

PSLE SCIENCE

BOOKLET A

SECTION A (28 x 2 marks = 56 MARKS)

For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Write your answer (1, 2, 3 or 4) in the bracket provided.

1. The table below shows the characteristics of items A, B, C and D. A tick (✓) indicates the item has the particular characteristics.

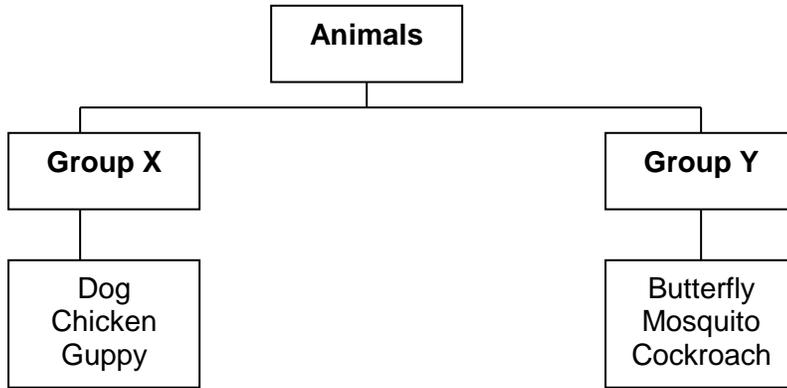
Item	Needs air, food and water	Has legs	Makes its own food	Responds to changes
A	✓			✓
B		✓		✓
C	✓	✓		✓
D	✓		✓	✓

Which one of the following items best represents an orchid?

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

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2. Study the classification table below carefully.



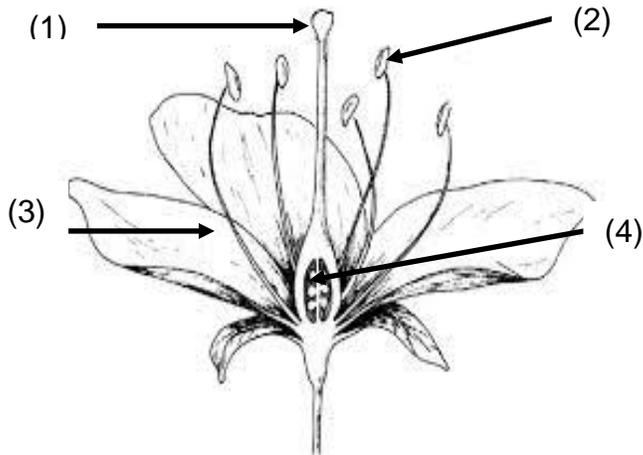
In what way the animals above have been grouped?

	Group X	Group Y
(1)	Mammals	Insects
(2)	Found on land	Found in sea
(3)	Give birth to young alive	Lay eggs
(4)	Young looks like adult	Young does not look like adult

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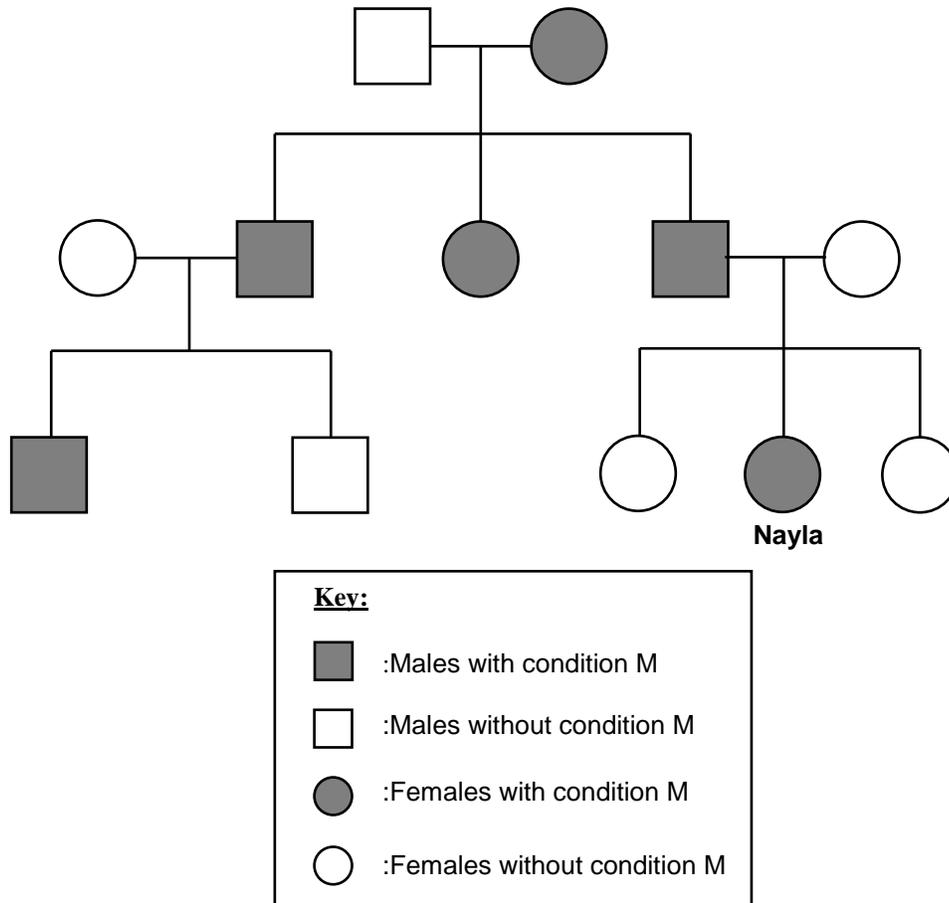
3. The diagram shows the parts of a flower.

Which part will develop into a fruit?



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4. Nayla drew her family tree showing the hereditary of a medical condition M as shown below.



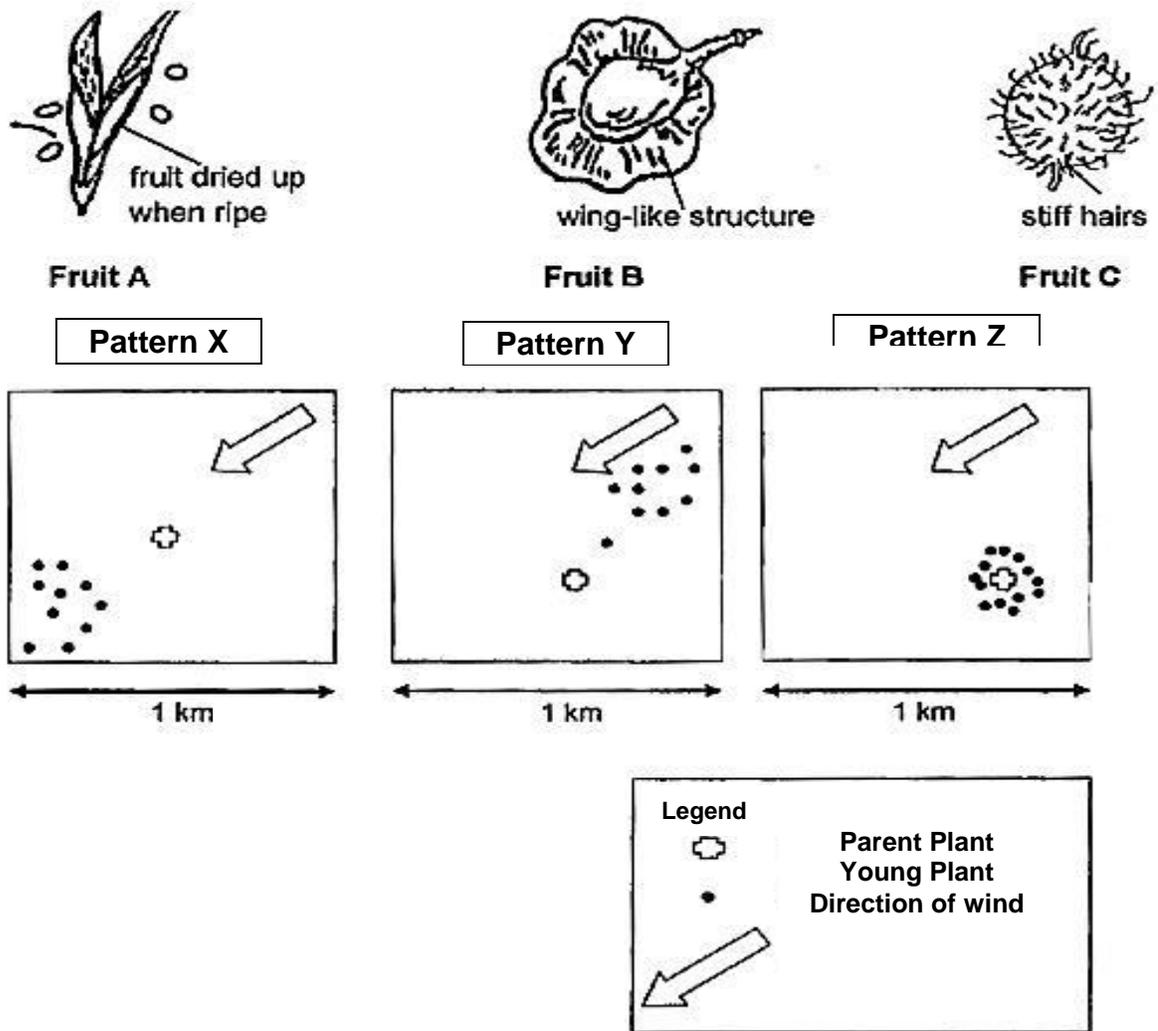
From the family tree, which of the following statements are correct?

- A: Nayla is the second child in her family.**
- B: Nayla has three cousins without condition M.**
- C: Nayla inherited condition M from her father.**
- D: Nayla's grandparents have five grandchildren.**

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

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5. The diagrams below show the fruits of 3 different plants.

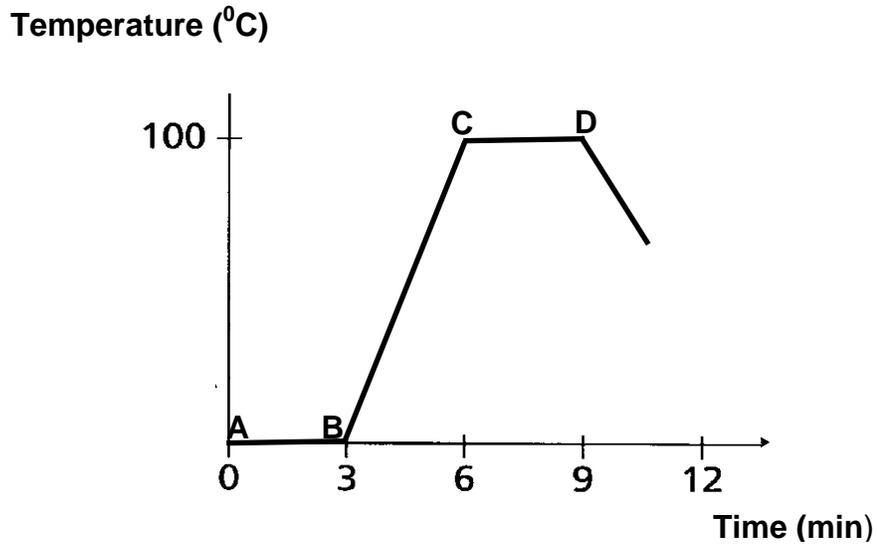


The diagrams above show three possible seed dispersal patterns X, Y and Z. Which of the following best represents the dispersal **pattern of the fruits A, B and C?**

	Pattern X	Pattern Y	Pattern Z
(1)	A	C	B
(2)	B	C	A
(3)	B	A	C
(4)	C	B	A

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6. A block of ice was taken out from a freezer and heated continuously for more than 9 minutes. The temperature of the water was measured at regular intervals and the results were shown in the graph below.



Which of the following describes the processes that took place at **AB** and **CD**?

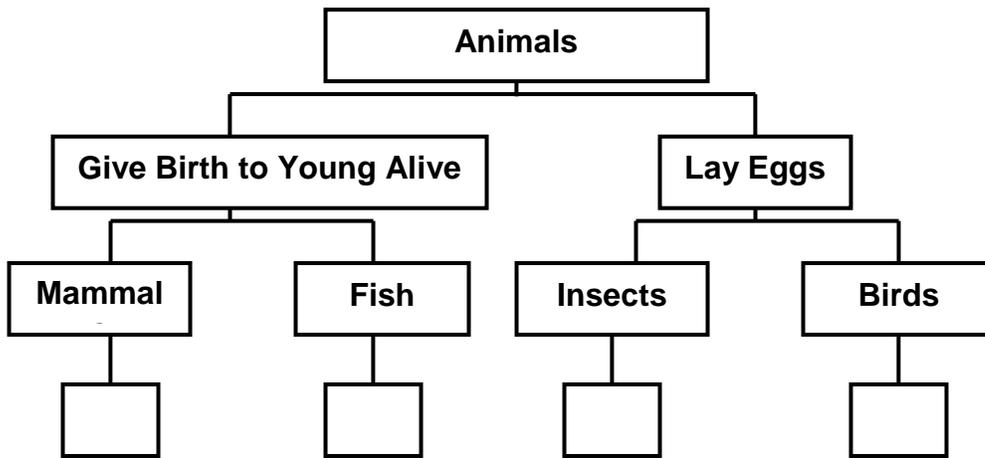
	AB	CD
(1)	Melting	Evaporation
(2)	Freezing	Boiling
(3)	Melting	Boiling
(4)	Freezing	Evaporation

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7. The table below shows the characteristics of four animals, A, B, C and D. A tick (✓) shows that the animal has the characteristics.

Animal	Lays eggs	Has scales on its body	Has feathers as its outer body covering	Has 6 legs
A	✓		✓	
B				
C		✓		
D	✓			✓

Another classification chart was then drawn to group the 4 animals.

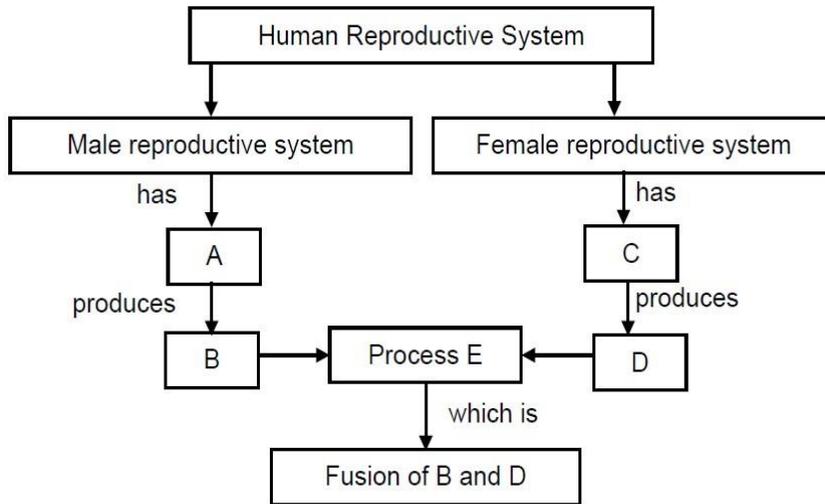


Using the classification chart above, where can animals A, B, C and D be grouped under?

	Mammals	Fish	Insects	Birds
(1)	B	A	C	D
(2)	B	C	A	D
(3)	B	C	D	A
(4)	C	B	D	A

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8. Study the flow chart shown below on the human reproductive system.

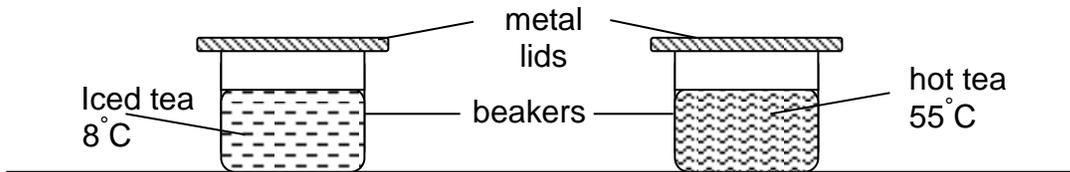


Which of the following would best represent A, B, C, D and E?

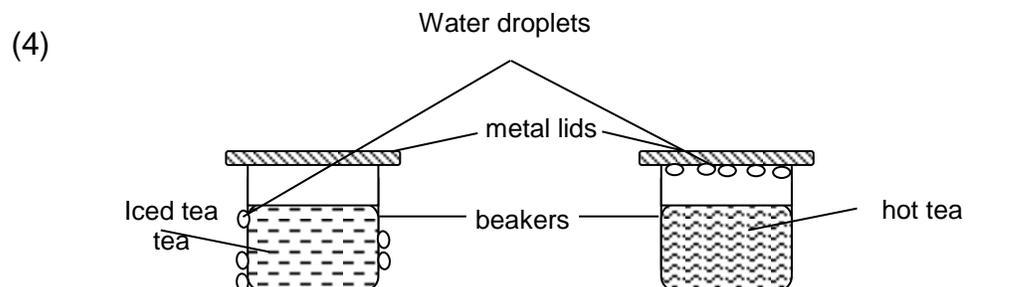
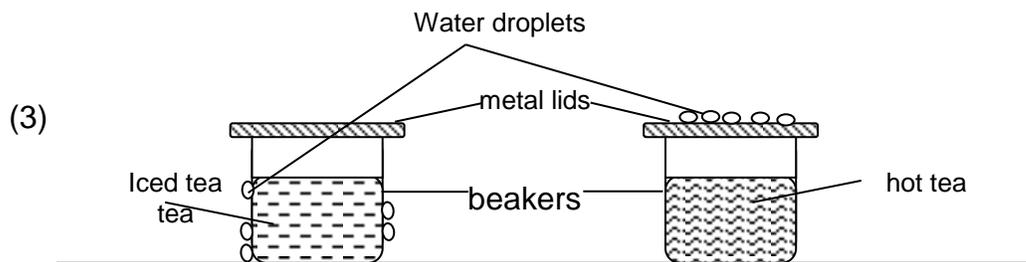
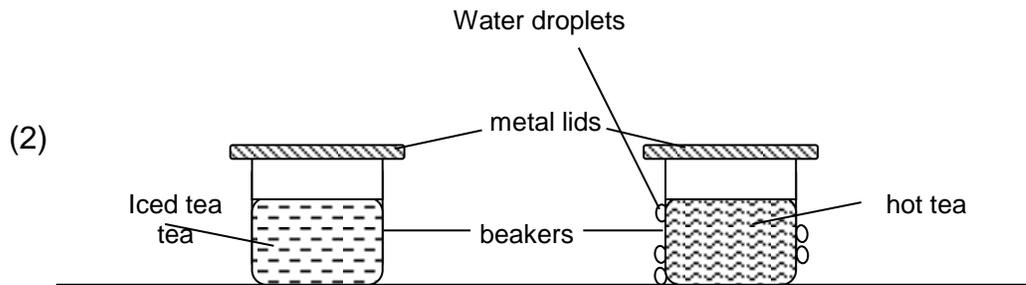
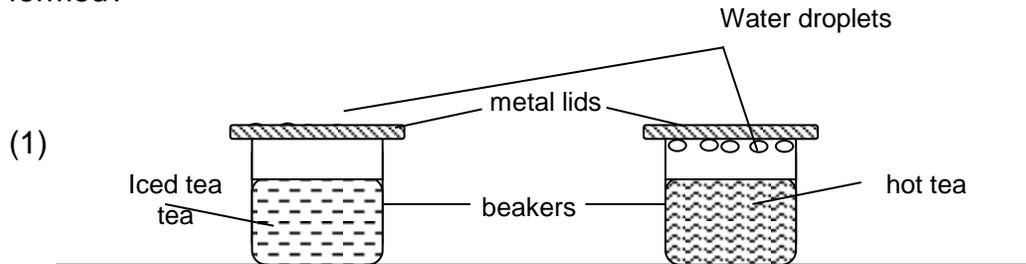
	A	B	C	D	E
(1)	Testes	Sperms	Ovaries	Eggs	Pollination
(2)	Sperms	Testes	Eggs	Ovaries	Fertilisation
(3)	Ovaries	Eggs	Testes	Sperms	Pollination
(4)	Testes	Sperms	Ovaries	Eggs	Fertilisation

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9. Study the diagrams below. The same amount of iced tea and hot tea was poured into two identical beakers at the same time. Identical metal lids were used to cover the beakers as shown. The two beakers were placed in a room with average room temperature of 26°C .

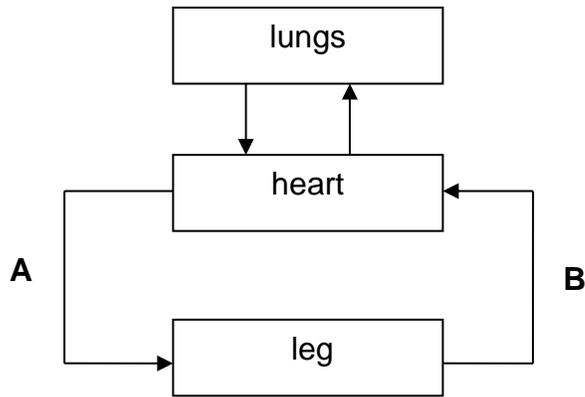


After five minutes, water droplets were seen in both set-ups. Which of the following set-ups best represents where the water droplets were formed?



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10. The diagram below shows the circulation of blood in the human body. **A** and **B** represent the blood vessels that carry blood from one part of the body to another.



The blood in B has _____ than the blood in A.

- (1) less carbon dioxide and less digested food
- (2) more carbon dioxide and less digested food
- (3) less oxygen and more digested food
- (4) more oxygen and more digested food

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11. Four students wrote in their Science Journal about what they knew about water-carrying and food-carrying tubes in plants as shown below.

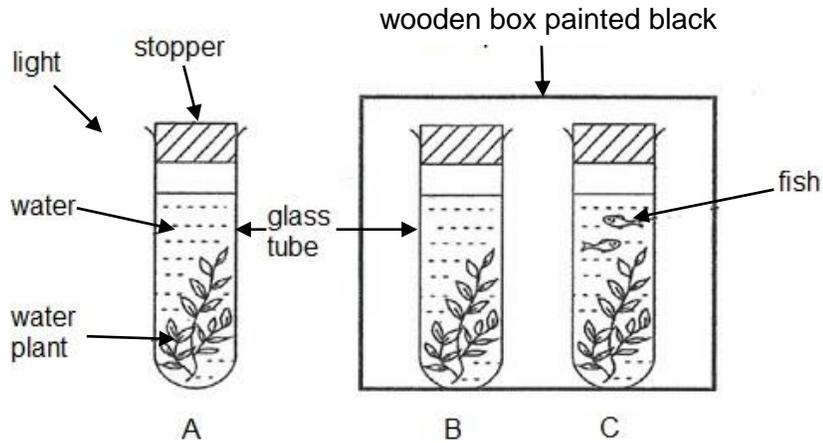
Student	Water-carrying tubes	Food-carrying tubes
Adam	all parts of the plant	all parts of the plant
Belle	roots and stem only	leaves and stem only
Charles	roots and stem only	leaves and flowers only
Diana	leaves and flowers only	roots and stem only

Which student made the correct statements about water-carrying and food – carrying tubes?

- (1) Adam
- (2) Belle
- (3) Charles
- (4) Diana

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12. Sylvia conducted an experiment using the following set-ups. She placed the set-ups in a sunny area. The water plants and apparatus used in the set-ups were similar. 200 cm³ of water were placed in each glass tube.

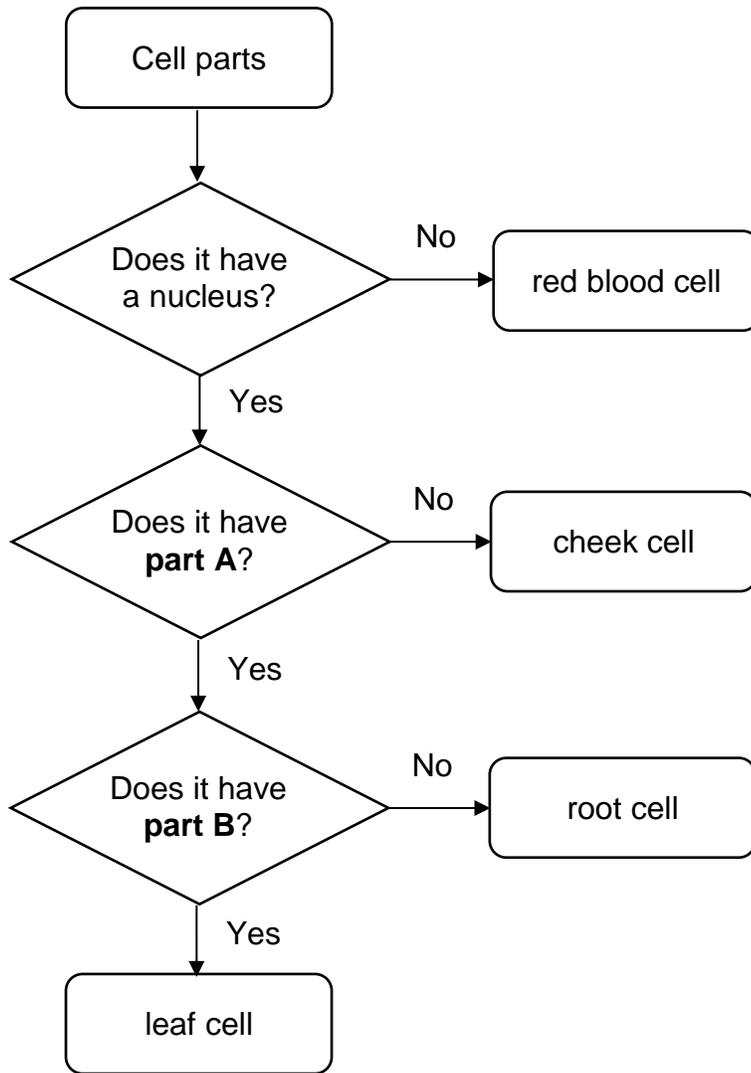


What would be the likely change in the amount of oxygen after a few hours?

Amount of oxygen in the glass tubes		
Set-up A	Set-up B	Set-up C
(1) Increase	Decrease	Decrease
(2) Decrease	No change	No change
(3) Increase	No change	Decrease
(4) Decrease	Increase	Increase

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13. Study the flowchart below.



Which of the following correctly identifies parts A and B?

	Part A	Part B
(1)	cell membrane	chloroplast
(2)	cell wall	chloroplast
(3)	chloroplast	cytoplasm
(4)	chloroplast	cell wall

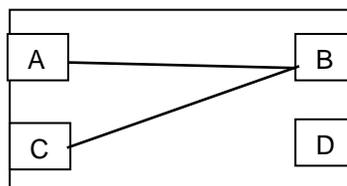
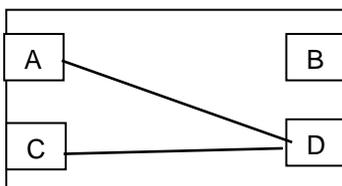
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14. The table below shows the results of testing a circuit card with a circuit tester.

Clips tested	Did the bulb light up?
A and B	No
A and C	Yes
B and C	No
B and D	No
C and D	Yes

Which one of the following is the correct circuit card that will give the results shown above?

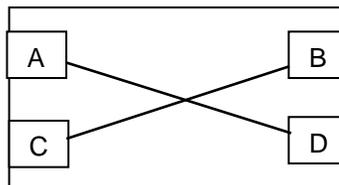
(1)



(3)

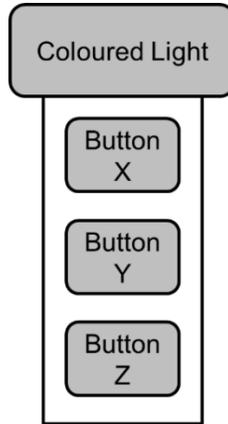


(4)



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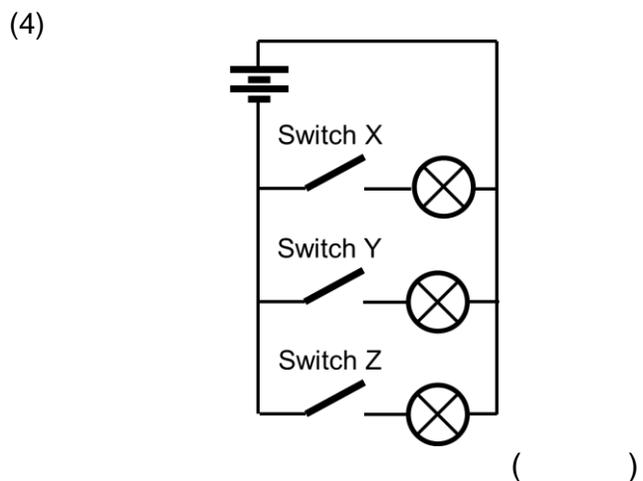
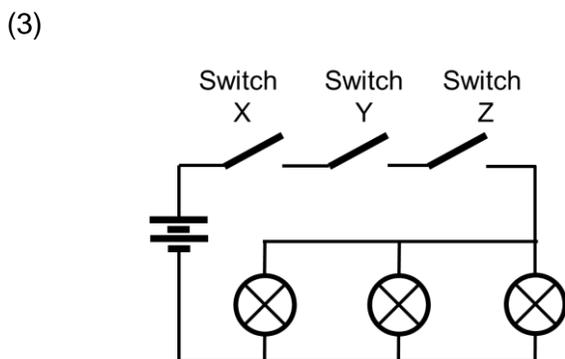
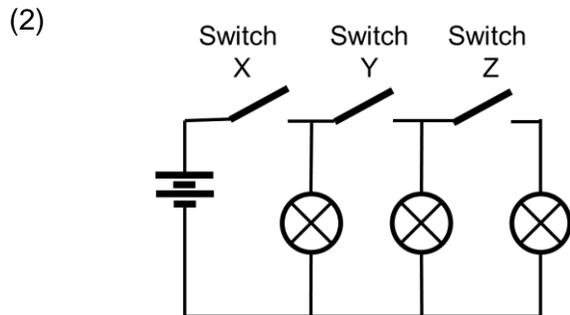
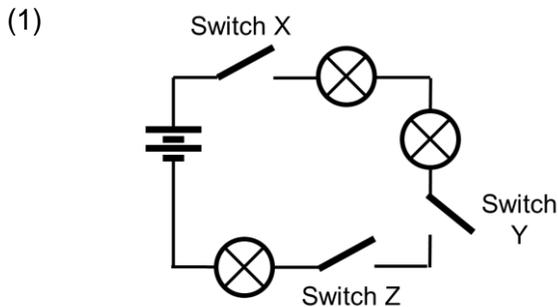
15. Zaki was given a special torch as shown below.



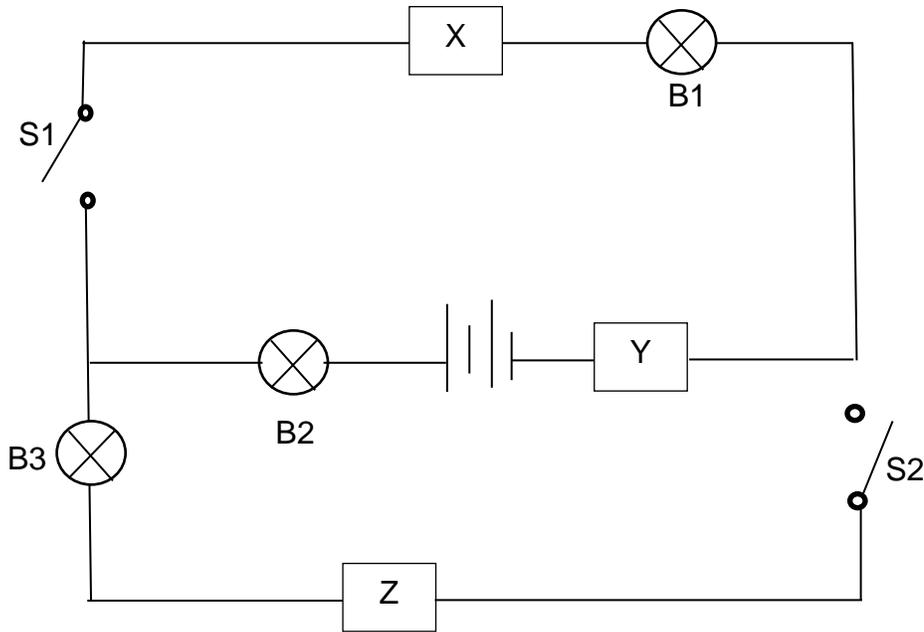
Zaki observed that when he pressed on the different buttons of the torch, it would shine with a different coloured light, as shown in the table below. When a button was pressed, the other two buttons would be switched off.

Button	Colour of Light
X	Red
Y	Blue
Z	Green

Which of the following circuit diagrams correctly shows the wiring of this torchlight?



16. Mike carried out an experiment with objects X, Y and Z, in an electric circuit as shown.



The table below shows the results of his experiment.

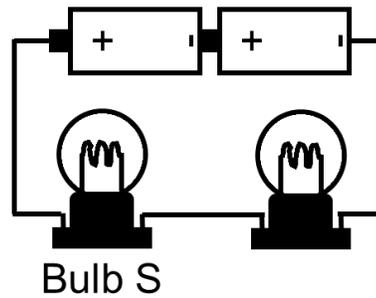
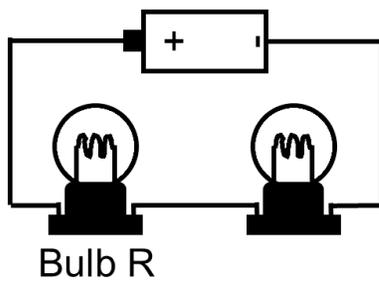
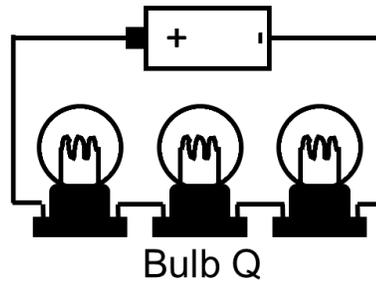
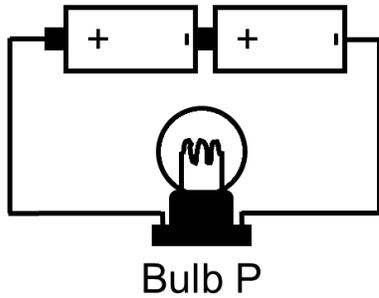
Switch that is closed	Bulb(s) that lights up
S1 only	B1 and B2
S2 only	None

Based on his results, which one of the following statements is **not true** ?

- (1) If Bulb 2 fuses, the circuit will become an open circuit. .
- (2) Switch 1 controls the whole circuit..
- (3) Object Z is a poor conductor r of electricity.
- (4) Object X and Y are conductors of electricity.

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17. David set up four circuits with different numbers of identical batteries and identical bulbs. All the bulbs in the circuits lit up.

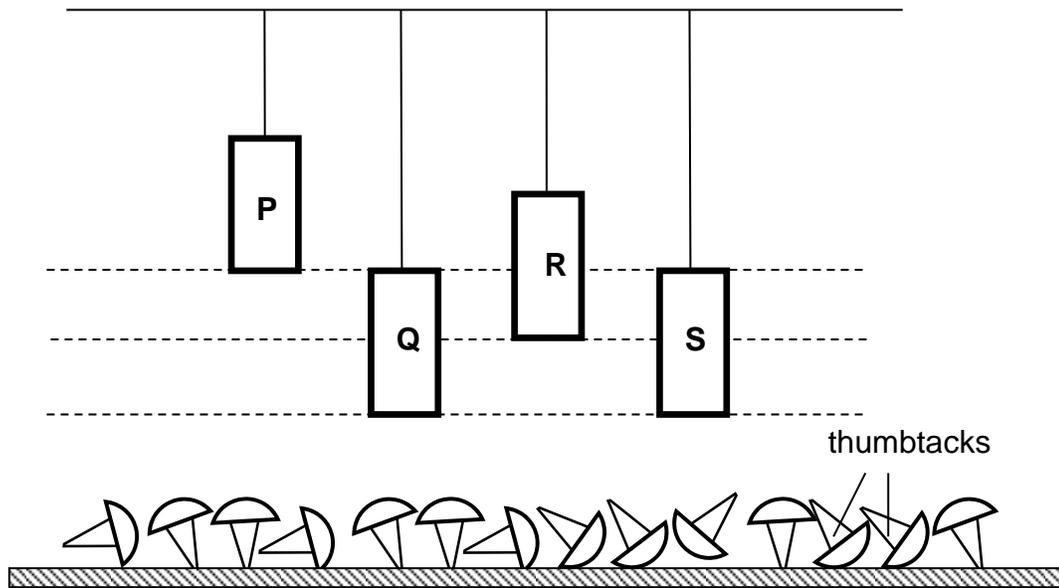


Arrange the bulbs from the least brightness to the most brightness.

Brightness of Bulb				
Least bright		→	Brightest	
(1)	P	Q	R	S
(2)	Q	R	S	P
(3)	R	Q	P	S
(4)	S	P	Q	R

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8. Benedict had four magnets P, Q, R and S hung above some thumbtacks as shown below.



He counted the number of thumbtacks attracted by each magnet and recorded in the table below.

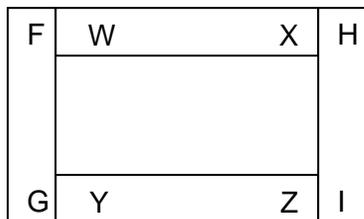
Magnet	Number of thumbtacks attracted
P	5
Q	4
R	3
S	5

Based on his results, He concluded that _____.

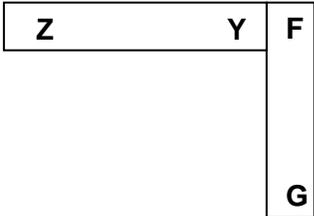
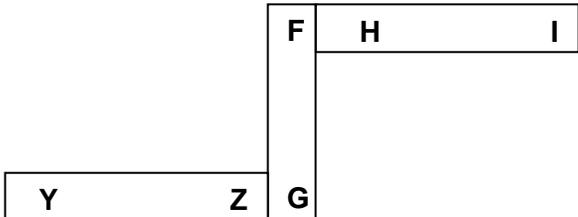
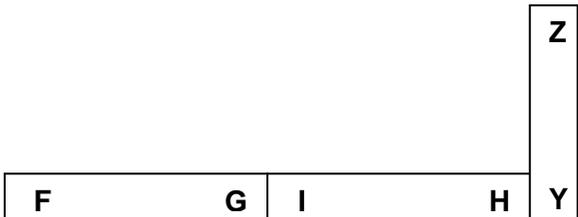
- (1) magnet P is the weakest magnet
- (2) magnet S is the strongest magnet
- (3) magnet Q is stronger than magnet R
- (4) magnet P is stronger than magnet S

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19. Four pieces of magnets are put together and their ends are marked as shown.



Which of the following arrangements shown below are possible?

A	
B	
C	
D	

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

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20. Jessica counted the number of different organisms in her garden and recorded the data in the table below.

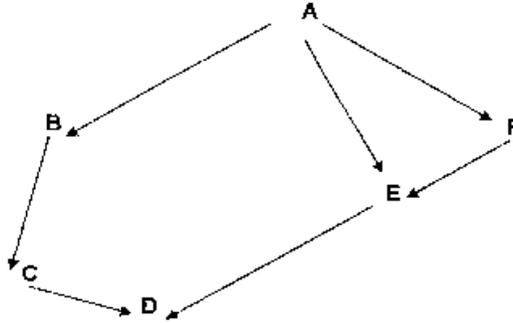
Organism	Number of organisms
Rose	8
Aphid	6
Hibiscus	5
Butterfly	7
Ladybird	2
Grasshopper	3
Grasshopper nymph	4
Caterpillar of butterfly	4

Based on the table above, which of the following is correct?

- (1) There is one community with six populations.
- (2) There is one community with eight populations.
- (3) There are two communities with six populations.
- (4) There are two communities with eight populations.

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21. Study the food web below.



Which of the following statements is/are true of the food web shown above?

- Q: E is a both plant and animal eater. an omnivore.
- R: B is a predator.
- S: A is able to make its own food.
- T: If F is removed, D and E will eventually die.

- (1) Q only
- (2) R only
- (3) R and T only
- (4) Q and S only

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22. Which of the following are structural adaptations of animals?

- A: Bears hibernate during winter.
- B: Penguins huddle together to keep warm.
- C: The stripes on tigers make it difficult for prey to detect them.
- D: The non-poisonous king snakes have similar bands on their bodies as the poisonous coral snakes.

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

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23. The diagram below shows a bird's wing reactions wings before diving into water to catch its prey.

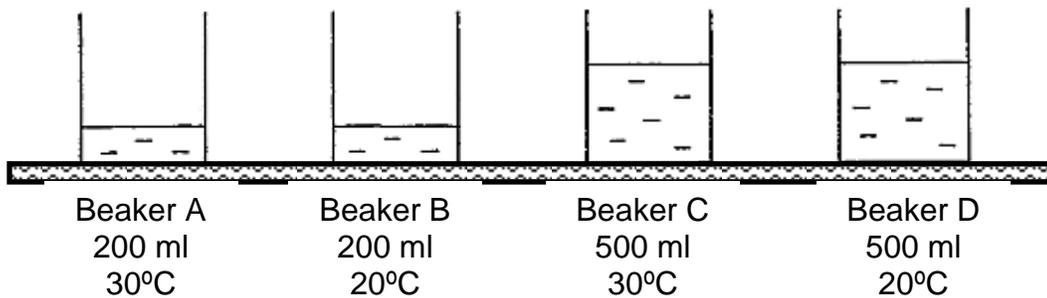


Which one of the following explains the behavioural adaption of the bird?

- (1) To reduce its weight.
- (2) To have a better aim of prey
- (3) To obtain a streamlined body shape
- (4) To increase wing span for extra speed

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24. An experiment of four identical beakers containing different amounts of water at different temperatures were set up.

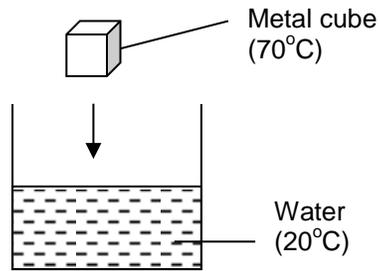


Based on the experiment, which one of the following statement is false?

- (1) Beaker A will reach the boiling point first.
- (2) Beaker has more heat than beaker A.
- (3) Beaker C has more heat than beaker D.
- (4) Beaker D will reach the boiling point the last.

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25. Study the diagram below carefully.



When the heated metal cube is lowered into the water, the water will become _____ as it _____ the metal cube.

- (1) colder, loses heat to
- (2) warmer, loses heat to
- (3) colder, gains heat from
- (4) warmer, gains heat from

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26. Irdyna threw a bowling ball. It rolled along the lane and then knocked down all the bowling pins.

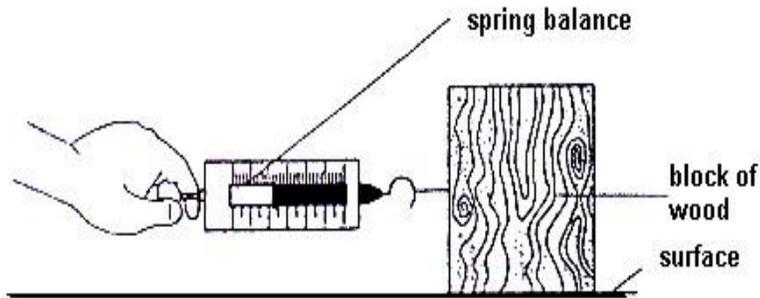


Which one of the following correctly shows the conversion of energy that took place?

- (1) Potential energy → kinetic energy → sound and heat energy
- (2) Potential energy → kinetic energy → sound and light energy
- (3) Kinetic energy → potential energy → sound and heat energy
- (4) Kinetic energy → sound energy → light and heat energy

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27. A block of wood with a spring balance hooked to it was pulled across the surface, W. The experiment was repeated by replacing the surface, W with different surfaces, X, Y and Z.



The amount of force required to move the block of wood are shown in the table below.

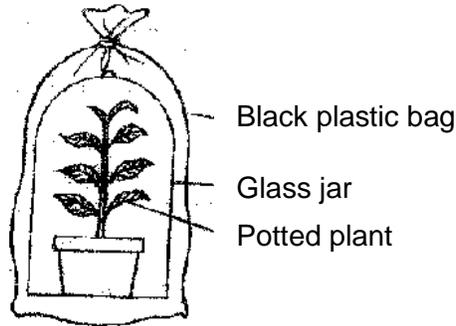
Surface	W	X	Y	Z
Amount of force required to move the block of wood (units)	110	80	240	180

Which of the following is definitely true?

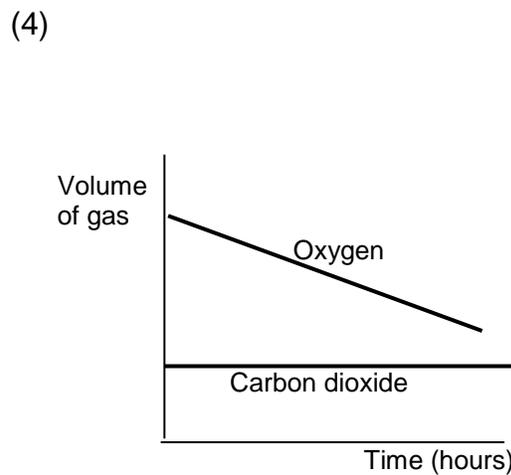
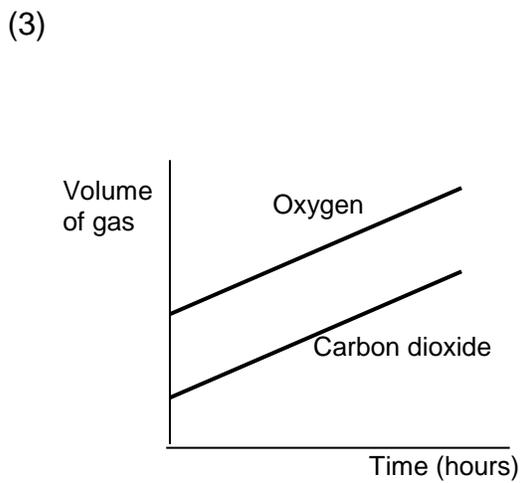
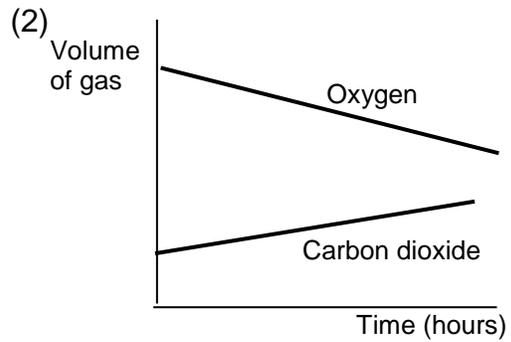
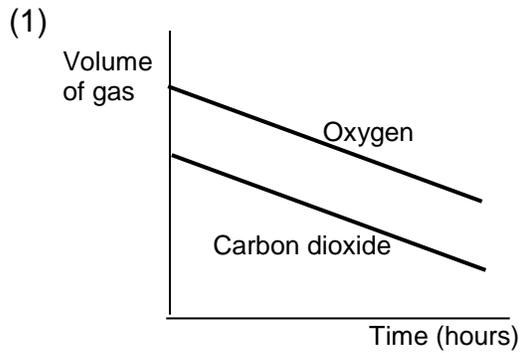
- (1) Surface X is glass.
- (2) Surface Y is the roughest.
- (3) Surface Z is smoother than Surface W.
- (4) Surface Z is most suitable for making anti-slip bathroom floor.

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28. A well-watered plant is put into a black plastic bag and placed under the sun for several hours.



Which one of the following graphs correctly shows the changes in the levels of carbon dioxide and oxygen in the bell jar during that period of time?



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END OF BOOKLET A

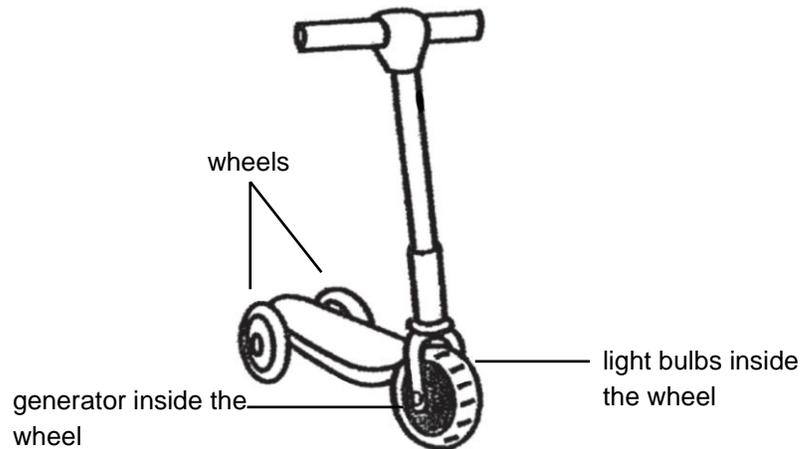
PSLE SCIENCE

BOOKLET B

Section B (44 marks)

For questions 29 to 41, write your answers in this booklet. The number of marks available in the brackets [] at the end of each question or part question.

29. The diagram below shows Salleh's skate scooter.



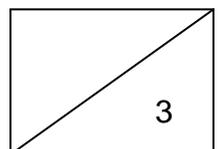
When Salleh pushes off, the skate scooter will move and the bulbs in the front wheel will light up.

(a) What material should the front wheel be made from? Explain your answer.

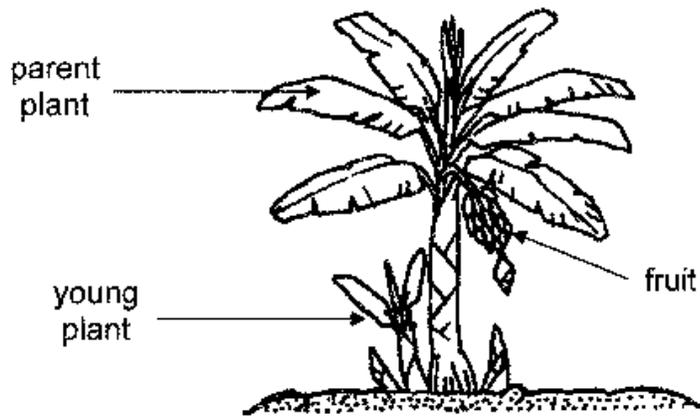
(2m)

(b) Salleh noticed that the brightness of the bulbs decreased when he was moving at a slower speed. Explain why the brightness of the bulb decreased.

(1m)



30. The diagram below shows some banana plants.



(a) Why does the young plant grow so close to the parent plant

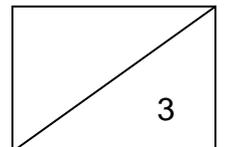
(1m)

(b) In which part of the plant is the excess sugar produced during photosynthesis stored?

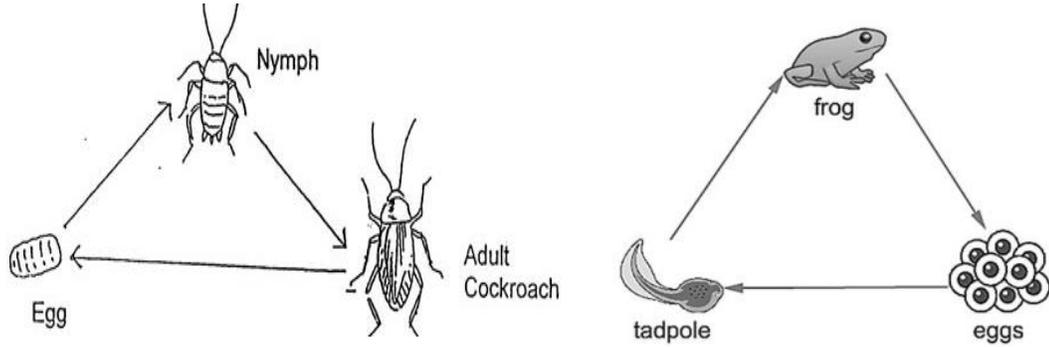
(1m)

(c) Name another plant that reproduces in the same way as the banana plant.

(1m)



31. The pictures below show the lifecycles of the cockroach and the frog.

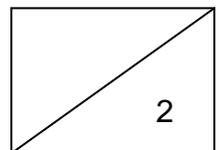


(a) Based on the pictures above, state **one** similarity in the **lifecycles** of the cockroach and the frog.

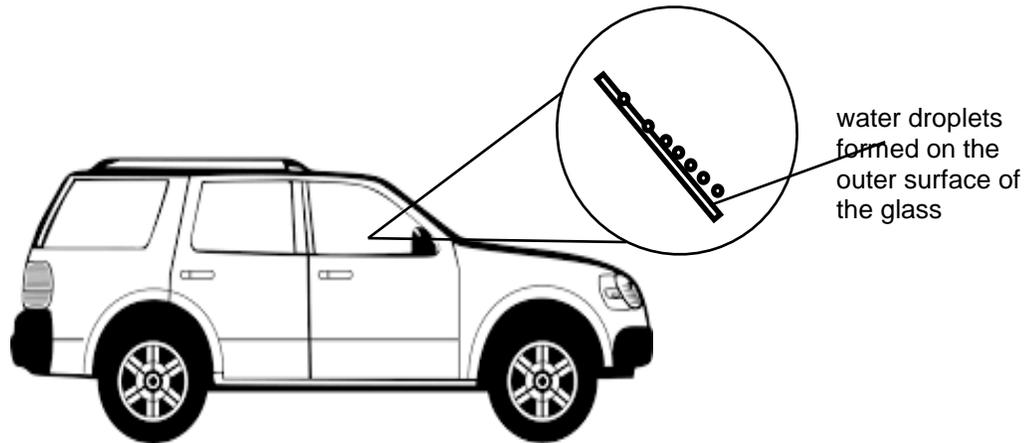
(1m)

(b) State **one** difference between the **life-cycles** of the cockroach and the frog.

(1m)



32. The diagram below shows the side view of the same car some time after the air-condition was turned on.

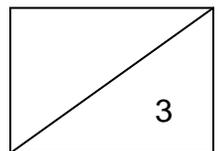


- (a) Explain how water droplets were formed on the outer surface of the glass

(1m)

- (b) Explain why, on rainy days, the inner surface of the window may be fogged up.

(2m)



33. Siti dropped some shorea fruits from a certain height. She then recorded the distance these fruits travelled in a table as shown below.



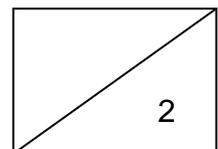
Shorea	Length of wing-like structure (cm)	Distance travelled (cm)
A	2	29
B	3	42
C	4	47
D	5	51
E	4	53
F	5	60

- (a) What is the relationship between the length of the wing-like structure and the distance travelled by the shorea fruit?

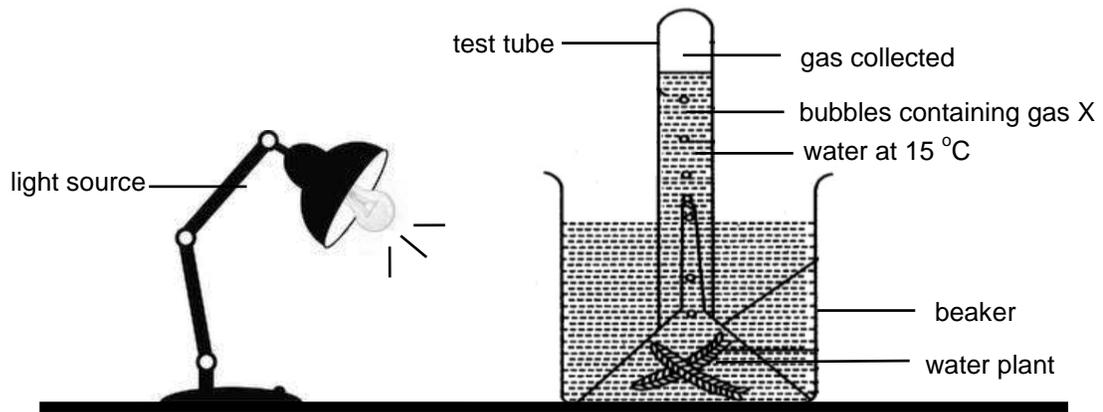
(1m)

- (b) Besides the length of the wing-like structure, what other factors can affect the distance travelled by the shorea fruit?

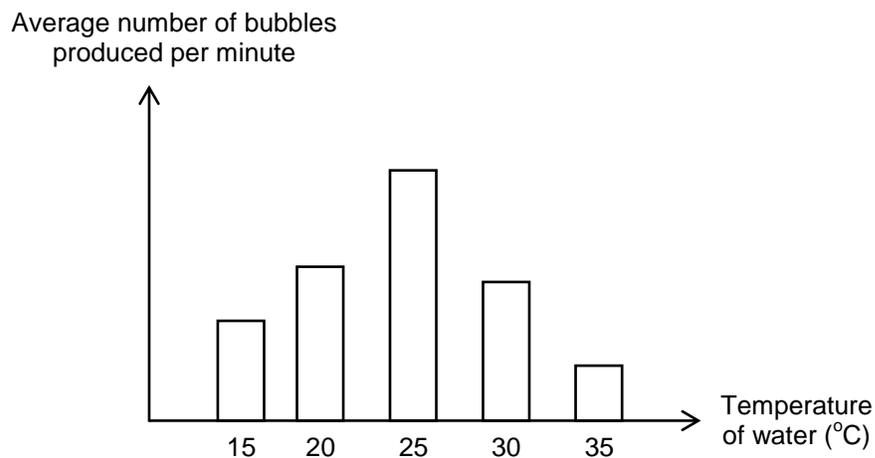
(1m)



34. Jannah conducted an experiment to find out how the temperature of water affects the rate of photosynthesis of a water plant. She set up the experiment as shown below and measured the average number of bubbles produced by the water plant per minute.



Jannah repeated the experiment using four other similar set-ups while changing only the temperature of the water for each set-up. Her results are shown below.

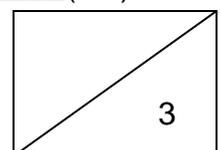


- (a) Without adding or removing any part of the experiment set-up, how can Jannah increase the number of bubbles produced at any given temperature?

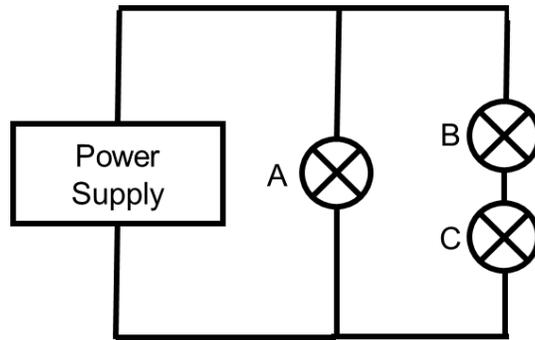
(1m)

- (b) Based on the results, how did the temperature of water affect the rate of photosynthesis. Subsequently, suggest why this was so.

(2m)



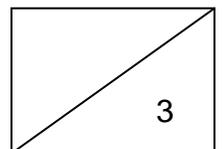
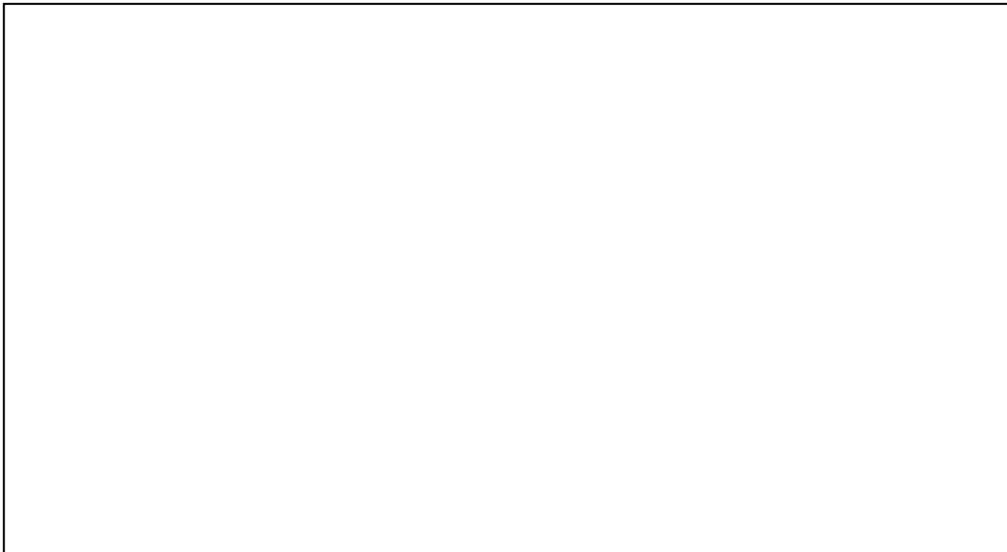
35. The diagram below shows the electrical wiring of the lighting system in a house. The power supply is connected to similar lights A, B, and C, .



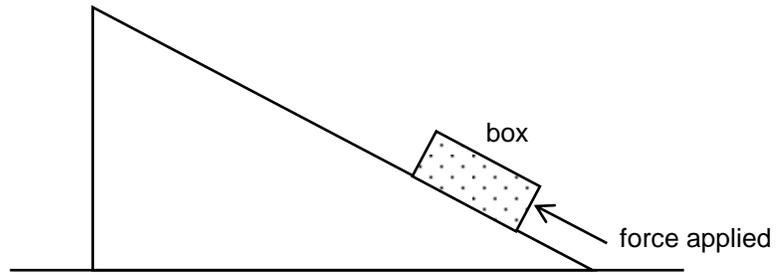
- (a) What is the advantage of this circuit?

_____ (1m)

- (b) Redraw the circuit in the space below using lights A, B, and C and a switch such that the 3 lights can be controlled by one switch. (2m)



36. A box is being pushed up a slope as shown below.

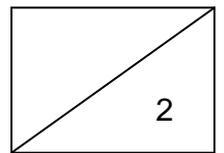


(a) Explain why the box could be pushed up the slope.

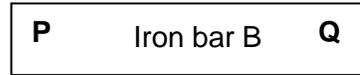
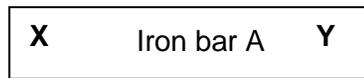
(1m)

(b) Without changing any of the components of the set-up above, suggest one way to make it easier to push the box up the slope.

(1m)



37. Garrett has two iron bars A and B and he puts them near each other.



- (a) He notices that they are attracted and thus concluded that the two pieces are magnets. Do you agree with him? Explain why.

(1m)

- (b) He turns Iron bar A such that end X faces P. How will this confirm that the two pieces are magnets?

(2m)

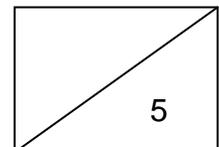
- (c) State **one** way in which a magnet may:

(i) lose its magnetism

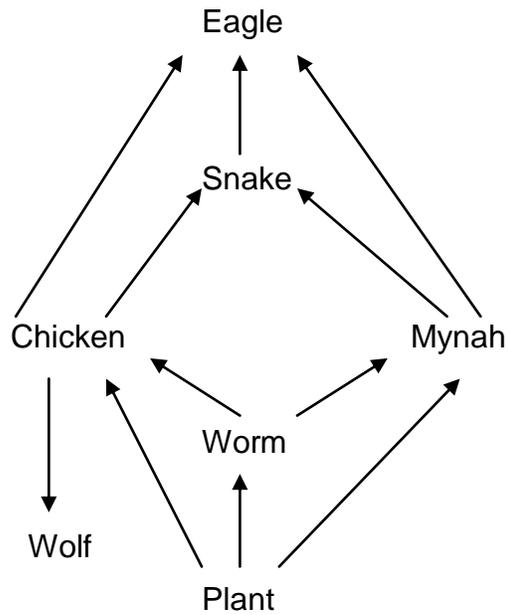
(1m)

(ii) gain magnetism

(1m)



38. Look at the food web below and answer the following questions.

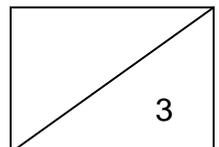


(a) Name two animals which are both a predator and a prey.

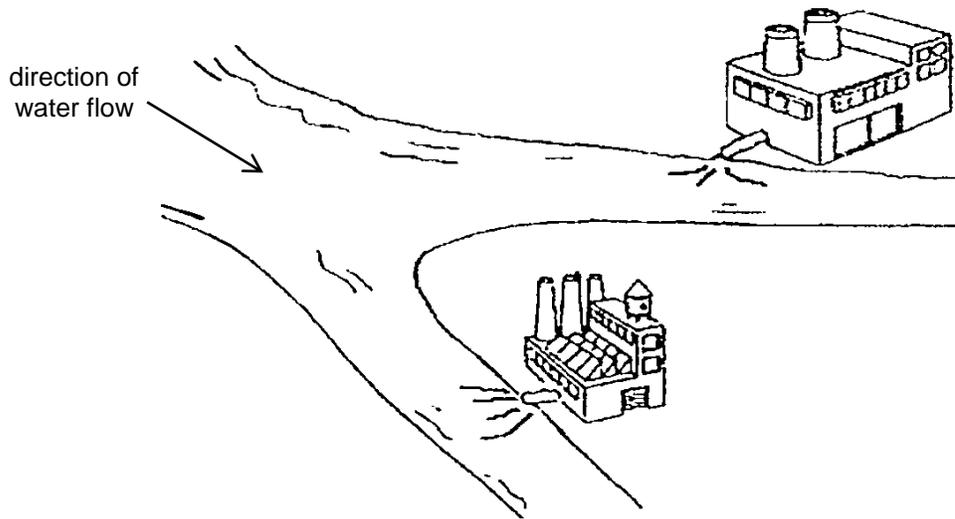
(2m)

(b) How is it possible for the snake population to increase even though the populations of the chicken and mynah do not increase?

(1m)



39. The Environmental Ministry is concerned that polluted water is being washed into the rivers as seen in the picture below.



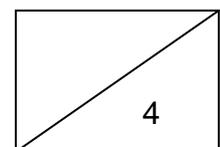
- (a) On the picture above, mark with a cross (X) the locations environmental officers must collect and test samples from to check if polluted has indeed been washed into the rivers. (1m)

- (b) In order to test the level of pollution, the environmental officers took samples of river water from various locations and poured them into similar beakers. Substance P was then added into each beaker. Substance P will change colour depending on the level of pollution. State two variable(s) must the officers keep the same to ensure a fair test?

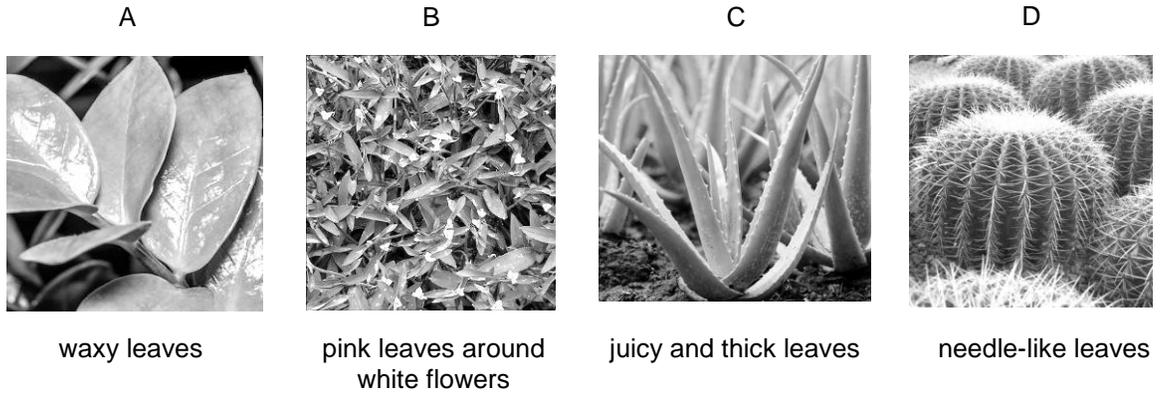
(2m)

- (c) How will polluted water affect the survivability of submerged plants in the river?

(1m)



40. The pictures below show four plants with descriptions of each plant's special features.

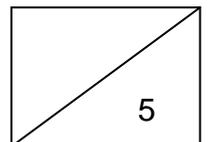


(a) In the table below, write down **one** benefit for each structural adaptation described in the pictures above. (4m)

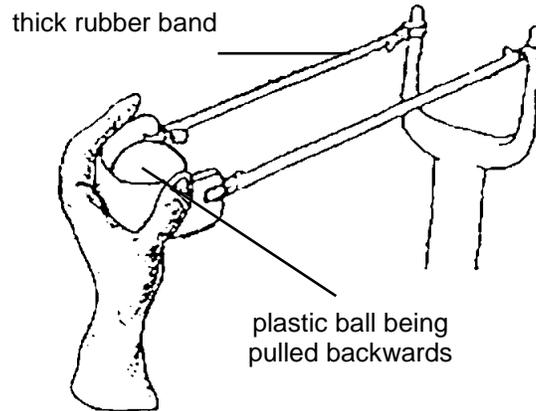
Structural Adaptation	Benefit for the plant
waxy leaves	
pink leaves around white flowers	
juicy and thick leaves	
needle-like leaves	

(b) Write down another benefit for the structural adaptation for Plant D

_____ (1m)



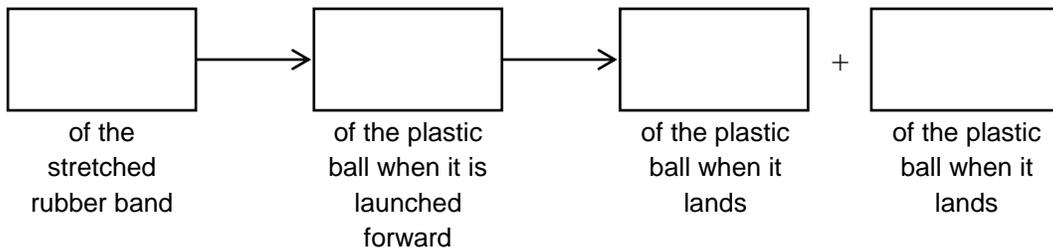
41. Hirman used a slingshot to launch a plastic ball as shown in the diagram below.



(a) Where did Hirman get the energy to pull the rubber band from?

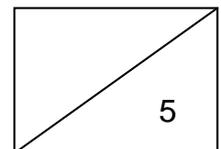
(1m)

(b) State the energy conversions from the point when the ball was released to the point when the ball hits the ground. (2m)



(c) Without adding, changing or removing anything, how can Hirman increase the distance travelled by the rubber ball? Explain your answer

(2m)



End of Booklet B