TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

PRIMARY 5 END-OF-YEAR EXAMINATION 2020

Name : _____ ( )

Class : Primary 5 ( )

Parent's Signature: _____

Date: 28 October 2020

Time: 8.00 a.m. - 9.45 a.m.

Duration: 1 hour 45 minutes

Marks: _____/ 56

SCIENCE

BOOKLET A

INSTRUCTIONS TO CANDIDATES

1. Write your name, class and register number.
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.

Booklet A (28 x 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) and shade your answer on the Optical Answer Sheet.

(56 marks)

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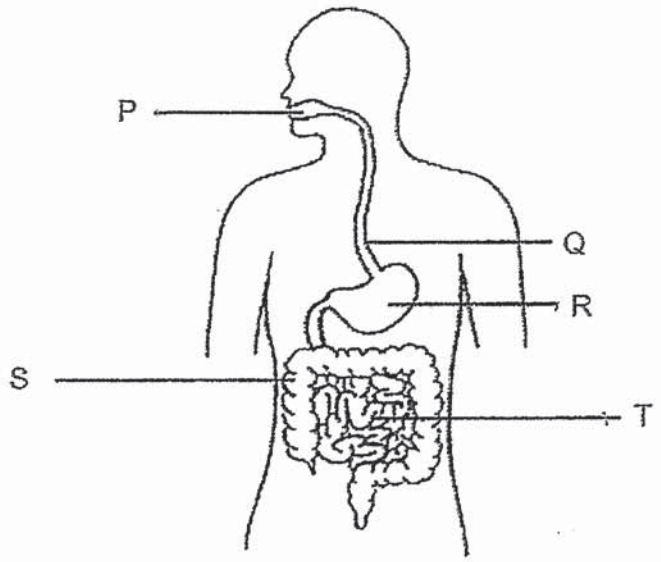
1. The diagram below shows parts, P, Q, R, S and T, of the human digestive system.



Where does digestion occur?

(1) P, Q and T

(2) P, R and T

(3) Q, R and S

(4) R, S and T

2. Which of the following controls the substances moving in and out of a cell?

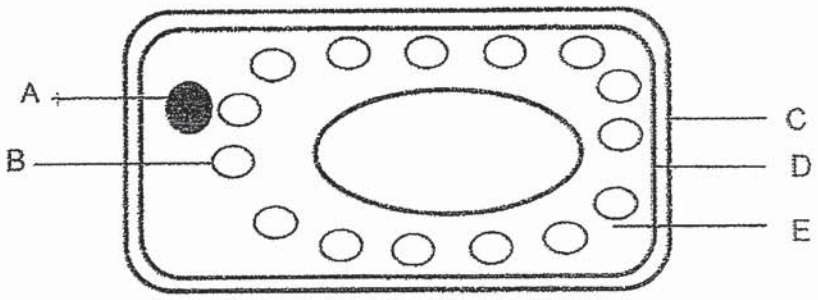
(1) nucleus

(2) cell wall

(3) cytoplasm

(4) cell membrane

3. The diagram below shows a leaf cell.



Which part(s) of the leaf cell is/are also found in a human cheek cell?

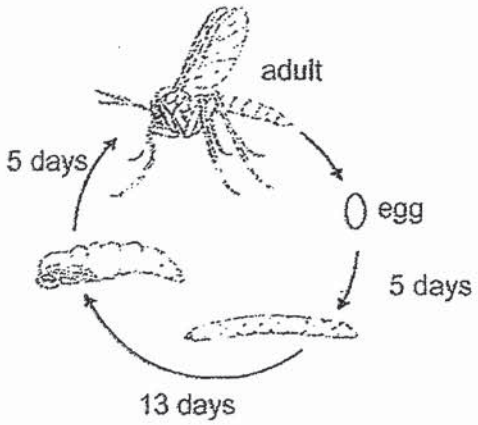
(1) A only

(2) B and C only

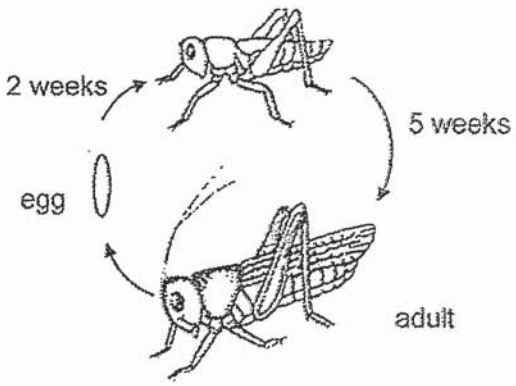
(3) A, D and E only

(4) A, B, D and E only

4. The diagrams below show the life cycles of organisms J and K.



organism J



organism K

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

(1) Organism K does not feed during the nymph stage.

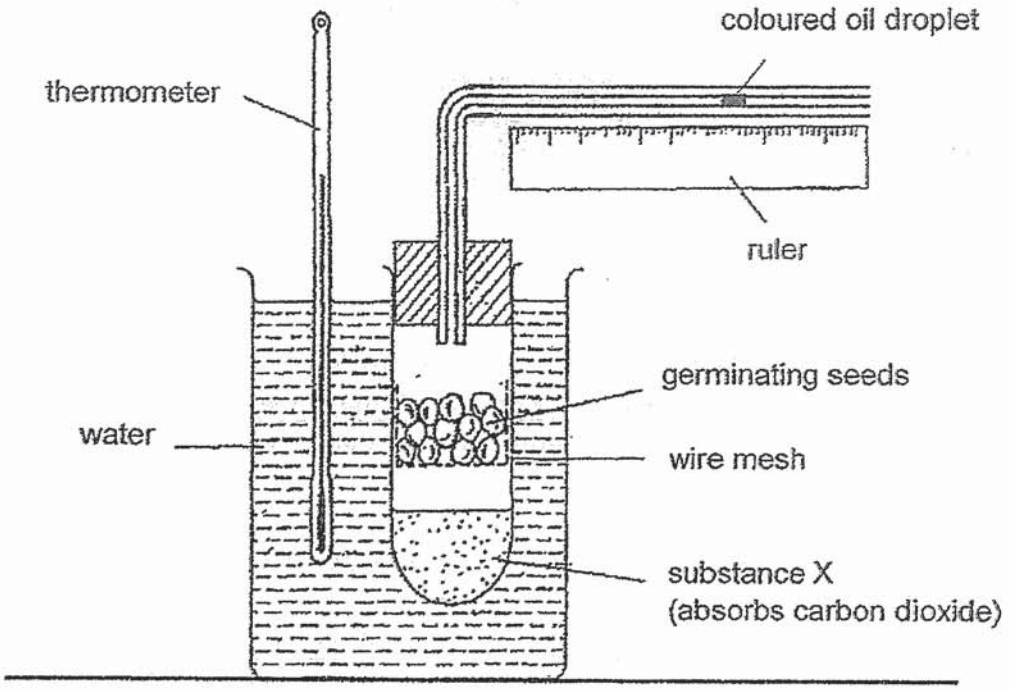
(2) Both the young of organisms J and K resemble the adult.

(3) Organism J has a 3-stage life cycle while organism K has a 4-stage life cycle.

(4) The young of organism J takes a shorter time to develop into an adult than that of organism K.

5. Seeds take in oxygen during germination.

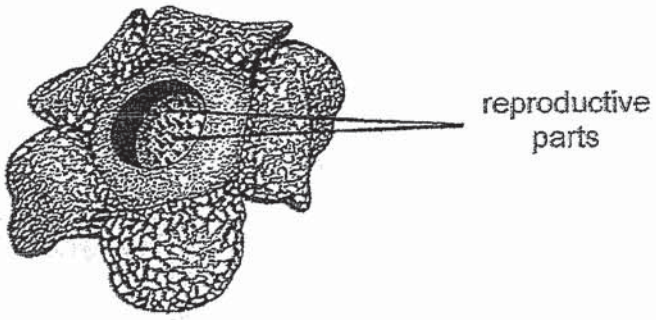
The set-up below is used to show that oxygen is taken in by the germinating seeds.



What measurement(s) should be taken to show that oxygen is taken in?
("✓" means measurement is needed)

	Size of germinating seeds (cm)	Distance moved by droplet (cm)	Temperature (°C)
(1)			✓
(2)		✓	
(3)	✓	✓	
(4)	✓		✓

6. Rafi recorded his observations on the flowers of plant X:



flower of plant X

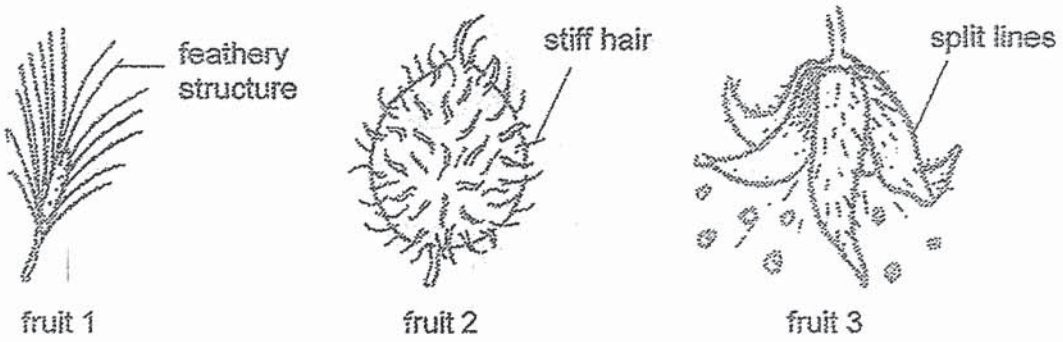
Observations:

- The flowers give off a strong smell.
- Their reproductive parts are hidden in the flowers.
- Each flower has either male or female reproductive parts.

Which of the following can be inferred from Rafi's observation?

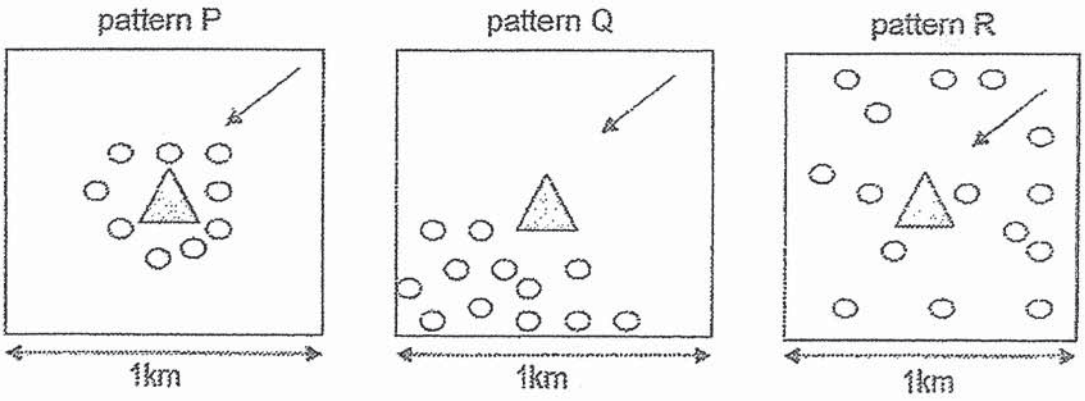
	Method of pollination	Least number of flowers involved in pollination
(1)	insect	one
(2)	insect	two
(3)	wind	one
(4)	wind	two

7. The diagrams below show three different fruits.



The dispersal patterns of the fruits of these three types of plants are shown below.

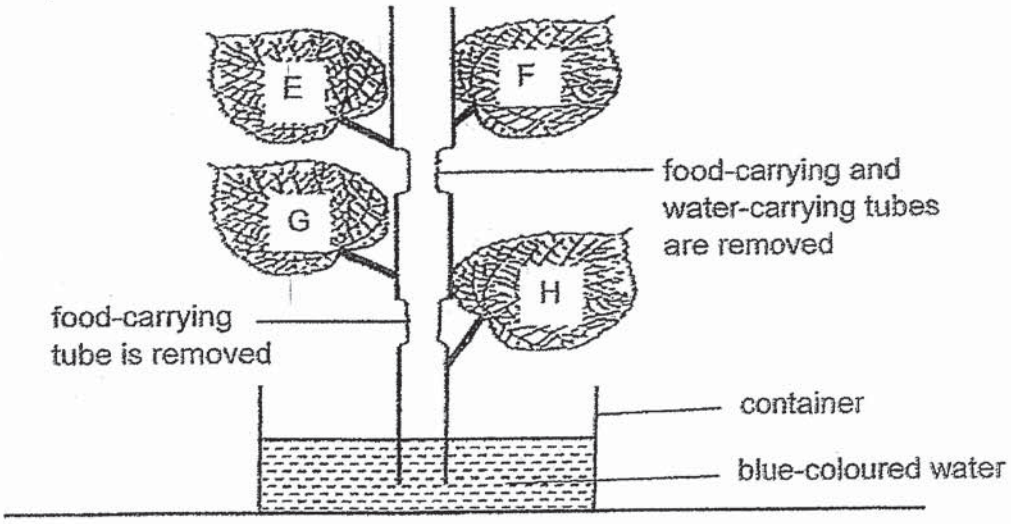
	Represents the parent plant
	Represents the seedlings
	Represents the direction of wind



Which dispersal patterns, P, Q and R, matches fruits 1, 2 and 3?

	fruit 1	fruit 2	fruit 3
(1)	P	Q	R
(2)	Q	P	R
(3)	Q	R	P
(4)	R	Q	P

8. Sam removed parts of the stem of a plant as shown below.



Which of the following leaves, E, F, G and/or H, would turn blue?

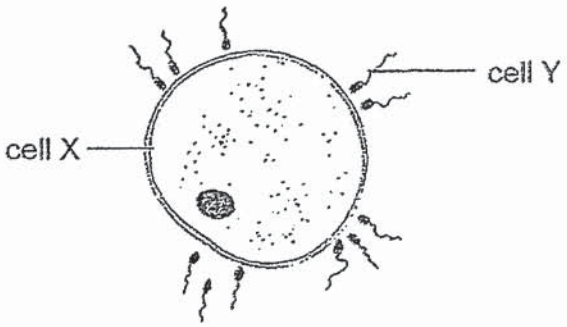
(1) H only

(2) G and H only

(3) E, F, G and H

(4) None of the leaves

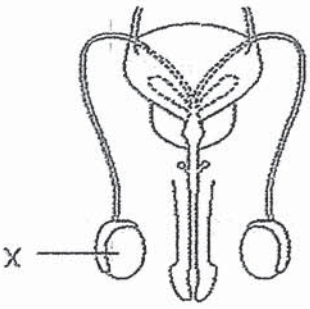
9. The diagram below shows two types of reproductive cells, cell X and cell Y.



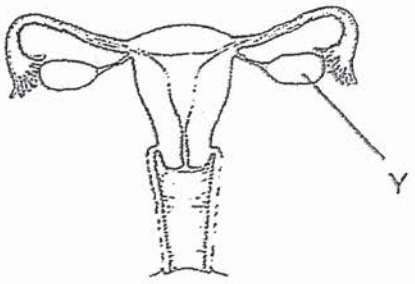
Which of the following are the reproductive organs where cell X and cell Y are produced?

	cell X	cell Y
(1)	ovule	testes
(2)	ovary	penis
(3)	ovary	testes
(4)	womb	penis

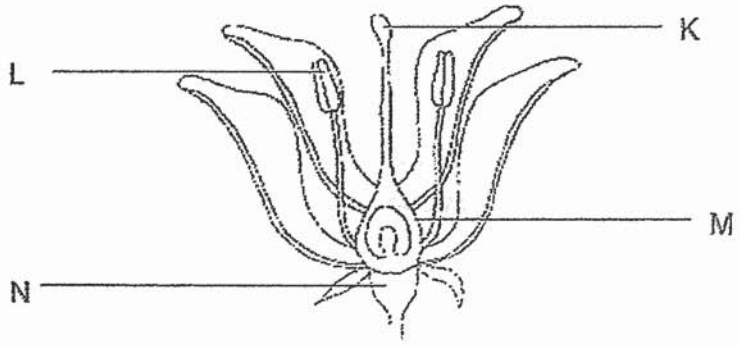
10. Study the diagrams below.



male reproductive system in human



female reproductive system in human

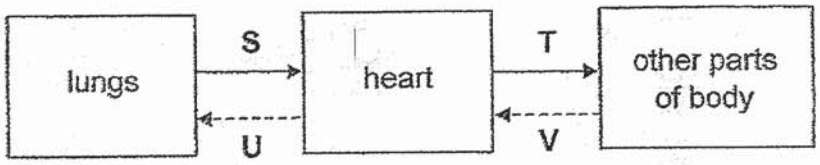


flower

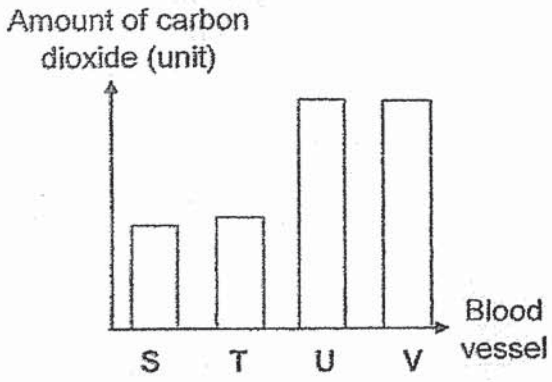
Which parts, K, L, M or N, of the flower have the same functions as X and Y in a human?

	Part X	Part Y
(1)	K	N
(2)	L	K
(3)	L	M
(4)	M	L

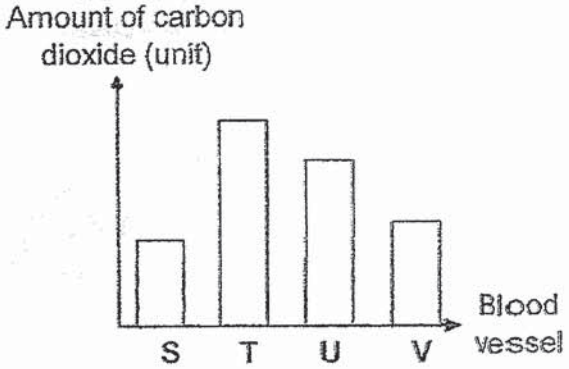
11. The arrows, S, T, U and V, represent the pathways of blood in a human circulatory system.



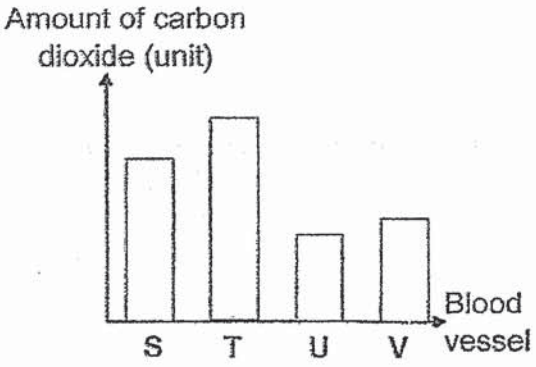
Which of the following graphs best represents the amount of carbon dioxide in S, T, U and V?



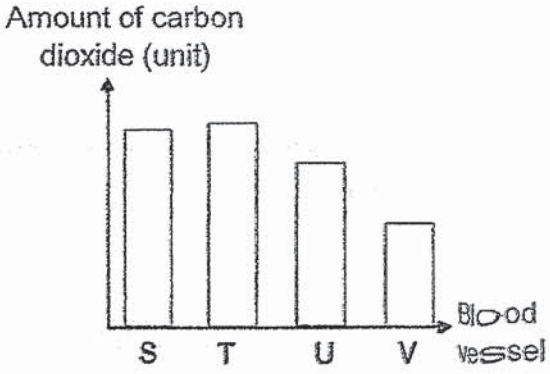
(1)



(2)



(3)



(4)

12. Which of the following parts are grouped correctly according to the body systems.

	Respiratory system	Digestive system	Circulatory system
(1)	windpipe	mouth	blood vessels
(2)	gullet	stomach	heart
(3)	lungs	small intestine	chest cavity
(4)	nose	windpipe	heart

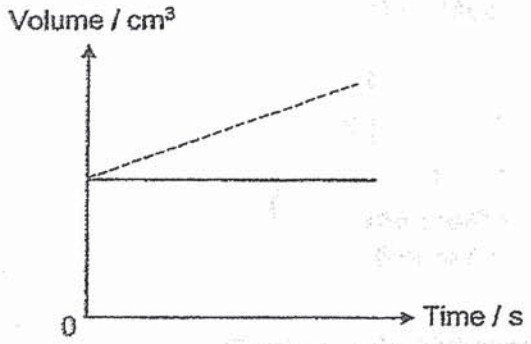
13. Alex ran 100 metres. The volume of his lungs was measured before and immediately after he completed the run.

Which of the following graphs correctly shows the change in the volume of Alex's lungs before and after the run?

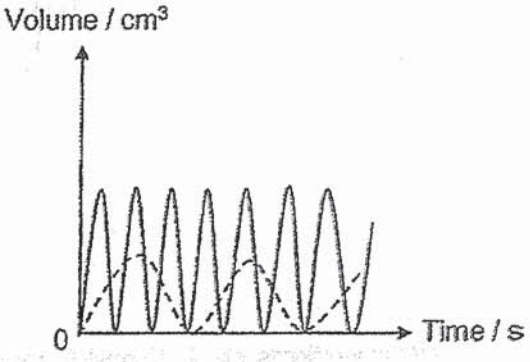
Key:

Before Alex ran: ————

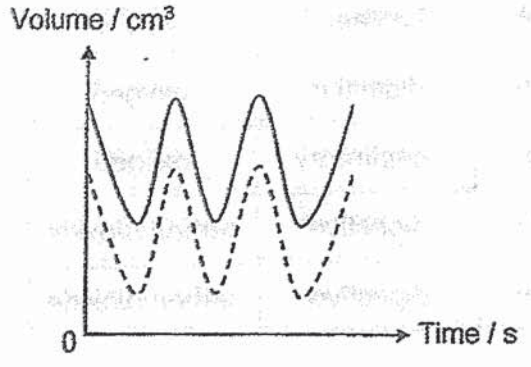
After Alex ran: - - - - - - - - -



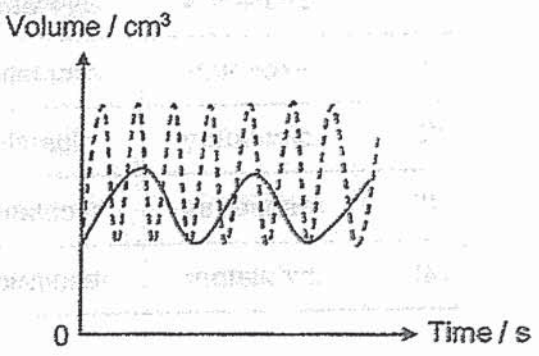
(1)



(2)

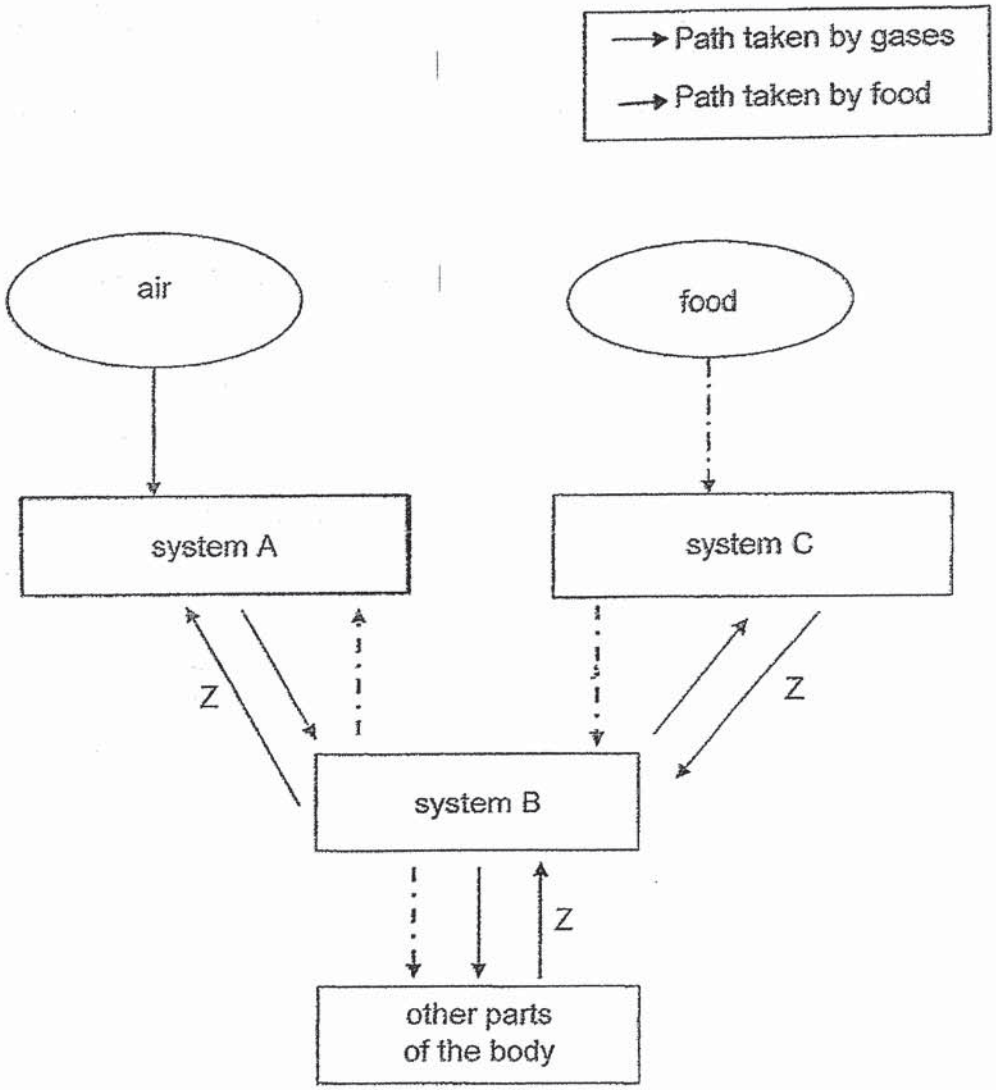


(3)



(4)

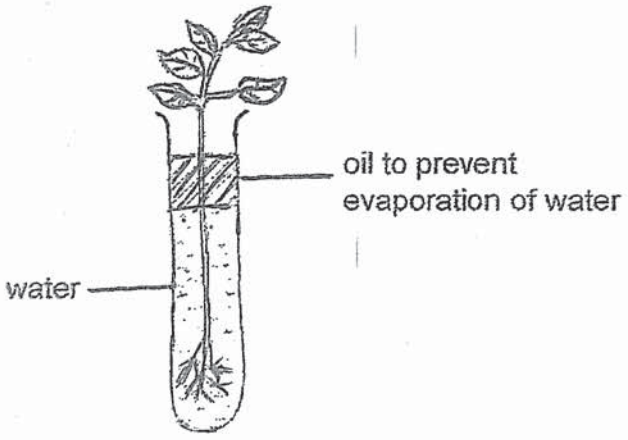
14. The diagram below shows how food and gases are transported between systems A, B and C in the human body.



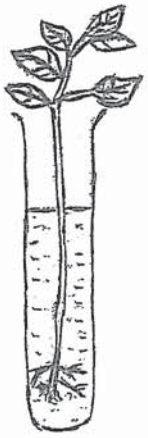
What systems do A, B and C represent and what is gas Z?

	System A	System B	System C	Gas Z
(1)	respiratory	circulatory	digestive	oxygen
(2)	circulatory	digestive	respiratory	oxygen
(3)	respiratory	circulatory	digestive	carbon dioxide
(4)	circulatory	respiratory	digestive	carbon dioxide

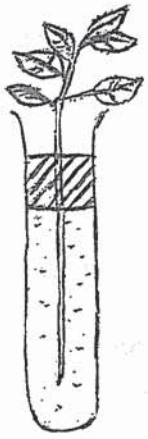
15. Muthu wanted to find out if roots of a plant take in water.



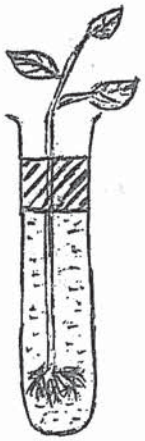
S



T



U



V

Which of the two set-ups above should he choose to carry out his experiment?

(1) S and T only

(2) S and U only

(3) T and U only

(4) U and V only

16. Which of the following can be attracted by a magnet?

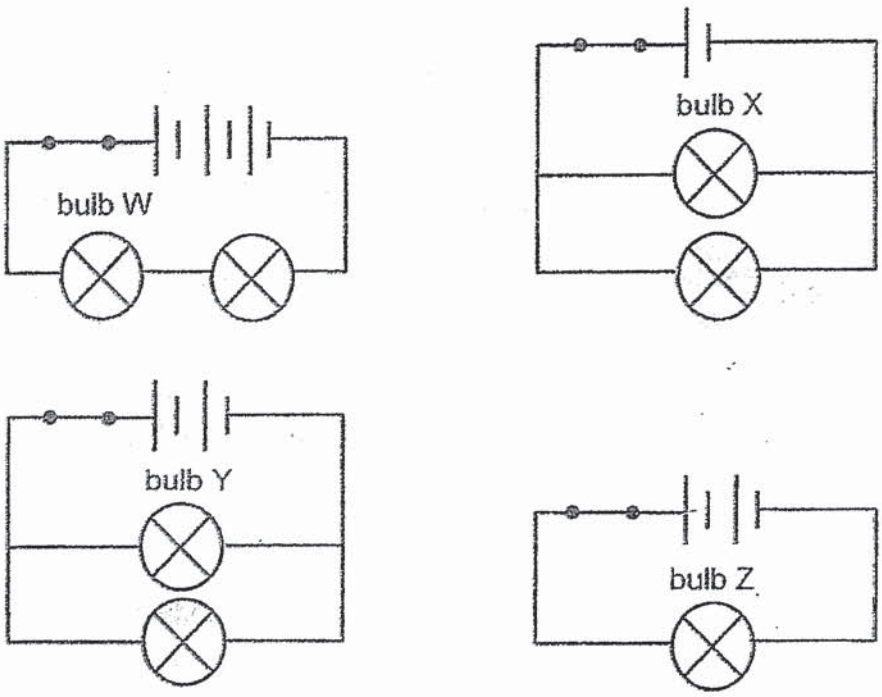
(1) iron

(2) gold

(3) copper

(4) aluminium

17. The diagrams below show four circuits.



Which of the following bulbs are of equal brightness?

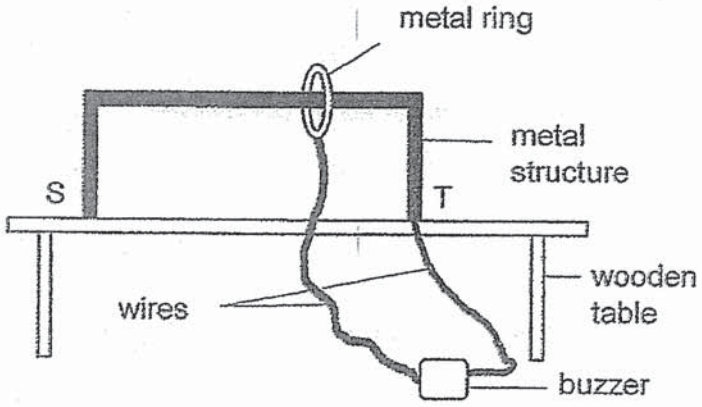
(1) W and Y

(2) X and Y

(3) X and Z

(4) Y and Z

18. A player has to move a ring from S to T without touching the metal structure to win the game. The buzzer would sound if the metal structure is touched.



However, during the game, the buzzer did not sound when the ring touches the metal structure. From the diagram above, what change must be done to the set-up to allow it to work?

(1) Use a plastic ring.

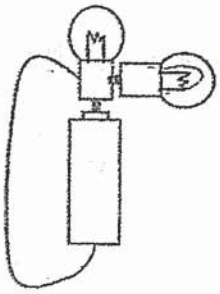
(2) Use a longer wire.

(3) Insert a bulb into the circuit.

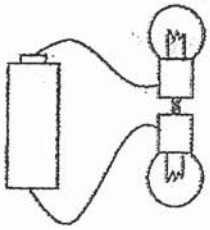
(4) Connect a battery to the wires.

19. Which of the following electrical circuits allows only one bulb to light up?

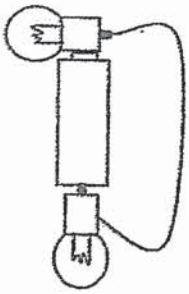
(1)



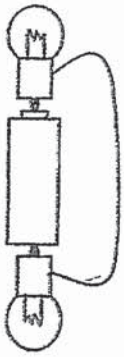
(2)



(3)



(4)



20. Which of the following actions does not conserve electrical energy?

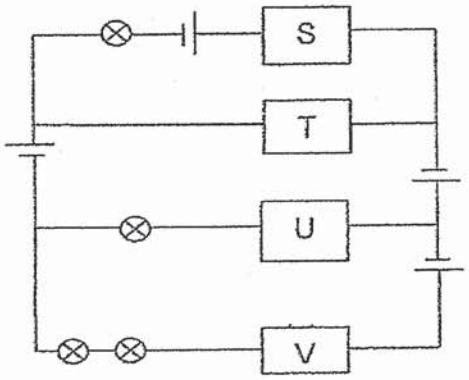
(1) Using energy-saving lamps.

(2) Leaving the lights on when not in the room.

(3) Using an electric fan instead of an air conditioner.

(4) Hang the clothes outdoors to dry instead of using an electric dryer.

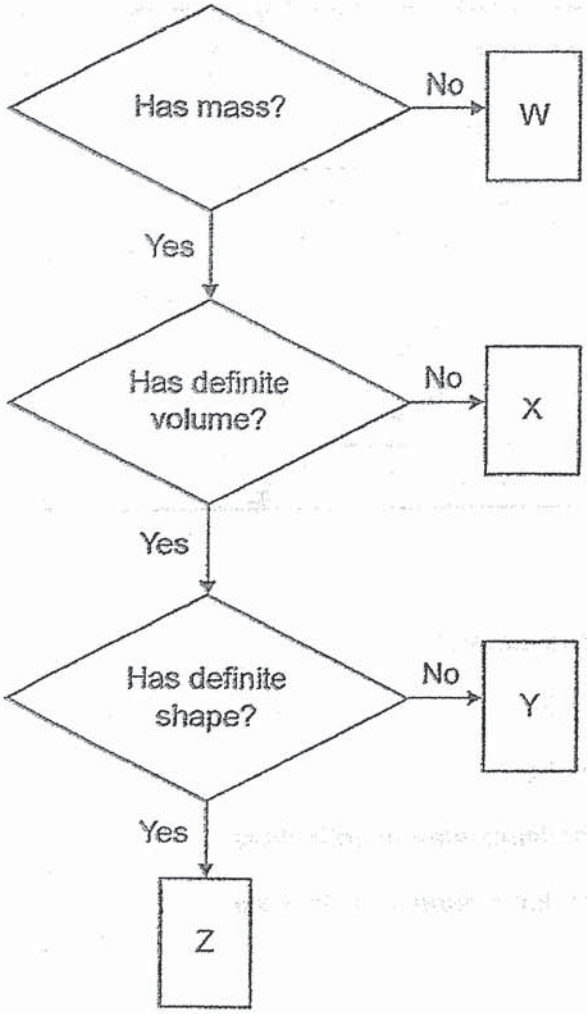
21. Four materials, S, T, U and V, were connected in the electrical circuit as shown below.



Which of the following correctly represents materials, S, T, U and V, in the electrical circuit so that only two of the bulbs light up?

	Material S	Material T	Material U	Material V
(1)	plastic	wood	glass	metal
(2)	metal	metal	plastic	wood
(3)	metal	glass	metal	plastic
(4)	plastic	metal	metal	metal

22. Substances W, X, Y and Z are classified in the flowchart shown below.

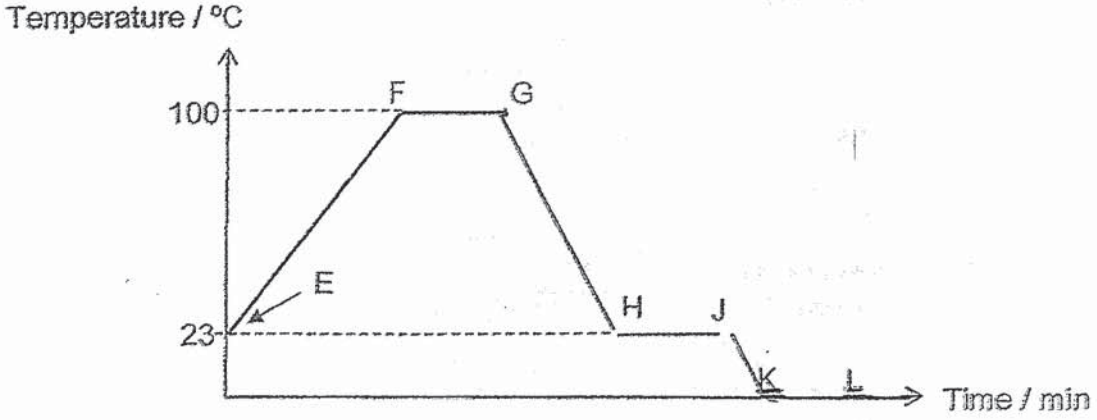


What could W, X, Y and Z be?

	W	X	Y	Z
(1)	light	water vapour	sand	oil
(2)	sound	oxygen	oil	sand
(3)	heat	sand	water vapour	oxygen
(4)	oxygen	oil	sand	sound

Use the graph below to answer Questions 23 and 24.

The graph below shows the change in the temperature of water in a beaker. The water was heated over a flame. Then, the flame was removed. Finally, the beaker of water was placed into the freezer.



23. Which of the following statements is correct?

(1) There was heat gain from E to G.

(2) There was no heat gain during FG.

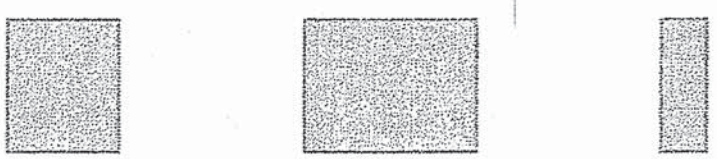
(3) During HJ, water changed from liquid state to solid state.

(4) During JK, water changed from liquid state to solid state.

24. Which of the following correctly matches the time at which the beaker was removed from the flame and placed into the freezer?

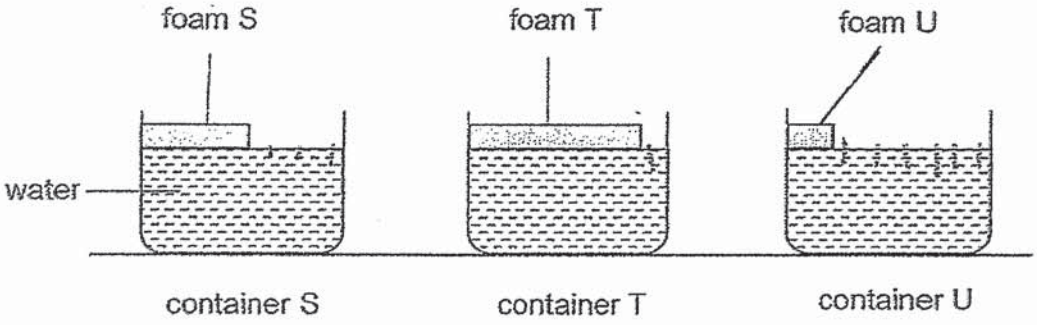
	Flame was removed	Beaker was placed into the freezer
(1)	F	H
(2)	F	J
(3)	G	K
(4)	G	J

25. Below are the diagrams of the top view of three pieces of foam, foam S, foam T and foam U.



foam S foam T foam U

These three pieces of foam are placed in three identical containers, container S, container T and container U, with the same amount of water.

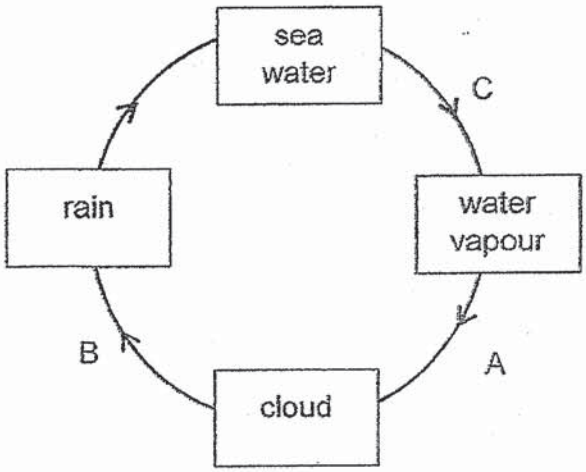


The volume of water left in each container was observed after one day.

Which of the following shows the correct order of the volume of water left in the containers, from the most to the least?

	Volume of water left (cm^3)		
	Most →		Least
(1)	S	U	T
(2)	T	U	S
(3)	T	S	U
(4)	U	S	T

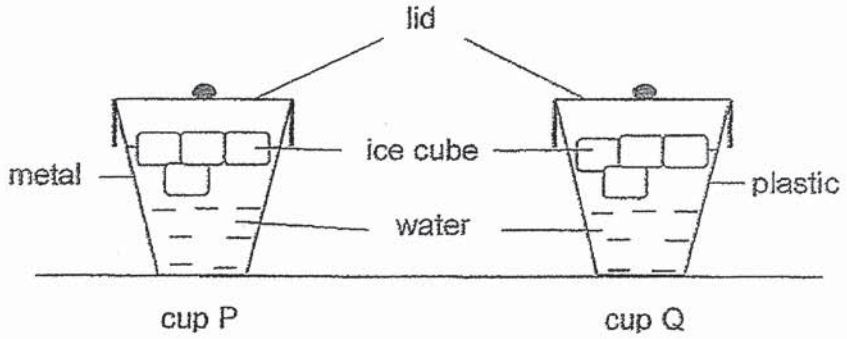
26 The diagram below represents the water cycle.



Which of the following is correct?

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

27. Equal amount of iced-water is placed in two similar-sized cups, P and Q, made of different materials. Both cups are placed in a room.



What will most likely happen after some time?

(1) The ice cubes in both cups will lose heat to the water.

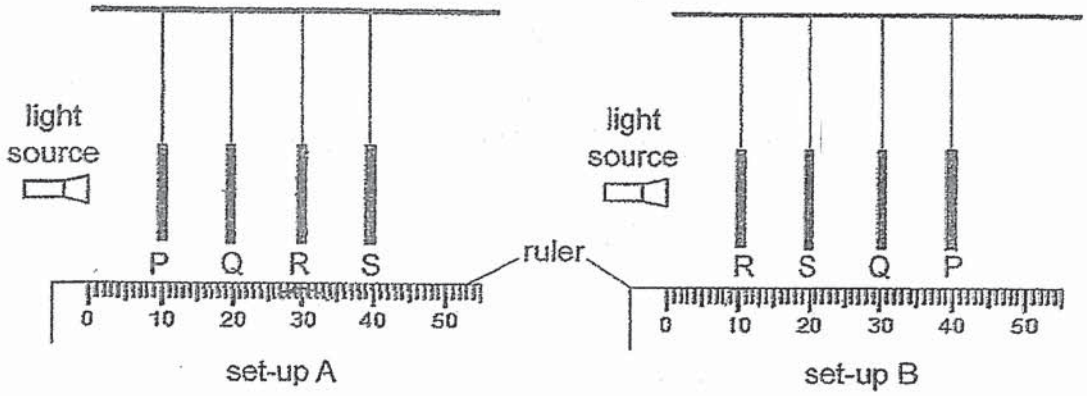
(2) The ice cubes in cup P will melt more slowly than that in cup Q.

(3) The water in cup Q will gain more heat from the surrounding air than that in cup P.

(4) The temperature of the water in cup Q will increase slower than that in cup P.

28. An experiment was conducted in a dark room to find out whether light can pass through four sheets, P, Q, R and S, made of different materials but of equal thickness.

A ruler was used to determine how far the light travelled before it was blocked.



The distance travelled by the light for each set-up was measured and the results are shown in the table below.

Set-up	Distance travelled by light (cm)
A	30
B	10

Which one of the following correctly describes sheets P, Q, R and S?

	Does it allow light to pass through?			
	P	Q	R	S
(1)	Yes	Yes	No	Not possible to tell
(2)	Yes	Not possible to tell	No	Yes
(3)	Yes	Yes	No	No
(4)	No	Yes	Yes	Not possible to tell

End of Booklet A

PRIMARY 5 END-OF-YEAR EXAMINATION 2020

Name : _____ ( )

Class : Primary 5 ( )

Parent's Signature : _____

Date: 28 October 2020

Time: 8.00 a.m. – 9.45 a.m.

Duration: 1 hour 45 minutes

SCIENCE

BOOKLET B

INSTRUCTIONS TO CANDIDATES

1. Write your name, class and register number.
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 the booklet.

Booklet A	/56
Booklet B	/44
Total	/100

Booklet B (44 marks)

For questions 29 to 40, write your answers clearly 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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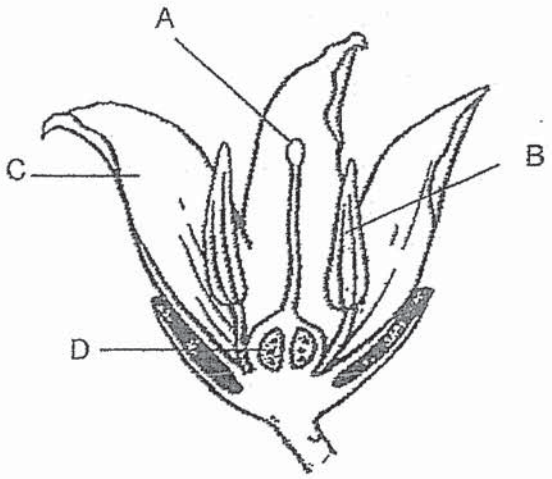
29. A, B, C and D are parts of flower X.



Flower X

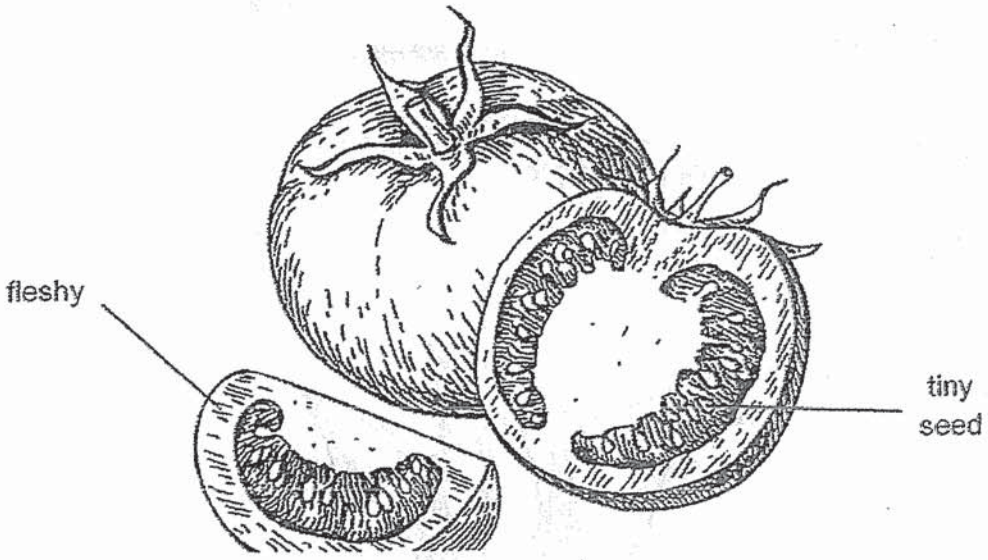
Sharon removed two of these parts. Then, she dusted some pollen grains on the remaining two parts of flower X. After some time, a fruit was still observed to be formed.

(a) Based on the diagram above, identify the two parts of flower X which had been removed. [1]

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

Score	3

The fruit of flower X is shown below.



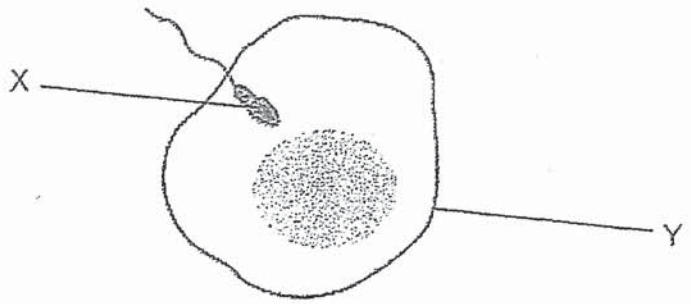
(c) Describe how the seeds of this fruit can be dispersed over a wide area. [2]

_____

_____

Score	/ 2

30. The diagram below shows a process that takes place in a female human body.



(a) Describe the process show in the diagram above. [1]

_____

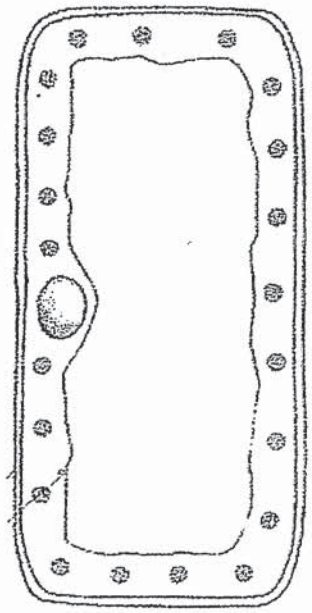
(b) Explain why there is a need to have many cell X. [1]

_____

_____

Score	2

31. Study the plant cell below.



(a) Identify and label the cell wall in the diagram above. [1]

(b) State the function of the cell wall. [1]

_____

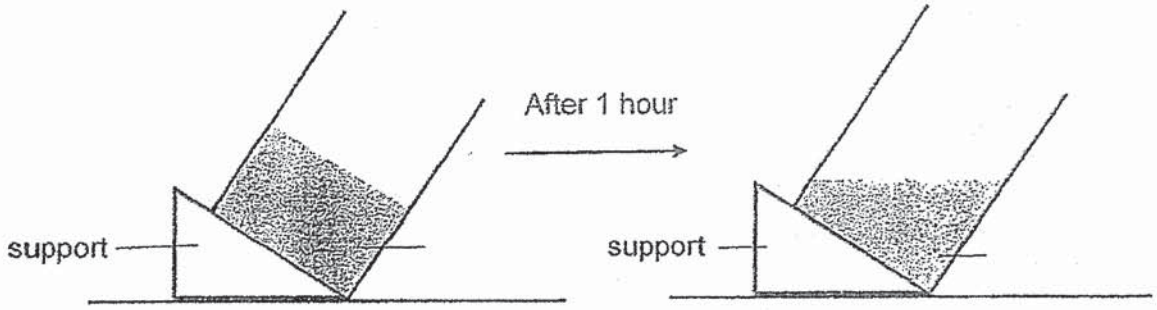
_____

(c) Name the part(s) of the cell shown above that is/ are also found in the animal cell. [1]

_____

Score		3

32. Mei Lan placed a container with substance X on a table in a room. The temperature of the room is 32°C. After one hour, she observed a change in substance X.



(a) Explain what had happened to substance X in the above diagram. [1]

_____

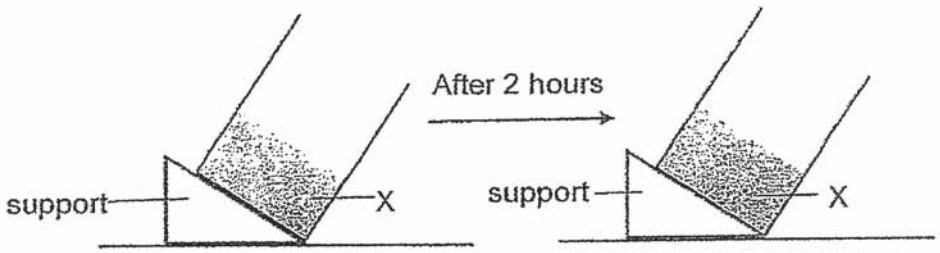
_____

Score	/ 1

The container with substance X was placed in a freezer for 5 hours.

(b) Describe the process of freezing. [1]

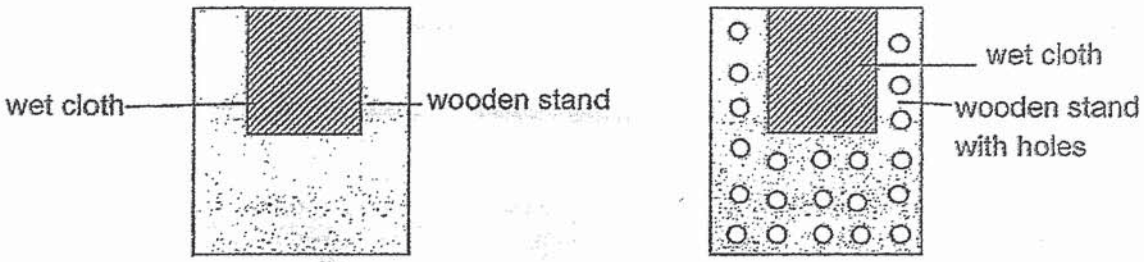
Substance X was then taken out of the freezer and left on the table in a room at the temperature of 25°C. After two hours, there was no observable change to substance X as shown below.



(c) Based on the information above, state a possible freezing point of X. [1]

Score	2

33. Wee Kiat placed two identical pieces of wet cloth, on wooden stands, C and D, as shown below in a room. He measured the mass of each cloth before and after the experiment.



The results of his experiment are shown in the table below.

	Mass of cloth (g)	
	on wooden stand C	on wooden stand D
Start of the experiment	40	40
End of the experiment	27	24

(a) On which wooden stands, C or D, did the cloth dry faster? Give a reason for your answer. [2]

_____

_____

(b) Wee Kiat wanted both cloths to dry faster. Suggest another way for Wee Kiat to dry the cloths faster. [1]

_____

_____

Score 3

34. The diagram below shows the temperature inside and outside Jeremy's car.

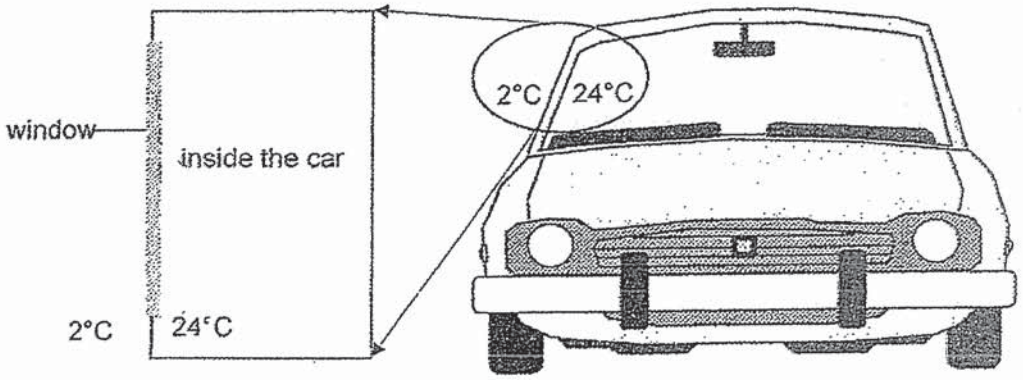


Diagram H

The temperature in the car is 24°C while the temperature outside is 2°C. After some time, water droplets are formed on the window.

(a) Draw in diagram H the water droplets on the side of the window where they are most likely to be found. [1]

(b) Explain how the water droplets are formed on that side of the car window. [2]

_____

_____

_____

(c) Describe what Jeremy would likely observe if he raises the temperature in his car to 29°C. [1]

_____

_____

Score	4

35. Farah wanted to find out how the different exercises would affect her heart rate. The table below shows Farah's heart rate when she carries out three different forms of exercise.

Exercise	Heart rate (beats per minute)
Walk for 20 minutes	100
Jog for 20 minutes	
Run for 20 minutes	148

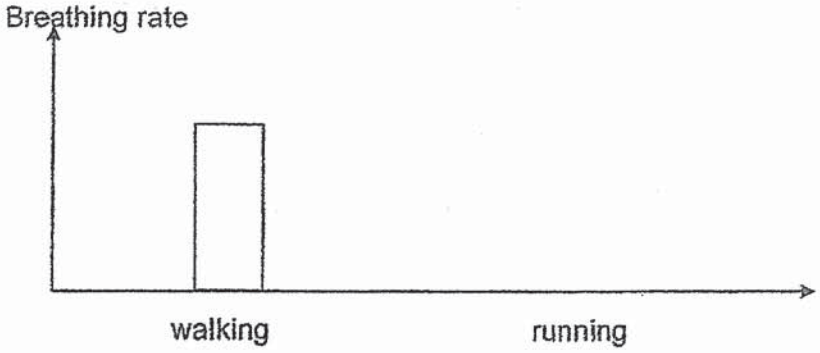
(a) Complete the table above by writing down a possible value for her heart rate during jogging. [1]

(b) Explain the difference in her heart rate when she runs compared to when she walks. [2]

_____

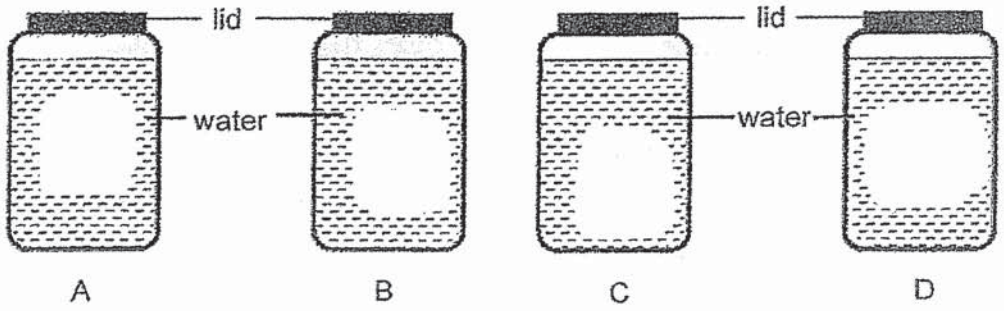
_____

(c) Complete the bar graph below to show a possible breathing rate for Farah when she is running. [1]



Score / 4

36. Anna poured equal amounts of hot water at 80°C into four different containers, A, B, C and D, that of the same size and thickness but made of different materials.



She measured the temperature of water after one hour. Her results are shown below.

Container	Temperature of water after one hour/ °C
A	65
B	50
C	55
D	75

(a) State the aim of this experiment. [1]

_____

_____

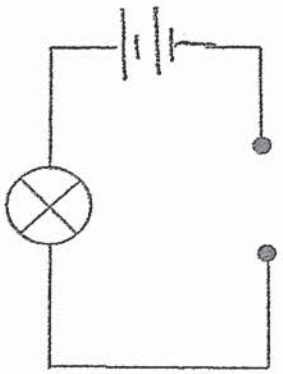
(b) State another two variables that must be kept constant for this experiment. [2]

_____

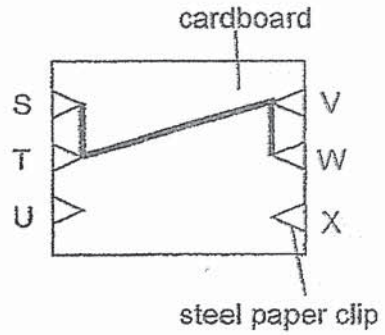
_____

Score	3

37. Jane connected a circuit tester to the circuit card as shown below.



circuit tester



circuit card

The wires of the circuit card are connected as shown above. Jane connected the two ends of the circuit tester to two different steel paper clips at a time. She recorded her results as shown below.

Points connected to circuit card	Does the bulb light up?
S and W	Yes
T and V	No
W and T	Yes
U and X	No
S and T	Yes

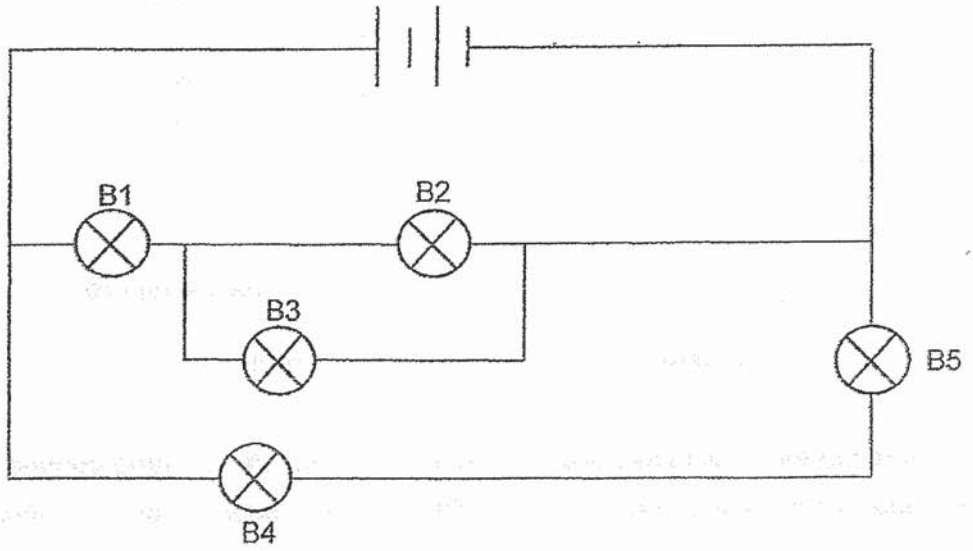
(a) Jane's teacher told her that one of her observations is wrong. Explain why.
[2]

_____

_____

Score	2

Jane set up another circuit as shown below.

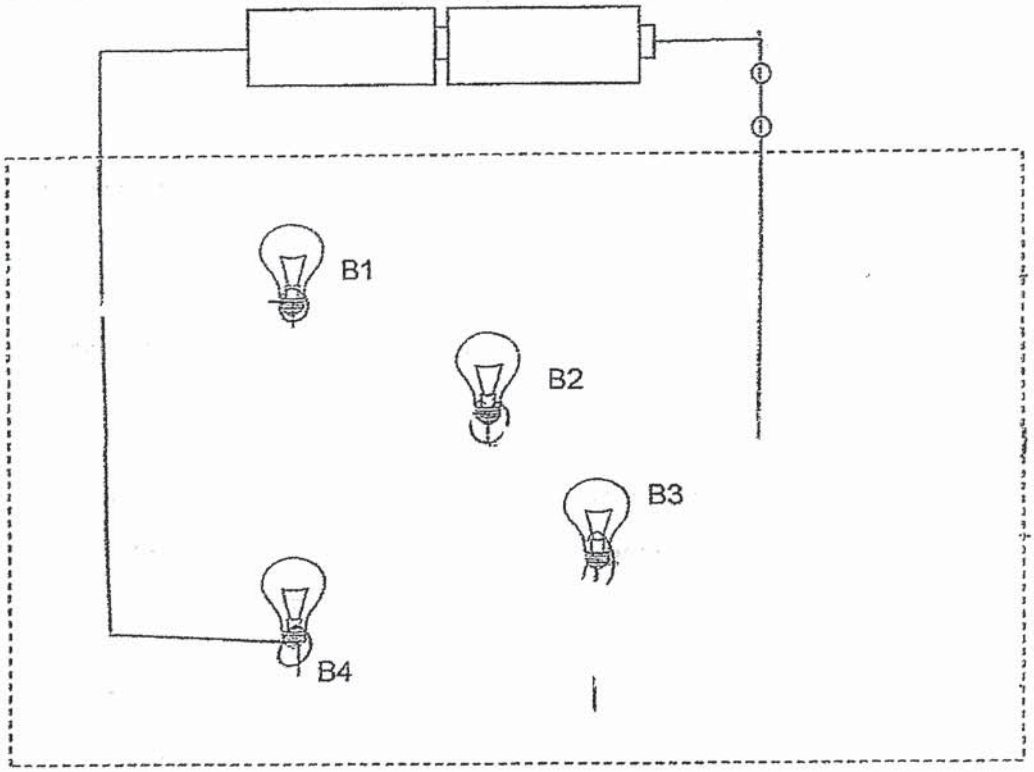


(b) If B3 fuses, which bulbs will remain lit? Explain why. [2]

(c) Mark 'X' on the circuit diagram to show the position Jane can place a switch so that she can turn all the bulbs on and off together. [1]

Score	/ 3

38. Bulbs B1, B2, B3, and B4 are connected in a circuit hidden in a wooden box as shown below. All the light bulbs lit up when the switch is closed.



Darren removed one light bulb from the electric circuit above each time and observed what happened to the rest of the bulbs. His observations are recorded in the table below.

Bulb removed	Bulb(s) lit
B1	B3, B4
B2	B3, B4
B3	B1, B2
B4	B1, B2

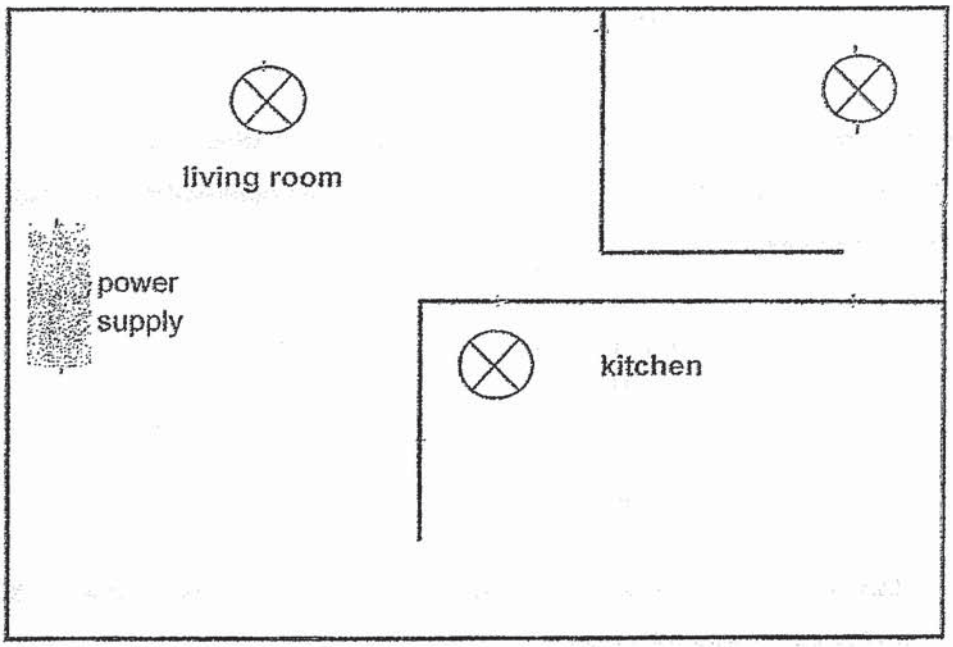
(a) Based on his observations, draw in the wires in the diagram above to complete the electric circuit [2]

Score	2

(b) Darren added another battery in series to the two batteries. The bulbs in the wooden box lit up very brightly but stopped glowing after some time. Suggest a reason why this happened. [1]

(c) Darren then designed an electrical circuit to light up an apartment with three rooms: a living room, a bedroom and a kitchen.

Complete the circuit diagram below with wires and switches such that all three bulbs will light up with equal brightness and can be switched on or off independently. The power supply is the source of electricity. [2]



Score	3

39. Daniel set up an experiment as shown below. He pushed magnet J slowly along the ruler towards the pin. He measured the distance, d, where the pin was just attracted to the magnet.

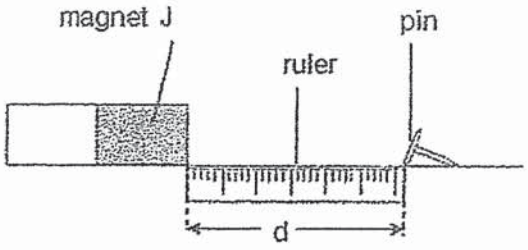
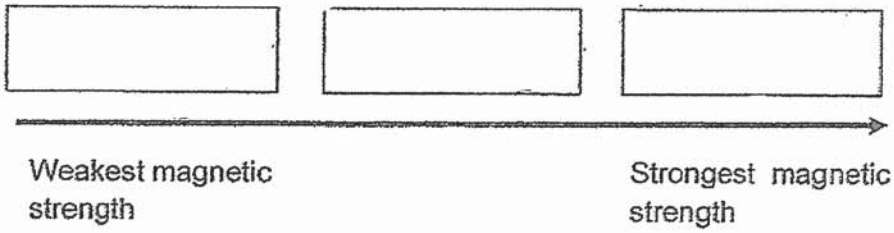


Diagram 1

He repeated these steps with magnets K then L. Daniel recorded his observations in the table below.

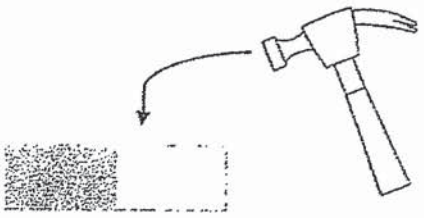
Magnet	d (cm)
J	3
K	8
L	5

(a) Based on the results in the table, arrange the bar magnets, J, K and L, according to their magnetic strength from the weakest to the strongest. [1]



Score 1

Daniel hammered bar magnet J twenty times.



Magnet J

(b) He then conducted the same experiment in diagram 1 and observed that the distance from which the pin was attracted to magnet J was less than 3 cm. Give a reason for his observation. [1]

_____

_____

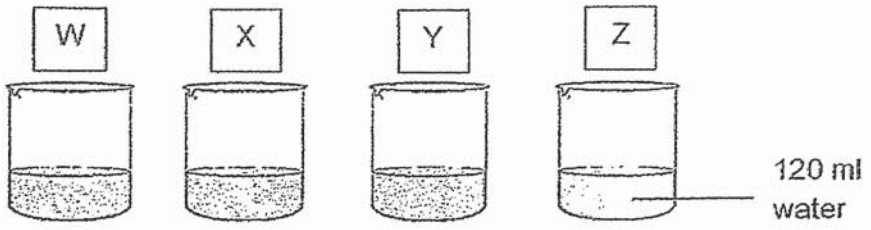
(c) Magnet J was brought close to an object. Instead of being attracted to Magnet J, the object moved away. Explain why this happened. [2]

_____

_____

Score	3

40. Melanie conducted an experiment using four strips of different materials, W, X, Y and Z, of the same size. She dipped each material into a container with 120 ml of water for 30 seconds. She measured the amount of water remaining in the container after each material was removed. The results are shown in the table below.



Material	W	X	Y	Z
Amount of water left in the beaker (ml)	100	80	60	10

(a) Explain why it is important that all materials are to be dipped into the water for the same amount of time. [1]

_____

_____

(b) Suggest what Melanie can do to ensure that her results are reliable. [1]

_____

_____

(c) Melanie picked Z to make a bath towel. Explain why. [1]

_____

_____

End of Booklet B

Score	3

ANSWER KEY

YEAR: 2020

LEVEL: PRIMARY 5

SCHOOL: TAO NAN SCHOOL

SUBJECT: SCIENCE

TERM: END OF YEAR EXAMINATION

BOOKLET A

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

BOOKET B

Q29. a)B and C

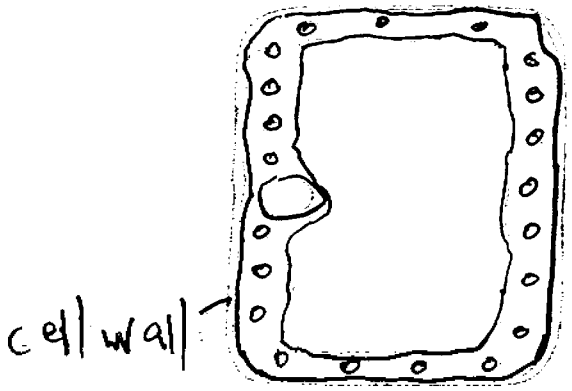
b)Pollination can still take place at A. Although part B and C are removed, the male reproductive part can still fuse with the female reproductive part in the ovary hence fertilisation can still take place for a fruit to be formed.

c)Animals will feed on the flesh of the fruit and will swallow the seeds. The tiny and indigested seeds will then come out in the animal's waste as the animal travels over the wide area.

Q30. a)The sperm fuses with the female egg cell.

b)It is to increase the chances of fertilization for cell X to fuse with cell Y.

Q31. a)

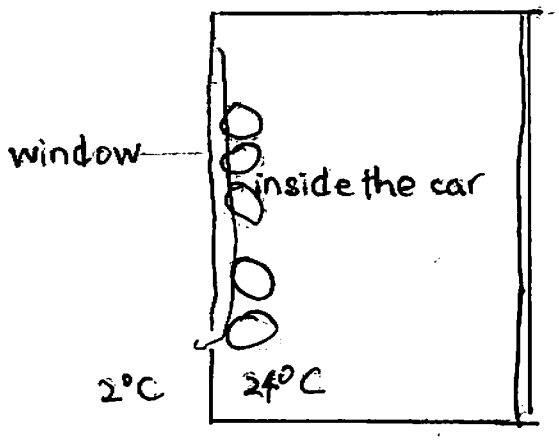


b)The cell wall gives the cell its fixed shape.
c)Nucleas, Cytoplasm, Cell membrane

Q32. a)Substance X gained heat from the surrounding air and melted.
b)Freezing is a process by which a liquid loses heat to the cooler surroundings resulting a change in state for liquid to solid at a fixed temperature.
c)25°C to 31°C

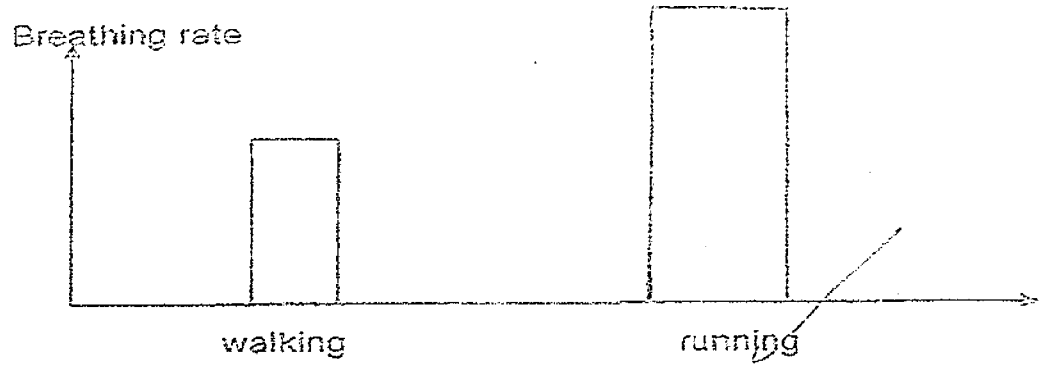
Q33. a)Wooden stand D. There are holes in wooden stand D, allowing the water which has evaporated into water vapour to escape into the surroundings faster, thus increasing the rate of evaporation.
b)Put a fan which produce wind in front of both cloths.

Q34. a)



b)Warmer water vapour in the car comes into contact with cooler inner side of the window loses heat to the window and condenses to form water droplets.
c)He would observe more water droplets as the rate of condensation would increase.

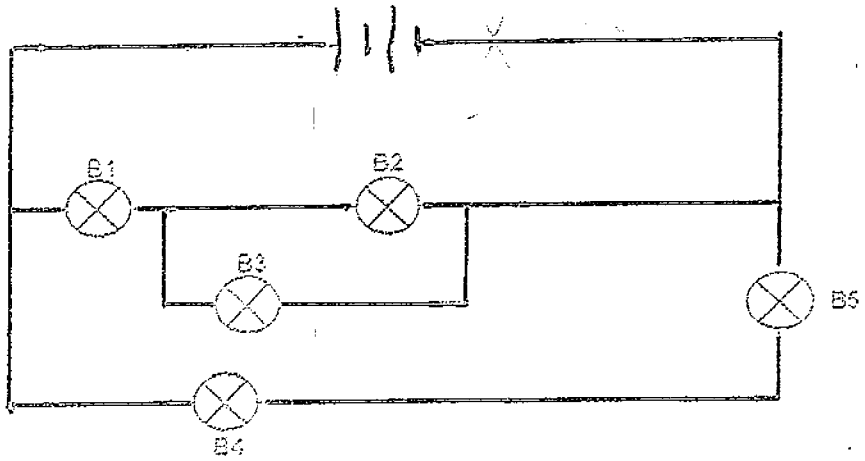
Q35. a)135
b)As running is a more vigorous activity than walking, her heart heart needs to pump blood faster containing oxygen and digested food to all parts of the body for a greater rate.
c)



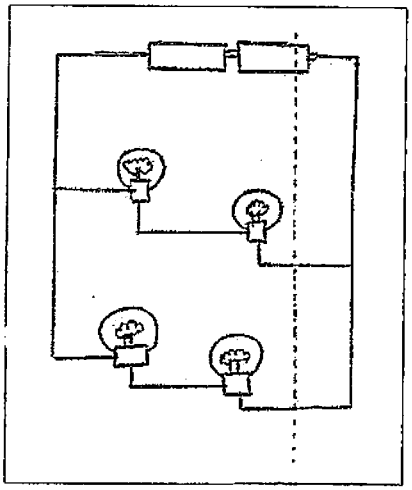
Q36. a)To find out if the type of material affects the temperature of water after one hour.
b)The height of the container and the location of the location of the experiment surrounding temperature
Thickness/Material of lid.

Q37. a)There is a wire connecting T and V so the bulb should light up. As the electric current can flow through the closed circuit.
b)Bulb 1, 2, 4, 5 will remain lit. Although B3 has fused there is still a closed circuit for electric current to flow through Bulbs 1,2,4,5 hence they will remain lit.

c)

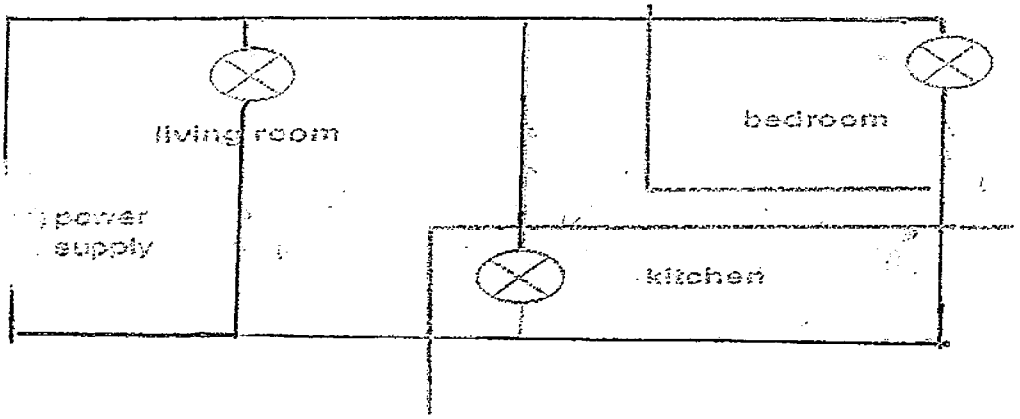


Q38. a)



b)Too much electric current flowed to the bulbs hence melting the filament in the bulbs, causing them to fuse.

c)



Q39. a)J,L,K
b)Hammering bar magnet J causes it to loses some its magnetic strength, hence the pin could be attracted to magnet J was less than 3cm.
c)The like poles of Magnet J was taking the like poles of the object so they repelled causing the object to move away. The object is a magnet.

Q40. a)To ensure that it is a fair test , only one variable, the type of material, is changed and not the amount of time \, the material is dipped in the water.
b)She can repeat her experiment at least three times to ensure the readings are reliable.
c)Material Z absorbed the most water as there is only 10ml of water left so it can absorb the most water on the body.