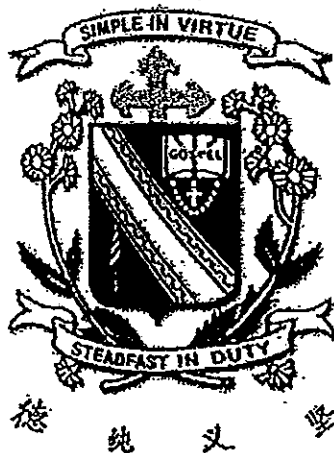


Name: _____ ()

Class: Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5
Semestral Assessment 2 – 2013
SCIENCE
BOOKLET A

29 October 2013

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

30 questions
60 marks

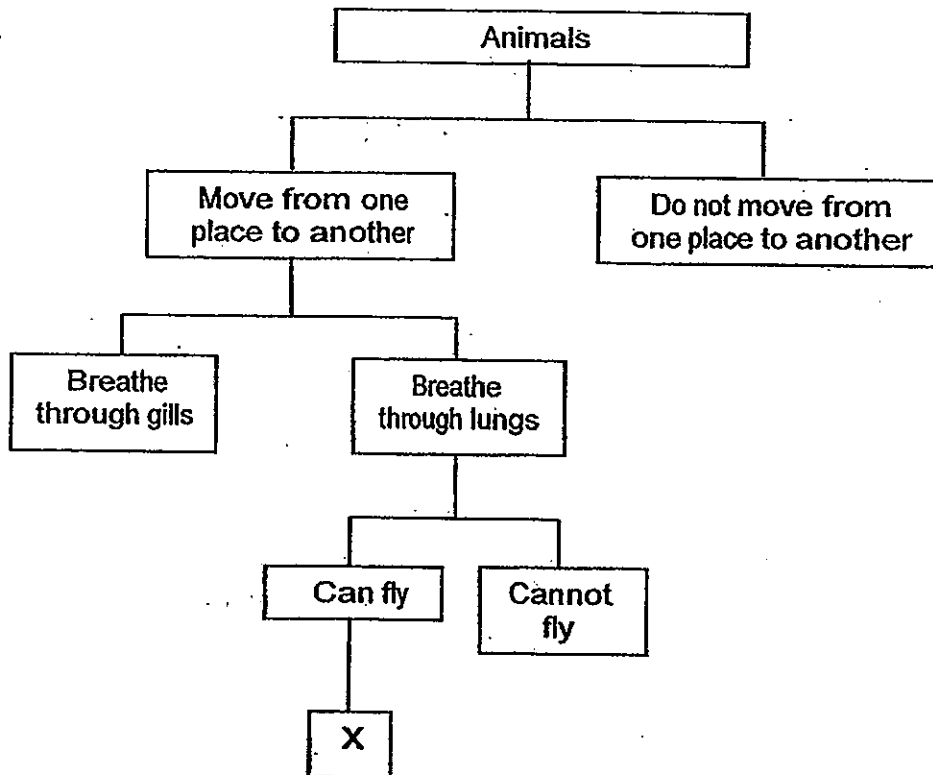
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of 27 printed pages.

Section A : (30 x 2 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. The classification chart below shows the characteristics of some animals.

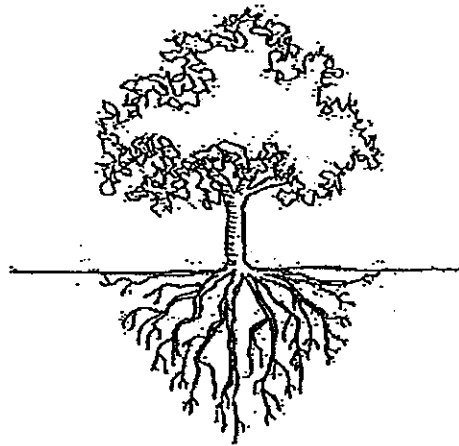


Which of the following animal groups can be represented by X?

- A Bird
- B Fish
- C Insect
- D Mammal

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

2. The diagram below shows a tree.

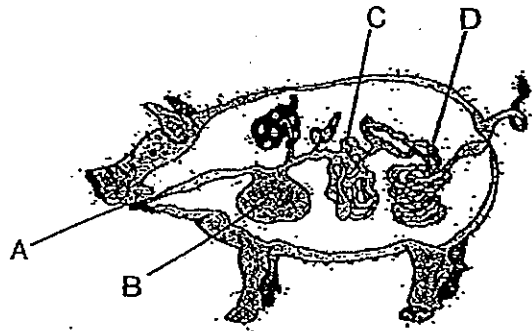


Which of the following statements about the parts of the tree is incorrect?

- A The roots help the tree to transport food.
- B The leaves spread out to receive moisture and sunlight.
- C The roots spread out to reach for more water and minerals.
- D The branches spread the leaves out to enable the tree to maintain its shape.

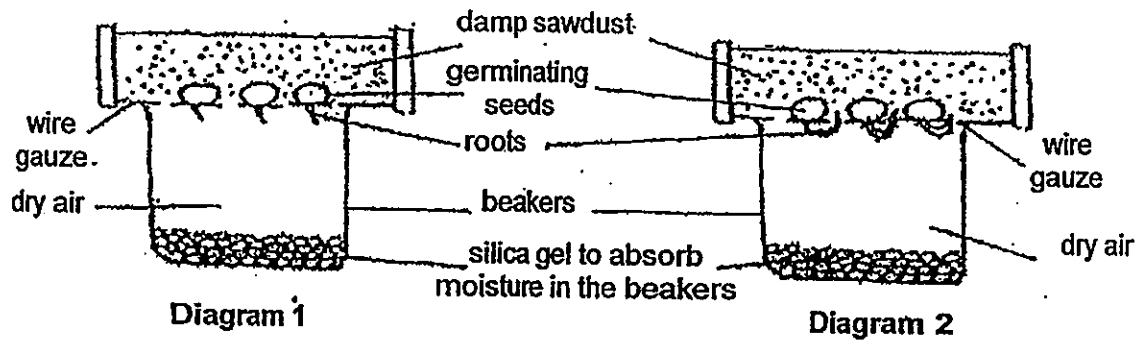
- (1) D only
- (2) A and D only
- (3) B and C only
- (4) A, B and D only

3. The digestive system of a pig as shown below is very similar to that of a human being.



Based on the above diagram, food is partially digested at part _____ and digested food is absorbed into the bloodstream at part _____.

- (1) A and D
 - (2) A and B
 - (3) B and C
 - (4) B and D
4. Sundram placed some germinating seeds in a set-up as shown below in diagram 1.

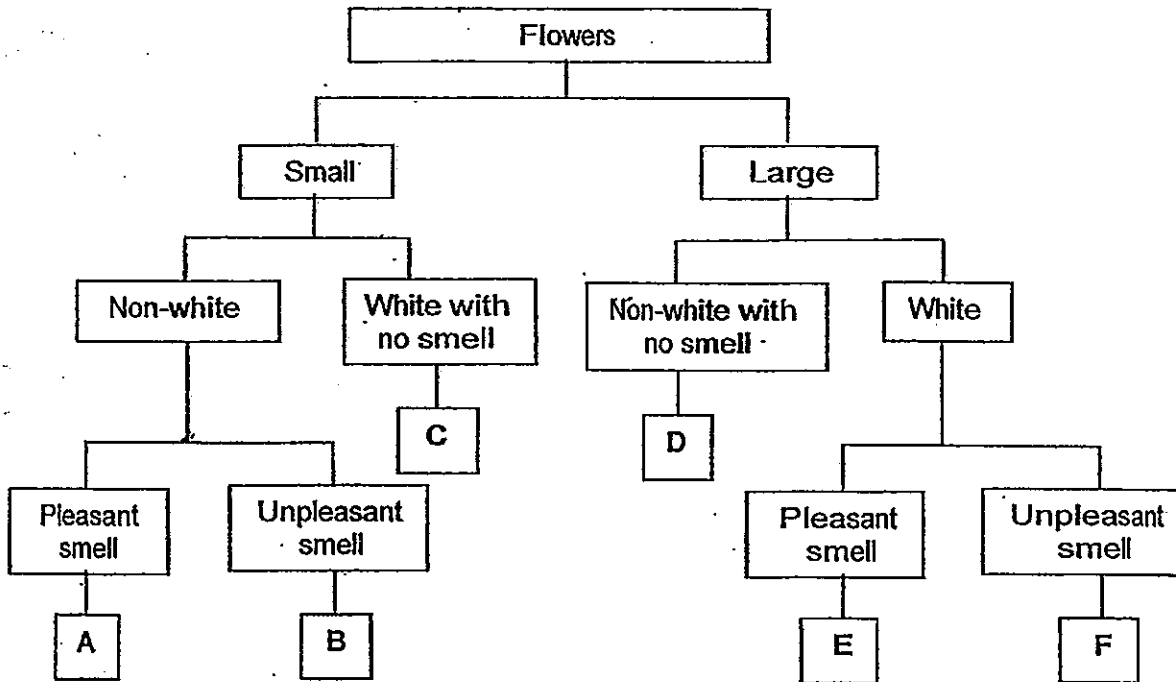


He then left the set-up in a well-ventilated room and diagram 2 shows the changes to the germinating seeds after a few days.

Which one of the following conclusions can Sundram draw from the above observation?

- (1) Roots grow towards water.
- (2) Germination cannot take place in dry air.
- (3) Germination cannot take place in sawdust.
- (4) Air, moisture and warmth are needed for germination to take place.

5. The classification chart below shows how 6 flowers, A, B, C, D, E and F, are classified.



The table below shows the characteristics of flowers that animals X, Y and Z are attracted to.

Animal	Characteristics of flowers
X	Small, red with a pleasant smell
Y	Small, white with no smell
Z	Large, white with a pleasant smell

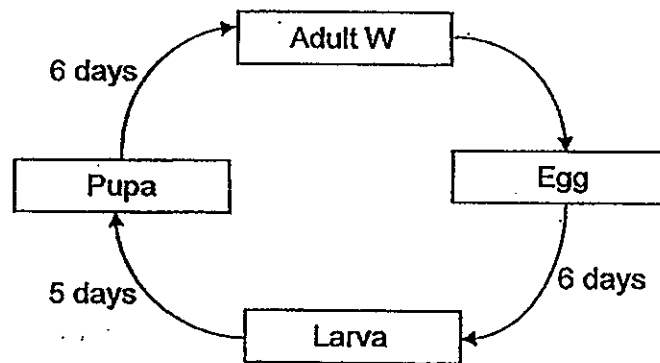
Based on the above classification chart, which one of the following shows the flowers, A, B, C, D, E or F, animals X, Y and Z are most likely attracted to?

	Animal X	Animal Y	Animal Z
(1)	A	C	E
(2)	B	C	F
(3)	E	D	A
(4)	C	D	E

6. The number of eggs laid by organism W and the length of time taken for W to grow from an egg to an adult change with the surrounding temperature as shown in the table below.

Temperature of surroundings (°C)	Number of fertilised eggs laid	Time taken for eggs to grow into adults (days)
16	50	30
21	90	17
26	130	13
31	201	9

At a certain time of the year, the life cycle of W in an environment is shown below.

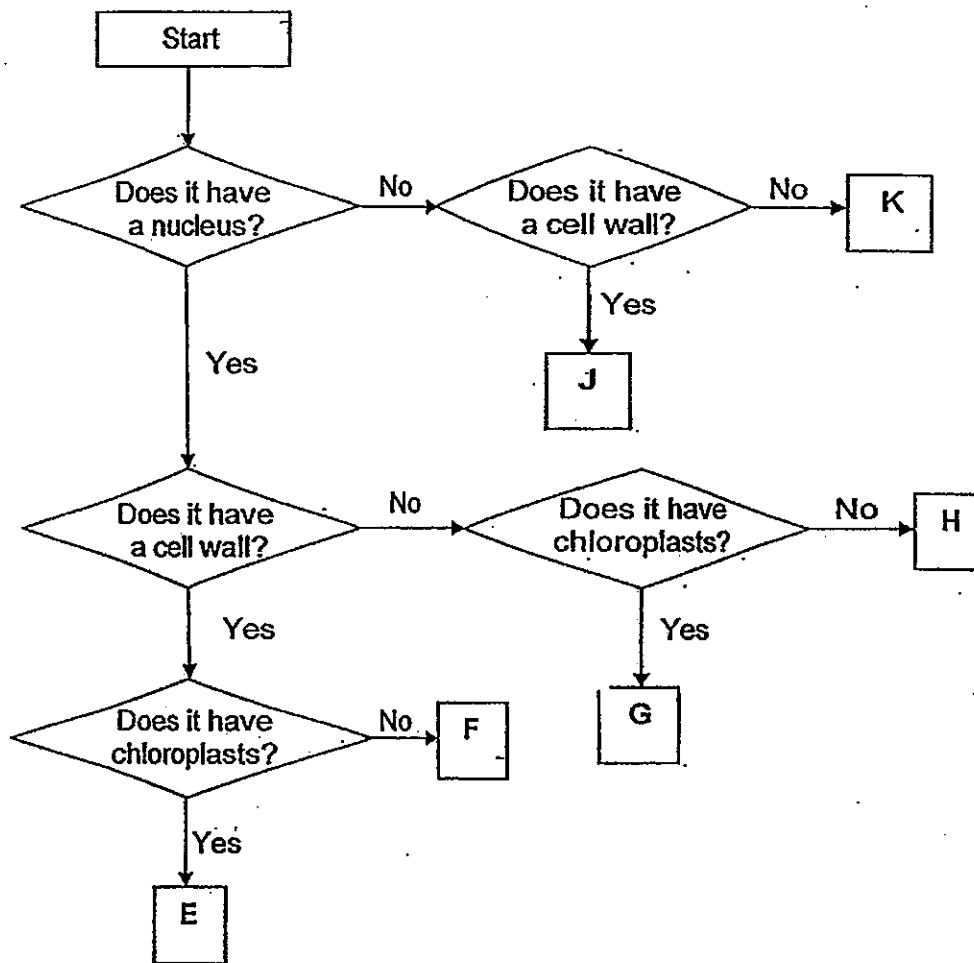


Based on all the above information, which of the following statements are correct?

- A The temperature of the environment is 21°C.
- B It takes 11 days for W to become pupae after the eggs have hatched.
- C W will be able to multiply quickly when the temperature of the environment is between 26°C and 31°C.
- D The number of fertilised eggs W laid decreases with decreasing temperature.

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

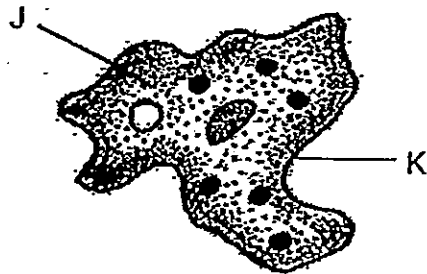
7. The diagram below shows a flowchart used to differentiate cells E, F, G, H, J and K.



Based on the above information, which of the following statements about the above cells are definitely true?

- A Cells H and K may be animal cells:
 - B Cells E and F are taken from plants.
 - C Cells E and G can trap sunlight to make food.
 - D Cells J and K may not be cells as they do not have a nucleus.
- (1) A and C only
 (2) B and D only
 (3) A, B and C only.
 (4) A, B, C and D

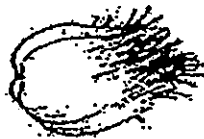
8. The diagram below shows a cell.



Which one of the following states the functions of parts J and K correctly?

	J	K
(1)	Controls the movement of substances in and out of the cell	Controls all activities in the cell
(2)	Allows cell activities to take place	Gives the cell a fixed shape
(3)	Gives the cell a fixed shape	Produces chlorophyll
(4)	Allows cell activities to take place	Controls the movement of substances in and out of the cell

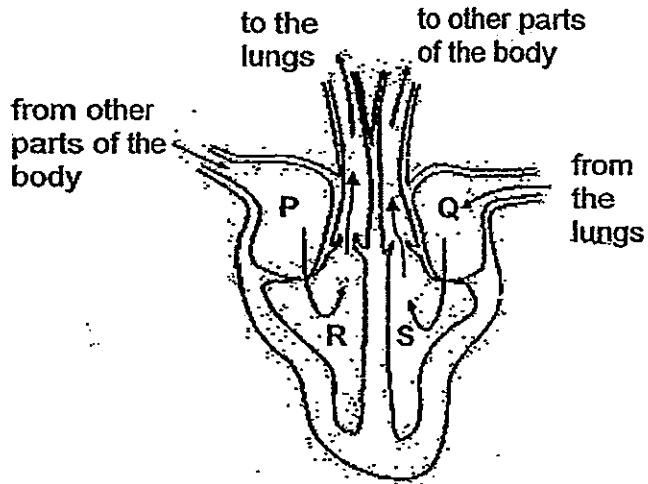
9. The diagram below shows a fruit found by Megan during her school trip to Sungei Buloh Nature Reserve.



Which one of the following tests can Megan carry out to find out if the fruit is most likely dispersed by water?

- (1) Measure the mass of the fruit.
- (2) Measure the volume of the fruit.
- (3) Observe whether the fruit sinks in water.
- (4) Observe the presence of hairs on the fruit.

10. The arrows below show the movement of blood as it passes through a human heart.

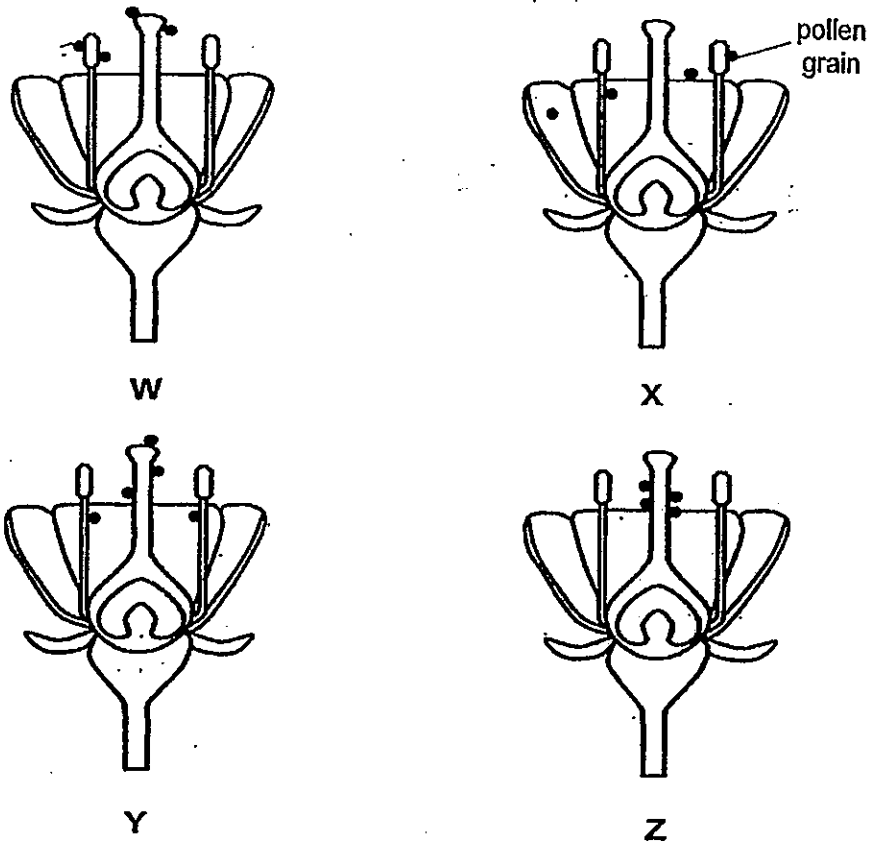


The human heart

Which one of the following correctly describes the blood found in parts P, Q, R and S?

	P	Q	R	S
(1)	rich in carbon dioxide	rich in oxygen	rich in oxygen	rich in carbon dioxide
(2)	rich in oxygen	rich in carbon dioxide	rich in oxygen	rich in carbon dioxide
(3)	rich in carbon dioxide	rich in carbon dioxide	rich in oxygen	rich in oxygen
(4)	rich in carbon dioxide	rich in oxygen	rich in carbon dioxide	rich in oxygen

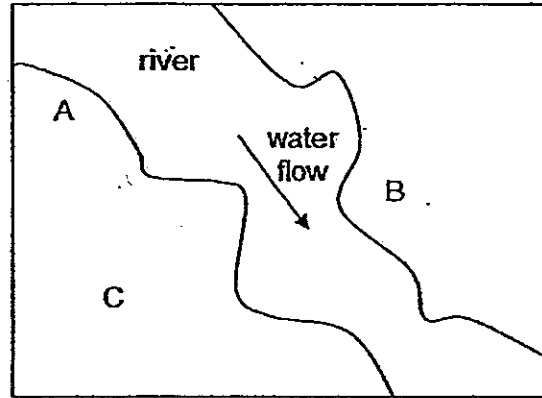
11. The diagram below shows 4 flowers, W, X, Y and Z, of the same species. The black dots "•" represent pollen grains that have landed on the flowers as shown below.



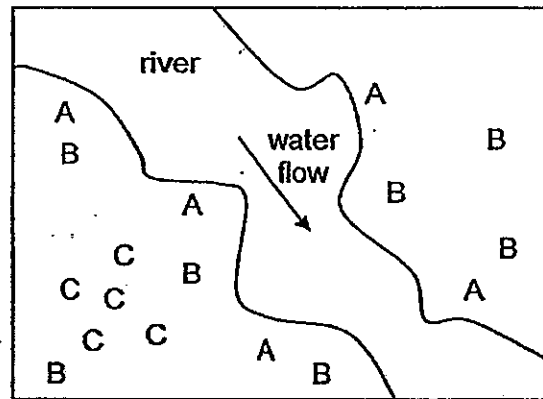
Based on the above observation, which of the flowers, W, X, Y or Z, have been successfully pollinated?

- (1) W and X only
- (2) W and Y only
- (3) Y and Z only
- (4) W, Y and Z only

12. The diagram below shows part of an island where 3 types of plant, A, B and C are growing.



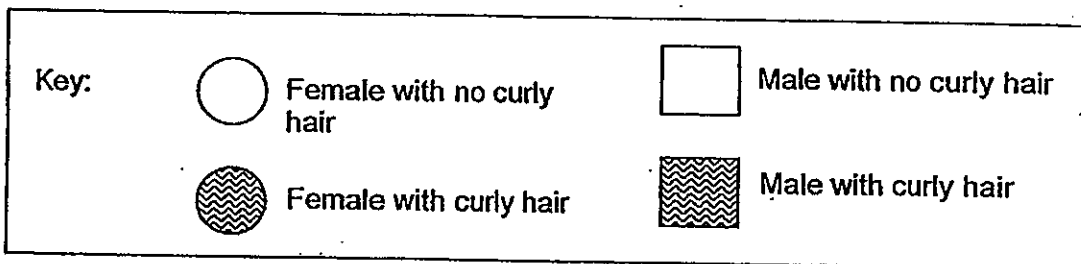
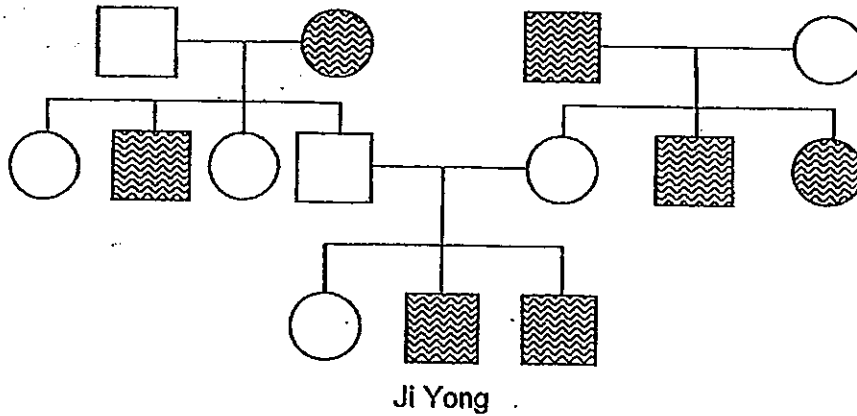
After 3 years, the number of each type of plant has increased as shown in the diagram below.



How are the seeds/fruits of A, B and C most likely dispersed?

	A	B	C
(1)	Water	Splitting	Splitting
(2)	Animal	Animal	Wind
(3)	Wind	Wind	Animal
(4)	Water	Animal	Splitting

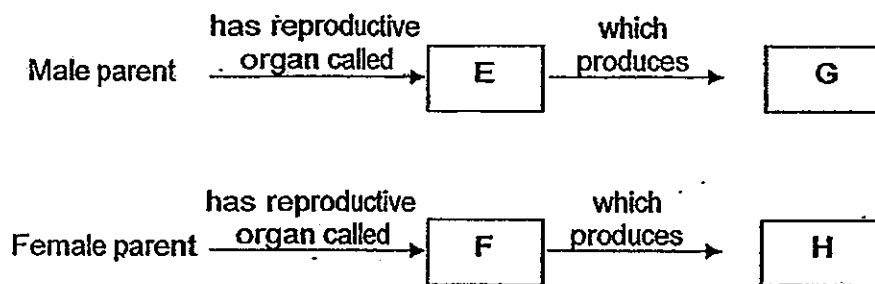
13. Study the family tree of Ji Yong below. The family tree shows the members who either have curly hair or no curly hair.



Based on the information provided above, which one of the following statements about the family tree is true?

- (1) Ji Yong's parents have curly hair.
- (2) Ji Yong and his brother do not have curly hair.
- (3) Ji Yong's father has a brother who has curly hair.
- (4) Both Ji Yong's grandfathers do not have curly hair.

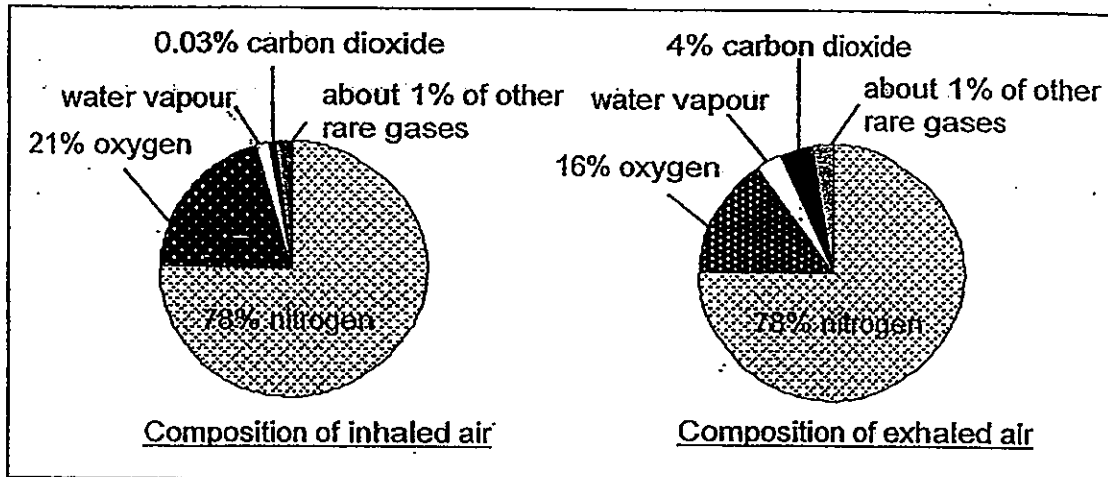
14. Study the diagram below.



Which one of the following correctly represents E, F, G and H?

	E	F	G	H
(1)	Anther	Ovary	Pollen grains	Ovules
(2)	Testis	Ovary	Sperms	Eggs
(3)	Penis	Vagina	Eggs	Ovaries
(4)	Testis	Womb	Sperms	Eggs

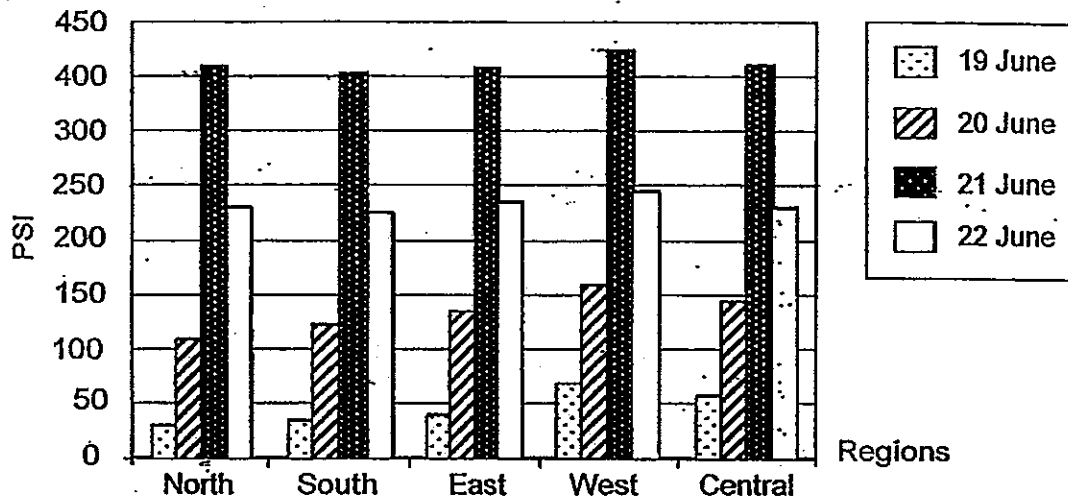
15. The diagram below shows the composition of inhaled and exhaled air.



Based on the above diagram, which of the following statements about inhaled and exhaled air are true?

- A Exhaled air has more oxygen than carbon dioxide.
 - B Exhaled air has more water vapour than inhaled air.
 - C Inhaled air has a lower temperature than exhaled air.
 - D Inhaled air has the same amount of nitrogen as exhaled air.
- (1) A and B only.
(2) B and D only
(3) A, B and D only.
(4) A, B, C and D

16. The graph below shows the Pollutant Standards Index (PSI) readings of the North, South, East, West and Central regions in Singapore from 19 June to 22 June.



The table below shows the PSI value and the air quality description.

PSI Value	0 - 50	51 - 100	101 - 200	201 - 300	Above 300
Air quality descriptor	Good	Moderate	Unhealthy	Very unhealthy	Hazardous

(Note: PSI is a measure of the concentrations of pollutants in the air.)

Based only on the above information, which of the following statements is/are definitely true?

- A The PSI on all 4 days are within the unhealthy range everywhere in Singapore.
 - B The PSI on all 4 days are highest in the West region.
 - C The PSI on all 4 days are lower in the North than in the South region.
 - D The lungs and air tubes of the people are damaged on the days when the PSI value is between 101 and 200.
- (1) B only
 (2) B and D only
 (3) A, C and D only
 (4) B, C and D only

17. Mohan fully immersed 4 different materials, A, B, C and D, of the same size into 4 containers each containing a certain amount of tap water. He then removed the materials from the containers after 5 minutes.

The table below shows the amount of water in the containers as observed by Mohan.

	Container for material A	Container for material B	Container for material C	Container for material D
Amount of water in container at first	65ml	155ml	90ml	100ml
Amount of water in container at the end	55ml	125ml	45ml	70ml

Based on the above results, which one of the materials, A, B, C or D, should Mohan choose to make a bath towel?

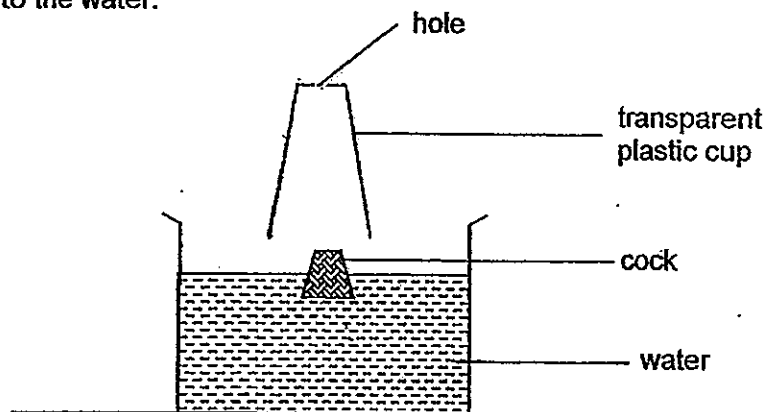
- (1) A
 - (2) B
 - (3) C
 - (4) D
18. The table below shows the freezing and boiling points of substances A, B, C and D.

Substance	Freezing point	Boiling point
A	-4 °C	60 °C
B	5 °C	75 °C
C	-2 °C	45 °C
D	20 °C	87 °C

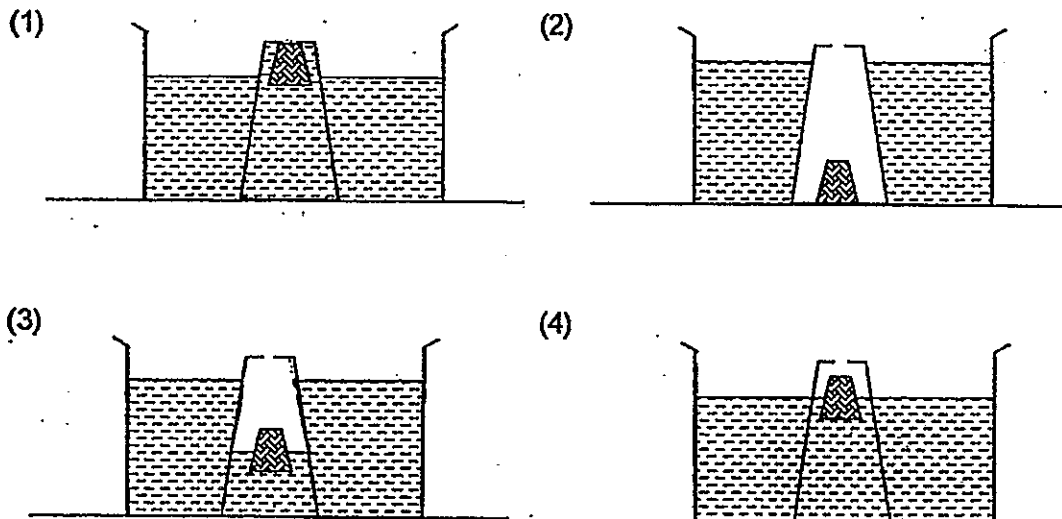
At which one of the following temperatures are the 4 substances, A, B, C and D, in the same state?

- (1) 18 °C
- (2) 32 °C
- (3) 47 °C
- (4) 63 °C

19. Kenne placed a piece of cork in a basin of water. Next, he made a hole at the bottom of a transparent plastic cup before inverting the cup over the piece of cork as shown below. He then proceeded to push the cup vertically into the water.



Which one of the following best represents what he would observe?



20. Ethan wanted to compare the hardness of four objects R, S, T and U. He tested them by scratching them with rods made of plastic, wood and metal. After the experiment, he concluded that object T is the hardest, followed by object U, R and S.

Which one of the following was the most likely observation that he had made?

(1)

Objects	(✓) indicates the presence of scratch marks made by the rods		
	Plastic	Wood	Metal
R			✓
S			
T	✓	✓	✓
U		✓	✓

(2)

Objects	(✓) indicates the presence of scratch marks made by the rods		
	Plastic	Wood	Metal
R		✓	✓
S	✓	✓	✓
T			
U			✓

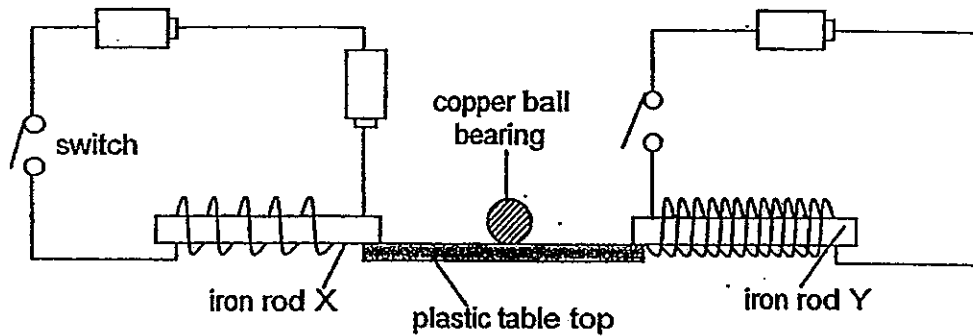
(3)

Objects	(✓) indicates the presence of scratch marks made by the rods		
	Plastic	Wood	Metal
R		✓	✓
S			
T	✓	✓	✓
U			✓

(4)

Objects	(✓) indicates the presence of scratch marks made by the rods		
	Plastic	Wood	Metal
R			✓
S	✓	✓	✓
T			
U		✓	✓

21. The diagram below shows an experiment set up by Ron.

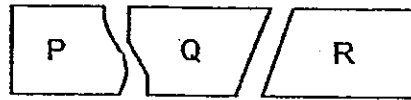


Ron had used identical batteries, wires, switches and iron rods for the above set-up.

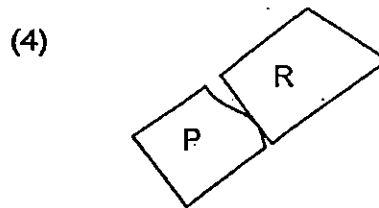
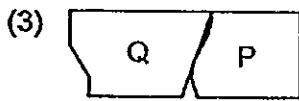
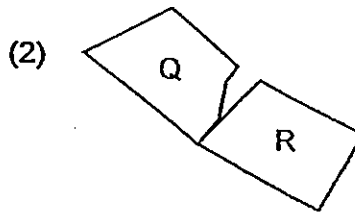
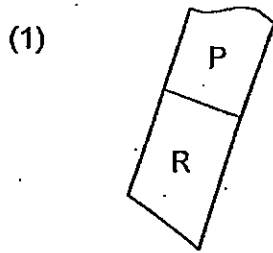
When the switches were closed, what observation would Ron make of the ball bearing?

- (1) The ball bearing moved towards iron rod X.
- (2) The ball bearing moved towards iron rod Y.
- (3) The ball bearing remained in the same position.
- (4) The ball bearing moves towards iron rod X before moving towards iron rod Y.

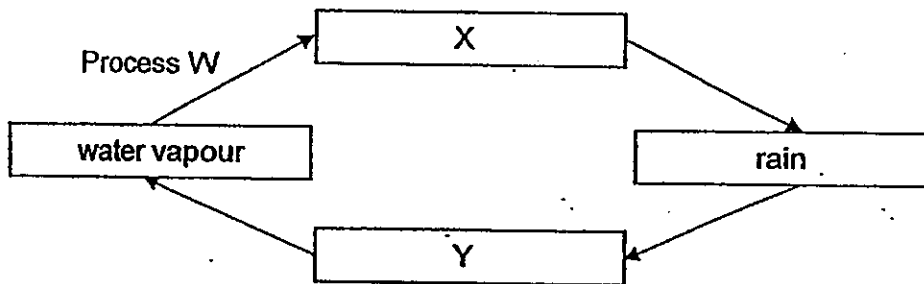
22. Beckam broke a piece of magnet into 3 pieces, P, Q and R, as shown below.



Which one of the following arrangements is possible when 2 broken pieces of the magnet are brought together?



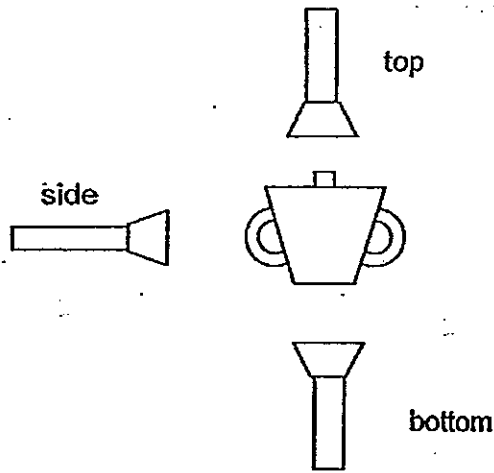
23. The diagram below shows the water cycle.



Which one of the following correctly represents W, X and Y?

	W	X	Y
(1)	evaporation	cloud	ocean water
(2)	evaporation	ocean water	cloud
(3)	condensation	cloud	ocean water
(4)	condensation	ocean water	cloud

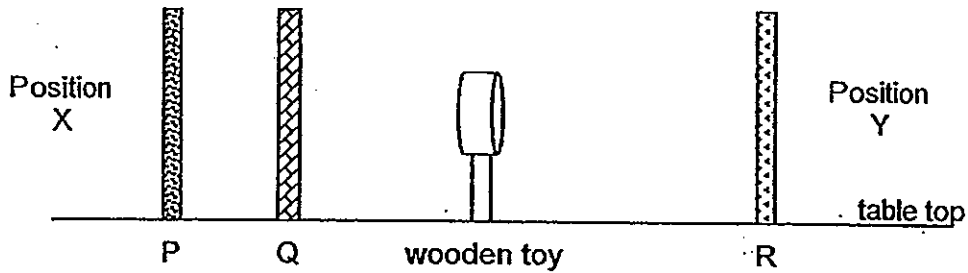
24. Bee Eng used a torch to shine on a mug with a lid from three different positions as shown below.



Which one of the following correctly shows the shadows observed by Bee Eng when the torch was shone from the three different positions?

	top	side	bottom
(1)			
(2)			
(3)			
(4)			

25. Angela placed 3 similar sized screens, P, Q and R, made of different materials and a wooden toy on a table as shown below.

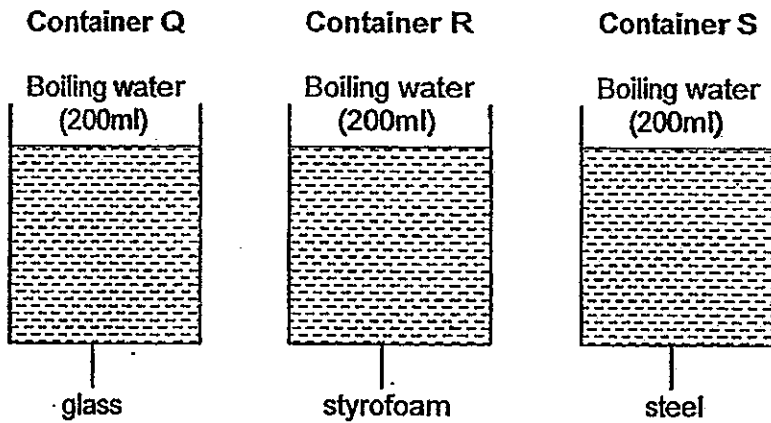


When Angela viewed the toy from position X, she was able to see it clearly. However, the toy was seen as a blurry image when she viewed it from position Y.

Which one of the following best represents the materials that screens P, Q and R could be made of?

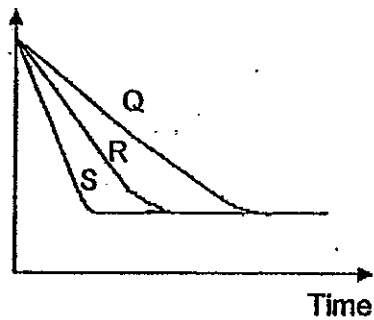
	P	Q	R
(1)	Frosted glass	Clear glass	Clear plastic
(2)	Clear glass	Cardboard	Frosted paper
(3)	Clear plastic	Frosted glass	Cardboard
(4)	Clear plastic	Clear glass	Frosted paper

26. Three containers, Q, R and S, of the same size and thickness are filled with 200ml of boiling water. Each container is made of a different material as shown below. The containers are left on a table for three hours.

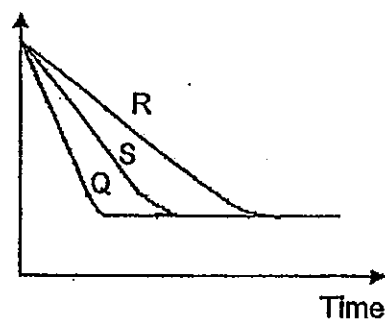


Which one of the following graphs best represents the changes in the temperature of the water in each container at the end of the experiment?

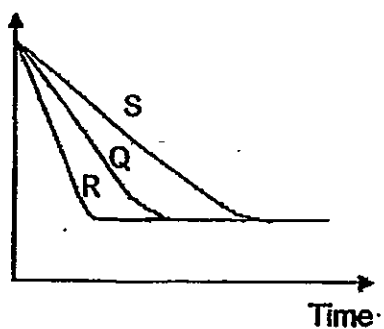
(1) Temperature ($^{\circ}\text{C}$)



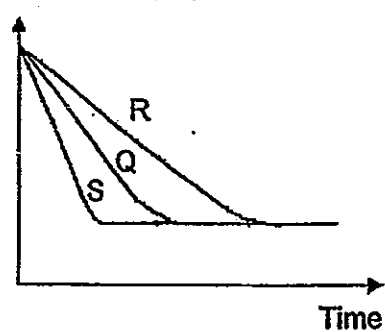
(2) Temperature ($^{\circ}\text{C}$)



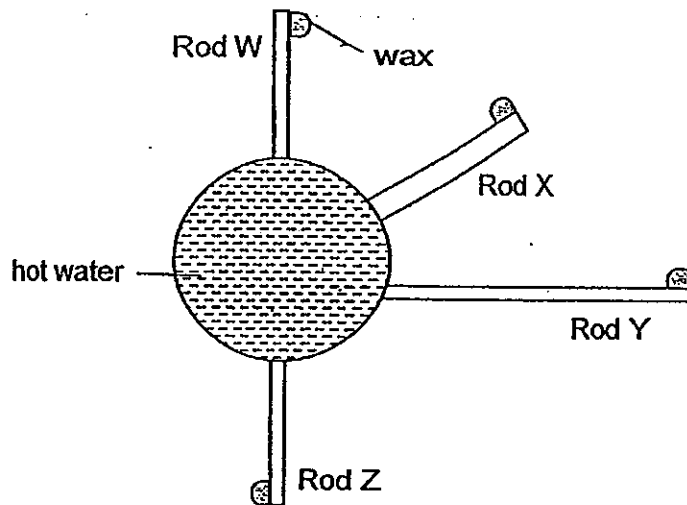
(3) Temperature ($^{\circ}\text{C}$)



(4) Temperature ($^{\circ}\text{C}$)



27. Nelson wanted to investigate the factors affecting the heat conductivity of different rods. He had a container of hot water with rods W, X, Y and Z attached to it. Each rod had a piece of wax placed at the end of it as shown in the diagram below. He then measured the time taken for the wax on each rod to melt completely.



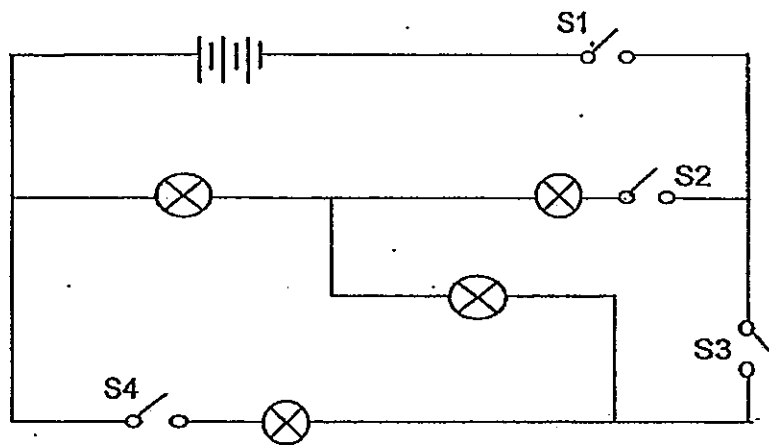
The table below provides the information on the various rods.

Rod	Material	Length (cm)	Thickness (cm)
W	Brass	6	0.5
X	Brass	6	0.8
Y	Glass	9	0.3
Z	Steel	6	0.5

Which of the following sets of rods should he compare in order to ensure a fair test?

- A Rod W and X
 - B Rod W and Z
 - C Rod X and Y
 - D Rod Y and Z
- (1) A and B only
 (2) A and D only
 (3) B and C only
 (4) B and D only

28. An electric circuit was set up as shown in the diagram below.

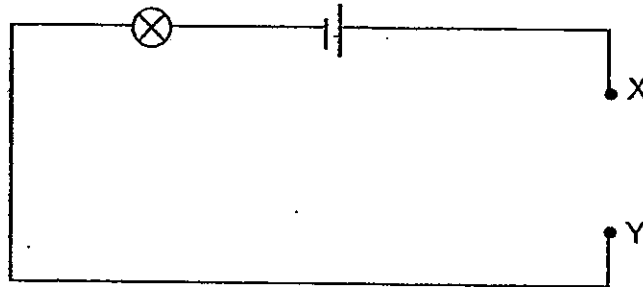


Which of the following switches should be closed to ensure that only 2 bulbs light up?

- A S1 and S2
- B S1 and S3
- C S1 and S4
- D S2 and S4

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

29. Singa cut 4 pieces of wire, P, Q, R and S, each of different length and thickness from the same material. He then set up a circuit as shown below.



He used each of the wires to join ends X and Y and observed the brightness of the bulb. He recorded his observations in the table below.

Wire	Length (m)	Thickness (mm)	Brightness of bulb
P	1.5	0.2	Bright
Q	1.5	0.4	Very bright
R	2	0.2	Dim
S	2	0.4	Bright

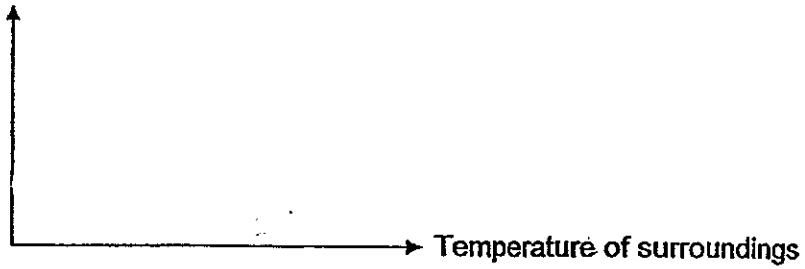
Based on the information in the table above, what can Singa conclude from his experiment?

- A As the length of the wire decreases, the brightness of the bulb increases.
- B As the length of the wire decreases, the brightness of the bulb decreases.
- C As the thickness of the wire increases, the brightness of the bulb decreases.
- D As the thickness of the wire increases, the brightness of the bulb increases.

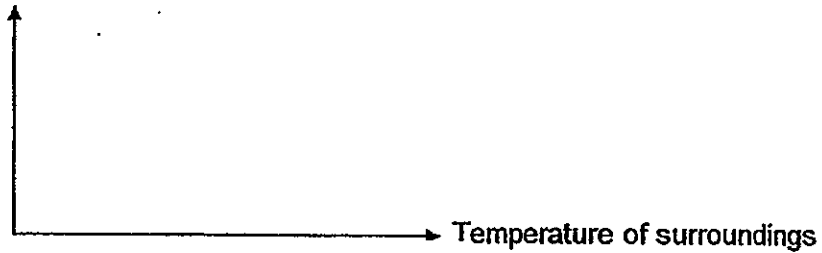
- (1) A and C only
- (2) A and D only
- (3) B and C only
- (4) B and D only

30. Aston conducted an experiment to find out the effects of temperature on the evaporation of water from 3 identical wet towels over a period of time. Which one of the following should he use to represent his results?

(1) Size of towel



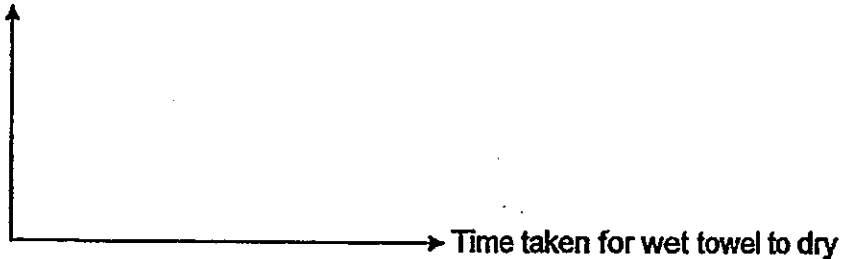
(2) Mass of wet towel



(3) Exposed surface area of towel



(4) Mass of wet towel



***** END OF SECTION A *****

Name: _____ ()

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5

Semestral Assessment 2 – 2013

SCIENCE

BOOKLET B

29 October 2013

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

14 questions
40 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This paper consists of 16 printed pages.

Booklet A	60
Booklet B	40
Total	100

Parent's Signature/Date

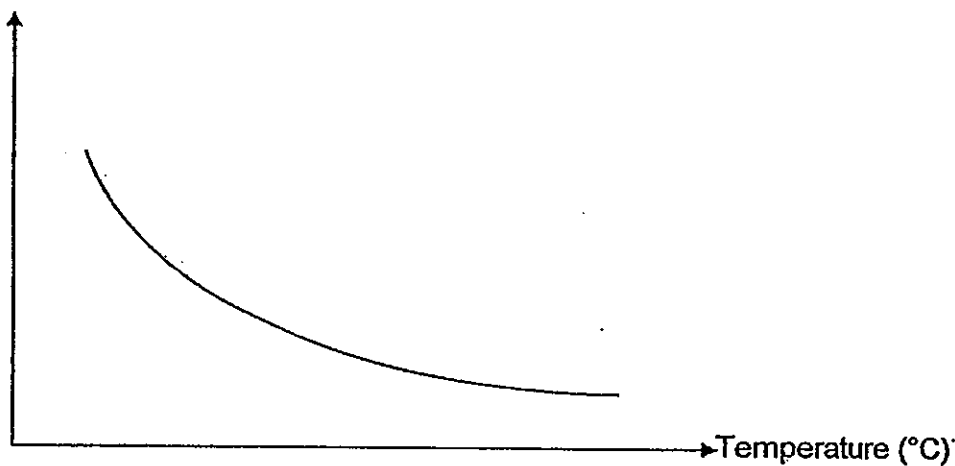
Section B (40 marks)

For questions 31 - 44, write your answers in this booklet.

The number of marks available is shown in brackets [] at the end of each question or part question.

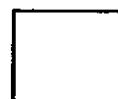
31. Agnes conducted an experiment to measure the amount of oxygen present in the water of her fish tank at different temperatures. She plotted her results in the graph below.

Amount of oxygen (units)

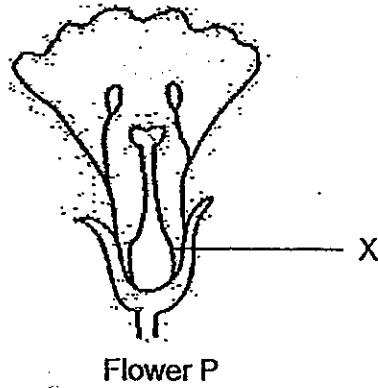


- (a) Based on the above graph, what is the relationship between the temperature and the amount of oxygen present in the water? [1]

- (b) Agnes observed that the rate at which the fishes in her tank open and close their gill covers increased when the temperature of the water in the tank increased. Using the results of the experiment, explain her observation. [2]



32. Gwen's teacher showed her a diagram of the cross-section of a flower P as shown below.



(a) Based on her observation of the above diagram, Gwen concluded that flower P is not pollinated by wind. Why do you think Gwen concluded so? [2]

(b) What will part X develop into after fertilisation has taken place? [1]

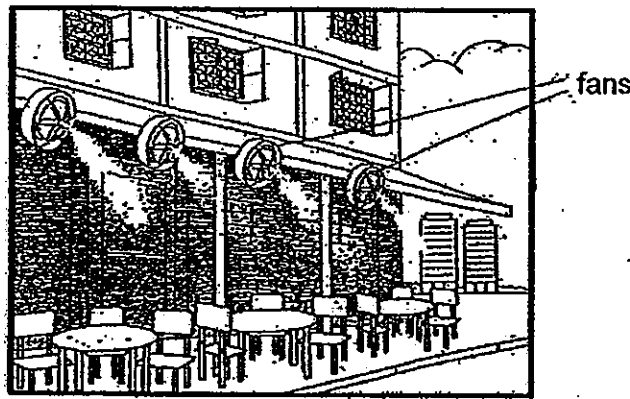


33. Ah Huat installed water mist systems outside his open-air cafe to cool the surrounding air as shown below. Tiny water droplets in the form of a mist are produced.



- (a) Explain how such a system is able to lower the temperature of the surrounding air. [2]

Subsequently, Ah Huat added fans to his water mist system as shown below to cool the surrounding air more effectively.



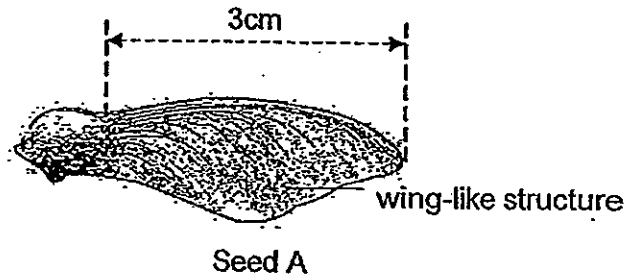
- (b) Suggest two reasons how adding the fans would help to cool the surrounding air more effectively. [2]

(i) _____

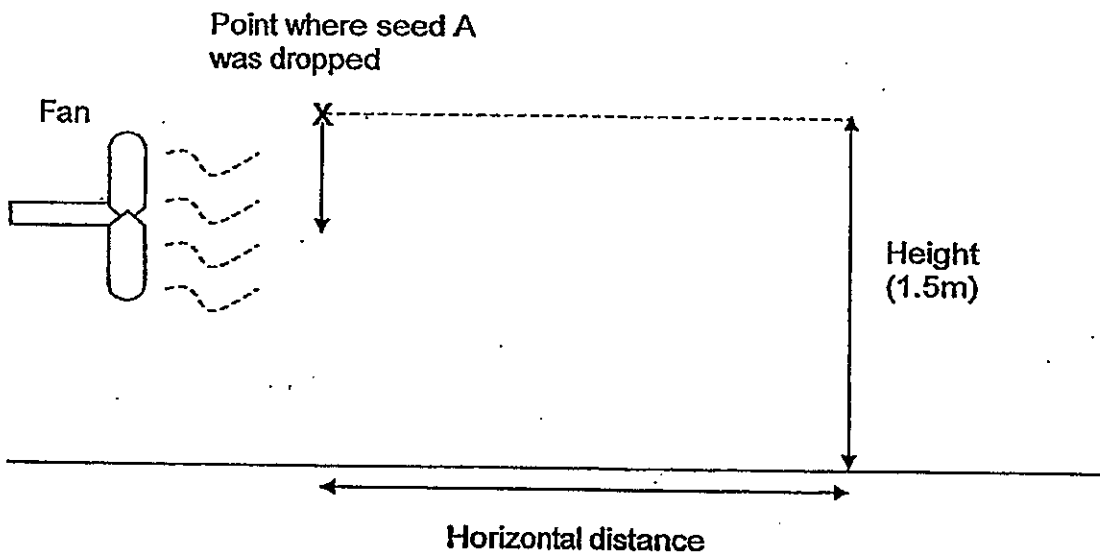
(ii) _____



34. Mikayla wanted to find out how the wing-like structure of a seed affects the distance it will travel. She obtained a seed A with a 3cm wing-like structure from a plant as shown below.



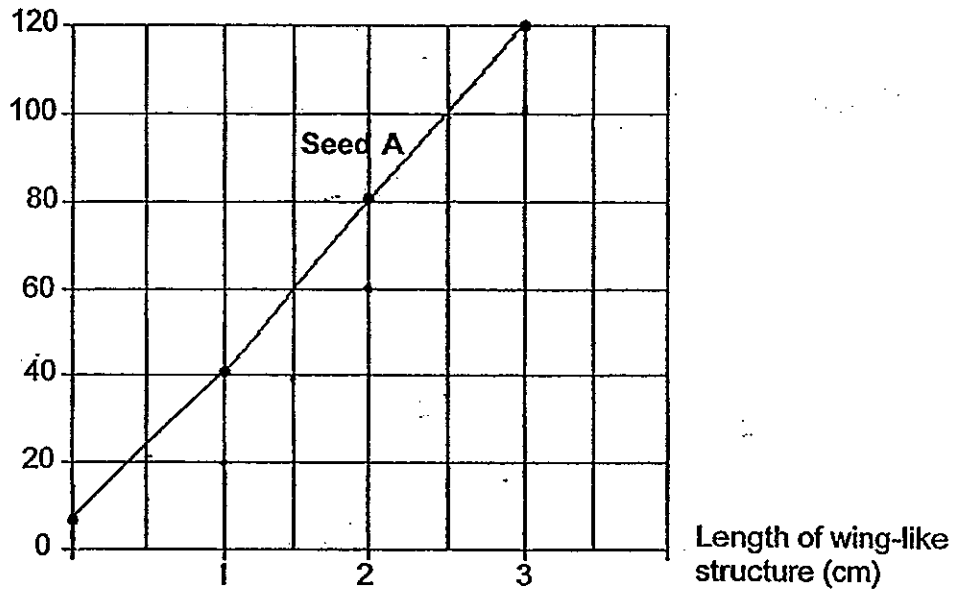
She dropped it from a height of 1.5m and measured the horizontal distance it travelled as shown in the set-up below.



Next, she trimmed off 1cm of the wing-like structure of seed A and repeated the experiment as above. Then, she trimmed off another 1cm from the wing-like structure and repeated the experiment as above. She did this another time before plotting her results on a graph as shown.



Horizontal distance travelled (cm)



- (a) Based on the above graph, state the relationship between the length of the wing-like structure of seed A and the horizontal distance travelled. [1]

- (b) Explain your answer in (a). [1]

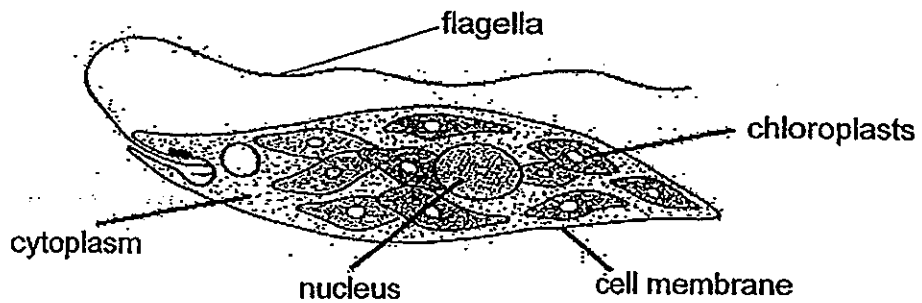
- (c) Mikayla found another seed B, with the same 3cm wing-like structure as seed A, from the same plant. However, Seed B was heavier than seed A. She then repeated the same experiment with seed B and recorded the results.

Draw another graph in the above diagram to show the results for seed B.

[1]



35. Meng Neng found a single-celled organism X, as shown below, living in pond water.

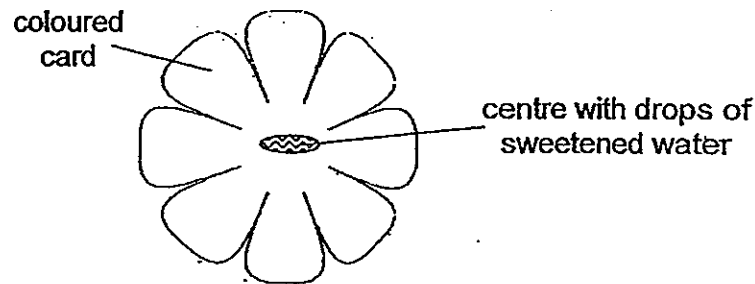


- (a) Based on his observation of organism X, Meng Neng said that organism X cannot be classified as a plant. Suggest a reason why he said so. [1]

- (b) State one part inside this organism that is not found in a typical animal cell. [1]



36. Sam wanted to find out the colour of flowers that most bees prefer. He made similar sized model flowers using different coloured papers. He then put 15 drops of the same sweetened water in the centre of each flower before leaving the model flowers in the open field.



He then counted the number of bees that visited the model flowers over 3 hours and recorded his results in the table below.

Colour of flower	Number of bees attracted		
	8 – 9am	9 – 10am	10 – 11am
blue	18	11	13
purple	10	8	9
yellow	27	24	20

- (a) Based on the results in the above table, what conclusion can Sam draw from his experiment? [1]

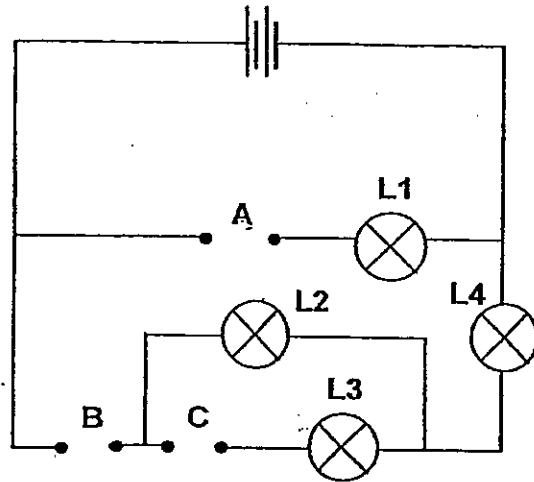
- (b) Hamni wanted to find out the relationship between the size of flowers and the number of honey bees visiting the flowers. Suggest 2 changes she should make to Sam's experiment. [2]

(i) _____

(ii) _____



37. Gwyneth was given 3 rods, X, Y and Z, made of unknown materials. She placed them at positions A, B and C, respectively of the circuit shown below.



The results of her experiment were shown in the table below. When any of the bulbs, L1, L2, L3 or L4, lit up during the experiment, a tick (✓) was placed in the box.

Positions where rods were placed			Bulbs			
A	B	C	L1	L2	L3	L4
X	Y	Z	✓	✓		✓

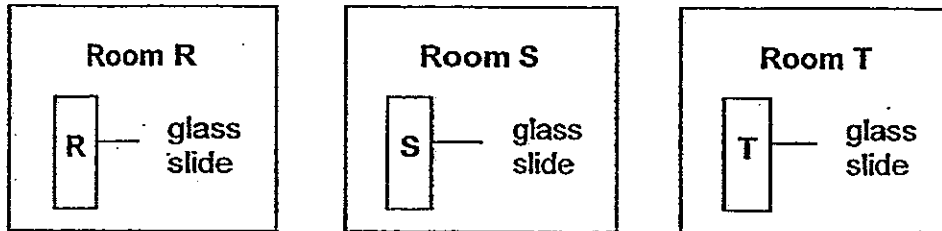
- (a) Based on the results in the above table, what can you conclude about the electrical conductivity of the 3 rods? [1]

- (b) To conduct further tests on the rods, Nerissa then placed the rods at different positions as shown in the table below. Indicate with a tick (✓) the bulbs that would light up when the rods were placed at different positions. [2]

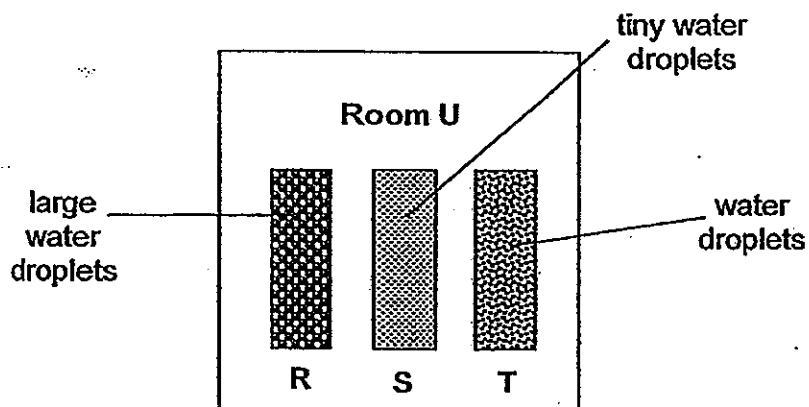
	Positions where rods were placed			Bulbs			
	A	B	C	L1	L2	L3	L4
(i)	Y	Z	X				
(ii)	Z	Y	X				



38. Mei Ling left three similar glass slides in 3 rooms, R, S and T, of different temperatures for an hour as shown below:



After which, she removed the glass slides and placed them on a table in room U. After 10 minutes, she noticed water droplets forming on the glass slides as shown in the diagram below.

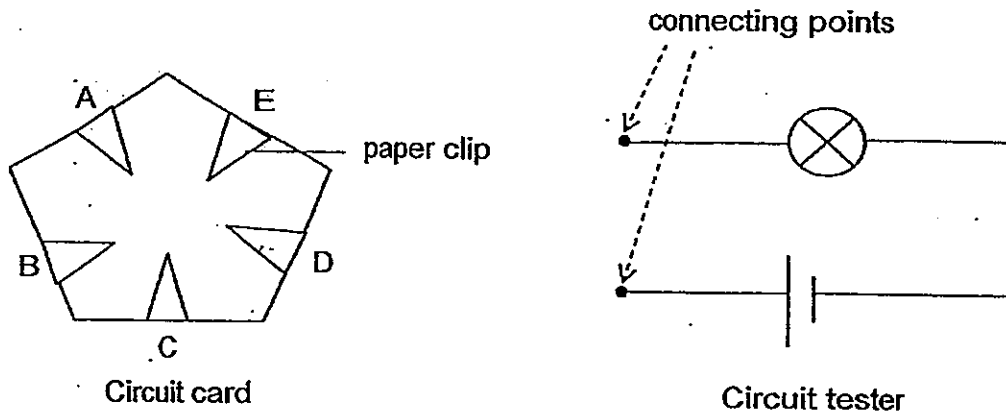


- (a) Based on the results observed above, arrange the 3 rooms, R, S and T, in order of their temperatures, from the lowest to the highest. [1]

- (b) Explain how water droplets were formed on the glass slides. [2]



39. Joenn's Science teacher asked her to use a circuit tester to test the wire connections at the back of the circuit card shown below.

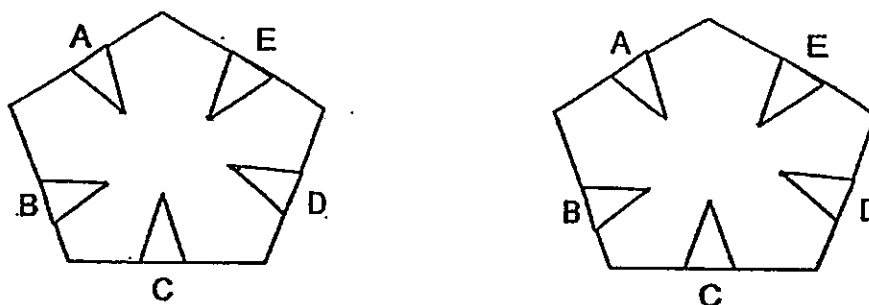


She recorded her test results in a table as shown below.

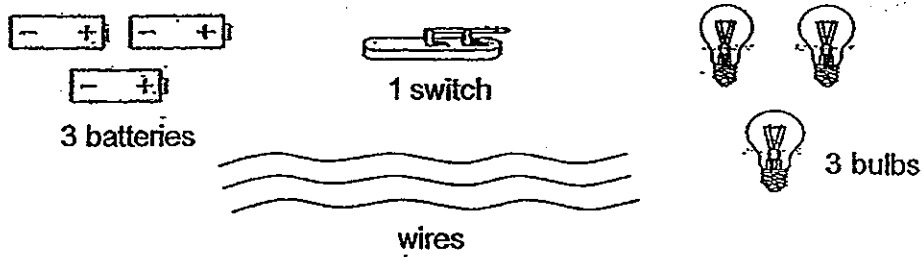
Clips Tested	Did the bulb light up?	
	Yes	No
A and B	√	
A and C		√
A and D	√	
A and E	√	
B and C		√
B and D	√	
B and E	√	
C and D		√

Joenn concluded that there were several possible connections on the circuit card.

From the results obtained, draw 3 lines on each circuit card below to show 2 different wire connections at the back of the card. [2]

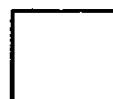
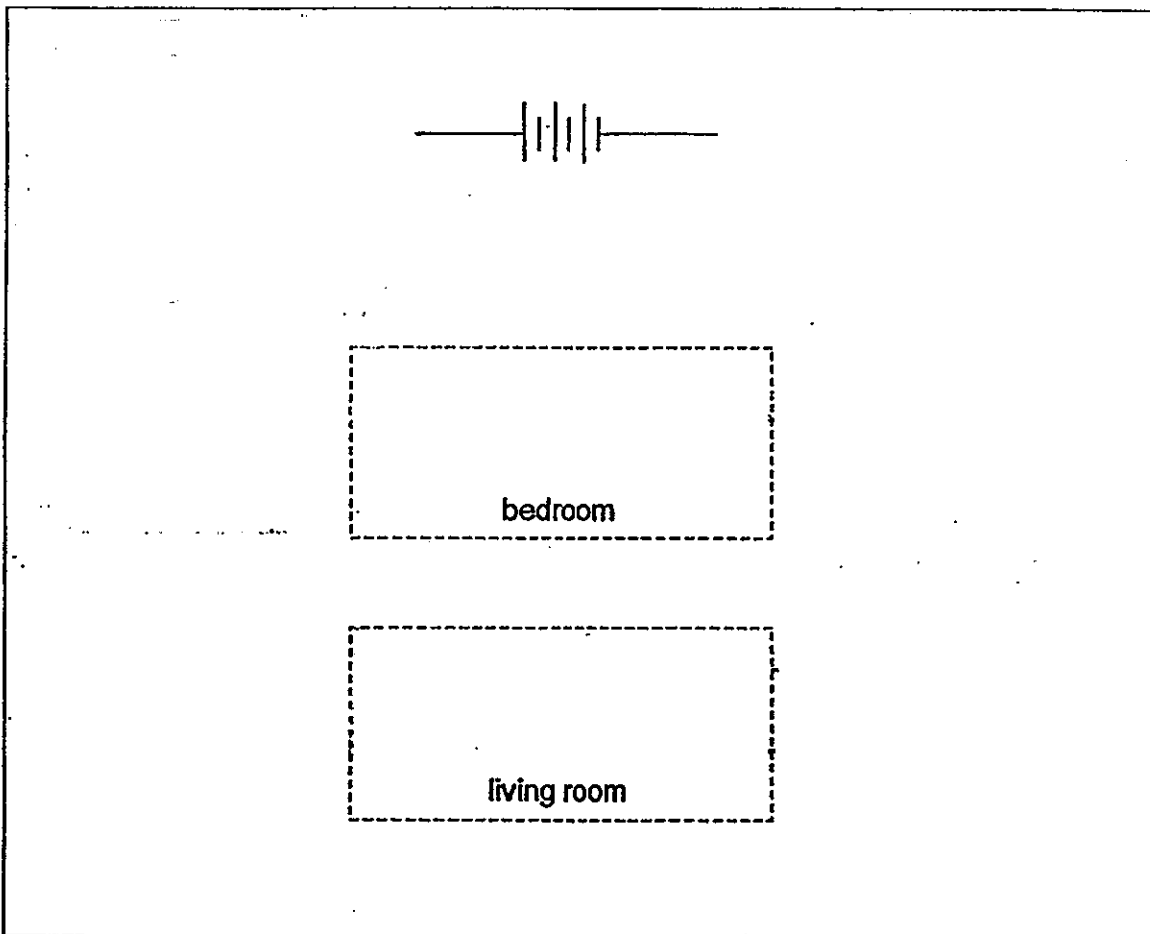


40. Sandra wanted to make a toy house for her doll and she wanted to fix 2 bulbs in the living room and 1 bulb in the bedroom. She was then given some electrical components as shown below.

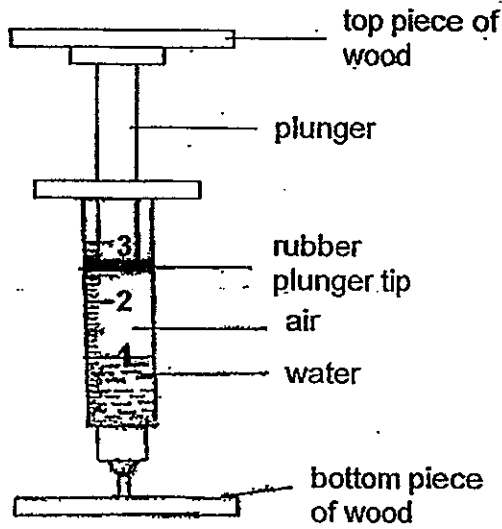


Upon completing the toy house, she noticed that the light in each room was of equal brightness when the switch was closed.

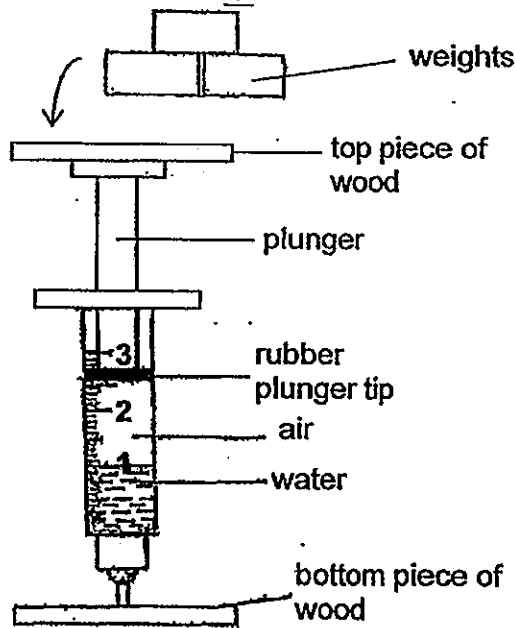
Complete the circuit diagram below to show the circuit that Sandra had set up. (Sandra has to use all the components given.) [2]



41. Penelope placed a syringe containing water and air between two pieces of wood as shown below.



Penelope then placed weights on the top piece of wood as shown in the diagram below.

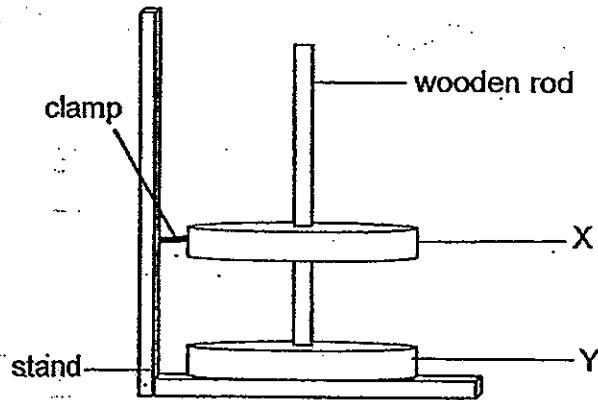


- (a) What do you think would happen to the volume of air and water in the syringe when the weights were placed on the top piece of wood? [2]

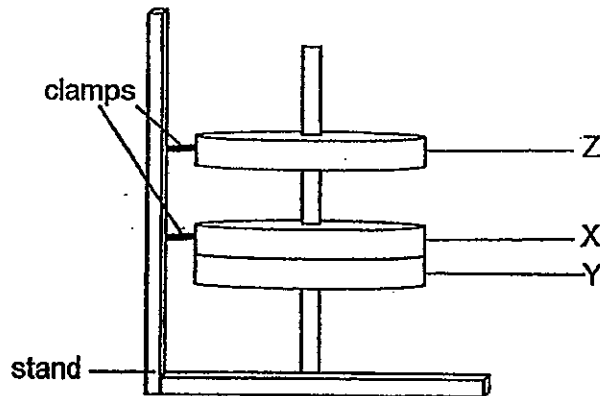
- (b) If Penelope were to place more weights on the top piece of wood, would the rubber plunger tip reach the mark "1" on the syringe? Explain your answer. [1]



42. Sean placed two different metal rings X and Y through a wooden rod and clamped metal ring X to the stand as shown in the diagram below.



He then clamped metal ring Z to the set-up and the diagram below showed what happened to ring Y.

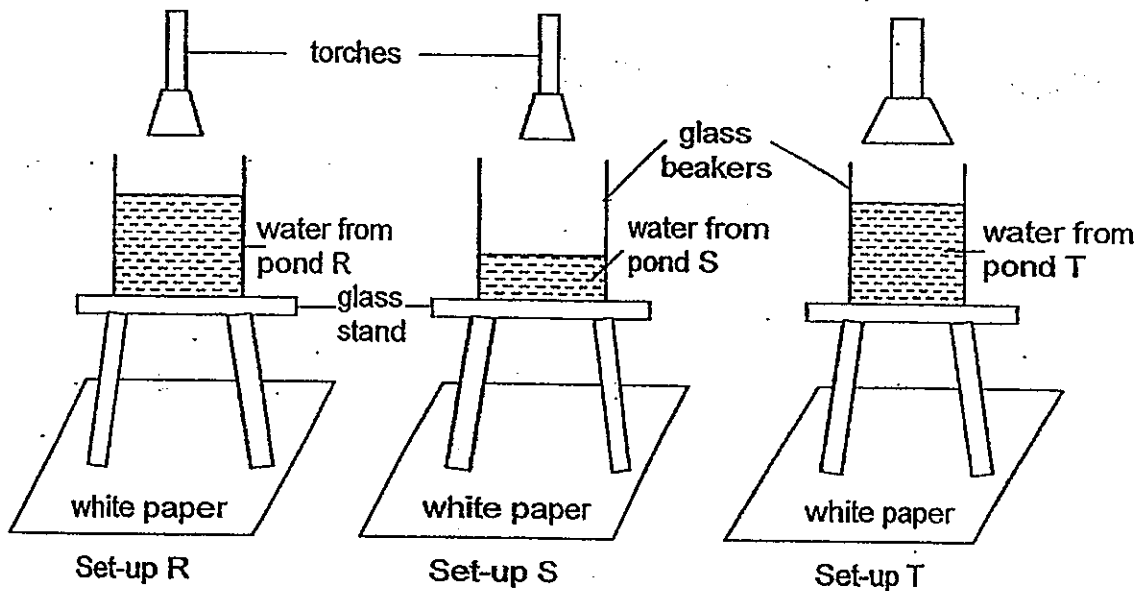


Based on the above observation, state whether each of the following statements is True (T), False (F) or Not Possible to Tell (NP). [2]

	Statements	Answer
(a)	Ring Y is a magnet.	
(b)	Ring Z is a magnet.	
(c)	Ring Y and Z are made of steel.	
(d)	Ring X is made of a magnetic material.	



43. Jasmine conducted an investigation to find out which pond has the greatest amount of soil particles in the water. She collected 3 samples of water from 3 ponds R, S and T and set up the experiment as shown below in a dark room.



Her teacher told her that she had conducted an unfair test.

- (a) State 2 changes Jasmine should make to her set-ups to ensure a fair test. [1]

(i) _____

(ii) _____

- (b) Jasmine conducted her experiment in a dark room. How does this make it a fair test? [1]

- (c) Based on her experiment, what observation would help her to decide which pond water has the least amount of soil particles? [1]

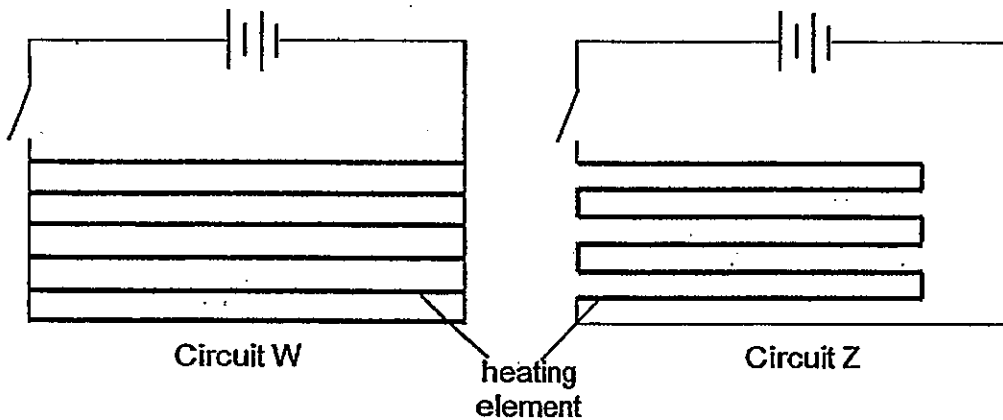


44. The back window of a car shown below has a heating element that is part of an electrical circuit connected to the battery of the car. On cold days, mist may form on the back window of the car, obstructing the motorist's view of the traffic. When the heating element is switched on, the back window will be prevented from misting over.

wires of heating element



The diagram below shows two ways, W and Z, of connecting the circuit of the heating element.

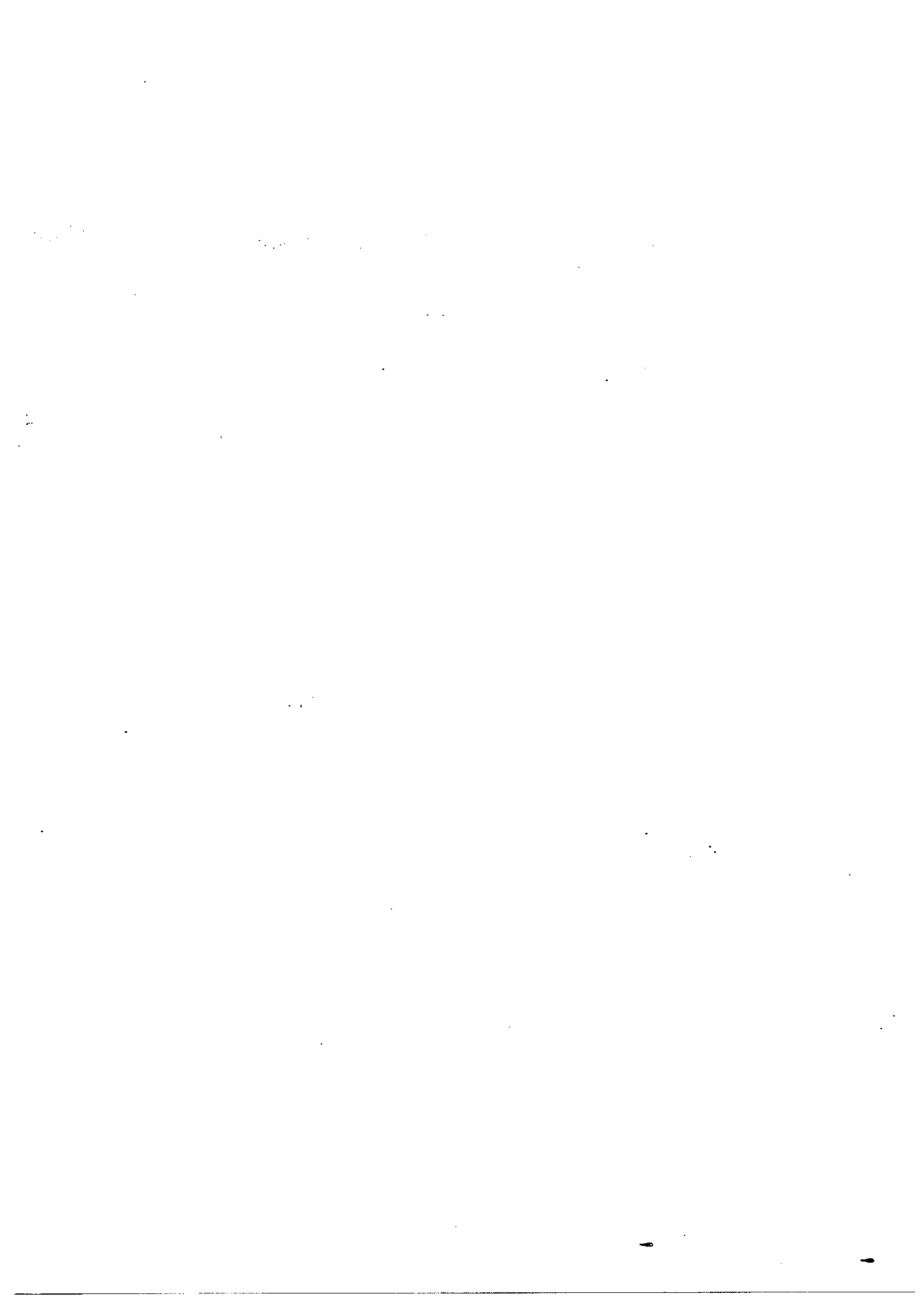


- (a) After observing the two circuits, Kenneth concluded that circuit W is more suitable for the heating element. Explain why Kenneth made such a conclusion. (Do not mention length of heating element.) [2]

- (b) Explain how the heating element prevents the back window of the car from misting over when the switch is closed. [2]

~~ End of Paper ~~





ANSWER SHEET

EXAM PAPER 2013

SCHOOL : CHIJ

SUBJECT : PRIMARY 5 SCIENCE

TERM : SA2

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
2	4	3	1	1	3	3	4	3	4	2	4	3	2	3	1	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	2	3	1	3	4	4	4	1	1	2	2

31)a)As the temperature creases, the amount oxygen in two decreases.

b)The greater the temperature of the water, the less oxygen present in the water. As fishes need dissolved oxygen to survive, when the temperature of the water increased, the amount of dissolved oxygen decreased and the fishes open and close their gill covers move to absorb more dissolved oxygen.

32)a)The anthers are not hanging out of the flower so the wind cannot carry away the pollen grains easily.

b)A fruit.

33)a)The water droplets produced is cooler than the surrounding air. Thus, the water droplets gains heat from the surrounding air and evaporates as water vapour, causing the surrounding air to lose heat and at the same time producing cooling effect.

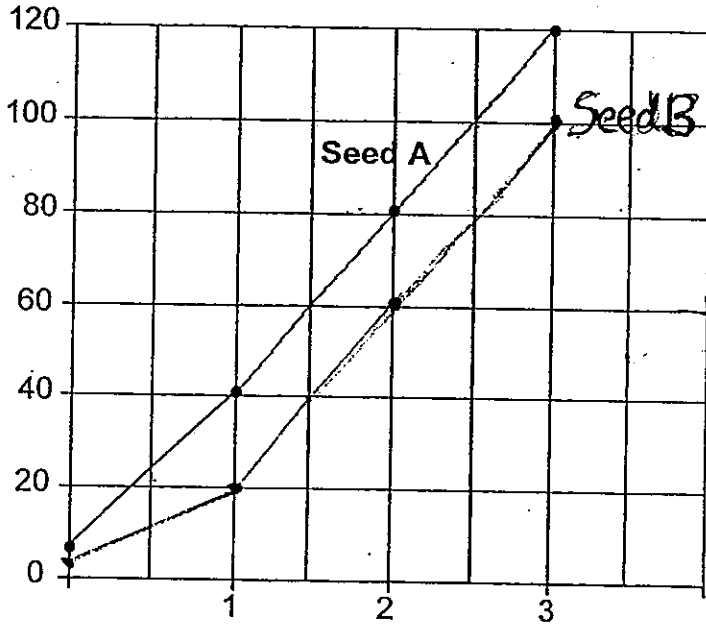
b)i)The fans blew the water droplets to a larger area so cooler a larger area.

ii)It produces wind that increases the rate of evaporation.

34)a)The greater the length of the wing-like structure, the greater the horizontal distance travelled.

b)The wing-like structure enables the seed to stay afloat in the air longer to allow the wind to blow it future away.

c)



35)a)Plant cells have cell walls. However, the Organism X does not have a cell wall. Thus, Organism X cannot be a plant cell.

b)Chloroplasts.

36)a)Bees are attracted to the colour yellow more than to other colours.

b)i)Change all the colours to the same colour.

ii)Change the size of each flower so all the flowers do not have the same size.

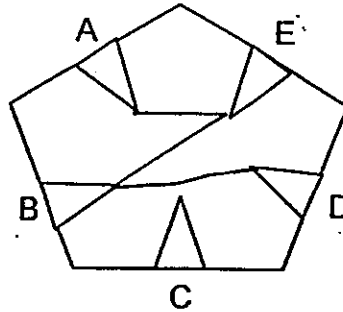
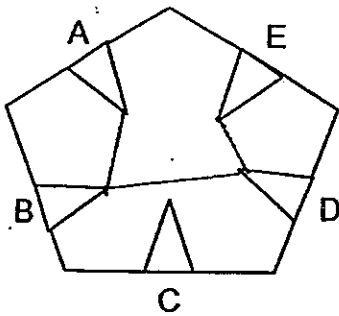
37)a)Rods X and Y are electrical conductors but Rod Z is an electrical insulator.

b)i)L1 ii)L2, L3,L4

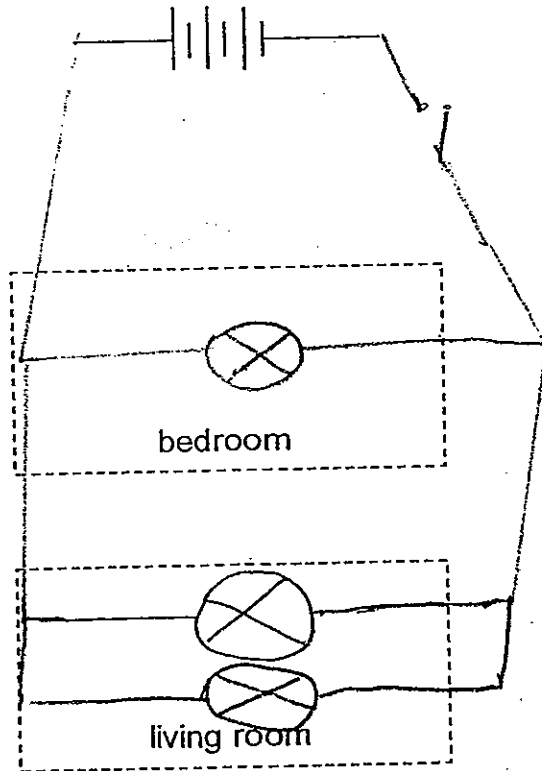
38)a)R, T, S

b)Warm water vapour from the surroundings in Room U touched the cooler surface of the glass slides, lost heat and condensed into tiny water droplets.

39)



40)



41)a)The volume of air in the syringe would decrease, whereas the volume of water in the syringe would remain the same.

b)No. Although air can be compressed, it can only be compressed to a limit. Thus, as the air occupies space will "1" the air cannot be compressed completely and the plunger cannot reach the mark "1" on the syringe.

42)a)NP b)NP c)NP d)F

43)a)i)Change the torch in set-up T to a torch of the same size as in set-up R and S.

ii)Change the amount of water in set-up S to the same volume as the other set-up S.

b)This is to ensure that the torch is the only light source.

c)The brightest patch of light on the paper.

44)a)The heating elements are arranged in parallel, so if one heating element is faulty the other will still function.

b)Any water droplets on the back window will gain heat from the heating element and evaporate as water vapour, away from the back window of the car, so it does not mist up.

