



RED SWASTIKA SCHOOL

SCIENCE 2018 SEMESTRAL EXAMINATION 1 PRIMARY 5

Name : _____ ()

Class : Primary 5/ _____

Date : 7 May 2018

BOOKLET A

Total time for Booklets A & B: 1h 45 min

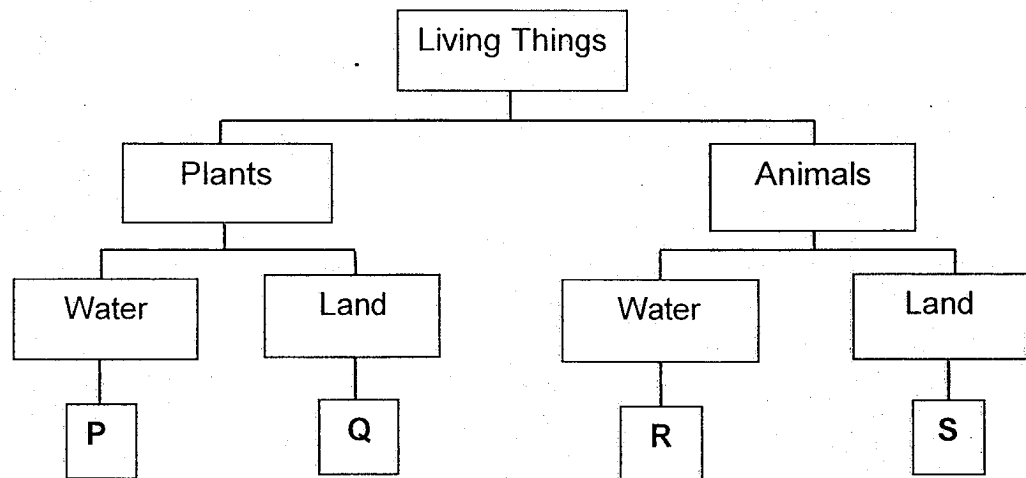
Booklet A: 28 questions (56 marks)

Note:

1. Do not open the booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the booklet.
3. Do not waste time. If the question is too difficult for you, go on to the next question.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
 - a. Page 1 to Page 20
 - b. Questions 1 to 28

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

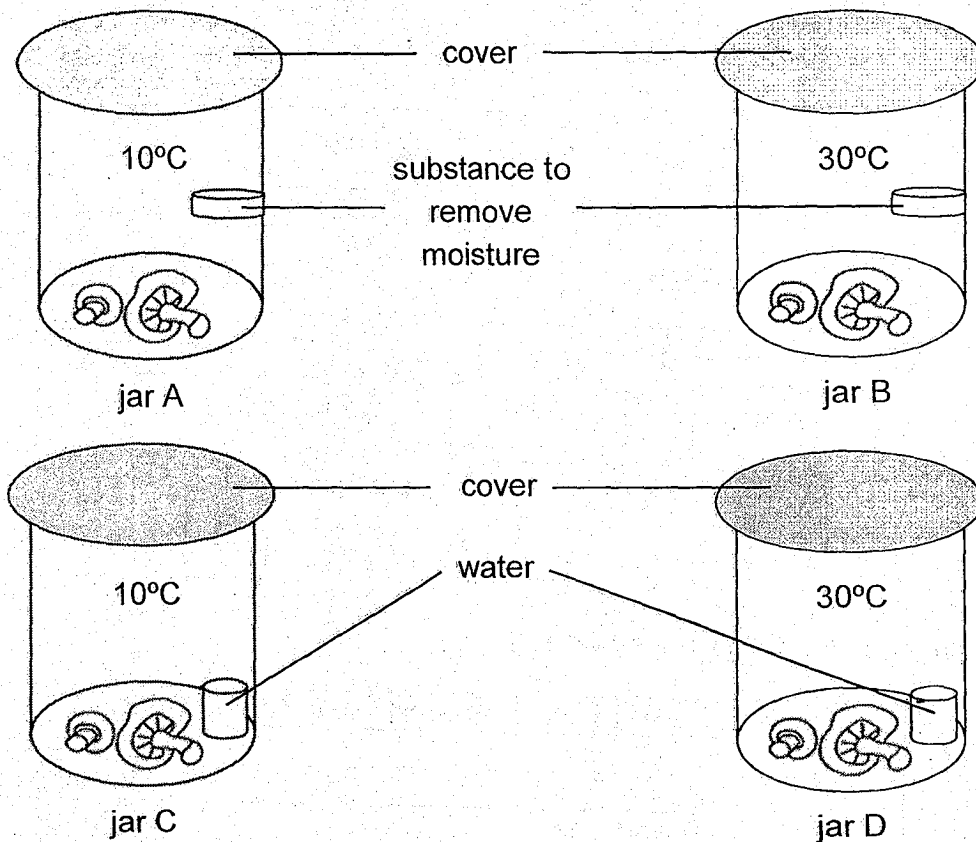
1. Study the classification table below.



Which of the following is correct?

	Living things that live on land	Living things that live in water
(1)	Q only	R only
(2)	P and Q only	R and S only
(3)	Q and S only	P and R only
(4)	Q and R only	P and S only

2. Jasmine conducted an experiment to find out how to keep mushrooms fresh for a longer time. The mushrooms were put in identical jars but kept under different conditions as shown below.



After two weeks, Jasmine noticed that the mushrooms in jar D had become mouldy. Which two conditions have caused the mushrooms to become mouldy?

	Condition 1	Condition 2
(1)	warm	dry
(2)	warm	moist
(3)	cold	dry
(4)	cold	moist

3. The table below shows information about two animals, X and Y.

Animals	Number of legs			Types of outer coverings	
	0	2	4	feathers	hair
X		✓		✓	
Y		✓			✓

What method of reproduction do animals X and Y most likely have?

	Animal X	Animal Y
(1)	give birth	lay eggs
(2)	give birth	give birth
(3)	lay eggs	give birth
(4)	lay eggs	lay eggs

4. Three students made a statement each about the similarity in sexual reproduction between flowering plants and humans.

Allison: Pollination takes place before fertilisation in flowering plants and humans.

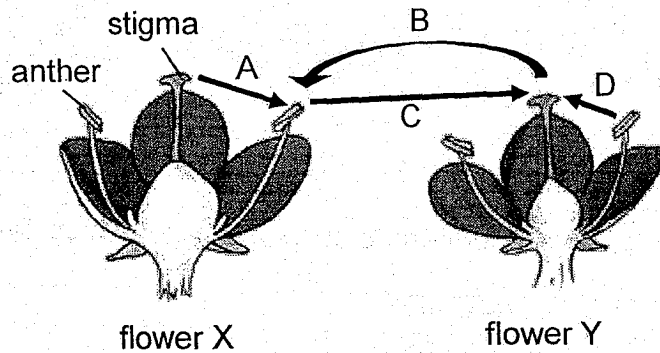
Benny: Both flowering plants and humans have female reproductive cells.

Chris : Egg cells are transferred to the male reproductive parts in both the flowering plants and humans.

Which student(s) has/have made a correct statement?

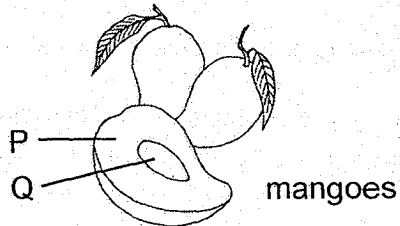
- (1) Benny only
- (2) Chris only
- (3) Allison and Benny only
- (4) Benny and Chris only

5. The diagram below shows two flowers, X and Y, of the same type of plants.



Which of the arrows show(s) pollination taking place?

- (1) B only
 - (2) A and B only
 - (3) C and D only
 - (4) A, C and D only
6. Study the diagram below.

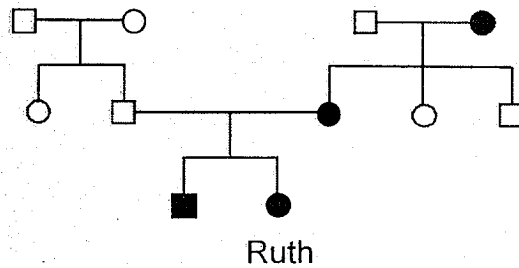


Which of the following statements are correct?

- A: P is formed from the ovary of a flower.
 B: Q is developed from many ovules in a flower.
 C: Q is dispersed by animals.

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

7. Study the family tree of Ruth as shown.



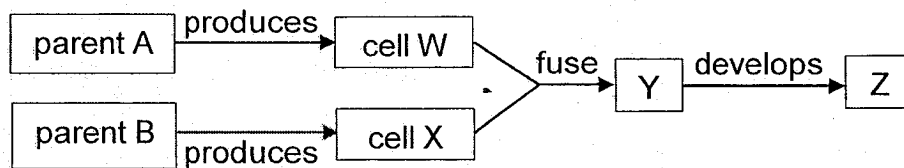
Legend:

- male without dimples
- female without dimples
- male with dimples
- female with dimples

Which one of the statements below is correct?

- (1) Ruth's uncle has no dimples.
- (2) Ruth's grandfathers have dimples.
- (3) One of Ruth's aunts has dimples.
- (4) Ruth and her brother have no dimples.

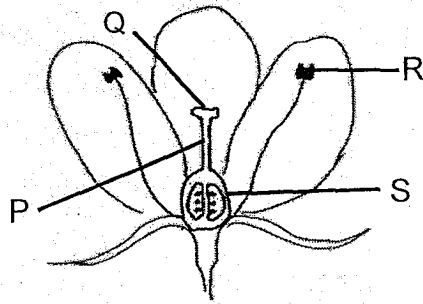
8. The following diagram shows the human reproduction process.



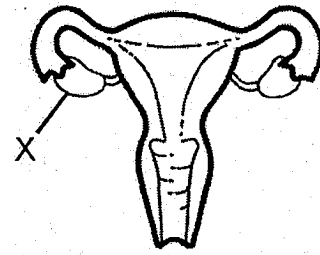
Which of the following contain(s) the characteristics of both parent A and parent B?

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

9. The diagrams below show the parts of the reproductive system of a flowering plant and a human.



reproductive system of a flowering plant



a human reproductive system

Which of the following parts has a similar function as part X?

- (1) P
- (2) Q
- (3) R
- (4) S

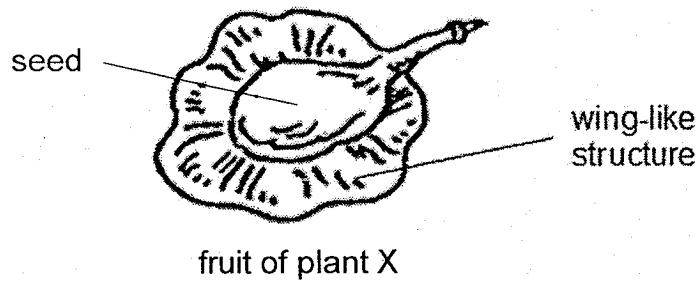
10. Daniel made a few statements about inhaled and exhaled air as shown below.

- A: Exhaled air is warmer than inhaled air.
- B: Exhaled air contains carbon dioxide only.
- C: Inhaled air contains more water vapour than exhaled air.

Which of his statements is/are correct?

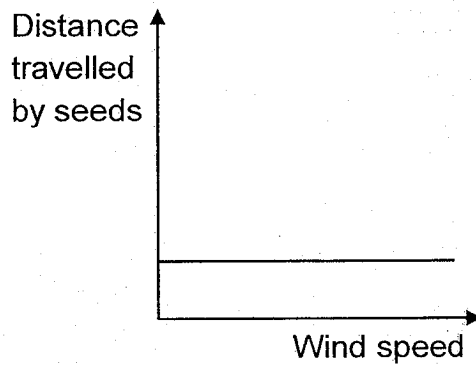
- (1) A only
- (2) A and B only
- (3) A and C only
- (4) B and C only

11. The diagram below shows the fruit of plant X.

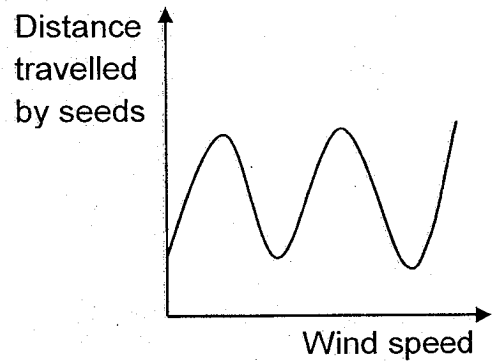


Which one of the following graphs would most likely show the relationship between the wind speed and the distance travelled by the seeds of plant X?

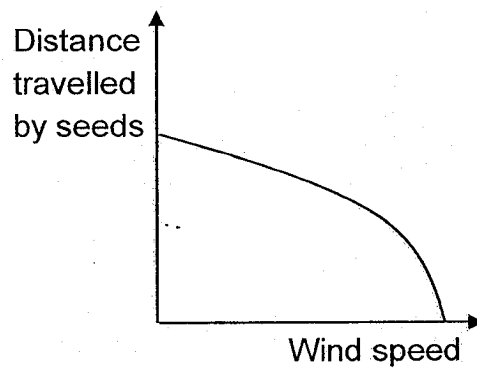
(1)



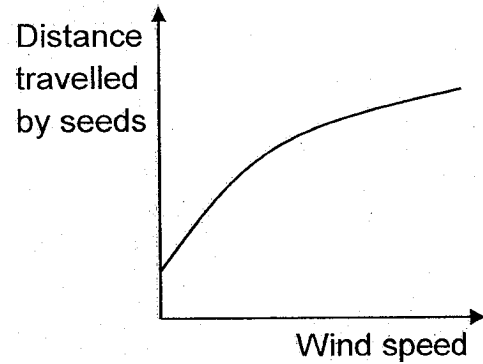
(2)



(3)

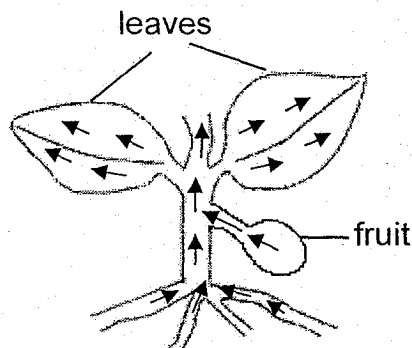


(4)

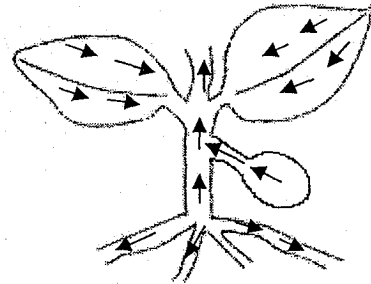


12. Which of the following diagrams best shows the correct path taken by the food made by the leaves?

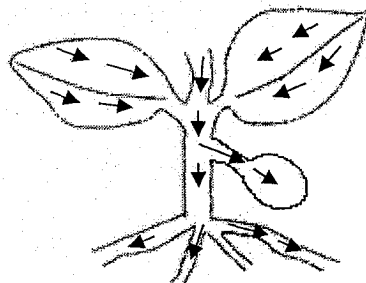
(1)



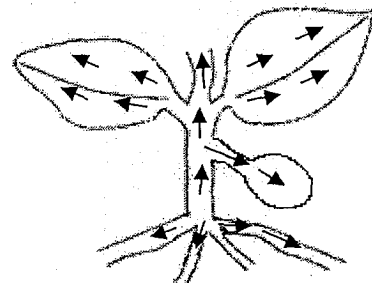
(2)



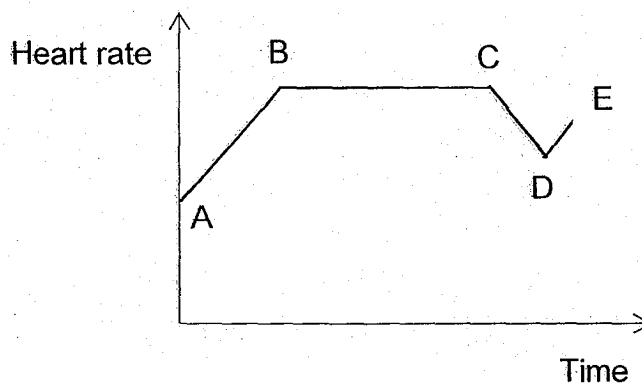
(3)



(4)



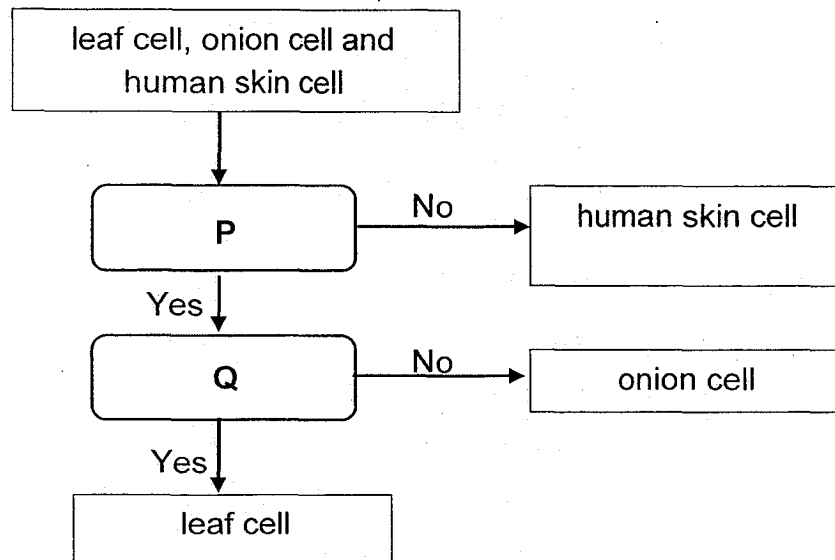
13. Ho Meng wore a device that measured his heart rate as he ran during his athletic training. During the training, he took a rest for a while before he continued on his run. The graph below shows his heart rate that was recorded during his training.



At which part of the graph did Ho Meng take a rest?

- (1) A to B
- (2) B to C
- (3) C to D
- (4) D to E

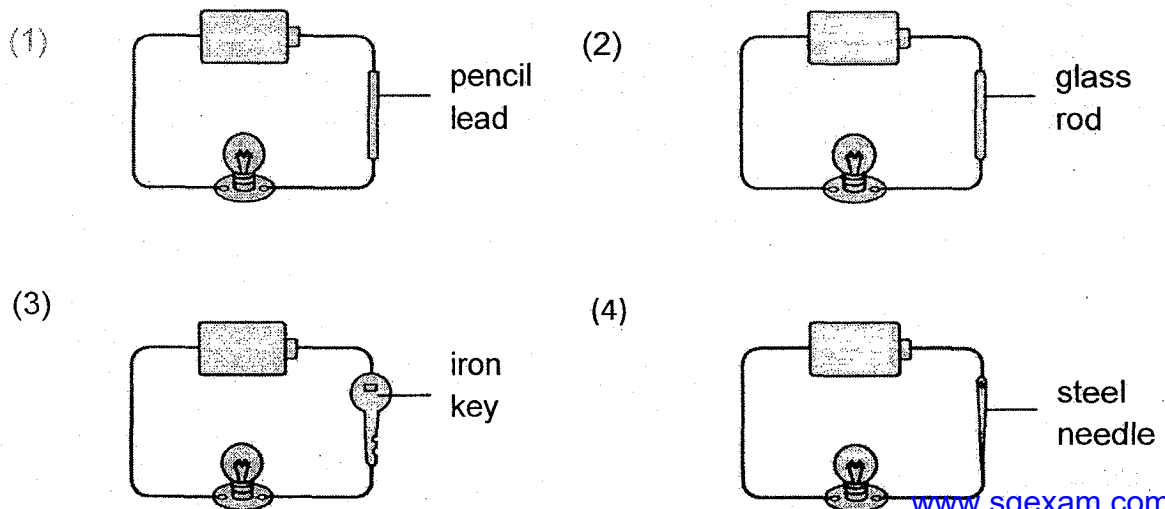
14. Aye Leng classified three types of cells as shown below.



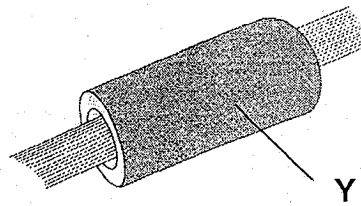
Which of the following are the likely questions for P and Q?

	P	Q
(1)	Does it have a cell wall?	Does it have a nucleus?
(2)	Does it have a cell wall?	Does it have chloroplasts?
(3)	Does it have chloroplasts?	Does it have a cell wall?
(4)	Does it have a cell membrane?	Does it have a nucleus?

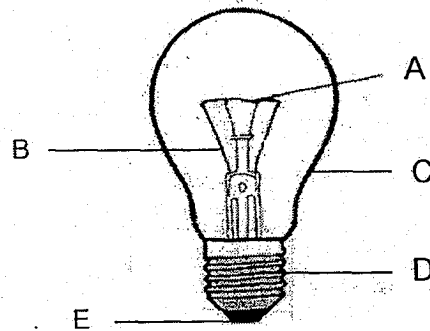
15. Which one of the following bulbs will not light up?



16. Material Y is used to cover electric wires as shown because it _____.



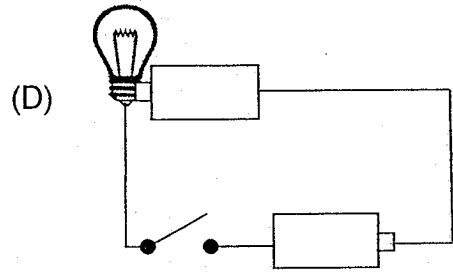
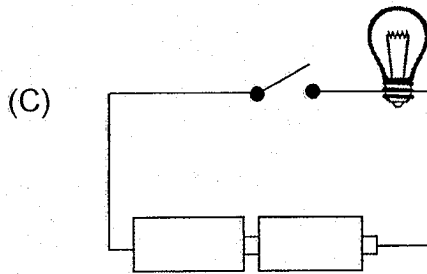
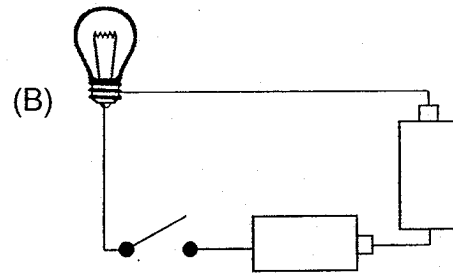
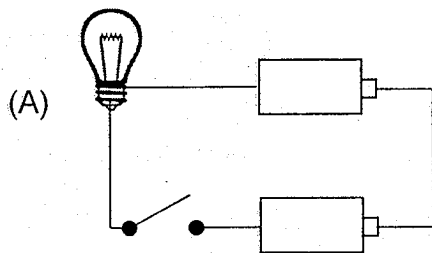
- (1) is cheap
 - (2) is cylindrical in shape
 - (3) can stretch very easily
 - (4) does not conduct electricity
17. The diagram below shows the parts of a bulb.



Which of the following best describe the parts of the bulb?

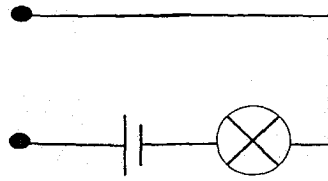
	Conductors of electricity	Insulators of electricity
(1)	A, D, E	B, C
(2)	A, B, D, E	C
(3)	A, B, C	D, E
(4)	C, D, E	A, B

18. Which of the following bulbs will light up when the switch is closed?



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

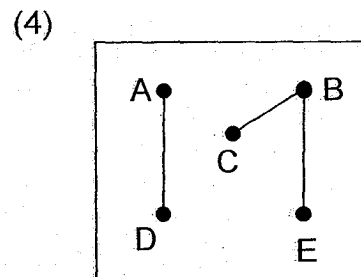
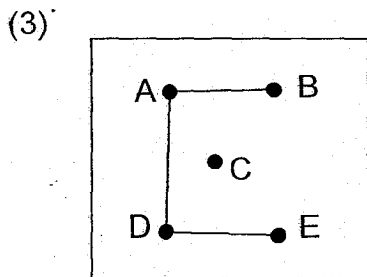
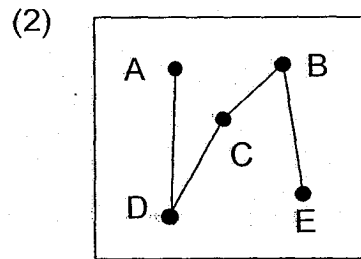
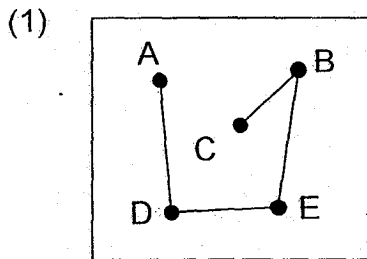
19. John used a circuit tester to test a circuit card.



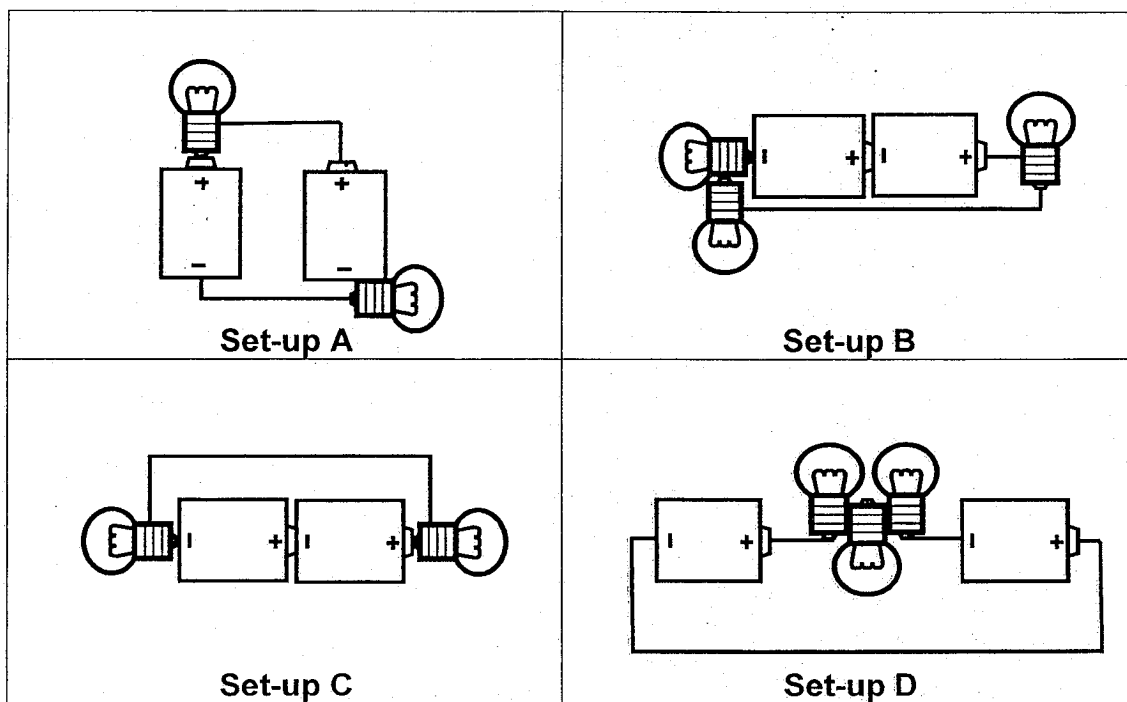
Two points were tested each time and the test results are shown in the table.

Points at which tester is connected	Does the bulb in the circuit tester light up?
A and D	yes
A and C	no
B and D	no
B and E	yes
C and E	yes

Which one of the following is a possible arrangement of the wires on the circuit card?



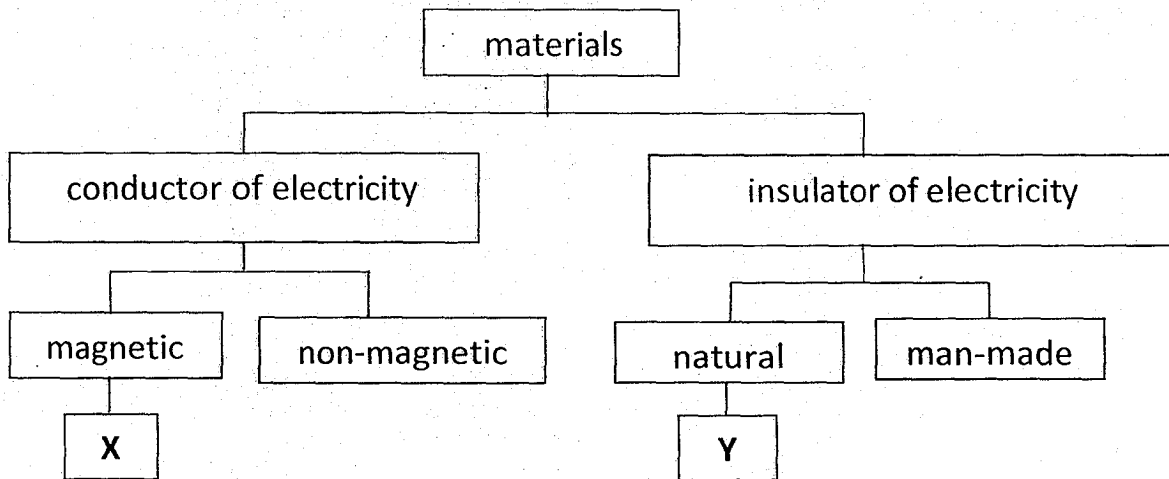
20. Study the set-ups shown. The batteries and bulbs used are identical and in working condition.



In which of the set-ups will all the bulbs light up?

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

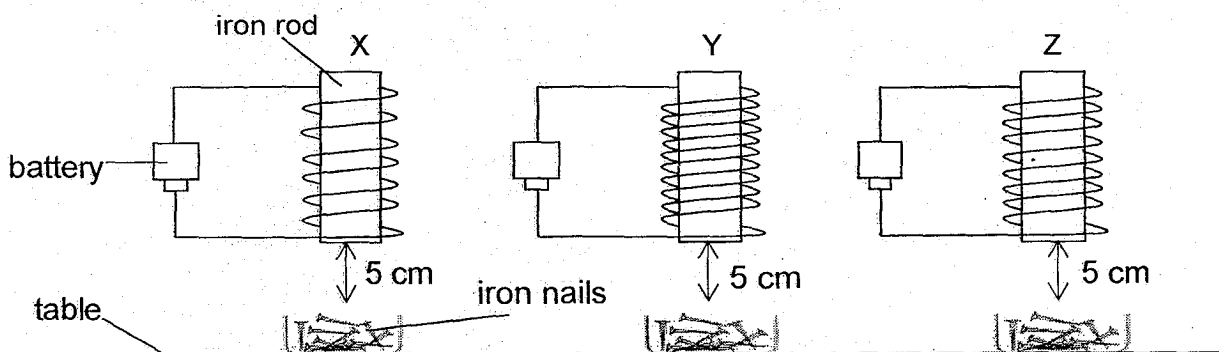
21. The classification chart below shows how some materials are grouped.



Which of the following best represents materials X and Y?

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

22. Rina used similar batteries and iron rods, X, Y and Z, to set up the experiments as shown.



What is the aim of her experiment?

- (1) To find out if the iron nails affect the magnetic strength of the electromagnet.
- (2) To find out if distance of the nails from the rods affects the magnetic strength of the electromagnet.
- (3) To find out if the number of wire coils around the rod affects the magnetic strength of the electromagnet.
- (4) To find out if the material of the rod affects the magnetic strength of the electromagnet.

23. The table shows the properties of four substances, P, Q, R and S.

Substance	Is it magnetic?	Can it float on water?
P	no	no
Q	yes	no
R	no	no
S	yes	yes

The substances are mixed together in a beaker. The following shows the steps Karen took to separate the substances.

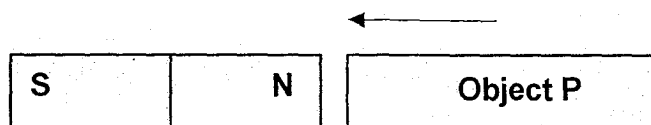
Step 1: Pour some water into the beaker.

Step 2: Place a magnet close to the mixture.

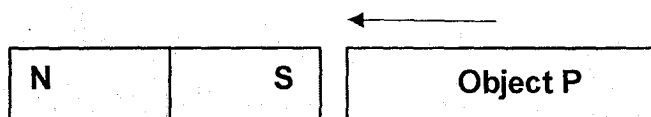
Which of the following is correct after Karen carried out the steps according to the sequence above?

	Substance that can be separated	Substance that cannot be separated
(1)	S only	P, Q, R
(2)	Q only	P, R, S
(3)	P, R	Q, S
(4)	Q, S	P, R

24. Joe placed the North pole of a magnet near one end of object P as shown in the diagram.



He observed that object P moved towards the magnet. Next, he placed the South pole of the magnet near the same end of object P.



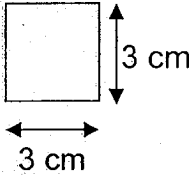
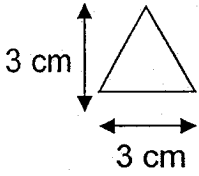
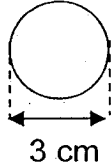
He observed that object P again moved towards the magnet. He repeated the experiment with two other objects, Q and R, and recorded his observations in the table below.

Object	Movement of object when North pole of magnet was placed near the object	Movement of object when South pole of magnet was placed near the object
P	moved towards magnet	moved towards magnet
Q	moved towards magnet	moved away from magnet
R	did not move	did not move

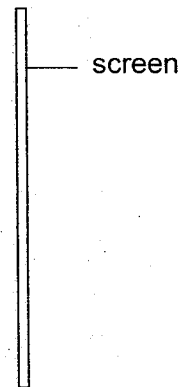
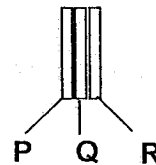
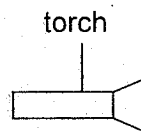
Based on Joe's observations, which object(s) is/are made of magnetic material?

- (1) P only
- (2) R only
- (3) Q and R only
- (4) P and Q only

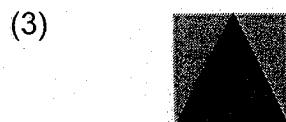
25. The diagrams show three different objects and the materials they are made of.

Object P	Object Q	Object R
		
tracing paper	cardboard	clear plastic

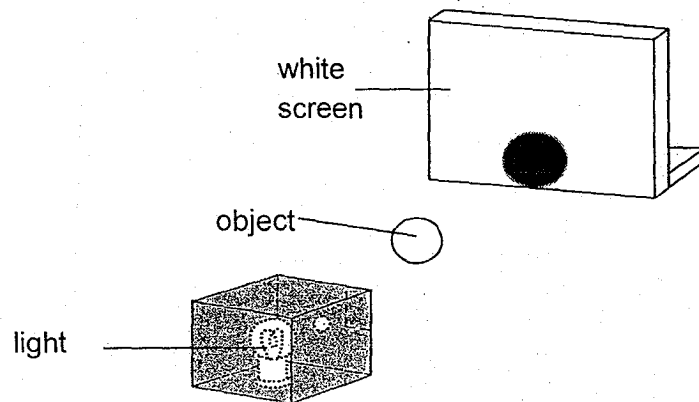
Ali placed the three objects as shown below.



Which one of the following shadows will be cast on the screen when the torch is switched on?



26. When Joyce placed an object between the light source and the white screen, a shadow of the object was cast on the white screen as shown below.



Which of the following changes should Joyce make to the set-up such that she could observe a smaller shadow of the object?

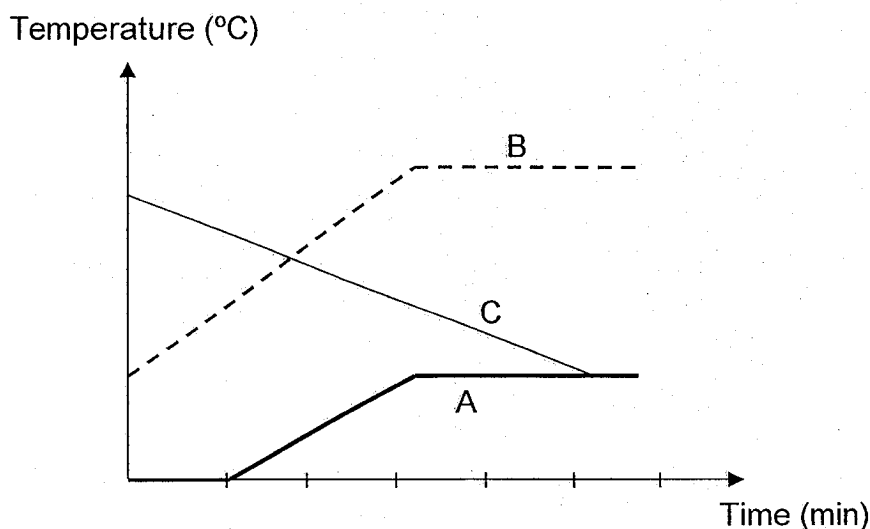
- A: Use a brighter light source.
- B: Move the screen nearer to the object.
- C: Move the light source nearer to the object.
- D: Move the light source further from the object.

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

27. Danny used three different set-ups, A, B and C, to carry out some investigations in the kitchen. The set-ups were as follows:

- Leaving a cup of ice cubes in the room
- Leaving a cup of hot water in the room
- Boiling a beaker of tap water in the room

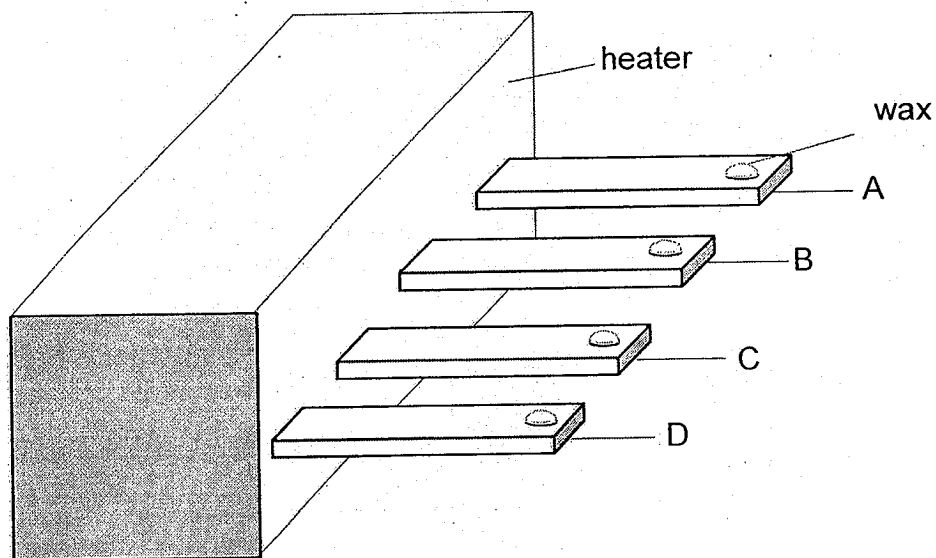
He recorded the changes in temperature of the water in each set-up over a period of time and plotted the line graphs as shown below.



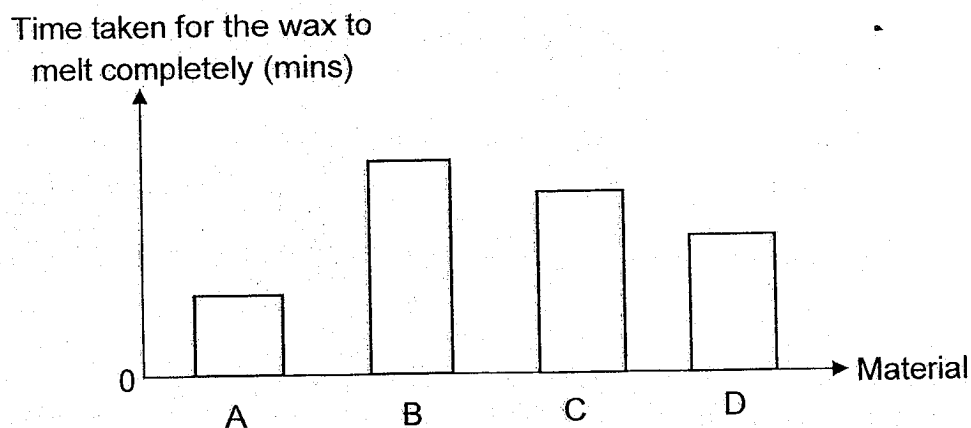
Based on the graphs, which of the following correctly describes the three set-ups?

	Leaving a cup of ice cubes in the room	Leaving a cup of hot water in the room	Boiling a beaker of tap water in the room
(1)	C	B	A
(2)	A	B	C
(3)	A	C	B
(4)	B	C	A

28. Devi placed an equal amount of wax at the ends of four different materials, A, B, C and D, as shown.



The time taken for each piece of wax to melt completely is shown in the graph.



Based on the results, which of the following shows the correct arrangement of the materials from the best to the poorest conductor of heat?

	best conductor of heat →		poorest conductor of heat	
(1)	A	D	C	B
(2)	B	C	D	A
(3)	A	C	D	B
(4)	B	A	C	D



RED SWASTIKA SCHOOL

SCIENCE 2018 SEMESTRAL EXAMINATION 1 PRIMARY 5

Name : _____ ()

Class : Primary 5/ _____

Date : 7 May 2018

BOOKLET B

12 Questions

44 Marks

In this booklet, you should have the following:

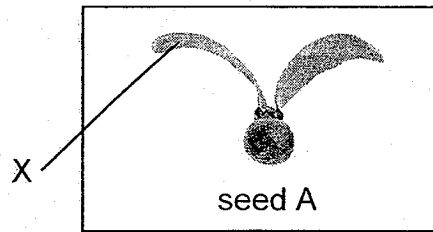
- a. Page 21 to Page 35
- b. Questions 29 to 40

MARKS

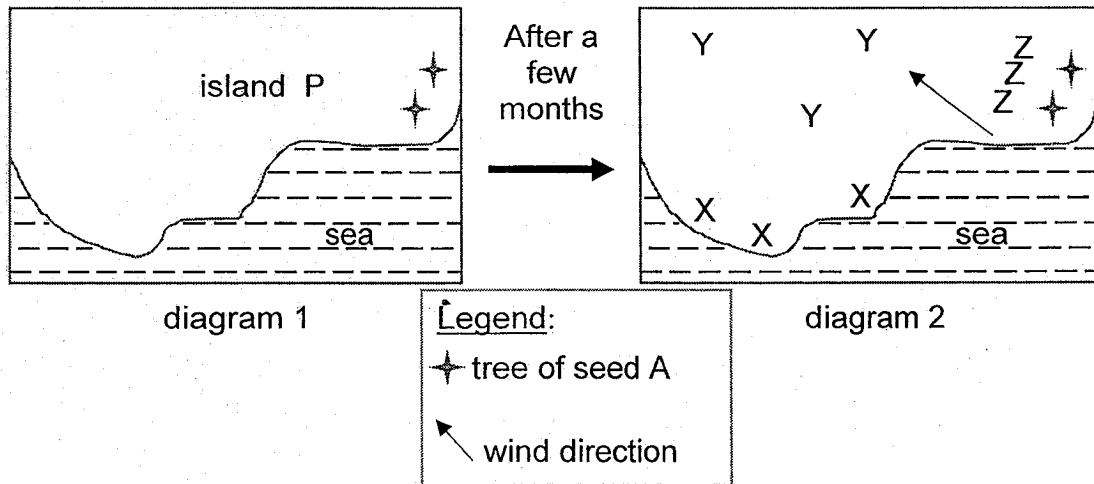
	OBTAINED	POSSIBLE
BOOKLET A		56
BOOKLET B		44
TOTAL		100

Answer all the questions in the spaces provided.

29. Observe the seed shown below.



Part X of the seed helps the seed to stay in the air for a longer time. The tree of seed A is commonly found on an island, P. Diagram 1 below shows part of island P where the trees of seed A can be found.



- (a) Predict where the seedlings of seed A would most likely be found on this part of the island after a few months. Fill in the blank below with the letter 'X', 'Y' or 'Z'. (1m)

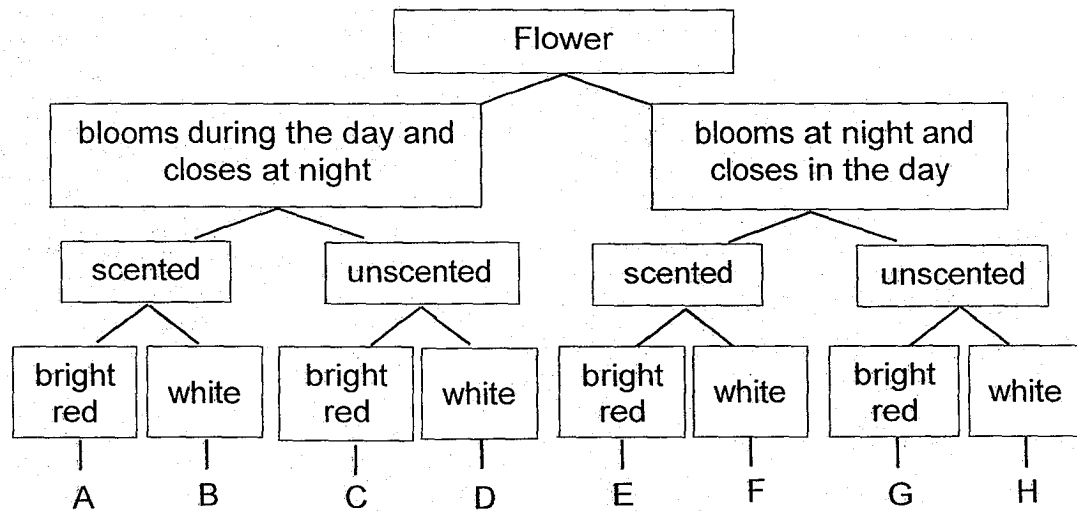
The seedlings of seed A would most likely be found at _____.

- (b) Explain your answer for part (a). (2m)

30. Animal X helps in the pollination of flowers. The table below shows some information about this animal.

Animal X
attracted to scented flowers
likes white flowers
only active at night

There are many flowering plants in a garden. The characteristics of the flowers of these plants are shown in the classification chart below.



- (a) Which flowering plant (A, B, C, D, E, F, G or H) is most likely pollinated by animal X? (1m)

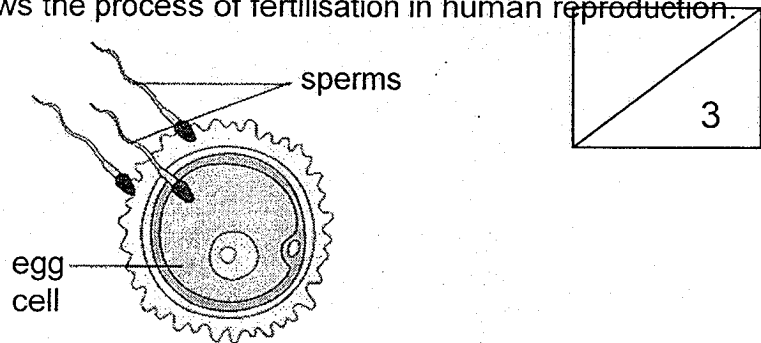
- (b) Explain your answer for part (a). (1m)

The insect below collects nectar and is often seen flying around the flowers of plant A (refer to the chart above).



- (c) Name one other characteristic not stated in the flow chart that the flower of plant A most likely has to attract the insect to help pollinate the flower. (1m)

31. The diagram below shows the process of fertilisation in human reproduction.



- (a) Name the parts in the reproductive system of a flowering plant that are similar to the sperms and egg cell. (1m)

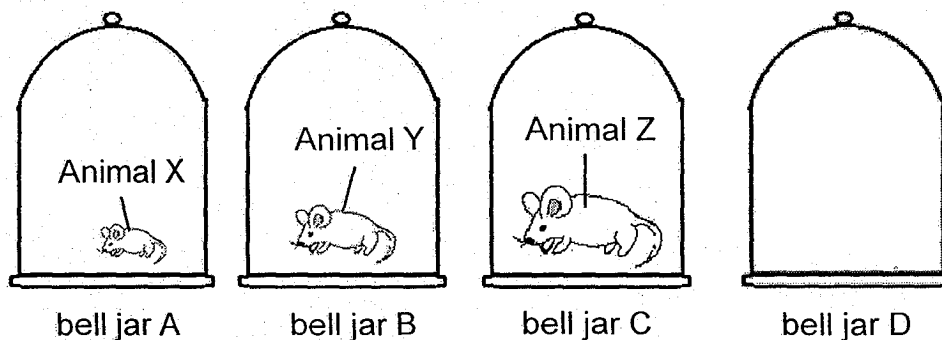
(i) sperms: _____ (ii) egg cell: _____

Study the table below which shows one difference and one similarity in the sexual reproduction of flowering plants and humans.

Sexual Reproduction of Flowering Plants and Humans		
Similarity	Difference	
	Plant	Human
In both plant and human reproduction, fertilisation occurs when a male reproductive cell fuses with a female reproductive cell.	The female reproductive cell remains in the ovary.	?

- (b) What is the missing information about the human female reproductive cell in the table? Write your answer below. (1m)

32. Roger wanted to find out if the mass of an animal affects the amount of carbon dioxide it exhales. He placed animals, X, Y and Z, into identical bell jars, A, B and C, respectively. No animal was placed in bell jar D. He placed all the bell jars in a room with constant temperature.



- (a) Which variable(s) should Roger keep constant in order to conduct a fair test? Put a tick (✓) in the correct box(es) below. (2m)

	Variable	Constant (✓)
(i)	mass of the animal	
(ii)	size of the bell jar	
(iii)	amount of air in the bell jar at start of experiment	
(iv)	composition of air in the bell jar at start of experiment	
(v)	amount of time the animal is kept in the bell jar	

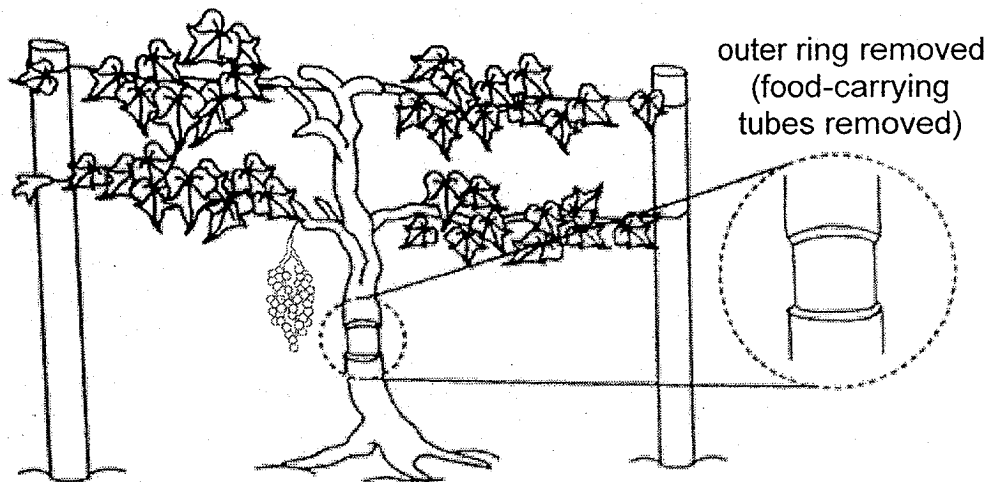
The table below shows the amount of carbon dioxide in the bell jar at the end of the experiment.

bell jar	animal	mass of animal (grams)	amount of carbon dioxide in bell jar at the end of experiment (units)
A	X	100	10
B	Y	170	18
C	Z	300	30
D	-	-	2

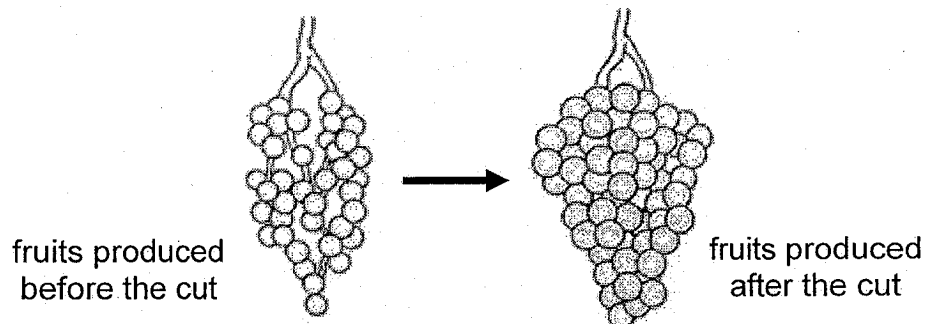
- (b) Based on the results in the table, state the relationship between the mass of an animal and the amount of carbon dioxide it exhales. (1m)

- (c) Identify the purpose of bell jar D in the experiment. (1m)

33. George had a plant in his garden. He wanted the plant to produce bigger fruits, so he removed an outer ring from the stem of the plant as shown below. The food-carrying tubes were removed while the water-carrying tubes remained in the stem.



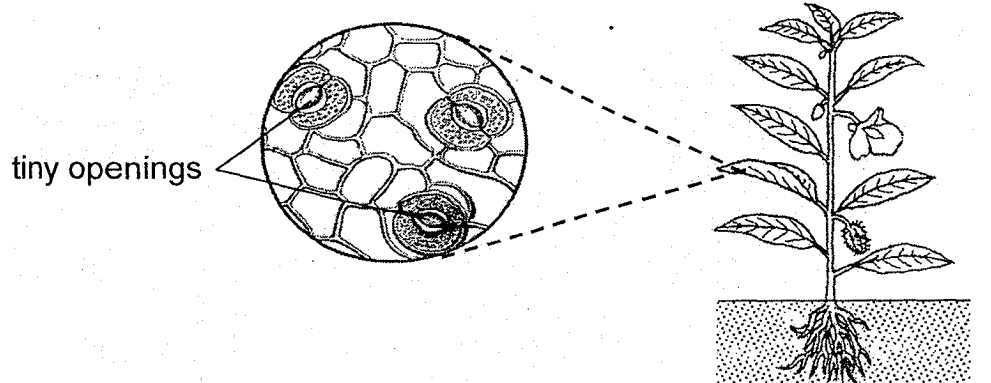
After some time, the plant produced bigger fruits than before.



- (a) Explain why the removal of an outer ring from the stem caused the plant to produce bigger fruits? (2m)

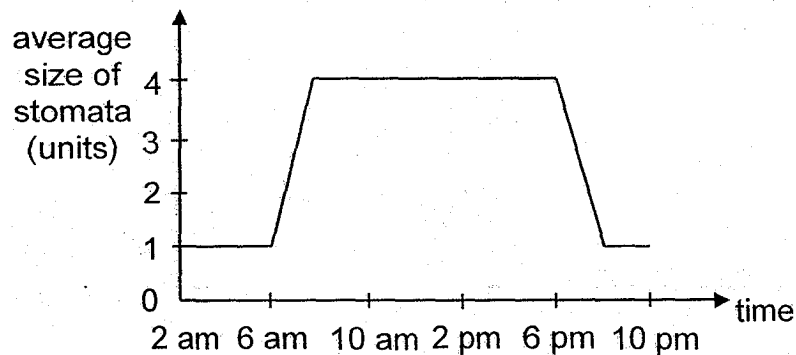
- (b) However, several months later, the plant died. Suggest why the plant died several months after the removal of the outer ring of the stem. (2m)

34. There are many tiny openings called stomata on the underside of leaves



Gases such as oxygen, carbon dioxide and water vapour move through the stomata.

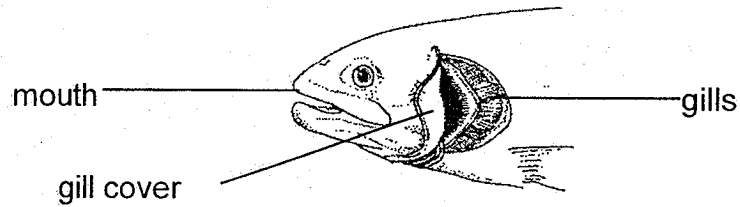
Roslan measured the changes in the size of the stomata of a plant in his garden at different times of the day. He plotted his results in a graph as shown below.



- (a) Based on the graph, were the tiny openings bigger or smaller during the day than night? (1m)

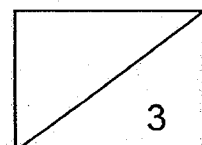
- (b) The change in size of the stomata in (a) during the day can also be a disadvantage to the plant. What is this disadvantage? (1m)

34. The diagram below shows the head of a fish.

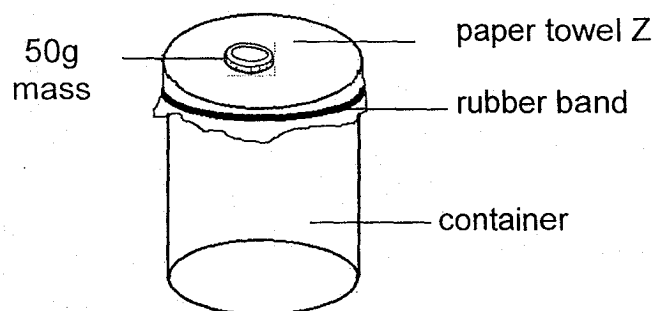


(c) Which part of the fish has a similar function as the tiny openings found on the underside of the leaf? (1m)

(d) For the human body, describe how the respiratory system and the circulatory system work together for oxygen in the atmospheric air to reach the legs. (2m)



35. Roland placed a piece of paper towel, Z, over the mouth of a container using a rubber band as shown in the diagram below. The paper towel served as the cover of the container.



He added 50g mass on the paper towel, one at a time, until the paper towel tore. He then repeated the experiment with another two different types of paper towels, X and Y. The table below shows his results.

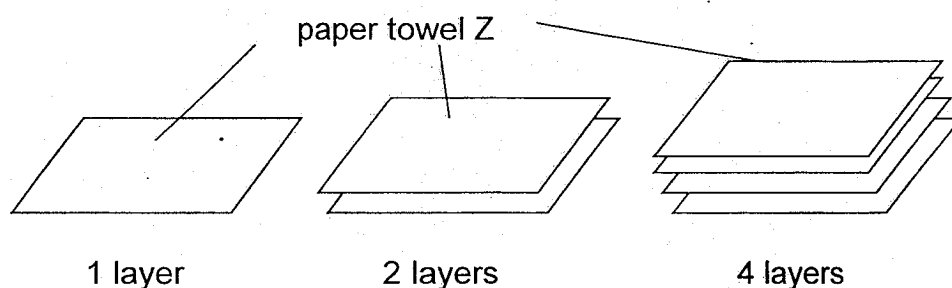
Type of paper towel	Number of 50g mass placed before the paper towel tore
X	1
Y	5
Z	3

- (a) Based on the table, what can he conclude about paper towel X and Z? (1m)

- (b) Which paper towel, X, Y or Z, is the strongest? Give a reason for your answer. (1m)

- (c) Roland repeated his experiment three times. Explain why. (1m)

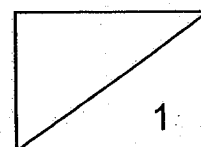
35. Roland repeated the experiment using different number of layers of paper towel Z as the cover of the container as shown in the diagram below.



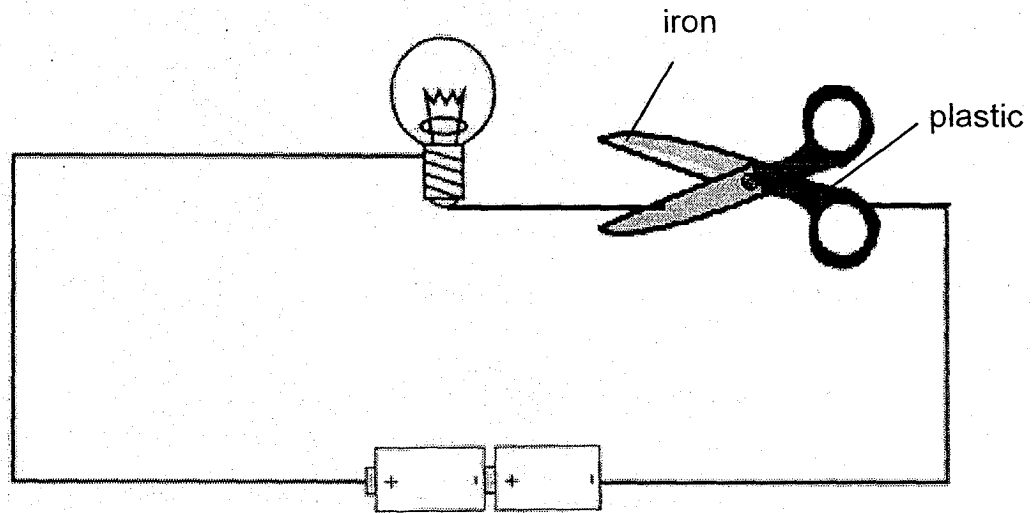
His results are shown in the table below.

Number of layers of paper towel Z	Number of 50g mass placed before the paper towel tore
1	3
2	7
4	14

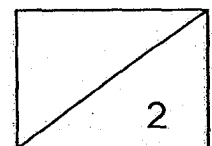
- (d) What is the relationship between the strength of the cover and the number of layers of paper towel Z used? (1m)



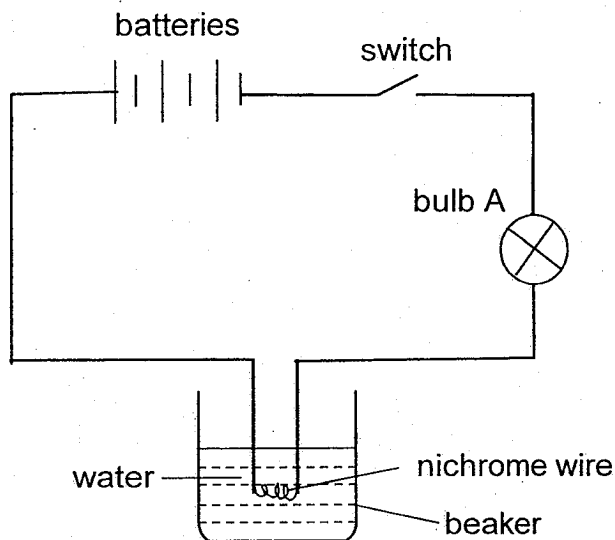
36. Norah sets up a circuit as shown. The bulb and batteries are in working condition.



Will the bulb light up? Explain why. (2m)



37. Rahim set up the experiment as shown. He wanted to find out how the number of batteries used affected the temperature of the water and the brightness of the bulb. When he closed the switch, the nichrome wire heated up and the temperature of the water in the beaker increased.



He recorded the following results when different number of batteries were used.

Number of batteries used	Temperature of the water ($^{\circ}\text{C}$)	Brightness of the bulb (lux)
0	30	0
2	32	50
3	34	55
4	37	62

- (a) Based on the table, what effect did the number of batteries used have on the temperature of the water? (1m)

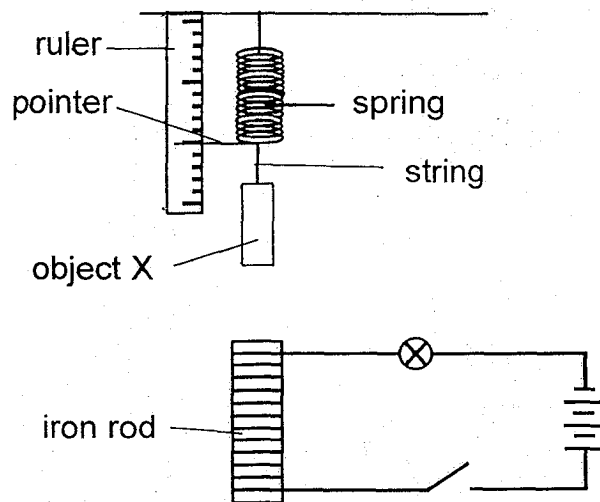
- (b) To conduct a fair test, identify two variables that should be kept the same in the above experiment. (2m)

Variable 1: _____

Variable 2: _____

- (c) When Rahim connected six batteries to the circuit, he observed that the temperature of the water remained at 30°C and the bulb did not light up. Suggest what happened to the bulb. (1m)

38. Bernard prepared the set-up shown.



(a) The pointer moved downwards when the switch was closed. Explain why. (2m)

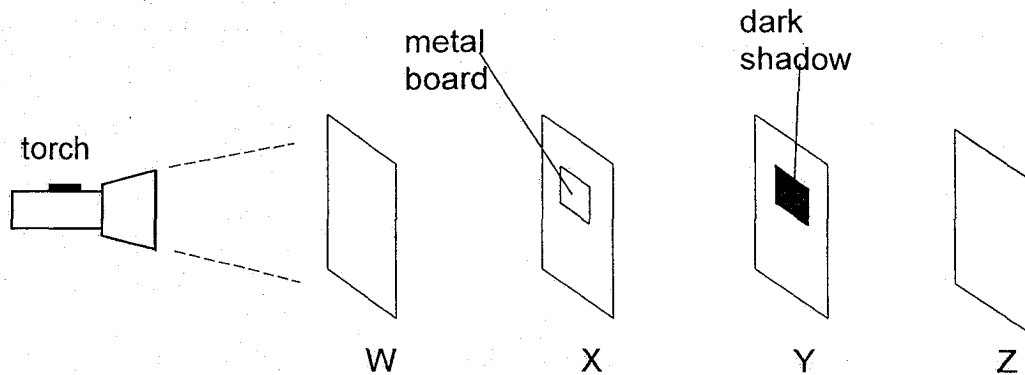
(b) For the set-up to work, state the property of the material used to make object X. Give an example of the material used to make object X. (2m)

Property of material: _____

Example of material: _____

(c) Would the pointer move downwards more or less when one battery was removed from the circuit and the switch closed? (1m)

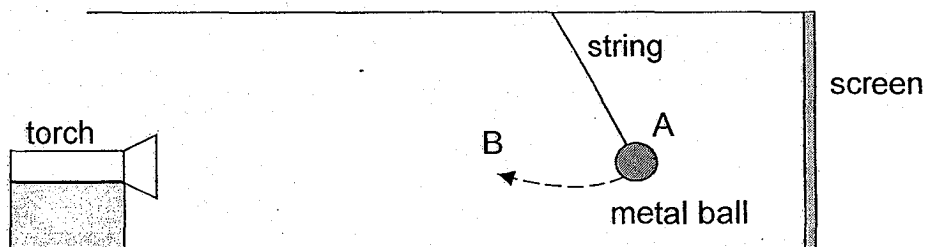
39. Zhi Lun arranged sheets, W, X, Y and Z, in a straight line in a dark room as shown in the diagram below. He pasted a metal board on sheet X.



- (a) When he switched on the torch, a dark shadow was formed on sheet Y. Based on the experiment, tick (✓) the boxes accordingly to show if each statement is true, false or not possible to tell. (2m)

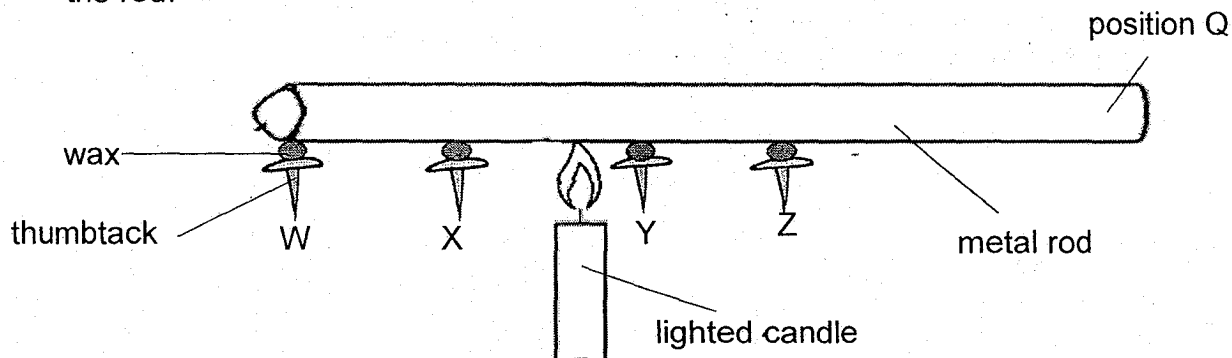
	Statement	True	False	Not possible to tell
(i)	W and X allows light to pass through.			
(ii)	Y does not allow light to pass through.			
(iii)	Z allows light to pass through.			
(iv)	If the metal board is pasted on Y, a dark shadow will form on Z.			

Zhi Lun conducted another experiment in a dark room using the set-up below. He hung a rubber ball and let it swing freely in front of a torch. At position A, he observed that a shadow had formed on the screen.



- (b) How would the size of the shadow on the screen change as the metal ball swings from position A to B? (1m)

40. Sally set up an experiment as shown. She placed a lighted candle below the metal rod. She used the same amount of wax to hold all the thumbtacks W, X, Y and Z to the rod.



- (a) Which thumbtack will drop first from the metal rod? (1m)

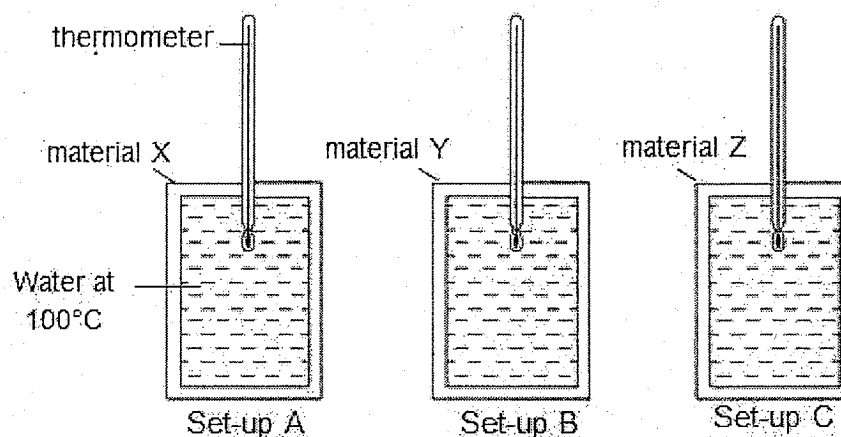
- (b) Sally repeated the experiment by replacing the metal rod with a glass rod.

What will she observe about the time needed for all the wax to melt when the glass rod is used as compared to the metal rod? (1m)

- (c) The experiment was repeated with thumbtack Z pasted at position Q of the metal rod and the remaining thumbtacks at their original positions.

Sally observed that the wax on thumbtack Z took the longest time to melt. Why was this so? (1m)

40. Sally conducted another experiment using three set-ups as shown below. The container for each set-up was covered with different material, X, Y or Z. Each container was filled with the same amount of hot water at 100°C .



Sally measured the temperature of the water in each container at different times and recorded them in the table below.

Time (min)	Temperature of water ($^{\circ}\text{C}$)		
	Set-up A	Set-up B	Set-up C
0	100	100	100
15	88	80	90
30	77	55	75

- (d) In which set-up will the water reach room temperature first? Explain why. (2m)

END OF BOOKLET B

PLEASE CHECK YOUR ANSWER

SCHOOL : RED SWASTIKA PRIMARY SCHOOL
 LEVEL : PRIMARY 5
 SUBJECT : SCIENCE
 TERM : 2018 SA1

SECTION A

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

SECTION B

Q29)	(a) Y (b) As seed A has wing-like structured, it will be carried away by the wind to other parts of the island depending on the wind direction before it lands on the ground.
Q30)	(a) F (b) Flower F only blooms at night and is a scented flower and white in colour. (c) The stigma is inside the petals.
Q31)	(a) (i) Sperms : Pollen grains (ii) egg cell : ovules (b) The female reproductive cell (the egg) fuses with the sperms and the fertilised egg will rest on the wall of the uterus.

Q32)	(a) (i), (ii), (iv), (v) (b) The greater the mass of the animal, the greater amount of carbon dioxide the animal exhales. (c) To act as a control set-up to show the amount of carbon dioxide with and without animal.
Q33)	(a) The food-carrying tube is being removed, so the excess food cannot be stored at lower part of the plant and thus the fruits are bigger. (b) No food is transported to the roots and thus the roots do not have enough food to function.
Q34)	(a) The openings are bigger during the day than night. (b) With bigger openings during the day, more water is lost through the stomata. (c) Gills (d) The lungs take in oxygen from the air and the air is absorbed into the blood stream which being to other parts of the body.
Q35)	(a) Paper towel X and Z cannot withstand heavier weight compared to paper towel Y (b) Paper towel Z is the strongest as it can take 5 50g mass before it tore. (c) To achieve a fair test and more accurate data by taking the average of the 3 experiments. (d) The greater the number of payers of paper towel Z used, the greater the weight the paper towel can withstand.
Q36)	The bulb will not light up as plastic is a poor conductor of electricity and causes an open circuit and thus electricity cannot flow through the circuit.

Q37)	(a) The more number of batteries used, the greater is the current flowing through the circuit and thus the higher the temperature of the water. (b) Variable 1 : Amount of water Variable 2 : The type of wire (c) The bulb has fused.
Q38)	(a) When the switch is closed, electricity passes through the circuit and iron rod gets magnetised and becomes electromagnet and attracted Object X. Thus the pointer moves downwards. (b) Property of material : Non-magnetic material Example of material : steel (c) Move downwards less
Q39)	(a) i. True ii. True iii. Not possible to tell iv. False (b) The size of the shadow changes from smaller to bigger as the metal ball swings from position A to B.
Q40)	(a) Y (b) It takes longer time for all the wax to melt when the glass rod. (c) Heat travels from hotter region to colder region. It takes longer time to reach position Q since it is the furthest from the lighted candle and thus it will take the longest time for the wax to melt. (d) Set-up B as it has the lowest temperature after 30 mins which means it loses heat the fastest and thus will reach room temperature first.

