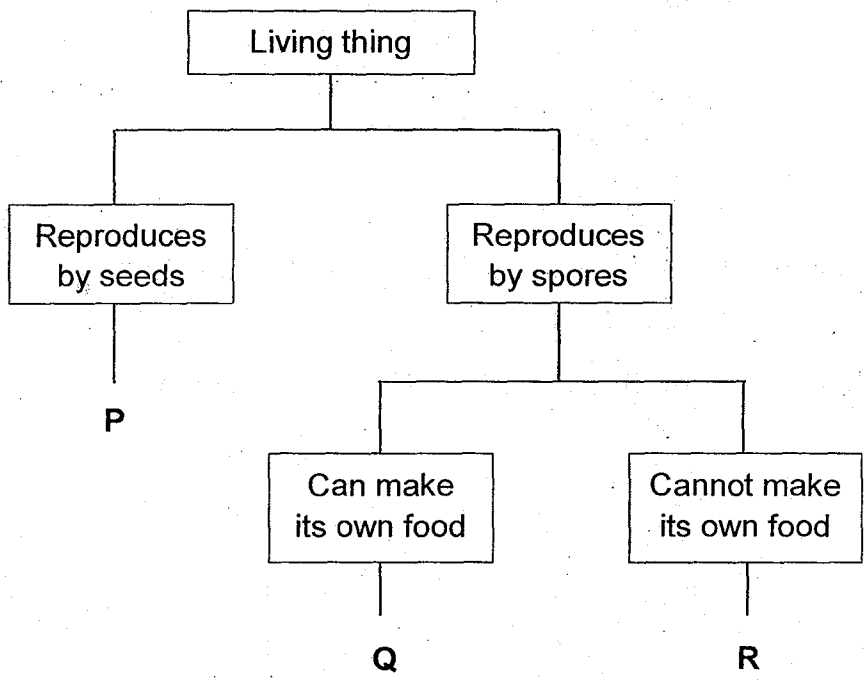
RED SWASTIKA (CA2)

For Questions 1 to 28, choose the most suitable answer and shade its number in the OAS provided.

1. Minah observed animal X and she thought that it was an insect. Which of the following characteristics should she look out for to determine that animal X is an insect?

   (1) It can fly.
   (2) It responds to changes.
   (3) It has wings.
   (4) It has six legs.

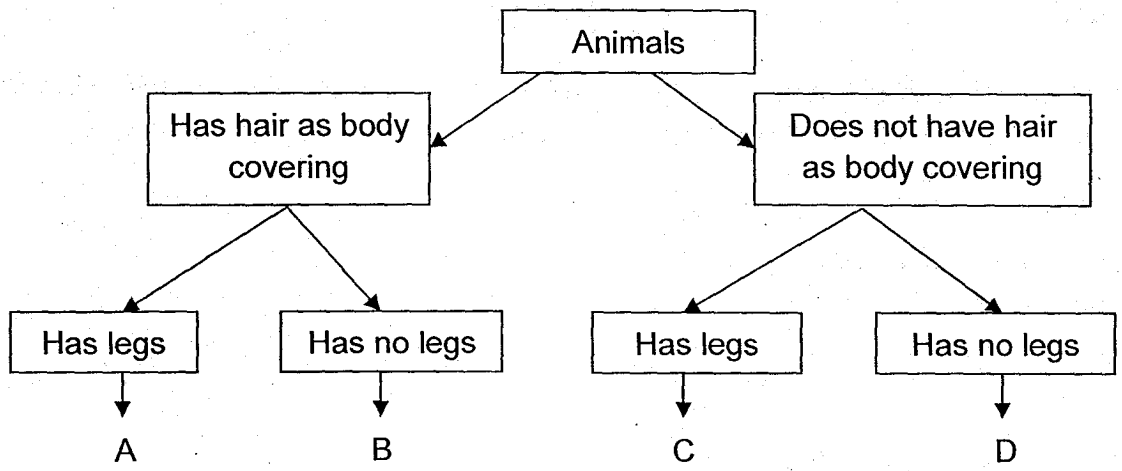
2. Study the classification chart.



From the information given, which of the following correctly classifies organisms P, Q and R?

	fern	fungi	flowering plant
(1)	P	R	Q
(2)	Q	R	P
(3)	R	P	Q
(4)	R	Q	P

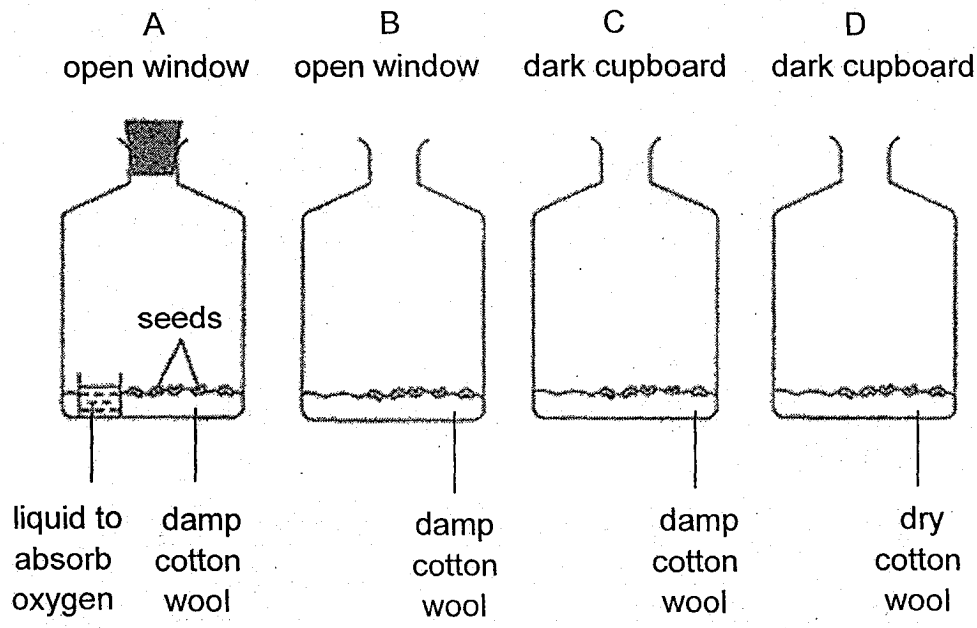
3. The chart below shows the classification of four animals, A, B, C and D.



Which of the following is most likely a fish?

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

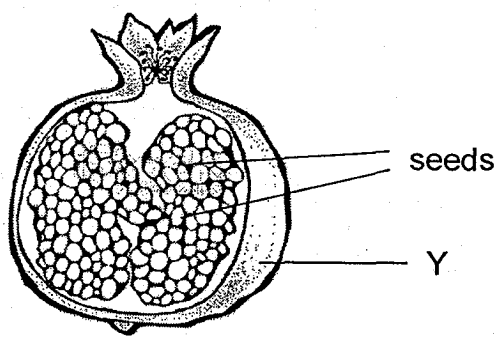
4. Nizham placed an equal number of seeds in four set-ups as shown.



In which set-ups will the seeds most likely germinate?

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

5. The diagram shows the cross section of a fruit developed from a flower.



Based on the diagram, what can she conclude about the flower?

A: The flower has many ovaries.
B: The flower has many ovules.
C: Part Y developed from the stigma after fertilisation.

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

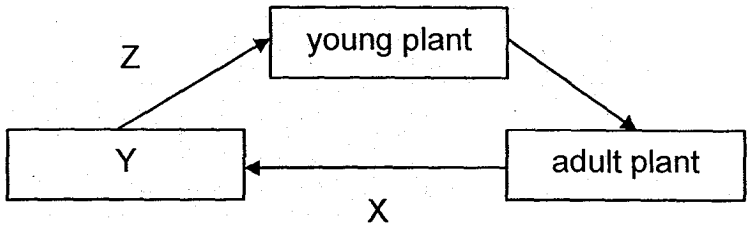
6. Fred caught two animals, A and B. He observed the animals over a period of time and recorded his observations in the table shown below.

	Animal A	**Animal B**
It has three body parts.	yes	no
Its eggs are laid on land.	no	yes
There are four stages in its life cycle.	yes	no

Based on the information, what could animal A and animal B be?

	Animal A	**Animal B**
(1)	butterfly	frog
(2)	mosquito	frog
(3)	butterfly	chicken
(4)	mosquito	chicken

7. The diagram shows the life cycle of a flowering plant.



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

	X	Y	Z
(1)	pollination	egg	germination
(2)	germination	ovule	fertilisation
(3)	fertilisation	seed	germination
(4)	pollination	seed	fertilisation

8. Jessica had two angsana fruits, P and Q, which were similar in size. She cut away the wing-like structure of fruit Q. She wanted to find out how the wing-like structure affected the time taken for the fruit to reach the ground.

fruit P with wing-like structure

fruit Q without wing-like structure

Which of the following would not affect the results of the experiment?

A: The height from which both fruits were dropped.
B: Presence of light shining on both of the fruits.
C: The availability of wind in the surrounding location.

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

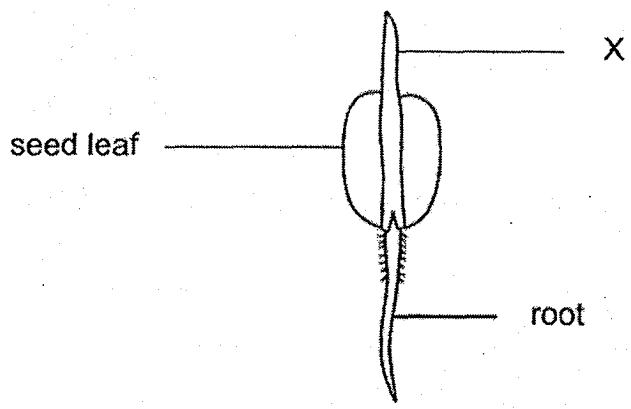
9. The table shows a comparison between plant and human reproductive parts that have similar functions.

Human reproductive part	Plant reproductive part
W	pollen grain
testis	X
egg	Y

Which of the following correctly identifies W, X and Y?

	W	X	Y
(1)	penis	filament	ovule
(2)	penis	anther	ovary
(3)	sperm	anther	ovule
(4)	sperm	filament	ovary

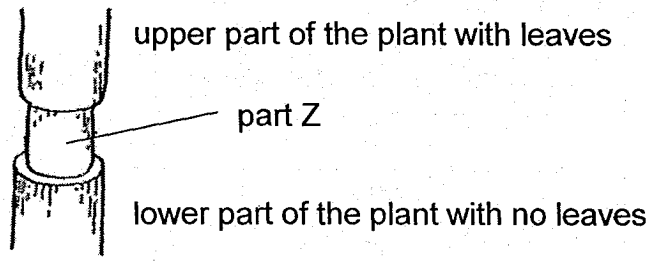
10. The diagram shows a seedling.



In which direction(s) are water and food being transported to part X?

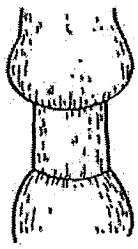
	Direction of transport for	
	water	food
(1)	downwards	upwards
(2)	downwards	downwards
(3)	upwards	downwards
(4)	upwards	upwards

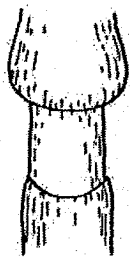
11. Mr Weng removed the food-carrying tubes of the stem of a healthy plant at part Z as shown below.

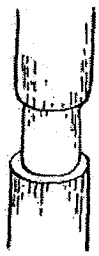


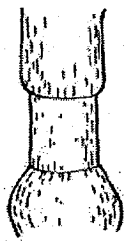
The plant was provided with sufficient light and water.

Which one of the following diagrams shows the appearance of the stem after three weeks?

(1) 

(2) 

(3) 

(4) 

12. The table provides some information on three cells, A, B and C. A tick (√) indicates the presence of the cell part.

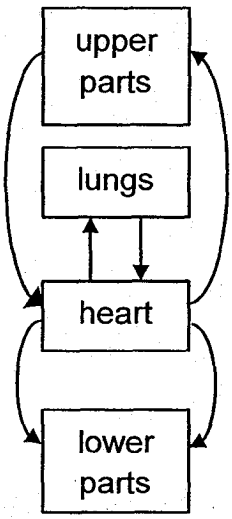
Part	A	B	C
nucleus	√	√	√
chloroplast			√
cell wall		√	√

Based on the information, where are cells A, B and C likely to be found?

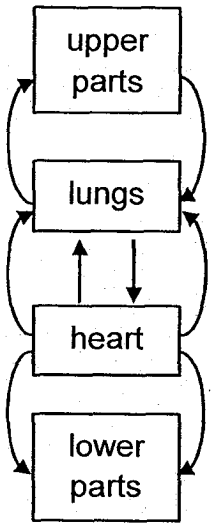
	A	B	C
(1)	cheek	root	onion
(2)	cheek	onion	leaf
(3)	root	onion	leaf
(4)	root	cheek	onion

13. Which one of the following diagrams correctly shows the blood flow in the human body?

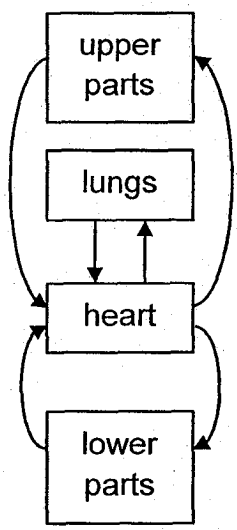
(1)



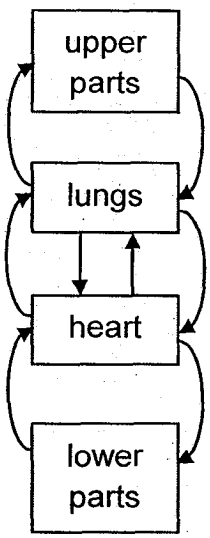
(2)



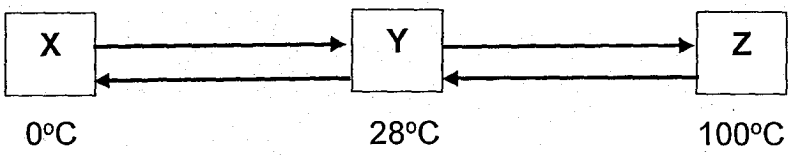
(3)



(4)

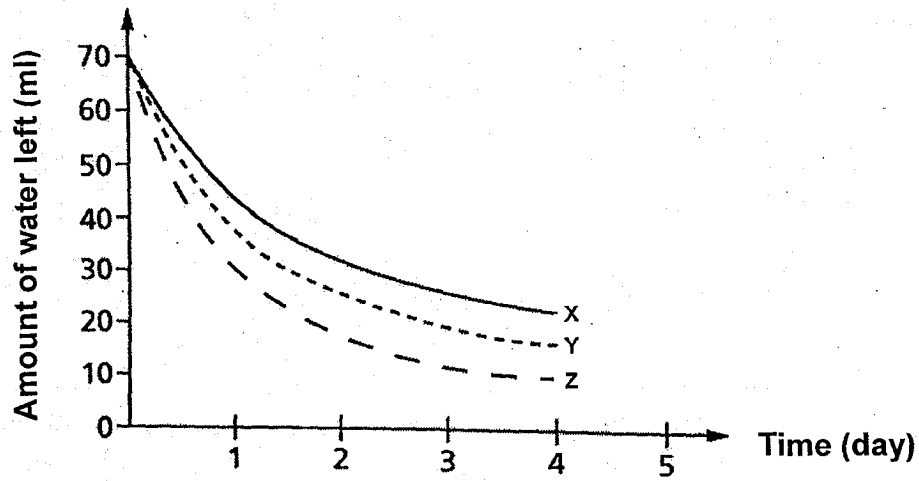


14. The diagram shows the different forms of water at different temperature. What can X, Y and Z be?



	X	Y	Z
(1)	ice	dew	water
(2)	steam	rain water	dew
(3)	ice	water	steam
(4)	dew	water	steam

15. Three containers X, Y and Z each containing 70ml of water were left at different locations. The amounts of water left in the container were measured every day.

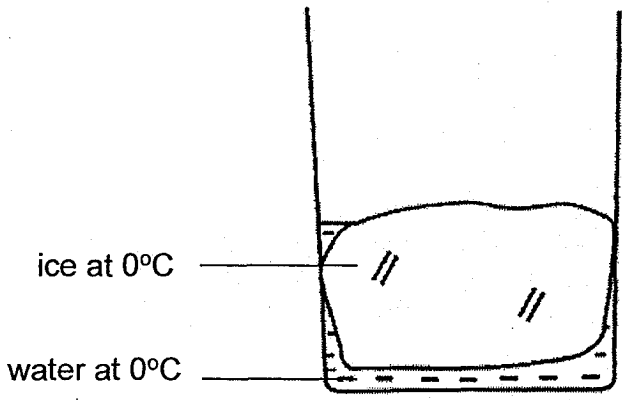


Which of the following conclusions is/are correct?

A: Container Z could have the biggest exposed surface area.
B: The rate of evaporation of water in container Z was the slowest.
C: The rate of evaporation of water in container Y was slower than in container X, but faster than in container Z.
D: Container Y could have been placed in a warmer place than container X but in a cooler place than container Z.

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

16. A glass containing a block of ice and some water was placed in a room. The room temperature was 27°C.



When the ice and the water were at 0°C, which one of the following statements is correct?

(1) The ice would not melt as it remained at 0°C.
(2) The ice would not melt as it did not gain heat.
(3) The ice would melt as it gained heat from the water.
(4) The ice would melt as it gained heat from the room.

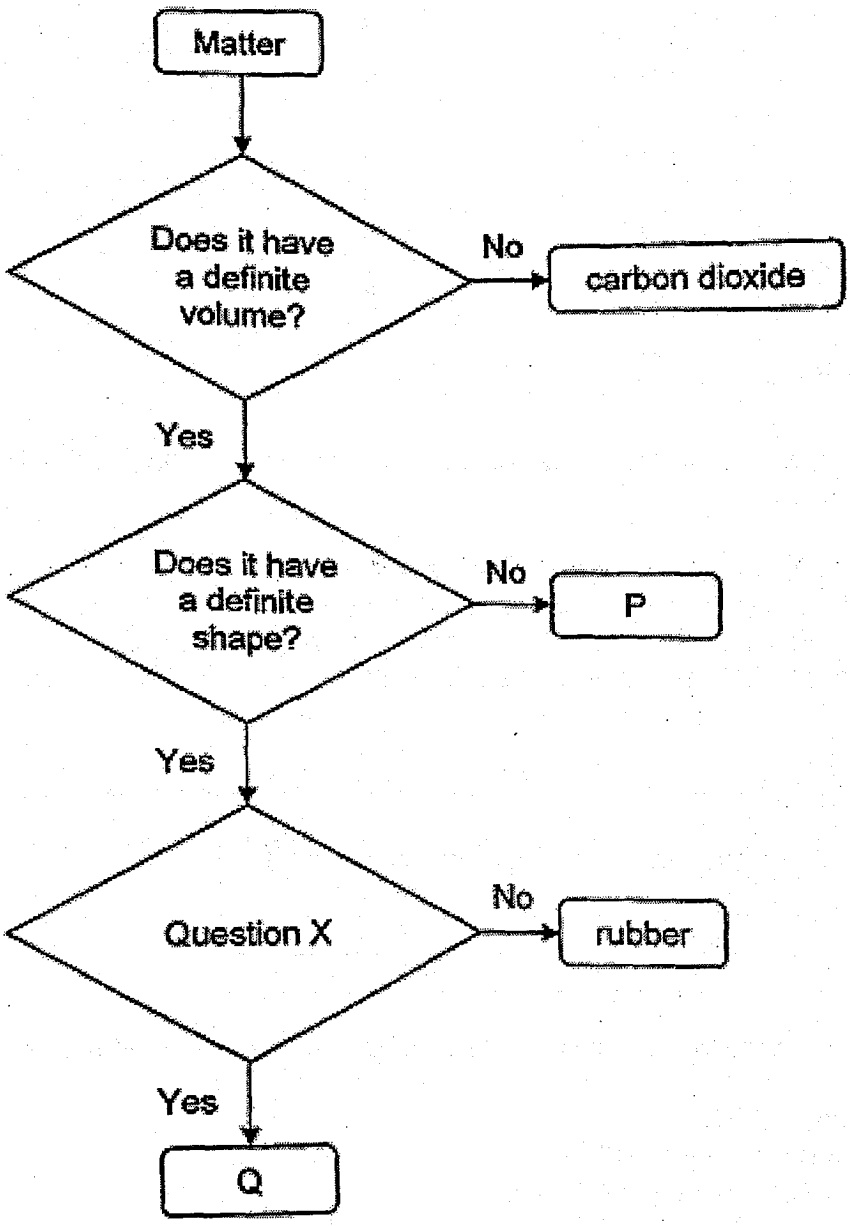
17. The table below shows the freezing points of three substances, A, B and C.

Substance	Freezing point (°C)
A	5
B	30
C	120

Based on the information given above, which one of the following is correct?

(1) A is a solid at 3 °C.
(2) A and B are both liquids at 28 °C.
(3) B and C are both solids at 130 °C.
(4) C can be liquid or a gas at 120 °C.

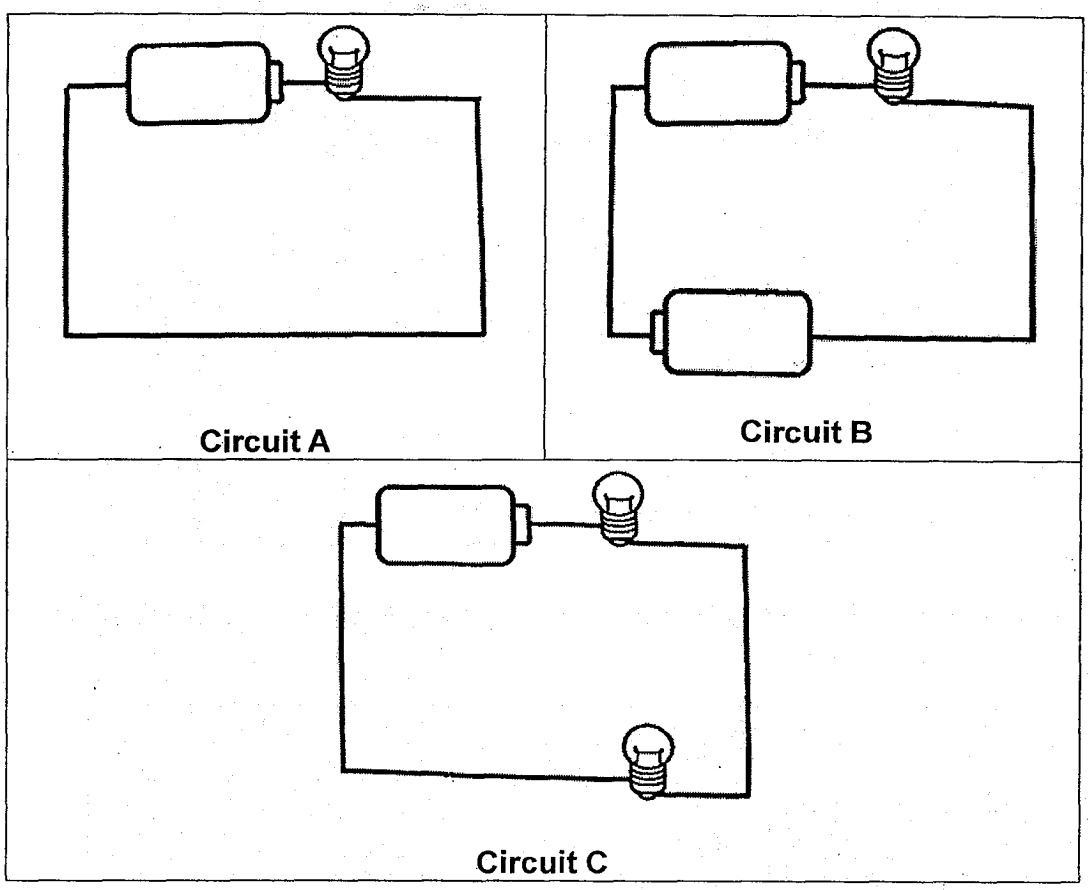
18. Study the diagram below.



Which one of the following correctly states what P, Question X and Q are?

	P	Question X	Q
(1)	air	Is it a good conductor of heat?	aluminium
(2)	oxygen	Does it conduct electricity?	iron
(3)	water	Is it a magnetic material?	iron
(4)	oil	Is it a magnetic material?	aluminium

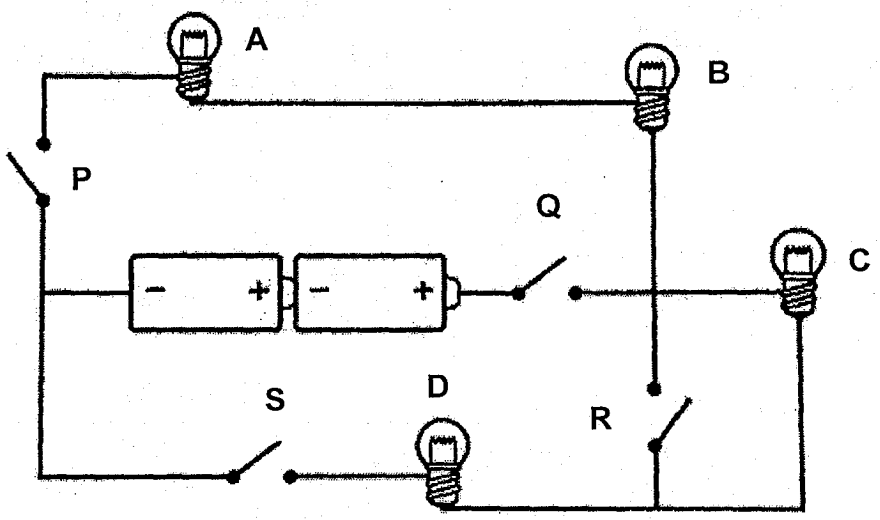
19. Study the circuits.



Arrange the circuits in order from the dimmest to the brightest.

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

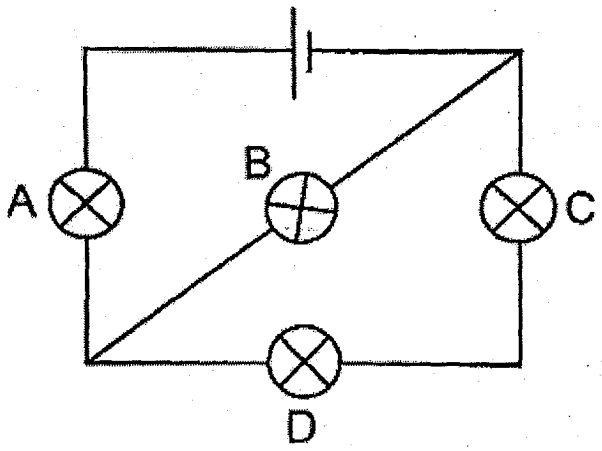
20. Mr Tan set up the circuit shown. He opened and closed certain switches and observed if the bulbs lit up.



A tick (✓) represents a lit bulb. A cross (x) represents an unlit bulb. Which of the following is wrong?

	Switch				Bulb			
	P	Q	R	S	A	B	C	D
(1)	closed	closed	open	open	✓	✓	✓	x
(2)	closed	closed	open	open	✓	✓	x	x
(3)	open	closed	open	closed	x	x	✓	✓
(4)	closed	closed	open	closed	✓	✓	✓	✓

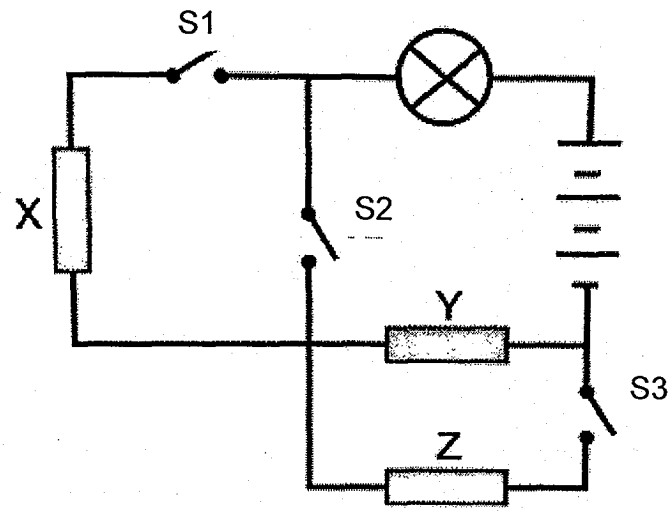
21. A student set up the circuit shown.



After one of the bulbs had fused, all the other bulbs did not light up. Which bulb had fused?

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

22. Study the circuit below carefully. X, Y and Z are made of different materials.



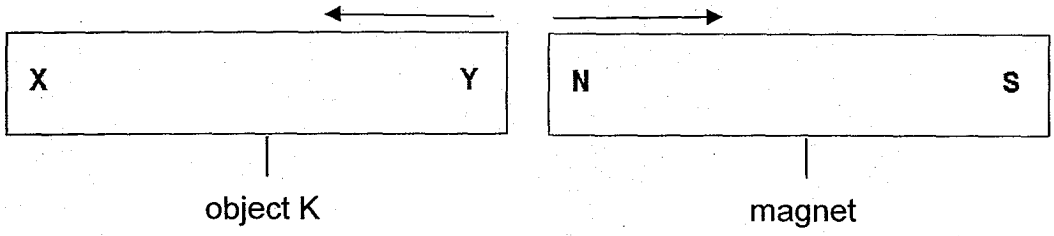
The table below shows the observations when the switch(es) is/are closed.

Switch(es) closed	Observation
S1	Bulb lights up
S1 and S3	Bulb does not light up
S2 and S3	Bulb lights up

Which one of the following correctly matches the materials of X, Y and Z respectively?

	Material X	Material Y	Material Z
(1)	plastic	wood	iron
(2)	steel	iron	plastic
(3)	iron	rubber	wood
(4)	copper	silver	aluminium

23. When object K was placed near a bar magnet, the magnet was pushed away from the object as shown below.

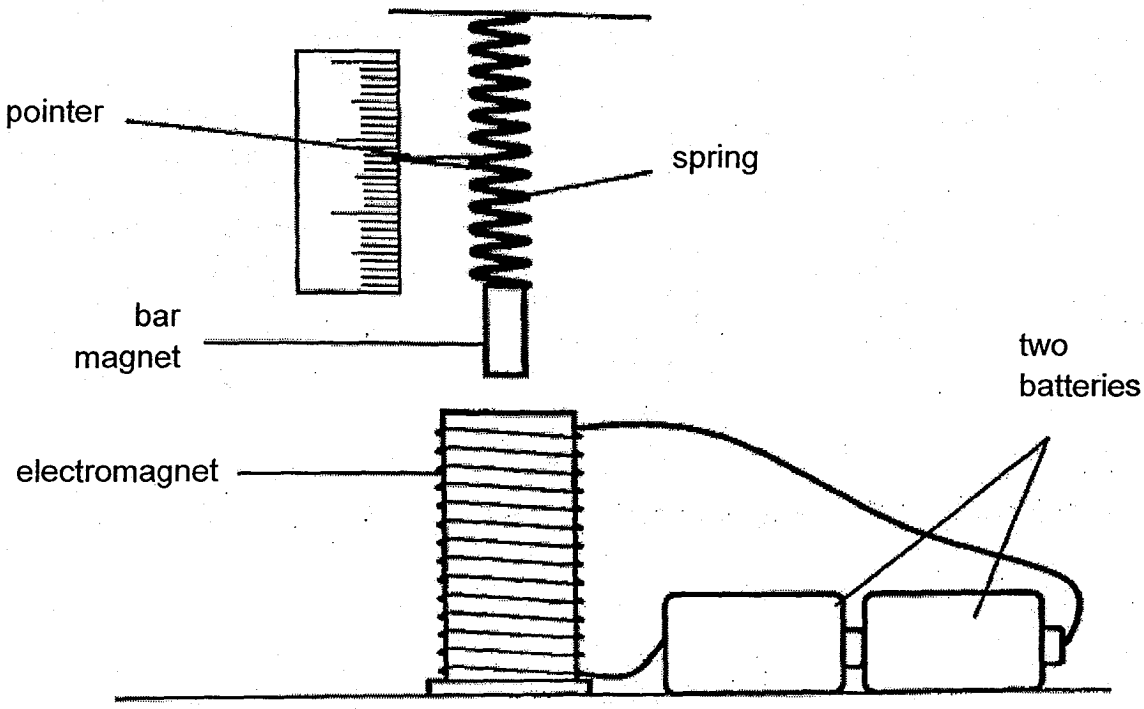


Which of the following statements is/are true of object K?

A: Object K is a magnet.
B: The South pole of the magnet can be attracted to part Y of object K.
C: Part X of object K can be attracted to the South pole of the magnet.

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

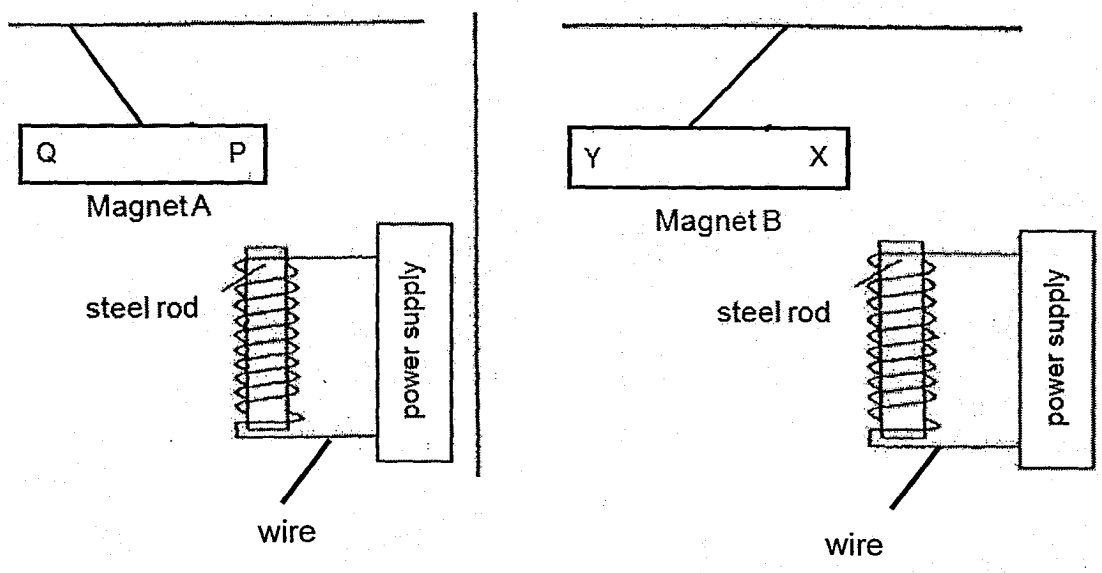
24. In the set-up below, the bar magnet is repelled by the electromagnet. A pointer attached to the spring moves when the circuit is closed.



How will the pointer move if the experiment is repeated with one identical battery? Why?

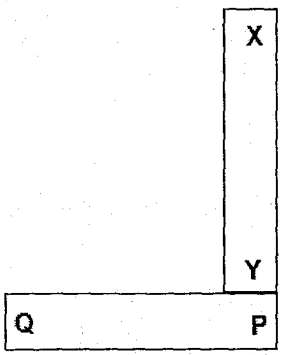
	Movement of pointer	**Strength of the electromagnet**
(1)	downwards	decreased
(2)	downwards	increased
(3)	upwards	increased
(4)	upwards	decreased

25. Study the diagram below.



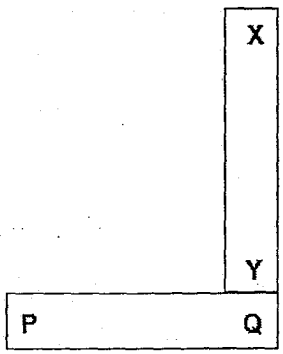
Which of the following arrangements of magnet A and B is possible?

(1)

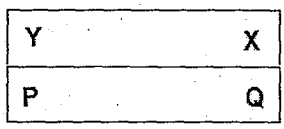


(2)

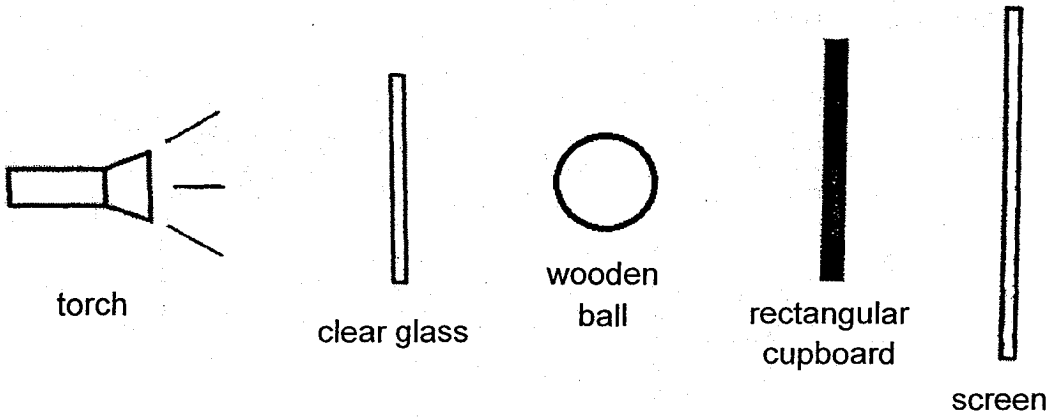
(3)



(4)



26. The diagram below shows an experiment set up by Peter. Peter observed the shadow formed on the screen when the torch was shone.

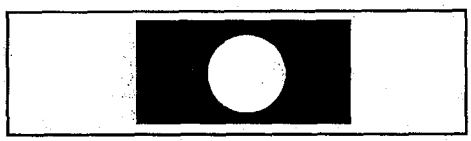


Which of the following best represents the shadow cast on the screen?

(1)

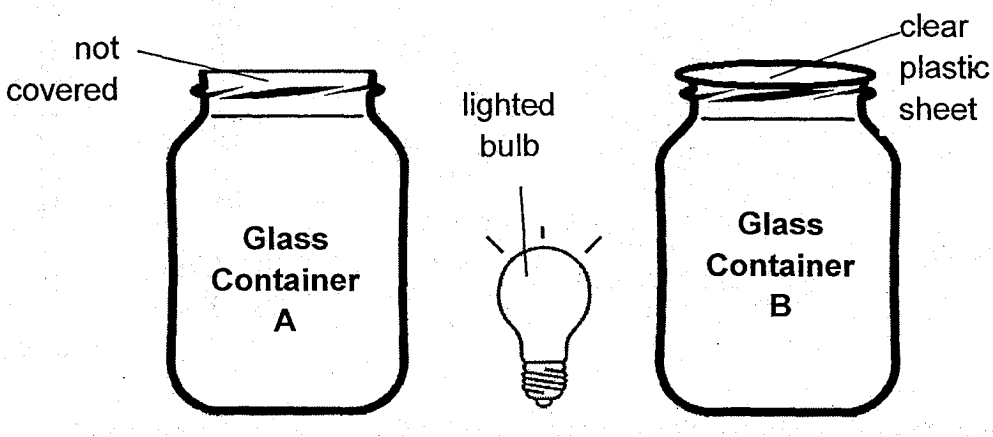
(2)

(3)

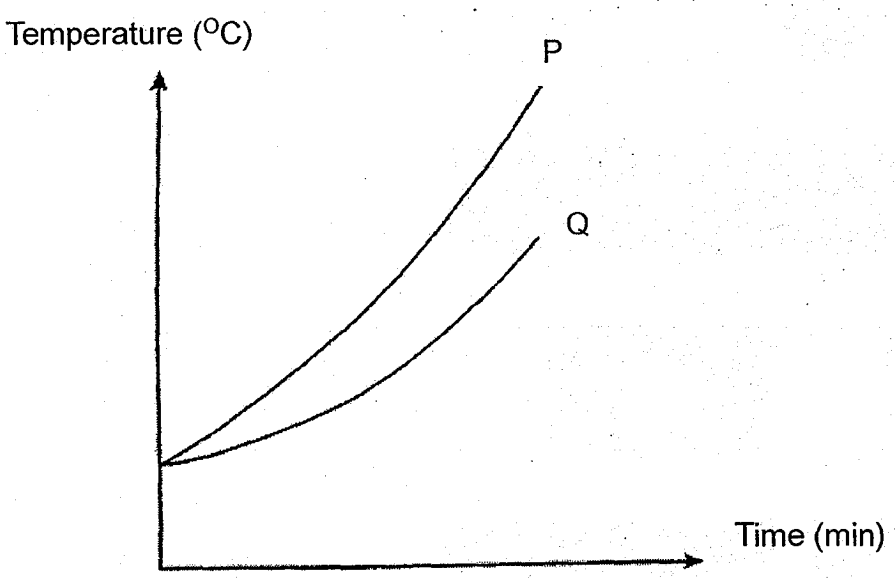


(4)

27. The diagram below shows a bulb placed between two identical glass containers, A and B. Container A is not covered while container B is covered with a clear plastic sheet.



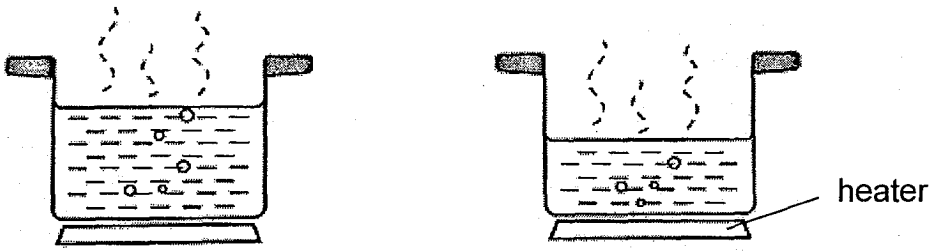
The temperatures in both containers are recorded as shown in graphs P and Q below.



Which one of the following shows correctly the graph and the explanation of the results for glass container B?

	graph	explanation of results
(1)	P	more heat is trapped
(2)	Q	more heat is trapped
(3)	P	less heat is trapped
(4)	Q	less heat is trapped

28. Two similar sized pots, A and B, were made of different materials. Pot A contained 800ml of water and pot B contained 500ml of water. Both pots were heated till the water in them boiled.



Pot A **Pot B**

The water in each pot took 15 minutes to reach boiling point. Based on the information, which of the following conclusions are possible?

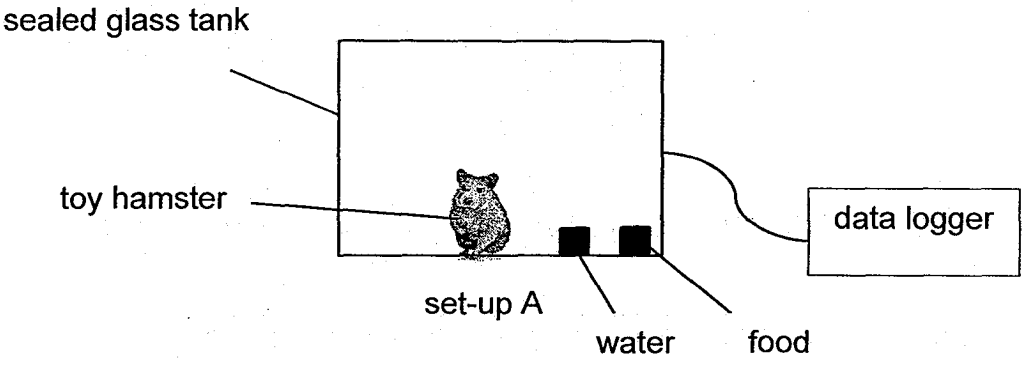
A: The temperature of the water in pot A was higher than the temperature of the water in pot B at the end of 15 minutes.
B: The heater used for pot B gave out less heat than the one used for pot A.
C: Pot A was a better conductor of heat than pot B.

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

END OF BOOKLET A

Answer all the questions in the spaces provided.

29. Alex set up the experiment as shown in a lighted room. After one day, he measured the amount of oxygen and carbon dioxide found in the glass tank using a data-logger.



(a) Complete the table by writing "increase", "decrease" or "no change" in the space provided. (1m)

Type of gas in the glass tank	Change in the amount of gas at the end of one day
oxygen	
carbon dioxide	

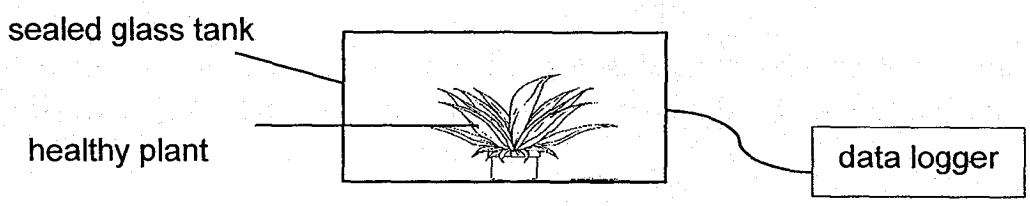
(b) If the experiment was repeated using a live hamster, the hamster would not be able to survive. Why is this so? (1m)

_____

_____

2

29. Alex repeated the experiment in a lighted room with a healthy plant as shown.



set-up B

(c) Complete the table by writing "increase", "decrease" or "no change" in the space provided. (1m)

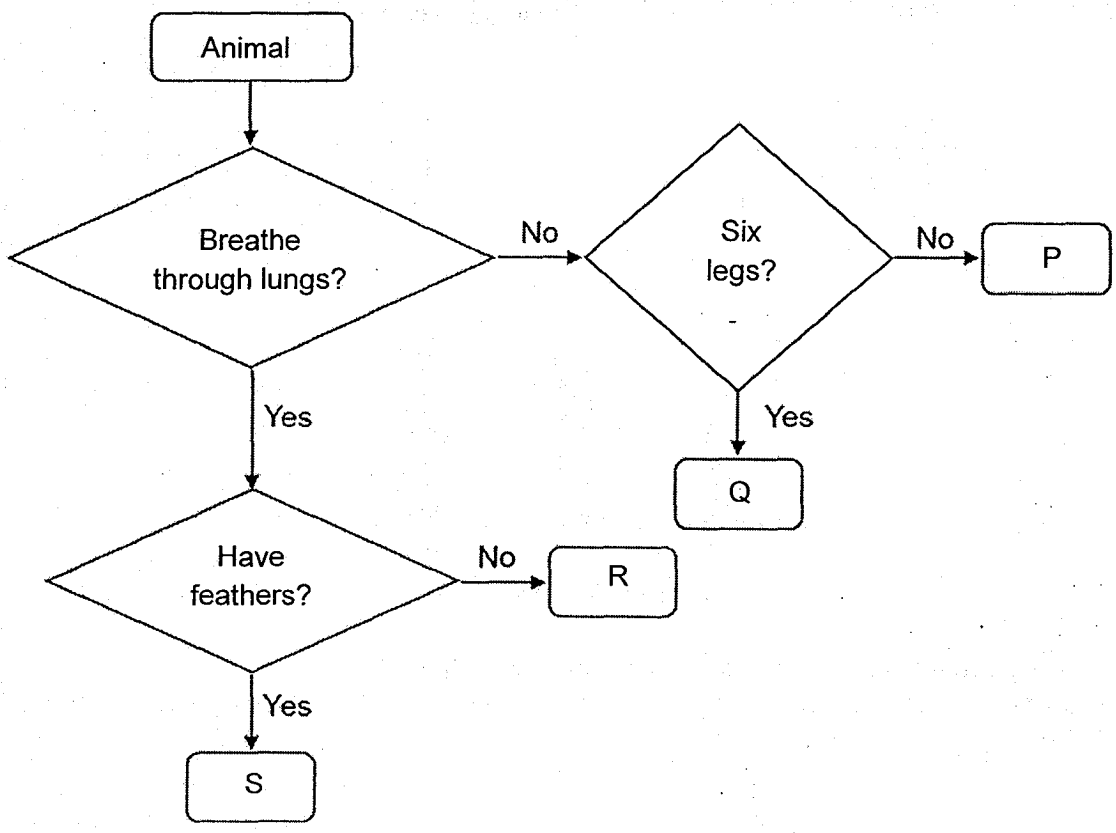
Type of gas in the glass tank	**Change in the amount of gas at the end of one day**
oxygen	
carbon dioxide	

(d) Alex should have a separate control set-up to confirm that it was only the plant that affected the amount of gases in set-up B.

Put a tick (✓) for the items that should be present in the control set-up to compare with set-up B. (1m)

Items	**Control set-up**
sealed glass tank	
healthy plant	
data logger	
lighted room	

30. Study the flow chart.



(a) Which animal, P, Q, R or S, is the best match for the group of animals stated below? (2m)

Mammals: _____ Fish: _____ Insects: _____ Birds: _____

The table shows the number of animal S that hatches at different temperatures.

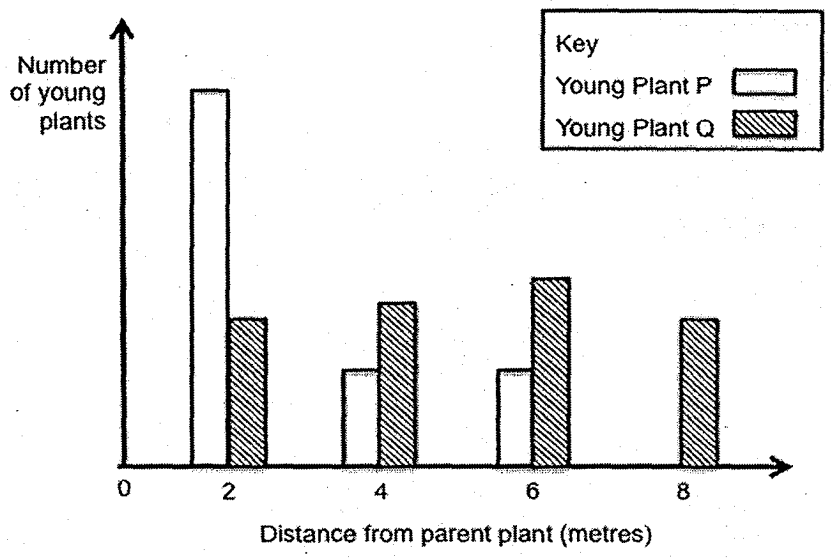
Temperature (°C)	15	20	25	30	35
Number of animal S that hatches	50	48	43	37	30

(b) What is the relationship between the number of animal S that hatches and the temperature? (1m)

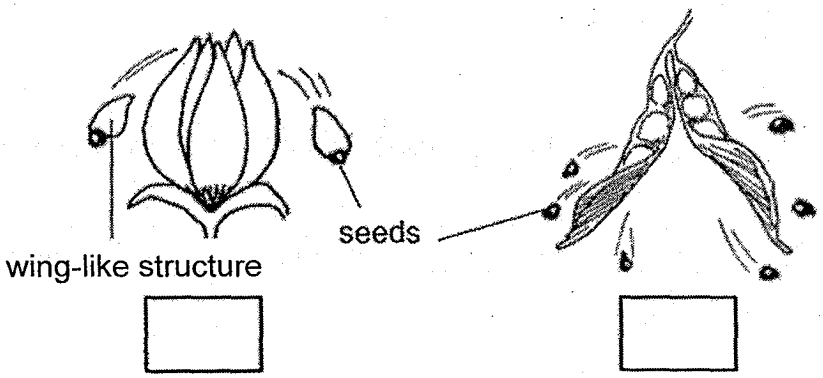
_____

_____

31. Mrs Tan counted the number of two different types of young plants, P and Q, at various distances from their parent plants in a garden. The results are shown below.



(a) The diagrams below show the fruits of plants P and Q.
Which one of them is likely to be the fruit of plant P? Choose your answer by putting a tick (√) in the correct box. (1m)



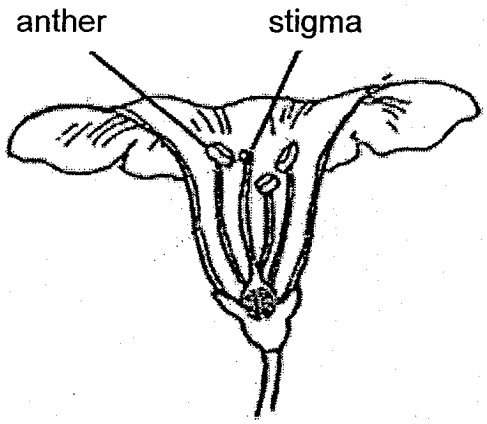
(b) Based on the graph, which plant, P or Q, is more likely to experience overcrowding? Explain your answer. (2m)

_____

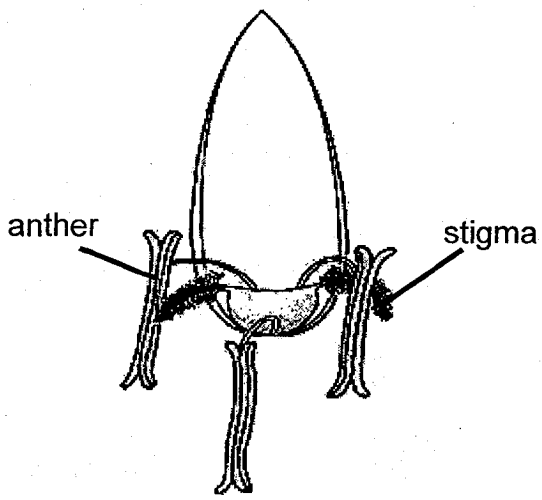
_____

_____

32. The diagrams show two flowers. Both have male and female reproductive parts in the same flower.



flower C



flower D

Flowers C and D have different methods of pollination. Based on the diagrams, identify the method of pollination for each flower. State one characteristic of the flower to support your answer. (Do not compare shape and size of the parts of the flowers.) (2m)

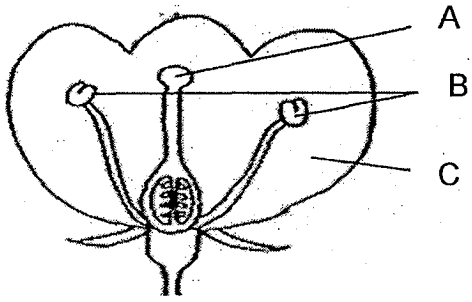
(ai) Method of pollination for flower C : _____

Characteristic of flower C:_____

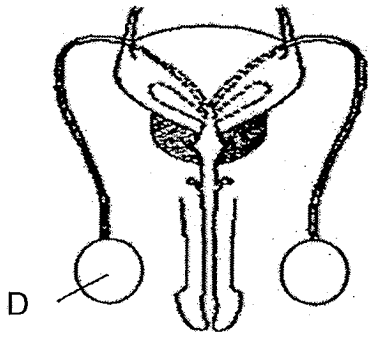
(aii) Method of pollination for flower D : _____

Characteristic of flower D: _____

The diagrams below show the reproductive parts of flower X and the male human reproductive system.



flower X



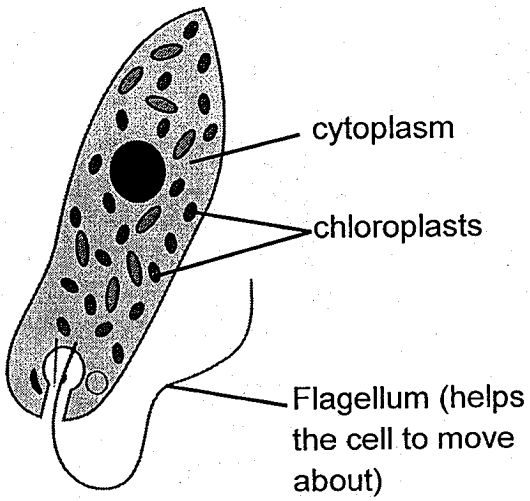
male reproductive system

(b) Which part, A, B or C, has a similar function as part D of the male human reproductive system? (1m)

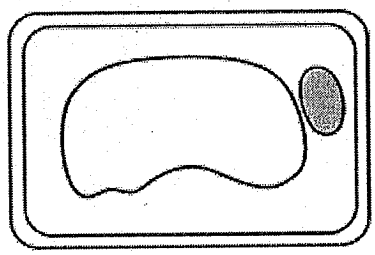
_____

33. The diagrams below show two cells labelled X and Y.

Cell X is a single-celled organism that is commonly found in pond water. It is considered to be both animal-like and plant-like.



cell X



cell Y

(a) Other than the ability to move, state the function that cell X can perform but cell Y cannot. Give a reason for your answer. (1m)

_____

_____

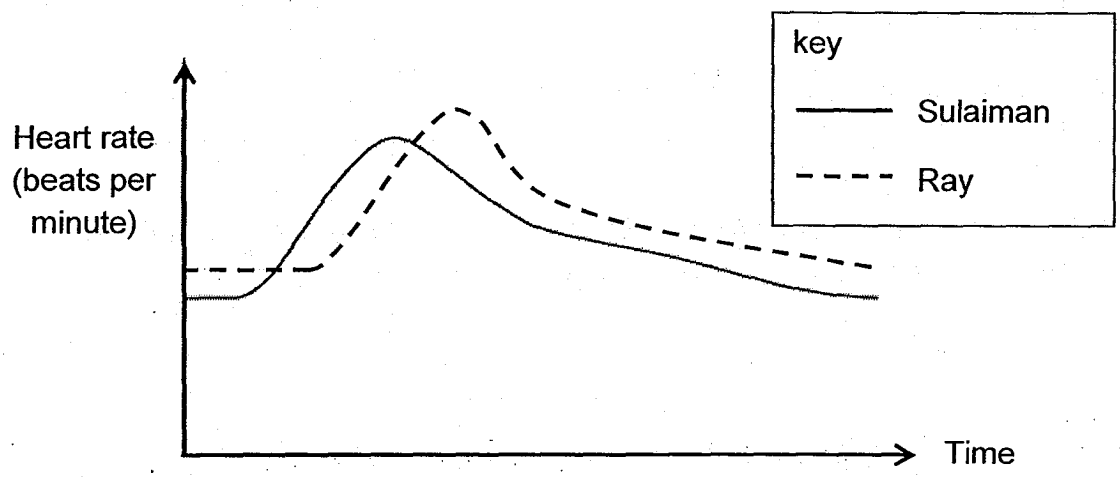
(b) Cell Y has a cell part that is not found in cell X. Identify this part. (1m)

_____

2

34. Sulaiman and Ray started their exercise routine with a walk. After a while, one of them decided to start jogging earlier. Both of them eventually slowed down to a walk again after their jog. They exercised for a total of one hour each.

They used a special watch to measure their individual heart rates for the one hour exercise. The results are plotted in the two graphs below.



(a) Based on the above graphs, who (Sulaiman or Ray) started jogging earlier? Give a reason for your answer. (1m)

_____

_____

(b) Explain the change in Ray's heart rate as he started to jog. (2m)

_____

_____

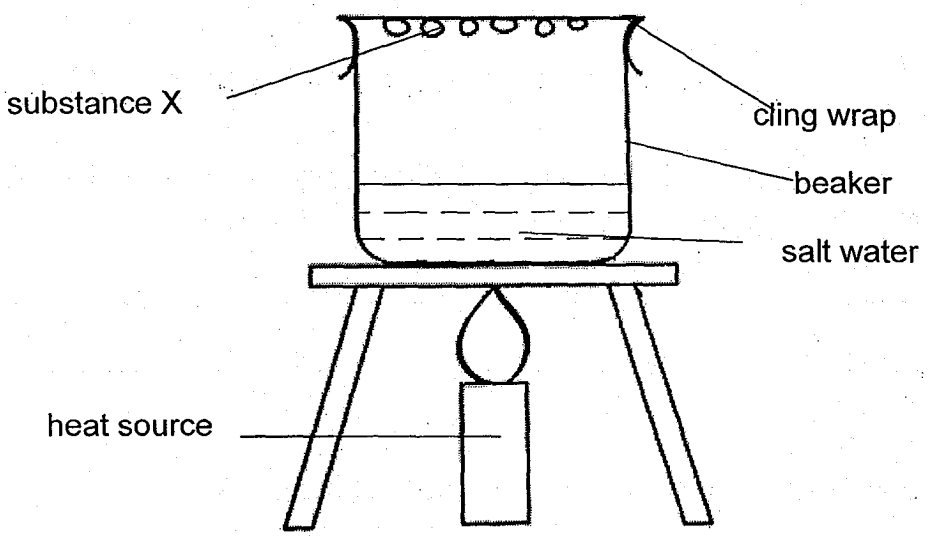
_____

3

35. (a) State **True** or **False** for the statements below. (1m)

	Statement	True or False?
(i)	When water loses heat, it evaporates to form water droplets.	
(ii)	Clouds are made up of water vapour.	

(b) Emily added salt water into a beaker and placed a layer of plastic cling wrap over the opening. The beaker was then heated over a flame.



After a while, substance X could be seen on the inner surface of the cling wrap.

(i) Identify substance X. (1m)

_____

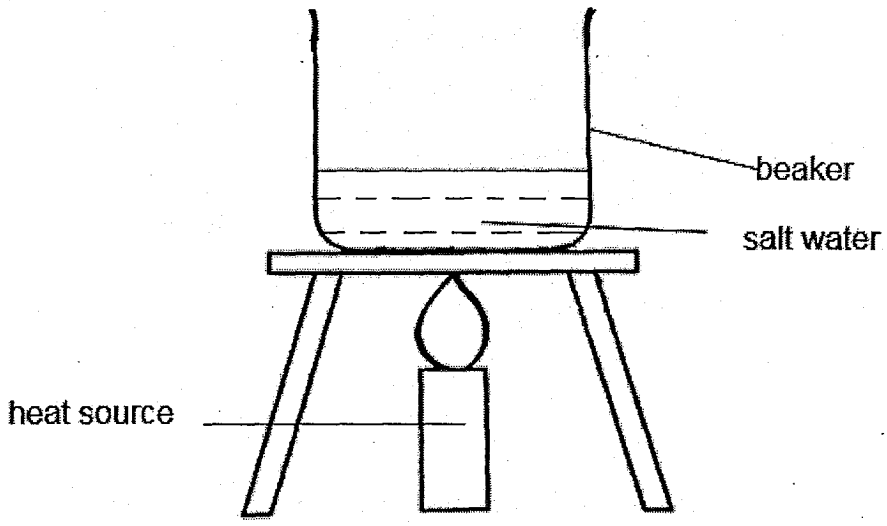
(ii) Explain how substance X was formed. (2m)

_____

_____

_____

35. Emily removed the cling wrap and continued boiling the salt water until all the water dried up. She noticed that there was some white substance left in the dry beaker.



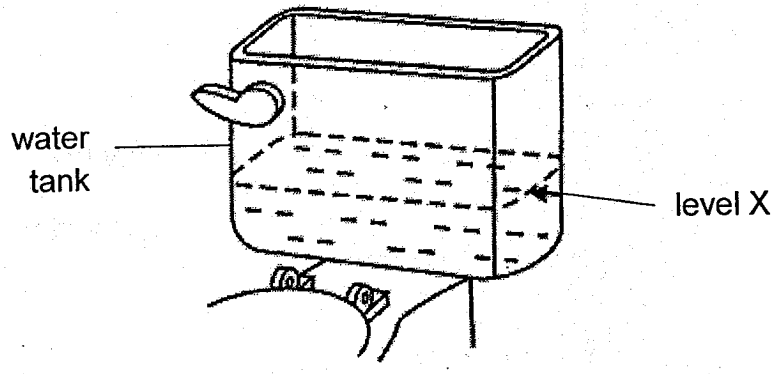
(c) What was the white substance left in the dry beaker? (1m)

_____

_____

1

36. The picture below shows a water tank used for flushing a toilet bowl. The flushing and re-filling system is not shown in the diagram.



After flushing, water enters and re-fills the tank. The tank will stop filling when the water reaches level X. Raju wanted to save water when flushing. He suggested putting a plastic bottle filled with stones into the water tank.

(a) Explain how Raju's suggestion would help to save water when flushing. (1m)

_____

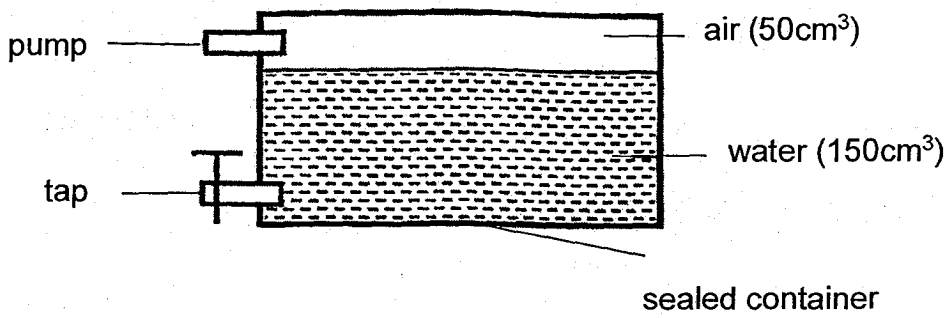
_____

(b) State the property of matter that was involved in Raju's suggestion. (1m)

_____

2

36. Raju conducted another experiment. The set-up is as shown below.



He used the tap to remove $20cm^3$ of water. He then used the pump to add $15cm^3$ of air into the container.

(c) What was the final volume of air in the container? (1m)

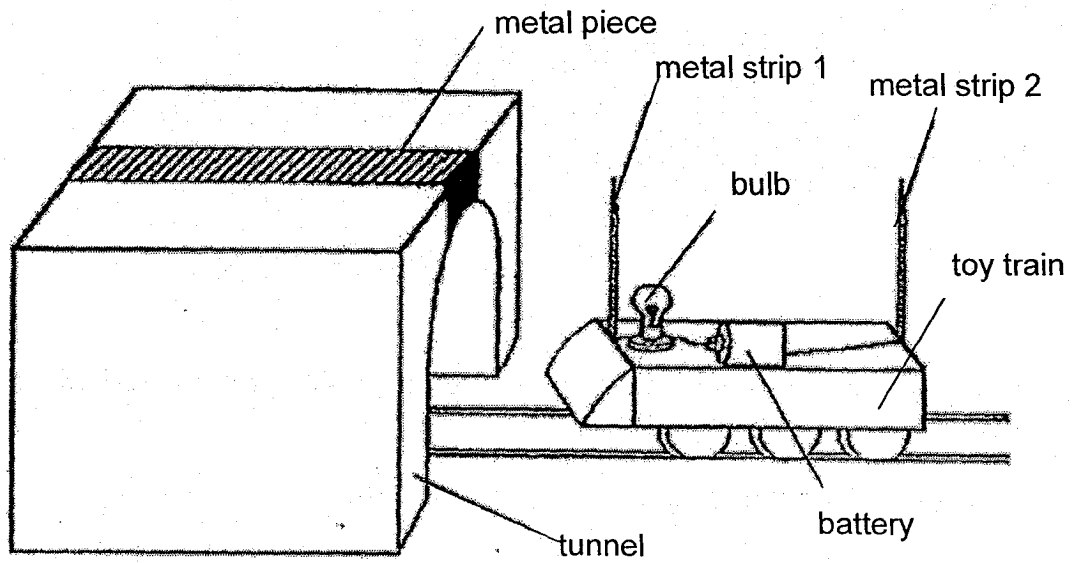
_____

(d) Which property of water was used to obtain the answer in (c)? (1m)

_____

2

37. The diagram below shows a tunnel and the circuit on a toy train set up by Mary. When Mary pushed the train into the tunnel, the bulb only lighted when the whole train entered the tunnel fully.



(a) Explain why the bulb would not light up if only half of the train entered the tunnel. (2m)

_____

_____

_____

(b) Mary added three new batteries in series to the toy train. The bulb lit up very brightly the first time the train entered the tunnel. However, when the train entered the tunnel again, the bulb did not light up.

Besides the batteries, suggest one other possible reason why the bulb did not light up. (1m)

_____

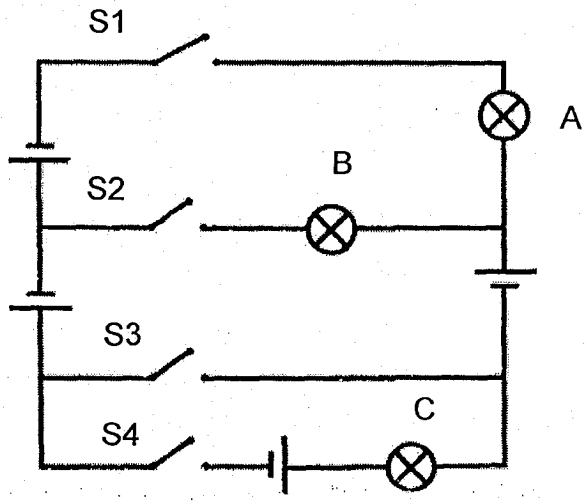
_____

(c) Metal strip 1 and 2 were changed to plastic strip 1 and 2 of the same length. A bulb in working condition was used. When the train entered the tunnel fully, the bulb did not light up. Explain why. (1m)

_____

_____

38. Study the circuit diagram below.



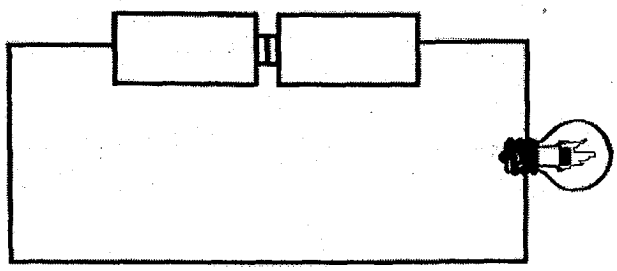
(a) State the two switches that must be closed so that only bulbs A and B would light up? (1m)

_____

(b) Which bulb(s) would light up if only S2 and S3 were closed? (1m)

_____

Timmy set up the circuit as shown below using batteries, wires and a bulb that were in good working condition. He observed that the bulb did not light up. He was told that he had made two mistakes in the set-up.



(c) What were the two changes that Timmy could make to the set-up in order for the bulb to light up? (2m)

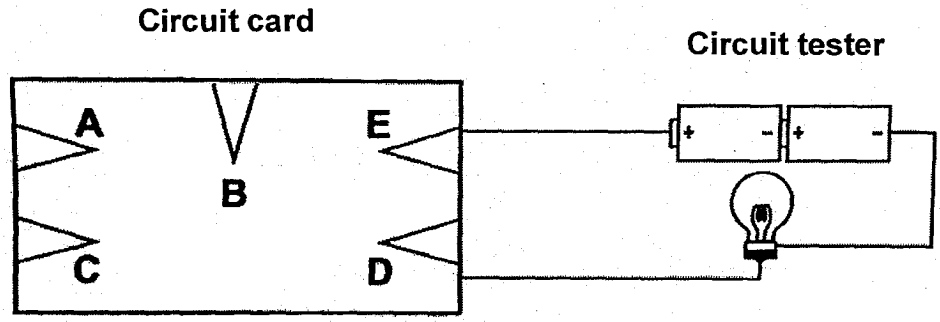
Change 1: _____

_____

Change 2: _____

_____

38. Study the circuit tester and circuit card below carefully.

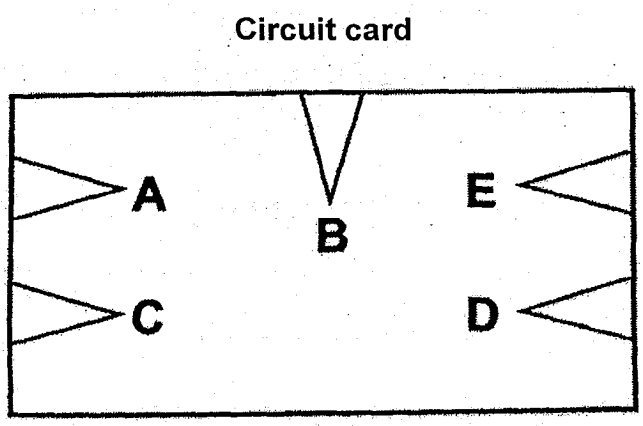


A, B, C, D and E are five contact points on the circuit card. The wires underneath the circuit card are not shown. When the ends of the two wires of the circuit tester are connected to different contact points, the bulb may or may not light up.

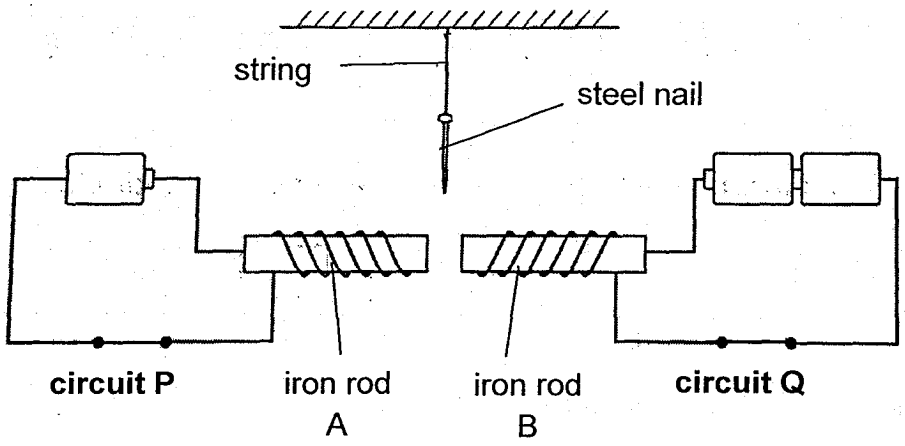
The table below shows the results obtained when different pairs of contact points were connected to the circuit tester.

Points connected to circuit tester	Did the bulb light up?
D and E	No
A and C	Yes
B and E	No
A and D	Yes
A and B	No

(d) In the diagram below, draw only two lines to represent the wires that connect the contact points for all the above observations. (1m)



39. The diagram below shows two circuits, P and Q. Identical batteries and iron rods were used in the circuit.



(a) Compare the magnetic strength of iron rods A and B. Which one of these rods, A or B, had a stronger magnetic strength? Explain your answer. (1m)

_____

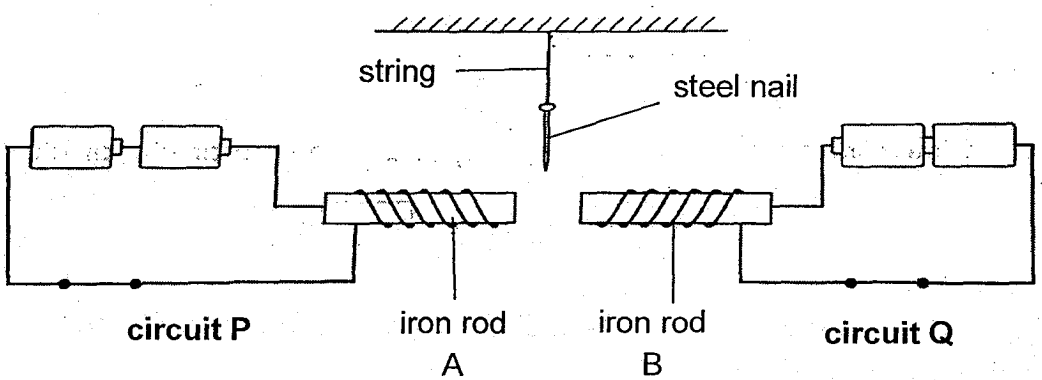
_____

(b) What would happen to the suspended steel nail when both switches were closed? (1m)

_____

_____

The experiment was repeated with the set-up shown below.



(c) The steel nail remained in the centre and did not move. Explain why. (2m)

_____

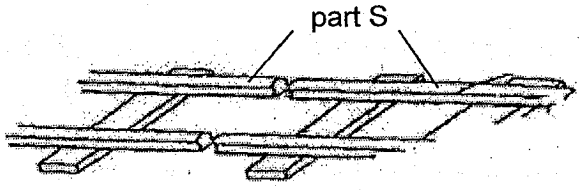
_____

_____

40. Ron conducted an experiment by heating three similar rods made of different materials, A, B and C, for 30 minutes. He recorded the results as shown in the table.

Rod	Length before heating (cm)	Length after heating (cm)
A	40	45
B	40	43
C	40	41

The diagram below shows part of a railway track.



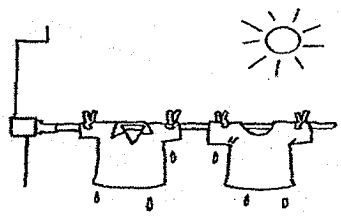
(a) Which rod, A, B or C, is the most suitable to make part S of the railway track? Explain your answer. (2m)

_____

_____

_____

In Singapore, most households hang their clothes on bamboo poles out in the Sun to dry.



(b) In order for the clothes to dry quickly, the clothes are spread out and not folded. Explain why this is so. (2m)

_____

_____

_____

END OF BOOKLET B
PLEASE CHECK YOUR WORK.

SCHOOL : RED SWASTIKA PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 CA2

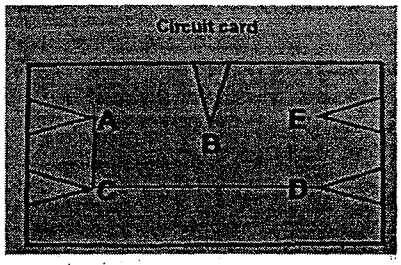
SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
4	2	4	3	1	4	3	2	3	4
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	1	3	3	2	4	1	3	3	1
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
1	-	2	4	3	4	1	3		

SECTION B

Q29)	(a) Oxygen : no change Carbon dioxide : increase (b) The glass tank is sealed. So oxygen will deplete after sometime and thus the live hamster will die. (c) Oxygen : increase Carbon dioxide : decrease (d) Tick "sealed glass tank, data logger and lighted room"
Q30)	(a) Mammals : R Fish : P Insect : Q Birds : S (b) The lower the temperature, the greater number of animal S hatches.
Q31)	(a) Wing-like structure : Q Explosive : P (b) Q is likely to experience overcrowding as the young are not spread over greater distance.
Q32)	(a) i. Insect Pollination / Stigma is inside the flower petals ii. Wind Pollination / Stigma is hanging outside the petals (b) B
Q33)	(a) Cell X can make food as it has chloroplasts (b) Cell Y

Q34)	(a) Sulaiman as his heart rate increases earlier than Ray (b) As he started to jog, he needs more energy. The heart pumps blood faster to deliver more oxygen and digested food to other of parts of the body to release more energy.
Q35)	(a) i. False ii. False (b) i. water ii. The salt water in the beaker gains heat from the heat source and the water evaporates. When the water vapour touches the cooler surface of the cling wrap, loses heat and condenses into water droplets. (c) Salt
Q36)	(a) The plastic bottle filled with stones will stay at the bottom of the water tank and occupies space. So lesser water is required to reach level X and thus save water. (b) Matter occupies space. (c) 70 cm^3 (d) Water does not have a definite shape
Q37)	(a) The metal strip 1 and metal strip 2 need to be in contact with the metal piece to form a closed circuit for electricity to low through. (b) The bulb has fused (c) Plastic is a poor conductor of electricity. Even when the train entered the tunnel fully, it is still an open circuit. So the bulb will not light up.

Q38)	(a) S1 and S3 (b) Bulb B (c) Change 1 : turn one of the battery the other side with positive touches the negative of the other battery Change 2 : the end of the wire should be touching the metal tip of the bulb (d) 
Q39)	(a) Rod B as it has two batteries connected. (b) The steel nail will be attracted to iron rod B (c) Both iron rod A and B have the same magnetic strength as the number of batteries used and number of coils around the rods are the same.
Q40)	(a) Rod C as expands the least during hot day and thus less likely to bend or crack due to expansion. (b) By doing so, it has bigger exposed surface area which means rate of evaporation will be faster.