



RED SWASTIKA SCHOOL

2018 CONTINUAL ASSESSMENT 1 SCIENCE PRIMARY 6

Name : _____ ().

Class : Primary 6/ _____

Date :

BOOKLET A

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

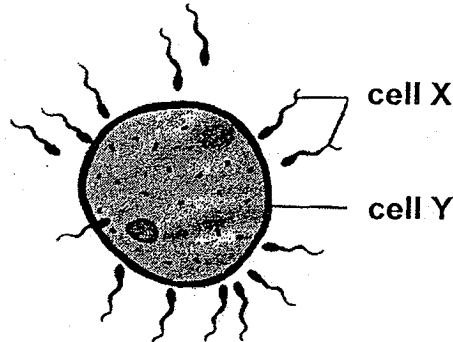
1. Priya made a study of three animals. She placed a tick (✓) in the box when she made the observation. At the end of her study, she completed the table below.

Observation	Animal A	Animal B	Animal C
Young looks like the adult	✓		✓
Lays eggs	✓	✓	✓
4 stages in the life cycle		✓	

Which of the following best represents animals A, B and C?

	Animal A	Animal B	Animal C
(1)	chicken	beetle	mosquito
(2)	butterfly	chicken	grasshopper
(3)	cockroach	mosquito	chicken
(4)	grasshopper	butterfly	beetle

2. The diagram shows the human fertilisation process.

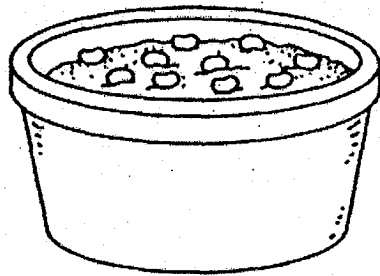


Which of the following statements are true about the diagram?

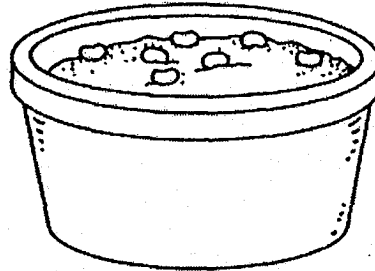
- A: X are male reproductive cells.
- B: Y is a female reproductive cell.
- C: Only one cell X can fertilise cell Y.
- D: All cell X will enter cell Y and fertilise it.

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

3. Sue Ming prepared the following experiment to find out if the number of seeds affect the growth of the seeds. She used the same type of seeds for the experiment.



Pot A
50ml of water
added daily



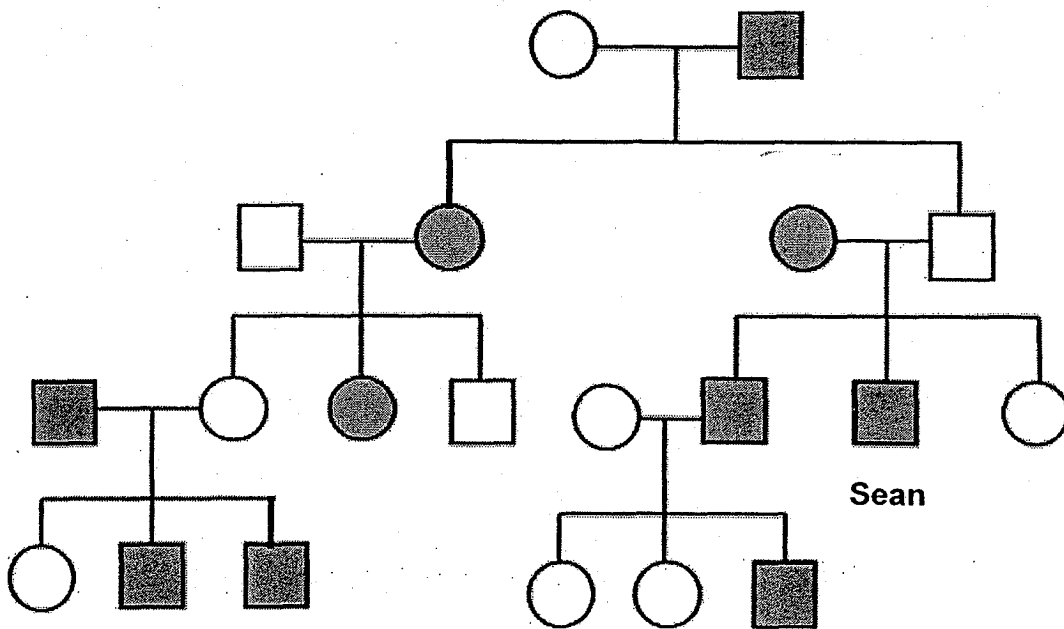
Pot B
100ml of water
added daily

Which of the following statements explain why her experiment was not fair?

- A: The pots had different number of seeds.
- B: The sizes of the pots were the same.
- C: More water was added to pot B than pot A.

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

4. The diagram shows the members of Sean's family who carry the genetic trait for single eyelid.



Legend:



Male with double eyelid



Female with double eyelid



Male with single eyelid



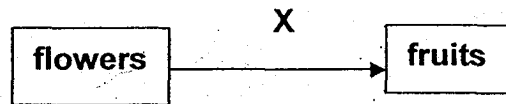
Female with single eyelid

Based on the diagram, which of the following statements is/are true?

- A : A female with single eyelid can have a child who does not have single eyelid.
 B : The fathers of all males with single eyelid also have single eyelid.
 C : Sean's aunt has single eyelid.

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

5. Study the diagram below.

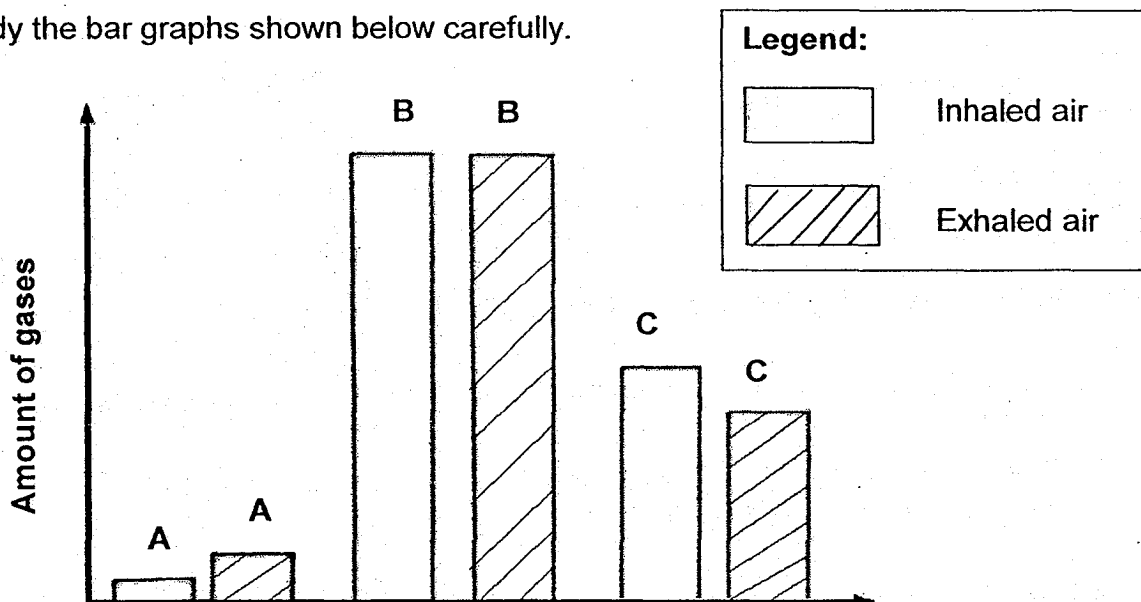


Which two processes occur at X?

- A: Dispersal
- B: Germination
- C: Pollination
- D: Fertilisation

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

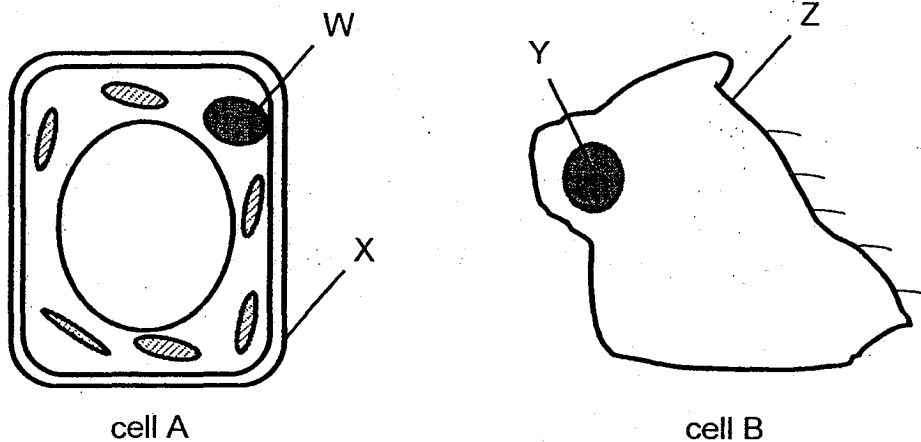
6. Study the bar graphs shown below carefully.



Which one of the following shows the correct gases for A, B and C?

	A	B	C
(1)	oxygen	nitrogen	carbon dioxide
(2)	carbon dioxide	oxygen	nitrogen
(3)	nitrogen	oxygen	carbon dioxide
(4)	carbon dioxide	nitrogen	oxygen

7. Jane studied cell A and cell B under a microscope as shown below.



Her friends made the following statement(s):

Ben: Part W contains chlorophyll for the cell to make food.

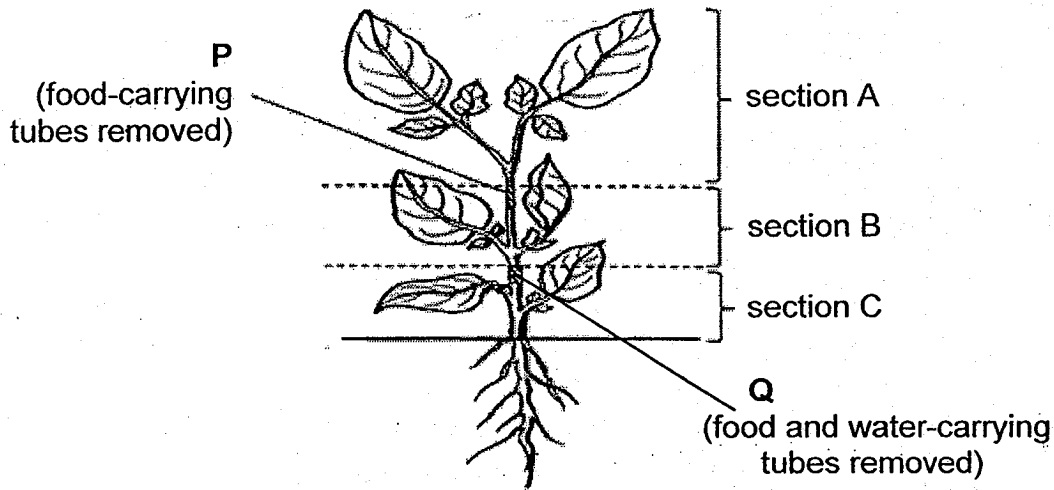
Cindy: Part Y controls all the activities that take place in the cell.

Dora: Part X has the same function as part Z.

Who made the wrong statement?

- (1) Cindy only
- (2) Cindy and Dora only
- (3) Ben and Cindy only
- (4) Ben and Dora only

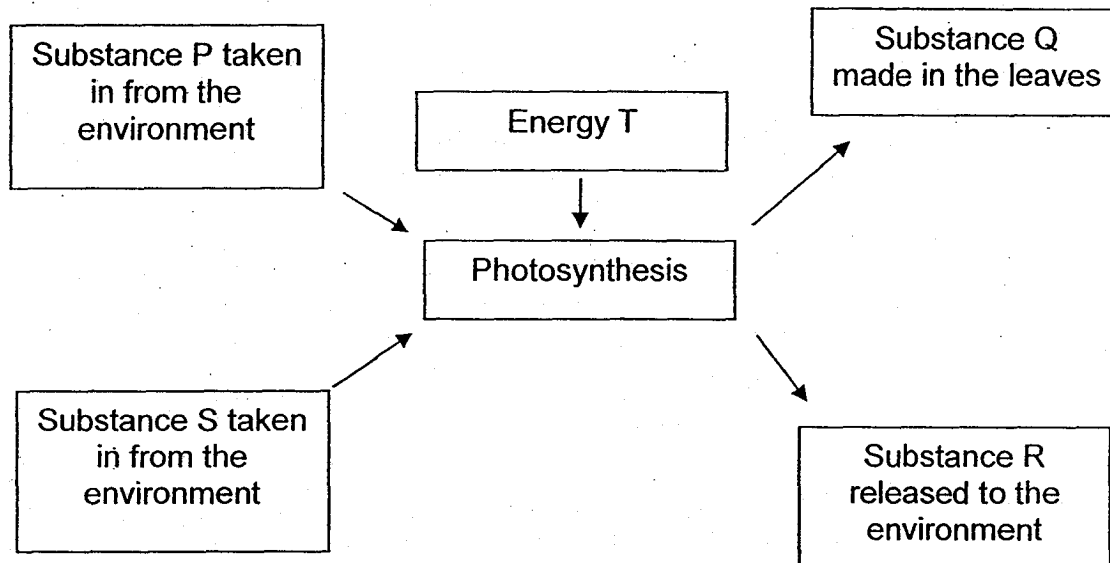
8. The diagram below shows a plant that has been cut at P and Q. At P, a cut was made to remove the food-carrying tubes. At Q, a cut was made to remove the food and water-carrying tubes.



Which section(s) of the plant will still be able to carry out photosynthesis after a week?

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

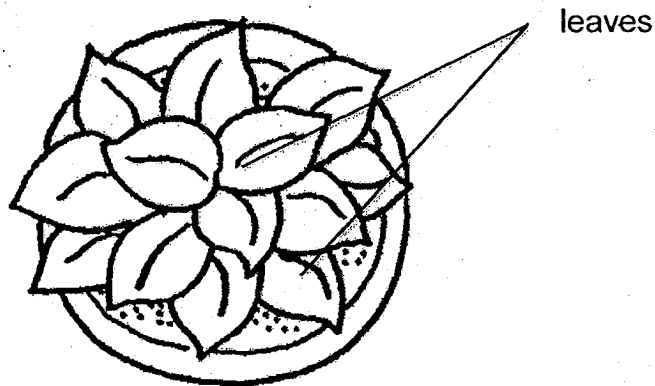
9. The diagram represents the process of photosynthesis that takes place in green plants.



Which one of the following correctly identifies P, Q, R, S and T?

	Substance				Energy T
	P	Q	R	S	
(1)	carbon dioxide	water	oxygen	food	light
(2)	oxygen	food	carbon dioxide	water	heat
(3)	carbon dioxide	food	oxygen	water	light
(4)	oxygen	water	food	carbon dioxide	heat

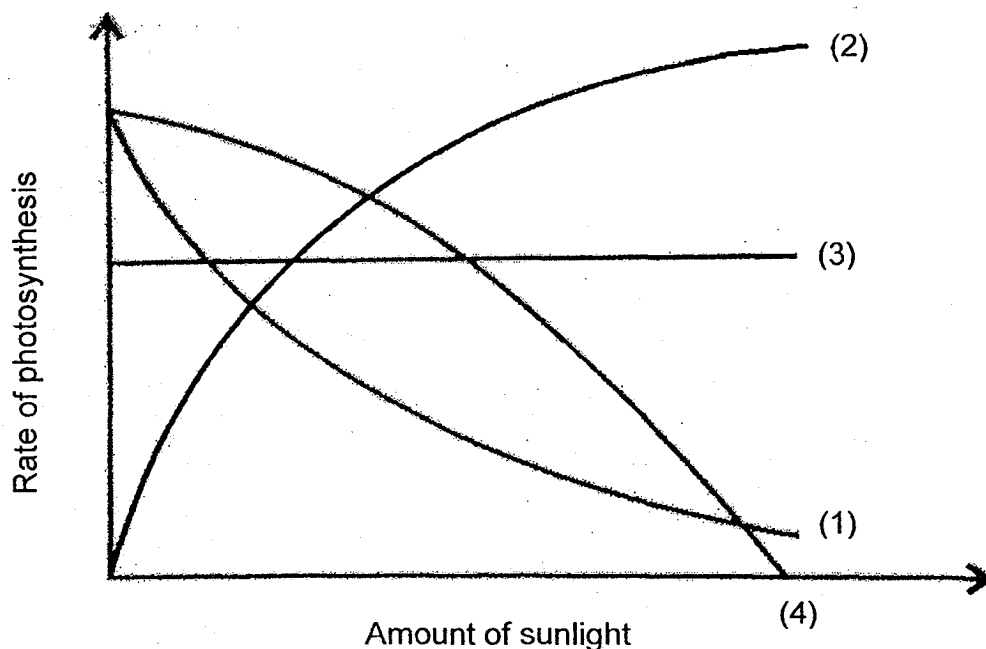
10. Observe the leaves of the plant shown below.



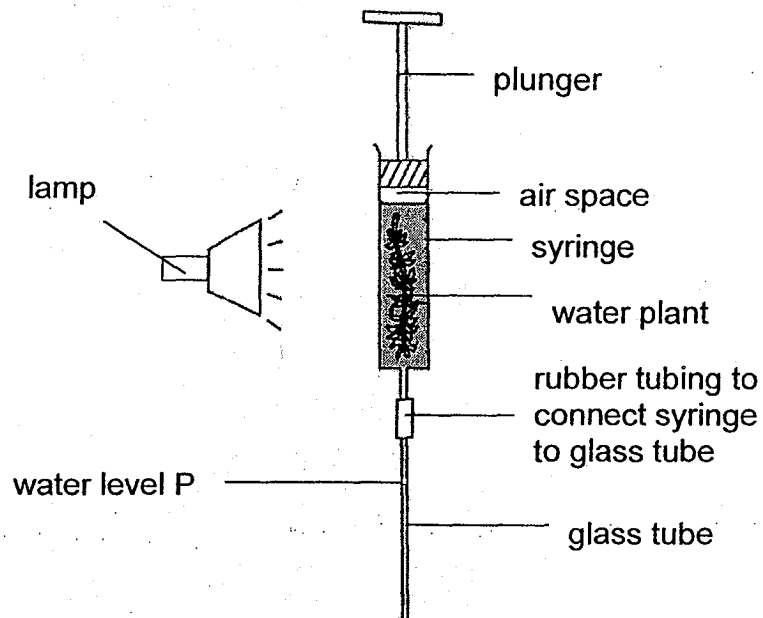
The leaves spread out and grow in a manner where overlapping is minimised. Which of the following is the importance of this feature?

- (1) It allows the plant to store more food in the leaves.
- (2) It increases the amount of water taken in by the plant.
- (3) It allows the plant to capture more sunlight for making food.
- (4) It decreases the rate of evaporation of water through the stomata.

11. Dave conducted an experiment to find out how the amount of sunlight affects the rate of photosynthesis in a plant. Which of the following correctly shows the results of his experiment if he had carried out a fair test?



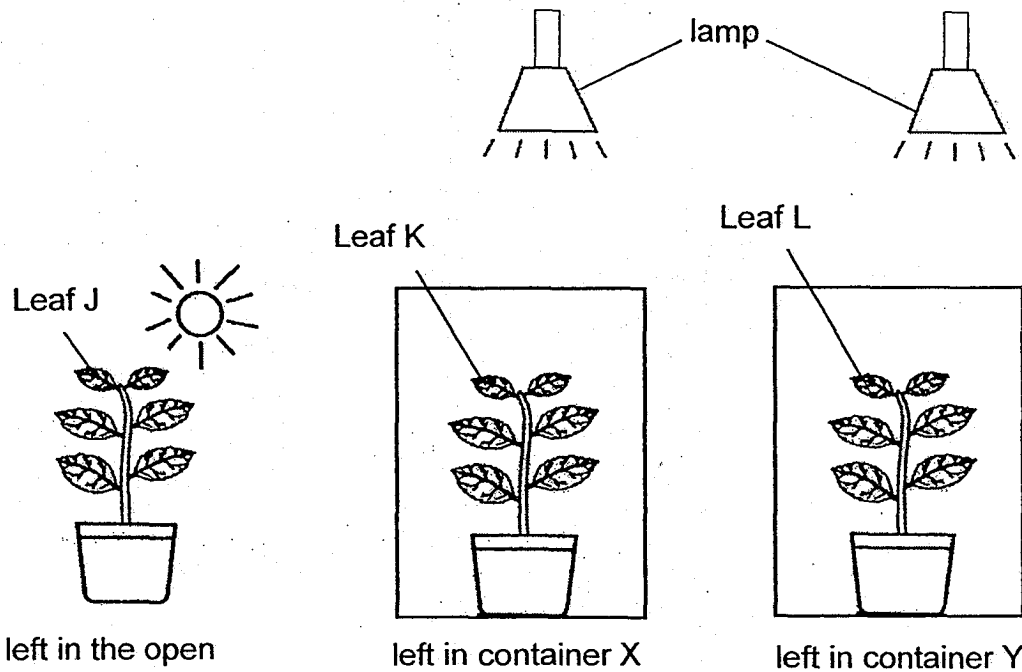
12. Chye Ming conducted an experiment with the set-up below. He switched on the lamp and observed that the water level P in the glass tube moved after some time. The plunger remained at the same place.



In which direction did the water level P move and what was the reason for the movement?

	Direction in which water level P moved	Reason
(1)	up	Carbon dioxide collected in the air space.
(2)	down	Oxygen gas collected in the air space.
(3)	up	Heat from the lamp caused water to expand.
(4)	down	Plant gave out water during photosynthesis.

13. Mike conducted the following experiment with three identical green plants that were provided with enough water.



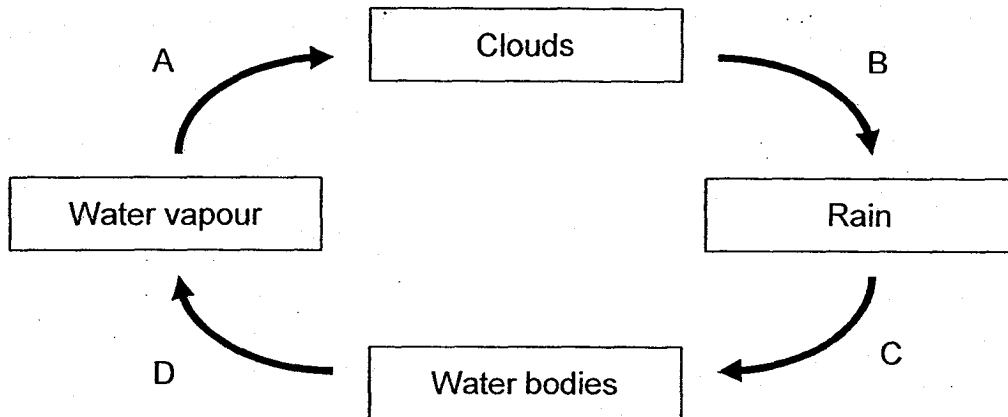
After three days, a leaf was plucked from each plant and tested for starch. The results are shown in the table below.

Leaf	Starch test result
J	Iodine solution turned dark blue
K	Iodine solution remained yellowish-brown
L	Iodine solution turned dark blue

What can you infer from the above experiment?

- (1) Leaf J produces oxygen in the dark.
- (2) Container X and Y allows light to pass through.
- (3) Leaf J carries out photosynthesis but Leaf K and Leaf L do not.
- (4) Container Y allows light to pass through but container X does not.

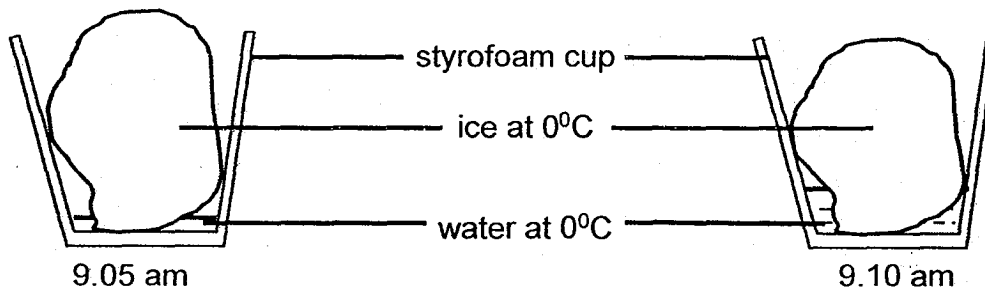
14. The diagram below shows a water cycle.



Which of the following correctly identifies the stages at which most amount of evaporation and condensation take place?

	Evaporation	Condensation
(1)	A	B
(2)	A	D
(3)	D	A
(4)	D	C

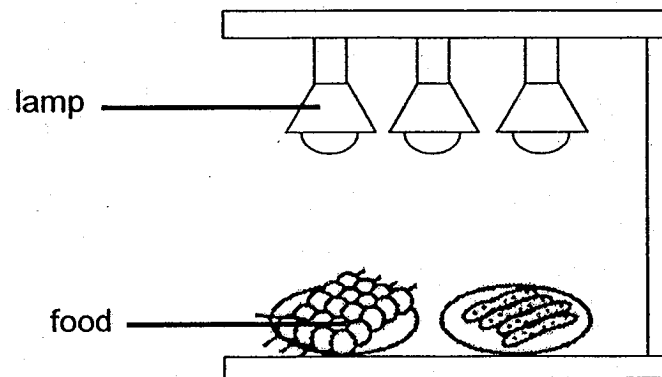
15. Tim left a block of ice in a dry styrofoam cup in the kitchen at 9 am. He observed that there was more water in the cup at 9.10 am as compared to 9.05 am.



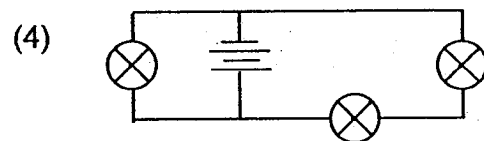
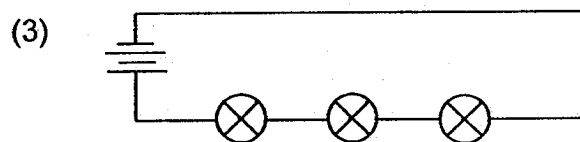
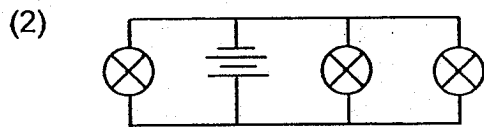
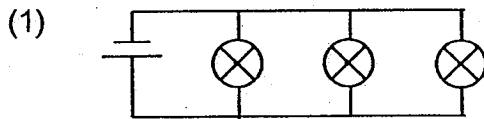
Which of the following statements was correct at 9.10 am?

- (1) The ice would stop melting as it remained at 0°C .
- (2) The ice would melt as it lost heat to the kitchen.
- (3) The ice would stop melting as it gained heat from the water.
- (4) The ice would melt as it gained heat from the kitchen.

16. The diagram below shows a set-up that uses three identical lamps to keep the food warm in a street stall. When the lamps are brighter, they give out more heat.



In which of the following arrangement of circuits will the lamps give out the most heat?



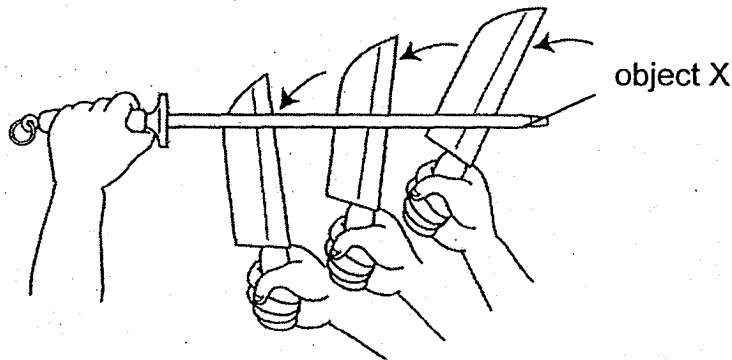
17. Which of the following forces can act on an object from a distance?

A: Elastic spring force
C: Gravitational force

B: Frictional force
D: Magnetic force

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

18. The diagram shows how a knife can be sharpened by moving the knife against object X repeatedly.

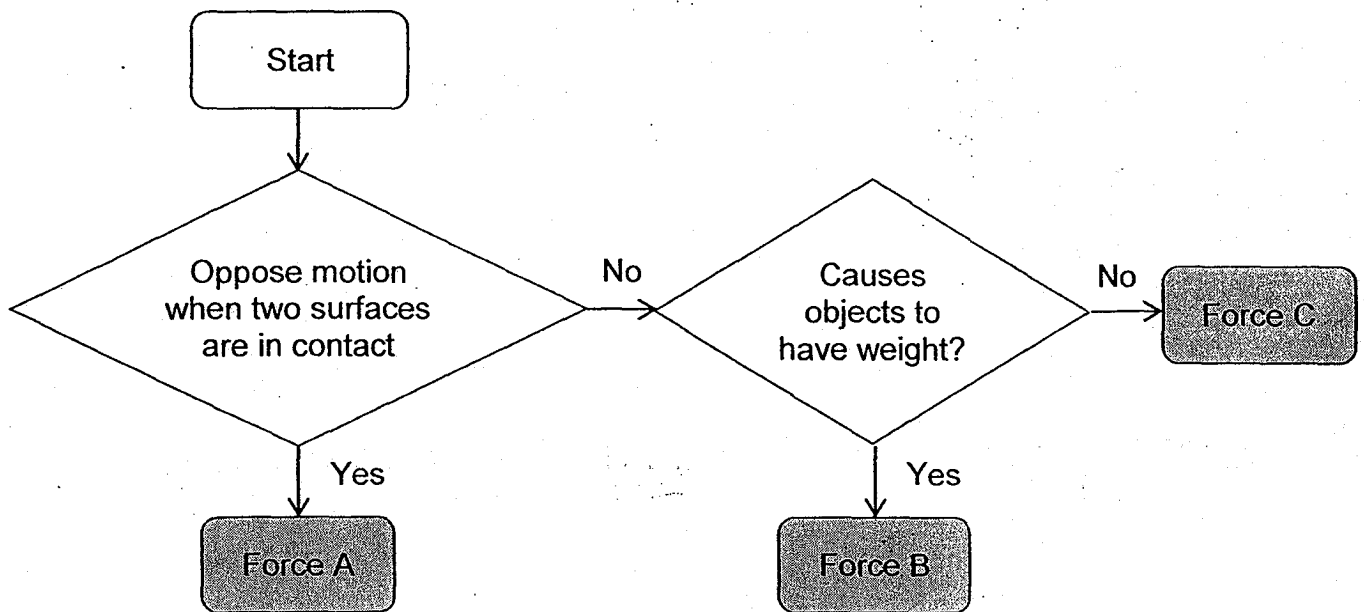


Which of the following statements are true?

A: Object X and the knife must be magnetised.
B: Friction prevents the knife from slipping out of the hand.
C: Friction causes the surfaces in contact between the knife and object X to wear off.

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

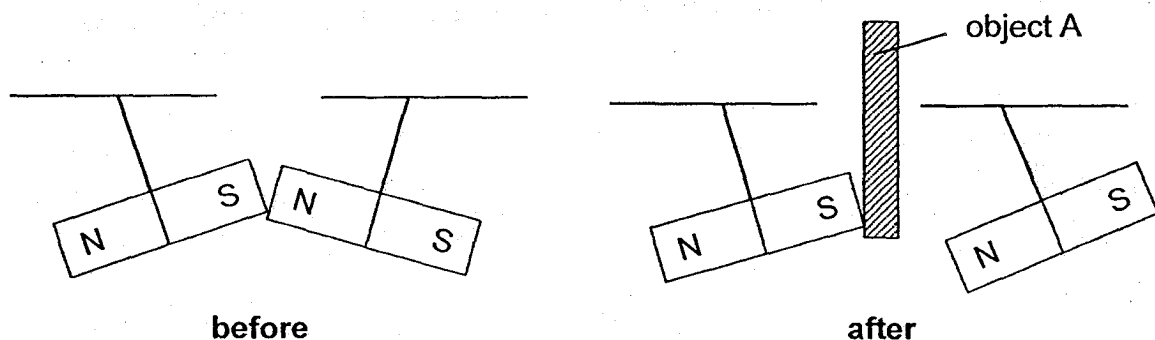
19. Study the flow chart below.



Based on the flow chart, identify the forces, A, B and C.

	Force A	Force B	Force C
(1)	Elastic spring force	Magnetic force	Gravitational force
(2)	Frictional force	Gravitational force	Magnetic force
(3)	Gravitational force	Frictional force	Magnetic force
(4)	Frictional force	Elastic spring force	Gravitational force

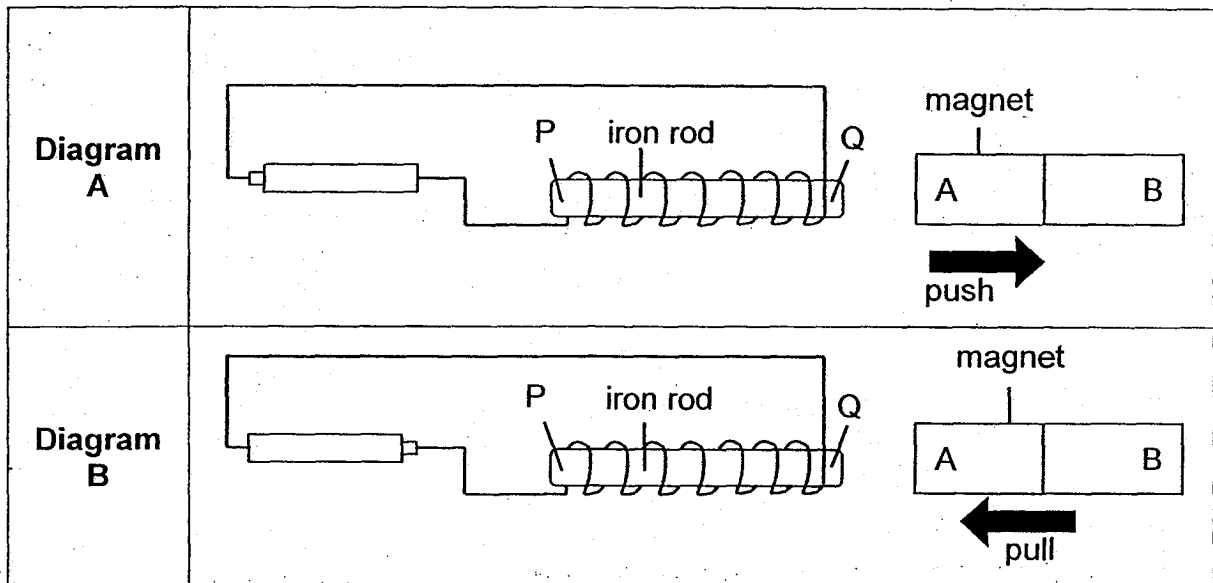
20. Two bar magnets attract each other when they are placed side by side. When they are separated by object A, the result is shown below.



Which of the following statements is definitely correct?

- (1) Object A is a magnet.
- (2) Object A is not a magnet.
- (3) One of the magnets has lost its magnetism.
- (4) The attraction of one of the magnets is greater than the other.

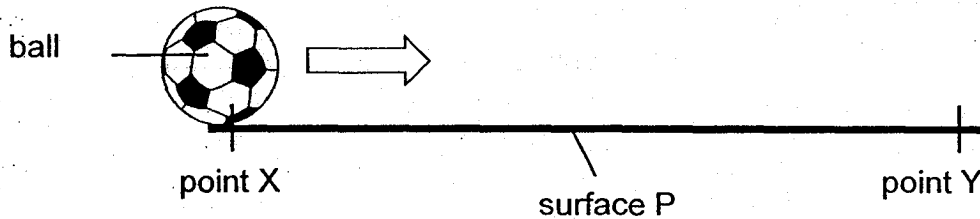
21. Adam set up two experiments as shown. The results he observed were also shown in the diagrams.



Based on the diagrams, what is the aim of his experiment?

- (1) To find out how the direction of iron rod affects the poles of the electromagnet.
- (2) To find out how the material of the rod affects the strength of the electromagnet.
- (3) To find out how the number of coils of wire around the iron rod affects the strength of the electromagnet.
- (4) To find out how the direction of the batteries affects the poles of the electromagnet.

22. Johnny conducted an experiment by pushing a ball from point X to point Y on surface P as shown below.



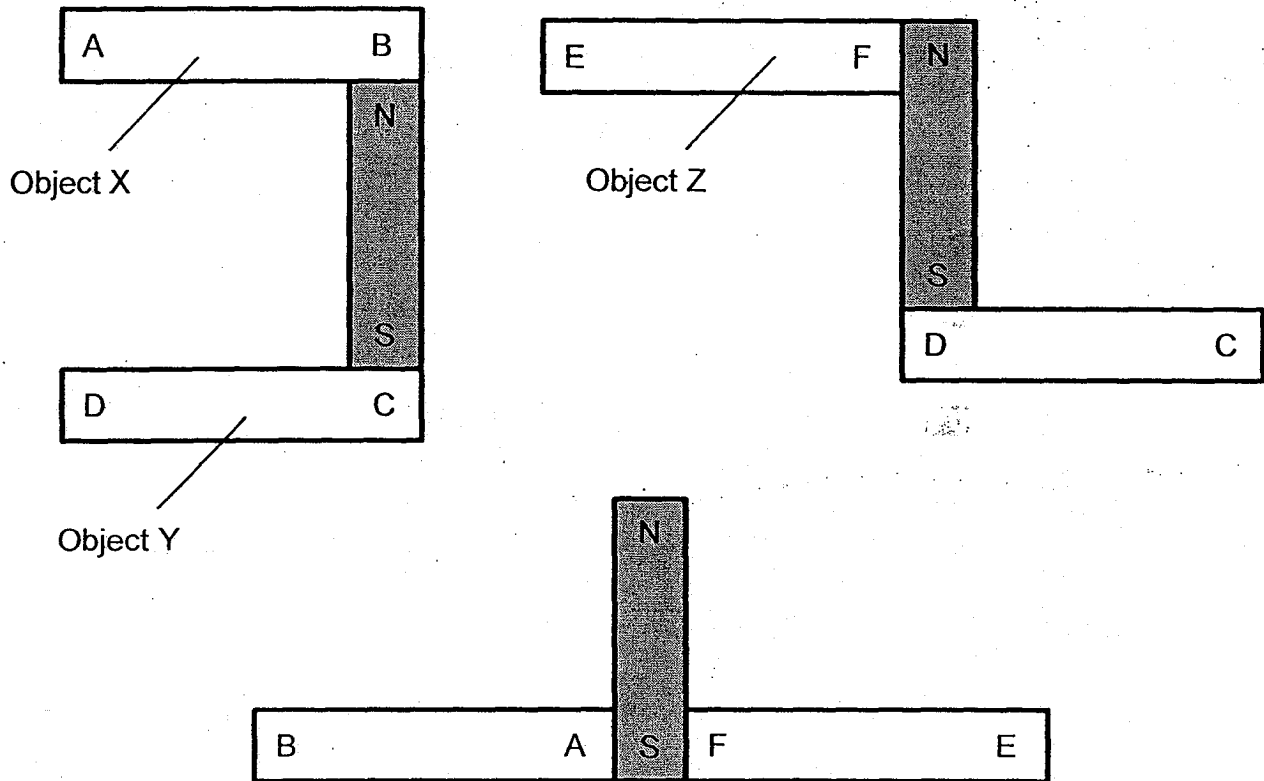
He repeated the experiment with two other surfaces, Q and R. He recorded the time taken for the ball to reach point Y as shown in the table below.

Surface	Time taken (s)
P	10
Q	20
R	15

If an equal amount of force was used to push the ball for each of the surfaces, which of the following statements is/are correct?

- A: Surface Q is the roughest.
 B: The gravitational force is the least for surface Q.
 C: The frictional force between the ball and surface P is the greatest among the three surfaces.
- (1) A only
 (2) C only
 (3) A and B only
 (4) B and C only

23. Mr Chen has three unknown objects, X, Y and Z. He proceeded to mark their respective ends with the letters A to F. All three unknown objects are made of magnetic material but only one is magnetised. He proceeded to test and record their interactions with a bar magnet as shown in the diagrams below.



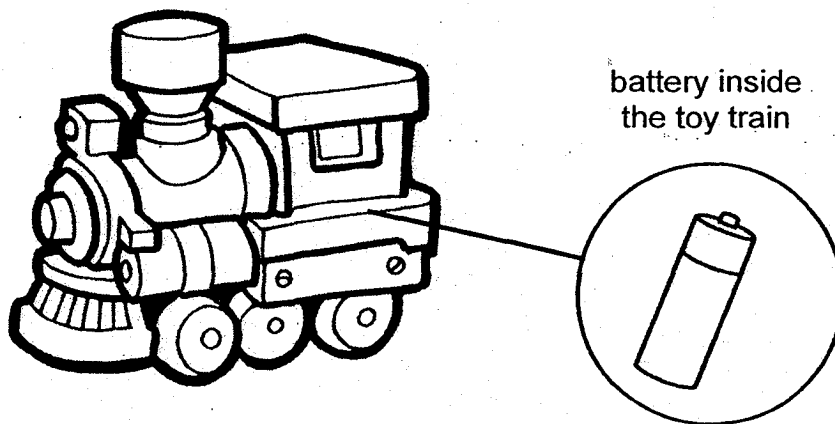
Which of the following correctly identifies the magnetised object and its North pole?

	Magnetised unknown object	North pole
(1)	Object Z	F
(2)	Object Y	C
(3)	Object Y	D
(4)	Object X	A

24. What is the energy conversion that takes place during photosynthesis?

- (1) heat energy $\rightarrow$ chemical potential energy
- (2) light energy $\rightarrow$ chemical potential energy
- (3) chemical potential energy $\rightarrow$ heat energy
- (4) chemical potential energy $\rightarrow$ light energy

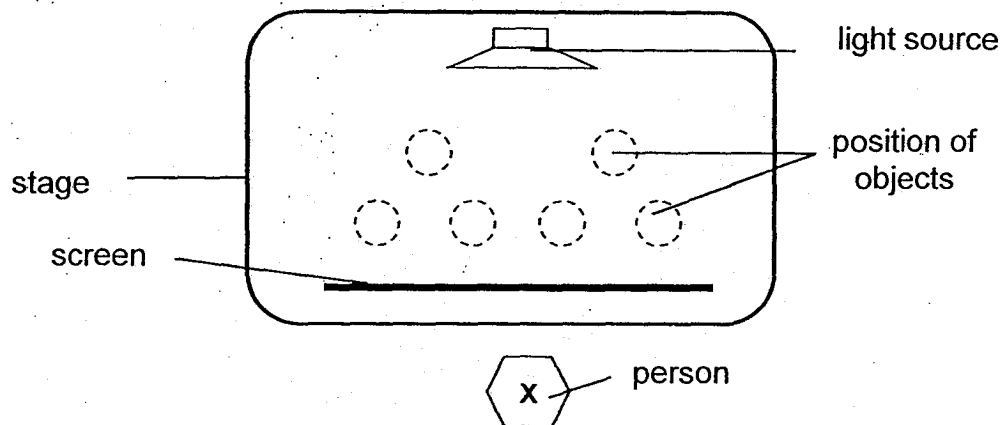
25. The picture below shows a battery-operated toy train.



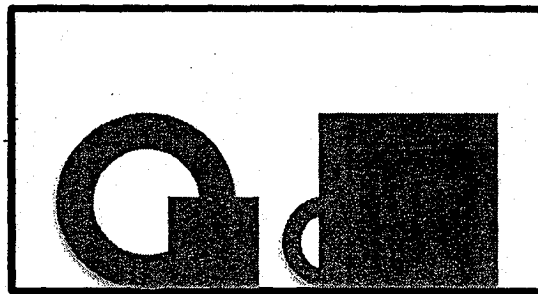
Which of the following shows the correct energy conversion that enables the toy train to move?

- (1) kinetic energy $\rightarrow$ electrical energy
- (2) gravitational potential energy $\rightarrow$ kinetic energy
- (3) chemical potential energy $\rightarrow$ electrical energy $\rightarrow$ kinetic energy
- (4) electrical energy $\rightarrow$ chemical potential energy $\rightarrow$ kinetic energy

26. The diagram below shows the top view of the stage for a shadow performance.



There were four objects, two rings and two squares, which were of similar height. The person at position X saw the shadows of the objects on the screen as shown.

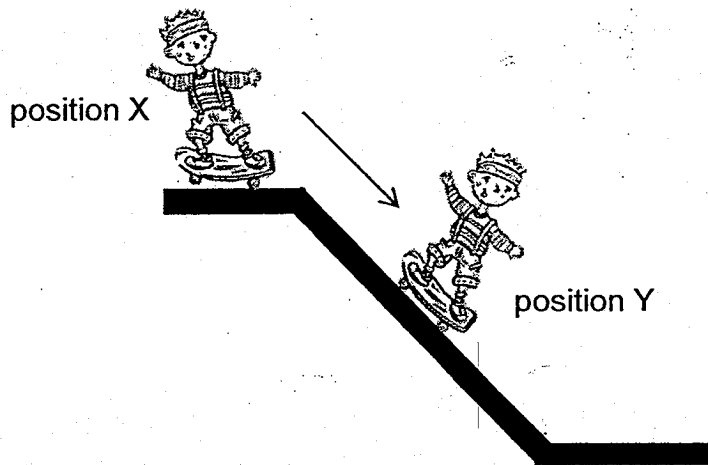


Which of the following shows the correct position of the four objects where

(R) represents a ring and (S) is a square?

- (1)
- (2)
- (3)
- (4)

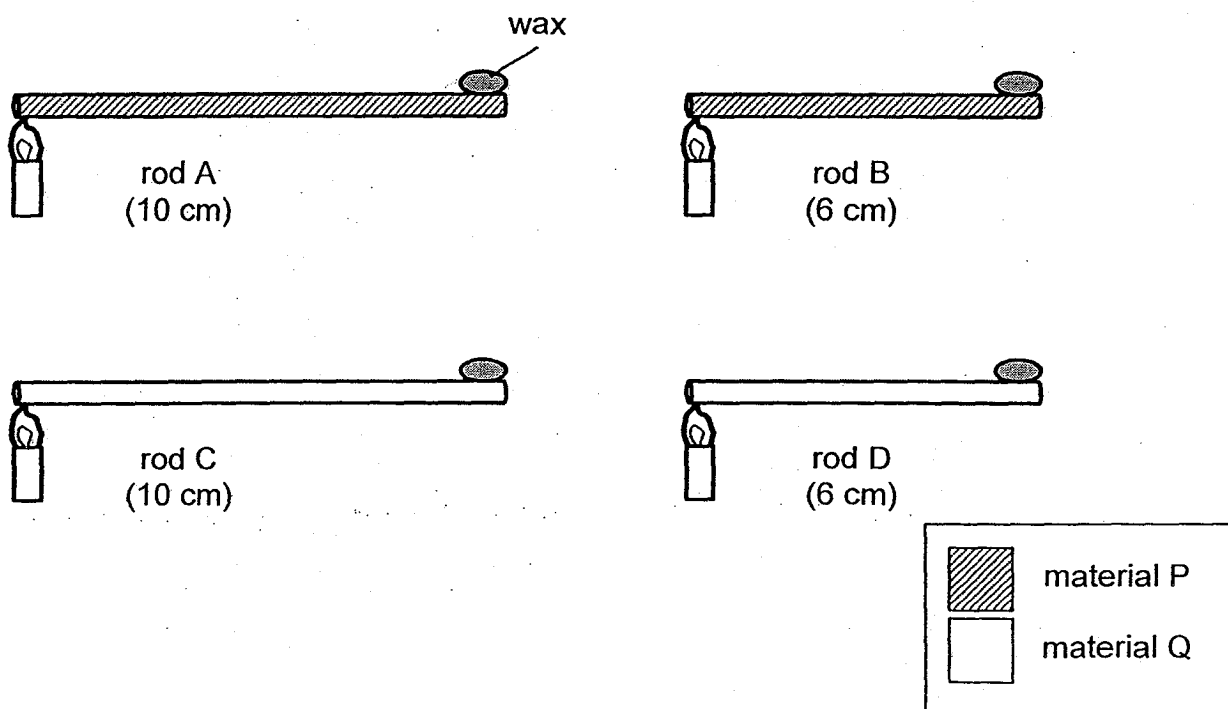
27. Jamal was standing on top of a ramp at position X. He skated down the ramp until he reached position Y as shown in the picture below.



Which of the following statements is/are true about the above picture?

- A: More gravitational force acted on Johnny at position X.
 - B: Jamal has more gravitational potential energy at position X than at position Y.
 - C: Jamal has the same amount of gravitational potential energy at positions X and Y.
- (1) B only
 - (2) C only
 - (3) A and B only
 - (4) A and C only

28. Melissa conducted an experiment using four rods of equal thickness. Two of the rods were made of material P and the other two were made of material Q. She placed 5g of wax at one end of each rod and heated up the rods at the other end as shown in the diagram below.



She recorded the time taken for the wax to melt completely in the table shown.

Rod	Time taken (min)
A	20
B	10
C	14
D	?

Which of the following statements is/are definitely true?

- A: Material Q is a better conductor of heat.
 B: The wax on rod D took the shortest time to melt completely.
 C: The wax on rod D melted slower than the wax on rod B.

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



RED SWASTIKA SCHOOL

2018 CONTINUAL ASSESSMENT 1 SCIENCE PRIMARY 6

Name : _____ . ()

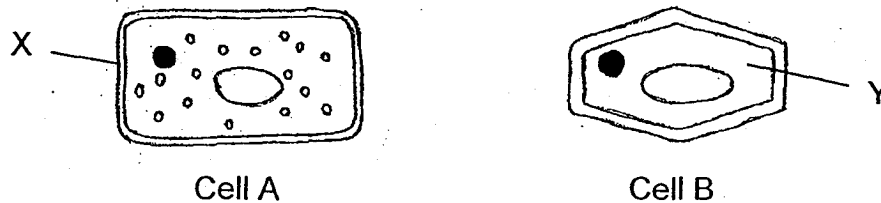
Class : Primary 6/ _____

Date : _____

BOOKLET B

Answer all the questions in the spaces provided.

29. Devi observed two types of cells, A and B, under a microscope.



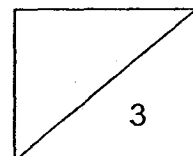
- (a) Identify part X and part Y. (1m)

Part X: _____

Part Y: _____

When she tested both cells for the presence of starch using iodine solution, only one of the cells turned the iodine solution dark blue in colour.

- (b) Which cell, A or B, turned the iodine solution dark blue in colour? Explain your answer. (2m)



30. Figures A and B show how blood flows in the circulatory system of a fish and a human respectively.

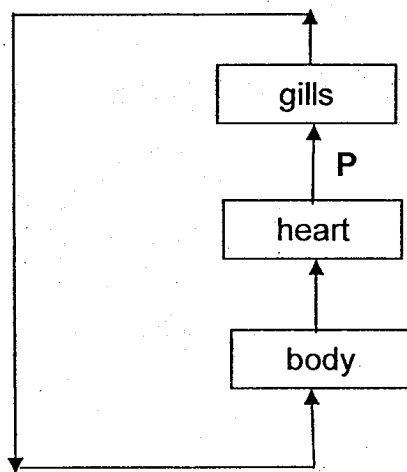


Figure A (fish)

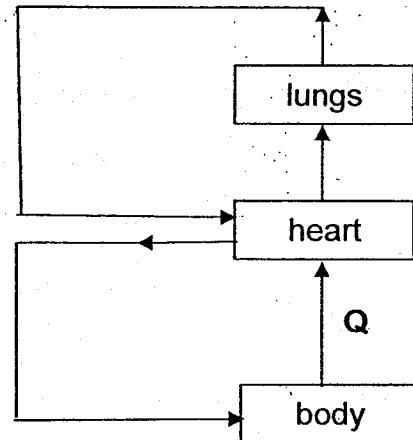
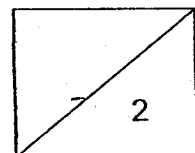


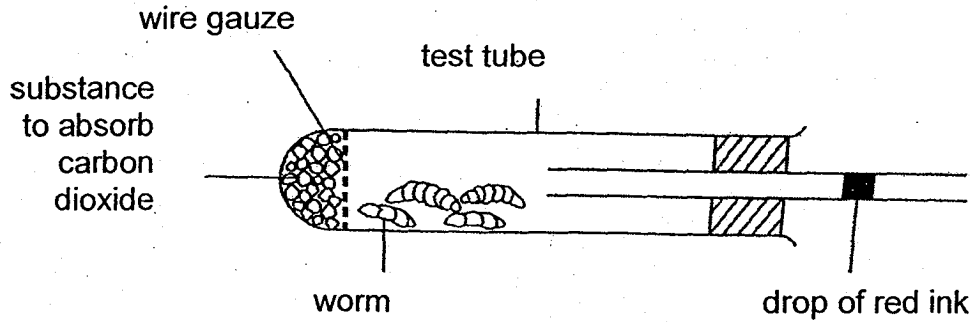
Figure B (human)

- (a) State one difference between the direction of flow of blood in a fish and in a human. (1m)

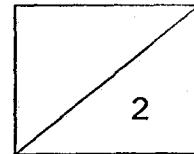
- (b) State one similarity between the level of carbon dioxide found in the blood flowing at P and Q. (1m)



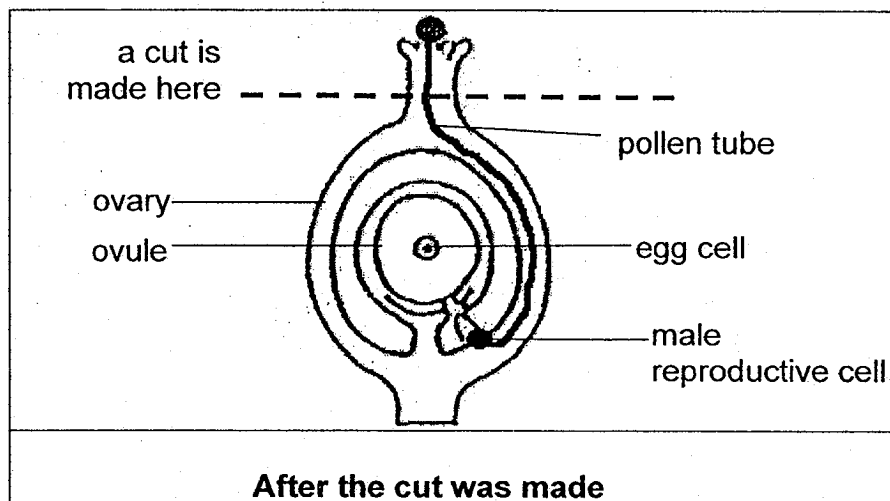
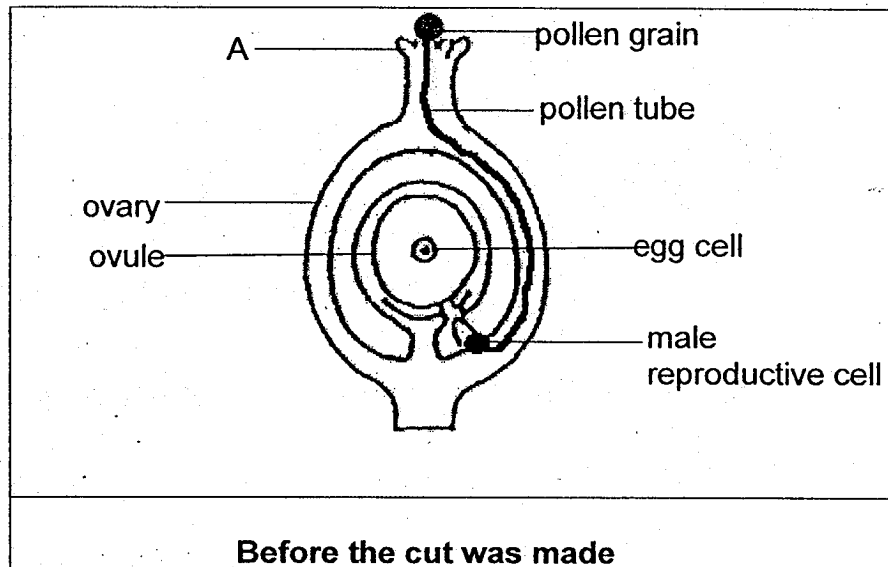
30. Ah Bao set up the experiment as shown below. In the set-up, the drop of red ink prevents air from entering the test tube.



- (c) Explain why the drop of red ink moves towards the test tube after some time. (2m)

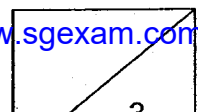


31. The diagram below shows the female reproductive part of a flower where the male reproductive cell is moving towards the egg cell.



- (a) Identify the part marked A. (1m)

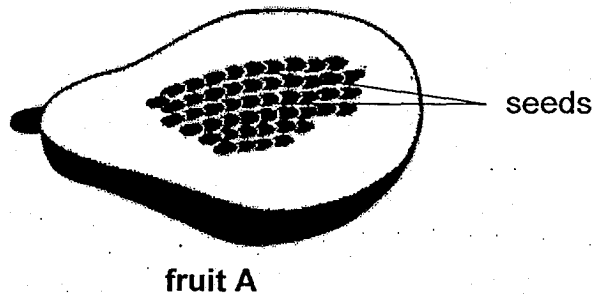
- (b) A cut is made on the female part of the flower as shown in the diagram above. The ovary is still able to develop into a fruit. Explain why. (2m)



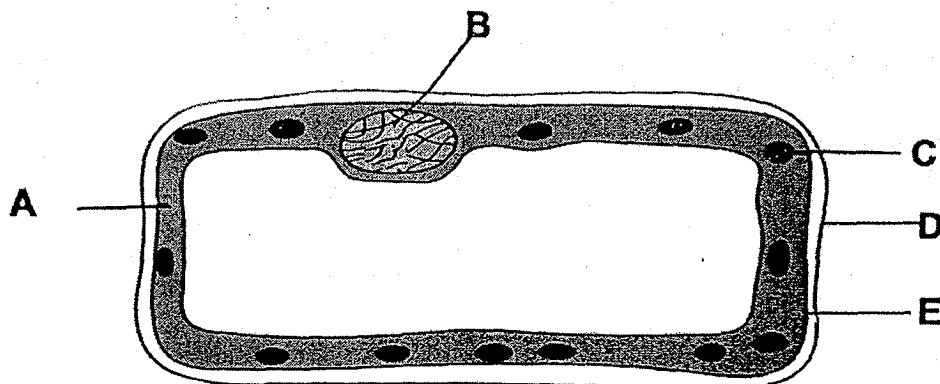
32. Liu Zhen observed the cross-section of two flowers, P and Q, from different plants. She recorded the following observations about each flower.

Flower P	Flower Q
bright red petals	white petals
big stigma	small stigma
only one ovule in the ovary	many ovules in the ovary
five filaments	three filaments

The diagram below shows the cross-section of a fruit developed from one of the two flowers, P or Q.

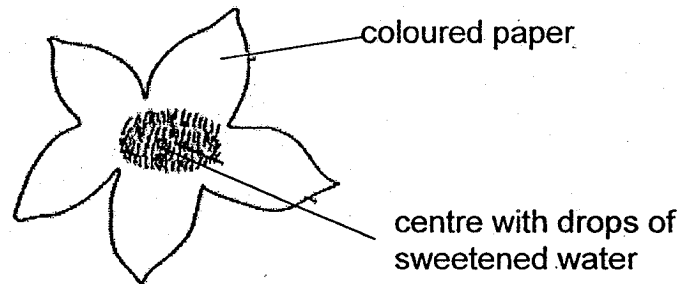


- (a) Which flower, P or Q, is fruit A most likely to have developed from? Explain why. (1m).



- (b) Which part of the cell (A, B, C, D or E) shown above for fruit A contains traits which were passed down from its parent plant? (1m)

32. Ahmad wanted to find out the colour of flowers which most bees prefer. He made model flowers as shown below, using thick paper of different colours. He put 20 drops of the same sweetened water in the centre of each flower. The model flowers were then left in the garden.



Ahmad then counted the number of bees that visited the model flowers over a period of three days. The results were recorded in the table below.

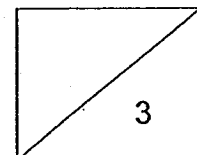
Colour of flower	Number of bees that visited the flower		
	Day 1	Day 2	Day 3
red	15	13	14
yellow	20	22	24
white	9	10	9

- (c) Based on the table, which colour did most of the bees least prefer? (1m)
- _____
- (d) Ahmad wanted to find out the relationship between the size of the model flowers and the number of bees that visited them.

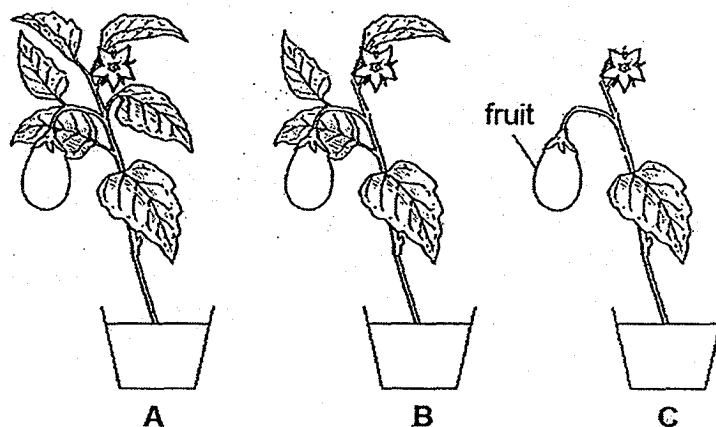
What two changes must he make to his experiment? (2m)

Change 1: _____

Change 2: _____



33. Ali placed three pots of the same type of plants in a well-lit area and watered them daily. There is no change in the number of leaves throughout the experiment.



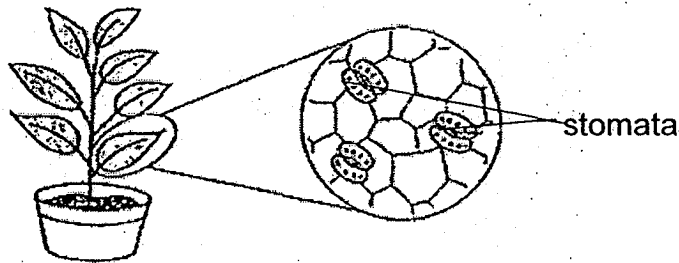
After two weeks, he measured the mass of the fruit in each set-up. The results are shown in the table below.

plant	number of leaves	mass of fruit (g)	
		start of experiment	end of experiment
A	6	8	15
B	4	8	11
C	1	8	9

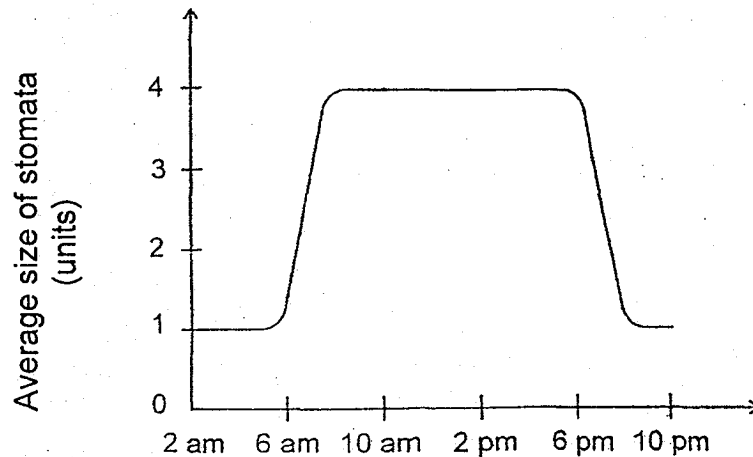
- (a) What is the relationship between the number of leaves and the increase in the mass of the fruit? (1m)

- (b) Explain why the mass of the fruit from plant A is different from plant C at the end of the experiment. (2m)

34. The picture below shows the stomata found on the underside of a leaf.

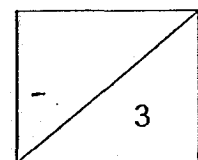


Tony measured the changes in the size of the stomata of a plant placed by the window at different times of the day. He plotted his results as shown below.

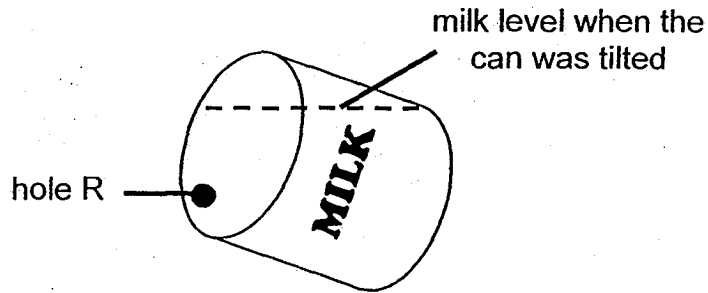


- (a) Based on his results, what effect did light have on the size of the stomata from 6am to 2pm? (1m)

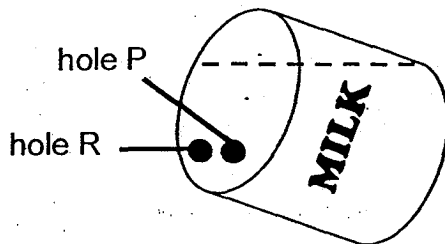
- (b) Explain how does the change in the size of the stomata in (a) help in photosynthesis. (2m)



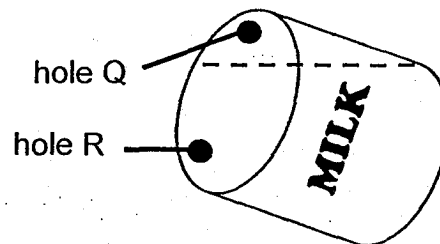
35. Ron made hole R on a can of milk as shown in the diagram below. He realised that the milk flowed very slowly when he tried to pour it out.



The diagrams below show two methods that he could choose to create an extra hole on the can lid to allow the milk to flow out more quickly.



Method A

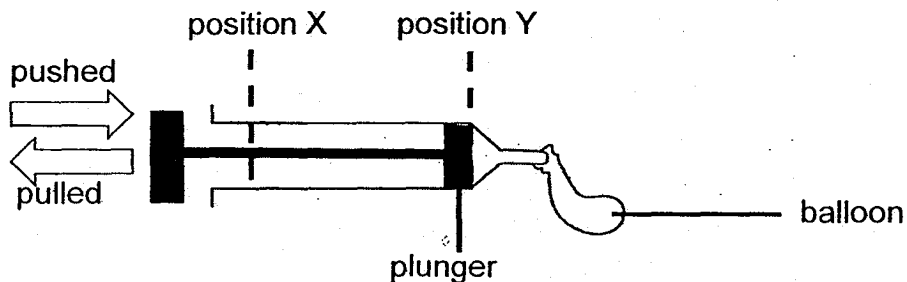


Method B

- (ai) Which method, A or B, will allow the milk to flow out more quickly? (1m)

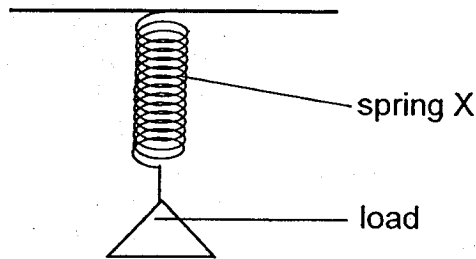
- (a ii) Explain your answer in (ai). (2m)

A deflated balloon is attached tightly to the syringe such that no surrounding air can enter the balloon as shown in the diagram below. The plunger was pulled back to position X and pushed back to position Y 20 times.

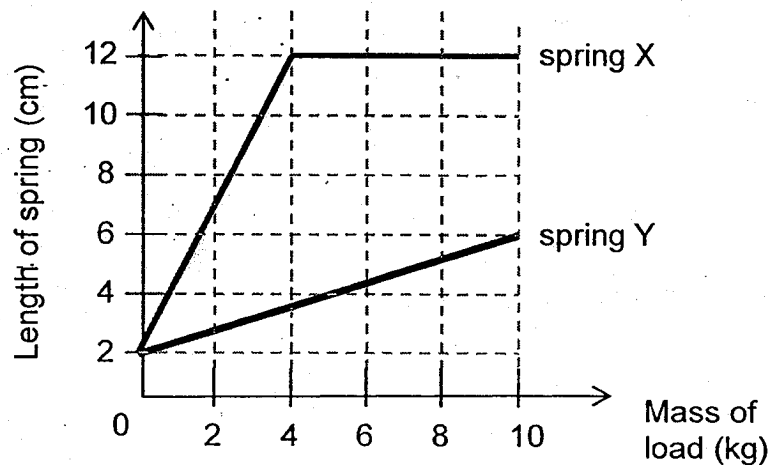


- (b) The balloon remained deflated. Explain why. (1m)

36. The diagram below shows an experimental set-up using spring X.

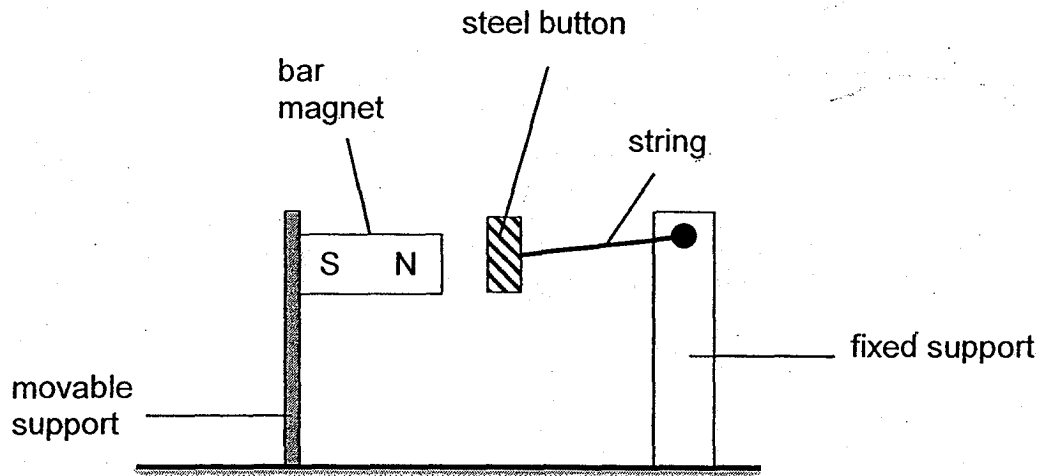


Different loads were hung and the length of the spring was recorded in the graph below. The same experiment was repeated using spring Y.



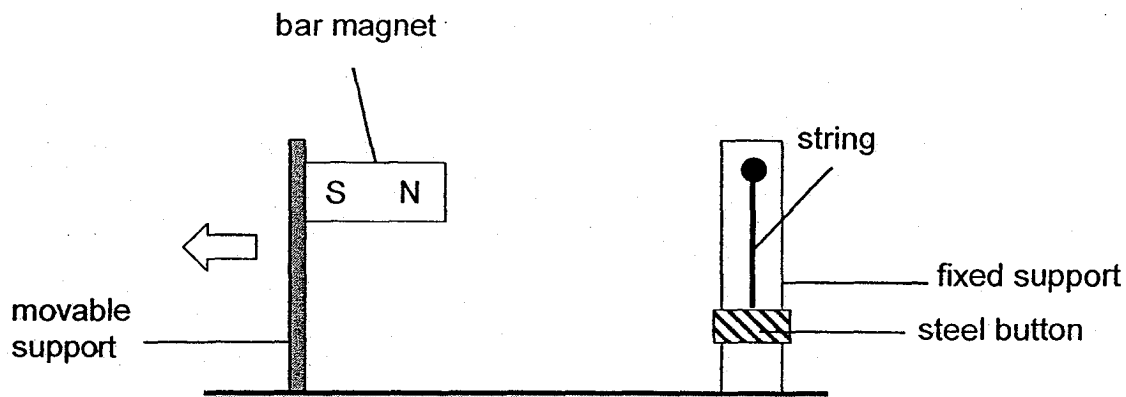
- (a) What is the extension of spring Y when a 10kg load was hung? (1m)
-
- (b) After the load was removed from spring X, the length of spring X did not return to its original length. Explain why. (1m)
-
- (c) After a load of 12kg was hung on both springs, one of the springs broke. Which spring would most likely be the one which broke? (1m)
-

37. Wayne created a set-up by attaching a bar magnet onto a movable support. Next, he attached a steel button to a fixed support using a short string. When the steel button was placed near to the bar magnet, the interaction below was seen.



- (a) Identify the force which is acting on the steel button that caused the steel button to move up when the bar magnet is moved nearer. (1m)

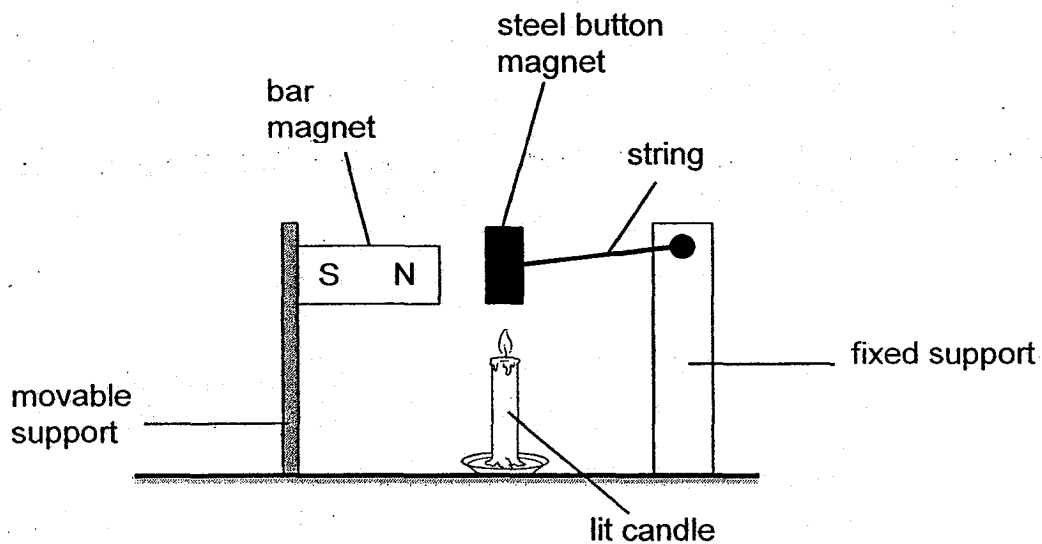
Wayne moved the support holding the bar magnet further away from the steel button. The steel button fell and moved back towards its own support as shown in the diagram below.



- (b) Explain, in terms of forces, what had happened to the steel button. (1m)

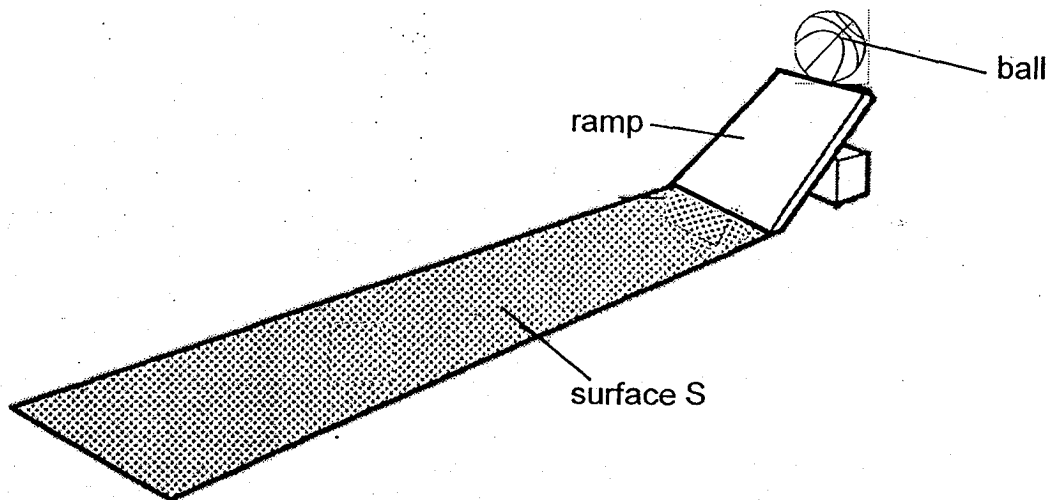
- 37(c) A similar set-up was created but the steel button was replaced with a steel button magnet. What condition in terms of the position of the poles of the bar magnet and the steel button magnet must be present to ensure that the steel button magnet remains attracted to the bar magnet? (1m)

A lit candle was placed under the steel button magnet and heated for 20 minutes such that the steel button magnet lost its magnetism.



- (d) The steel button magnet remained attracted to the bar magnet. Explain why. (1m)

38. Ravi released a ball from the top of a ramp and let it roll down as shown in the diagram below.

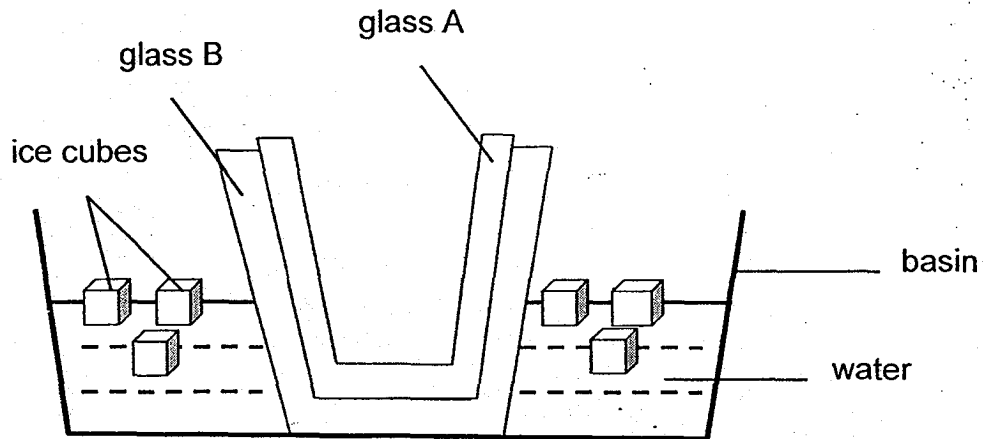


- (a) The aim of Ravi's experiment is to find out if the mass of an object affects the frictional force between the object and the surface it is in contact with. Study the table below and identify the variable(s) that must be changed or kept the same by putting a tick (✓) in the correct boxes. (1m)

	Variable	Changed	Kept the same
(i)	Mass of the ball		
(ii)	Material of surface S		

- (b) In another similar experiment, Ravi observed that when the same ball was released from a higher height on a longer ramp, the ball rolled a longer distance on surface S before stopping. Explain why. (2m)

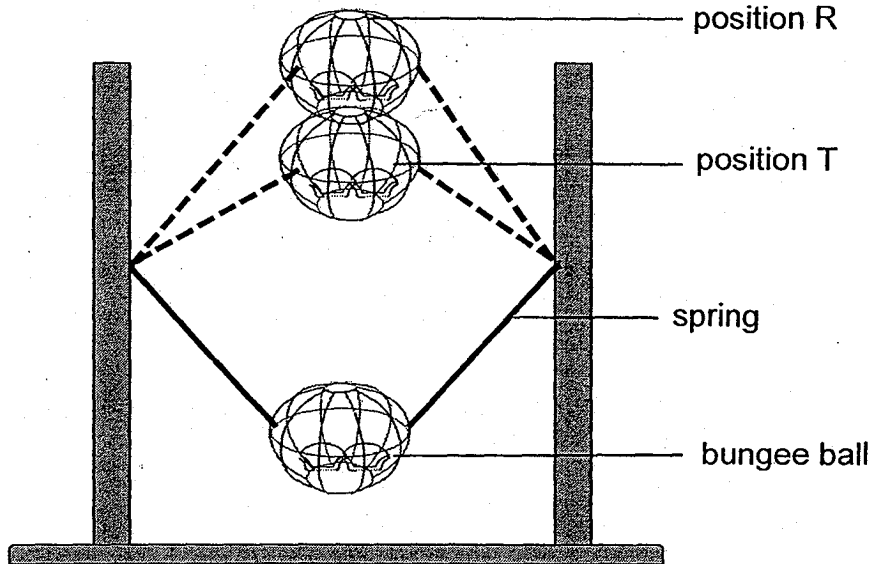
39. Glass A was stuck inside glass B. In an attempt to separate the two glasses, they were placed into a basin of ice water as shown in the diagram below.



- (a) After 15 minutes, some cracks were observed forming on the surfaces of both glasses. Explain why the cracks formed on glass B. (2m)

- (b) In another similar experiment, some ice was added into glass A before both glasses were placed into a basin of hot water. After ten minutes, the glasses were separated successfully. Explain why. (2m)

40. A simplified diagram of a bungee ball ride is shown in the diagram below.

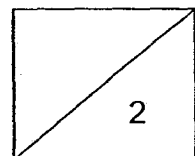


When the ball is released, the bungee ball will swing up to position R before swinging back down towards the ground and back up again till it reaches position T.

- (ai) State the energy changes that allow the bungee ball to start moving. (1m)

_____ → _____ → _____
 energy (spring) energy (spring) energy (bungee ball)

- (aii) Explain, in terms of energy, why the bungee ball was only able to reach position T when it went up the second time. (1m)



40. Before the bungee ball ride is used daily, engineers have to test it out to ensure the safety of the ride. Loads of 100kg, 200kg and 300kg were placed inside the bungee ball and the height of position T was recorded upon each release. The information recorded for one of the days was shown in table 1.

Table 1			
Total mass of load	100 kg	200 kg	300 kg
Height of position T	30 m	26 m	22 m

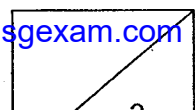
- (b) Based on the information above, what is the relationship between the height of position T and the total mass of the load? (1m)

The engineers repeated the above test two more times and recorded the results in table 2.

Table 2			
Total mass of load	100 kg	200 kg	300 kg
Height of position T (2 nd Try)	28 m	24 m	35 m
Height of position T (3 rd Try)	29 m	22 m	20 m

- (c) Why is it important for the engineers to repeat the test two more times? (1m)

- (d) Based on the results, the engineers had decided that the ride was unsafe for the day and repairs must be conducted. Circle the data in table 2 that supports their decision. (1m)



SCHOOL : RED SWASTIKA PRIMARY SCHOOL
 LEVEL : PRIMARY 6
 SUBJECT : SCIENCE
 TERM : 2018 CA1

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	2	2	4	4	4	2	3	3
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	2	4	4	4	2	4	3	2	1
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
4	1	4	2	3	1	1	3		

SECTION B

Q29)	a) X : Cell wall Y : cytoplasm b) Cell A. Cell A has chloroplast which contains chlorophyll to make food. Thus, starch is present and turn the iodine solution dark blue.
Q30)	a) The flow of blood in fish is in one direction while that in human is in two directions (bi-directional). b) Both contain high level c) The worms respire and give out carbon dioxide and the carbon dioxide is absorbed by the substance. Since air occupies space, the volume of air in the test tube will decrease and this the red ink moves towards the test tube after some time.
Q31)	a) Style b) The male reproductive cell has already fused with the egg cell and fertilisation has taken place.

Q32)	a) Flower Q. Flower Q has many ovules in the ovary which developed into seeds. b) B c) white flower d) Change 1 : Use the flower with the same color Change 2 : He should not add the sweetened water in the centre of each flower.
Q33)	a) The greater number of leaves in a plant, the greater the mass of the fruit. b) With more number of leaves, the plant will make more food and thus the plant will bear bigger fruit.
Q34)	a) The greater amount of light present, the bigger the size of the stomata. b) With greater the stomata, the more gaseous exchange can take place. More carbon dioxide will enter the stomata which increases the rate of photosynthesis to take place.
Q35)	a) (i) Method B (ii) Air occupies space and enter through hole Q will take up the space and force the milk to flow out through hole R. b) The balloon has holes and the air pumps in through the syringe escapes through the holes.
Q36)	a) 4 cm b) The spring has stretched to its maximum length and beyond it. c) Spring X

Q37)	a) Magnetic force b) When the magnetic is moved away from the steel button, the magnetic force is weaker and left gravitational potential energy the moment there is no magnetic force acting on it. The gravitational force will cause the steel button to move downwards, converting gravitational potential energy to kinetic energy. c) South pole of the steel button magnet must be facing the north pole of the bar magnet. d) The steel button magnet has lost its magnetism and become a magnetic material which allows magnetism to pass through it. Thus, the bar magnet is able to attract it.
Q38)	a) Mass of the ball → changed Material of surface S → Kept the same b) There is greater gravitational potential energy which is converted to more kinetic energy for the ball to overcome the frictional force between the surface S and the ball. Thus, it will roll a longer distance on surface S before stopping.
Q39)	a) Glass B loses heat faster than glass A since it is nearer to the water with ice cubes and it contracts. However, glass A does not allow glass B to contracts since it sits on glass B and thus it cracks. b) Glass A loses heat and contracts while glass B gains heat from the basin of hot water and expands. The contraction and expansion allow air to take up the space in between the glasses, thus they are successfully separated after 10 minutes.
Q40)	a) (i) Elastic potential → Kinetic → Gravitational Potential (ii) Some of the kinetic energy of the spring is converted to sound energy to overcome air resistance. b) The smaller the mass of the load, the greater the height of position T. c) To ensure accuracy of his results by taking the average reading of the data. d) 35m

