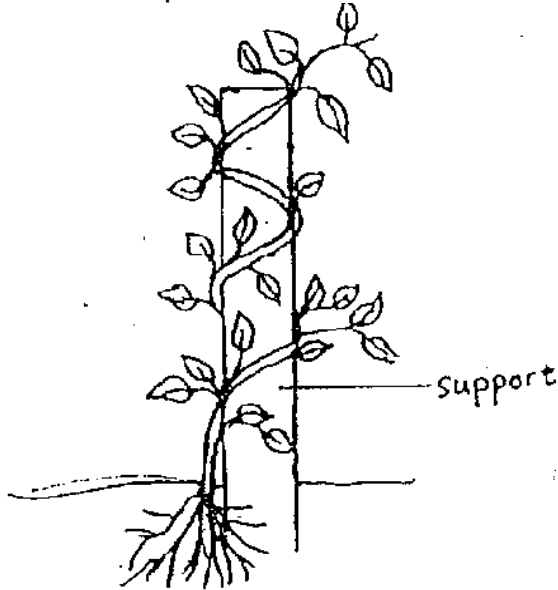


**Primary Six
Science
Semestral Assessment Two**

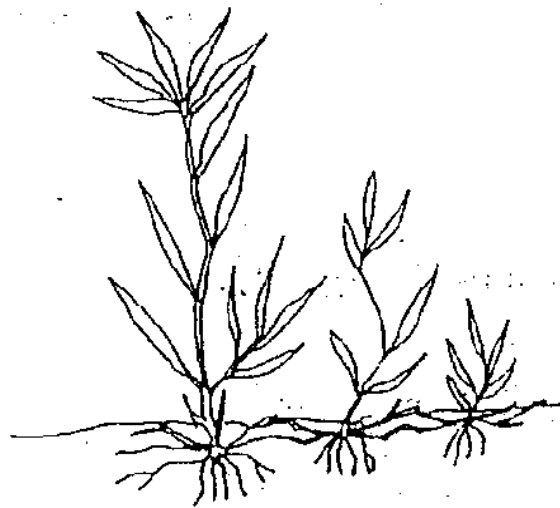
Section A

For each question from 1 to 30, four options are given. One of them is correct. Make your choice (1, 2, 3 or 4) and write your answer in the boxes provided. (30 x 2 marks)

1. The pictures below show two different plants, X and Y.



Plant X



Plant Y

Which of the following statements about both Plants X and Y are correct?

- A. Both plants have twining stems.
- B. The leaves of both plants are spread out.
- C. The roots of both plants hold their shoots upright.
- D. The roots of both plants absorb water and dissolved mineral salts.

(1) A and D only

(3) B and D only

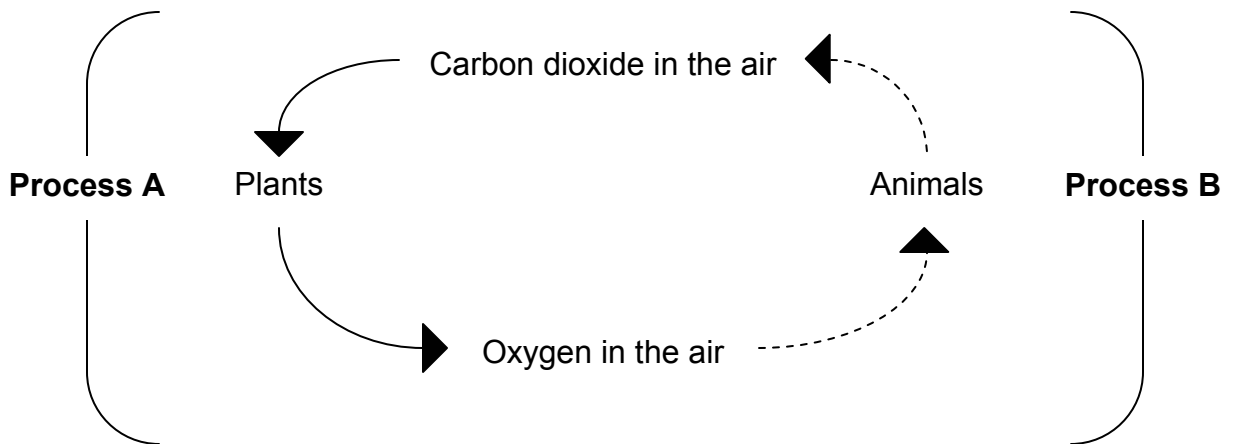
(2) B and C only

(4) A, B, C and D

2. Which one of the following plants is reproduced using a different method of vegetable propagation from the other three plants?

- | | |
|-----------------------|-------------------|
| (1) Bryophyllum plant | (2) Begonia plant |
| (3) Sansevieria plant | (4) Ginger plant |

3. The diagram below illustrates two processes, A and B that are carried out by plants and animals.



Which one of the following is most likely to be processes A and B?

	Process A	Process B
(1)	Transpiration	Breathing
(2)	Respiration	Decomposition
(3)	Decomposition	Breathing
(4)	Photosynthesis	Respiration

Which of the following are possible aims for Tom's fair test?

- A: To find out if overcrowding affects the average length of seedlings.
- B: To find out if the average lengths of seedlings affect the growth of seedlings.
- C: To find out if different types of soil used affect the average length of seedlings.
- D: To find out if different amounts of water used daily affect the average length of seedlings.

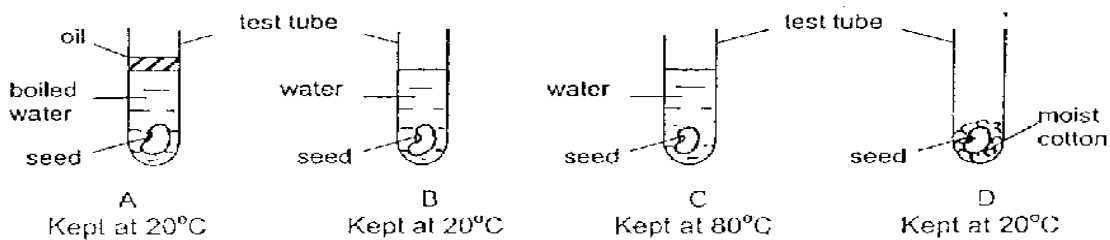
(1) A and C only

(2) A and D only

(3) B and C only

(4) B and D only

6. The pictures below show similar seeds being placed in 4 different test tubes over a few days.



In which of the above test tubes will seeds germinate?

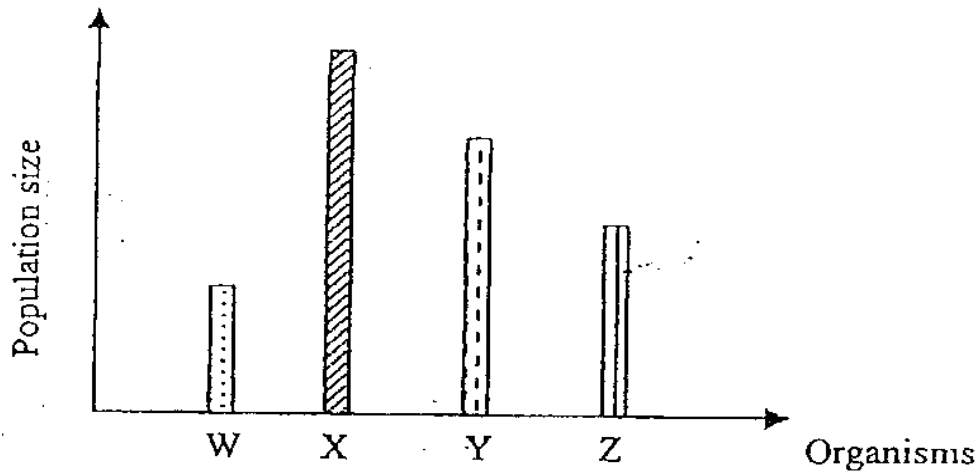
(1) A and B only

(2) A and C only

(3) B and C only

(4) B and D only

7. The bar graph shows the population sizes of organisms W, X, Y and Z in a community.



Based on the bar graph, which one of the following food chains shows the possible food relationship among organisms W, X, Y and Z?

- (1) $W \rightarrow Z \rightarrow Y \rightarrow X$ (2) $X \rightarrow Y \rightarrow Z \rightarrow W$
 (3) $Z \rightarrow W \rightarrow Y \rightarrow X$ (4) $Y \rightarrow X \rightarrow W \rightarrow Z$

8. Shawn made the following observations about Animal X.

Animal X has brown body.
 It has a moist skin.
 It moves away from light.
 It competes with centipedes for food.

Which one of the following habitats is Animal X most likely to be found?

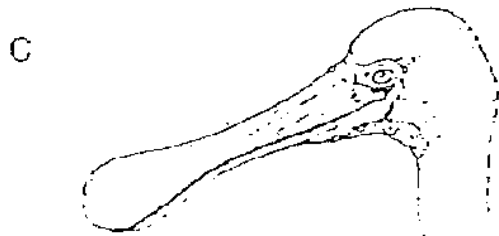
- (1) The leaf litter (2) The school field
 (3) The sea (4) Bottom of the pond

9. Which of the following statements are true of mammals?

- A. All mammals have four legs.
- B. Mammals are covered with hair.
- C. All mammals give birth to their young alive.
- D. All mammals breathe through lungs.

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

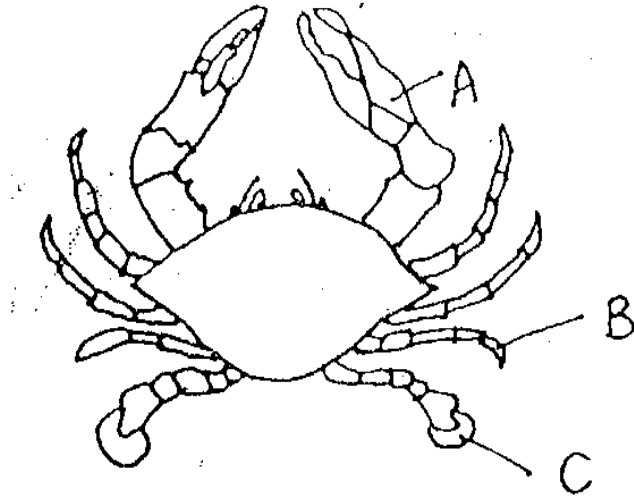
10. Birds use their bills in nest building, self-defence as well as in feeding. Study the diagrams of four birds below.



Which of the following shows the food they would most likely feed on?

	A	B	C	D
(1)	seeds	nectar	insects	fish
(2)	insects	seeds	fish	mice
(3)	nectar	flowers	berries	mice
(4)	fish	insects	seeds	berries

11. Which one of the following parts of a crab helps it to move on sand or muddy shores?



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

12. Study the table below.

Set	Animals that are poisonous	Animals that damage plants	Animals that spread diseases
1	Mosquito	Ladybird	Centipede
2	Jellyfish	Aphid	Rat
3	Homet	Earthworm	Cockroach
4	Termite	Snail	Housefly

Which one of the above sets (1, 2, 3 or 4) has all the animals grouped correctly?

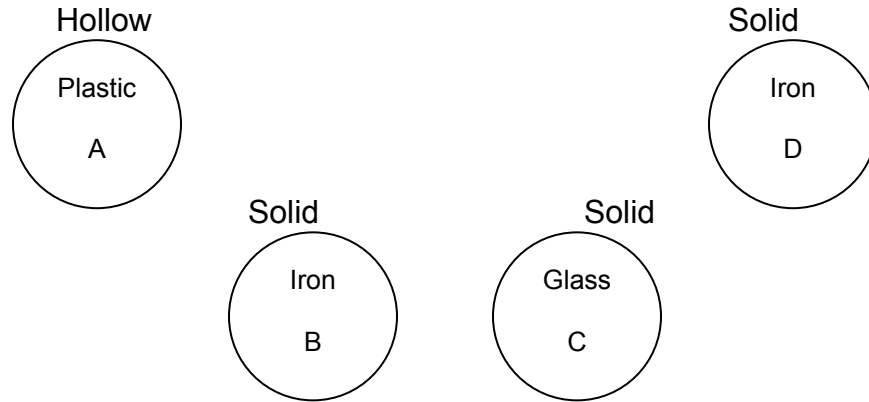
13. The life cycle of a mosquito and a cockroach are different from one another even though they are both insects with some similar features.

How do their life cycles differ?

- A. The young of the cockroach looks like the adult whereas the young mosquito does not.
 B. The mosquito hatches from eggs whereas the cockroach gives birth to live young.
 C. The mosquito has pupa stage whereas the cockroach has no pupa stage.

- (1) The larger the jar, the shorter the time taken for the candle flame to go off.
- (2) The larger the jar, the longer the time taken for the candle flame to go off.
- (3) The smaller the jar, the longer the time taken for the candle flame to go off.
- (4) The small, medium and large jars have the same time taken for the candle flame to go off.

18. Study the diagram.
4 balls of the same size, A, B, C and D were dropped from varying heights to make depressions in the sandpit.



Rank the balls according to the depth of the depression they make in the sandpit. Begin with the deepest one.

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

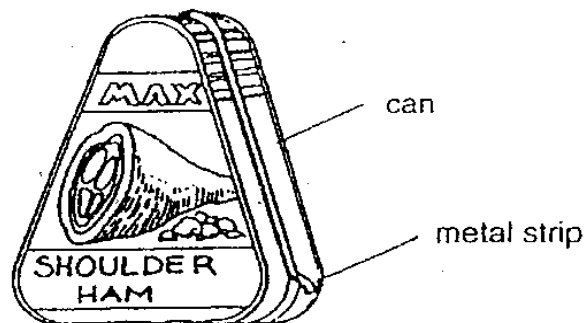
22. Jane carried out an experiment on the rate of evaporation of water. She recorded the results in the table below.

Type of material used	Place where material was hung	Time taken for material to dry
Cotton towel	In the sun	2 hours
T-shirt	At the balcony	1 h 30 min
Handkerchief	In the toilet	4 h 20 min

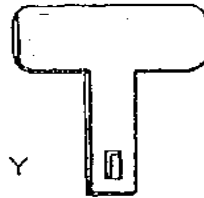
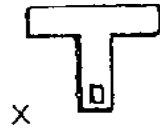
Jane's good friend, Lily, told her that the test was not a fair one. To make it a fair test, which of the following suggestions made by Lily should Jane accept?

- (1) Use the same material of different sizes and hang them in different places.
- (2) Use the same material of the same size and hang them in different places.
- (3) Use different materials of different sizes and hang them in the same place
- (4) Use different materials of the same size and hang them in different places.

23. Jimmy's mother was in the kitchen trying to open a can of shoulder ham. This is done by inserting the metal strip to the small hole at the bottom of a 'T' key and then turning the key.



The key provided to open the tin of ham is shown in (X) but Jimmy thinks his design in (Y) is better.



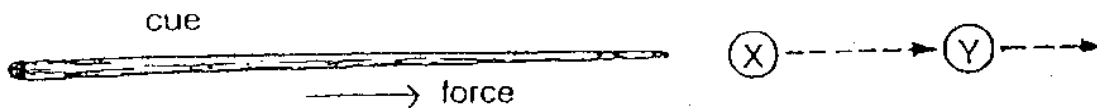
What makes Jimmy think so?

- A. The effort needed will be greater.
- B. It is easier to grip the key.
- C. The direction of the force will be changed.
- D. A longer length of the metal strip can be removed with each turn of the key.

- (1) A and B only
- (3) B and D only

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

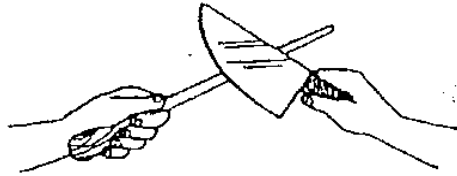
24. During a game of snooker, Mr Fang used his cue to hit ball X which knocked ball Y and caused Ball Y to move.



What can be said about ball X immediately after it had hit ball Y? Which one of the statements below are you most sure of?

- (1) It had used up all its energy.
- (2) It had energy and had done work
- (3) It had transferred all the energy from the cue to ball Y.
- (4) It had more energy than before it hit ball Y.

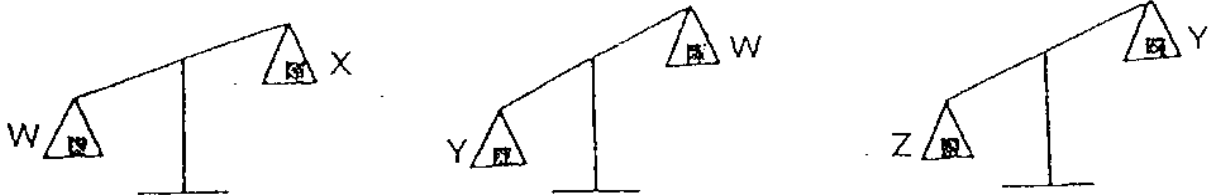
25. At the wet market, Veronica noticed the butcher sharpening his chopper as shown below. Which of the following aspects of friction help the butcher do his work?



- A. Friction prevents objects from slipping out of his hands.
- B. Friction acts in the opposite direction to motion.
- C. Friction causes the surfaces in contact to wear away.
- D. Friction produces heat energy.

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

26. Four boys are playing with four objects: W, X, Y, Z and an equal-armed balance. The results of their experiment are shown below:



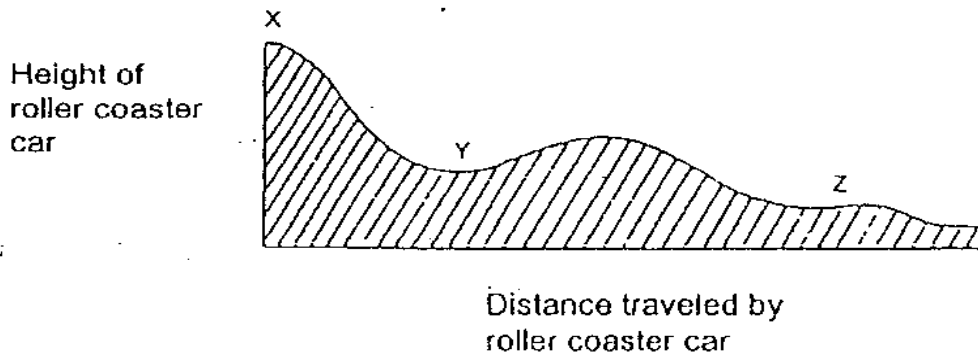
The four boys presented their observations:

- John : No two objects have equal weights.
- Arick : The lightest object is X.
- Mark : I can arrange the objects in ascending order of their weights.
- Melvin: The balance has no markings, so we cannot find out which object is the heaviest.

Which of the following boys, do you agree, are correct in their observations?

- (1) Melvin only
- (2) John and Arick
- (3) John and Mark
- (4) John, Mark and Arick

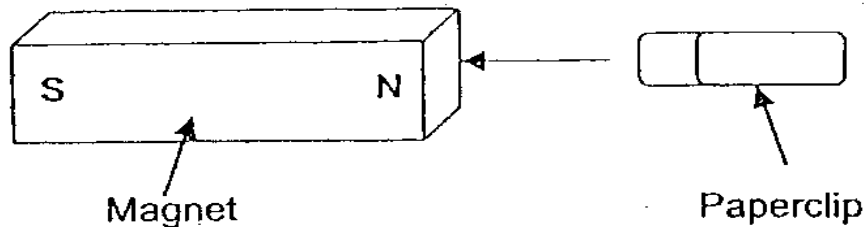
27. During the recent holiday, Sufen and her family went to the amusement park and sat on the roller coaster. The roller coaster car moved from X to Y and then to Z at one point along the ride.



Which one of the following statements is true?

- (1) The roller coaster car was the lightest at point X.
- (2) The roller coaster car had the most stored energy at Y.
- (3) The roller coaster car lost some energy when moving from X to Z.
- (4) The force of gravity acts on the roller coaster car from X to Y not from Y to Z.

28. A magnet was brought close to a paperclip. The paperclip was attracted to the magnet as shown below:

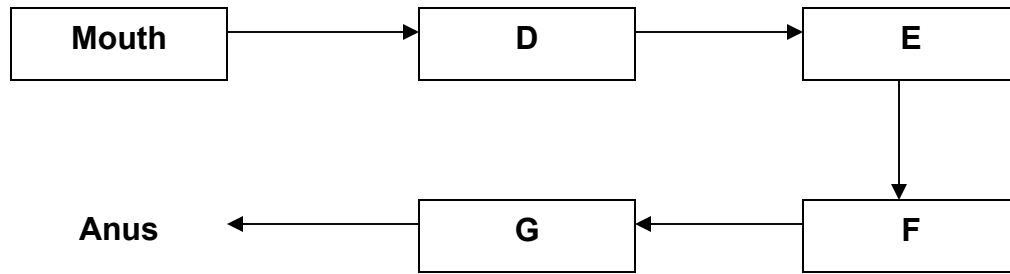


Based on the above result, what conclusions can we make?

- A. Magnetic force can act at a distance.
- B. The paperclip is made from a magnetic substance.
- C. Only the North Pole of a magnet can attract at a distance.
- D. The North Pole of a magnet is the strongest.

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

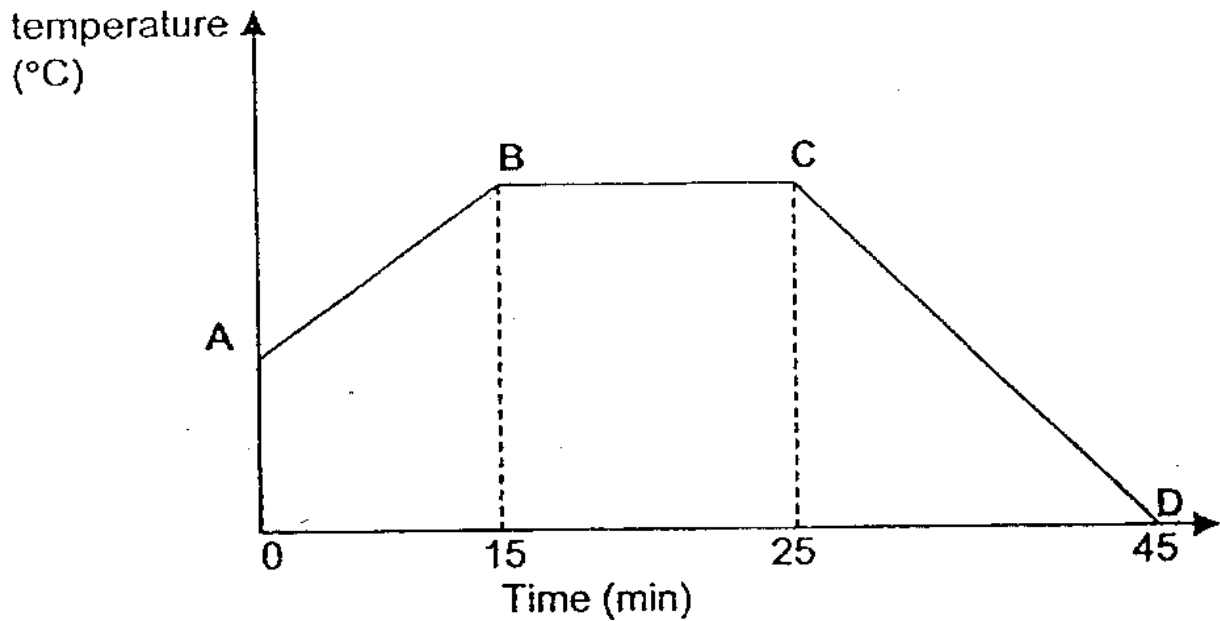
29. The diagram below shows the path taken by the food we eat.



Which of the following correctly represents the path taken by the food we eat?

	D	E	F	G
(1)	Large intestine	Gullet	Stomach	Small intestine
(2)	Gullet	Stomach	Large intestine	Small intestine
(3)	Stomach	Small intestine	Gullet	Large intestine
(4)	Gullet	Stomach	Small intestine	Large intestine

30. Peter carried out an experiment with a beaker of water. He plotted the results as shown in the graph below:



Based on the above graph, which of the following tells us what happened during the time between B and C?

- A. The water was boiling.
- B. Heating was stopped.
- C. The temperature of the water remained unchanged for 10 mins.
- D. More water was added to the beaker.

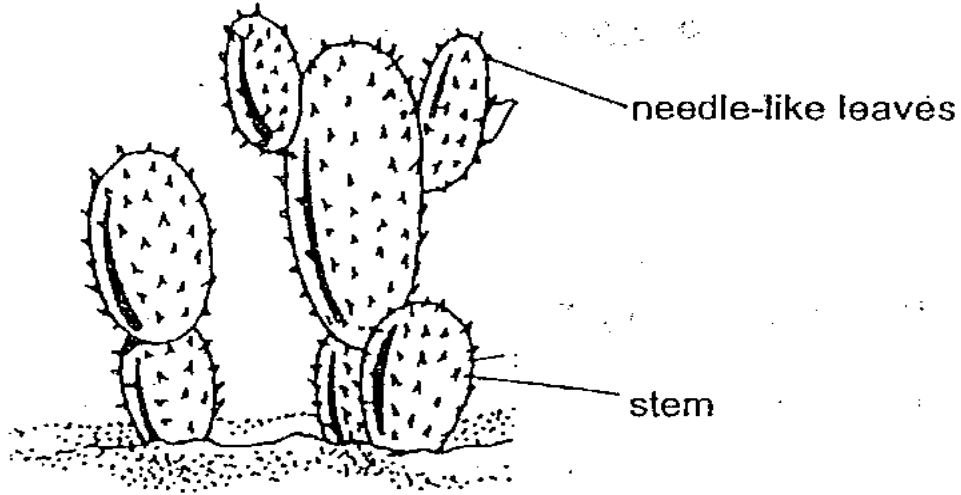
- (1) A only
- (3) A and C only

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

Section B (40 marks)

For question 31 to 46, write your answers in the space provided.

31. Below shows a picture of the cactus.



Read the following statements carefully.

Put a tick (\checkmark) in the correct boxes to indicate if the statements are true or false. (3 marks)

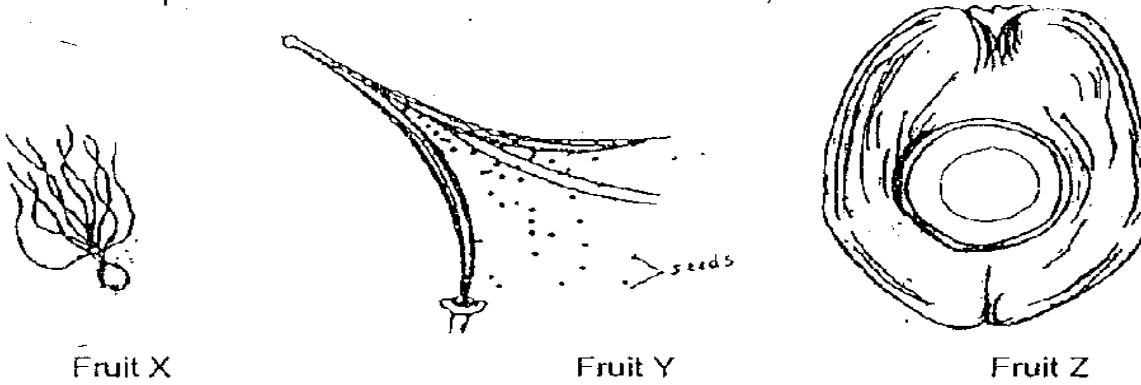
	Statements	True	False
a.	The needle-like leaves help to reduce water loss from the plant to the surroundings.		
b.	The stem is swollen because it helps the plant make food.		
c.	The needle-like leaves prevent animals from feeding on its juicy stem.		

32. State two ways in which trees grown along the roadside are useful to us. (2 marks)

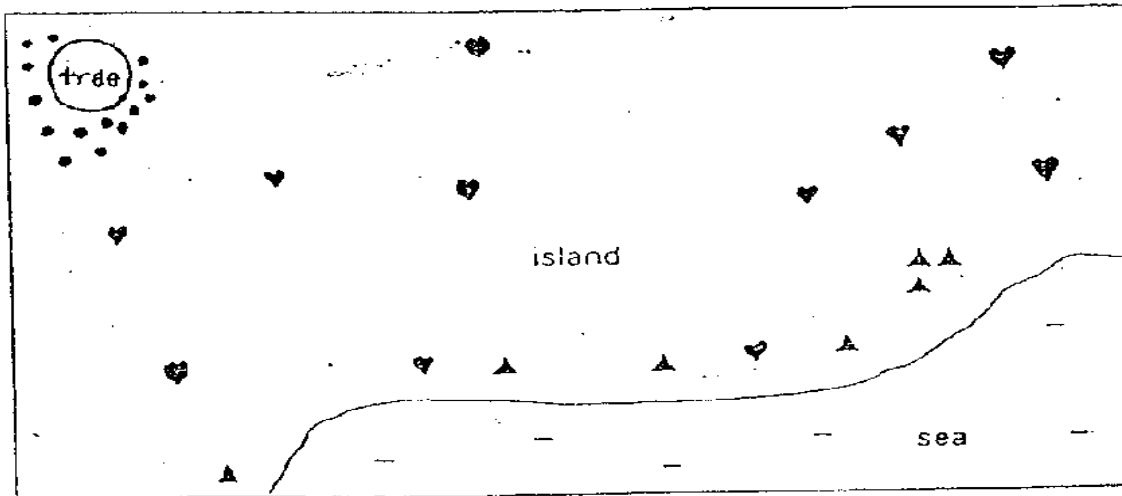
(a) _____

(b) _____

33. The pictures below show three different fruits X, Y and Z.



After X, Y and Z were dispersed, they were found at different parts of a plot of land represented by the three symbols ●, ♥ and ▲ as shown in the diagram below.



(a) Match the symbols used in the diagram to the correct fruits X, Y and Z (1 mark)

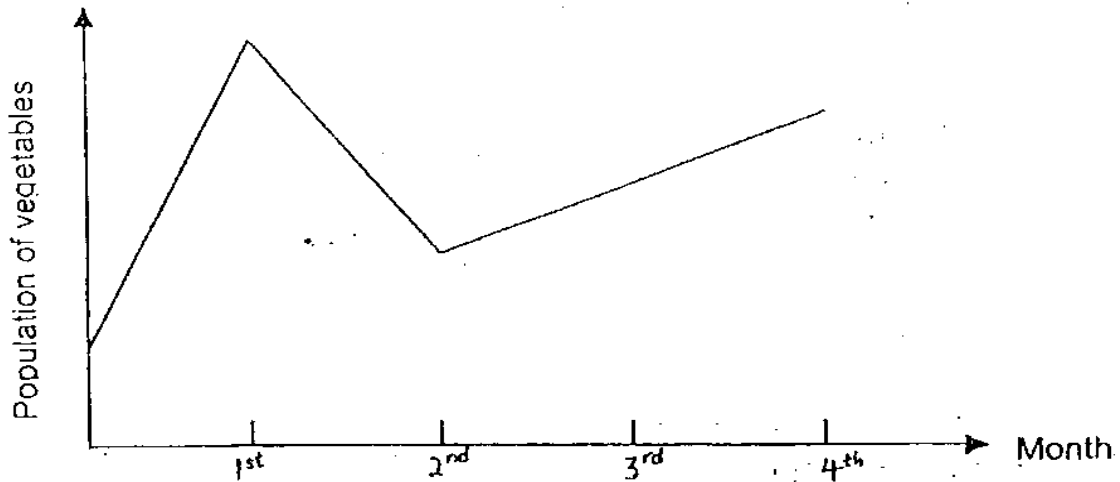
Symbol ● is matched to _____.

Symbol ♥ is matched to _____.

Symbol ▲ is matched to _____.

(b) Name a fruit or seed that can be dispersed in the same way as fruit X. (1 mark)

34. A population count was carried out to study the effect of weedkillers on the population of the vegetables grown in a farm over a period of time. The results were recorded in the graph shown below.



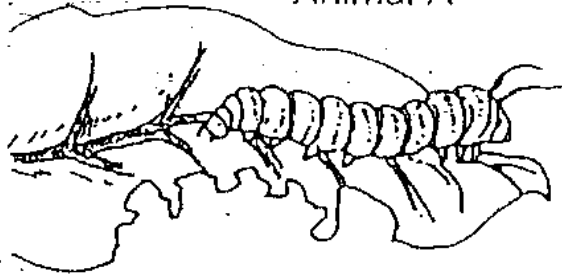
- (a) Describe the changes in the population of the vegetables during the 4-month period. (1 mark)

- (b) During which month was the weedkillers sprayed on the vegetable farm? (1 mark)

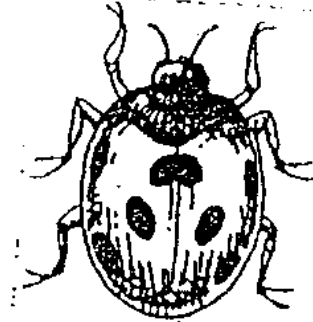
- (c) If the weedkillers were used on the vegetable farm for a long period of time, what possible effect would it have on the pests that feed on the vegetables? (1 mark)

35. Look at the two animals shown below.

Animal A



Animal B



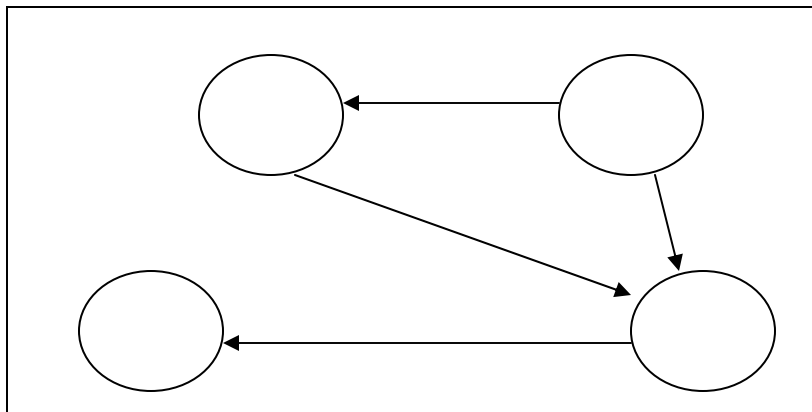
(a) In which habitat would you find them? (1 mark)

(b) Based on the diagram, write down, one difference between the two animals. Do not compare their size.

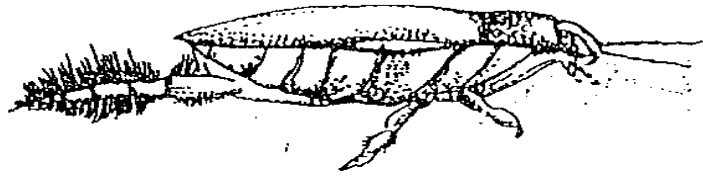
36. Organisms A, B, C and D are 4 living things in a community. The following are information about these organisms.

- A eats C.
- C eats B.
- D is a food producer.
- B and C eat D.

Use the information to help you to complete the food web below. Write the correct letter A, B, C or D in each circle. (2 marks)



37. Study the diagram below.



Diving beetle

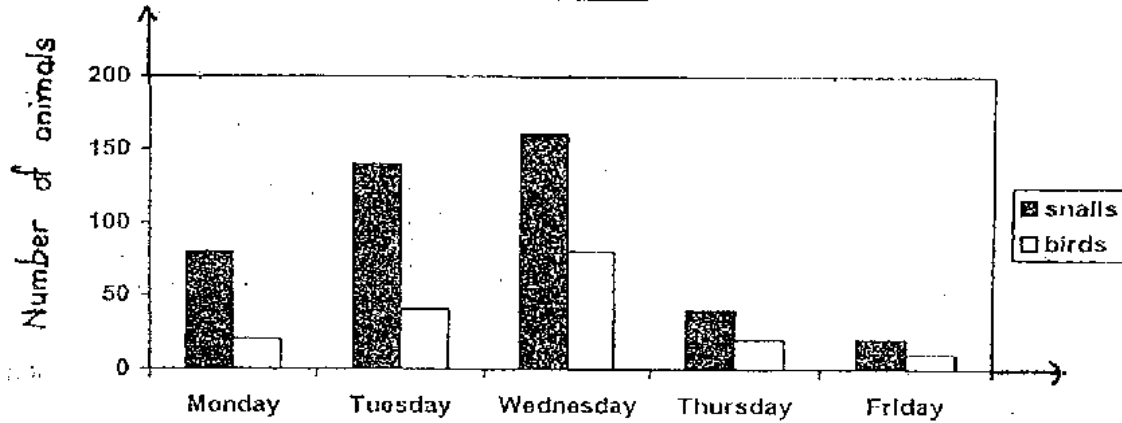
- (a) Based on the diagram, identify one feature of the diving beetle that helps it to swim. (1 mark)

- (b) Explain how the feature in (a) helps the diving beetle to swim. (1 mark)

- (c) A fish is able to breathe in water with the help of gills. How does the diving beetle breathe in water? (1 mark)

38. Some scientists made a study of 2 types of animals, snails and birds which are found on a seashore. They counted the number of snails and birds everyday and noted the weather for each day. The results are shown below.

Day	Weather
Monday	sunny
Tuesday	cloudy
Wednesday	rainy
Thursday	sunny
Friday	sunny

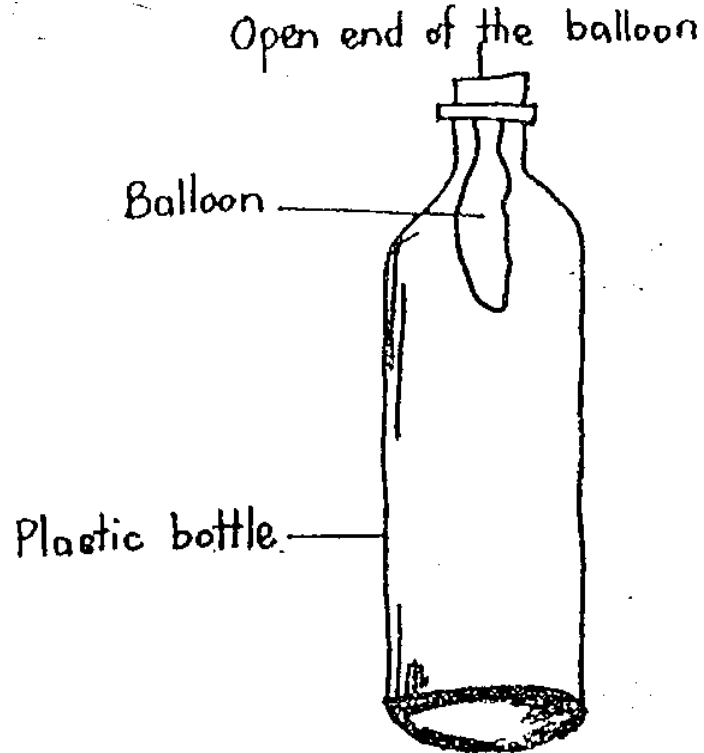


- (a) How is the number of snails affected by the weather? (1 mark)

- (b) In what way is the number of birds related to the number of snails? (1 mark)

- (c) What is a possible relationship between the snail and the birds? (1 mark)

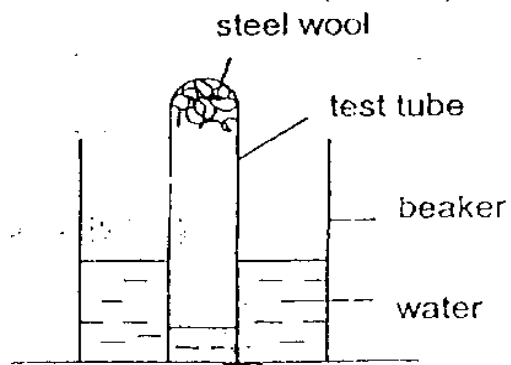
39. Look at the diagram below. A balloon is pushed into a plastic bottle and the opened end of the balloon is stretched over the mouth of the bottle.



- (a) Suggest a method for Samuel to blow up the balloon without taking it out of the bottle. (1 mark)

- (b) What does this experiment tell us about the property of air? (1 mark)

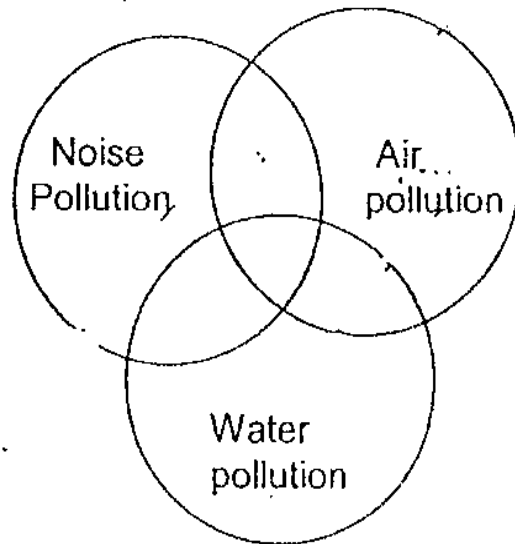
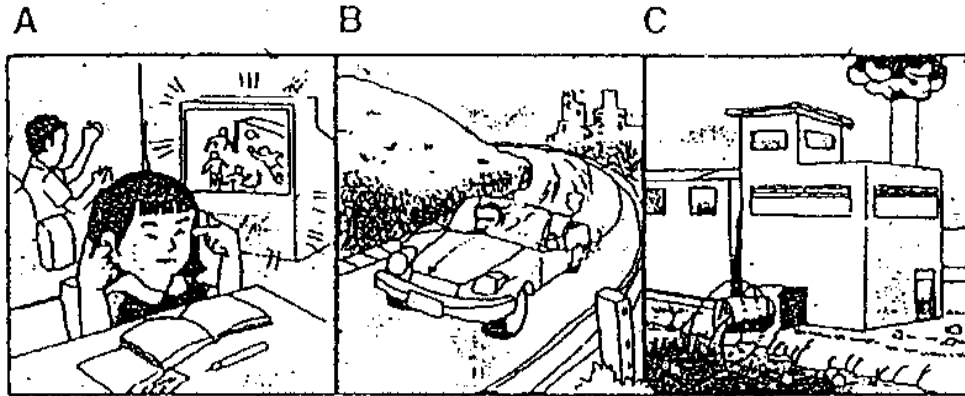
40. Fill in each blank with a correct word. (2 marks)



In the experiment shown on the right, the steel wool in the test tube will _____ after a few days. The presence of _____ and _____ in the test tube has allowed this change to take place. This change is _____ as a new substance is formed.

41. Study the diagrams below and answer the questions that follow.

- (a) In which part of the Venn Diagram below would you place A, B and C? Write A, B and C in their correct places in the Venn Diagram and indicate it with a dot beside it (1 mark)



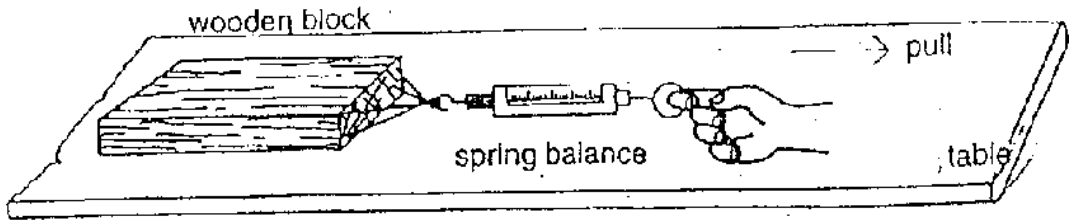
- (b) What can be done to prevent the type of pollution shown in the pictures above (3 marks)

A:

B:

C:

42. Study the diagram below.

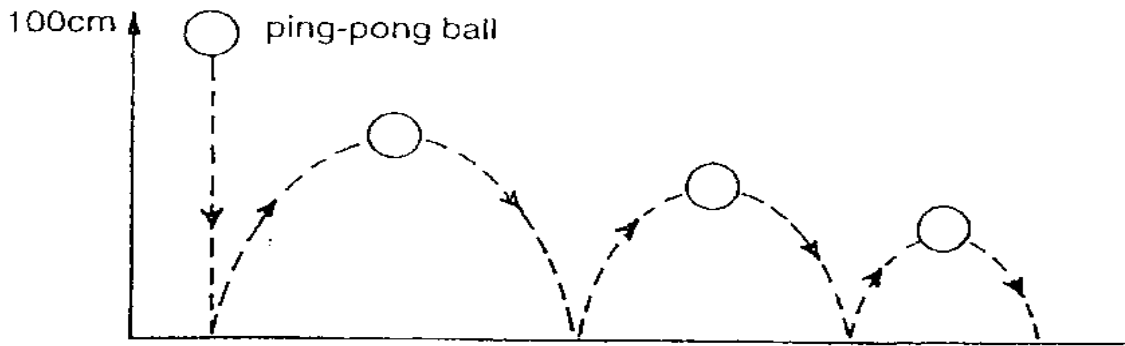


(a) When the spring balance is pulled in the direction shown, what is the balance measuring? (1 mark)

(b) How would the reading on the spring balance be affected if tiny wheels are attached to the four corners of the wooden block? (1 mark)

(c) Explain the effect of the wheels on the wooden block as it is being pulled across the table top. (1 mark)

43. A ping pong ball was dropped from a height of 1 metre from the ground. It bounced to a lower height each time it hits the ground as shown below until it finally stopped.



- (a) Why do you think the ball does not bounce back to the same height from which it was first dropped? Explain. (1 mark)

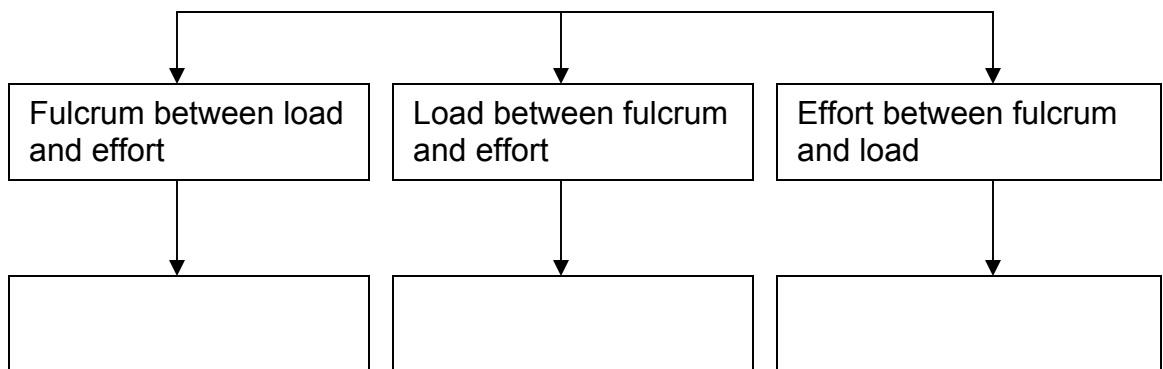
- (b) When the ball hit the ground, name at least two forms of energy loss (1 mark)

44. Study the list of objects in the table below:

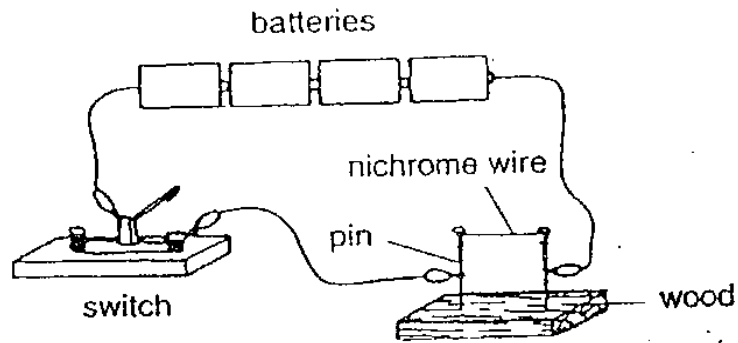
Fixed Pulley	Fishing Rod
Bottle Opener	Claw Hammer

Group the object in the table according to the classification table below. (2 marks)

LEVERS



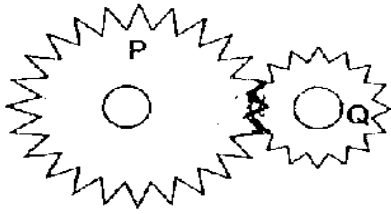
45. Look at the set up shown below.



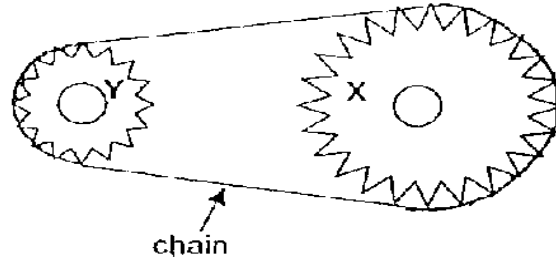
- (a) What happens to the nichrome wire when the switch is on?
(1 mark)

- (b) In the space below, state the changes in energy that have taken place when the circuit is closed. (2 marks)

46. Study the 2 gear systems below.



System M



System N

- (a) State one difference between the two gear systems. (Do not compare their size) (1 mark)

- (b) If both Gears P and X move in a clockwise direction, which directions would Gears Q and Y move?

Gear Q:

Gear Y:
