Anglo-Chinese School
(Primary)

A Methodist Institution
(Founded 1886)

END OF YEAR EXAMINATION 2024
SCIENCE
PRIMARY FIVE
BOOKLET A

Name: _____ ( ) **Class: Primary 5** ____

Date: 24 October 2024 **Total Time for Booklets A and B: 1 h 45 min**

INSTRUCTIONS TO CANDIDATES

1. Write your name, register number and class in the spaces provided.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers on the Optical Answer Sheet (OAS) provided.

This booklet consists of 20 printed pages including this cover page.

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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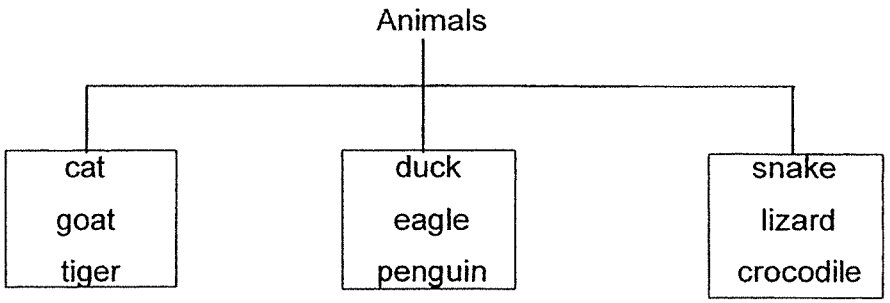
1 The diagram shows three groups of animals.



These animals are classified based on _____.

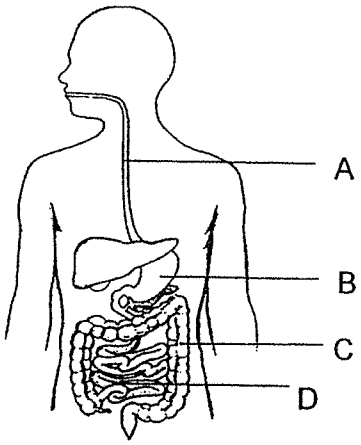
(1) the food they eat

(2) the way they move

(3) their body coverings

(4) their breathing methods

2 The digestive system of a human is represented by the diagram as shown.



In which part, A, B, C or D, is digested food absorbed into the blood vessels?

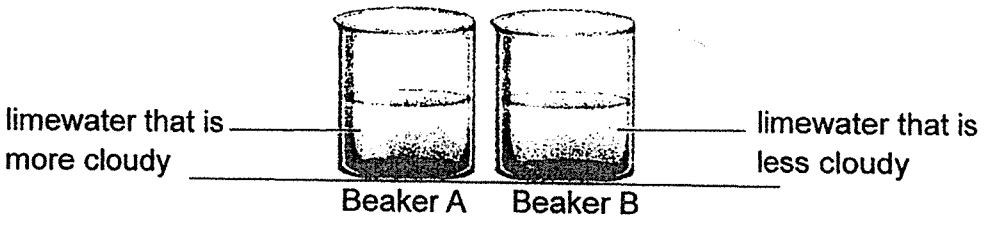
(1) A

(2) B

(3) C

(4) D

3 Limewater is a liquid that turns cloudy in the presence of carbon dioxide. The diagram shows two identical beakers, A and B, each containing the same volume of limewater but exposed to different amount of gases. It was observed that the limewater in beaker A was more cloudy than the one in beaker B.



Which of the following is an explanation of this observation?

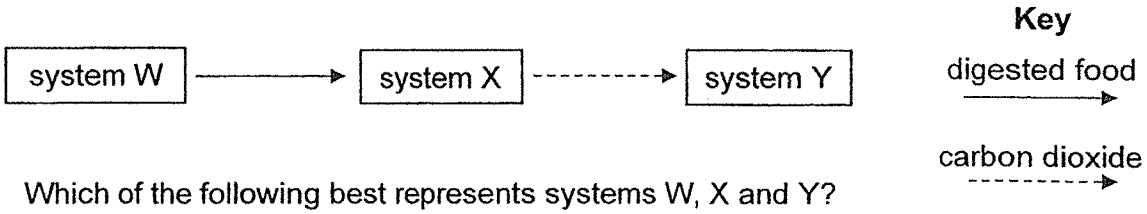
(1) Beaker A contains less oxygen than beaker B.

(2) Beaker A contains more oxygen than beaker B.

(3) Beaker A contains less carbon dioxide than beaker B.

(4) Beaker A contains more carbon dioxide than beaker B.

4 The diagram shows part of the movement of substances in the human body.



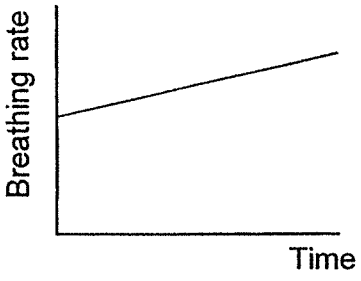
Which of the following best represents systems W, X and Y?

	W	X	Y
(1)	respiratory	circulatory	digestive
(2)	circulatory	digestive	respiratory
(3)	digestive	circulatory	respiratory
(4)	digestive	respiratory	circulatory

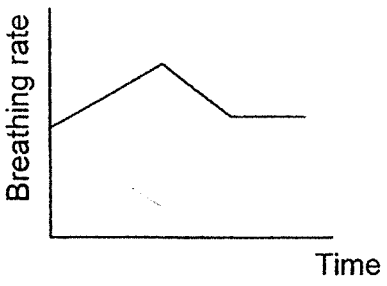
5 Ali was at the top of a hill. He ran down from the top to the foot of the hill, and continued to walk slowly for another five minutes.

Which of the following graphs shows Ali's breathing rate when he carried out the activities?

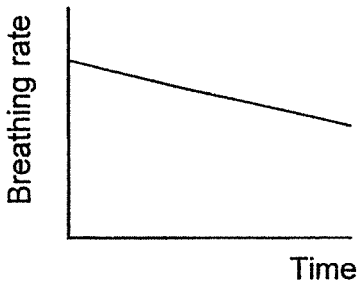
(1)



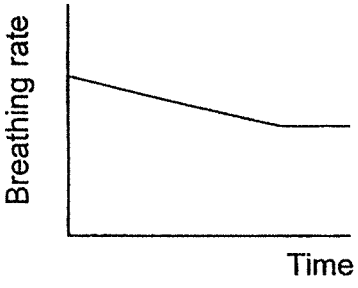
(2)



(3)



(4)



6 Five adults were trapped in a faulty lift where air could not enter or exit. The graph shows the composition of air in the lift at the start of the fault.

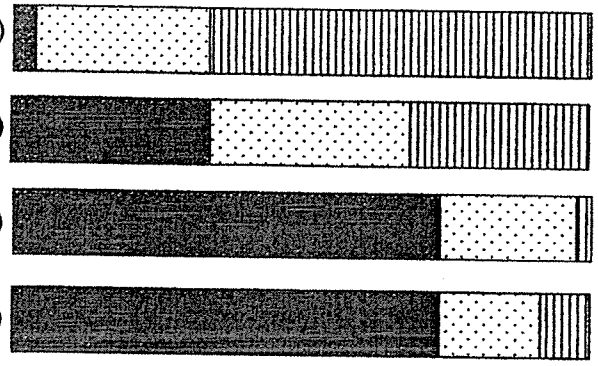
Which of the following shows the composition of air in the lift after they were trapped for an hour?

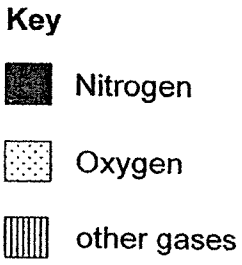
(1)

(2)

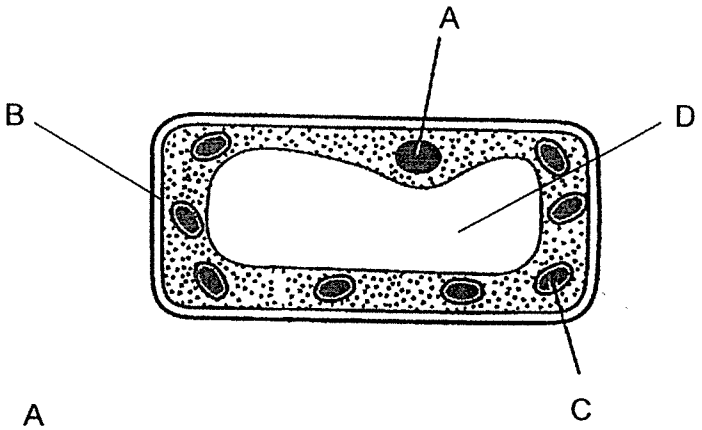
(3)

(4)





7 The diagram shows a plant cell. Which of the following parts is not found in an animal cell?



(1) A

(2) B

(3) C

(4) D

8 The table shows information about three types of cells, P, Q and R. A tick (✓) indicates the presence of the cell part in the cell.

	P	Q	R
Cell membrane			
Cell wall			
Chloroplasts			
Nucleus			

Based on the information given, which of the following statements about the cells are likely to be true?

A Cell R can be found in a cat.

B Cell P can be found in leaves.

C Cell Q can trap light to make food.

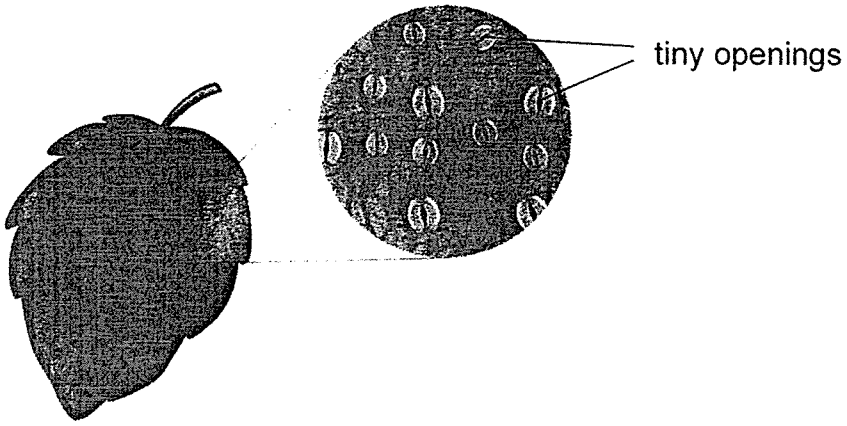
(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

9 The diagram shows some tiny openings on a leaf surface under a microscope.



Under very strong sunlight, these tiny openings will eventually close. This is important _____.

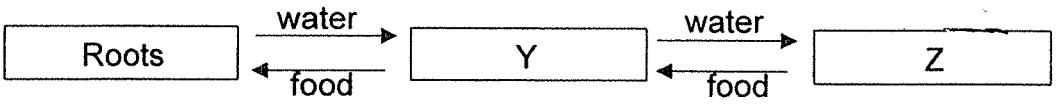
(1) to stop the leaf from making food

(2) so that less sunlight can be absorbed

(3) to reduce water loss to the surroundings

(4) so that the leaf can take in air more quickly

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

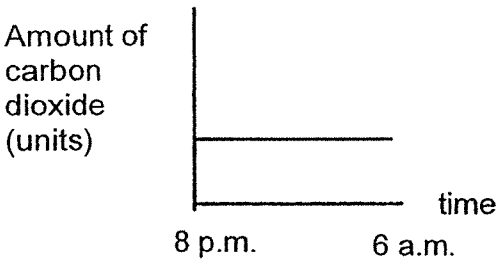


Which of the following correctly represents the plant parts Y and Z?

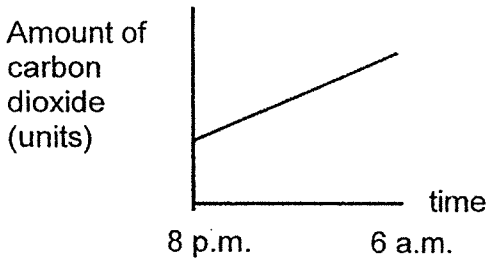
	Y	Z
(1)	Leaves	Stem
(2)	Fruit	Leaves
(3)	Stem	Leaves
(4)	Stem	Fruit

11 Noraini placed some plants in a sealed glass tank in an open field from 8 p.m. to 6 a.m. Which of the graphs shows the change in the amount of carbon dioxide in the tank?

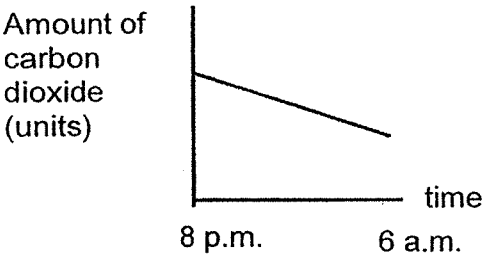
(1)



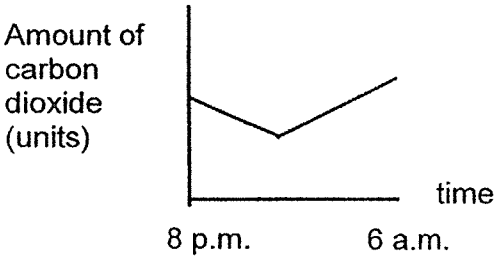
(2)



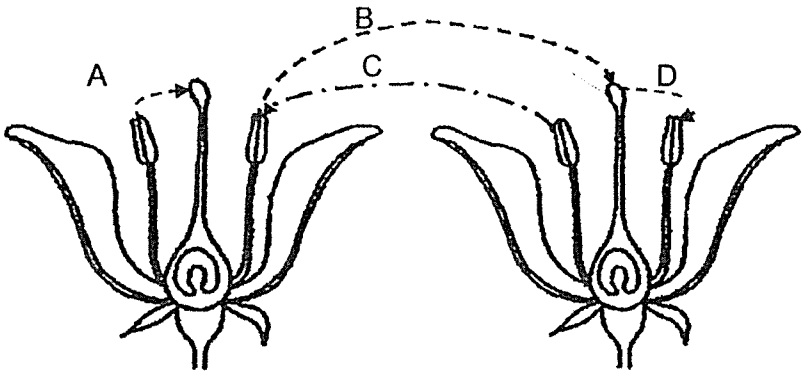
(3)



(4)



12 The diagram shows two flowers of a plant.



Which arrow(s) correctly show(s) pollination taking place?

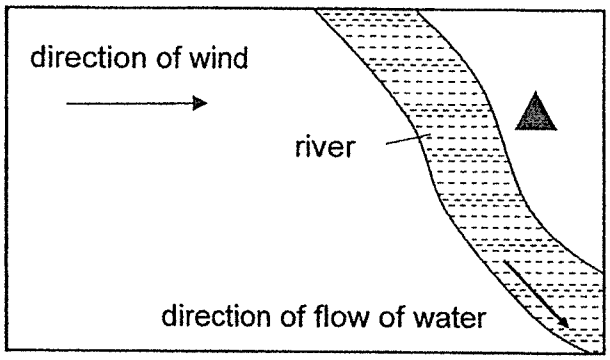
(1) B only

(2) D only

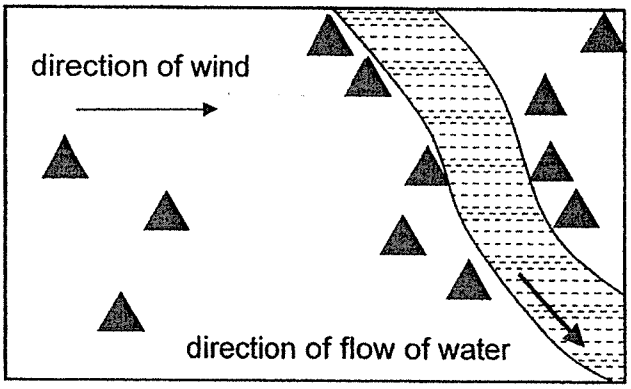
(3) A and B only

(4) C and D only

13 Bala wanted to find out how tree Q (▲) disperses its seeds and observed its position as shown.



A few years later, he observed more trees Q growing in the same area as shown.



Which of the following correctly describes the characteristics of the fruits of tree Q?

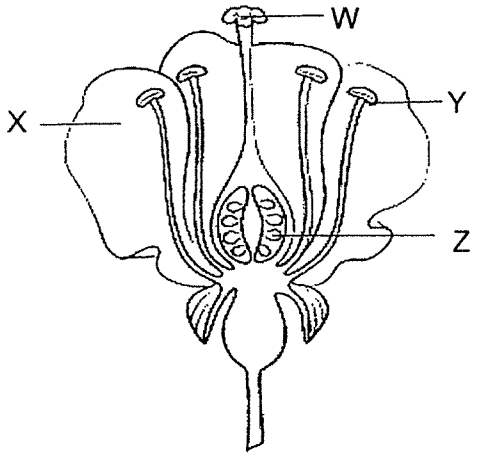
(1) fibrous husk

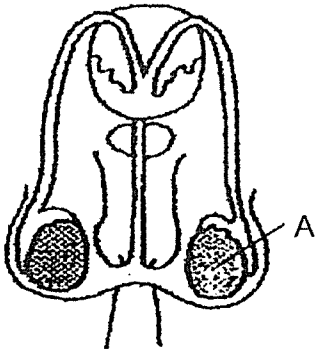
(2) pod-like structure

(3) wing-like structure

(4) hook-like structure

14 The diagrams show parts of the reproductive systems of a flower and a human.





Based on the diagrams, which part of the flower has a similar function as Part A?

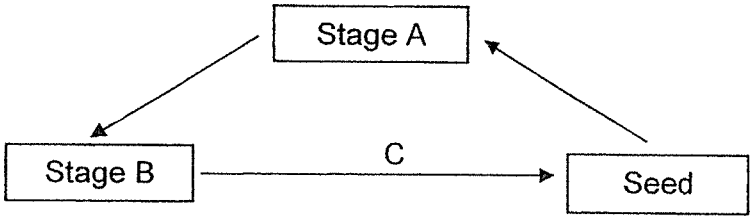
(1) W

(2) X

(3) Y

(4) Z

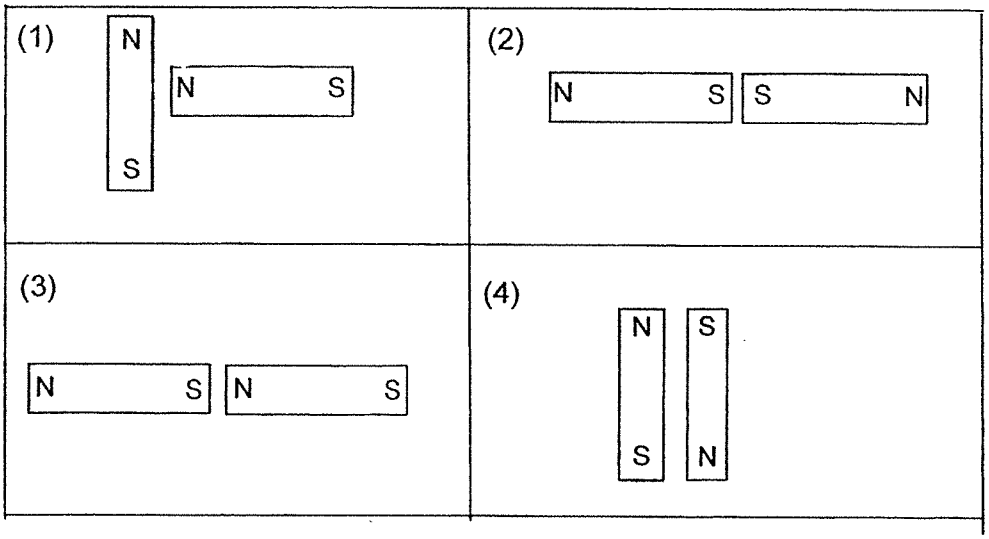
15 Study the life cycle of a plant as shown.



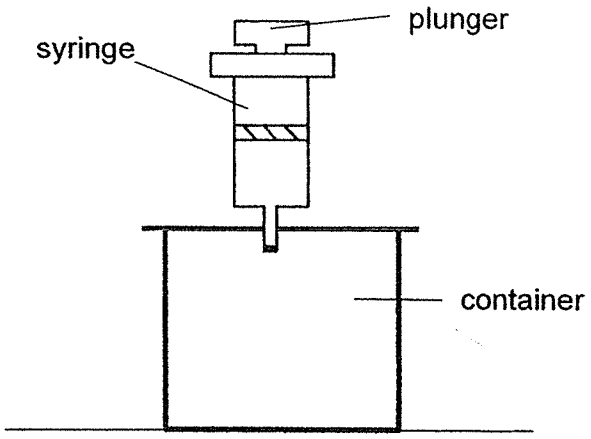
Which of the following is correct?

	A	B	C
(1)	Young plant	Adult plant	Pollination, fertilisation and dispersal
(2)	Young plant	Adult plant	Germination and pollination
(3)	Adult plant	Young plant	Dispersal and pollination
(4)	Adult plant	Young plant	Dispersal and fertilisation

16 The diagrams show two magnets being brought close to each other. Which of the following would result in the greatest repulsion between the two magnets?



17 Jamie used a syringe as shown to remove some air from an empty container by pulling the plunger upwards.



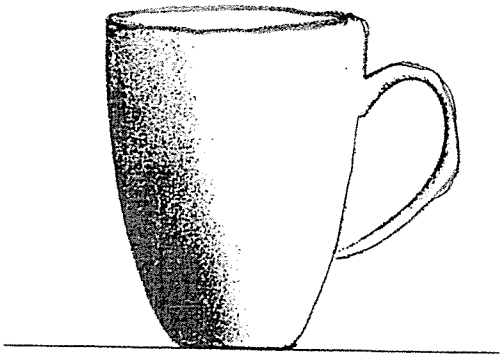
Which of the following correctly describes how the mass and volume of the air in the container change?

	Mass of air	**Volume of air**
(1)	Decreases	Decreases
(2)	Decreases	Remains the same
(3)	Remains the same	Decreases
(4)	Remains the same	Remains the same

18 The table shows the properties of four materials, P, Q, R and S. A tick (✓) indicates that the material has the property listed.

Property \ Material	P	Q	R	S
Absorbs water easily		✓		✓
Poor conductor of heat	✓		✓	
Bends easily without breaking	✓	✓		

Tommy wants to use one of the materials to make a coffee cup as shown.



Which of the following materials should he use?

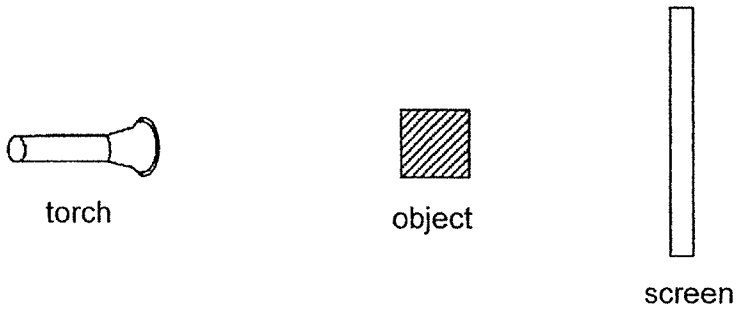
(1) P

(2) Q

(3) R

(4) S

19 The set-up as shown is used to cast a shadow of an object on the screen.



The shadow of the object becomes larger when the _____.

A object is moved nearer to the torch

B screen is moved nearer to the object

C torch is moved further from the screen

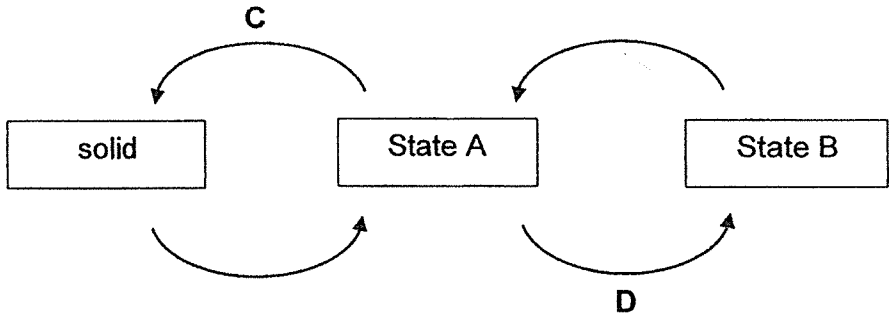
(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

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



Which of the following best identifies A, B, C and D?

	State A	State B	Heat gain/loss at C	Process D
(1)	Liquid	Gas	loss	Evaporation
(2)	Liquid	Gas	gain	Boiling
(3)	Gas	Liquid	loss	Boiling
(4)	Gas	Liquid	gain	Evaporation

21 Dan wanted to find out how the temperature of water in a container affects the rate of evaporation of water. He prepared four set-ups with different variables as shown

Set-up	A	B	C	D
Exposed surface area of container (cm^2)	150	80	150	150
Volume of water in the container at the start (cm^3)	500	450	500	450
Temperature of water (°C)	95	30	30	95

Which two set-ups did Dan use for his investigation?

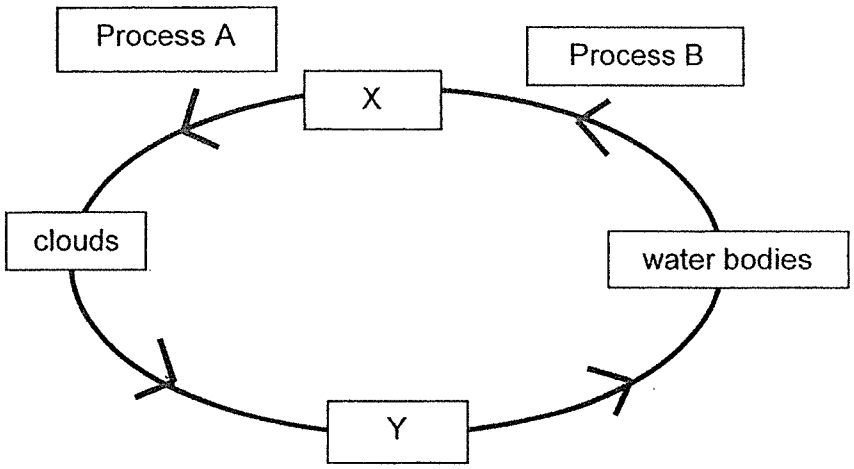
(1) A and B

(2) A and C

(3) B and C

(4) B and D

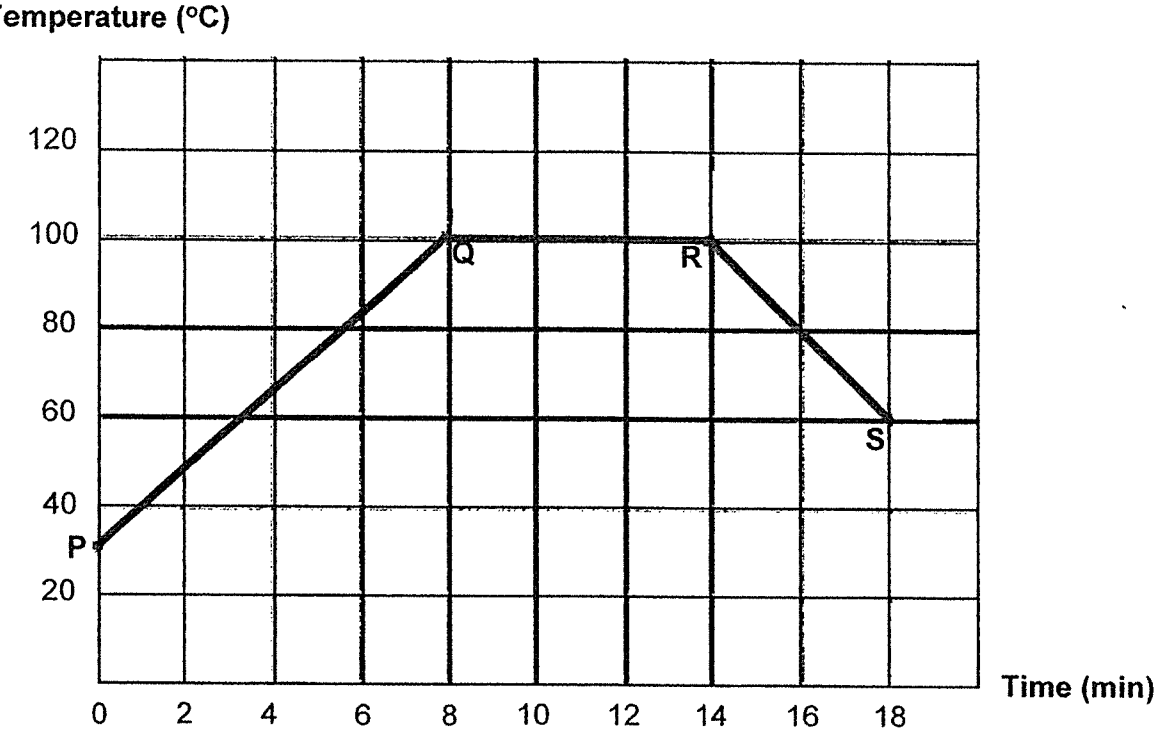
22 The diagram shows the water cycle.



Which of the following are correct examples of processes A and B?

	Process A	Process B
(1)	Water droplets forming on a glass of cold water.	Heating water at 100°C.
(2)	Mist forming at the spout of a kettle of boiling water.	Water droplets forming on the surface of a leaf in the morning.
(3)	Spectacle lenses becoming foggy after leaving an air-conditioned room.	Decrease in the volume of water in a cup after it is left on the table.
(4)	Water droplets disappearing from the surface of a glass filled with cold water.	Water droplets forming on a glass of cold water.

23 The graph below shows the change in the temperature of water in a container, as the water was boiled and then left to cool.



Based on the graph above, which of the following statement(s) is/are correct?

A Water gained heat from P to Q only.

B Water reached the boiling point at the 8th minute.

C Evaporation of water occurred from R to S only.

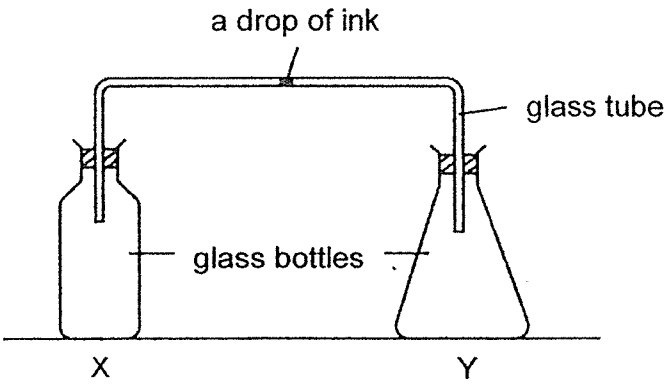
(1) A only

(2) B only

(3) A and B only

(4) A, B and C

24 The diagram shows two empty glass bottles, X and Y, connected by a glass tube. There is a drop of ink in the tube. John wants to move the drop of ink towards bottle X.



Which of the following methods will cause the drop of ink to move towards bottle X?

(1) Place both bottles X and Y into a basin of hot water.

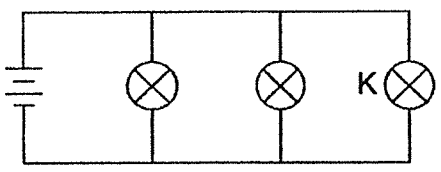
(2) Place both bottles X and Y into a basin of cold water.

(3) Place bottle X into a basin of cold water and bottle Y into a basin of hot water.

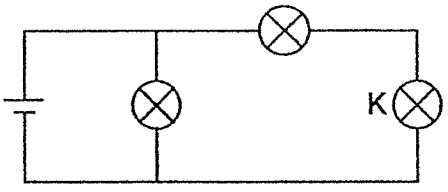
(4) Place bottle X into a basin of hot water and bottle Y into a basin of cold water.

25 Aisha set up four different circuits using identical bulbs and batteries as shown. In which circuit would bulb K light up the brightest?

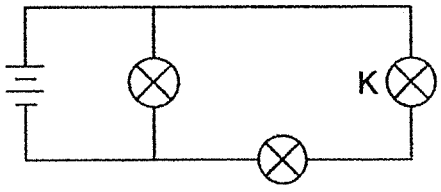
(1)



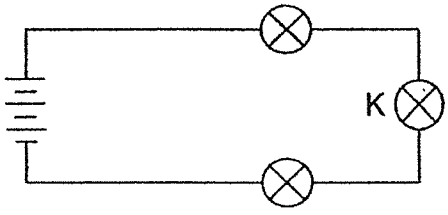
(2)



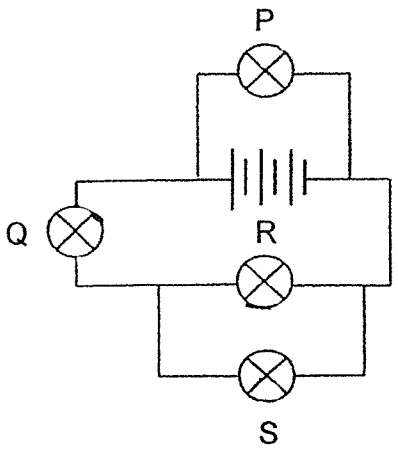
(3)



(4)



26 Study the circuit diagram as shown.



Which bulb, when fused, would cause only **ONE** bulb to light up in the circuit?

(1) P

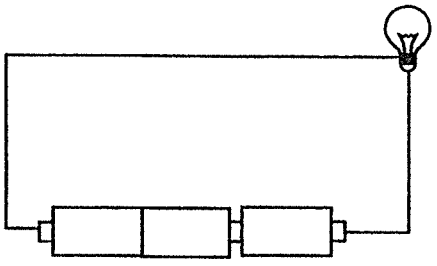
(2) Q

(3) R

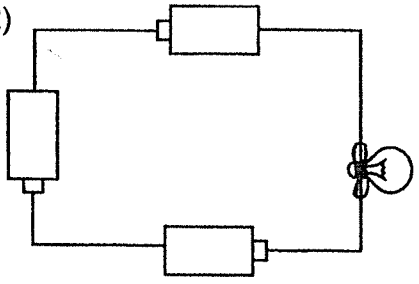
(4) S

27 The following circuits as shown are prepared using new batteries and bulbs. In which of the circuits will the bulb **not** light up?

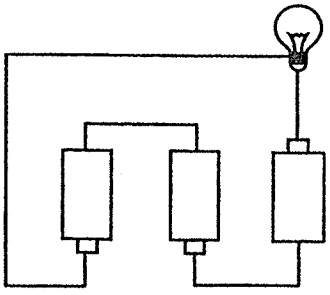
(1)



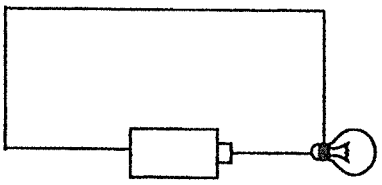
(2)



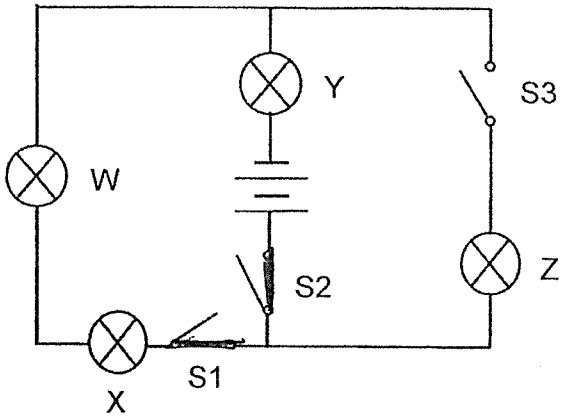
(3)



(4)



28 A circuit was set up as shown.



Which of the following statements correctly describes the bulbs when only switches S1 and S2 are closed?

(1) Bulbs W and X do not light up.

(2) Bulb Y is brighter than bulb X.

(3) Bulbs Y and Z did not light up.

(4) Bulbs W, X and Y have the same brightness.

(Go on to Booklet B)

Anglo-Chinese School
(Primary)
A Methodist Institution
(Founded 1886)

END OF YEAR EXAMINATION 2024
SCIENCE
PRIMARY FIVE
BOOKLET B

Name: _____ ( ) **Class: Primary 5** ____

Date: 24 October 2024 **Total Time for Booklets A and B: 1 h 45 min**

_____
Parent's/ Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. Write your name, register number and class in the spaces provided.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

BOOKLET	MAX MARKS	MARKS OBTAINED
A	56	
B	44	
Total	**100**	

This booklet consists of **14** printed pages including this cover page.

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)

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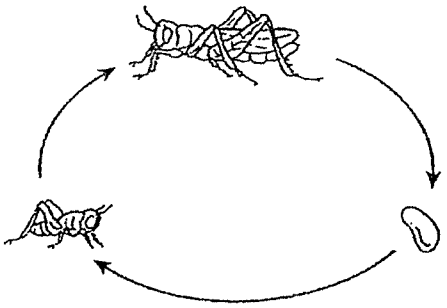
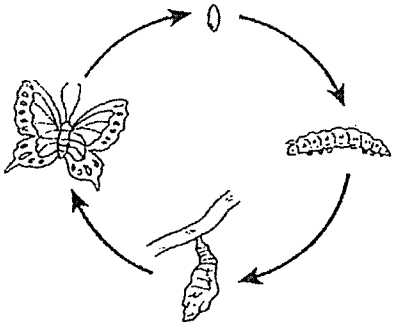
29 The diagrams show the life cycles of the grasshopper and the butterfly.





(a) Based on the diagrams, state a difference between the life cycles of a grasshopper and a butterfly. [1]

_____

_____

(b) Both the grasshopper and the butterfly lay many eggs at a time. State the advantage of laying many eggs at a time. [1]

_____

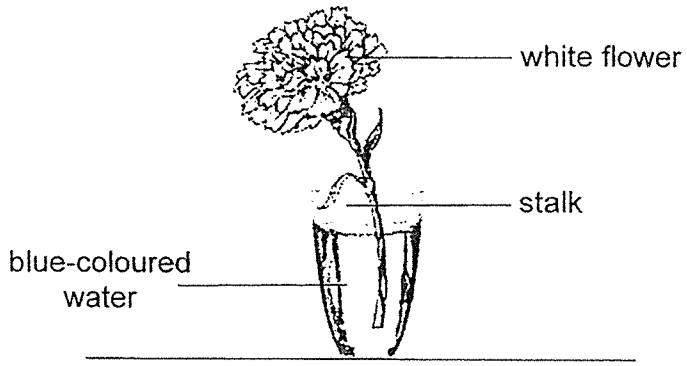
_____

(c) At which stage of the butterfly's life cycle is it most useful for the fruit farm? Explain. [2]

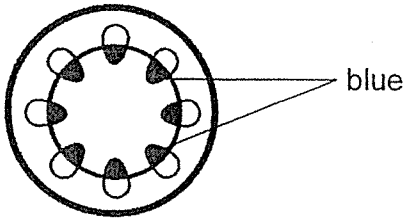
_____

_____

30 Ali placed the stalk of a white flower in a beaker of blue-coloured water as shown.



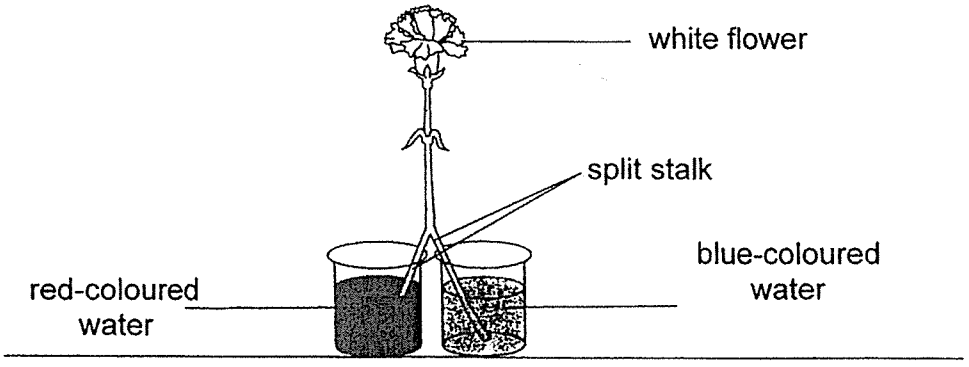
After two days, Ali took the flower out from the beaker and cut out a cross-section of the stalk.



He observed that some parts of the cross-section were stained blue as shown.

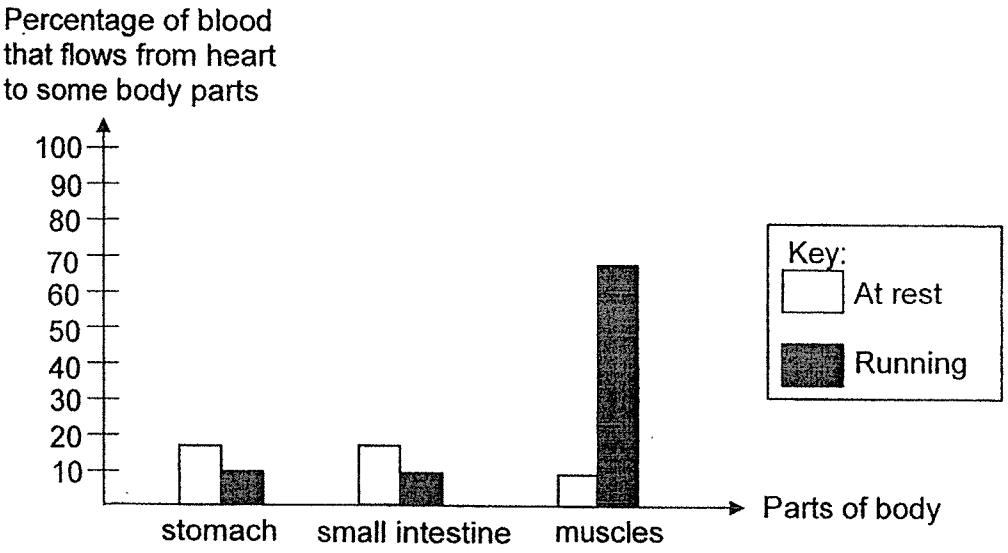
(a) Explain why the parts shown in the cross-section were stained blue. [1]

He then cut the stalk of another white flower into 2 halves and placed one half of the stalk into red-coloured water and the other half into blue-coloured water.



(b) Ali predicted that the colour of the flower will turn purple. Do you agree with him? Explain. [1]

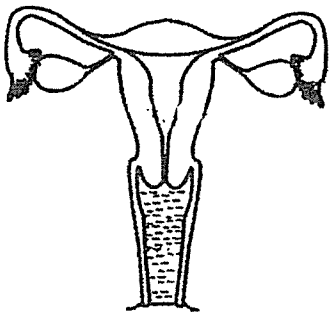
31 The bar graph below shows the percentage of blood that flows from the heart to some parts of the body when a person is at rest and running.



(a) Explain why the blood flow to the muscles is higher when a person is running than when he is resting. [2]

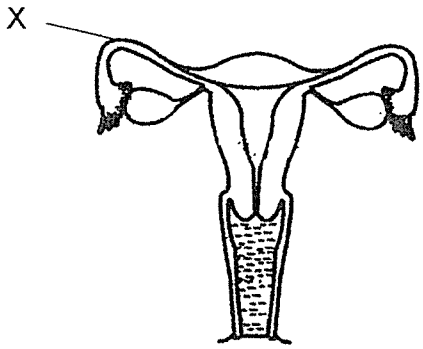
(b) David decided to exercise immediately after a heavy meal. Based on the graph shown above, explain why he should not exercise after eating. [2]

32 The diagram shows the human female reproductive system.



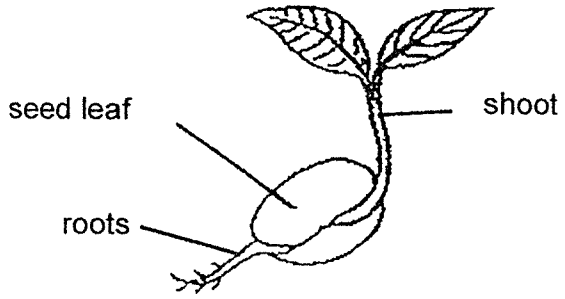
(a) Label the part(s) in which a baby develops on the diagram. [1]

(b) Describe how the developing baby obtain nutrients. [1]



(c) A cut is made at part X. Can fertilisation still take place? Explain. [1]

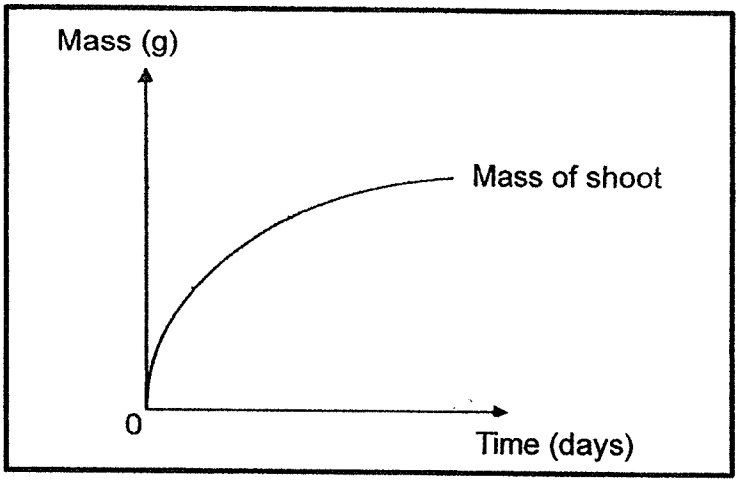
33 The diagram shows a seedling.



(a) State the conditions needed for a seed to develop into a seedling. [1]

_____

(b) The graph shows the change in the mass of the shoot. Using the same graph, draw a line to show the change in mass of seed leaves as the seeding grows. [1]



(c) Explain your answer in part (B). [2]

_____

_____

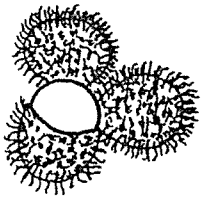
34 Jack found three types of fruits, W, X and Y and recorded his observations of the fruits in the table below.

Fruit W	Fruit X	Fruit Y
Juicy Sweet tasting	Fibrous husk Large	Inedible Surrounded by stiff hairs

(a) Based on his observations, identify the method of dispersal for each of the fruit. [1]

Fruit	Method of dispersal
X	
Y	

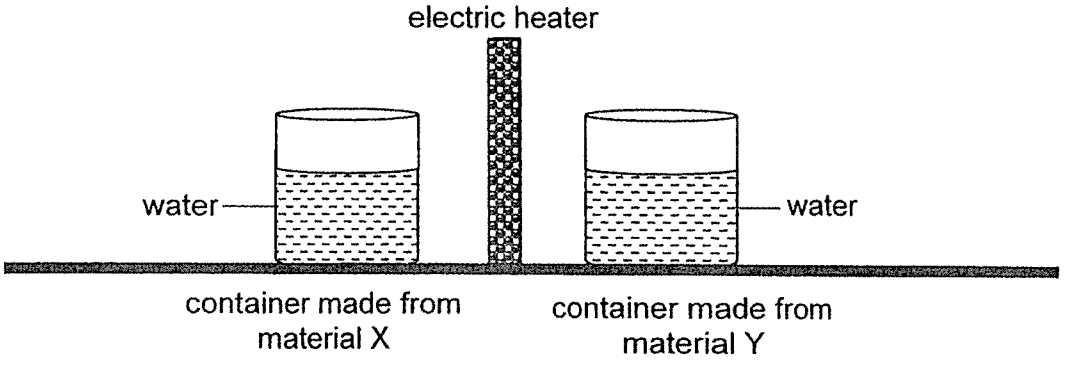
(b) One of the pupils noted that animals eat the whole of fruit W, including the outer covering and seeds. The seeds cannot be digested.



Fruit W

Explain how this helps with the reproduction of the plant of fruit W. [2]

35 Hassan set up an experiment as shown with two similar containers made from different materials, X and Y.



He measured the temperature of the water in both containers over 30 minutes and recorded the results in the table as shown.

Time (minutes)	Temperature of water in the container made from material X (°C)	Temperature of water in the container made from material Y (°C)
0	23	23
10	37	30
20	56	38
30	76	45

(a) State two other variables Hassan needs to keep the same in order to conduct a fair experiment. [2]

_____

_____

(b) Using Hassan's results, which material, X or Y, would be more suitable for making a box used to keep food warm for a long period of time? Explain your answer. [2]

_____

_____

_____

_____

36 An experiment to investigate the rate of evaporation of water was conducted with two beakers, A and B, each containing 100 ml of water. Each beaker was placed at a location of different temperature. The amount of water left in each beaker was then measured after some time and recorded in the table below.

Beaker	Temperature of water at the start (°C)	Exposed surface area (cm^2)	Volume of water left (ml)
A	(a) _____	30	50
B	40	30	70

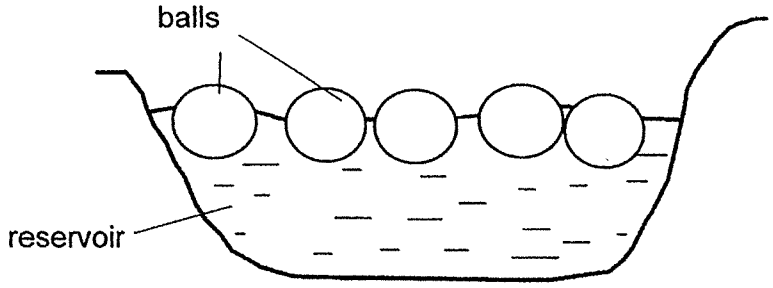
(a) State a possible value of the temperature of water in beaker A in the table. [1]

(b) Suggest a change to the setup to find out how the exposed surface area affects the rate of evaporation of water. [1]

_____

_____

(c) The water level in reservoirs has been affected with the recent increase in the surrounding temperature. Scientists suggest placing floating balls placed in the reservoirs to help slow down the decrease in water level.



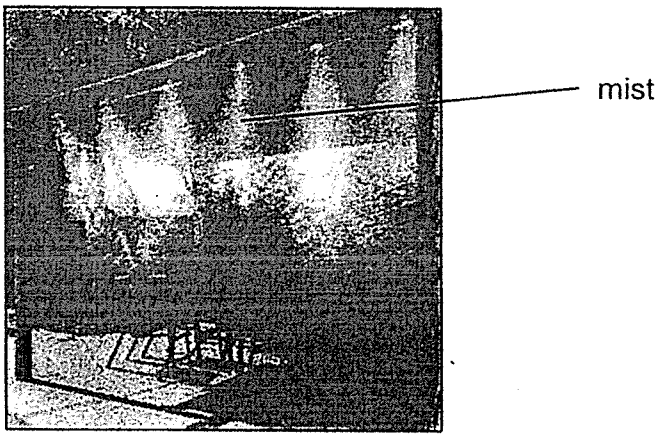
Give two reasons to how the balls help to slow down the decrease in water level. [2]

_____

_____

_____

37 Tom was feeling hot while having lunch at an outdoor restaurant on a sunny day. Some tiny water droplets are released by the system in the form of a mist as shown in the diagram. He felt cool standing around the mist.



(a) Explain how the mist lowers the temperature of the surrounding air. [1]

_____

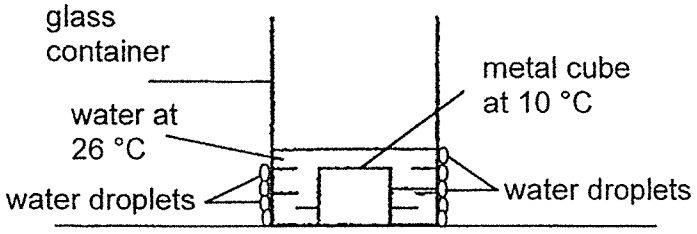
_____

(b) A gust of wind then blew on Tom, and he felt cooler. Explain why. [1]

_____

_____

38 Ravi placed a metal cube at 10°C inside a glass container containing water at room temperature (26°C).



(a) Ravi observed some water droplets forming on the outer surface of the glass container after 15 minutes. Explain. [2]

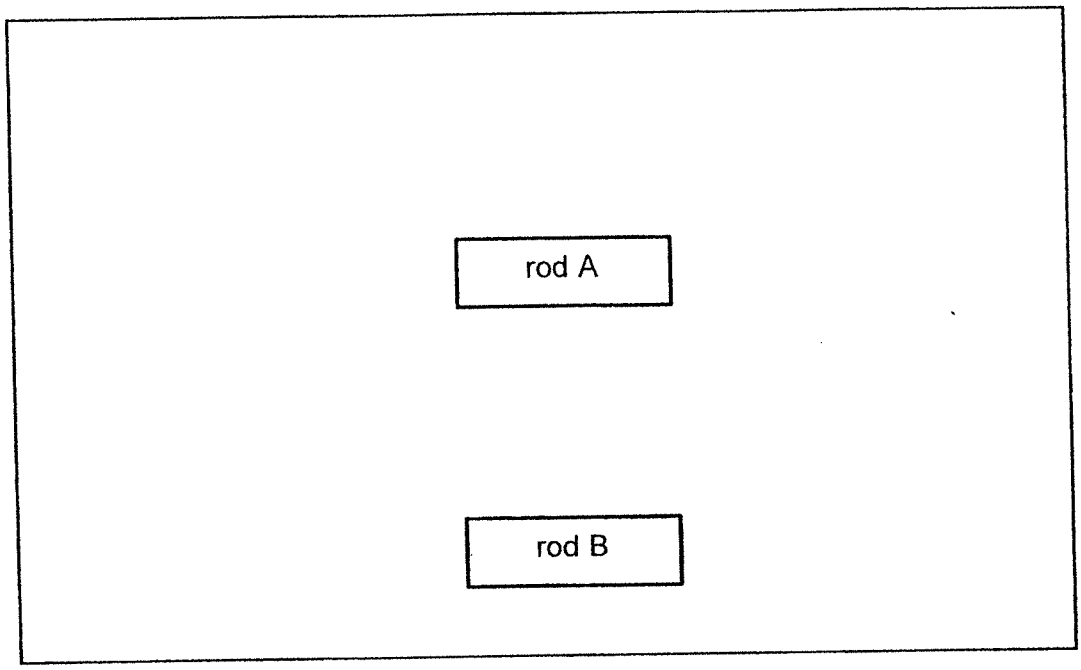
In country Z, snow is formed instead of rain during certain months of the year. Snow is also known as tiny ice flakes. The table below shows the average temperatures recorded in country Z over a period of five months.

Month	December	January	February
Average Temperature (°C)	7	4	0

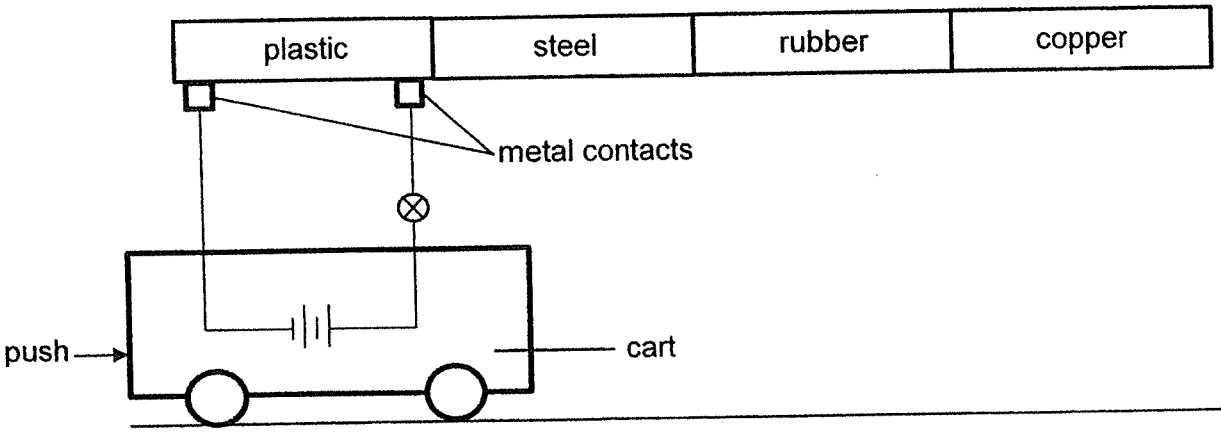
(b) Based on the table above, in which month will there most likely be snow falling in country Z? Give a reason for your answer. [1]

39 Aileen wanted to find out if rod A or B conducts electricity.

(a) Using only wires, two bulbs and a battery, draw a circuit diagram in the space to show how she should connect these electrical components to carry out her investigation. [2]



Alieen then set up an experiment as shown below and pushed the cart from left to right.



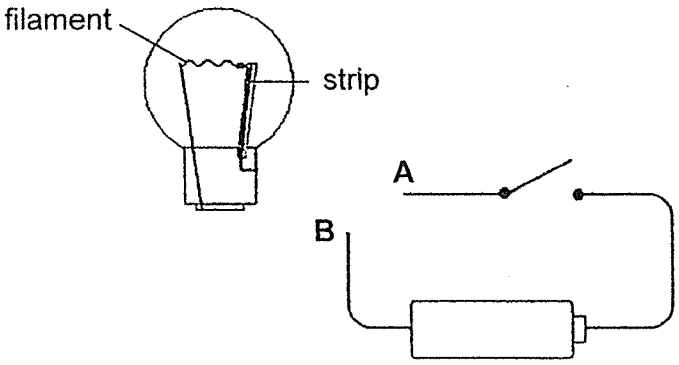
(b) Describe what Alieen would observe about the bulb as the cart moves along the path. Explain your answer. [2]

40 Ali had a strip made of two different metals. The strip bent when it was heated. It returned to its original shape and straightened after it was cooled to room temperature.

strip at room temperature

strip after heating

The diagram below shows a light bulb with the strip inside. The metal filament is in contact with the strip.



(a) Ali observed that the bulb lighted up when he closed the switch. State the parts of the bulb that wires A and B should be connected to for the bulb to light up. [1]

A: _____

B: _____

After some time, the strip became heated, and the light bulb did not light up even though the switch remained closed.

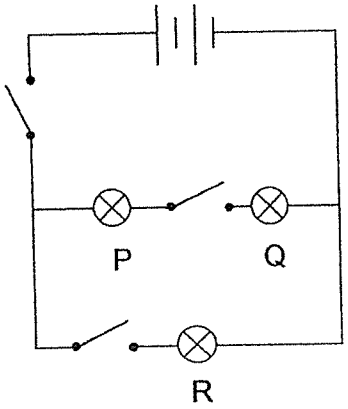
(b) Explain why the light bulb did not light up when the strip became heated. [2]

_____

_____

_____

41 The diagram shows a circuit with three identical bulbs, P, Q and R.



(a) All the switches were then closed. Put a tick (✓) in the box to indicate whether each bulb will light up dimly or brightly. [1]

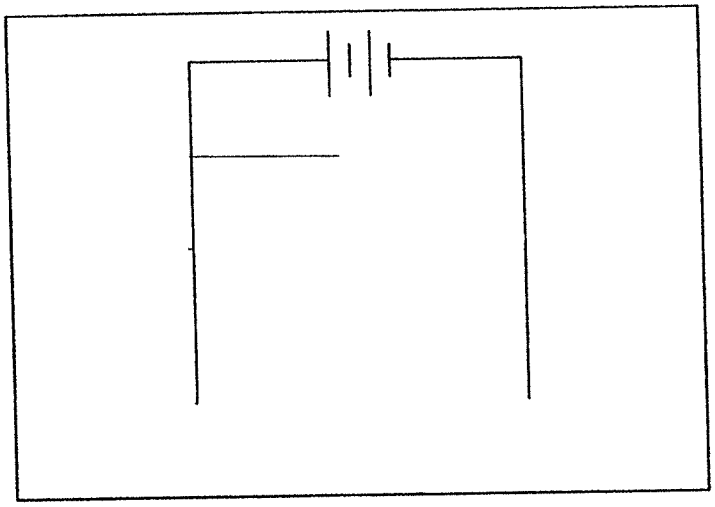
Bulb	Brightness	
	Dim	Bright
P		
Q		
R		

(b) What will happen to brightness of the bulb R if only the switch between bulbs P and Q was open? Explain. [2]

_____

_____

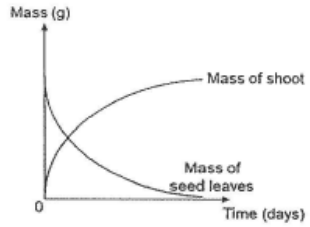
(c) Complete the circuit diagram in the space below to show how the three bulbs and switches can be arranged so that when any bulb fuses, the other two can still light up. The batteries have been drawn for you. [1]

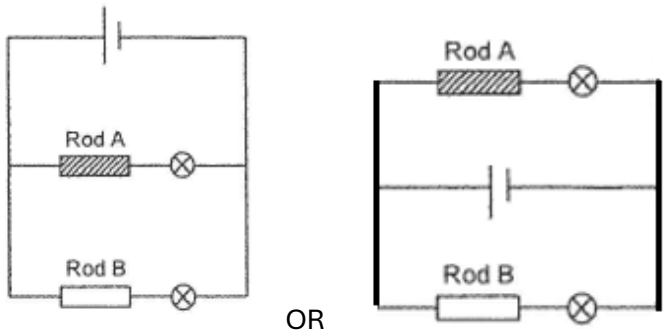


SCHOOL : ANGLO CHINESE SCHOOL (PRIMARY)
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2024 END OF YEAR EXAMINATION

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

29a	The life cycle of the grasshopper has **three** stages while the life cycle of the butterfly has **four** stages.
29b	To **increase** the chance of continuing the life cycle of the animal.
29c	Adult stage. The adult butterfly helps to **pollinate** the flowers in the farm and the flowers can develop into **fruits**.
30a	The **water-carrying** tubes transported the **blue-coloured** water up the stem to the flower.
30b	The **red-** and the **blue-coloured** water were transported by **separate** water-carrying tubes.
31a	The heart pumps **faster** to transport **more** blood carrying digested food and oxygen to the **muscles**, so that **more** energy can be released for the muscles to work. Carbon **dioxide** and **waste** materials, which are produced during running, are transported away **faster**.
31b	When exercising, more blood will flow to the **muscles** as there is less blood flow to the stomach and **small intestine** digestion rate decreased.
32a	

<table>
<tr><td>32b</td><td>The developing baby obtains nutrients from the female's blood through the umbilical cord.</td></tr>
<tr><td>32c</td><td>Yes. An egg is still able to be transported through the other fallopian tube for fertilization to take place.</td></tr>
<tr><td>33a</td><td>Water, oxygen and warmth</td></tr>
<tr><td>33b</td><td> 
</td></tr>
<tr><td>33c</td><td>The seedling is unable to make its own food before the leaves grow. It gets its food stored in the seed leaves, causing the mass of the seed leaves to decrease.</td></tr>
<tr><td>34a</td><td><table><tr><th>Fruit</th><th>Method of dispersal</th></tr><tr><td>X</td><td>water</td></tr><tr><td>Y</td><td>animals</td></tr></table></td></tr>
<tr><td>34b</td><td>The animals pass the seeds out in their droppings, away from the parent plant, reduce overcrowding and competition for space water, sunlight and mineral salts (for the young plants).</td></tr>
<tr><td>35a</td><td>Distance of container from heater.
Amount of water in the containers.</td></tr>
<tr><td>35b</td><td>Material Y. The temperature increases slower which makes material Y a poorer conductor of heat and the food will lose less heat to the surrounding slower.</td></tr>
<tr><td>36a</td><td>Any temperature greater than 40°C and less than 100°C.</td></tr>
<tr><td>36b</td><td>Change one of the beakers such that it will give a greater exposed surface area of water than the other.</td></tr>
<tr><td>36c</td><td>The floating balls reduce the surface area of water exposed to the surrounding air. The balls slow down the heat gained by the water from the surrounding air.</td></tr>
<tr><td>37a</td><td>The tiny water droplets gain heat from the surrounding air quickly to evaporate lowering the surrounding temperature.</td></tr>
</table>

<table>
<tr><td>37b</td><td>The presence of wind increased the rate of evaporation. The water droplets on his skin gained more heat from his body to evaporate.</td></tr>
<tr><td>38a</td><td>Water in the glass container lost heat to the colder metal cube and the glass container lost heat to the colder water. Water vapour in the surrounding air then lost heat to the colder glass container and condensed into water droplets.</td></tr>
<tr><td>38b</td><td>February. The temperature in February is 0°C. Water freezes into solid at 0°C.</td></tr>
<tr><td>39a</td><td> 
</td></tr>
<tr><td>39b</td><td>The bulb turns on and off. / The bulb was unlit-lit-unlit-lit.
When both contacts touched a conductor of electricity like steel and copper, the circuit closed and the bulb lighted up. When both contacts touched a non-conductor of electricity like plastic and rubber, the circuit opened, and the bulb did not light up.</td></tr>
<tr><td>40a</td><td>A: metal casing
B: metal tip</td></tr>
<tr><td>40b</td><td>The strip gained heat and expanded, bending away from the filament, forming an open circuit, and electricity cannot flow through the circuit, so the bulb did not light up.</td></tr>
<tr><td>41a</td><td>
<table>
<tr><th rowspan="2">Bulb</th><th colspan="2">Brightness</th></tr>
<tr><th>Dim</th><th>Bright</th></tr>
<tr><td>P</td><td>✓</td><td></td></tr>
<tr><td>Q</td><td>✓</td><td></td></tr>
<tr><td>R</td><td></td><td>✓</td></tr>
</table>
</td></tr>
<tr><td>41b</td><td>Brightness of bulb R remains the same when R is arranged in parallel with P and Q.</td></tr>
</table>

41c