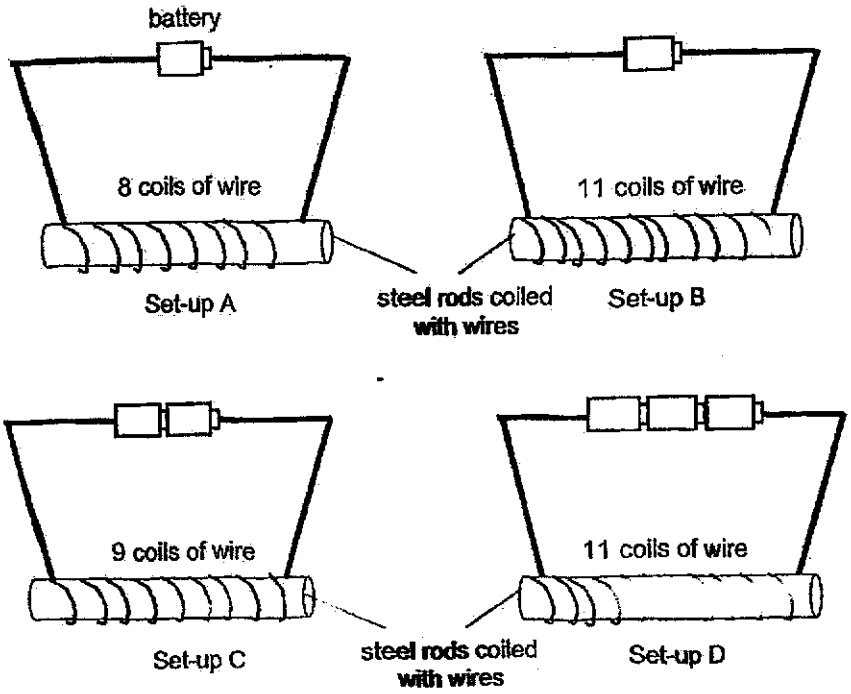
(1) Turn off the tap when soaping.

(2) Treat used water and make it drinkable water.

(3) Drink from bottled distilled water instead of tap water.

(4) Water the plants with water that has been used to wash rice.

12 Ella prepared set-ups, A, B, C and D, using identical steel rods, wires and batteries. She wanted to find out how the number of batteries affect the magnetic strength of the electromagnet.



Which two set-ups should she use to test her aim?

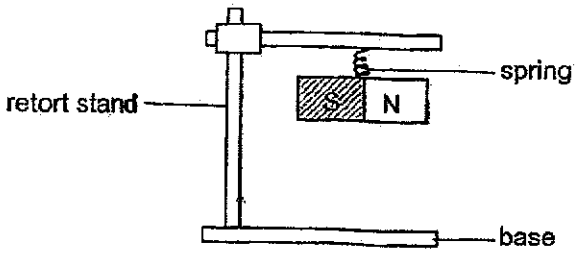
(1) A and B

(2) A and C

(3) B and D

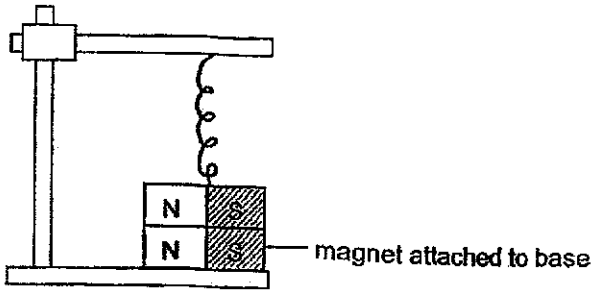
(4) C and D

13 The diagram shows a magnet hanging on a retort stand.

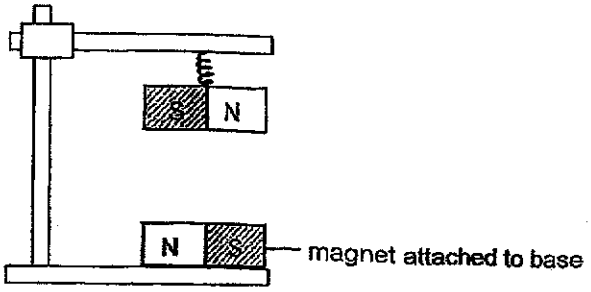


Which set-up shows the correct interaction?

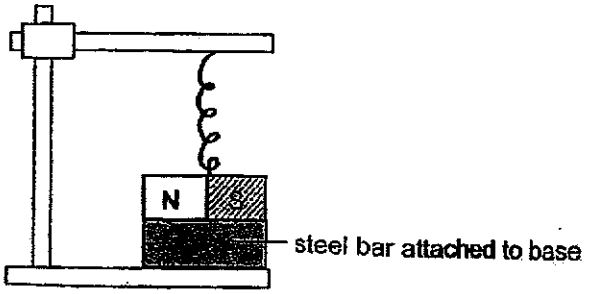
(1)



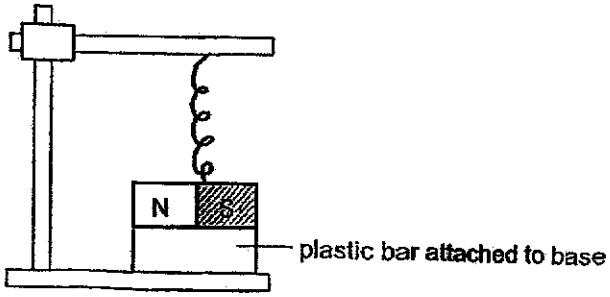
(2)



(3)



(4)



14 A steel bar AB was magnetised using the "stroke" method as shown in Diagram 1. Diagram 2 shows the magnetic poles of AB after it was magnetised.

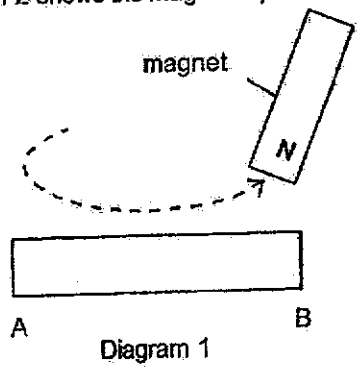


Diagram 1

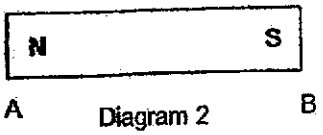


Diagram 2

Steel bars CD and EF were magnetised as shown in Diagrams 3 and 4.

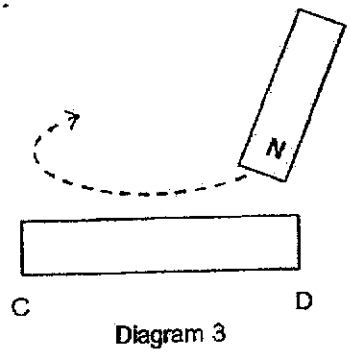


Diagram 3

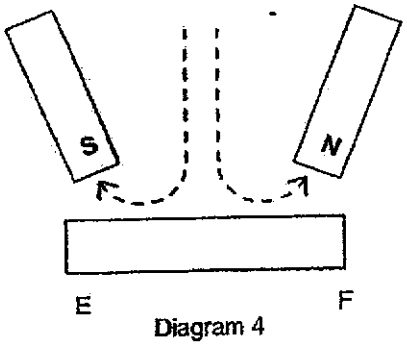
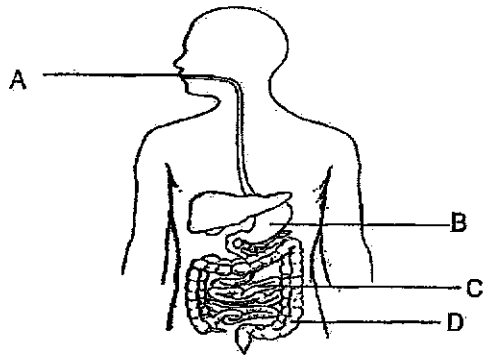


Diagram 4

Which of the following shows the magnetic poles of bars CD and EF?

(1)	N S C D	N S E F
(2)	N S C D	S N E F
(3)	S N C D	N S E F
(4)	S N C D	S N E F

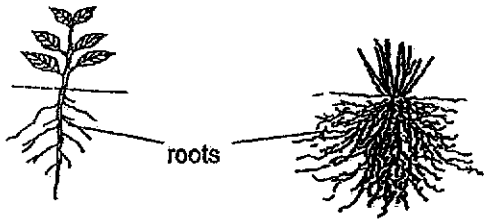
15 The diagram shows the human digestive system.



Which organ is correctly matched to its function?

	Organ	Function
(1)	A	Water is removed from the undigested food.
(2)	B	The food is chewed into smaller pieces.
(3)	C	More digestive juices are produced to complete digestion.
(4)	D	Undigested food is stored and absorbed into the bloodstream.

16 The diagram shows the roots of Plant G and Plant H.

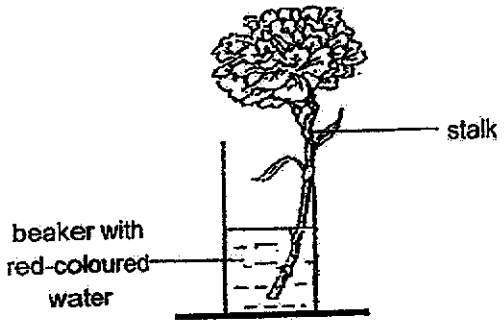


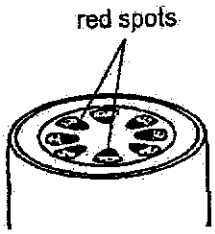
Plant H has more roots than Plant G. Thus, the roots of Plant H can

_____.

(1) trap more sunlight
(2) hold the plant more upright
(3) absorb more water from the soil
(4) transport more water to other parts of the plant

17 Jill left a stalk of flower in a beaker with red-coloured water overnight as shown.





cross section of stalk

The next morning, she cut a piece of the stalk and observed a neat arrangement of tiny red spots in its cross section.

Which of the following explains Jill's observation?

(1) Stored food in the flower stalk turns red.
(2) The red spots are the food-carrying tubes.
(3) The red spots are the water-carrying tubes.
(4) Water enters the flower stalk through the roots.

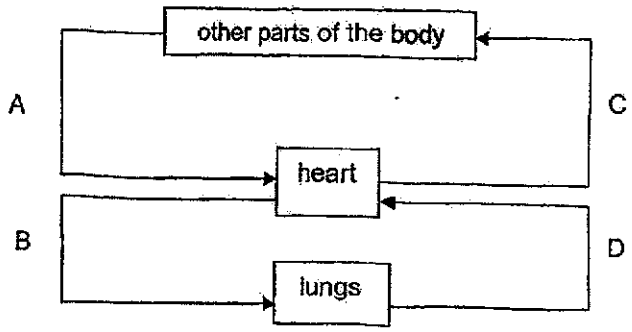
18 Ahmad listed the description of the breathing process in humans.

A Air enters the body through the nose.
B Air leaves the body through the nose.
C Blood transports carbon dioxide to the lungs.
D Air travels through the windpipe and reaches the lungs.
E Oxygen passes into the blood and is then transported to all parts of the body.

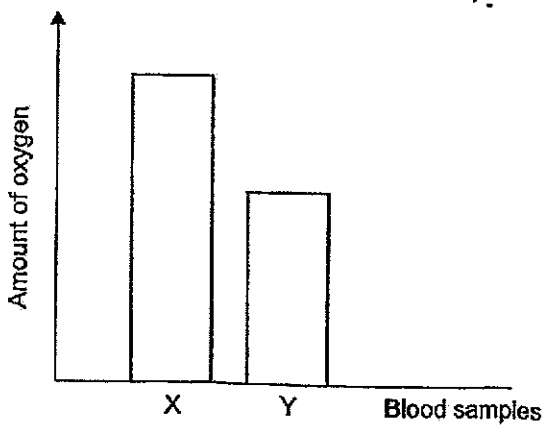
Which of the following are the correct steps involved in breathing in humans?

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

19 The diagram shows the direction of blood flow in some parts of the human body. Blood samples X and Y were taken from two of the four vessels, A, B, C and D.



The graph shows the amount of oxygen in blood samples X and Y.



Which of the following correctly matches blood samples X and Y to the blood vessels they were taken from?

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

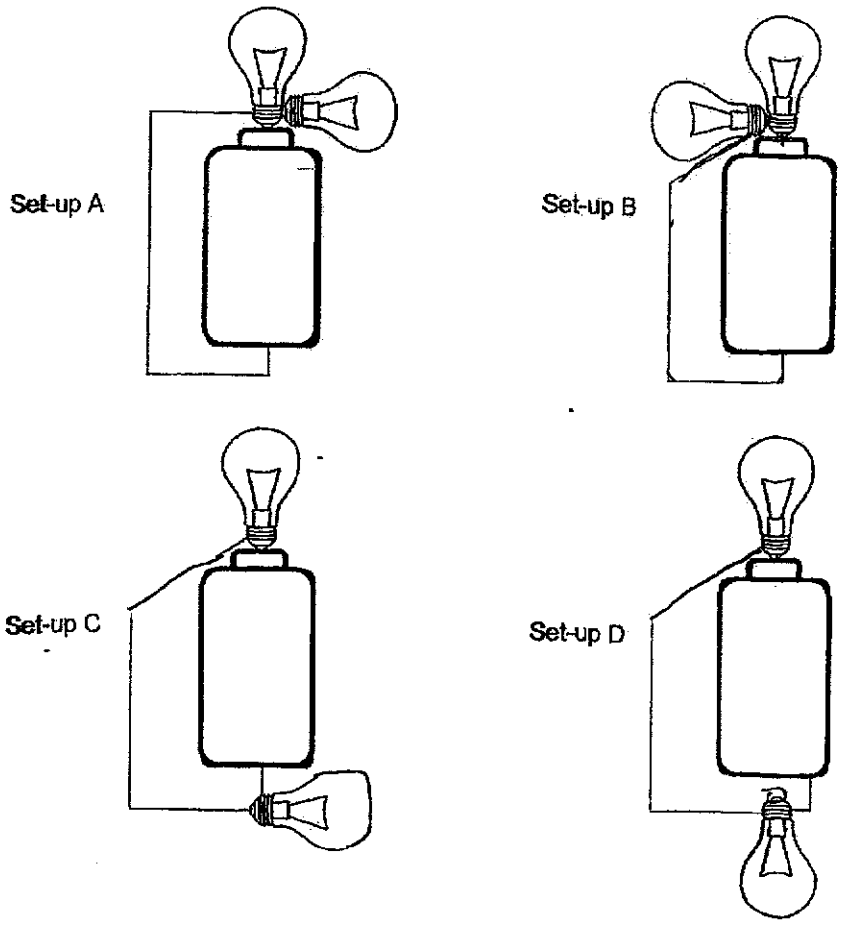
20 Four cells, taken from different parts of plants and animals, were observed under a microscope. The table shows the cell parts that were observed. A tick (✓) indicates the presence of the cell part.

	Cell P	Cell Q	Cell R	Cell S
nucleus	✓	✓	✓	✓
cell membrane	✓	✓	✓	✓
cell wall		✓	✓	
chloroplast			✓	
cytoplasm	✓	✓	✓	✓

Which of the following shows the correct grouping of the cells?

	Animal cells	Plant cells
(1)	P, Q and S	R only
(2)	P and S	Q and R
(3)	R and S	P and Q
(4)	R only	P, Q and S

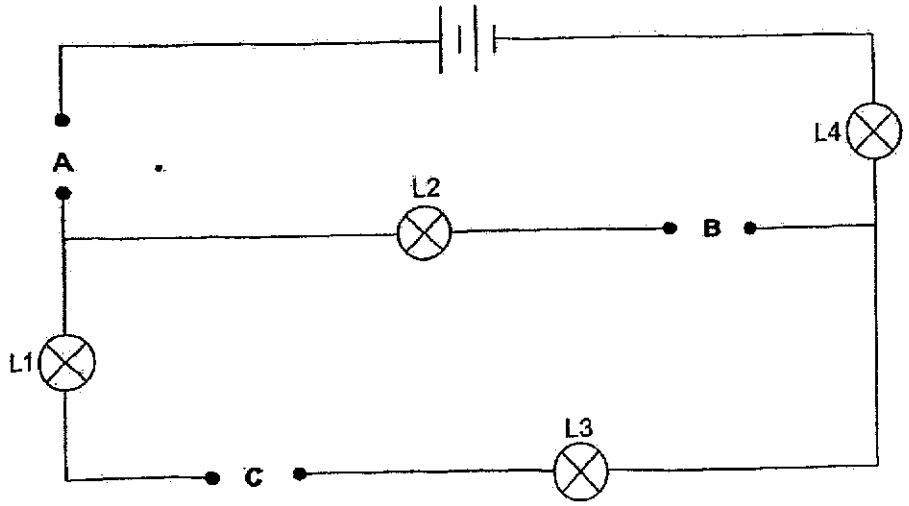
21 The diagram shows four set-ups A, B, C and D.



Which of the following states the correct **number** of lighted bulbs **in** each set up?

	Set-up A	Set-up B	Set-up C	Set-up D
(1)	1	0	1	0
(2)	2	1	1	0
(3)	1	2	2	1
(4)	2	2	2	2

22 Zayne constructed a circuit using three similar rods, X, Y and Z, of unknown materials and placed them in various positions A, B and C.



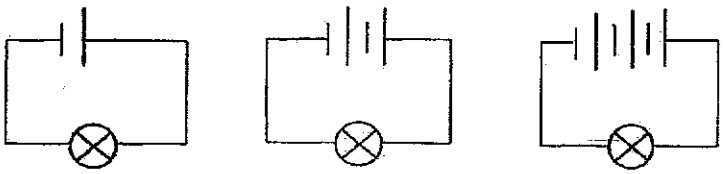
Zayne recorded the results in the table. A tick (✓) shows that the bulb lit up.

Position			Light bulb			
A	B	C	L1	L2	L3	L4
Rod X	Rod Y	Rod Z	✓		✓	✓

Which of the following shows the correct results when rods X, Y and Z were placed at the different positions?

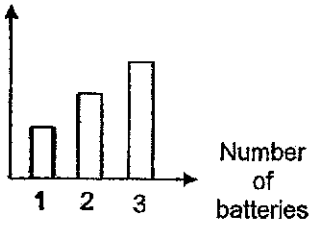
	Position			Light bulb			
	A	B	C	L1	L2	L3	L4
(1)	Rod Y	Rod X	Rod Z		✓	✓	✓
(2)	Rod X	Rod Z	Rod Y		✓		✓
(3)	Rod Z	Rod Y	Rod X	✓			✓
(4)	Rod Y	Rod Z	Rod X	✓	✓	✓	

23 David used the three circuits as shown to find out how the number of batteries in a circuit affects the brightness of a bulb.

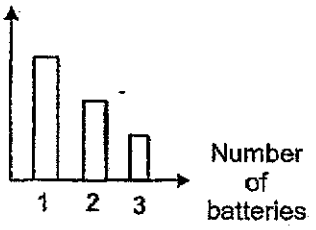


Which of the following graphs correctly shows his observations?

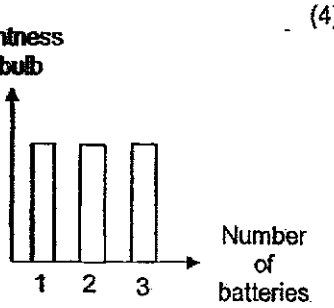
(1)



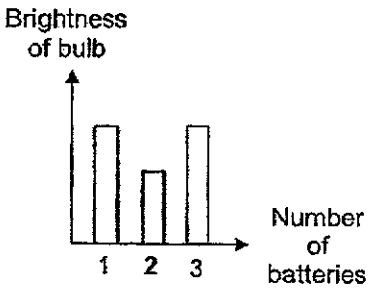
(2)



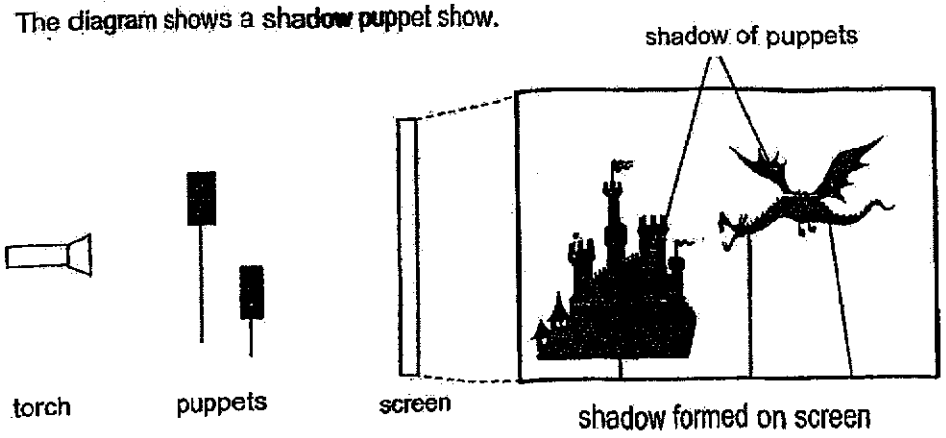
(3)



(4)



24 The diagram shows a shadow puppet show.

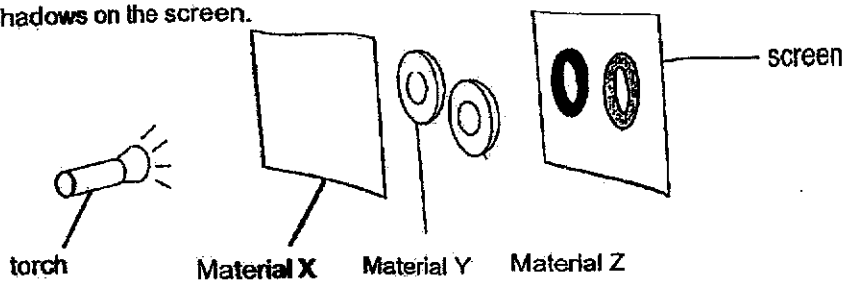


Which two of the following will affect the size of the shadows formed?

A The size of the screen.
B The size of the puppets.
C The brightness of the torch.
D The distance between the screen and puppets.

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

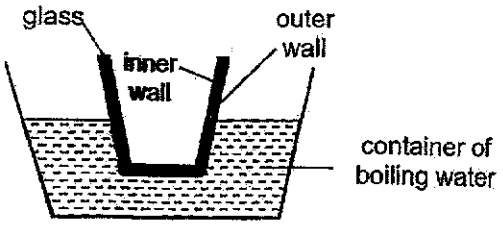
25 Wei Liang used the set up shown to find out how much light can pass through materials X, Y and Z. When he turned on the torch, he observed the following shadows on the screen.



Which of the following are the correct properties of materials, X, Y and Z?

	Material X	Material Y	Material Z
(1)	Opaque	Transparent	Translucent
(2)	Translucent	Transparent	Opaque
(3)	Transparent	Translucent	Opaque
(4)	Transparent	Opaque	Translucent

26 Isaac took a glass with a thick wall out of the freezer and placed it into a container of boiling water.



He observed that the outer wall of the glass cracked. Which of the following best explains his observations?

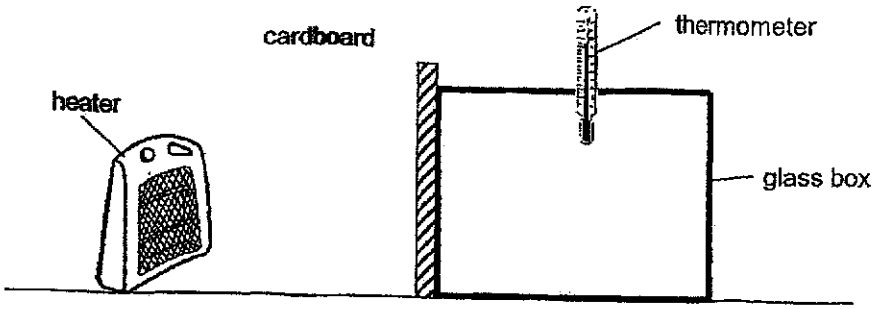
(1) The glass expanded more than it contracted.

(2) The outer wall of the glass expanded faster than the inner wall of the glass.

(3) The inner wall of the glass contracted faster than the outer wall of the glass.

(4) The outer wall of the glass gained heat but the inner wall of the glass lost heat.

27 Ajit set up the following apparatus. He covered one side of the glass box with a piece of cardboard as shown.



He recorded the temperature of the air in the box every 10 minutes after the heater was switched on.

What can Ajit do to increase the temperature of the air inside the glass box at a slower rate?

(1) Move the heater closer to the glass box.

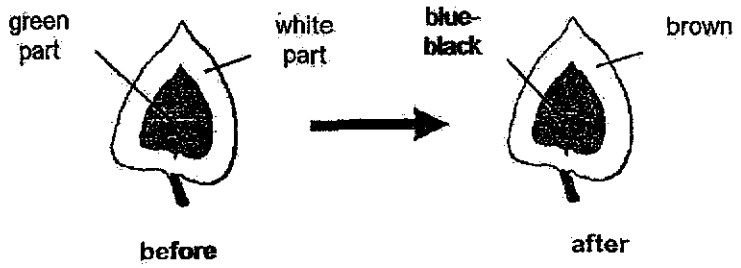
(2) Replace the cardboard with a metal board.

(3) Replace the cardboard with a sheet of paper.

(4) Replace the cardboard with a thicker cardboard.

28 Shaban plucked a leaf from a plant that had been exposed to sunlight for several hours. He tested the leaf for starch using iodine solution. Iodine solution changes from brown to blue-black in the presence of starch.

The diagram shows his observation.



Which of the following conclusions can be made from his observation?

A Starch is present only in the green part of the leaf.

B Starch is present only in the white parts of the leaf.

C Starch is present in all parts of the leaf after it was exposed to sunlight.

(1) A only

(2) B only

(3) A and C only

(4) B and C only

End of Booklet A

Anglo-Chinese School (Junior)

END-OF-YEAR EXAMINATION (2024)

PRIMARY 5
SCIENCE
(BOOKLET B)

24 October 2024

Name: _____( ) Class: 5.( )

Parent's Signature:_____

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

INSTRUCTIONS TO CANDIDATES

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

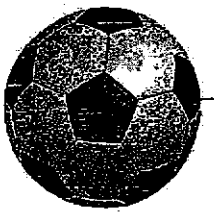
Booklet	Possible Marks	Marks Obtained
A	56	
B	44	
Total	100	

This question paper consists of 15 printed pages.

For questions 29 to 41, 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 Irfan has a fully inflated football with a mass of 480g.



He continued to pump air into the ball. He recorded the mass of the ball after every pump.

(a) Fill in the box in the table with the mass of the ball after three pumps of air. [1]

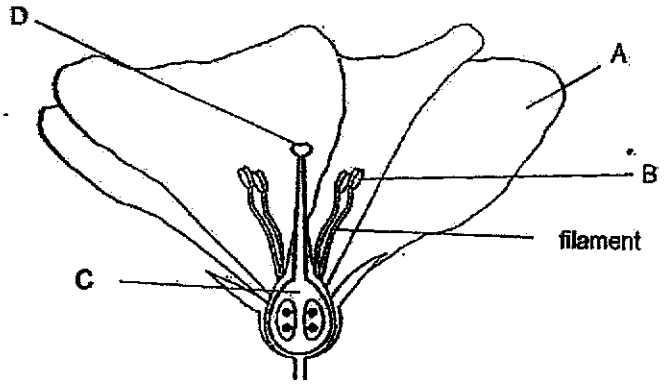
Number of pumps of air	Mass of the ball (g)
1	**500**
2	**510**
3	
4	**530**

(b) Explain why Irfan was able to pump more air into the ball after the ball was fully inflated, based on the property of matter. [1]

(c) Explain why the mass of the ball increased with more pumps of air. [1]

15

30 A, B, C and D are parts of flower Y.



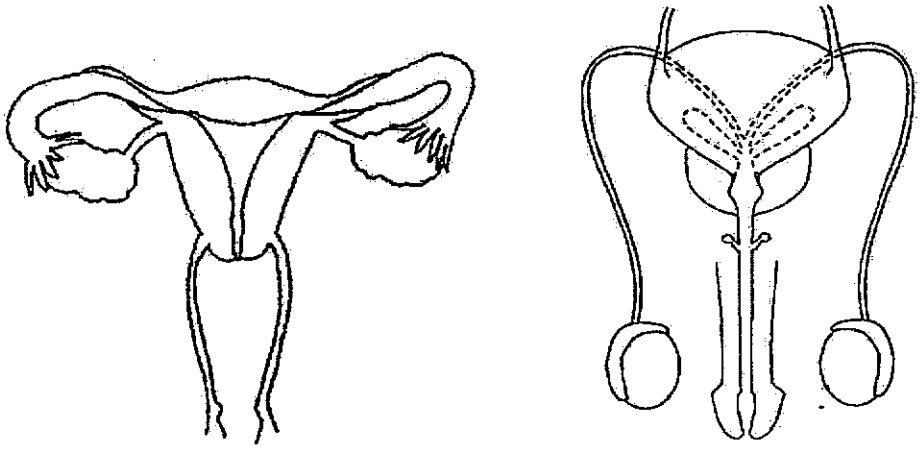
Flower Y

(a) State the function of the filament. [1]

Lee removed two of the four parts, A, B, C and D, and dusted some pollen grains on the flower. After some time, flower Y developed into a fruit.

(b) Describe how a fruit can be formed with the remaining parts. [2]

31 The diagram shows the **human** reproductive systems.

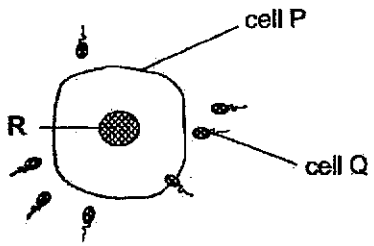


Female Reproductive System

Male Reproductive System

(a) Label (draw a line **touching** the parts) and name the parts where the reproductive cells are **produced**. [2]

(b) The diagram shows **cells** P and Q during the process of reproduction in humans.

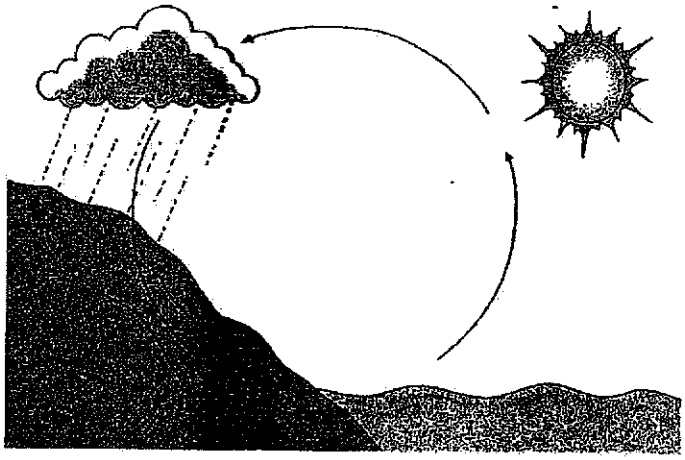


State the function **of part R** of cell P. [1]

_____

SCORE	- / 3

32 The diagram shows the **water cycle.**



(a) Name a water source **of the** water cycle. [1]

_____

(b) Explain the importance **of the** Sun in the water cycle. [1]

_____

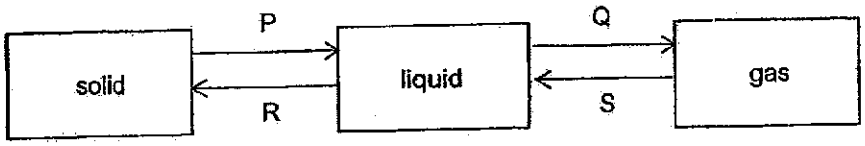
_____

(c) Describe what will **happen to** the water cycle if condensation did not take place. [1]

_____

_____

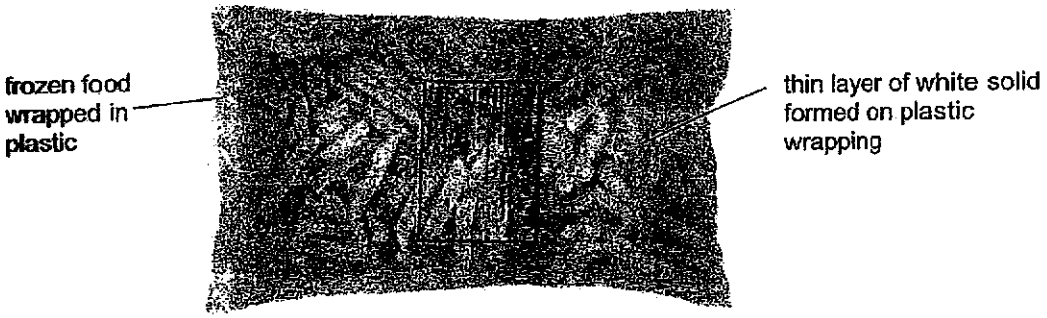
33 P, Q, R and S represent the processes that involve the changes in the states of some substances.



(a) Complete the table by writing the letters P, Q, R and S. [1]

Heat Gain or Heat Loss	Process(es)
Heat Gain	
Heat Loss	

Ephraim took out a packet of frozen food wrapped in clear plastic from the freezer. After a short time, he noticed a thin layer of white solid on the surface of the plastic wrapping.



(b) Explain how the white solid was formed. [2]

(00)

(c) Explain why the white solid could not be seen after a while. [1]

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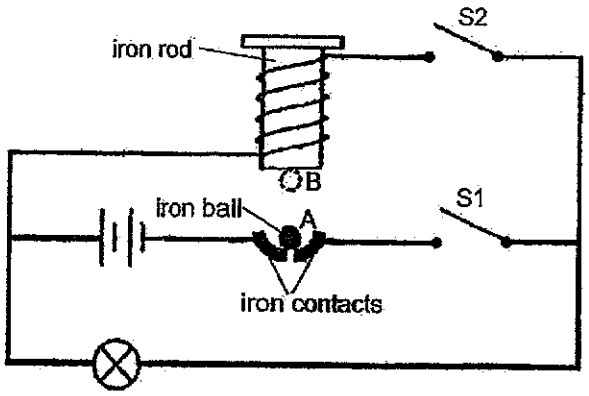
SCORE	4

34 Study the circuit shown.



(a) State what would be observed about the bulb in the circuit when:

(i) Switch S1 is closed [1]

_____

(ii) Switches S1 and S2 are closed [1]

_____

When both switches S1 and S2 were closed, the iron ball moved repeatedly from A to B and back to A.

(b) Explain why the iron ball moved up **and down** repeatedly. [2]

_____

_____

_____

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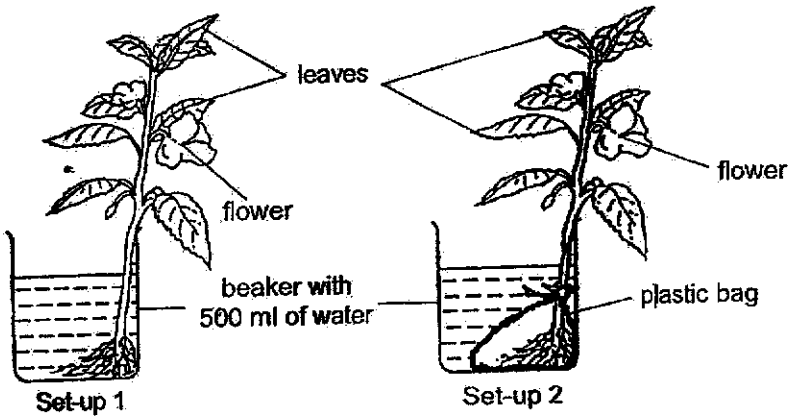
SCORE / 4

35 Jia Hui prepared two identical set-ups. The roots of the plant in set-up 2 was wrapped in a plastic bag as shown.



(a) What is needed for photosynthesis in green plants? [1]

_____

(b) After a few days, Jia Hui noticed that the plant in set-up 2 started to wither. Explain her observation. [1]

_____

_____

(c) Jia Hui wanted to find out how the number of leaves a plant has affects the amount of water left in the beaker after a week. State two changes that Jia Hui has to make to set-up 2 to test her new aim. [1]

Change 1: _____

_____

Change 2: _____

_____

SCORE	
	3

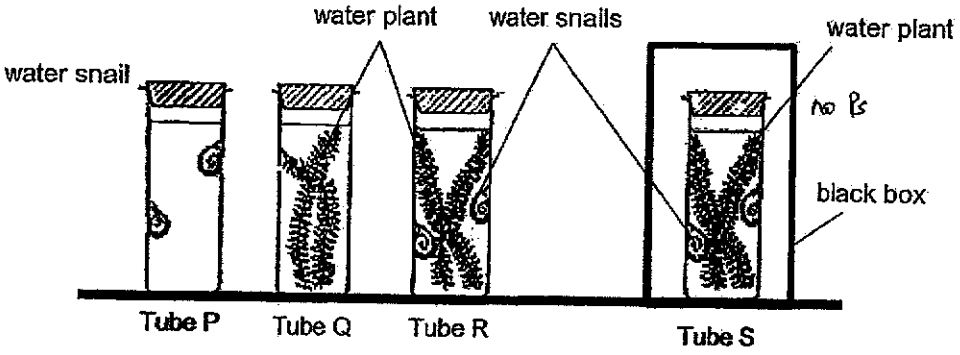
36 The table compares the difference in the amount of each type of gas when Yi Jie inhales and exhales.

Gas	Inhaled air	Exhaled air
A	Less	More
B	Less	More
C	Remain the same	Remain the same
D	More	Less

(a) State which gases, A, B, C or D represent nitrogen and oxygen. [1]

Nitrogen: _____ Oxygen: _____

Yi Jie placed some water snails and water plants into four similar sealed glass tubes, P, Q, R and S, in a well-lit room as shown.



(b) Which tube, P, Q, R or S, would have the largest amount of dissolved carbon dioxide in the water after six hours? Explain your answer. [2]

_____

_____

_____

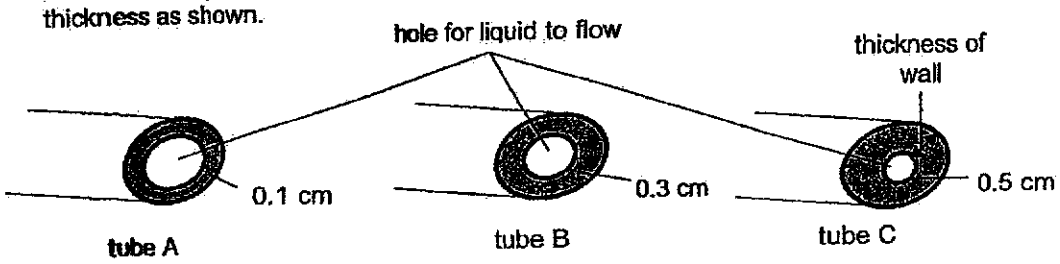
37 Reza made a model of the human circulatory system with a pump containing 100 ml of liquid and tube A as shown. When he squeezes the pump, the liquid in the pump will be transported through tube A to the beaker.

(a) Name the parts of the human circulatory system that are represented by the pump and liquid. [1]

(i) pump: _____

(ii) liquid: _____

Reza squeezed the pump once and measured the volume of liquid collected in the beaker. He repeated this with tubes B and C of similar size but different wall thickness as shown.



Reza recorded the results of his experiment in the table.

Tube	Thickness of wall (cm)	Volume of liquid collected in beaker (ml)
A	0.1	80
B	0.3	75
C	0.5	68

(b) State how the thickness of the wall affects the volume of the liquid collected in the beaker after one squeeze of the pump. [1]

_____

_____

(c) A healthy person has blood vessels similar to tube A but a man with disease X has blood vessels similar to tube C.

The heart of a man with disease X has to pump blood faster than the heart of a healthy man. Explain why based on the results. [1]

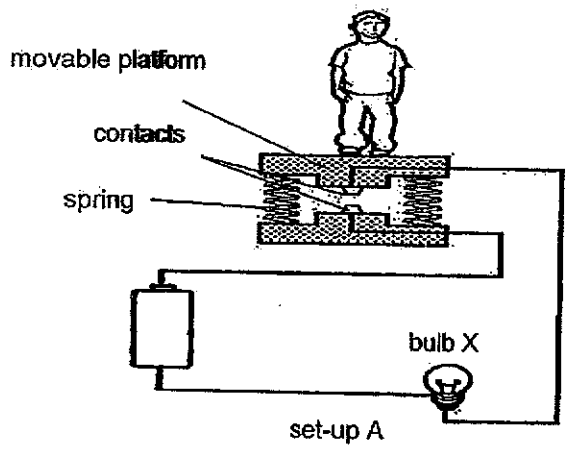
_____

_____

(Go on to the next page)

SCORE	
	3

38 When Bao Shan steps onto the platform in set-up A, the platform moves downwards, and bulb X lights up. The contacts act like switches.



(a) State a property of the contacts which makes it suitable to be used as a switch. [1]

_____

(b) Explain why bulb X lights up when Bao Shan steps onto the platform. [1]

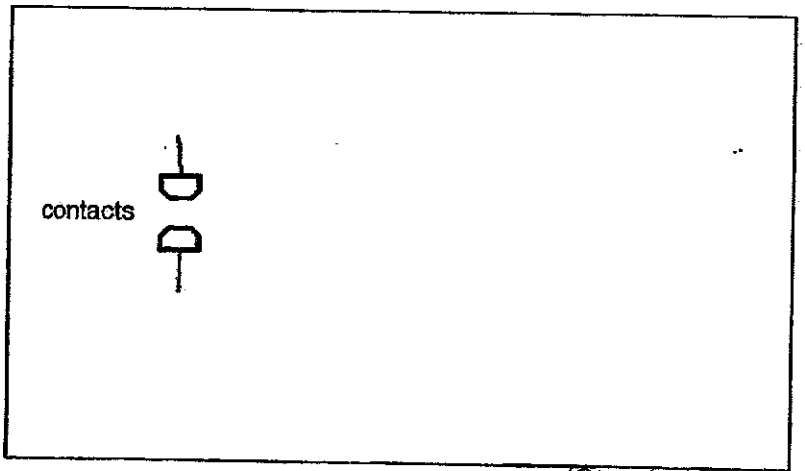
_____

_____

(c) Bao Shan wants to modify his circuit in set-up A such that:

1. Another bulb is added without affecting the brightness of bulb X.
2. Bulb X is brighter when he steps onto the platform.

Using an additional bulb and battery and some wires, complete the circuit diagram to show Bao Shan's modified circuit. [2]



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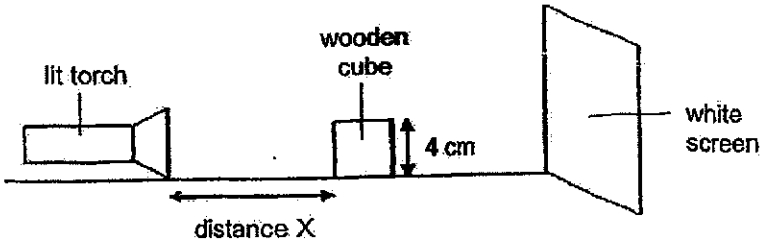
SCORE	/ 4

39 Jaya setup an experiment as shown.



She moved the wooden cube to find out its effect on the height of the shadow formed on the screen. She recorded the results in the table.

Distance X (cm)	Height of the shadow formed on the screen (cm)
10	25
20	20
30	15
40	10

(a) Explain how the wooden cube formed a shadow on the white screen. [1]

_____

_____

(b) What is the relationship between distance X and the height of the shadow formed on the screen? [1]

_____

_____

(c) Explain why using the same wooden cube during her experiment ensures a fair test. [1]

_____

_____

(d) Suggest the height of the shadow formed on the screen if a wooden cube of height 3 cm is used, given that distance X is 40 cm. [1]

_____

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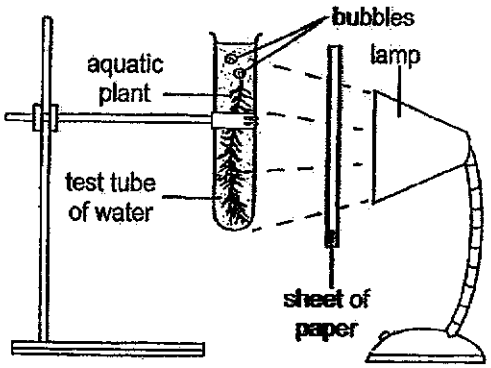
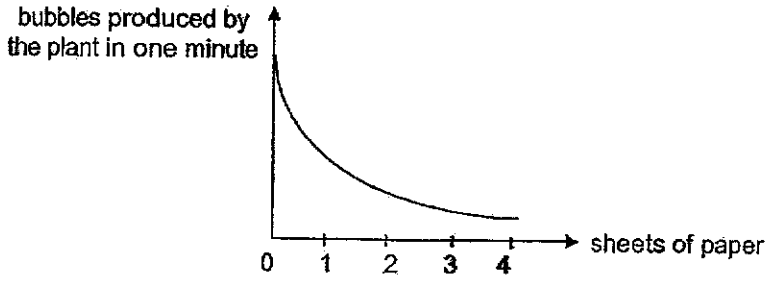
SCORE / 4

40 Nadia prepared the setup in a dark room. She observed bubbles in the test tube when she turned on the lamp as shown.



Nadia repeated the experiment with different number of sheets of paper and recorded the number of bubbles produced by the plant in one minute. She plotted the graph based on the results as shown.



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

_____

_____

(b) What do the bubbles produced by the plant contain? [1]

_____

(c) Nadia did not observe any bubbles when she used 10 sheets of paper. Explain why. [1]

_____

_____

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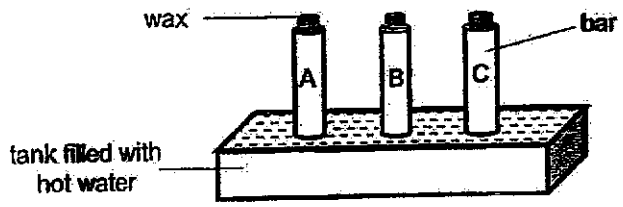
SCORE	
	3

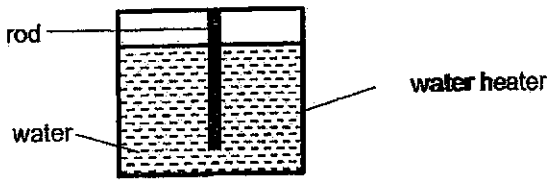
41 Jiehong attached three bars made of different materials, A, B and C, each with the same volume of wax to a tank filled with hot water as shown.



He recorded the time taken for the wax to melt completely for each bar in the table.

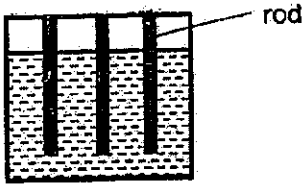
Material	A	B	C
Time taken for wax to melt completely (s)	120	90	75

Jiehong made a simple water heater with a rod and poured water into it as shown.



(a) Which material, A, B or C, is most suitable for making the rod of the water heater? Give a reason. [1]

_____



(b) Jiehong stated that the temperature of the water in the water heater will increase faster with three rods instead of one. Explain why. [1]

_____

_____

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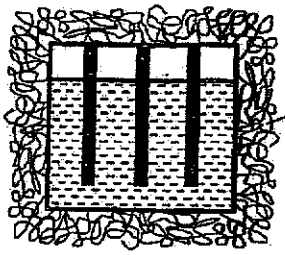
SCORE	
	2

Jiehong wrapped the water heater with a thick layer of cotton balls as shown.



(c) Explain how this will keep the water in the water heater warm for a longer period of time. [2]

End of Paper

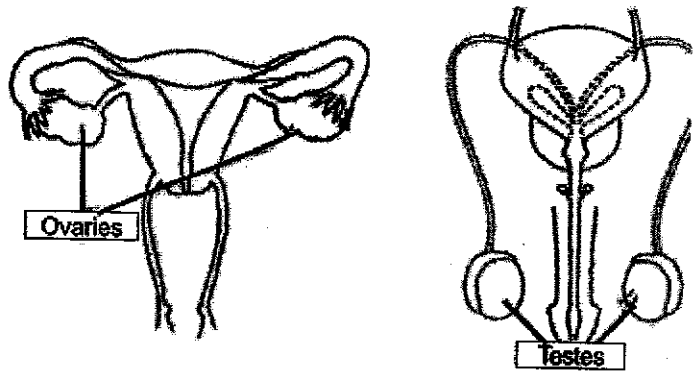
SCORE / 2

SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : SA2

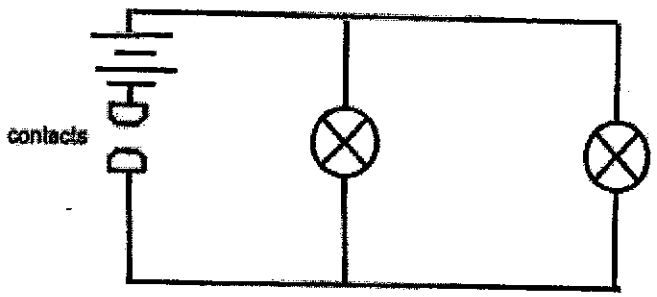
BOOKLET A

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

BOOKLET B

Q29 (a)	520
Q29 (b)	Air can be compressed.
Q29 (c)	Air has mass.
Q30 (a)	It holds the anther upright.
Q30 (b)	The stigma can receive pollen grains. The male sex cell can fuse with the egg cell in the ovule.
Q31 (a)	
Q31 (b)	It controls all activities in the cell.

Q32 (a)	Sea water.
Q32 (b)	The sun will evaporate the water by making it gain heat, to form water vapour.
Q32 (c)	The water vapour would not condense into tiny water droplets hence rain will not occur.
Q33 (a)	Heat Gain: P, Q Heat Loss: S, R
Q33 (b)	Water vapour near the plastic wrapping loses heat to the cooler plastic and condenses into water droplets. The water droplets lose heat to the cooler plastic surface and freeze into the white solid which is ice.
Q33 (c)	The white solid gains heat from the surrounding air and melts into water droplets.
Q34 (a)	(i) The bulb will light up. (ii) The bulb will start flickering.
Q34 (b)	When both switches are closed, the circuit becomes a closed circuit, allowing electricity to flow through. The iron rod becomes magnetised and attracts the iron ball from A to B. However, when the iron ball does not meet the iron contact, electricity cannot flow through the circuit, hence the iron rod will be demagnetized and the ball drops to A. The same thing happens repeatedly.
Q35 (a)	Water, carbon dioxide, sunlight, chlorophyll.
Q35 (b)	The roots could not absorb any water due to the plastic bag.
Q35 (c)	Change 1: Remove the plastic bag . Change 2: Pluck out some leaves.
Q36 (a)	Nitrogen: C Oxygen: D
Q36 (b)	Tube S. Both the snail and water plant gave out carbon dioxide, the plant did not photosynthesise as there was no light.
Q37 (a)	(i) Pump: Heart (ii) Liquid: Blood

Q37 (b)	The thicker the wall, the lesser volume of liquid is collected in the beaker.
Q37 (c)	The hole in the blood vessel is smaller so less blood will be transported to all parts of the body. Hence, his heart has to pump faster.
Q38 (a)	Conductor of electricity.
Q38 (b)	His weight presses onto the spring, making the contracts point touch each other to allow a closed circuit. Electricity can flow through the circuit, allowing bulb X to light up.
Q38 (c)	
Q39 (a)	The wooden cube is opaque, which blocks the light to form a shadow on the white screen.
Q39 (b)	As distance X increases, the height of the shadow formed on the screen decreases.
Q39 (c)	It is the ensure that only the distance between the cube affects the size of the shadow.
Q39 (d)	9cm
Q40 (a)	To find out how the number of sheets of paper affects the number of bubbles produced by the plant.
Q40 (b)	Oxygen
Q40 (c)	10 sheets of paper did not allow any light to reach the plant, hence photosynthesis could not occur hence the plant did not release bubbles of oxygen.
Q41 (a)	C. It is the best conductor of heat.
Q41 (b)	There is more contact surface area of the rods with the

	water, hence the water will gain heat faster.
Q41 (c)	Air in the cotton balls is a poor conductor of heat, so the water in the heater loses heat slower to the surroundings.