



HENRY PARK PRIMARY SCHOOL
PRELIMINARY ASSESSMENT 2018
PRIMARY 6
SCIENCE
BOOKLET A (56 MARKS)

INSTRUCTIONS TO CANDIDATES

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers on the Optical Answer Sheet (OAS) provided.

Name: _____ ()

Class: Primary 6 ()

Date: 28 August 2018

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

Booklet	Marks
A	/ 56
B	/ 44
Total (A+B)	/ 100

Parent's Signature: _____

Booklet A (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). Shade the correct oval (1, 2, 3 or 4) on the **Optical Answer Sheet**.

1. Zhi Xing wants to classify some animals as either mammals or birds.

Which of the following question(s) will help him to classify the animals into mammals or birds?

	Question
A	Does it fly?
B	What is its body covering?
C	How many legs does it have?
D	Does it feed its young with milk?

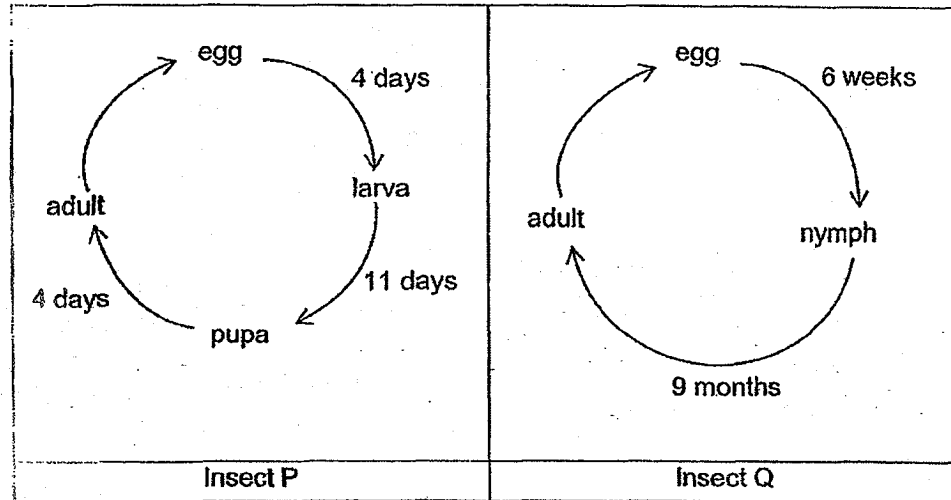
- (1) C only
 (2) A and C only
 (3) B and D only
 (4) A, B and C only

2. Which of the following take(s) place in both the stomach and the small intestine?

- A Food is broken into smaller pieces.
 B Food is broken down into simple substances.
 C Digested food is absorbed into the bloodstream.
 D Water is absorbed into the body.

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

3. Study the life cycles of insects P and Q shown below.

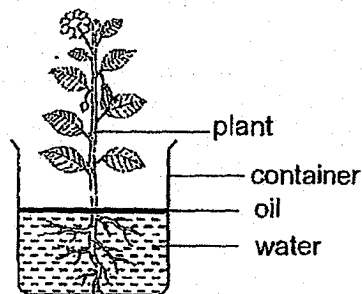


Based on the diagrams given, which of the following statements are correct?

- A Insect P and Insect Q have different number of stages in their life cycles.
- B The young of Insect Q resembles its adult but the young of Insect P does not.
- C The young of Insect P takes a longer time to grow into an adult than the young of Insect Q.

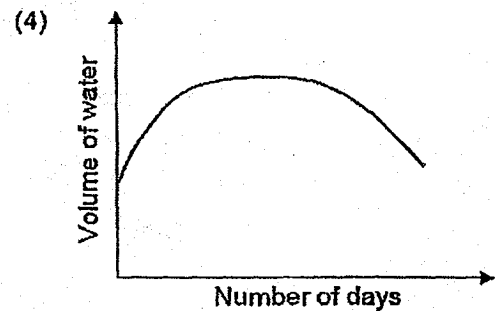
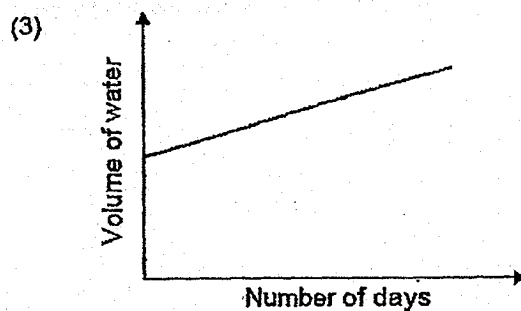
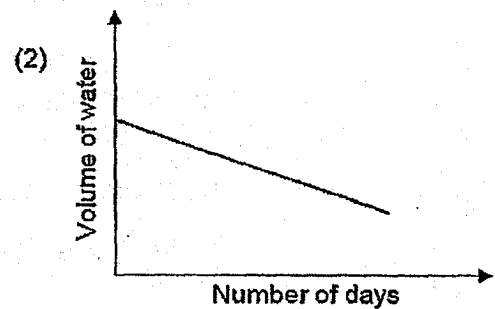
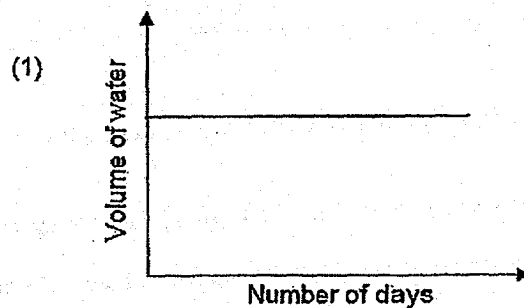
- (1) A and B only
- (2) B and C only
- (3) A and C only
- (4) A, B and C

4. Samuel placed the plant shown in the diagram below next to a window for one week.

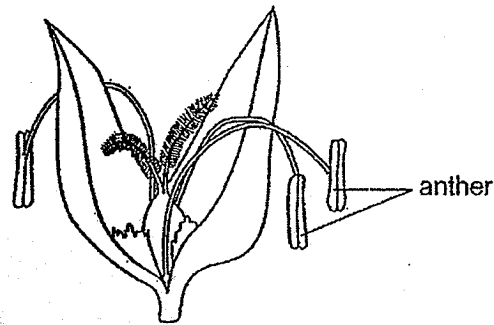


He checked and recorded the volume of water left in the container daily. A week later, he drew a graph showing the change in the water left in the container.

Which one of the following shows the change in the volume of water in the container correctly?

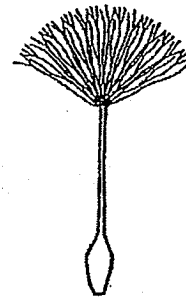


5. The diagrams below show Flower X and Fruit Y which are taken from two different plants.



small and dull-coloured petals

Flower X



small, hairy and light

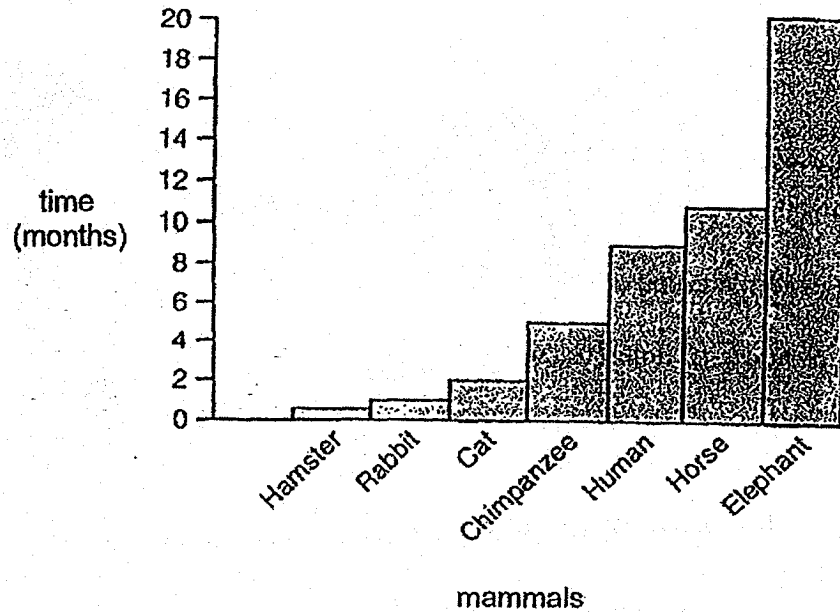
Fruit Y

Which of the following statements about X and Y is / are correct?

- A Both X and Y need wind in their reproduction process.
- B Both X and Y contain male and female reproductive cells.
- C Pollination takes place in X but fertilisation takes place in Y.

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

6. The graph below shows the time between fertilisation and birth (known as the gestation period) of different mammals.



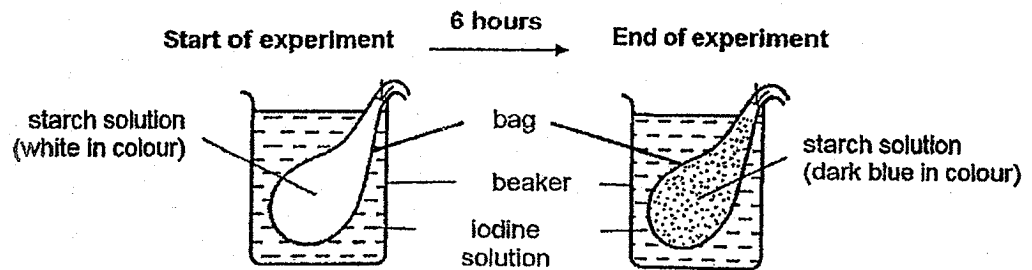
Based on the information from the graph, which of the following statements is/are correct?

- A The chimpanzee gives birth to more offspring than the rabbit.
- B The elephant has the longest life span among all the animals.
- C The greater the size of the animals, the longer the gestation period.

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

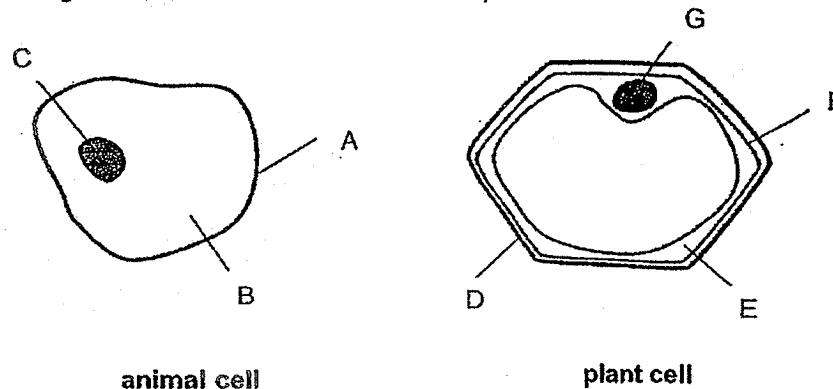


7. Ali placed a bag of starch solution in a beaker of iodine solution and observed it after 6 hours.



The starch could not move out of the bag into the iodine solution but the iodine solution moved into the bag of starch solution and turned dark blue.

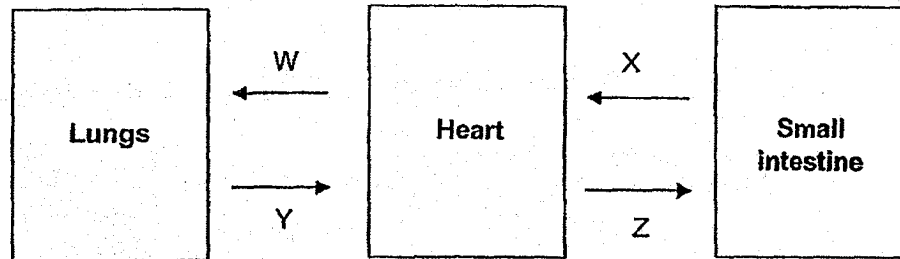
The diagrams below show an animal and a plant cell.



Which parts of the cells have similar function as that of the bag in Ali's experiment?

	Animal cell	Plant cell
(1)	A	F
(2)	B	E
(3)	A	D and F
(4)	B and C	E and G

8. The diagram below shows the flow of blood in three organs through blood vessels W, X, Y and Z.

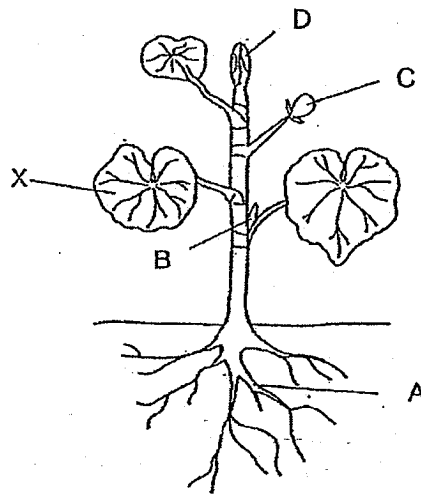


Which of the following statements are correct?

- A Blood in Z has more oxygen than blood in W.
- B Blood in W has less digested food than blood in X.
- C Blood in Y has less carbon dioxide than blood in W.

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

9. The diagram below shows a green plant.



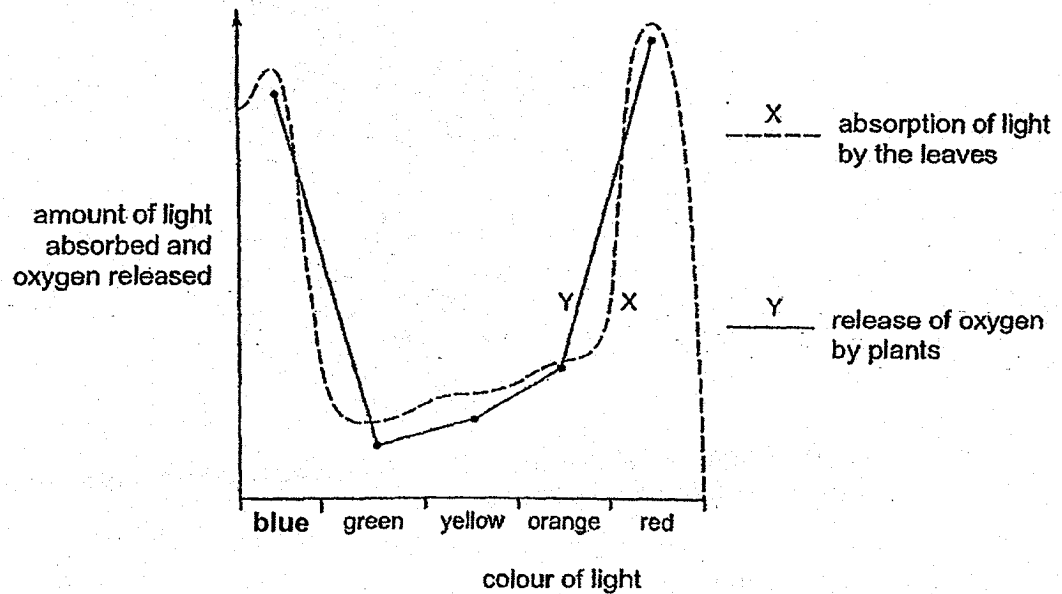
Which parts of the plant (A, B, C, D) will the food made by leaf X be transported to by the food-carrying tubes?

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



10. Raju conducted an experiment to investigate the effect of different coloured lights on a process taking place in green plants.

He recorded his findings in the graph shown below.

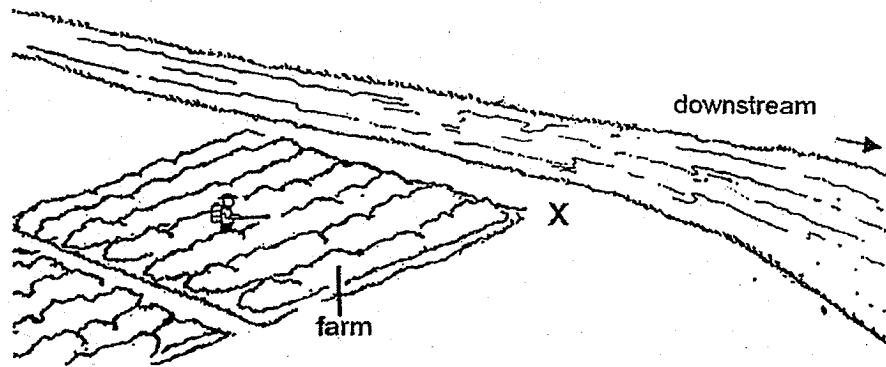


Based on the information given above, which of the following statements are correct?

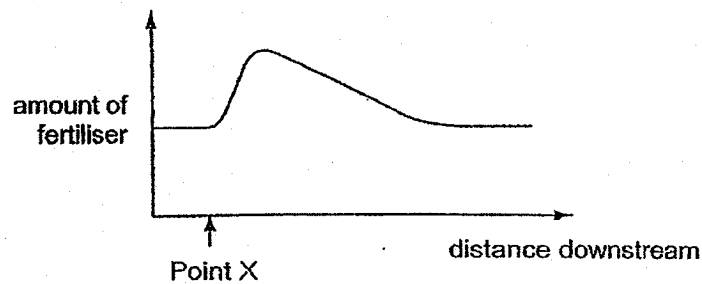
- A Photosynthesis takes place most actively in blue and red light.
 - B The plant releases more oxygen in the presence of orange light than in yellow light.
 - C The colour of the light does not affect the amount of light absorbed by the plant.
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) A, B and C



11. A farm next to a river releases fertiliser into the river at point X.

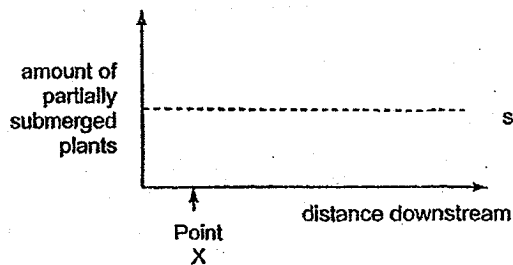


The graph below shows the change in the amount of fertiliser in the river water.

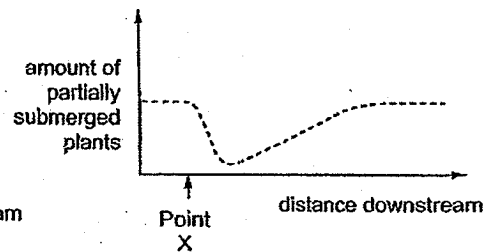


Which graph shows correctly the amount of partially submerged plants in the river?

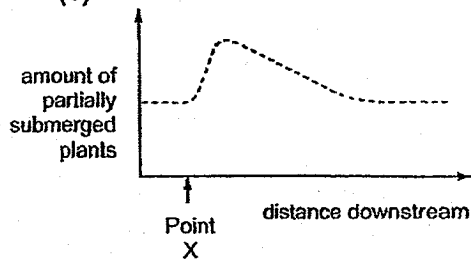
(1)



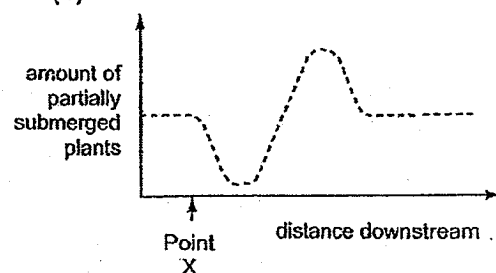
(2)



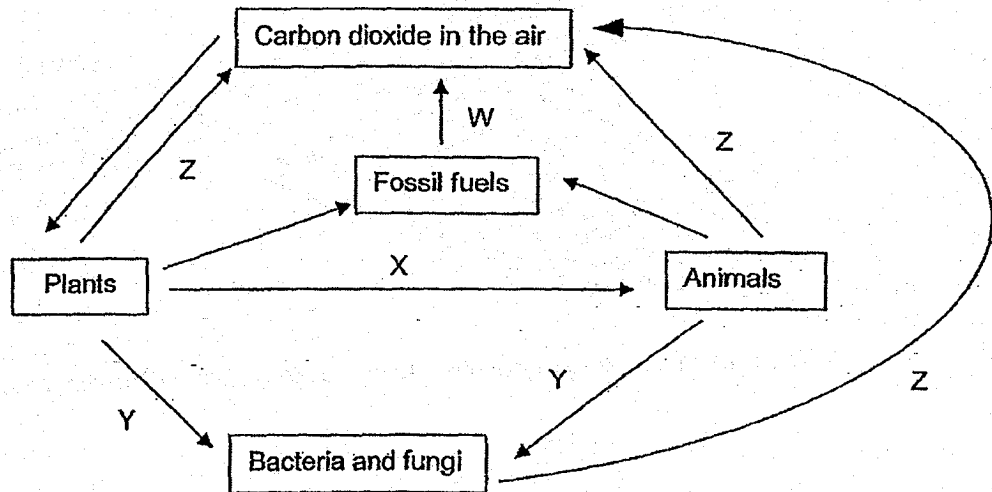
(3)



(4)



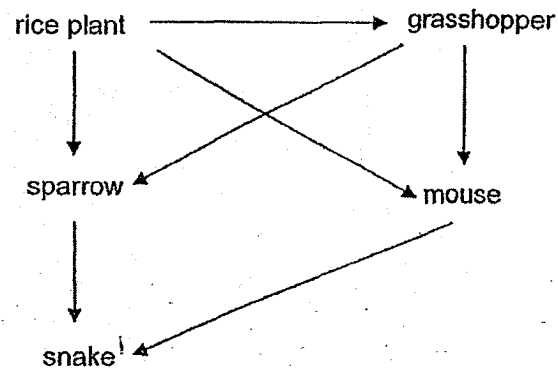
12. The diagram below shows the processes, W, X, Y and Z, taking place in our environment.



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

	Process		
	Decomposition	Burning	Feeding
(1)	Z	Y	W
(2)	Y	W	X
(3)	W	X	Z
(4)	X	Z	Y

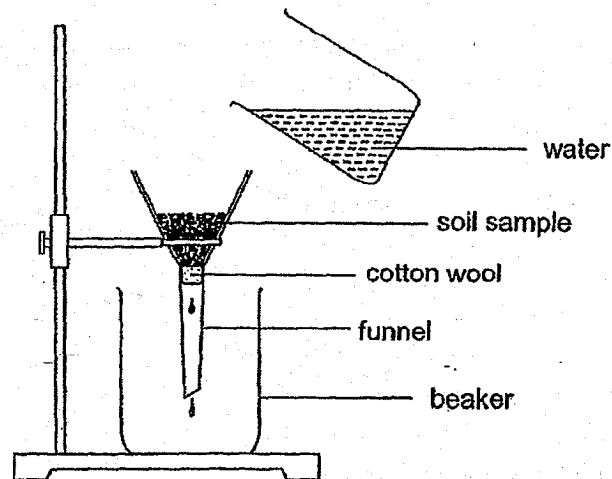
13. The diagram below shows a food web.



Which one of the following statements about the food web is correct?

- (1) There are five food chains in this food web.
- (2) There are three animals which are both prey and predator.
- (3) When the population of the sparrow decreases, the population of the mouse increases as the mice have more food available.
- (4) The population of the rice plant increases when the population of the snake decreases.

14. Irfan collected three different soil samples, P, Q and R. He poured the same amount of soil sample in a funnel with its end plugged with some cotton wool. Then he poured 300 ml of water onto each soil sample as shown below.



He measured and recorded the amount of water collected in the beaker 20 minutes after the first drop of water flowed out from the funnel into the beaker. The results are shown below.

Soil Sample	Amount of water collected 20 minutes after the first drop of water flowed out from the funnel (ml)
P	110
Q	60
R	250

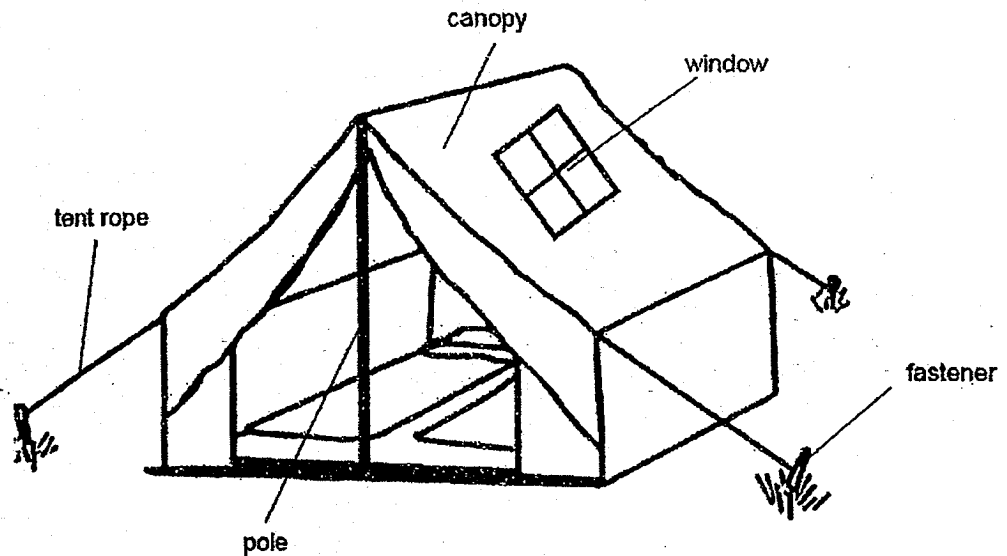
Which of the following shows correctly the habitat where Q can be found and the adaptation of plant roots in that environment?

	Habitat	Adaptation of plant roots
(1)	desert	long and deep roots
(2)	field	short hairy roots
(3)	garden	roots hanging down from the trees
(4)	mangrove	roots sticking out into the air



15. Some students came up with a sketch design of a tent for their camping trip.

They added a 'window' in the sketch so that they can see the stars in the night.



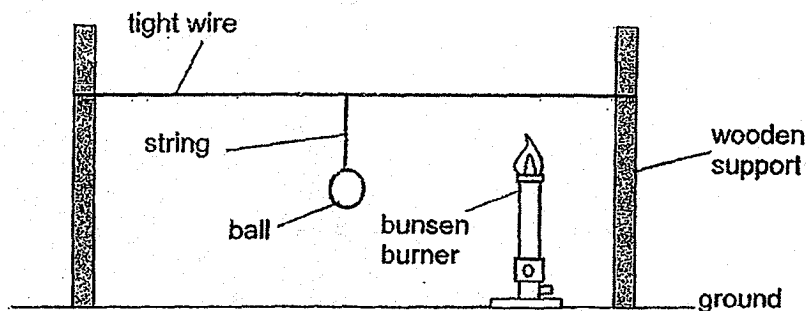
They chose four materials shown in the table below based on their properties.

Material	Properties
P	- transparent - waterproof
Q	- not transparent - waterproof
R	- strong - flexible
S	- strong - not flexible

Which one of the following shows the best material used for each part of the tent?

	canopy	fastener	tent rope	window	pole
(1)	Q	S	Q	R	P
(2)	R	Q	R	P	R
(3)	Q	S	R	P	S
(4)	R	Q	P	Q	S

16. Study the set-up shown below.



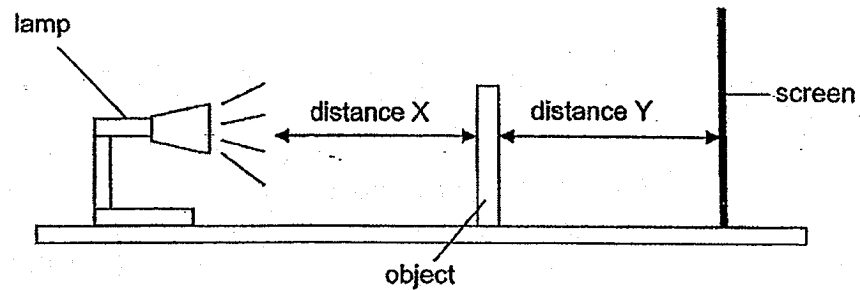
Which of the following shows the correct observations when the wire is heated for some time?

Observations		
	Ball	Wire
(1)	Moves further away from the ground	Gains heat and contracts
(2)	Moves nearer to the ground	Gains heat and expands
(3)	Remains in the same position	Loses heat, expands and then contracts
(4)	Increases in volume	Conducts heat to the ball

17. Study the set-up below.

The lamp was switched on and a shadow was formed on the screen.

Without shifting the position of the object, the height of the shadow can be changed by moving the lamp and the screen.

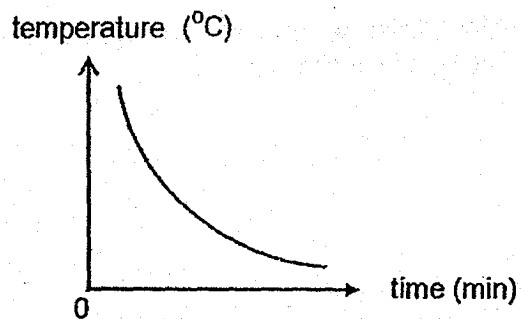


Which of the following distances will result in the longest shadow formed on the screen?

Distance (cm)	
X	Y
(1) 20	7
(2) 14	13
(3) 17	10
(4) 10	17



18. The graph below shows how the temperature of a cup of hot milo changes over time when it is left in a room.



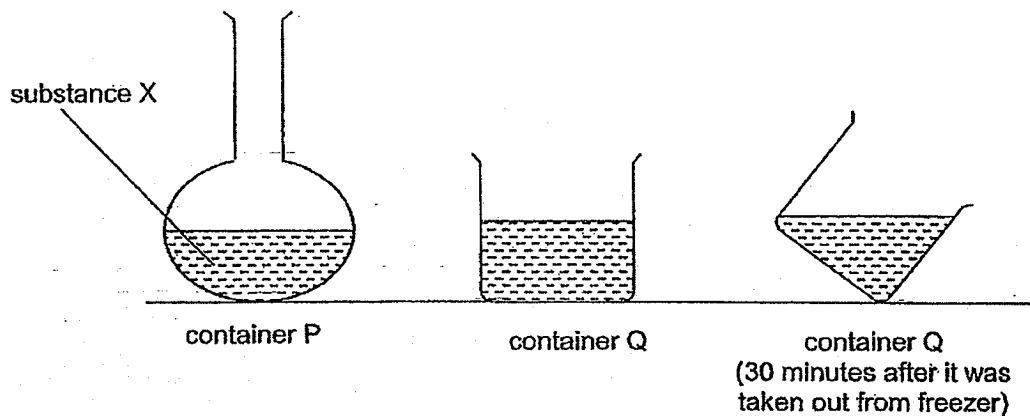
What can be inferred from the graph?

- A The hot milo is gaining heat from the surrounding.
- B The hot milo is losing heat to the surrounding.
- C The hot milo is gaining heat from the cup.

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

19. Joel transferred substance X from container P to container Q. Then he placed container Q into the freezer until substance X changed its state.

Next, Joel removed the container Q from the freezer and tilted it as shown in the diagram below.



Based on the information given, what could substance X possibly be?

- A syrup
- B sugar
- C water

(1) B only

(2) C only

(3) A and B only

(4) A and C only

20. A water tank is used for flushing a toilet bowl.

After each flush, water enters and fills up the tank again.

The re-filling stops when the water reaches the level G mark as shown in diagram 1.

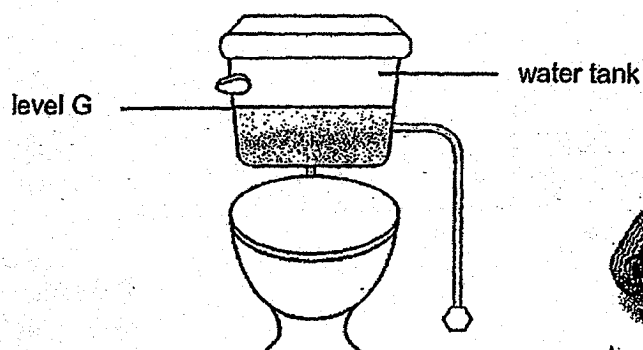


Diagram 1



bag of marbles

Diagram 2

Mani made use of the properties of matter to use less water to flush the toilet bowl to conserve water.

He put a bag of marbles into the water tank.

Which of the following properties of matter was Mani's method based on?

- A Solids have mass.
- B Solids occupy space.
- C Solids have definite shape.

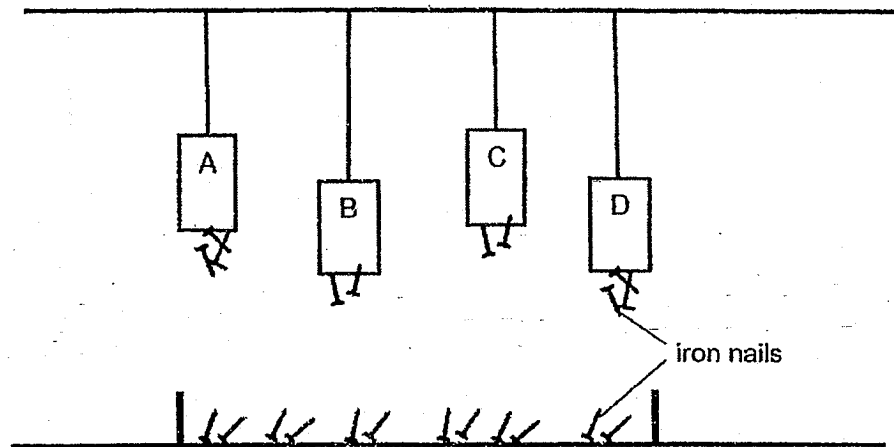
(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

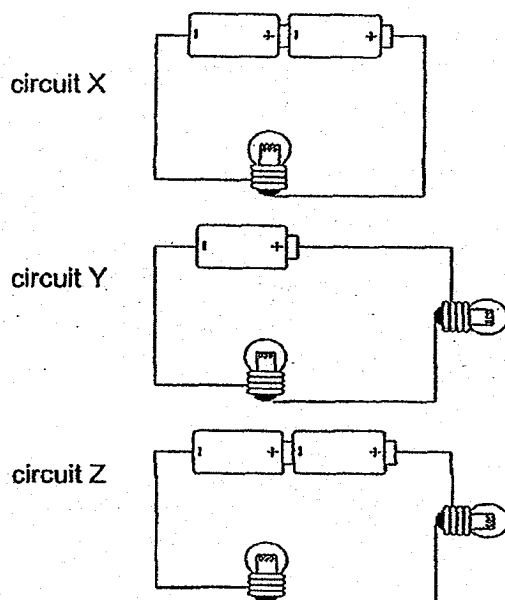
21. The diagram below shows the number of iron nails attracted to magnets, A, B, C and D, hung from strings of two different lengths.



Which magnet, A, B, C or D, is the weakest?

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

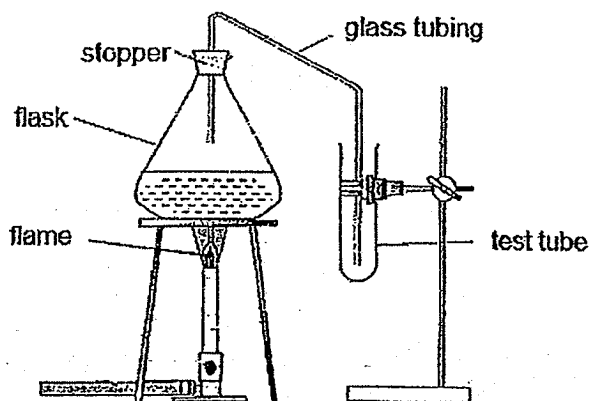
22. The diagram below shows three electrical circuits, X, Y and Z.



Which one of the following shows the correct order of the electric circuits when arranged according to the brightness of the bulbs, from the dimmest to the brightest?

- (1) X, Y, Z
- (2) Z, X, Y
- (3) Y, X, Z
- (4) Y, Z, X

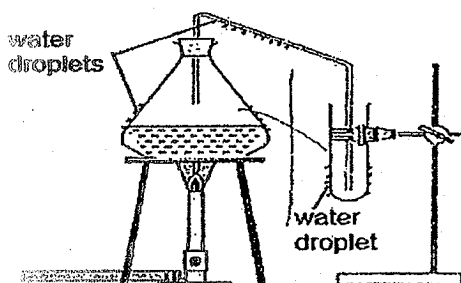
23. Debby heated a flask of water over a flame as shown below.



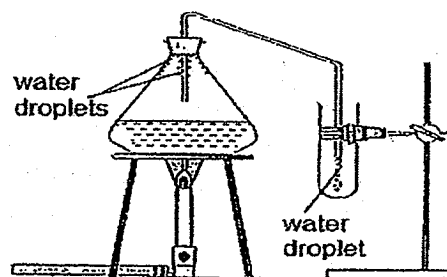
After a while, Debby observed that water droplets were formed.

Which one of these diagrams shows correctly the parts where Debby saw these water droplets?

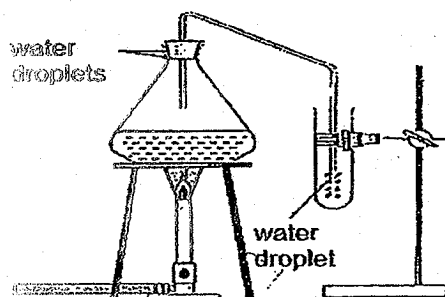
(1)



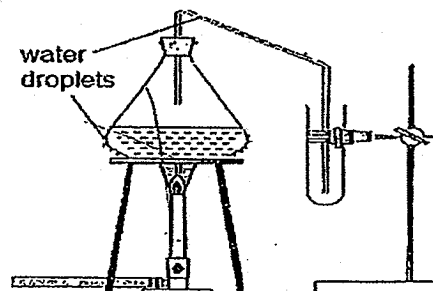
(2)



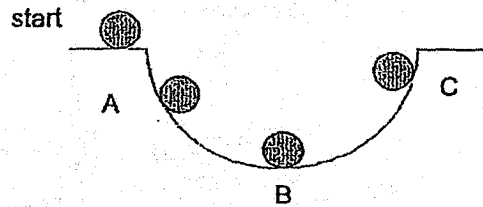
(3)



(4)



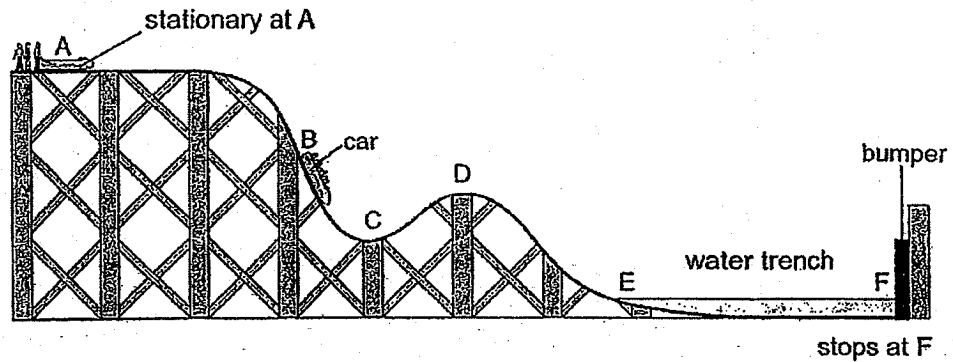
24. A ball is rolled down as shown in the diagram below.



Which of the following shows correctly the changes in the potential energy and kinetic energy of the ball as it rolls from A to C?

	change in kinetic energy from A to B	change in potential energy from B to C
(1)	increases	increases
(2)	increases	decreases
(3)	decreases	increases
(4)	decreases	decreases

25. The diagram below shows a theme park ride.
The letters, A, B, C, D, E and F, show different points along the track.



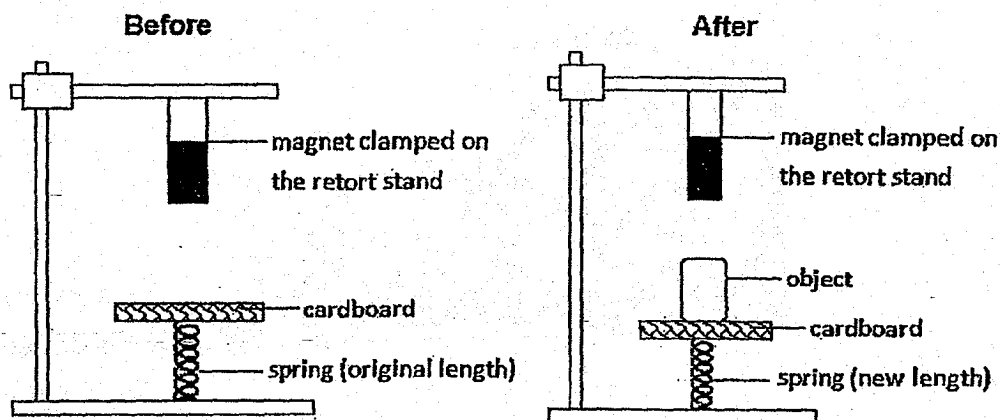
The car starts from A and travels to F, where it stops by hitting a bumper.
At E, the car enters a trench filled with water.

Which of the following statements are correct about the car?

- P At points A and F, the car has no kinetic energy.
- Q The car has maximum gravitational potential energy at point D.
- R The car slows down when it moves through the water at E due to the water resistance.
- S The car moves along the track from B to C because of gravity.

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

26. Gabby set up an experiment as shown in the diagrams below. She attached each of the four objects, P, Q, R and S, one at a time separately onto the cardboard stuck to the spring. She first attached object P on the cardboard and recorded the length of the spring.



Objects P, Q, R and S have the same mass.

Gabby repeated her experiment with objects Q, R and S and recorded her results in the table below.

Object	Original length of the spring (cm)	New length of the spring (cm)
P	10	12
Q	10	6
R	10	8
S	10	12

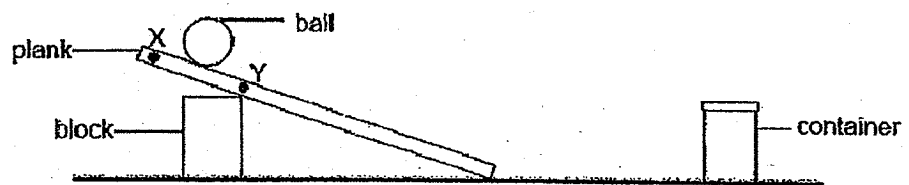
Based on the above result, what could objects P, Q, R and S be?

	P	Q	R	S
(1)	aluminium bar	copper bar	iron bar	magnet
(2)	steel bar	magnet	copper bar	iron bar
(3)	copper bar	iron bar	magnet	steel bar
(4)	iron bar	magnet	steel bar	copper bar

27. Ray set up the experiment shown in the diagram below.

Point Y of the plank was in contact with the edge of the block.

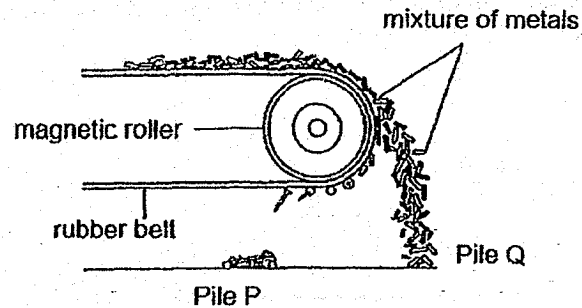
When he released the ball from point Y, it travelled down the ramp but was unable to hit the container.



Which of the following would most likely allow the ball to travel further to hit the container?

- A Apply oil on the ball.
 - B Wrap the plank with sandpaper.
 - C Release the ball from point X of the plank.
 - D Exert a push on the ball when releasing it from point Y.
-
- (1) A and B only
 - (2) A and C only
 - (3) C and D only
 - (4) A, C and D only

28. The diagram below shows a mixture of metals moving along the rubber belt. The mixture then rolls towards the end and gets separated into two piles, P and Q.



Which of the following forces are used to separate the mixture into pile P and Q?

	Pile P	Pile Q
(1)	frictional, gravitational	magnetic
(2)	gravitational	magnetic, gravitational
(3)	magnetic, gravitational	gravitational
(4)	magnetic	frictional

End of Booklet A



HENRY PARK PRIMARY SCHOOL
PRELIMINARY ASSESSMENT 2018
PRIMARY 6
SCIENCE
BOOKLET B (44 MARKS)

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3. Answer all questions.

Name: _____ ()

Class: Primary 6 ()

Date: 28 August 2018

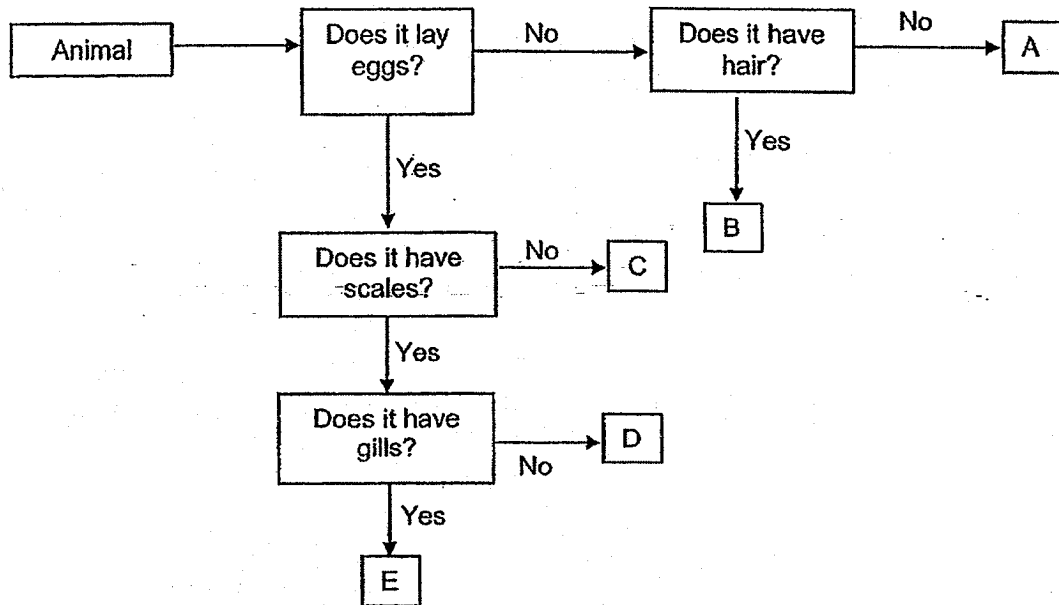
Total Time for Booklets A & B: 1 h 45 min

Marks for Booklet B: _____

Booklet B (44 marks)

Write your answers to questions 29 to 41 in the spaces given.

29. The diagram below shows the characteristics of five different animals represented by A, B, C, D and E.



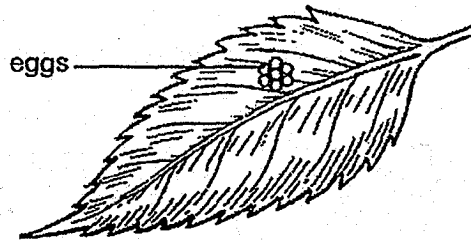
Using the information given, answer the following questions.

- a) State a difference between Animals A and C. [1]

- b) Which group of animals does E belong to? [1]



30. The diagram below shows some butterfly eggs on a leaf.



- a) Amin observed that an adult butterfly lays its eggs only on certain plants. [1]
Explain why.

The diagrams below show the larva of a butterfly feeding on Plant X while the adult of the butterfly feeding on Plant Y.



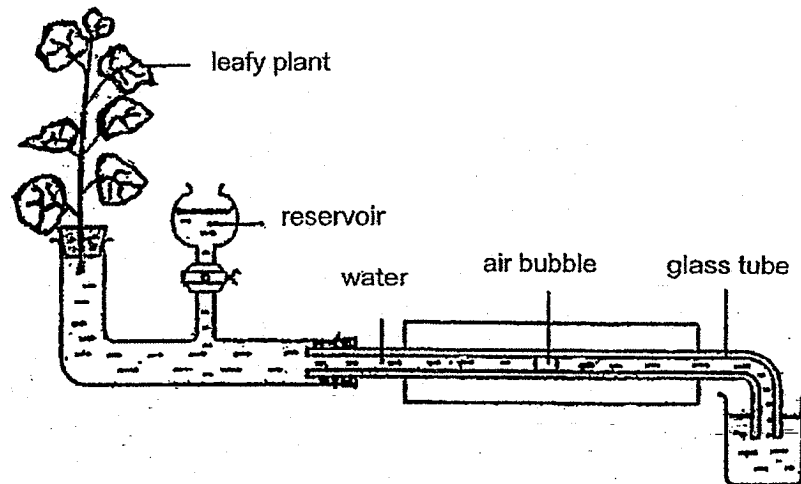
Plant X



Plant Y

- The larva and the adult butterfly feed on different plants. [1]
b) Give a reason for this behaviour.

31. The set-up below measures the amount of water taken in by a leafy plant under different conditions.



The time taken for the air bubble to move 50 mm under the different conditions are shown in the table below.

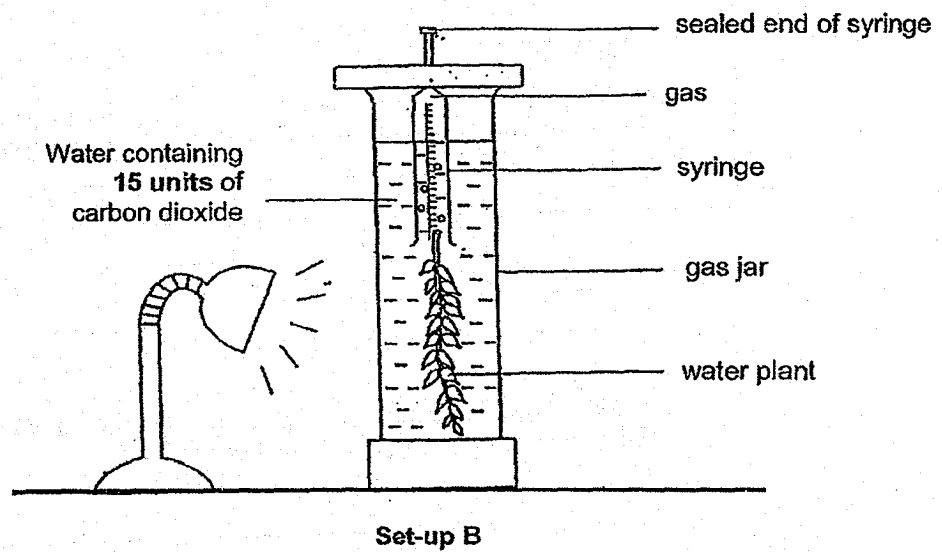
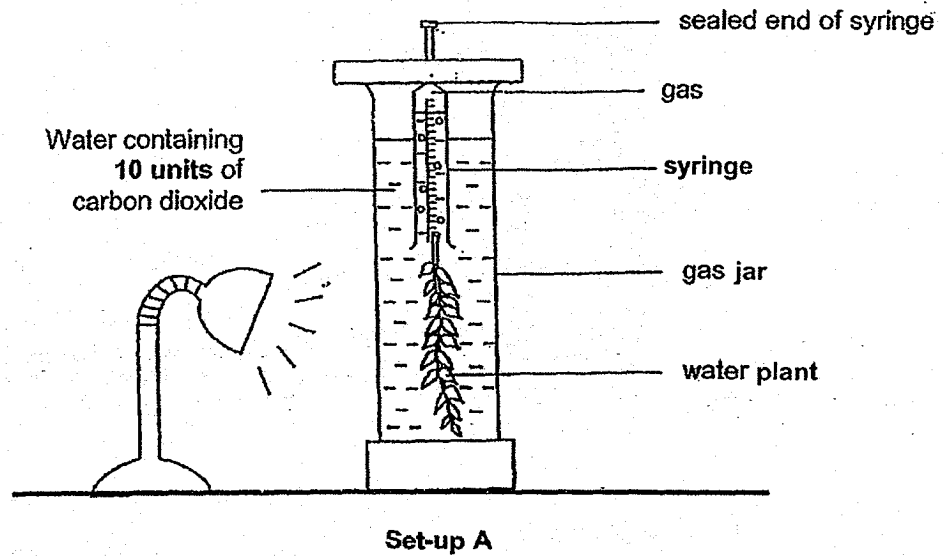
Conditions						Time taken for the air bubble to move 50 mm (min)
warm	cool	moving air	still air	in sunlight	at night	
✓		✓		✓		2
✓			✓	✓		7
	✓	✓		✓		5
	✓		✓	✓		10
	✓		✓		✓	50

- a) Based on the table, other than light, state another condition which affects how quickly water moves through the leafy plant. [1]

- b) Will the air bubble move to the right (→) or left (←)? [1]

Explain your answer.

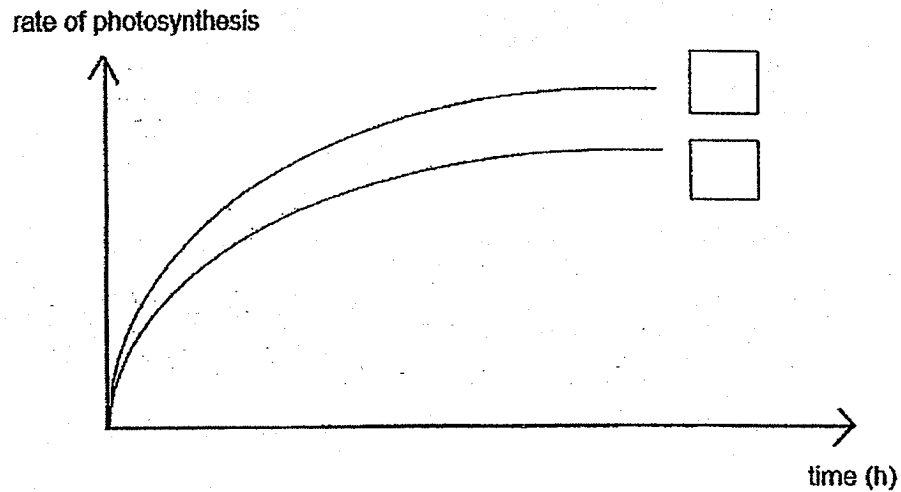
32. Janet set up the experiment as shown below. Both set-ups were placed at the same location.



Question 32 continues on the next page

Question 32 continues

The graph below shows the result of her experiment.

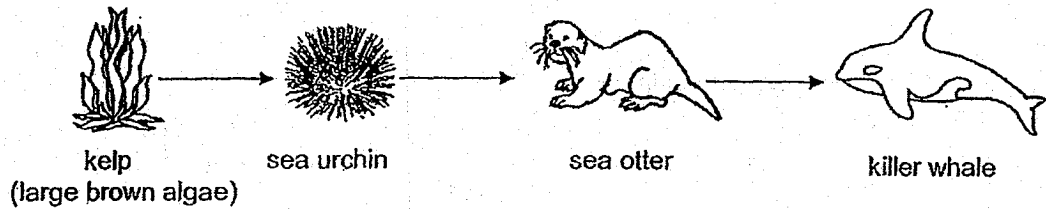


a) Label the line graphs, A and B, in the correct boxes. [1]

b) State the dependent variable that is to be measured in this experiment. [1]

c) Suggest a control set-up that Janet should have. [1]

33. Study the food chain shown below.

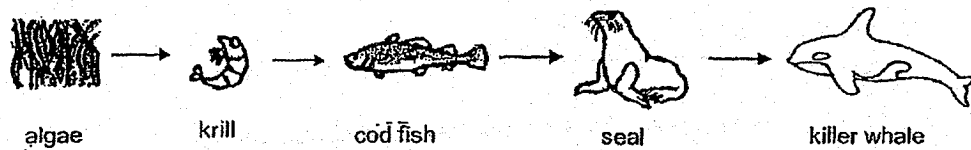


Food chain 1

Changes in the population of sea otters may affect other organisms in food chain 1.

- a) Explain how a decrease in the population of sea otters affect the populations of sea urchins and the kelp. [2]

The killer whale is also a predator in food chain 2 shown below.



Food chain 2

- b) Using the food chains 1 and 2 given, explain how over-fishing of cod fish leads to the change in the population of sea otters. [2]

Question 33 continues on the next page

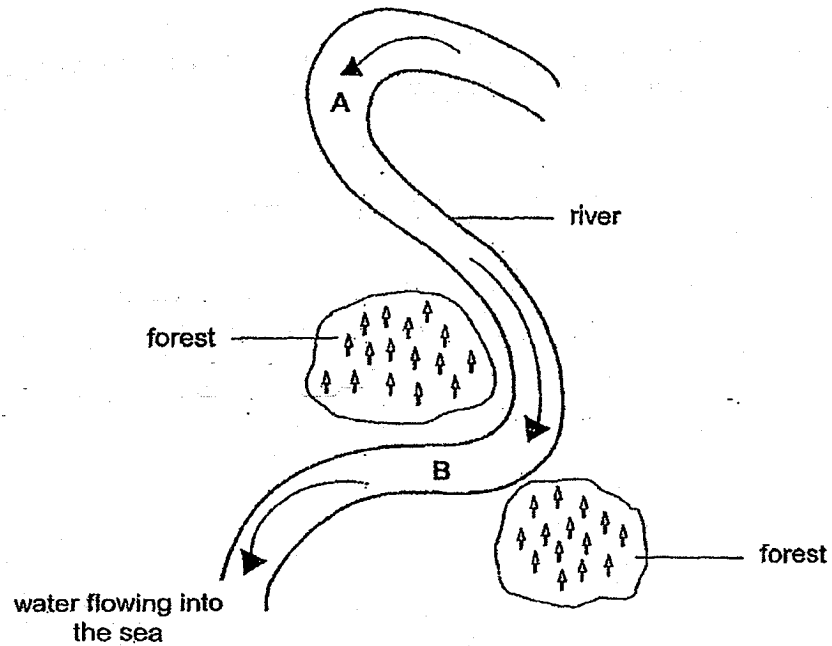
Question 33 continues

Kelp are large brown algae that grow in the ocean, providing food and shelter for several marine organisms.

- c) Based on food chain 1, explain how the sea otters are important to the survival of several marine organisms. [1]



34. The diagram below shows a forest on each side of a river.

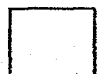


All the trees in both forests were chopped down.

- a) Will the water at part B of the river **turn muddy** or **remain the same** as that at part A of the river? [1]

- b) Give a reason for your answer in (a). [1]

Question 34 continues on the next page

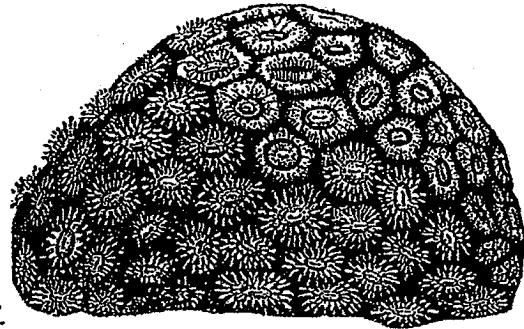


Question 34 continues

The water in the river then flows into the sea which is the habitat of tiny marine animals known as corals.

Read the short article on corals.

Corals have algae living in them. Both corals and algae depend on each other for survival. Algae give corals their colour. Under unfavourable conditions, like increased sea temperature and pollution the algae are expelled from the corals, leaving the corals looking very pale and vulnerable to diseases. This condition is called 'coral bleaching'.



- c) Using the two conditions given in the article, explain how deforestation can cause coral bleaching. [2]

(i) Condition 1:

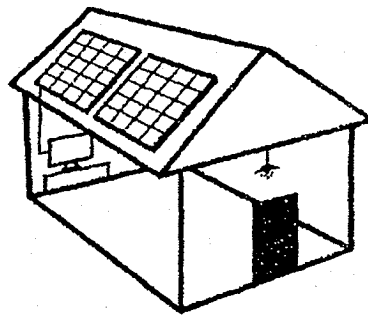
Explanation:

(ii) Condition 2 :

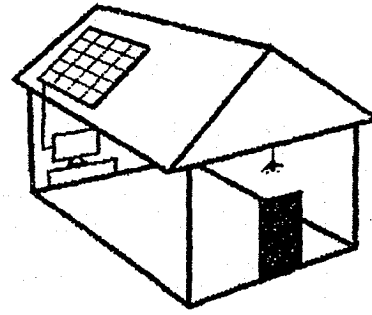
Explanation:



35. Two similar houses, A and B, are fixed with similar solar panels as shown below.



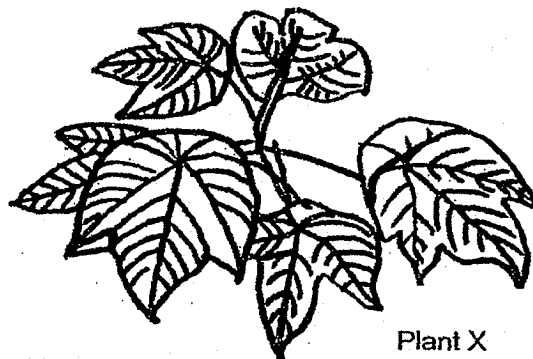
House A
(with two solar panels)



House B
(with one solar panel)

- a) Which house, A or B, will have more electricity produced by the solar panel? [1]
Give a reason for your answer.

The diagram below shows plant X which grows near the rainforest floor.



Plant X has large, broad leaves.

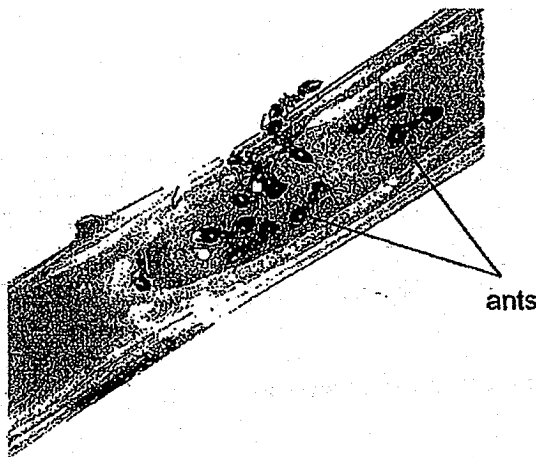
- b) Give a reason why the leaves of plant X are large and broad. [2]



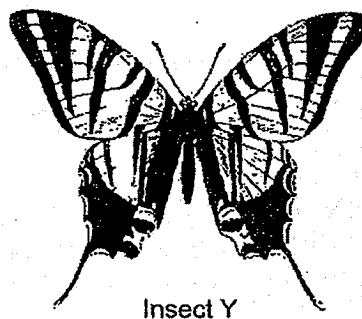
Question 35 continues

Some of the stems of plant X are hollow and ants are found living in them as shown in the diagram below.

Plant X produces white starchy substances which are food for the ants.

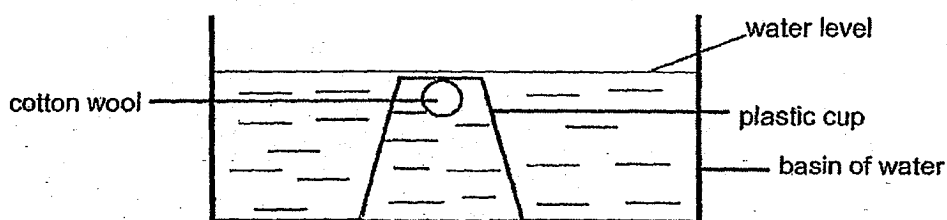


The leaves of plant X is a source of food for the larva of insect Y shown below.



- c) Besides having large broad leaves, explain how the presence of the ants may ensure that plant X grows healthily. [2]

36. Julia attached a piece of dry cotton wool inside a clear plastic cup. She inverted the plastic cup and pushed it vertically into a basin of water. She observed that bubbles were leaving the cup as water entered the cup. The piece of cotton wool was also wet.

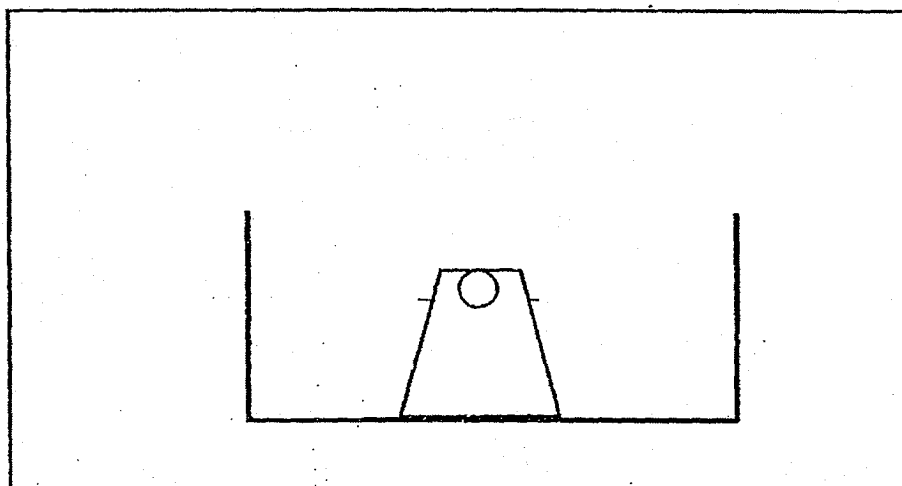


Julia was puzzled as she had learnt that the piece of cotton wool should remain dry.

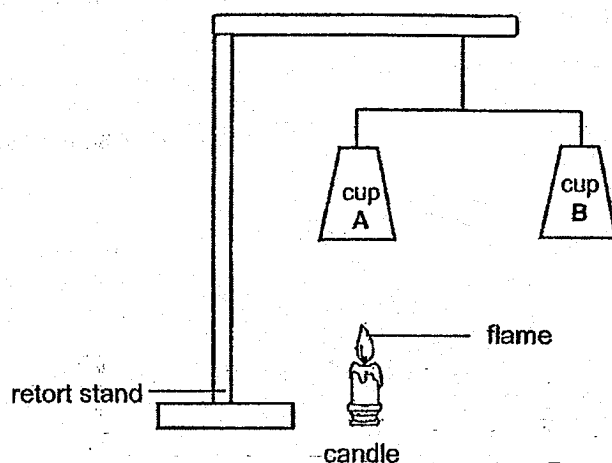
- a) Why do you think the cotton wool was wet? Give a reason for your answer. [2]

- b) Julia bought a new plastic cup and some dry cotton wool to repeat the experiment.

Draw the water level in the cup and the basin to show how the set-up should be so that the cotton wool would remain dry. [1]



37. Serene set up an experiment with two similar cups, A and B, as shown below.



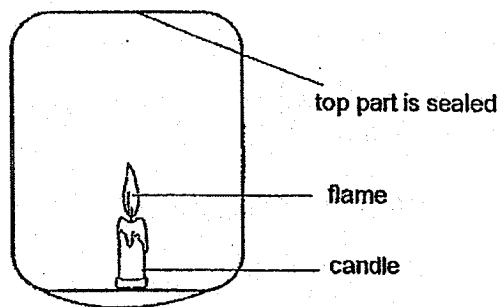
She observed that cup A moved upwards after some time.

a) Give a reason for her observation.

[1]

b) Next, Serene made a flying lantern using a lightweight plastic bag.

The diagram below shows the lantern that Serene had made.

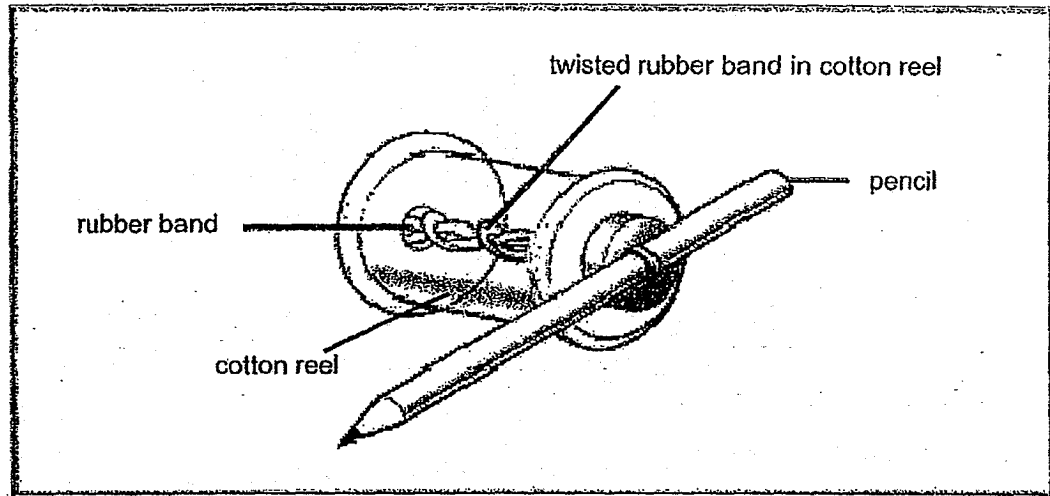


Lantern

The lantern is powered by the candle flame and is able to float in the air till the candle flame dies out. [2]

Explain, in terms of energy conversion, how the lantern is able to float in the air for a while.

38. Tim made a toy shown in the diagram below. The pencil was wound 3 rounds so that the rubber band became twisted in the cotton reel. When he released the pencil, the cotton reel spun forward.



- a) Name the source of energy for the toy to move. [1]

- b) Explain why the toy came to a stop after a while. [1]

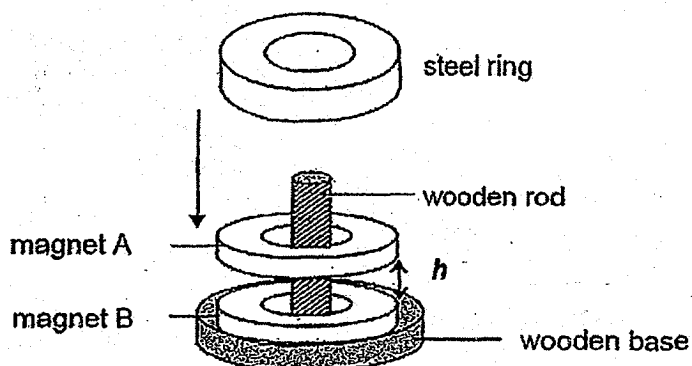
- c) Without changing any parts of the toy, suggest what Tim can do to make the toy move further. [2]

Give a reason for your suggestion.



39. Nathan placed two identical ring magnets, A and B, through a wooden rod as shown in the diagram below.

He observed that the two magnets were at a distance, h , from each other. He then put the steel ring on top of magnet A.



- a) State the forces acting on magnet A in the set-up above. [1]

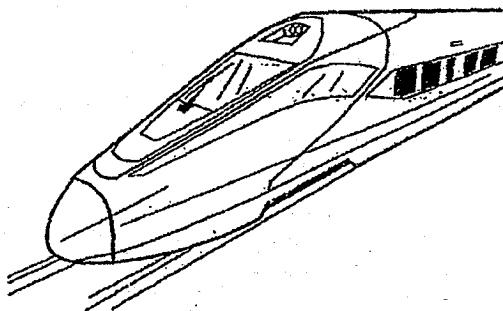
- b) What happened to distance h when the steel ring was placed on top of magnet A? [1]

Question 39 continues on the next page



Question 39 continues

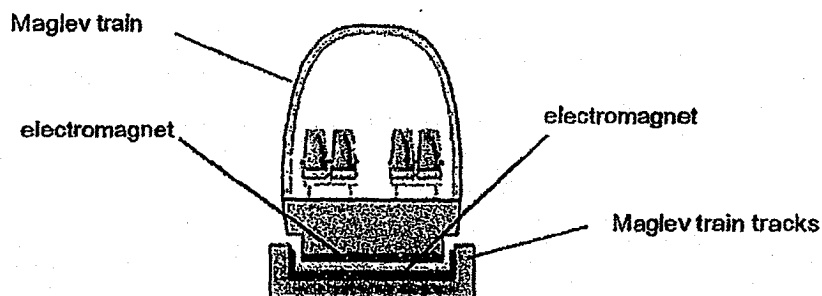
The Maglev train, shown in the diagram below, is the fastest train in the world and can travel at a speed of 500 km/h.



Instead of running on wheels, the Maglev train works on the magnetic force.

Strong electromagnets can be found at the bottom of the Maglev train and on the train tracks.

These strong electromagnets help the Maglev train levitate, or "float", above the train tracks as shown in the diagram below.

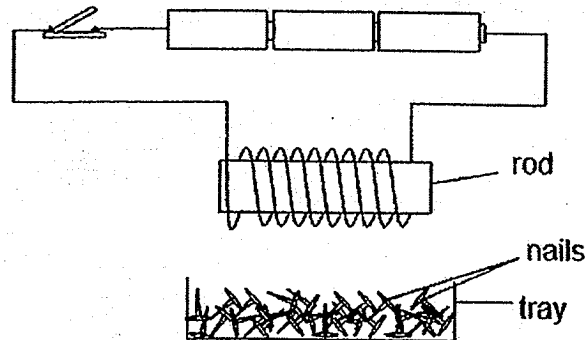


- c) Explain how the electromagnets help the Maglev train to "float" above the train tracks. [1]

- d) Give a reason why Maglev trains can travel faster than normal trains with wheels. [1]



40. Martin had four rods, P, Q, R and S, each made of different materials. He wanted to investigate the magnetic strength of each rod using the following set-up.



When the switch was opened, the number of iron nails in the tray was 50. When the switch was closed, the rod attracted some iron nails. The number of iron nails left in the tray was recorded in the table below.

Rod	Number of iron nails left in the tray
P	42
Q	35
R	21
S	28

- a) Based on the results given, which rod was the strongest electromagnet when the switch was closed? Explain your answer. [1]

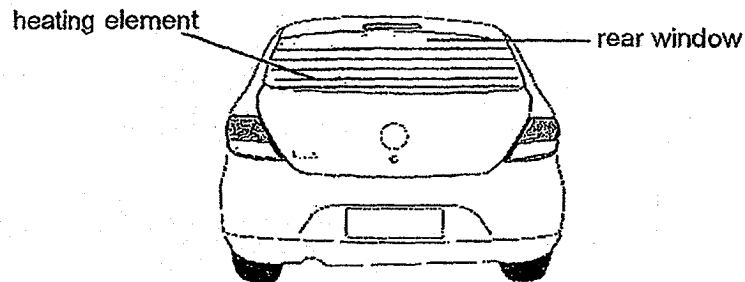
- b) Predict the number of iron nails left in the tray when one more battery was added to the circuit for Rod R. [1]

- c) When Martin used another rod, rod Z, he observed that the number of iron nails left in the tray was 50. [1]

Based on this observation, what can be inferred about the property of rod Z?

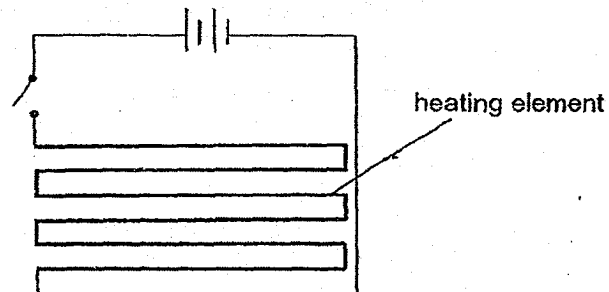
41. On cold mornings, the rear window of a car usually fogs up and the driver will switch on the heating element to clear the rear window before driving off.

The heating element helps to clear the rear window of the car of water droplets.



- a) Explain why the rear window of the car fogs up on cold mornings. [2]

The diagram below shows one way of connecting the circuit of the heating element.



- b) How does switching on the heating element help to clear the rear window of the car? [2]

End of Booklet B



EXAM PAPER 2018(P6)

SCHOOL : HENRY PARK

SUBJECT : SCIENCE

TERM : SA2

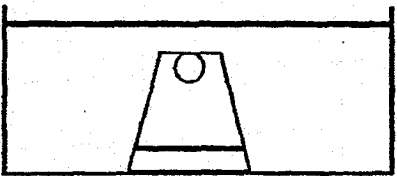
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	1	2	1	2	1	4	4	1
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	2	3	4	3	2	4	2	4	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
2	4	2	1	3	2	4	3		

21
22
23

Correction sheet for 2018 Science Prelim

Qn	Suggested answer.	Student's correction
29a	Animal C lays eggs but Animal A does not.	
29b	Fish	
30a	The larva eats only certain plants or leaves.	
30b	It is to reduce competition for food between the young and the adult.	
31a	Presence of wind / warmth	
31b	Left. Water is taken in by the plant. The water in the glass tube moves together with the air bubble to occupy the space.	
32a	B, A	
32b	Number of bubbles produced per minute.	
32c	A similar set-up but with water that has no carbon dioxide.	
33a	There will be an increase in the population of sea urchin because there are fewer sea otters to prey on them. The population of kelp will decrease because there are more sea urchins to eat them.	
33b	The population of sea otters will decrease. There will be a decrease in the population of seals as they have less cod fish to eat. The killer whales will eat more sea otters as they will have fewer seals to eat.	

33c	The sea otters eat and control the population of the sea urchins which feed on the kelp. Thus there is enough kelp to provide food and shelter for the marine organisms.	
34a	It will turn muddy.	
34b	When the trees are chopped down, there are no roots to hold the soil together and the soil will be washed into the river.	
34c	Condition: Increased sea temperature Explanation: Deforestation causes more carbon dioxide which traps more heat from the sun, leading to global warming. Condition: Pollution Explanation: Deforestation causes soil erosion which pollutes the water.	
35a	House A. It has more solar panels, increasing the surface area exposed to the sun, thus trapping more energy for storage and use.	
35b	The forest floor receives little light. The large and broad leaves give a bigger surface area to trap more light for photosynthesis.	
35c	The ants prevent the leaves of X from being eaten by the larva of Y by attacking it. Thus there are more leaves for plant X to photosynthesise.	

36a	There could be a hole in the cup. Air in the cup can escape through the hole and water enters to occupy the space.	
36b		
37a	The air between the cup and the flame gains heat and expands and then rises, pushing the cup upwards.	
37b	Potential energy in the wax is converted to heat energy in the flame, to heat energy in the hot surrounding air and kinetic energy in the rising air.	
38a	Twisted rubber band	
38b	All the elastic potential energy has been converted to kinetic energy, sound energy and heat energy.	
38c	Twist the rubber band more times. There is more potential energy to be converted to more kinetic energy.	
39a	Gravitational force (or gravity) and magnetic force of repulsion	
39b	It decreased.	
39c	The like poles of the magnets are facing each other and repelling.	
39d	Maglev trains have no / less friction between the train and the tracks than normal trains as there are no wheels in contact with the tracks.	

40a	Rod R. There are the least number of nails in the tray because R attracted the most number of nails.	
40b	(Any number less than 21)	
40c	Rod Z is a non-magnetic material.	
41a	The water vapour in the air comes into contact with the cooler surface of the rear window, loses heat quickly and condenses into tiny water droplets.	
41b	The heating element becomes warmer and the water droplets evaporate fast / faster.	