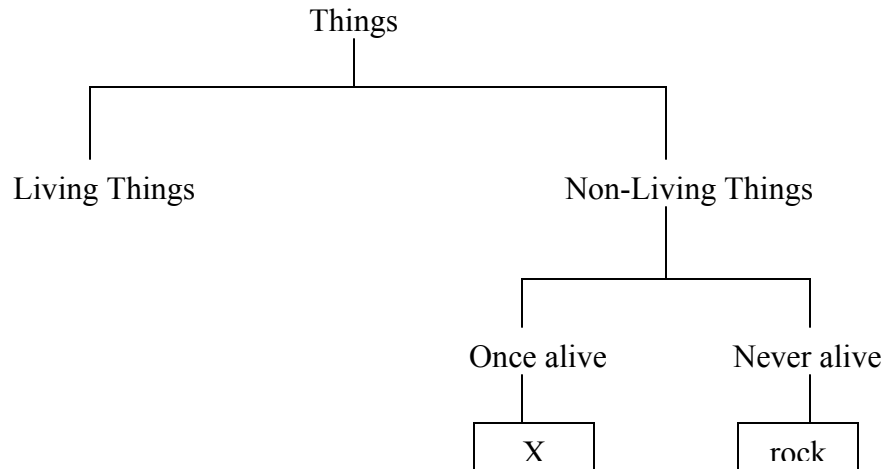


**Primary Six  
Science  
Semestral Assessment Two**

**Part 1: (60 marks)**

**For each question 1 to 30, four options are given. One of them is the correct answer. Make your choice (1,2,3 or 4). Write the correct answer in the box provided.**

1.



Which one of the following objects can you put in the box marked 'X'?

- A. A leather jacket
- B. A soccer ball
- C. A pillow case
- D. A pencil lead

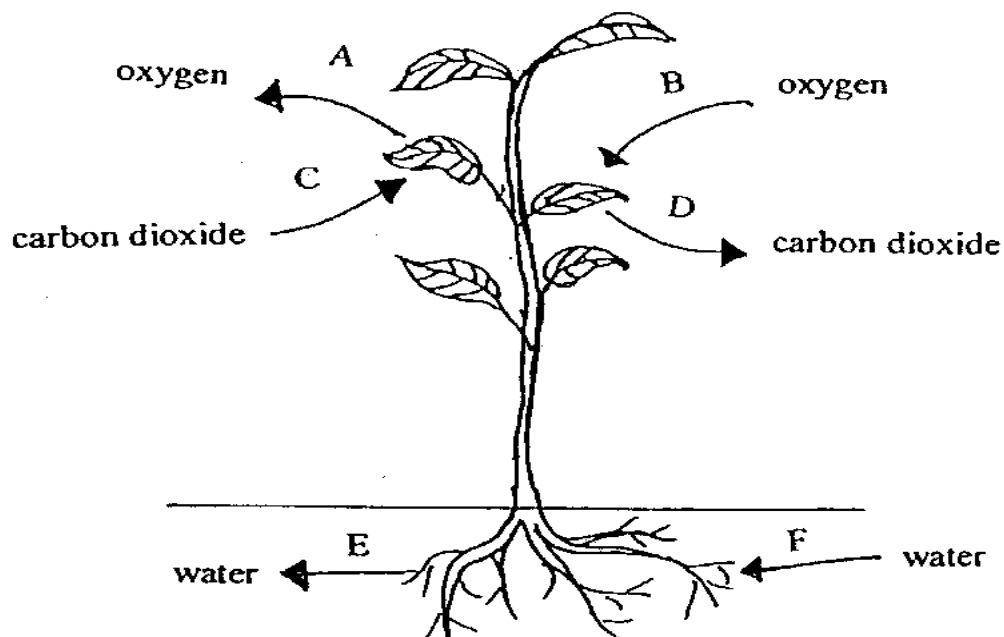
- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) B, C and D only

2. Which of the following sets of plants is classified correctly?

Dispersal of seeds/ fruits

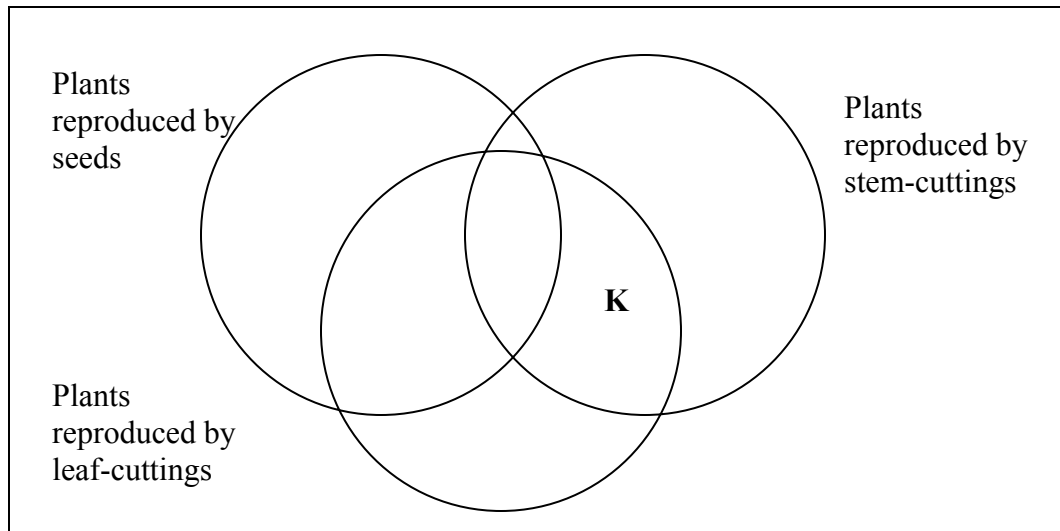
	By wind	By animal	By water	By explosive action
(1)	Angsana	Coconut	Love grass	Rubber
(2)	Mimosa	Tecoma	Cassia	Chestnut
(3)	Shorea	Mango	Nipah	Balsam
(4)	Lalang	Mangrove	Lotus	Durian

3. Which of the arrows indicate the direction of movement of gases and water when the plant photosynthesize?



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

4. The Venn Diagram below shows the different methods of reproducing plants.



Which of the following is the plant represented by 'K'?

- (1) Begonia
- (2) Hibiscus
- (3) Byrophyllum
- (4) Periwinkle

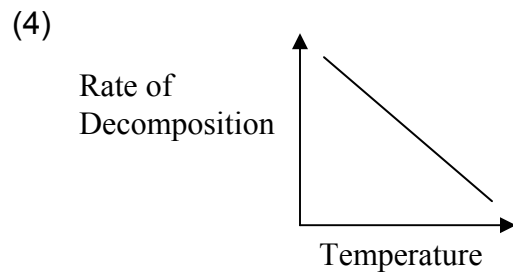
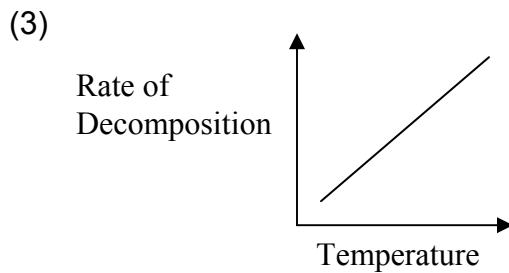
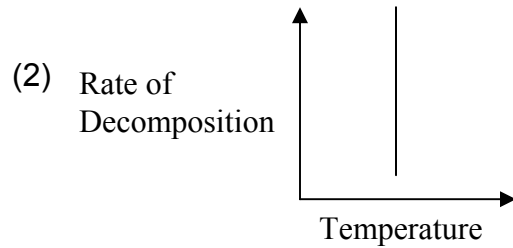
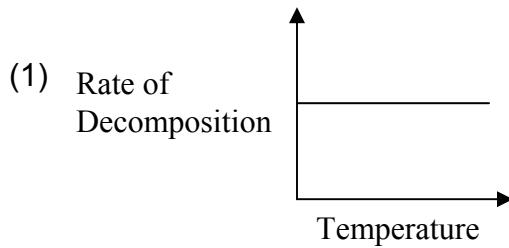
5. Which of the following sets of weak-stemmed plants, is correctly matched with its adaptation feature to obtain sufficient sunlight?

	Hooks & Thorns	Tendrils	Creeping stems
(1)	Pumpkin	Bougainvillea	Ivy
(2)	Rattan	Passion flower	Sweet potato
(3)	Rose	Carpet grass	Pepper plant
(4)	Mimosa	Blue pea	Cucumber

6. Which of these water plants in a pond will not be able to photosynthesize if the pond water becomes extremely muddy?

- (1) Lotus
- (2) Sedge
- (3) Water Lily
- (4) Amazon Sword Grass

7. Which of the following graphs show the relationship between temperature and the rate of decomposition?



8. Which is a common feature of seeds/ fruits which are dispersed by water?

- (1) They have hooks.
- (2) They have fibrous husks.
- (3) They have wing-like structures.
- (4) They have fragrant and juicy fruits.

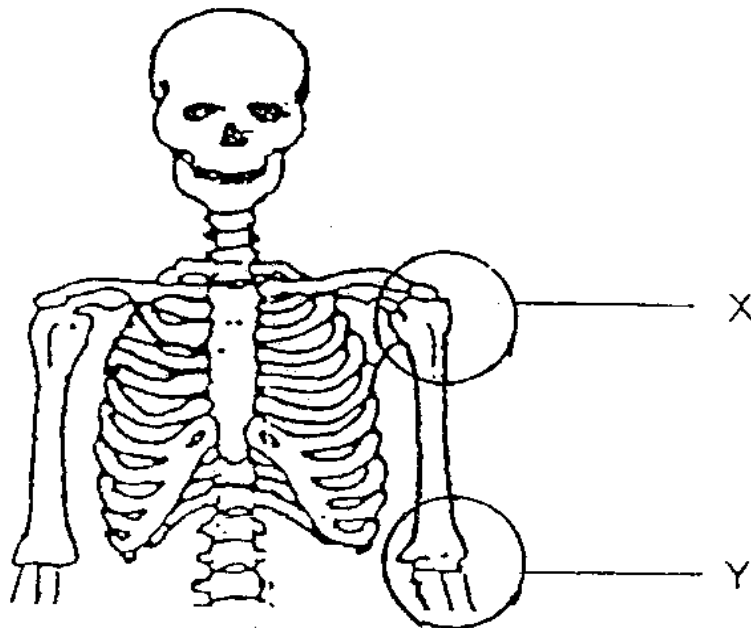
9. Which part of the eyes are we referring to when we describe the eyes as brown?

- (1) iris
- (2) pupil
- (3) eyeball
- (4) cornea

10. Which of the following **does not** occur in the mouth?

- (1) Food is mixed by the tongue.
- (2) Saliva is produced to digest the food.
- (3) Food is chewed and ground by the teeth.
- (4) Digested food is absorbed into the blood.

11. Study the diagram below.



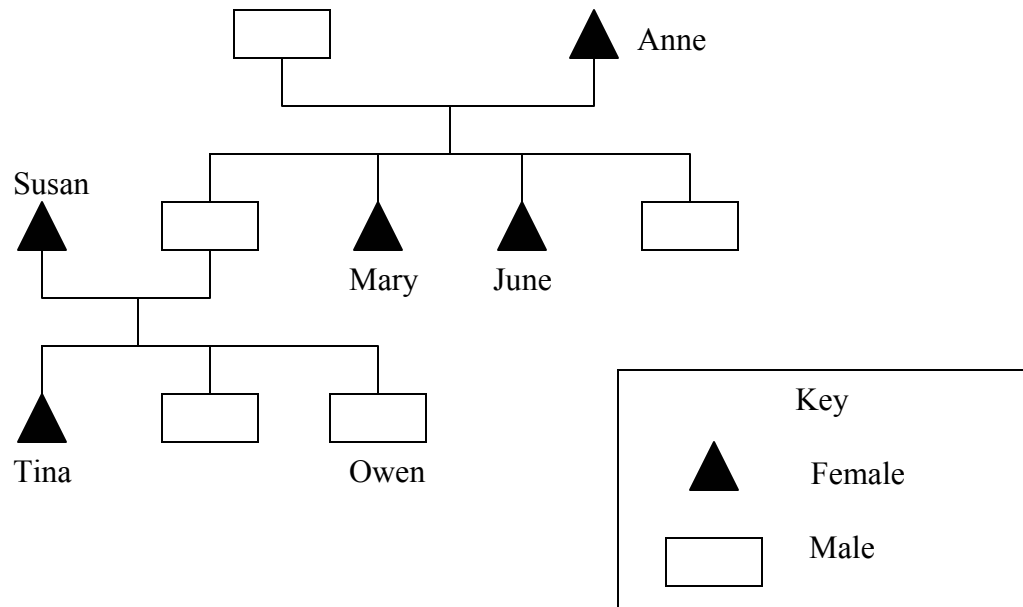
How do the parts X and Y of the skeleton help the body?

- (1) They hold the body upright.
- (2) They protect the heart and lungs.
- (3) They connect the head to the chest.
- (4) They allow more movement of the body.

12. Which of the following statements is **true** of the growth of a plant and of the growth of a chicken?

- (1) Both are irreversible changes.
- (2) Their growth does not follow a pattern.
- (3) Both require carbon dioxide to be present.
- (4) Their growth involves a change in shape and colour only.

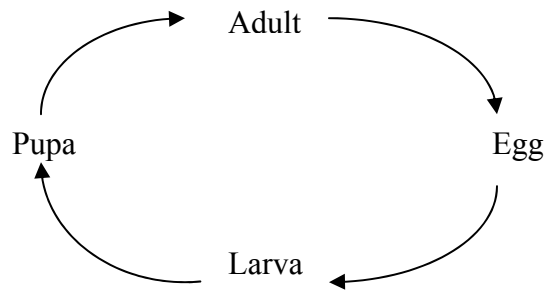
13. The following diagram shows the family tree of Owen.



Which of the following is Owen's aunt?

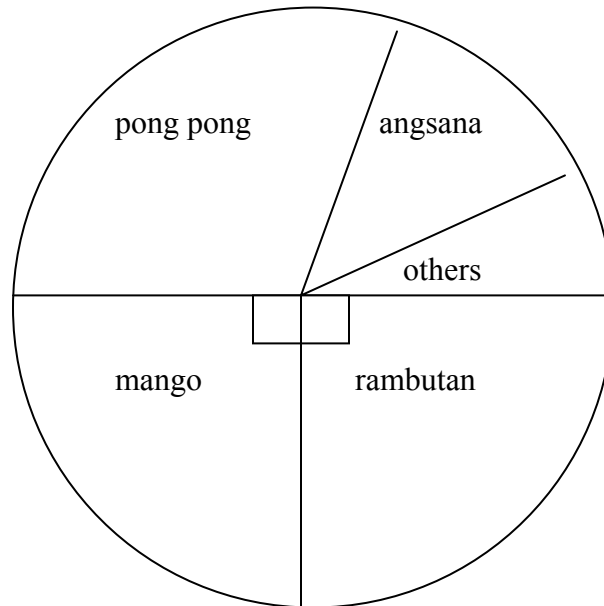
- (1) Anne
- (2) Susan
- (3) Mary
- (4) Tina

14. Which of the following **does not** go through the life cycle as shown below?



- (1) housefly
- (2) rice weevil
- (3) grasshopper
- (4) mealworm beetle

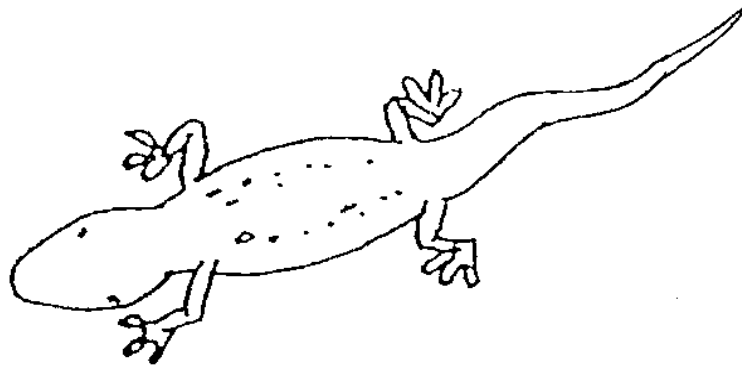
15. The pie chart below shows the population of trees in a particular school.



Which of the following statements is **false**?

- (1) There are five species of trees in the school.
- (2) There are more pong pong trees than angdana trees.
- (3) At least half of the trees in the school bear edible fruits.
- (4) There is an equal number of mango and rambutan trees.

16. The diagram below shows a house lizard.



Which features of the lizard will help it to catch its prey?

- A. A long sticky tongue to catch insects.
- B. A detachable tail to run away from its predators.
- C. Body colour which matches with the surroundings.
- D. Suction pads on the underside of its feet to walk on ceilings or walls.

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

17. Which of the following materials come from animals?

- A. Leather
- B. Wool
- C. Rattan
- D. Jute

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



18. Mingli made a box camera and used it to look at different objects.

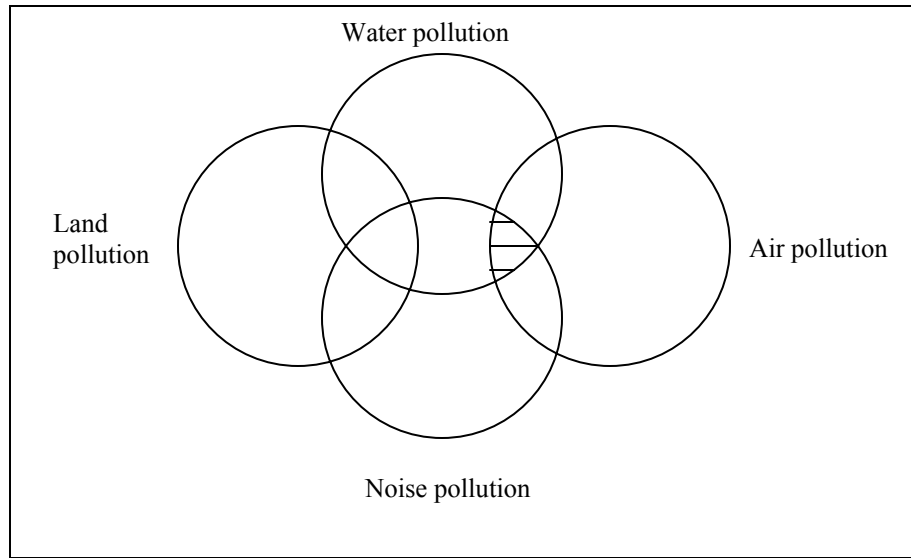


Using the box camera, he found that the images of the original objects are \_\_\_\_\_.

- A. inverted
- B. reflected
- C. smaller than the original object
- D. of the same colours as the original object

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

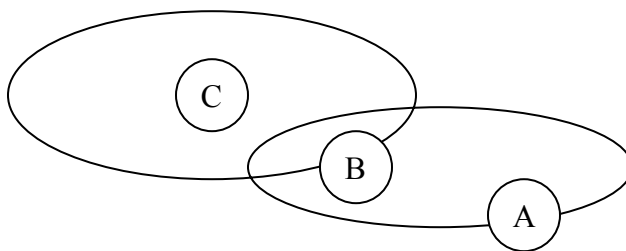
19. Study the Venn Diagram below.



Which of the following activities can be put in the shaded area of the Venn Diagram?

- (1) erosion of soil near a river
- (2) burning of refuse in the open
- (3) discharge of sewage into the drains
- (4) explosion of an oil tanker in the sea

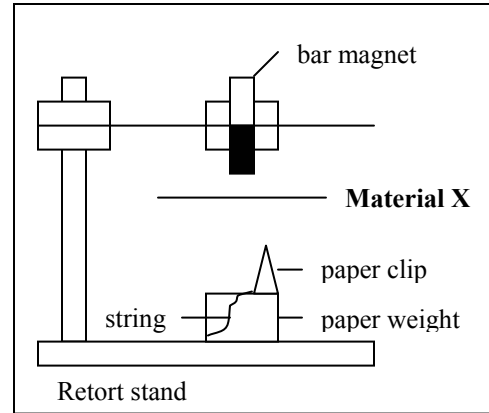
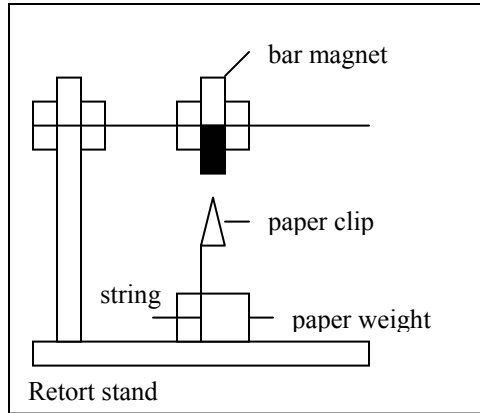
20.



In the diagram above, A, B and C are parts of the solar system. B revolves round C while A revolves round B. Which of the following represents A, B and C?

	A	B	C
(1)	Moon	Earth	Sun
(2)	Earth	Moon	Sun
(3)	Sun	Earth	Moon
(4)	Moon	Sun	Earth

21. The diagram below shows a paper clip 'floating in the air'. It dropped when a piece of material X was put between the magnet and the paper clip as shown below.

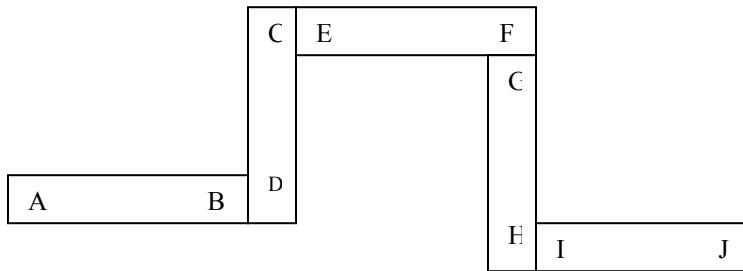


Which of the following materials can Material X be?

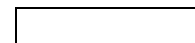
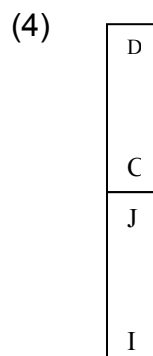
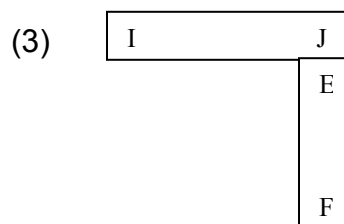
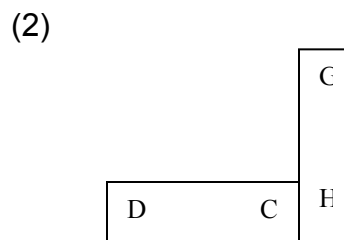
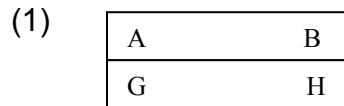
- A. Lead
- B. Steel
- C. Nickel
- D. Aluminium

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

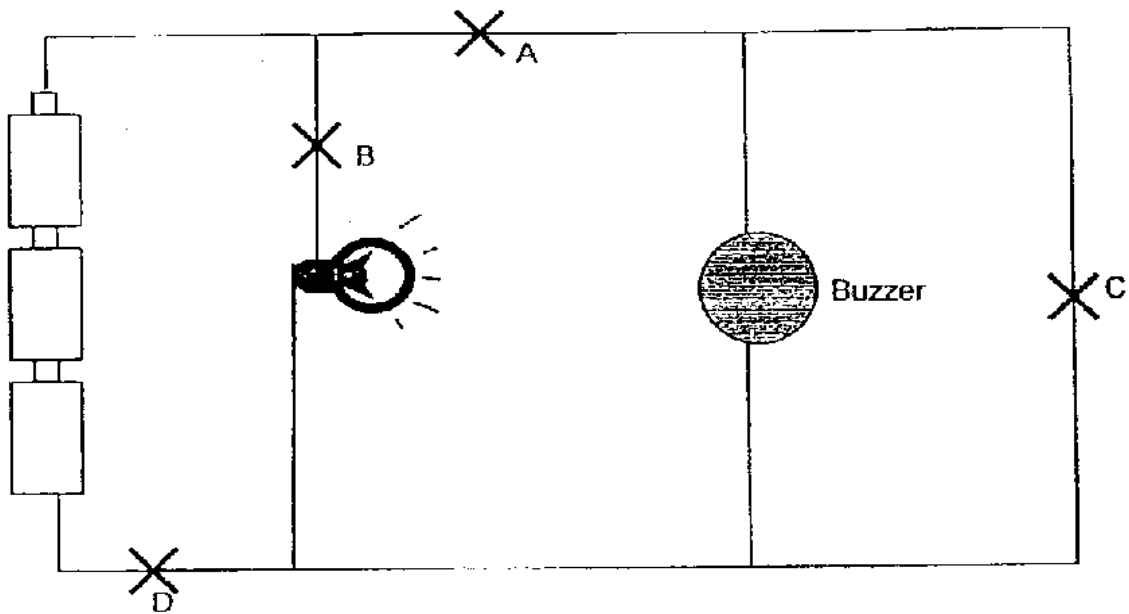
22. 5 bar magnets are put together such that they attract the other magnet at their poles. Their poles are marked as shown in the diagram below.



Which one of the following diagrams shows a correct arrangement when 2 of the magnets are placed together?



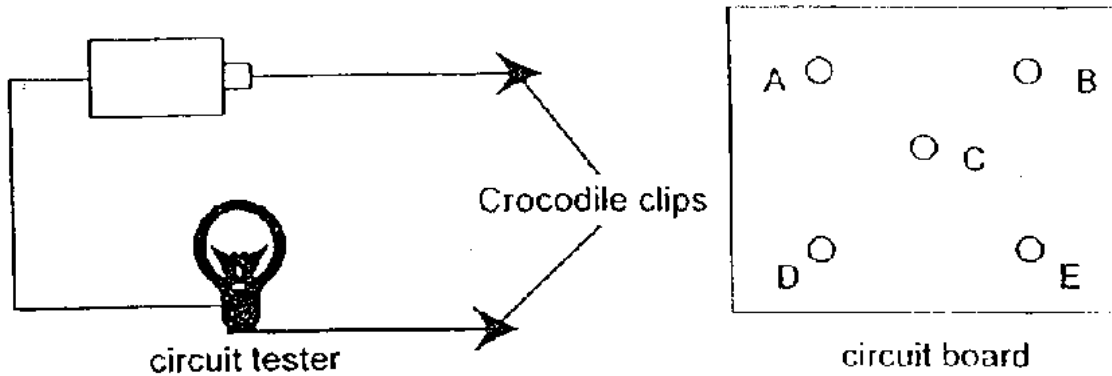
23. The diagram shows a lighted bulb and a buzzer in a circuit. A switch is to be installed so that the light bulb is always lighted up while the buzzer can be switched on or off.



At which point in the circuit should the switch be installed?

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

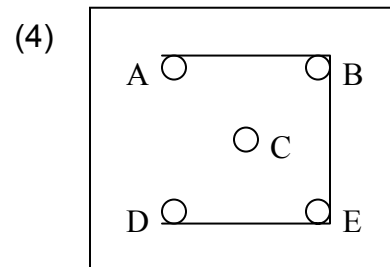
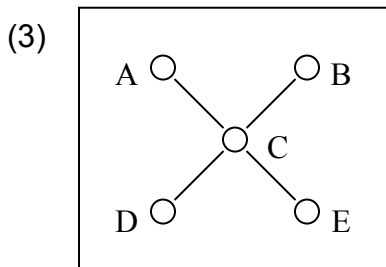
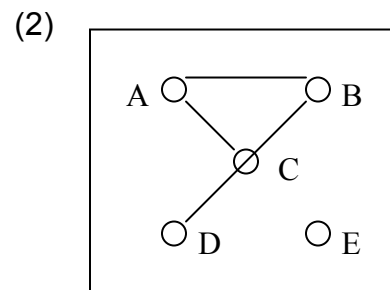
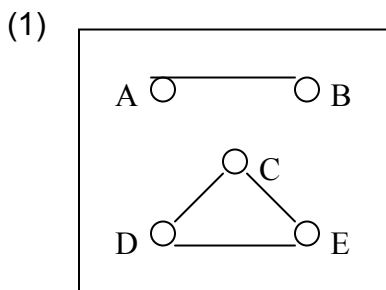
24. A circuit tester is used to test a circuit board at 5 different points.



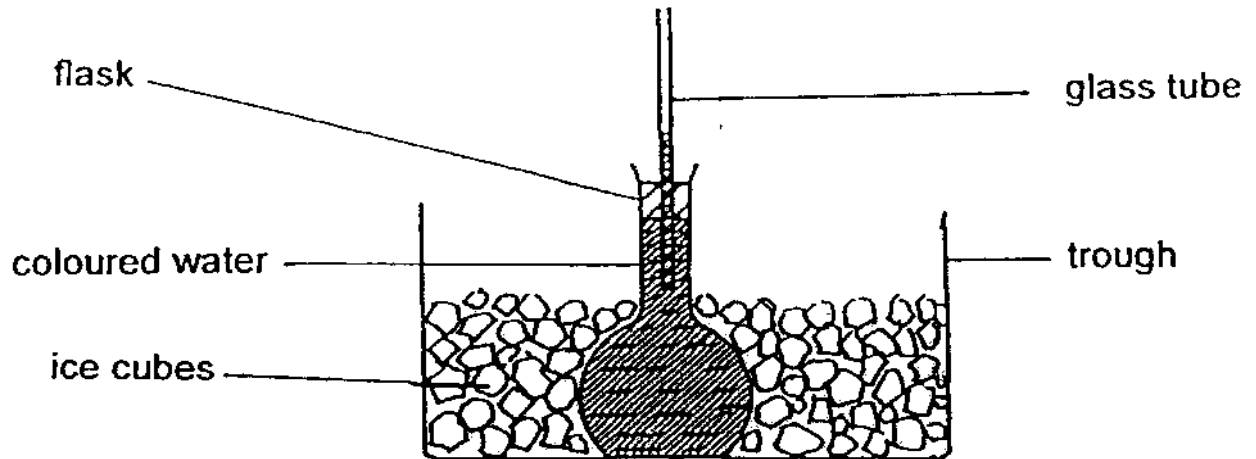
The test results are shown in the table below.

Points of contact on circuit board					Does the bulb light up?
A	B	C	D	E	
			√	√	Yes
	√	√			No
√				√	No

Based on the results, which diagram shows the correct connection on the reverse side of the circuit board?

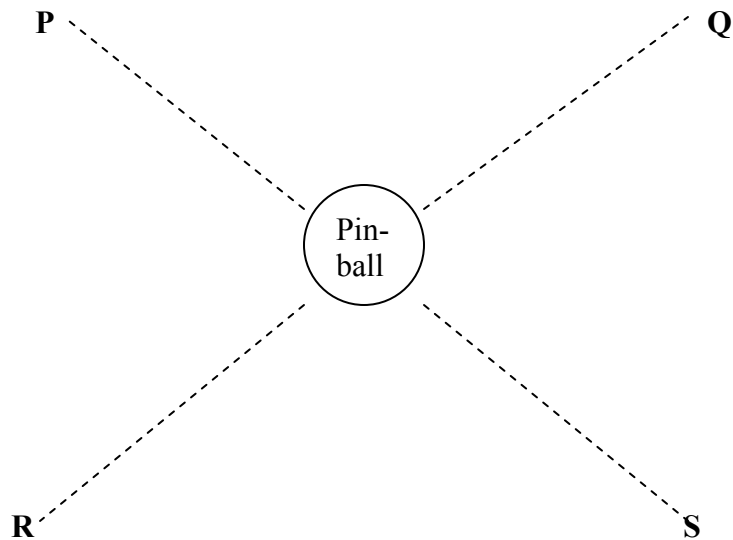


25. The diagram below shows a flask of coloured water immersed in a trough of ice cubes. It is observed that the water level in the glass tube rises slightly first before it falls. This is because the \_\_\_\_\_.



- (1) glass tube contracts after the water contracts
- (2) flask contracts first before the water contracts
- (3) water expands first before the glass tube contracts
- (4) glass tube contracts first before the water contracts

26. In the diagram below, a force is applied to a pin-ball such that it is heading towards direction P. The dotted lines represent the possible paths taken by the pin-ball.

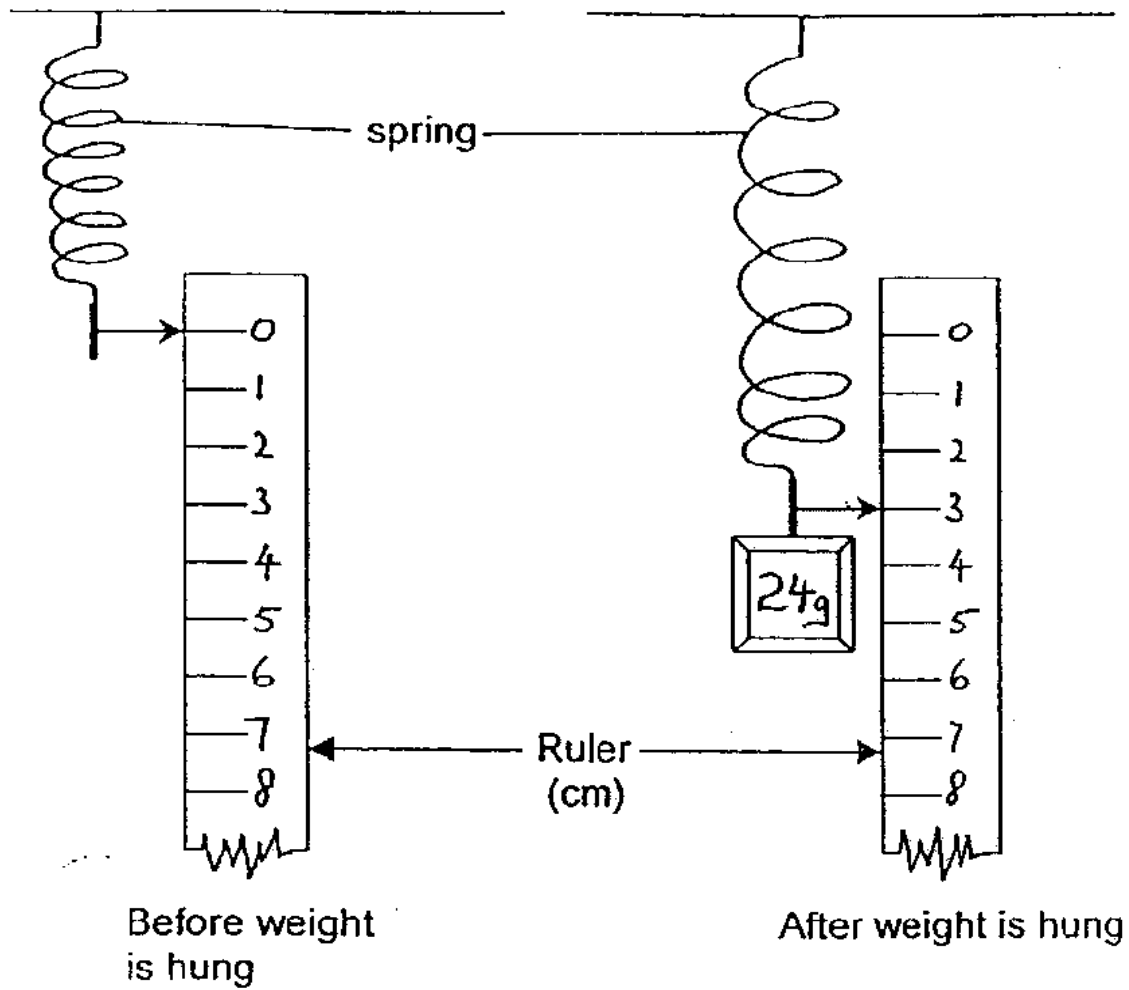


What must be done in order to change the direction of the pin-ball such that it is heading towards S?

- (1) A same and equal force should be applied towards direction S.
- (2) A stronger force should be applied towards direction S.
- (3) A weaker force should be applied towards direction R.
- (4) A stronger force should be applied towards direction Q.



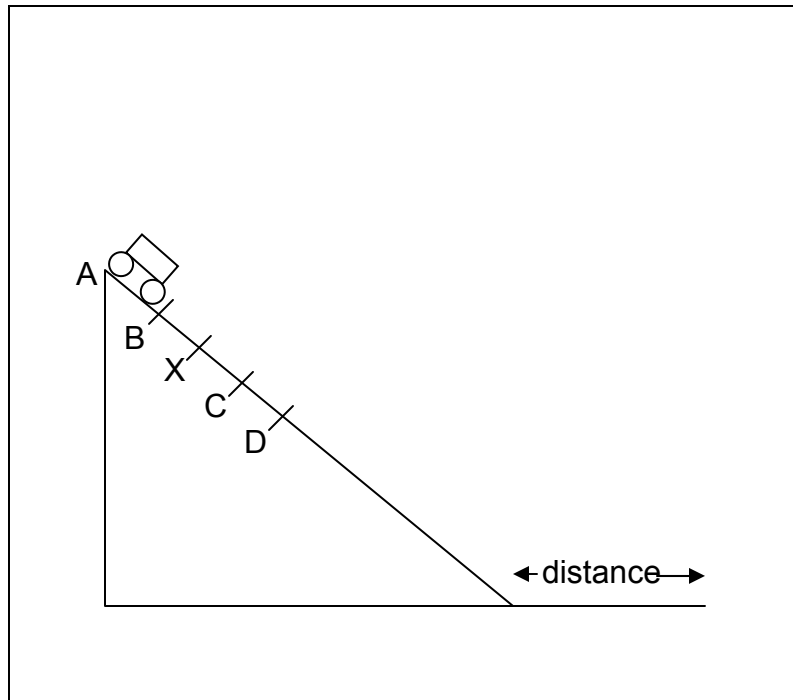
27. The diagram shows a spring of length 5 cm being extended when a weight of 24g is hung on it.



What will be the length of the spring when a weight of 40g is hung?

- (1) 5 cm
- (2) 8 cm
- (3) 10 cm
- (4) 15 cm

28. The diagram below shows a ramp.  
The slope of the ramp has been marked A, B, C, D and E at equal intervals.



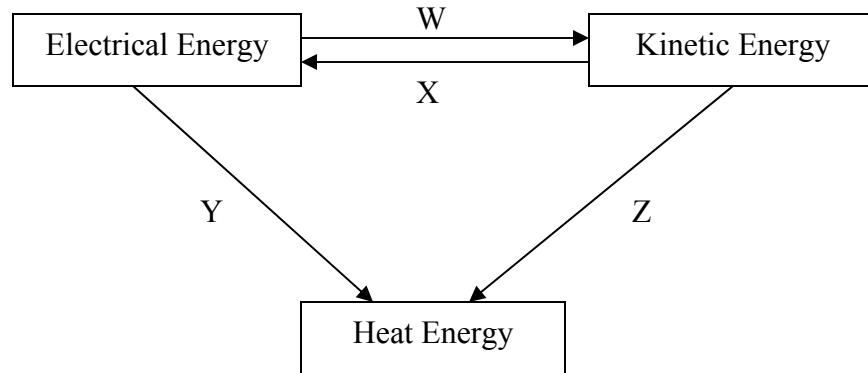
The following table shows the distance covered by a toy car released at the different points.

Position of the car at the start	Distance traveled by the car along the floor
A	150 cm
B	112 cm
C	85 cm
D	46 cm

If the toy car started from point X, it would travel about \_\_\_\_\_ along the floor.

- (1) 80 cm
- (2) 90 cm
- (3) 100 cm
- (4) 110 cm

29.

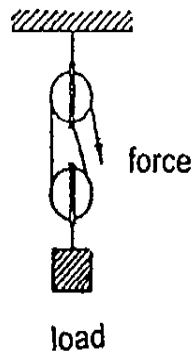


In the diagram above, different energy changes brought about by different activities are represented by arrows W, X, Y and Z. Only the useful forms of energy change are considered.

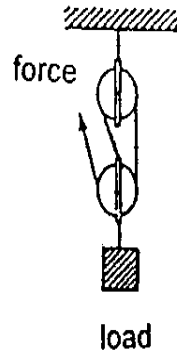
Which of the following activities brought about the energy changes?

	W	X	Y	Z
(1)	Switching on a fan	Operating a turbine	Switching on an oven toaster	Sharpening a knife
(2)	Turning on an air-conditioner	Extending a spring	Turning on a lamp	Soothing a piece of wood with a piece of sandpaper
(3)	Switching on a toy car	Operating a turbine	Switching on a television set	Striking a matchstick
(4)	Switching on a toy car	Turning on a dynamo	Switching on an iron	Rubbing your hands together

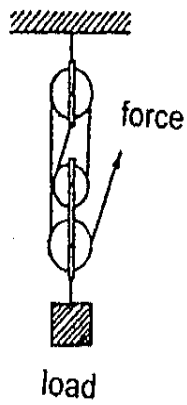
30. Which one of the pulley systems requires the least amount of force to raise a similar load and changes the direction of force?



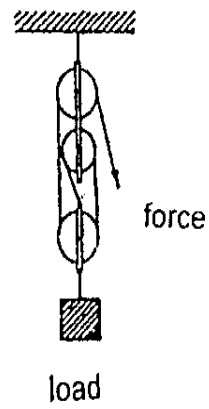
(1)



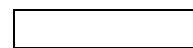
(2)



(3)



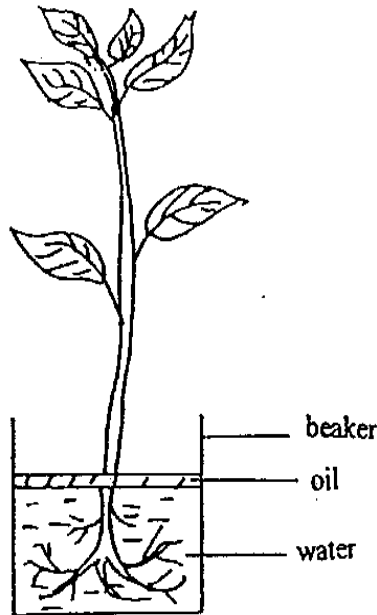
(4)



**Part II (40 marks)**

**Write your answers for each question 31 to 46 in the spaces provided.**

31. Jacky conducted an experiment on a plant as shown in the diagram below.



- (a) After a few days, the water level in the beaker was lower. Give a reason for this. (1m)

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- (b) Why do you think there is a layer of oil? (1m)

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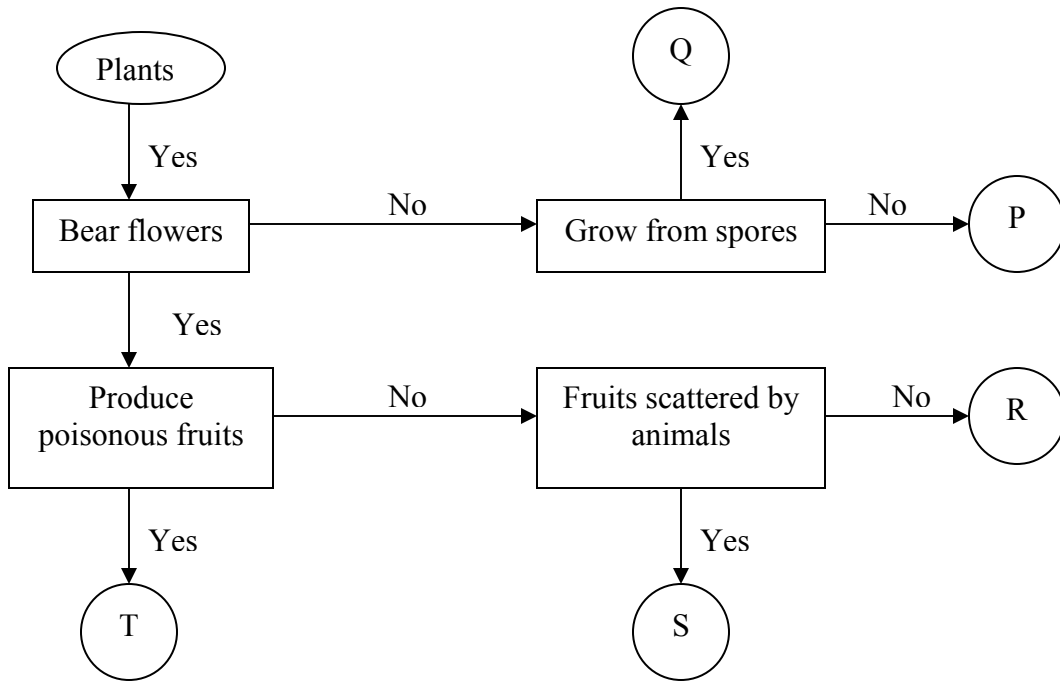
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- (c) How is water lost from the plant? (1m)

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32. Study the flow chart below carefully.



Match the following plants with the letters P, Q, R, S and T.  
Use the letters only once.

(2m)

Plants	Bird's Nest Fern	Lantana	Durian	Rubber
Letters				

33. The leaves of duckweeds and water hyacinth are coated with a \_\_\_\_\_ layer to prevent \_\_\_\_\_ from collecting on them. In this way, these plants are able to stay afloat to get \_\_\_\_\_. The water lettuce, however, has \_\_\_\_\_ leaves to keep them afloat.

(2m)

34. Mrs Teng put some green bean seedlings in 2 separate beakers. She placed one beaker in a cupboard and the other next to a window. She watered the seedlings daily. She recorded the height and observations of the seedlings every 2 days as shown in the table below.

Beaker A (next to the window)			Beaker B (in the cupboard)	
Days	Average height (mm)	Observations	Average height (mm)	Observations
2	3	Started growing	3	Started growing
4	9	Green healthy green leaves	14	Pale green leaves
6	18	Strong stems and green leaves	30	Long thin stems and yellowish leaves
8	30	Strong stems and green leaves opened	50	Thin stems started to droop and yellow leaves
10	42	Very strong stems and open green leaves	59	Straggly thin stems and yellow closed leaves
12	56	Very strong stems and big open green leaves	65	Few stems left curling on the bottom of beaker and closed yellow leaves

- (a) Which group of seedlings grew fastest in height? (1m)

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- (b) Using the table, list 2 differences between the appearance of the seedlings grown in the dark and in the open. (2m)

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35. Fandi was engaged in the following activities:

- A game of soccer
- A walk home
- A peaceful nap

(a) During which one of the activities would he most likely have the (1m)

(i) slowest heart beat : \_\_\_\_\_

(ii) fastest heart beat : \_\_\_\_\_

(b) Explain your answer in (a) (ii) . (2m)

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36. A flower will eventually change into a fruit.

(a) Name the processes that must take place after pollination so that the flower can develop into a fruit. (1m)

---

(b) Name the part of the flower that will become a fruit. (1m)

---

(c) The seeds are inside the fruit. Why are seeds so important to the plant? (1m)

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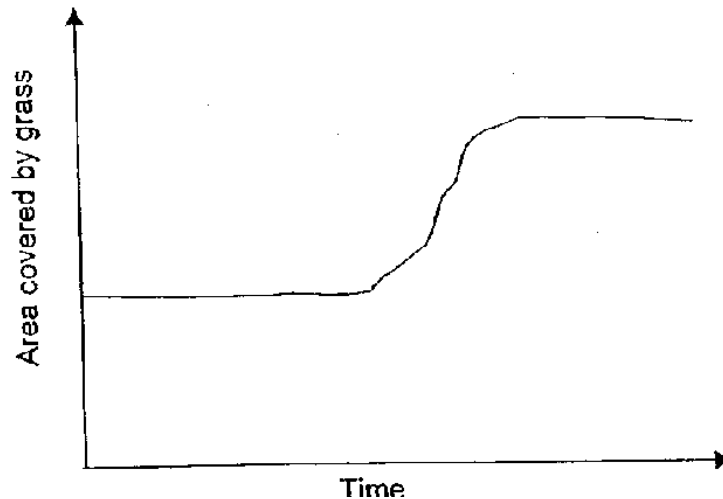


37. Fill each blank with the correct word.

(2m)

When we breathe, air enters our body through either our nose or mouth. Then, the air goes into a tube called \_\_\_\_\_ which leads into the \_\_\_\_\_. Blood vessels here contain blood which helps to collect the \_\_\_\_\_ from the air we breathe in. The blood then flows into the \_\_\_\_\_ which then sends it to all parts of our body.

38. Study the graph below which shows the change in the area covered by grass in a grassland.



(a) **Mark** on the line graph with an 'X' to show when a new animal population was introduced into the grassland community. (1m)

(b) What **type** of animal do you think was introduced into the grassland community? (1m)

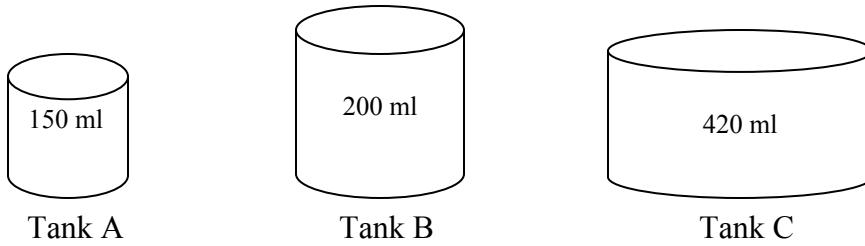
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(c) Explain **how** this type of animal in your answer in (b) can cause the area covered by grass to increase. (2m)

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39. Tanks A, B and C hold some oxygen.



(a) Which of the tank/s above can hold 200 ml of oxygen? (1m)

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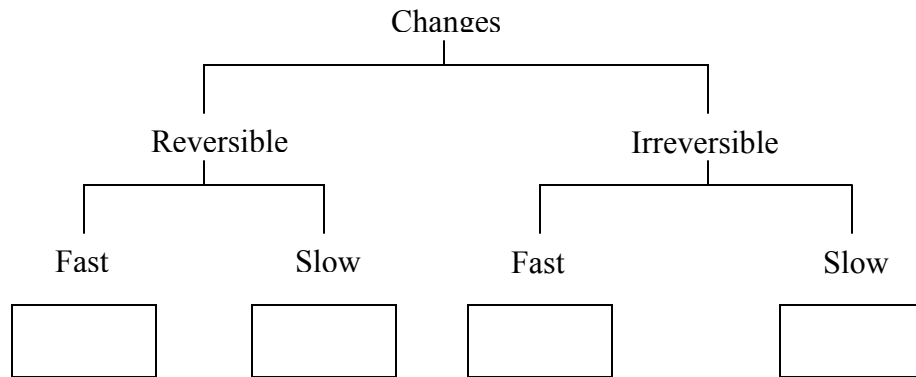
(b) Give a reason for your answer in part (a) (1m)

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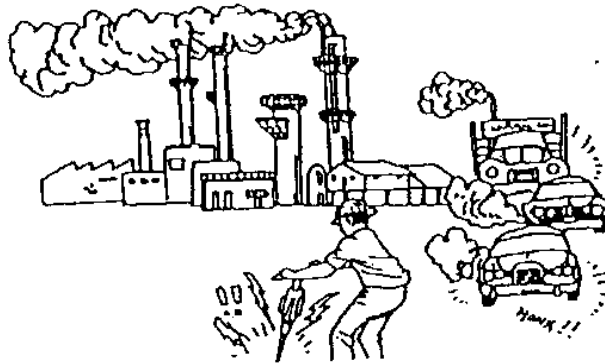
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40. Group the following activities W, X, Y and Z in the classification table below. Use each letter only once. (2m)

- W Growth of a tree
- X Frying a chicken wing
- Y Drying a wet bath towel
- Z Moulding a ball of plasticine



41. Study the picture below.



(a) Name two types of pollution shown in the picture. (1m)

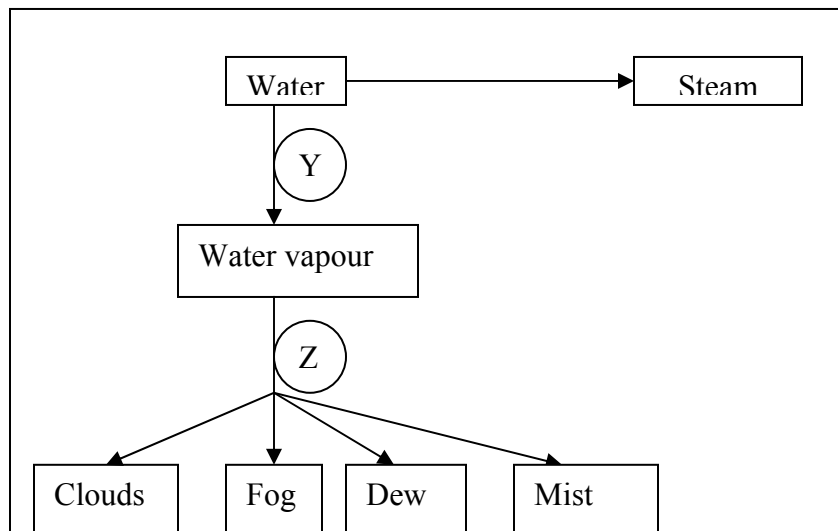
(i) \_\_\_\_\_ pollution

(ii) \_\_\_\_\_ pollution

(b) State one air pollutant that contributes to the greenhouse effect. (1m)

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42. In the diagram below, X, Y and Z represent three processes. Each involves a change in state. (2m)



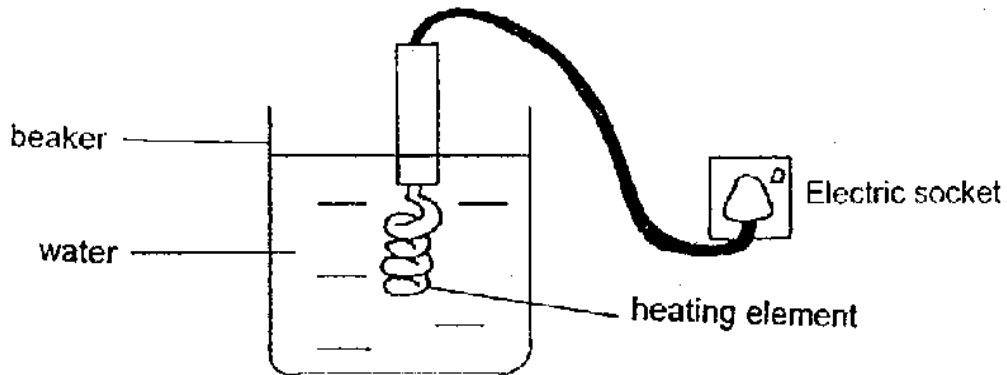
Identify the following processes.

X: \_\_\_\_\_

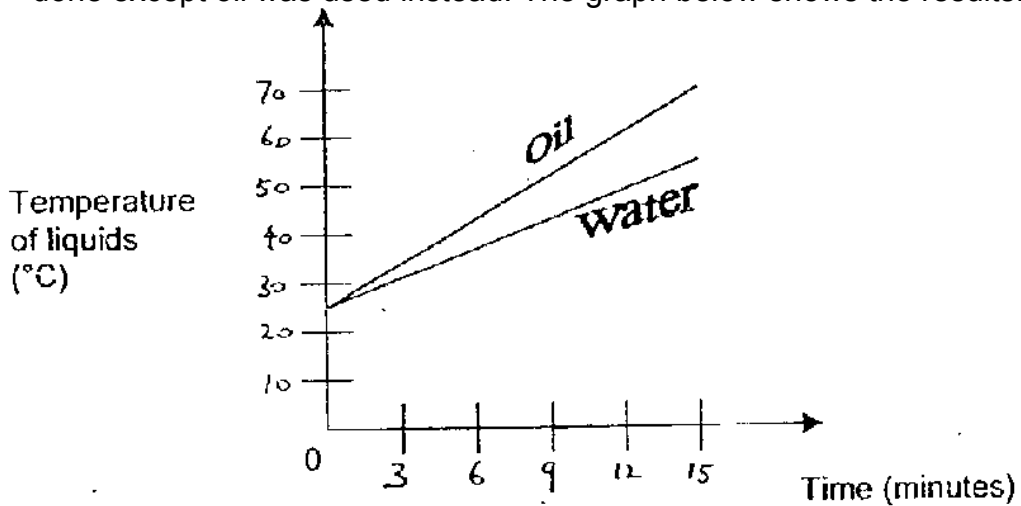
Y: \_\_\_\_\_

Z: \_\_\_\_\_

43. In the diagram below, a portable boiler was placed in a beaker filled with some water. The boiler is then switched on.



The temperature was recorded at 3 minute intervals for 15 minutes and a line graph was drawn. Another experiment involving a similar set-up was done except oil was used instead. The graph below shows the results.



- (a) What energy change had taken place in the boiler when the switch was turned on? (1m)

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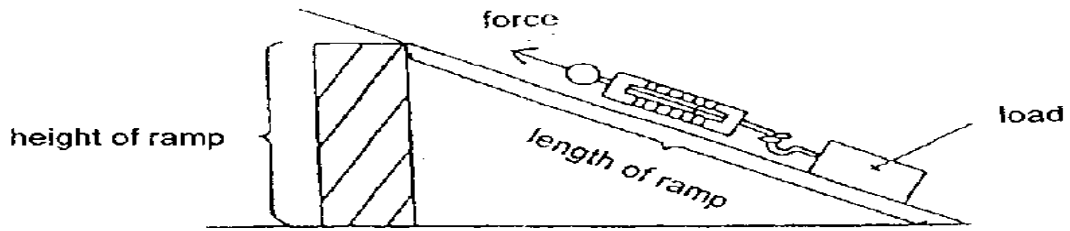
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- (b) Which liquid is a better conductor of heat? Explain your choice. (2m)

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44. Jimmy wanted to find out how the height of ramp affects the force used to pull the load up. He set up the experiment below.



- (a) Name three variables which must be kept the same to ensure a fair test. (1m)

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

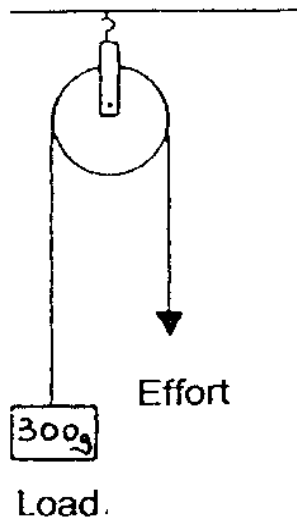
(iii) \_\_\_\_\_

- (b) How does the surface of the ramp affect the force used to pull the load up? (1m)

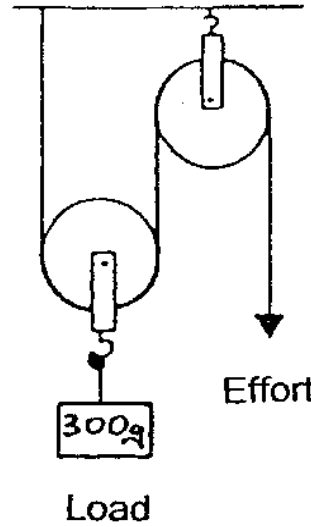
\_\_\_\_\_

\_\_\_\_\_

45. Pulley systems X and Y are set up as shown in the diagrams below. In each system, an effort is applied to lift a load of 300g.



Pulley system X



Pulley system Y

- (a) In lifting the load, what can you say about the distance moved by the load as compared to the distance moved by the effort in

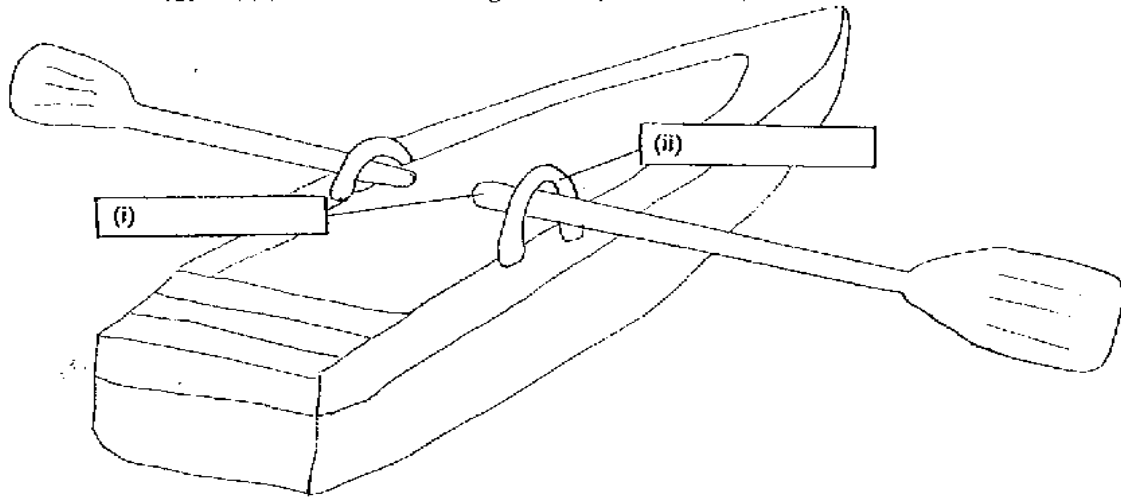
(i) pulley system X: \_\_\_\_\_  
 \_\_\_\_\_ (1m)

(ii) pulley system Y: \_\_\_\_\_  
 \_\_\_\_\_ (1m)

- (b) In lifting the load, name one disadvantage that pulley system X has when compared to pulley system Y. (1m)

\_\_\_\_\_  
 \_\_\_\_\_

46. A boat is rowed using an oar placed at a position in the diagram below.



(a) Fill in the boxes provided with the words **effort**, **fulcrum** or **load**. (1m)

(b) In what way does the oar make work easier for Man when it is used as a lever? (2m)

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**End of Paper**