Anglo-Chinese School (Junior)

BITE-SIZED ASSESSMENT 3

PRIMARY 5

SCIENCE

50 min

Name: _____ ( ) Class: 5.( ) Parent's Signature:_____

INSTRUCTIONS TO PUPILS

1 Do not turn over the pages until you are told to do so.

2 Follow all instructions carefully.

3 There are 13 questions in this booklet.

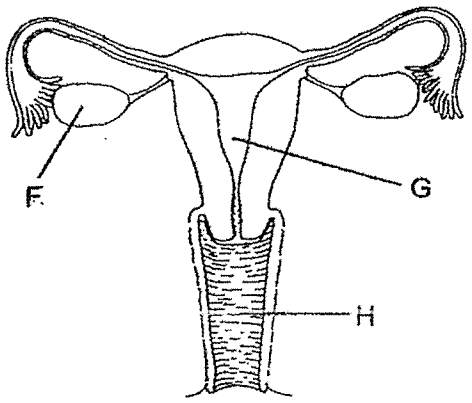
4 Answer ALL questions.

5 The marks are given in the brackets [ ] at the end of each question or part question.

Question Paper	Possible Marks	Marks Obtained
Total	30	

This question paper consists of 14 printed pages (inclusive of cover page).

1. The diagram shows the female reproductive system of a human.



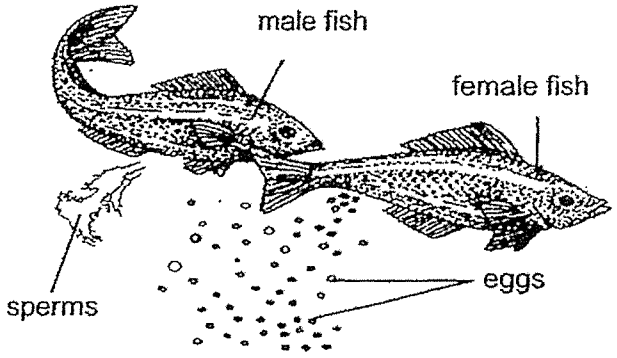
(a) Name and state the function of part F. [1]

_____

(b) Which part of the reproductive system, F, G or H, does a baby develop in? Name the part. [1]

_____

(c) The female fish releases a large number of eggs at a time from its body into the water. The picture shows a female fish releasing eggs and a male fish releasing sperms over the eggs at the same time to fertilise the eggs.



Based on the picture, explain why the female fish releases a large number of eggs at a time to ensure the continuity of its species. [1]

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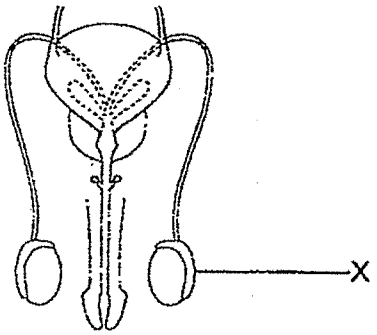
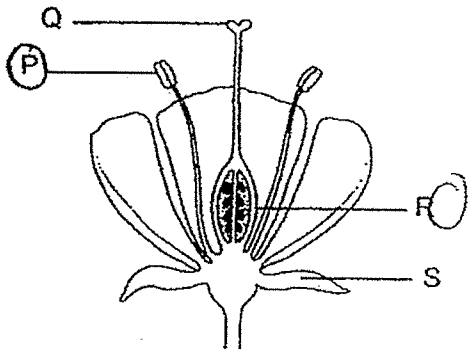
SCORE	
	3

2. The diagrams show the human and the plant reproductive systems.



Human reproductive system



Plant reproductive system

(a) Which part of the plant reproductive system, P, Q, R or S, has a similar function as part X of the human reproductive system? State its function. [1]

_____

_____

(b) Name part R and state its function. [1]

_____

_____

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SCORE	
	2

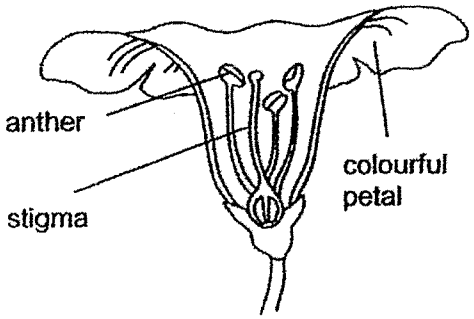
3. Mr Tan had a lot of plants in his garden. He noticed bees flying around the flowers growing in his garden.

(a) How could bees be helpful to flowers pollinated by animals? [1]

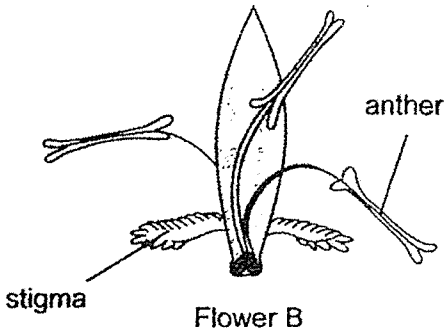
_____

_____

Mr Tan plucked two flowers, A and B from his garden. The diagrams show the cross-sections of flowers, A and B.



Flower A



Flower B

(b) The anthers of flower B are long and stick out of the flower and its stigma is feathery and exposed. Explain how this helps in pollination. [2]

_____

_____

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SCORE	
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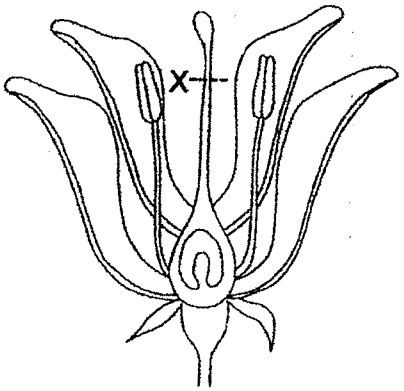
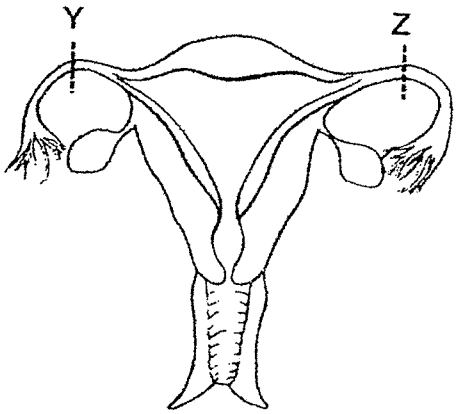
4. Fertilisation in flowering plants and humans can be prevented by certain methods.

A cut at part X of the plant reproductive system, as shown, prevents fertilisation from taking place.



Plant reproductive system

Unlike the plant reproductive system, the human reproductive system needs cuts at two parts, Y and Z, as shown to prevent fertilisation from taking place.



Human reproductive system

Give a reason why only one cut is required in the plant reproductive system but two cuts are required in the human reproductive system to prevent fertilisation. [1]

_____

_____

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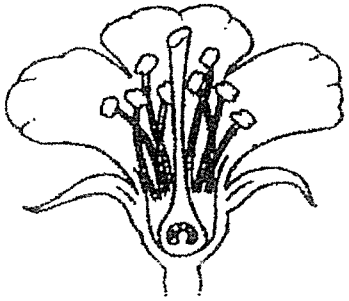
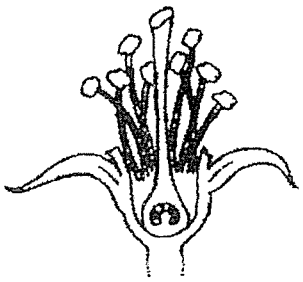
SCORE	
	1

5. James had some plants in his garden. One of the plants produced bright coloured flowers. When the flowers of this plant bloomed, he removed the petals of some of the flowers. A cross-section of this flower is shown.



cross-section of flower with petals



cross-section of flower without petals

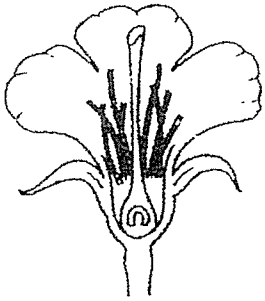
(a) He noticed that the number of fruits produced by flowers without petals had decreased. Explain why. [2]

_____

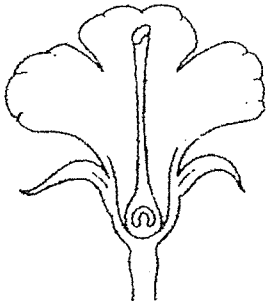
_____

_____

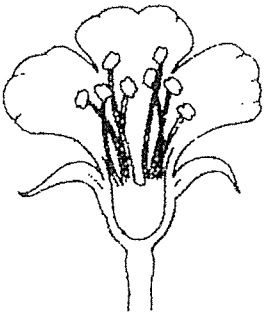
(b) James' brother obtained three identical flowers, L, M and N from the garden. He removed different parts from each of the flowers as shown.



Flower L



Flower M



Flower N

Which of the above flower(s), L, M and/or N, can still develop into a fruit after pollen is dusted across all the flowers? Give a reason for your answer. [1]

_____

_____

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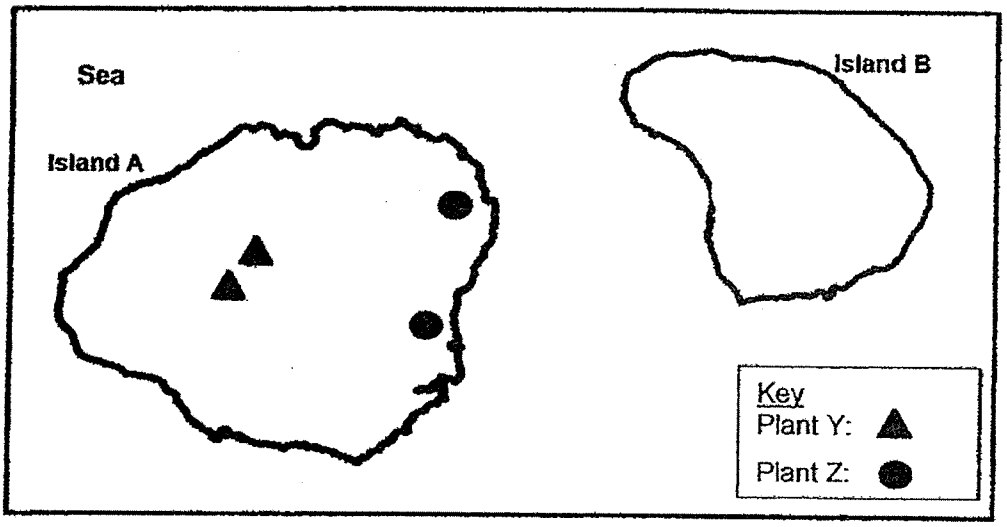
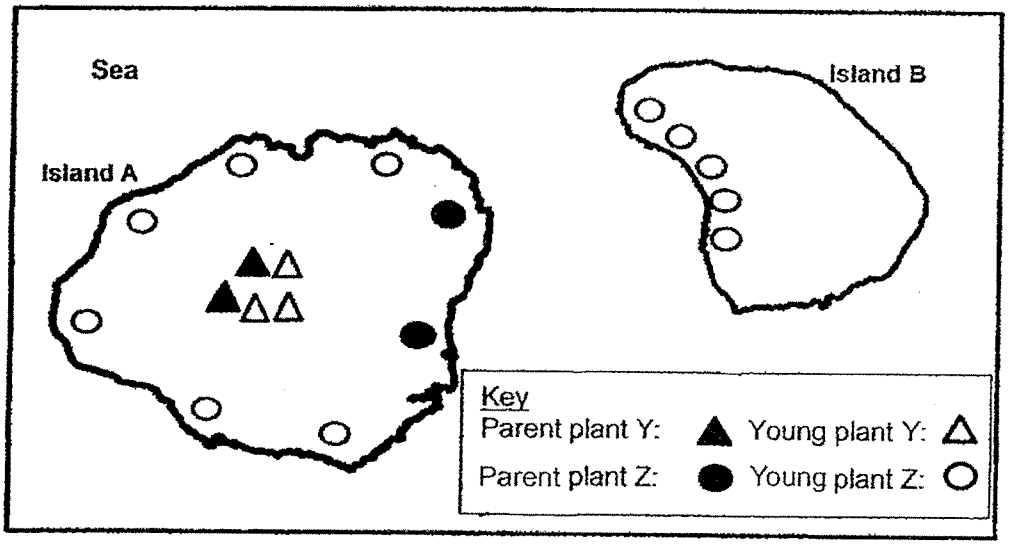
SCORE	/ 3

6. At the beginning, only island A had plants Y and Z.



A few years later, island B started to have plant Z as shown.



(a) Based on your observation of the dispersal pattern, identify the dispersal method for each of the fruits/seeds of plant Y and plant Z. [1]

Y: _____

Z: _____

(b) State an advantage of the method used by plant Y to disperse its fruits/seeds. [1]

_____

_____

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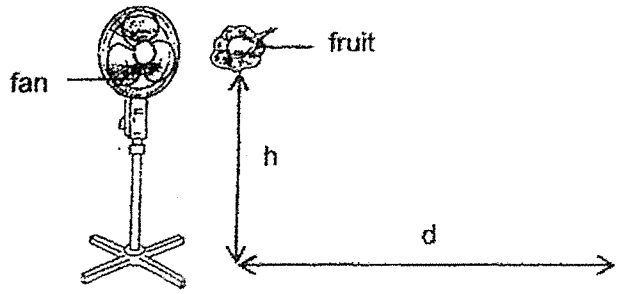
SCORE / 2

7. Bala conducted an experiment to find out how the speed of wind affects the distance a fruit travels. He dropped the fruit from a height, h, in front of a fan as shown. He measured the distance, d, it travelled.



Each time the wind speed was changed, the distance, d, travelled by the fruit was measured and recorded in the table.

Wind speed	Distance, d, travelled by the fruit (m)			Average (m)
	1st attempt	2nd attempt	3rd attempt	
Low	1.5	1.4	1.6	1.5
Medium	3.2	3.1	3.3	3.2
High	5.6	5.5	5.4	5.5

(a) How is the distance travelled by the fruit affected by the wind speed? [1]

_____

_____

(b) Bala then wanted to find out how the size of the wing-like structure of the fruit affects the distance the fruit travelled.

Identify the variables that should be kept the same or changed to test this new aim. Place a tick (✓) in the correct boxes in the table. [1]

Variables		Keep the same	Change
(i)	Wind speed		
(ii)	Height that the fruit is dropped		
(iii)	Size of wing-like structure		
(iv)	Type of fruit		

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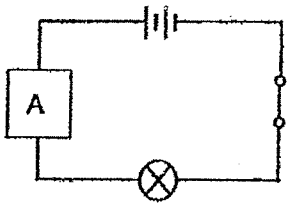
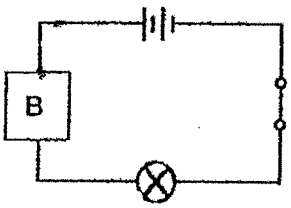
SCORE 2

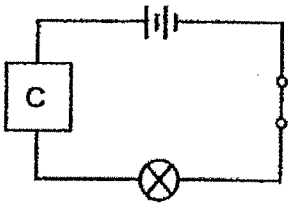
8. Three different materials, A, B and C, are each connected in separate circuits as shown. Only the bulb in the circuit with material B did not light up.



The bulb lights up.

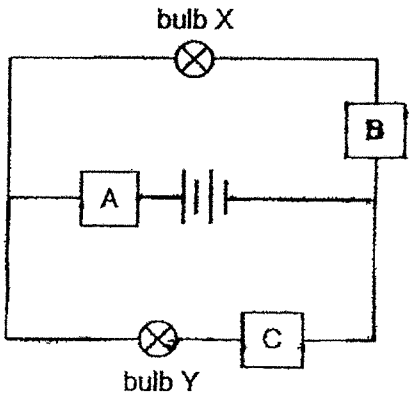


The bulb does not light up.



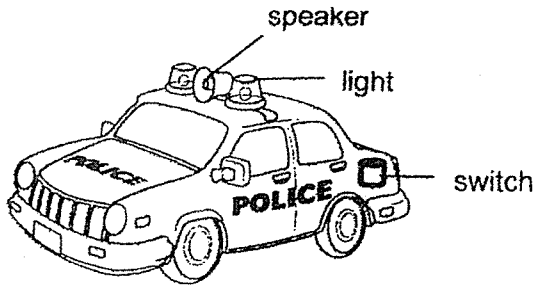
The bulb lights up.

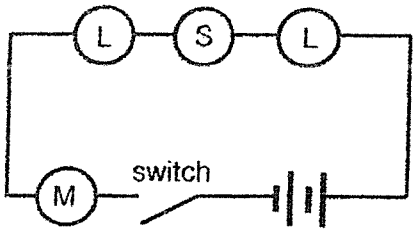
Materials A, B and C are then connected to bulbs X and Y in another circuit as shown.



Which bulb(s), X and/or Y will light up? Explain your answer. [2]

9. The diagrams show a toy car and circuit A which is found in the toy car.





Circuit A

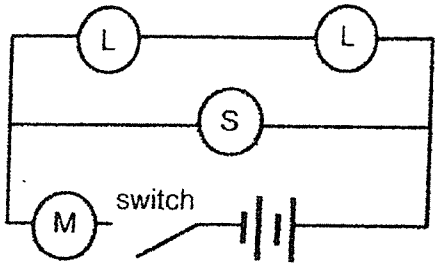
Key	Electrical Part
L	Light
S	Speaker
M	Motor to turn wheels

(a) Without adding or removing anything from the circuit, suggest one change to circuit A to increase the brightness of the light. [1]

_____

_____

(b) The same electrical parts in the toy car are connected to form circuit B as shown.



Circuit B

Key	Electrical Part
L	Light
S	Speaker
M	Motor to turn wheels

State an advantage of circuit B compared to circuit A. [1]

_____

_____

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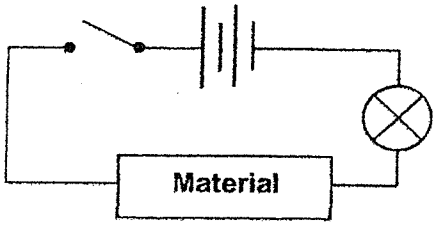
SCORE	/ 2

10. Tom conducted an experiment using a circuit as shown.



He placed different materials in the circuit and recorded his results in the table.

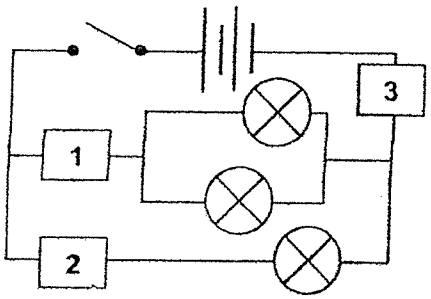
Material	Did the bulb light up?
A	Yes
B	Yes
C	No

(a) State the aim of Tom's experiment. [1]

_____

_____

Tom set up another circuit as shown, where materials, A, B and C could be placed at positions 1, 2 or 3.



(b) Which positions should materials, A, B and C be placed so that (i) none of the bulbs light up and (ii) most number of bulbs light up?

(i) none of the bulbs light up [1]

Position	1	2	3
Material			

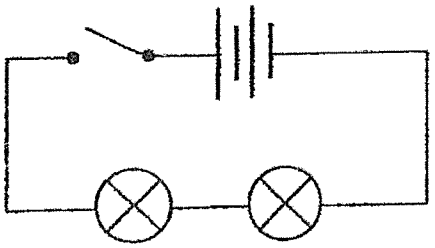
(ii) most number of bulbs light up [1]

Position	1	2	3
Material			

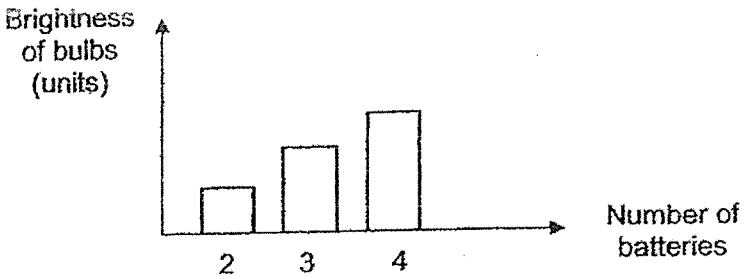
(Go on to the next page)

SCORE

11. Jerry set up a circuit as shown.



He measured the brightness of the bulbs and plotted the following graph.

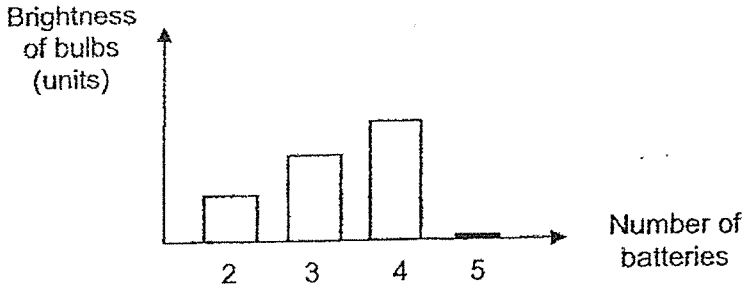


(a) State the relationship between the number of batteries and the brightness of the bulbs. [1]

_____

_____

Jerry added a 5th battery to the circuit and recorded his observation in the graph.



(b) Give a reason why the brightness of the bulbs changed when the 5th battery was added. [1]

_____

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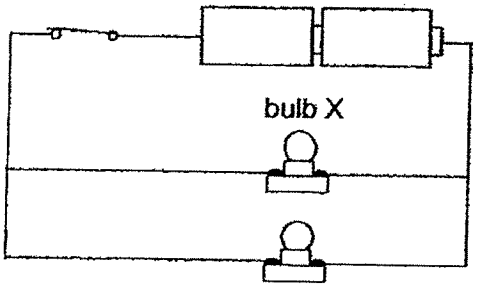
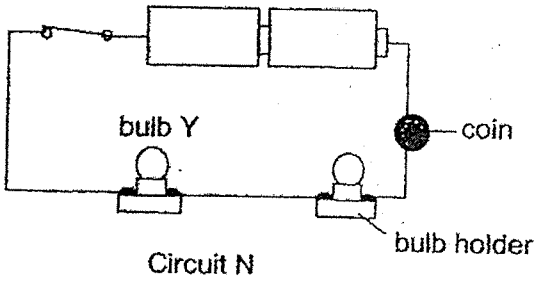
SCORE	/ 2

12. Susan set up two circuits, M and N, as shown. Both bulbs in the circuits lit up when the switches were closed.



Circuit M



Circuit N

For each of the statements, indicate if the statement is 'True', 'False' or 'Not Possible to Tell' by placing a tick (✓) in the correct boxes. [2]

	Statements	True	False	Not Possible to Tell
(a)	When bulb X fuses, the other bulb in circuit M will not light up.			
(b)	Adding one more battery to circuit M will cause bulb X to be brighter.			
(c)	When bulb Y is removed from the bulb holder, the other bulb in circuit N will not light up.			
(d)	The coin in circuit N is made of copper.			

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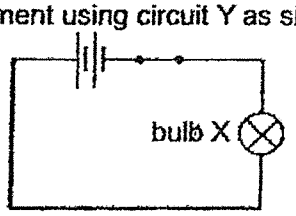
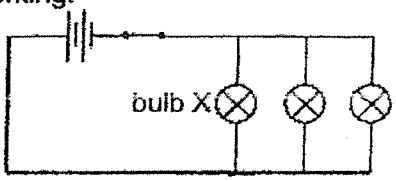
SCORE	/ 2

13. Ahmad conducted an experiment using circuit Y as shown.



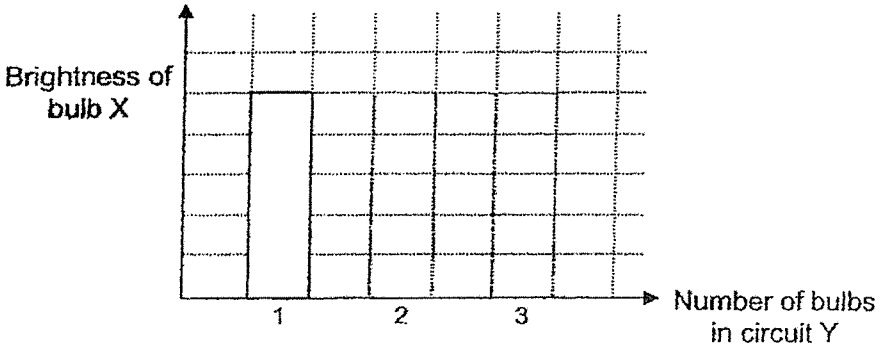
Circuit Y

He added a bulb in parallel to bulb X one at a time until there were three bulbs. All the electrical parts are working.



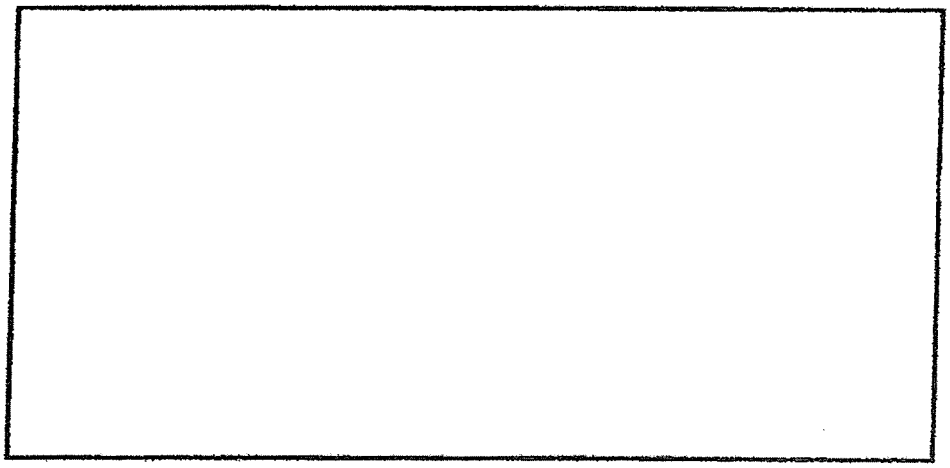
Circuit Y

(a) Complete the bar graph, using a ruler and pencil, to indicate the brightness of bulb X in circuit Y for every additional bulb added to the circuit. [1]



(b) Ahmad would like to set up another circuit to reduce the brightness of bulb X without adding or removing anything from circuit Y.

Draw the circuit diagram of this new circuit and label bulb X. [2]

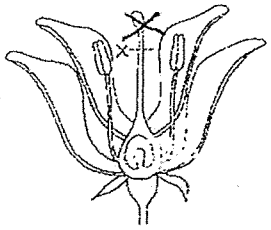
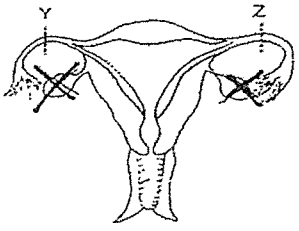


End of Paper

SCORE	
	3

ANSWER KEY

LEVEL : PRIMARY 5
SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)
SUBJECT : SCIENCE
TERM : BITE-SIZED ASSESSMENT 3

Q1	a)	Part F is the ovary which produces eggs
	b)	wombs, Part G
	c)	To increase the chances of the sperm fusing with the egg for successful fertilization to occur, thus offsprings can be conceived to grow and reproduce, preventing the kind from extinction
Q2	a)	Part P. It produces the pollen grains, each containing a male reproduction cell.
	b)	Ovary. IT produces and contain the ovules
Q3	a)	When the bees collect nectar from the male flower, pollen grains from the anther would be stuck on the body of bee. When bees collect nectar from the female flower, pollen grains would land on stigma, thus the bees had allowed pollination to occur.
	b)	The long anthers released pollen grains on to be carried by wind more easily and has feathery stigma which catches pollen grains carried by the wind more easily.
Q4	 Plant reproductive system	
	 Human reproductive system	
	Human reproductive system has 2 ovaries but the plant reproductive system has 1 ovary.	

Q5	a)	The brightly coloured petals was to attract pollinators like small animals to help in pollination of flowers without petals, lesser pollinators would be attracted to the flowers, thus the chances of pollination and fertilization decreases.
	b)	Flower L and M. Both flowers have their stigma, ovary and ovules still intact. Thus, pollen grains can land on the stigma for pollination to occur, then fertilization. Thus, the ovary develops into a fruit after fertilization.
Q6	a)	Y: Splitting Z: Water
	b)	They do not need an agent to disperse their seeds.

Q7	a)	As the wind speed increases, the distance travelled by the fruit increases.
	b)	

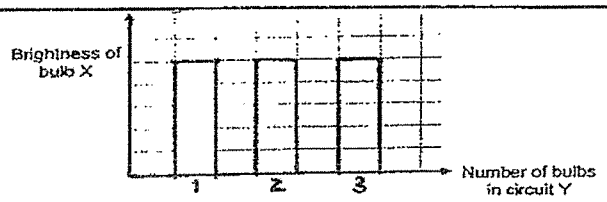
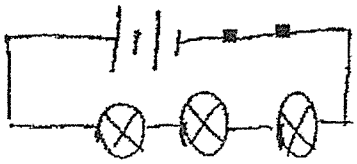
	Variables	Keep the same	Change
(i)	Wind speed	✔	
(ii)	Height that the fruit is dropped	✔	
(iii)	Size of wing-like structure		✔
(iv)	Type of fruit	✔	

Q8		Bulb Y. Material B is an electrical insulator. Thus, there was an open circuit formed and electric current could not pass through bulb X. However, both materials A and C are electric current could pass through bulb Y. Thus, bulb Y lit up.
Q9	a)	Arrange all the electrical parts, Part L, S and M in parallel to each other
	b)	If Key S is faulty in Circuit A, the whole circuit will be an *opened circuit as it is series circuit. If Key S is faulty in Circuit* B, the circuit will still be an close circuit as it is a parallel circuit
Q10	a)	To find out which material allow electricity to pass through to find out which materials are electrical conductor insulator.
	b)	

(i)	1	2	3
	A	B	C
(ii)	1	2	3
	B	C	A

Q11	a)	As the number of batteries in the circuit increases, the brightness of bulbs increases
	b)	As the amount of electrical current flowing through each bulb was too large, the filament of the bulb might have melted, causing the bulb to fuse.

Ans: Q8 electrical conductors, thus as closed circuit was formed and

Q12	a)	False
	b)	True
	c)	True
	d)	Not Possible to Tell
Q13	a)	
	b)	

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