新加坡福建会馆属下五校小六统一考试

道南 • 爱同 • 崇福 • 南侨 • 光华

SINGAPORE HOKKIEN HUAY KUAN 5-SCHOOL PRIMARY 6 COMBINED PRELIMINARY EXAMINATION

TAO NAN • AI TONG • CHONGFU • NAN CHIAU • KONG HWA

2006

科学 SCIENCE

BOOKLET A

Total Time For Booklets A and B: 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

- ✓ Do not open this booklet until you are told to do so.
- ✓ Follow all instructions carefully.
- ✓ Answer all questions.

This booklet consists of 22 printed pages and 1 blank page.

School : _____

Name : _____

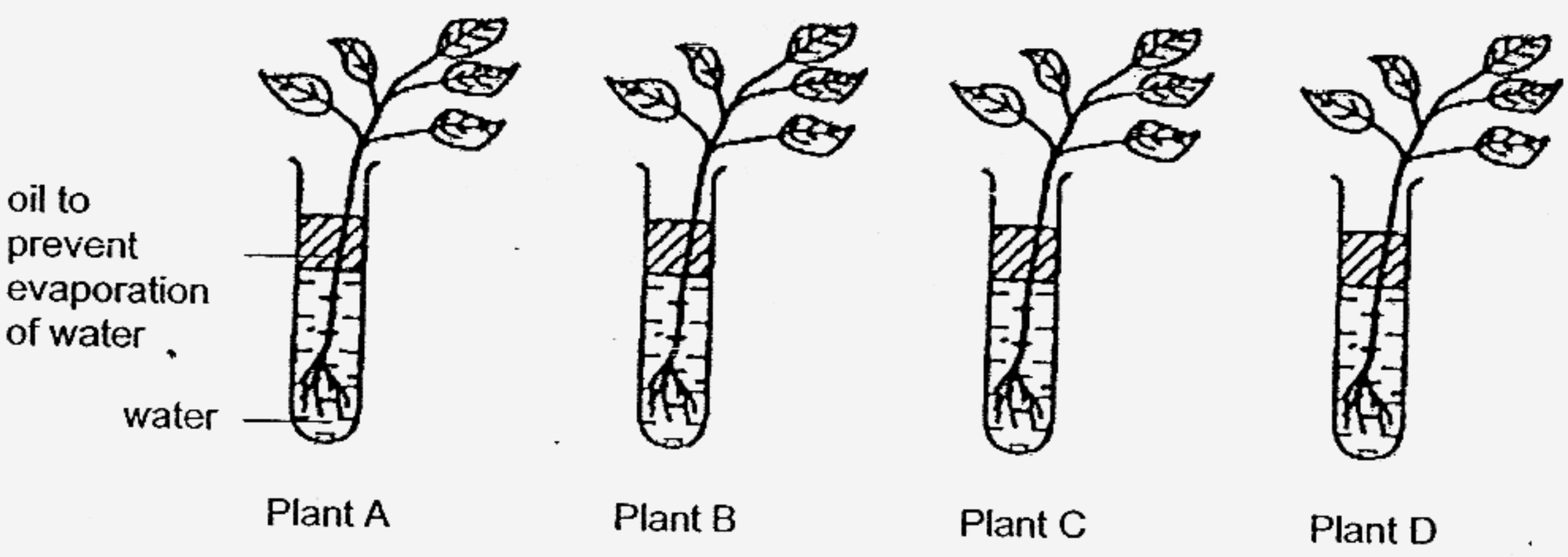
Class : _____

Date : 24 August 2006

TOTAL	/ 60

Section A (30 x 2 marks)
For each question from 1 to 30, 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) Four similar plants were placed in test-tubes as shown in the diagram below.



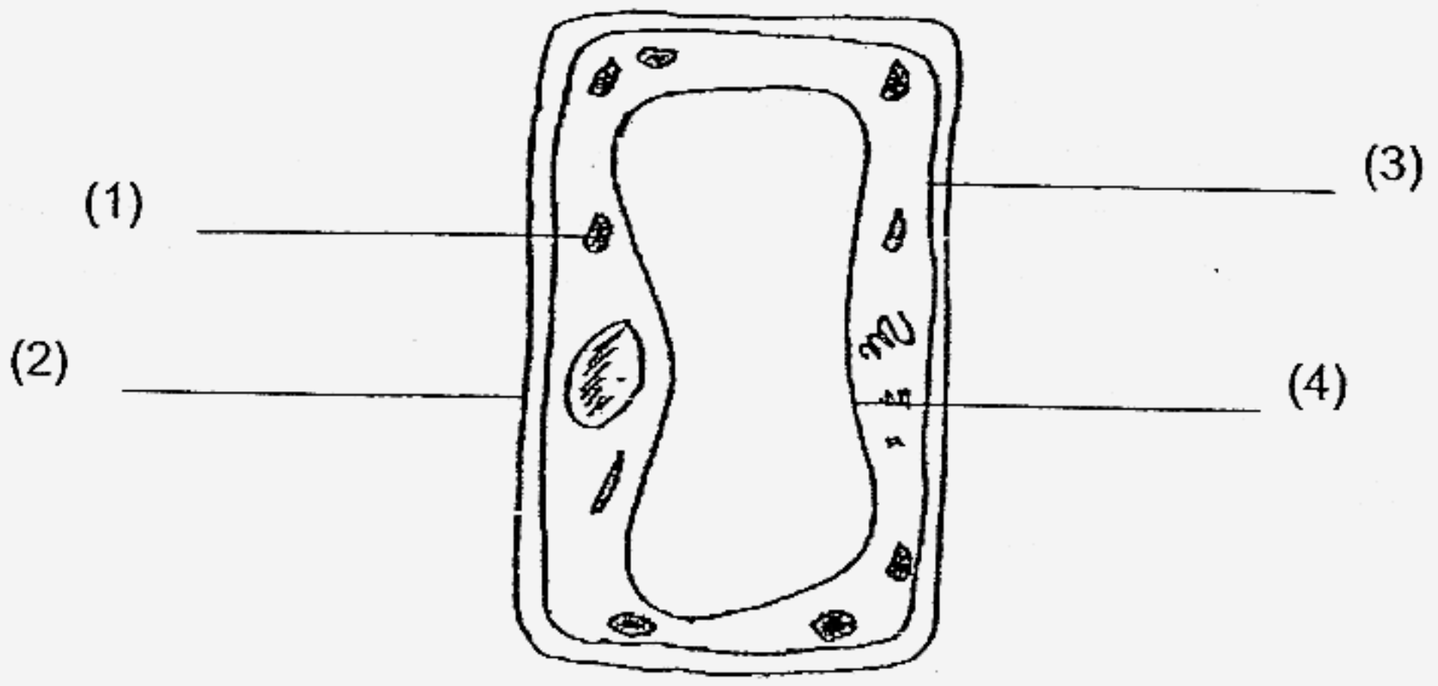
Some of the plants had their leaves coated with oil to prevent loss of water. Each plant was weighed in its test-tube at the start of the experiment and 5 days later. The results were shown in the table below.

	Mass of plant in its test-tube (g)	
	At the start of the experiment	At the end of the experiment, 5 days later
Plant A	105	103
Plant B	107	84
Plant C	112	110
Plant D	119	97

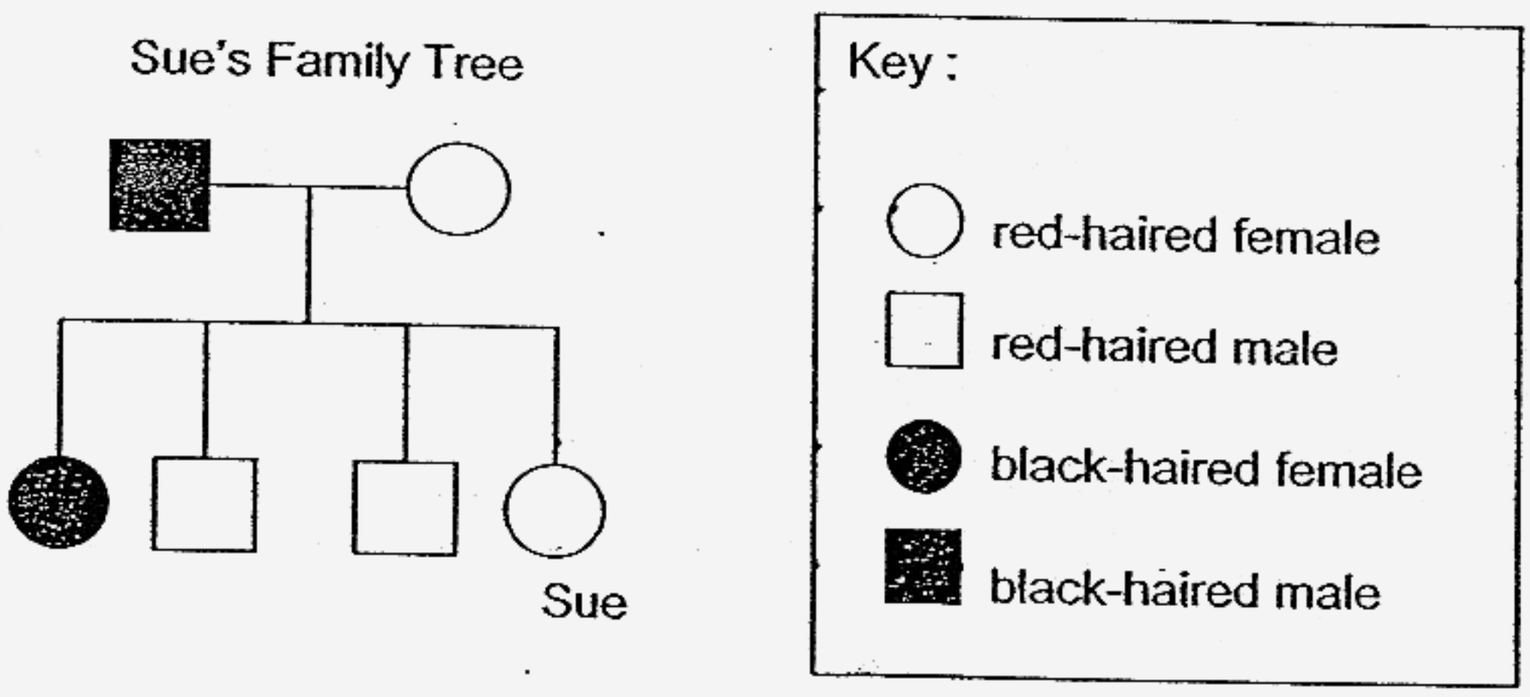
Which of the plants had their leaves coated with oil?

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

2) The diagram below shows a plant cell. Which part of the cell controls substances entering and leaving the plant cell?



3) The diagram below shows Sue's family tree.



Which of the following statements about Sue's family is correct?

(1) Sue has reddish black hair.
(2) Sue has 2 brothers and 2 sisters.
(3) 3 people in the family have red hair.
(4) Sue's sister inherited her hair colour from her father.

4) Which of the following statements describe asexual reproduction in the potato plant?

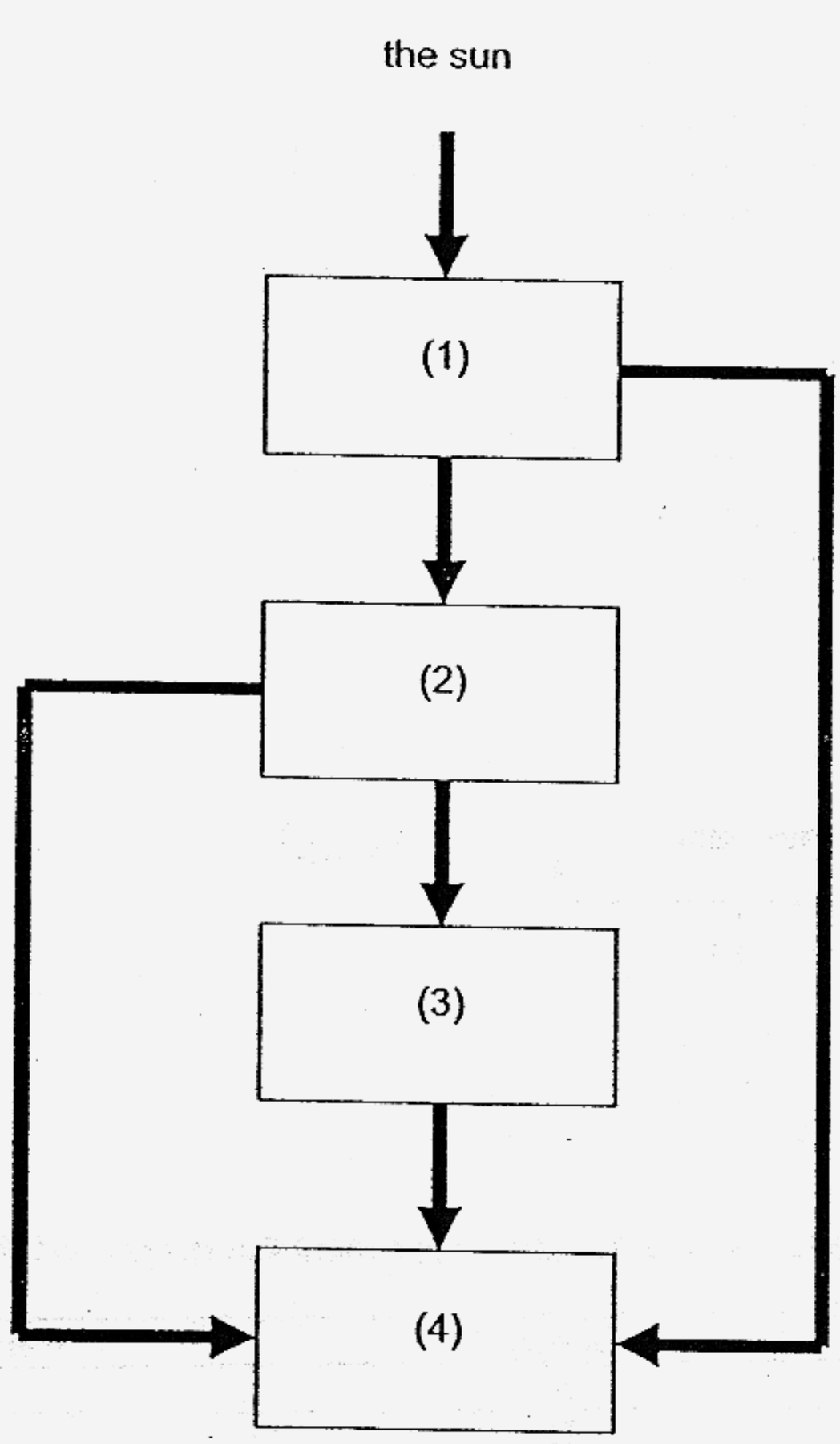
A There is only one parent plant.
B The underground stems store food for the plant.
C There are underground stems attached to the parent plant.
D The underground stems are genetically identical to the parent plant.

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

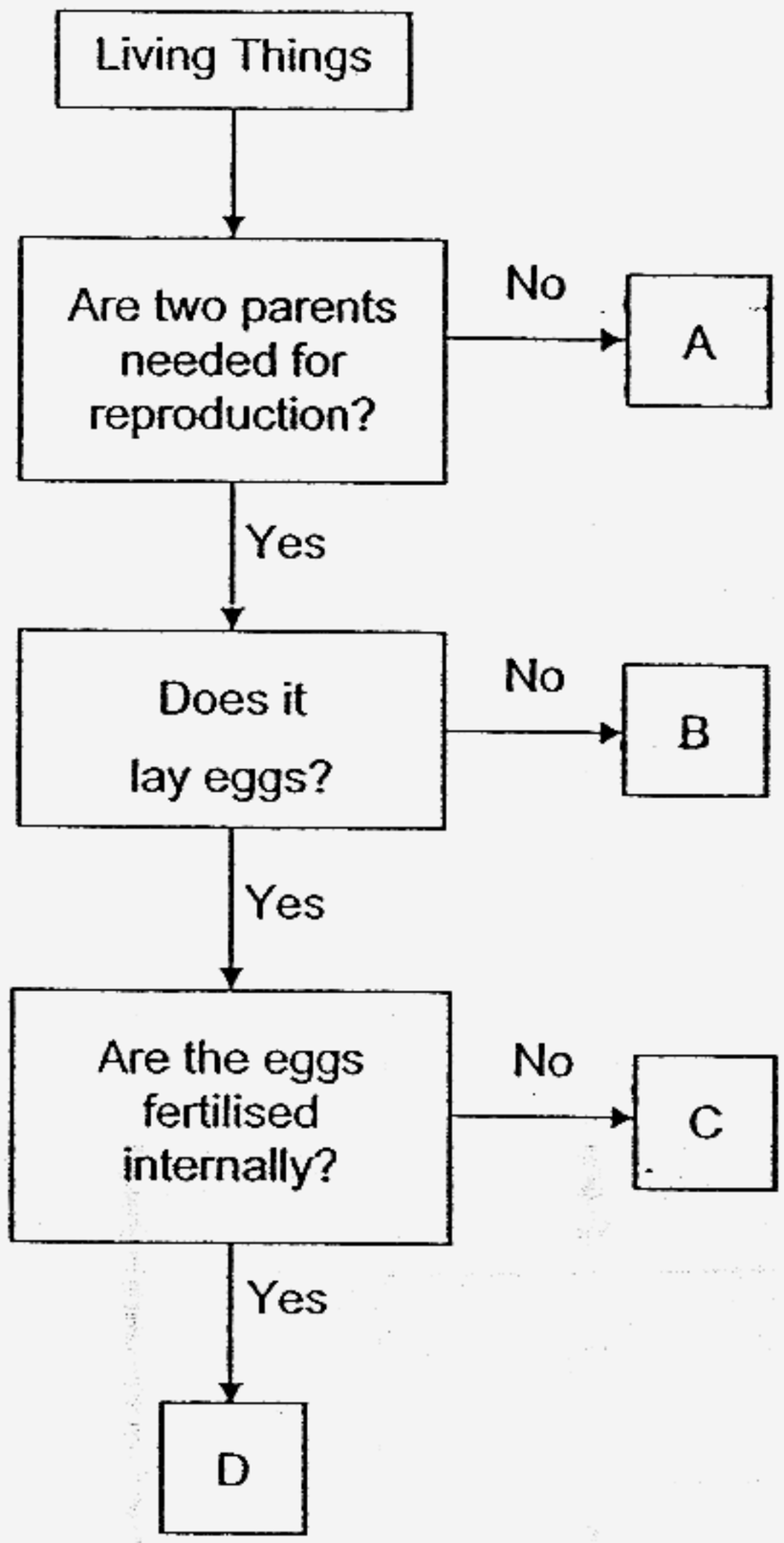
5) Which of the following statements about photosynthesis and respiration in plants is correct?

	Photosynthesis	Respiration
(1)	Make food	Release energy
(2)	Use glucose	Produce glucose
(3)	Take in oxygen	Give out carbon dioxide
(4)	Only occur in the day	Only occur in the night

6) The diagram below shows the flow of energy in a typical ecosystem.
Which box represents the largest total number of living organisms?



7) Study the flowchart below carefully.

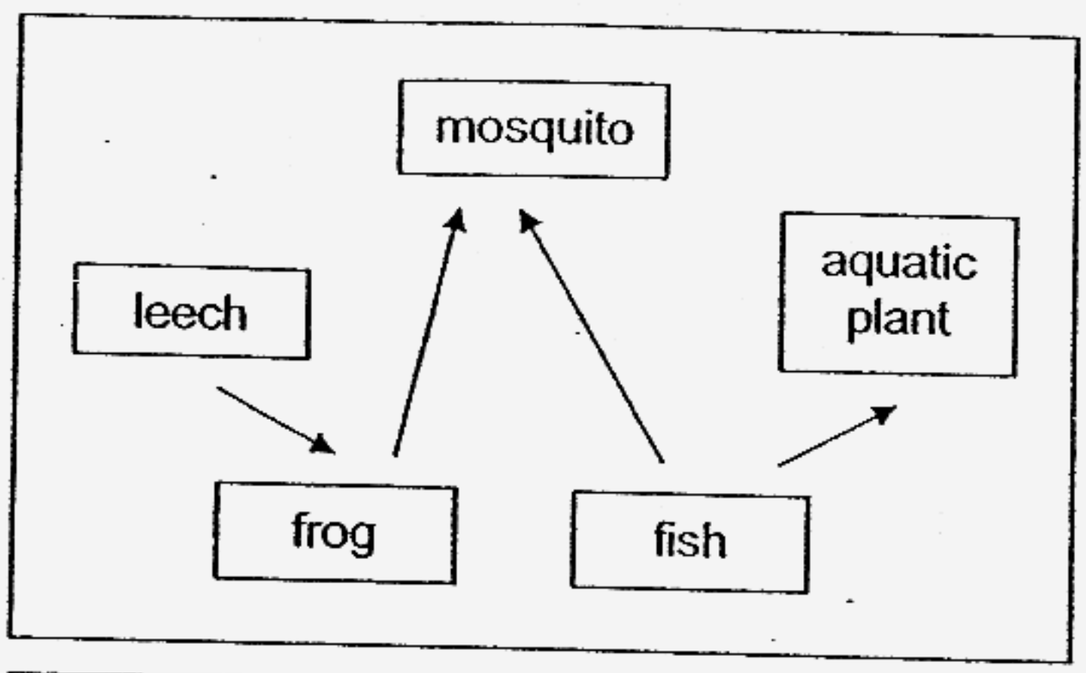


Which letters in the flowchart represent the guppy and the paramecium?

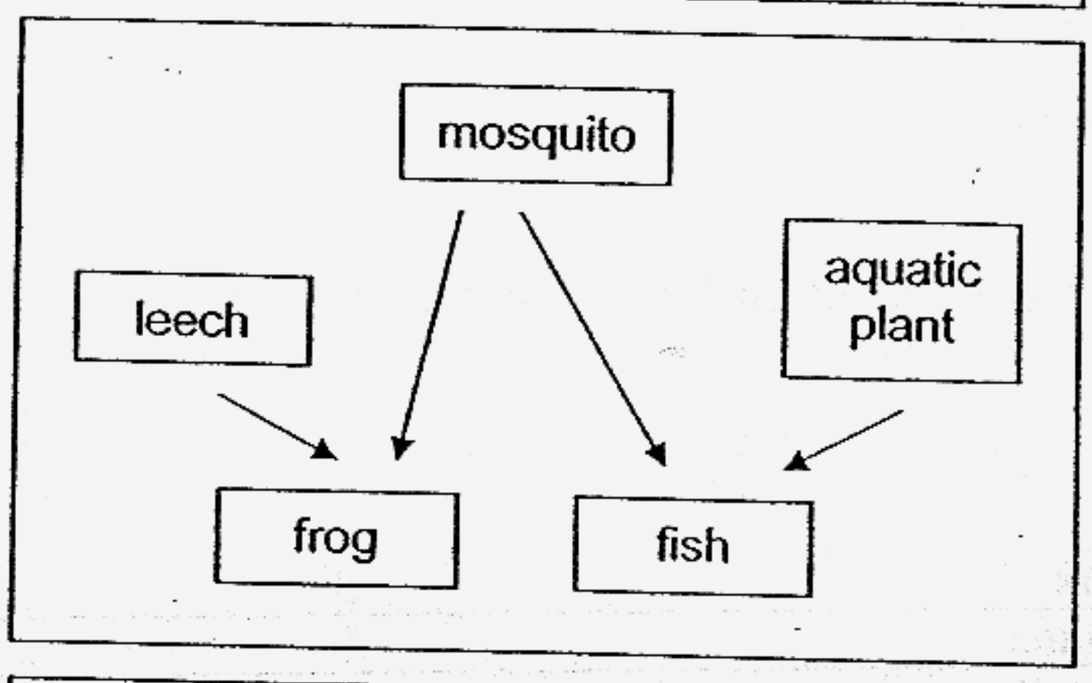
	Guppy	Paramecium
(1)	A	D
(2)	D	C
(3)	B	A
(4)	C	B

8) Leeches are found in shady areas of ponds. They feed on frogs. Which of the following food webs shows the food relationships in the ponds?

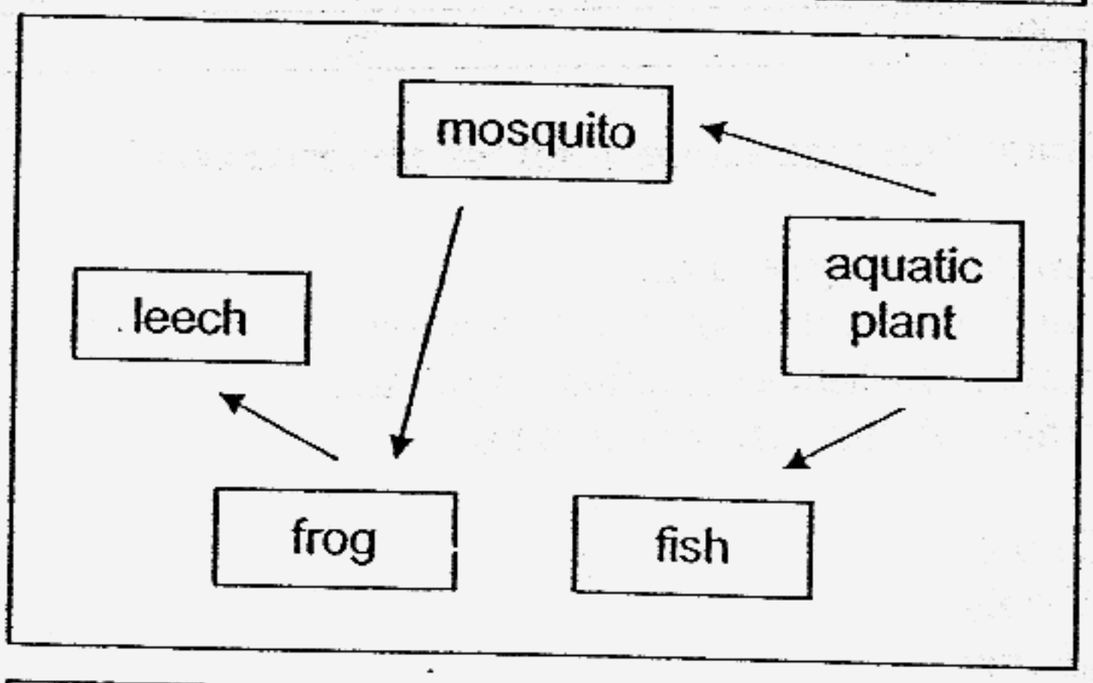
(1)



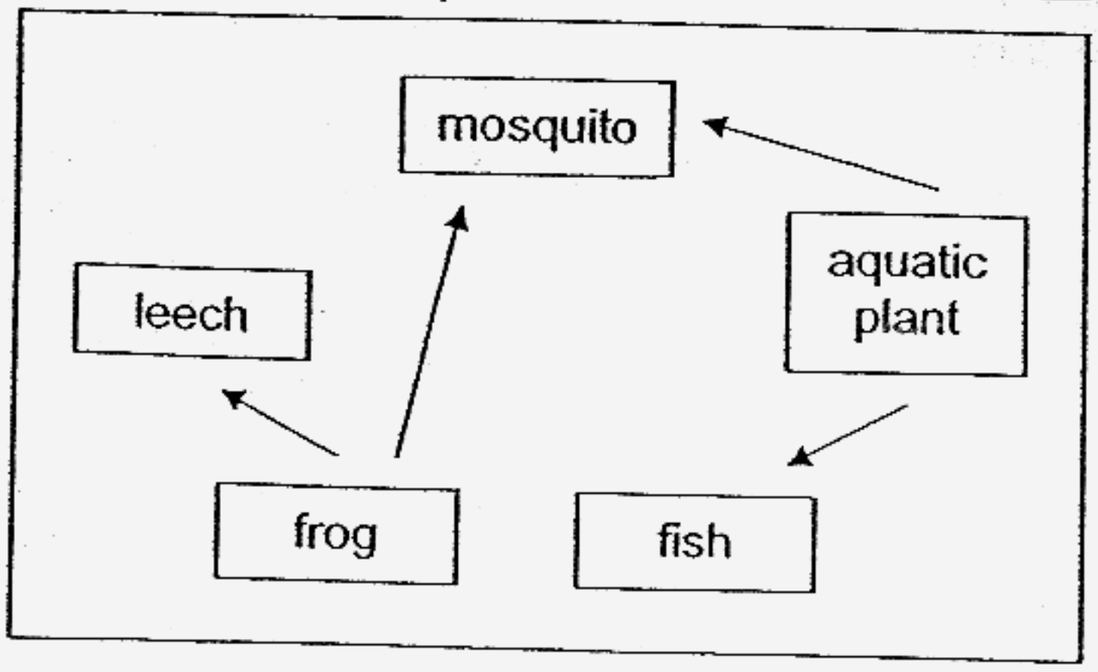
(2)



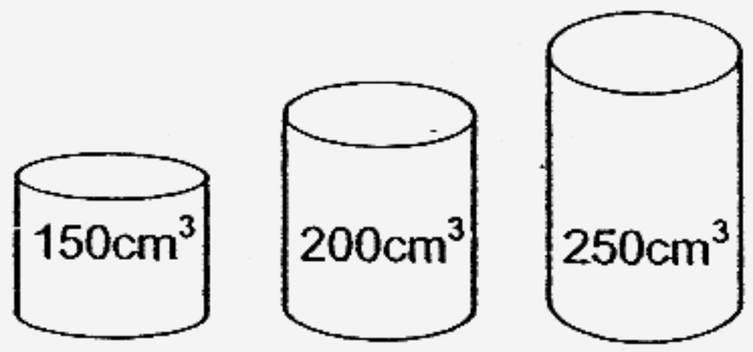
(3)



(4)



9) Jeff wants to transfer 200cm^3 of oxygen from a gas tank into another container. Which of the following container(s) can he use to hold the oxygen?



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

10) Choon Seng kept some starfish in his marine aquarium. He recorded the type of food the starfish ate.

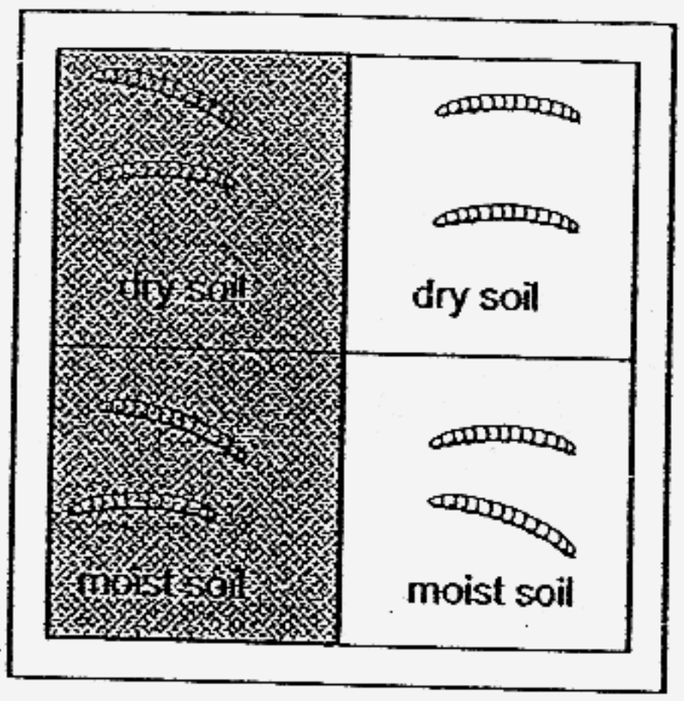
Type of Food	Number of starfish that ate the food
Algae	21
Prawns	2
Sea urchins	0
Marine snails	5

What could Choon Seng conclude from his observations?

A The starfish ate algae only.
B More starfish preferred plants to animals.
C More starfish preferred animals to plants.
D The starfish did not eat sea urchins.

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

11) The diagram below shows a tray. It is divided into four equal sections. The left hand sections are shaded with a cloth while the right hand sections are exposed to the sun for the whole duration of the experiment. 2 millipedes are placed on each section of the tray as shown below.

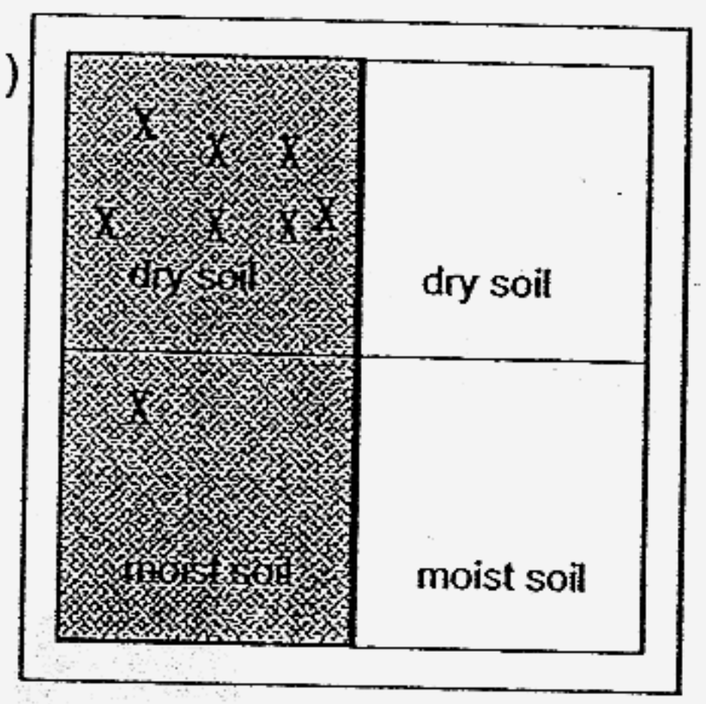


Left Hand Sections

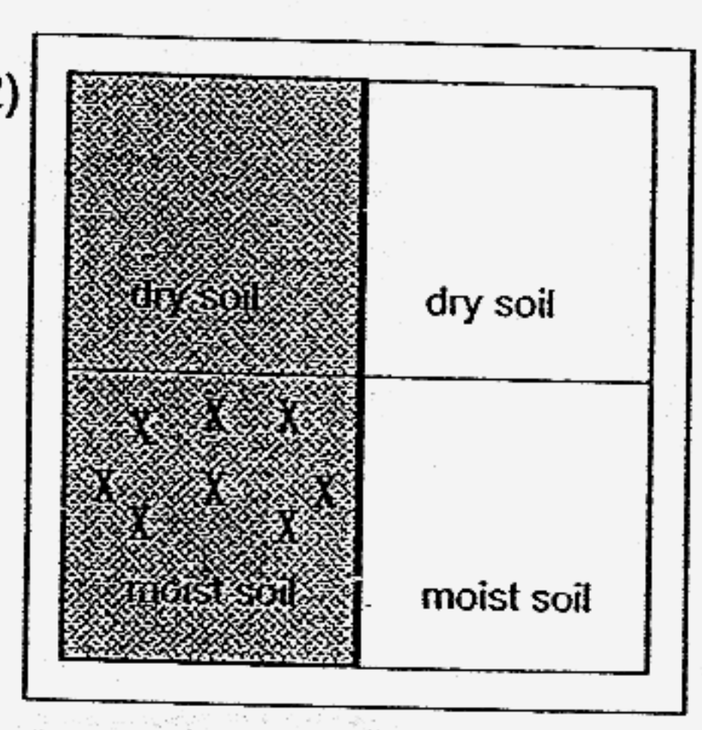
Right Hand Sections

Which of the following trays correctly shows where the millipedes are most likely to be found after 4 hours ? "X" denotes the final position of each millipede.

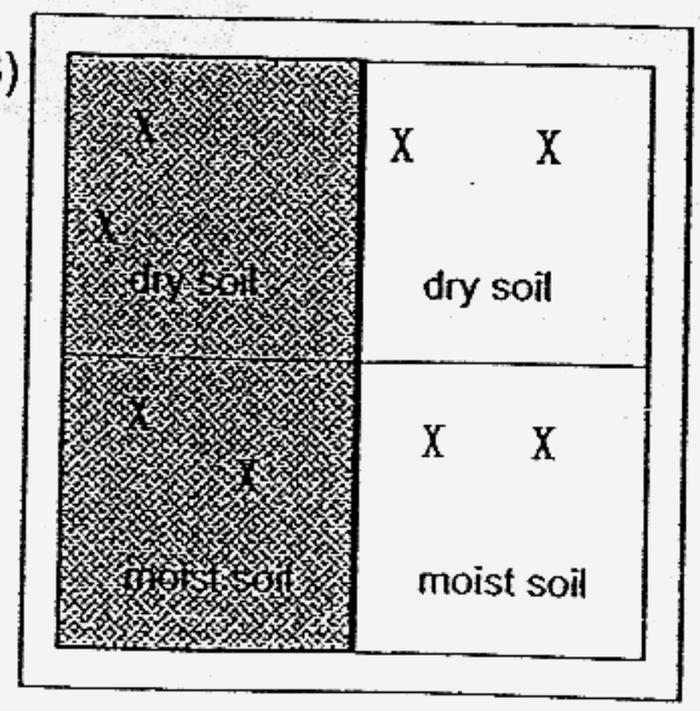
(1)



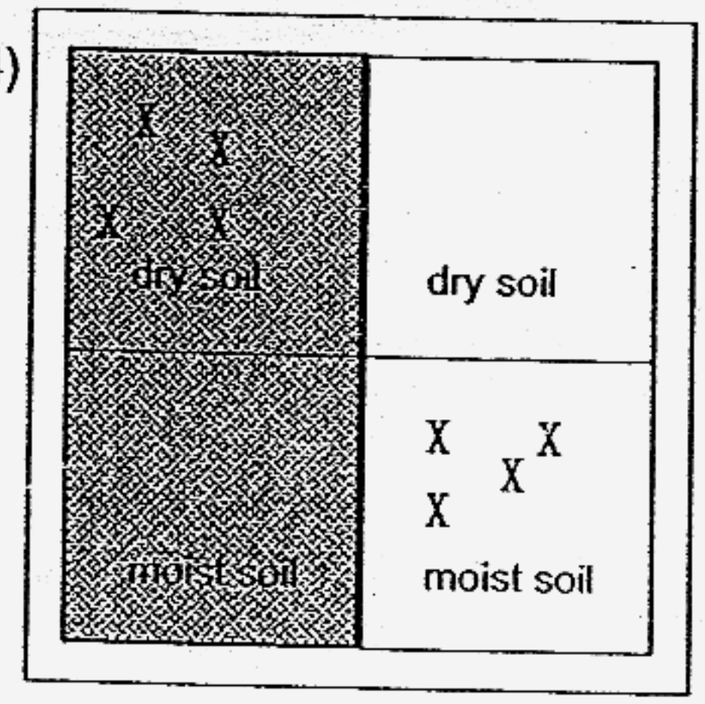
(2)



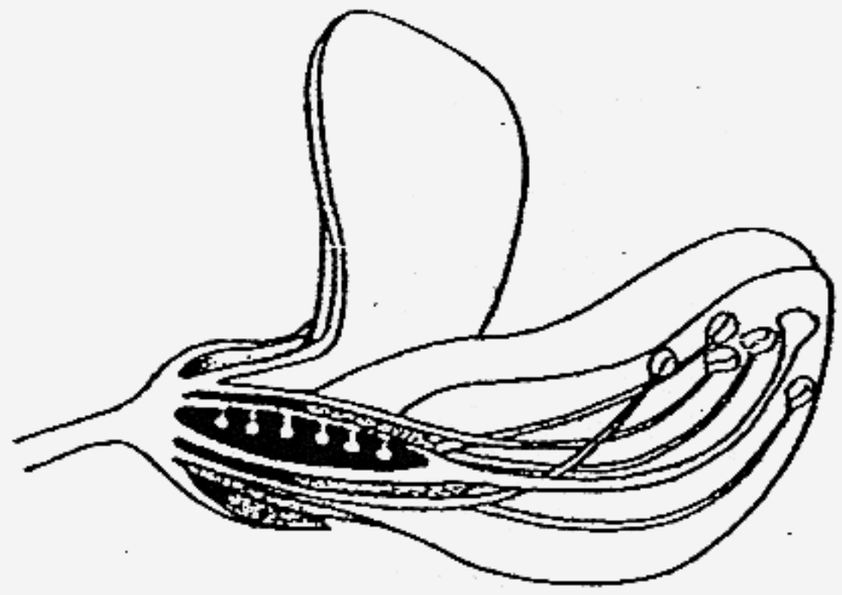
(3)



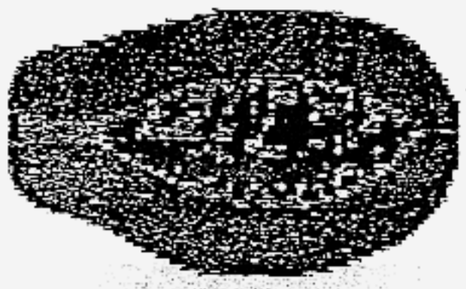
(4)



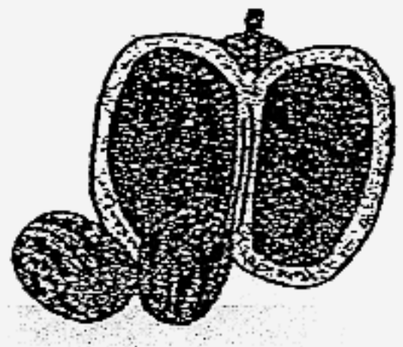
12) Study the cross-section of the flower shown below carefully.



After fertilisation, which of the following fruits is likely to develop from this flower?



(1)

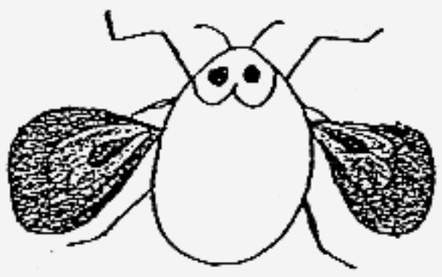


(2)

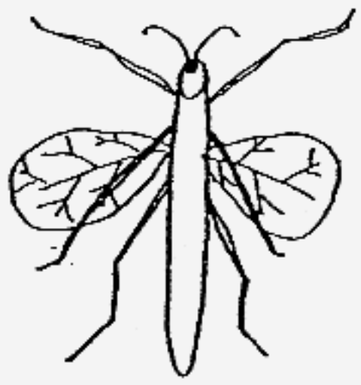
(3)

(4)

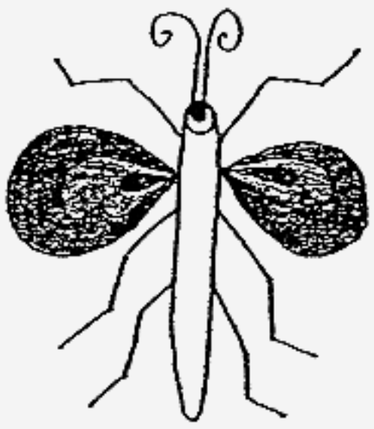
13) Look at the imaginary creatures below.



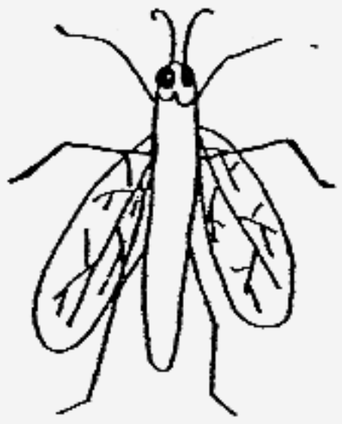
Lala



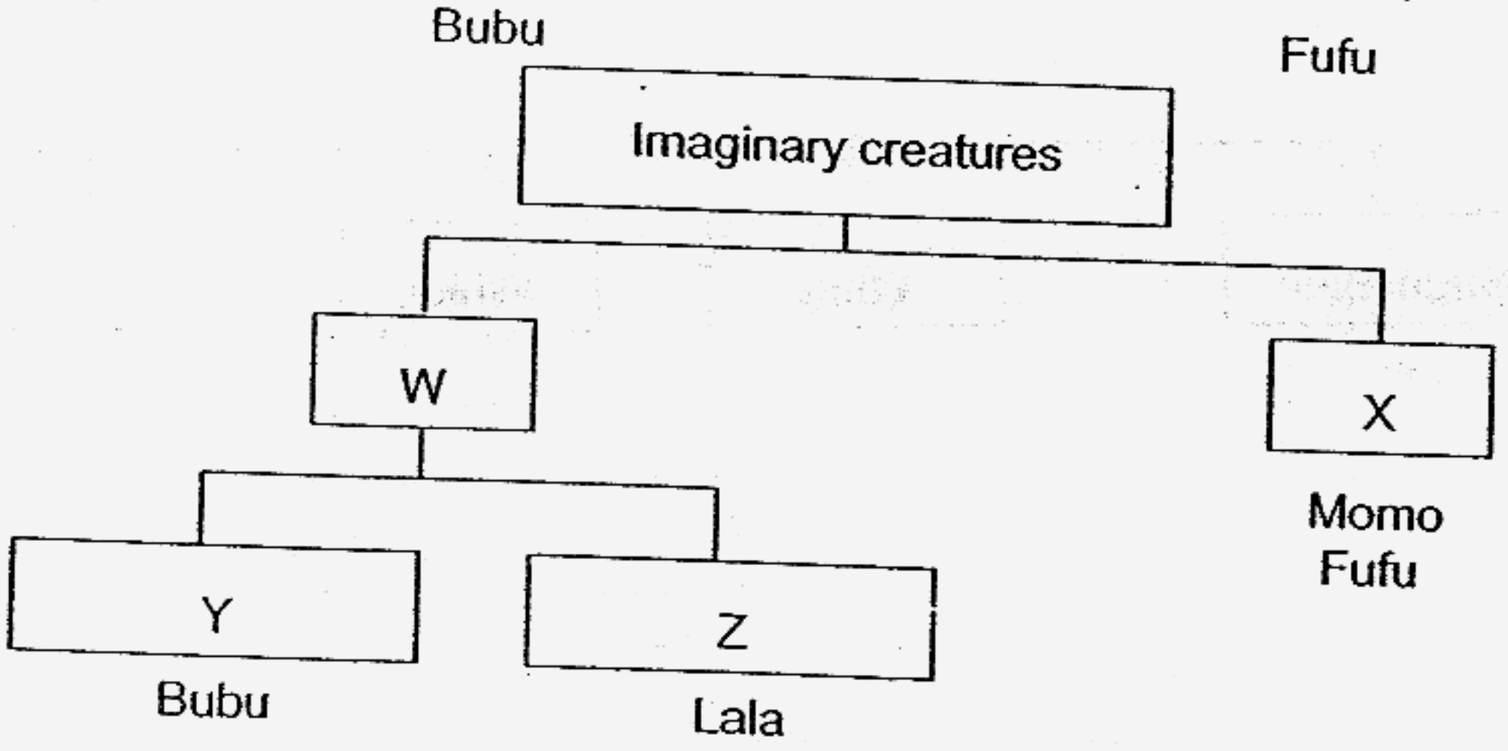
Momo



Bubu



Fufu



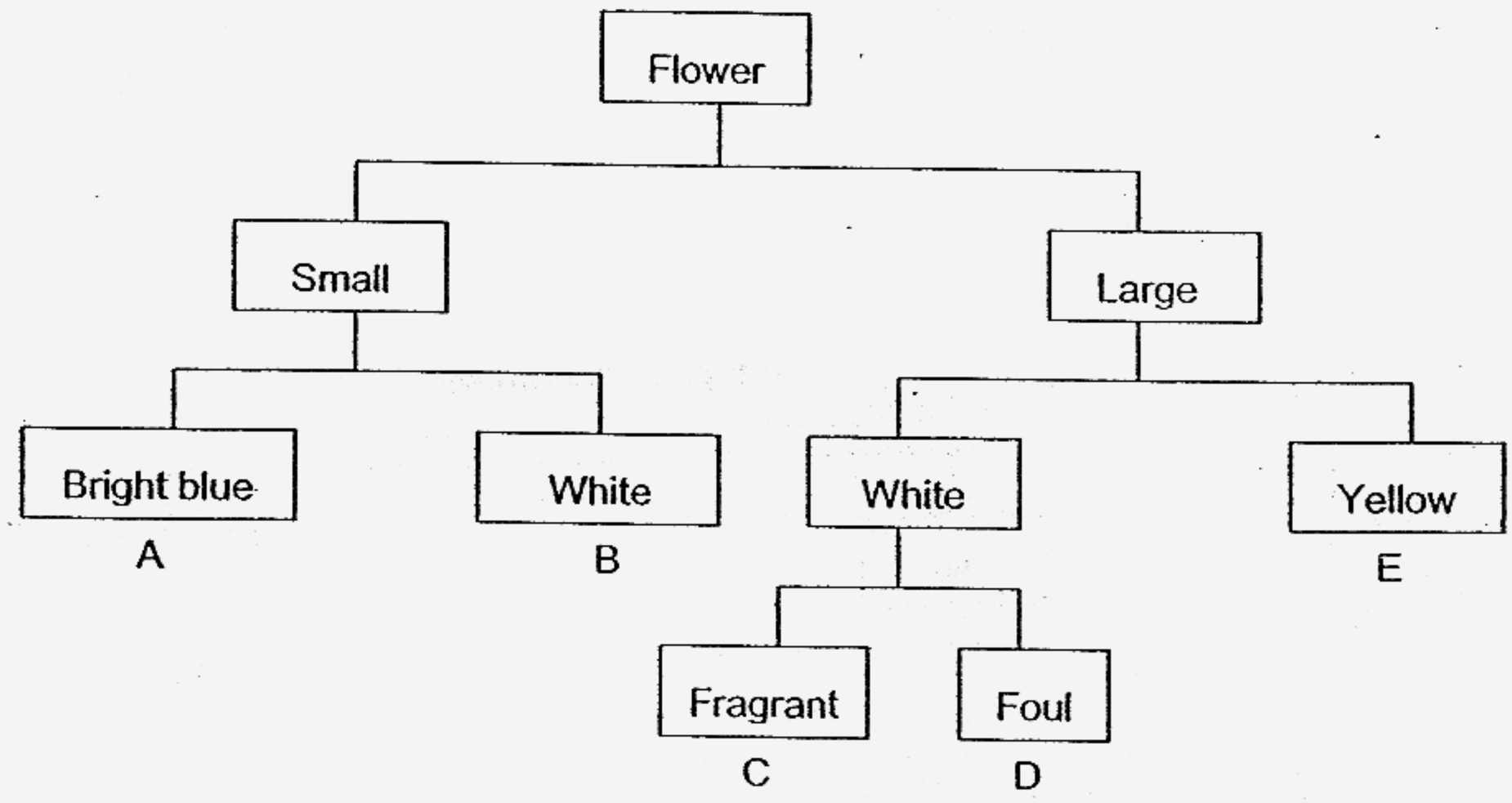
Based on your observation only, which method of classification best matches W, X, Y and Z?

	W	X	Y	Z
(1)	Round body	Slender body	Opaque wings	Transparent wings
(2)	Opaque wings	Transparent wings	Round body	Slender body
(3)	Long feelers	Short feelers	Slender body	Round body
(4)	Opaque wings	Transparent wings	Slender body	Round body

14) The table shows the characteristics of some flowers which attract specific animals.

Animal	The main characteristics of the flower that attract the animal		
	Size	Colour	Smell
Bee	Small	Bright blue or yellow	-
Bat	Large	White	Fragrant
Bird	Large	Red or yellow	-
Beetle	Large	White	Foul
Butterfly	Small	White	-

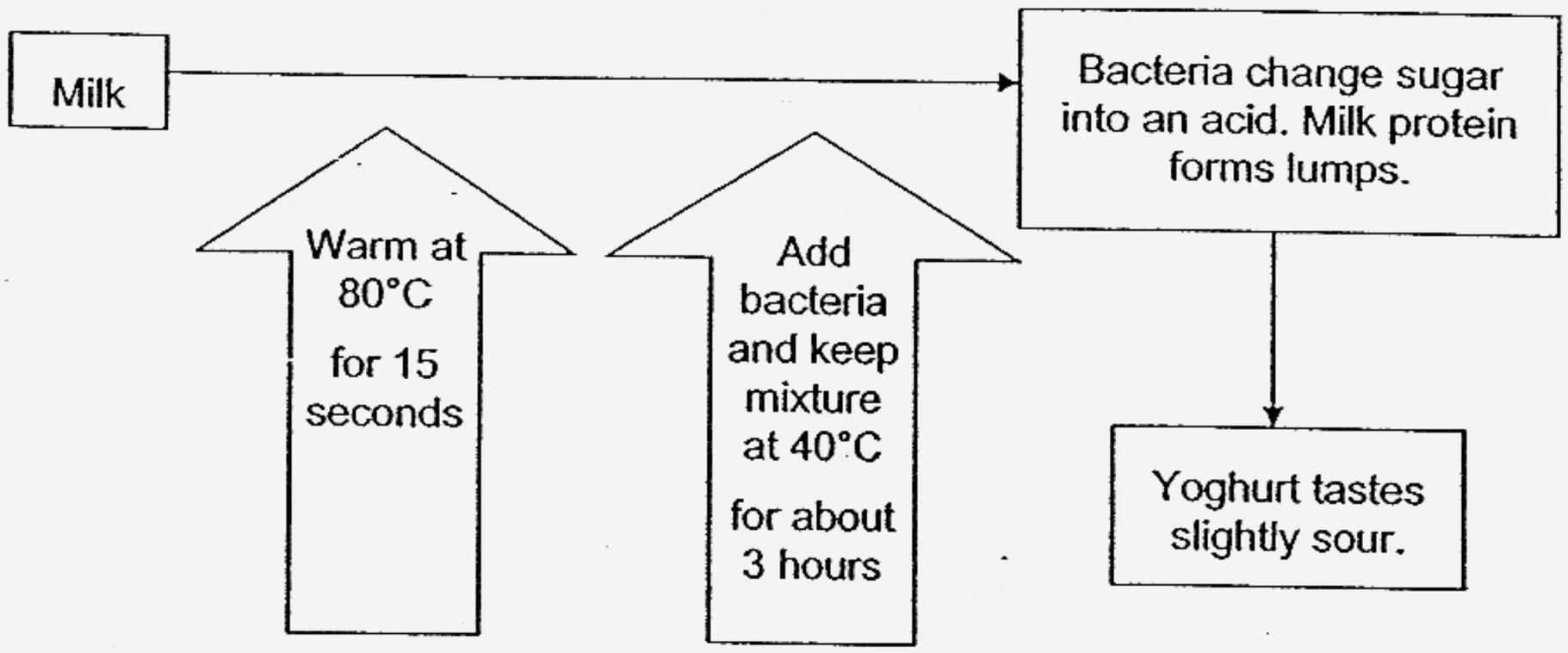
Study the classification chart below.



Which animals would be attracted to flowers B, D and E?

	B	D	E
(1)	Butterfly	Bat	Bee
(2)	Bird	Beetle	Bee
(3)	Butterfly	Beetle	Bird
(4)	Beetle	Butterfly	Bird

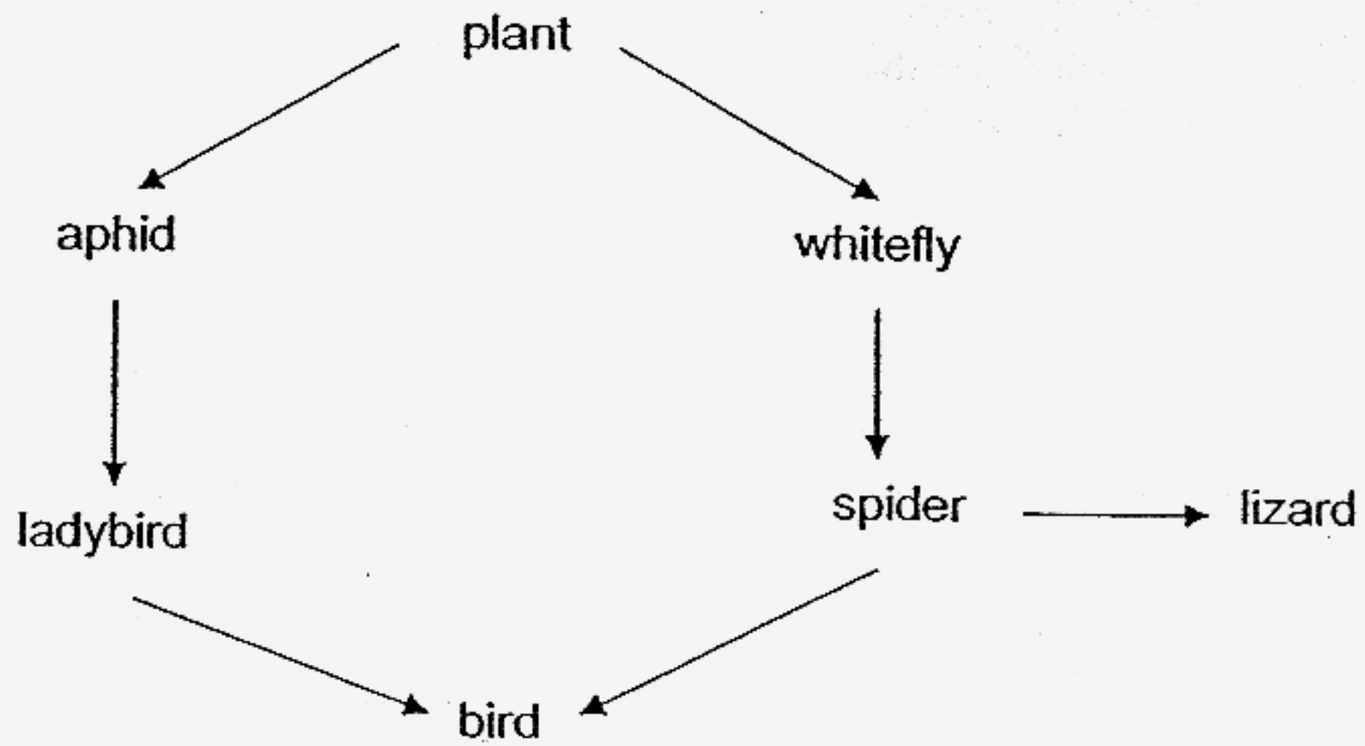
15) The flowchart below shows the process of yoghurt-making.



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

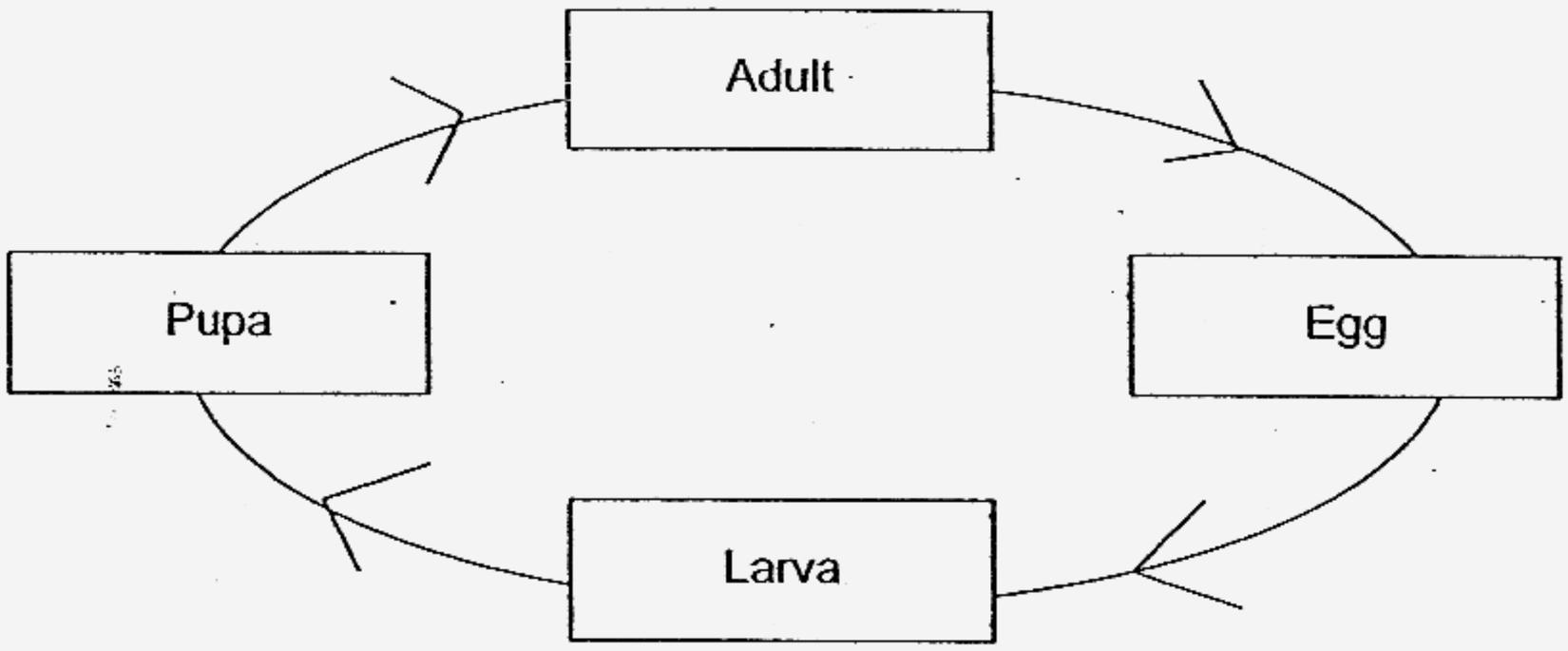
(1) Bacteria become yoghurt in 3 hours.
(2) Acid made by the bacteria taste sweet.
(3) Milk warmed at 80°C will cause lumps to form.
(4) Bacteria added to the milk need a temperature of 40°C to be active.

16) In the food web below, which populations will first increase in number if there is an increase in the bird population?



(1) plant and lizard
(2) aphid and whitefly
(3) ladybird and spider
(4) spider and lizard

17) Study the life cycle of a mosquito below carefully.

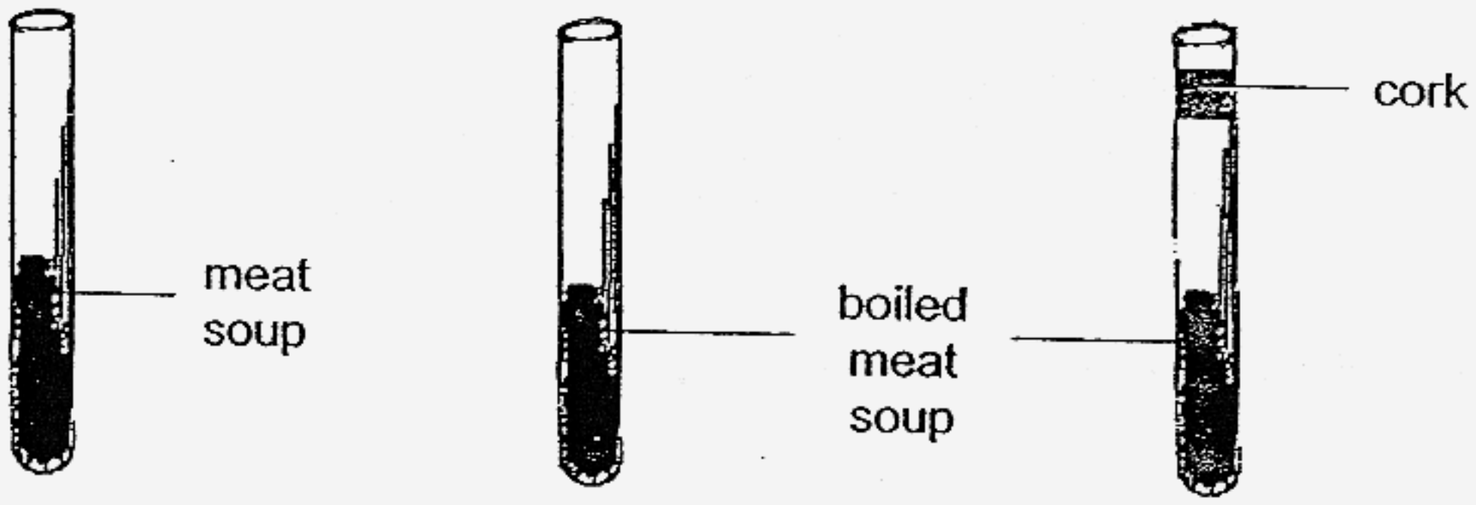


The mosquito spends part of its life cycle in water. Man sprays oil to control the population of the mosquitoes in stagnant water. Which stage(s) of its lifecycle would be most affected?

A Egg
B Larva
C Pupa
D Adult

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

18) Amelia carried out an experiment as shown below. She filled three test-tubes, A, B and C, with the same amount of meat soup and boiled the meat soup in Test-tube B and C for fifteen minutes. Then she sealed Test-tube C with a cork immediately. Following that, she left all the test-tubes in an airy room for two weeks.



The meat soup in Test-tube A turned bad in a day while the meat soup in Test-tube B turned bad in two days. The meat soup in Test-tube C remained fresh for one week.

What can she conclude from her experiment?

(1) There are bacteria in the air.
(2) Meat soup turns bad if it is boiled.
(3) Meat soup turns bad if it is not boiled.
(4) There are no bacteria in the meat soup.

19) The angler fish is found in the ocean with the following conditions.

Depth (m)	Conditions
1100-4500	Very cold and dark

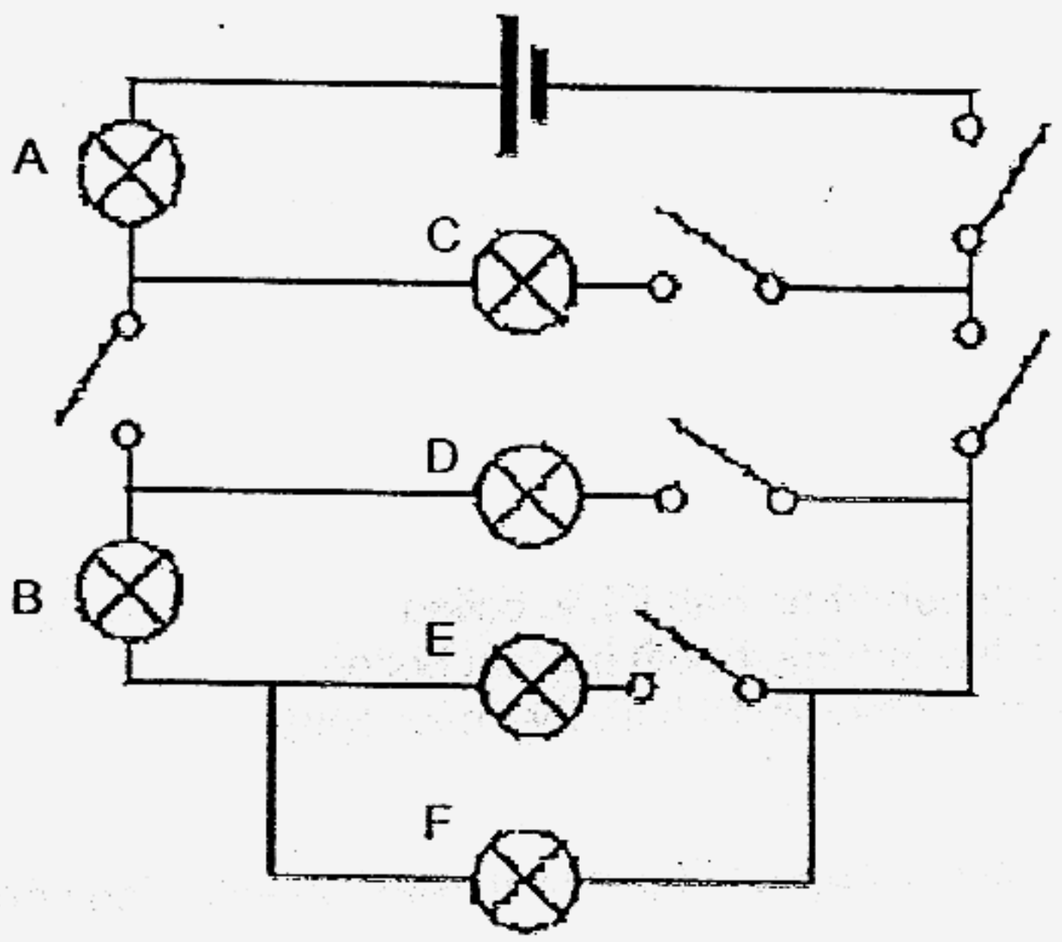
The angler fish has a stalk on its head that emits light. What is the most likely reason for this adaptation?

(1) To help it swim.
(2) To attract its prey.
(3) To keep it warm.
(4) To help it stay buoyant.

20) Andrew watched a sailing ship at sea through his binoculars and commented that the ship seemed to be "sinking" as it moved away. Which of the statements explains his observation?

(1) The earth is spherical in shape.
(2) The earth rotates on its own axis.
(3) The pull of the moon causes the tides.
(4) The surface of the ocean has depressions.

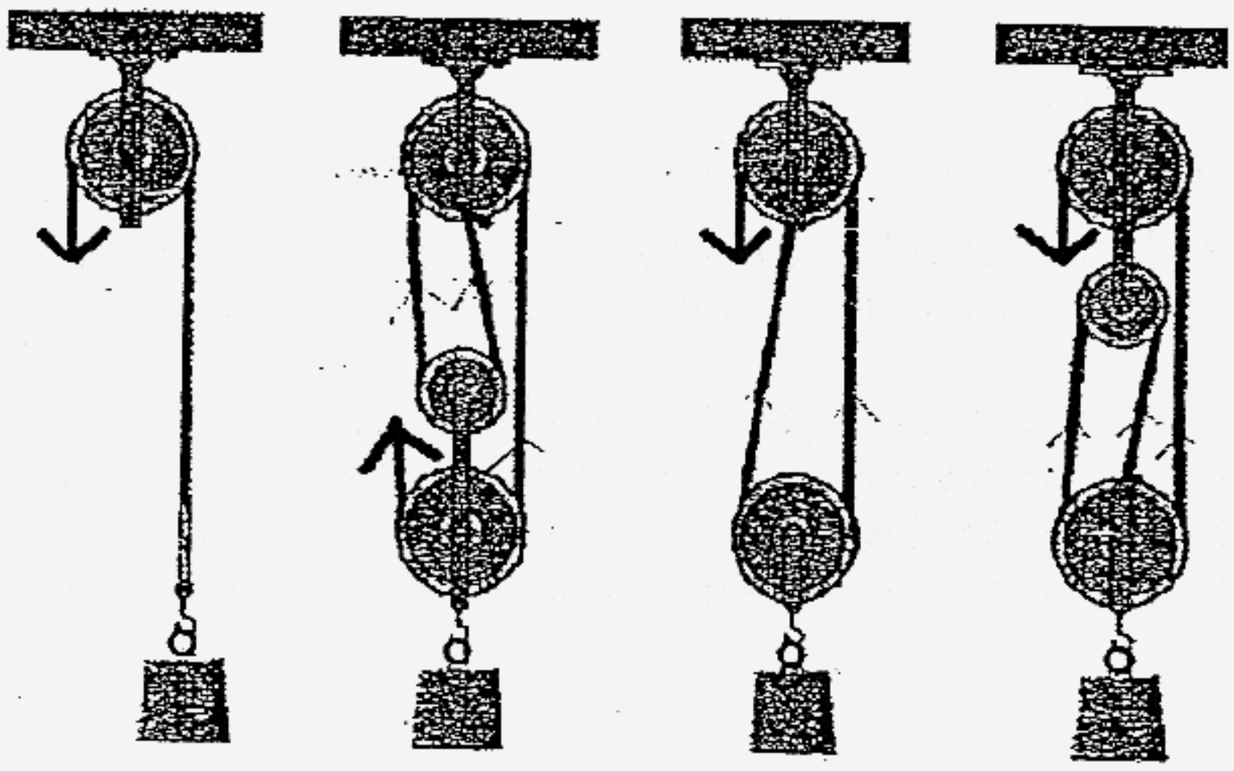
21) Study the electrical circuit below.



What is the **minimum** number of switches that has to be closed so that Bulb A, Bulb B and Bulb F will light up?

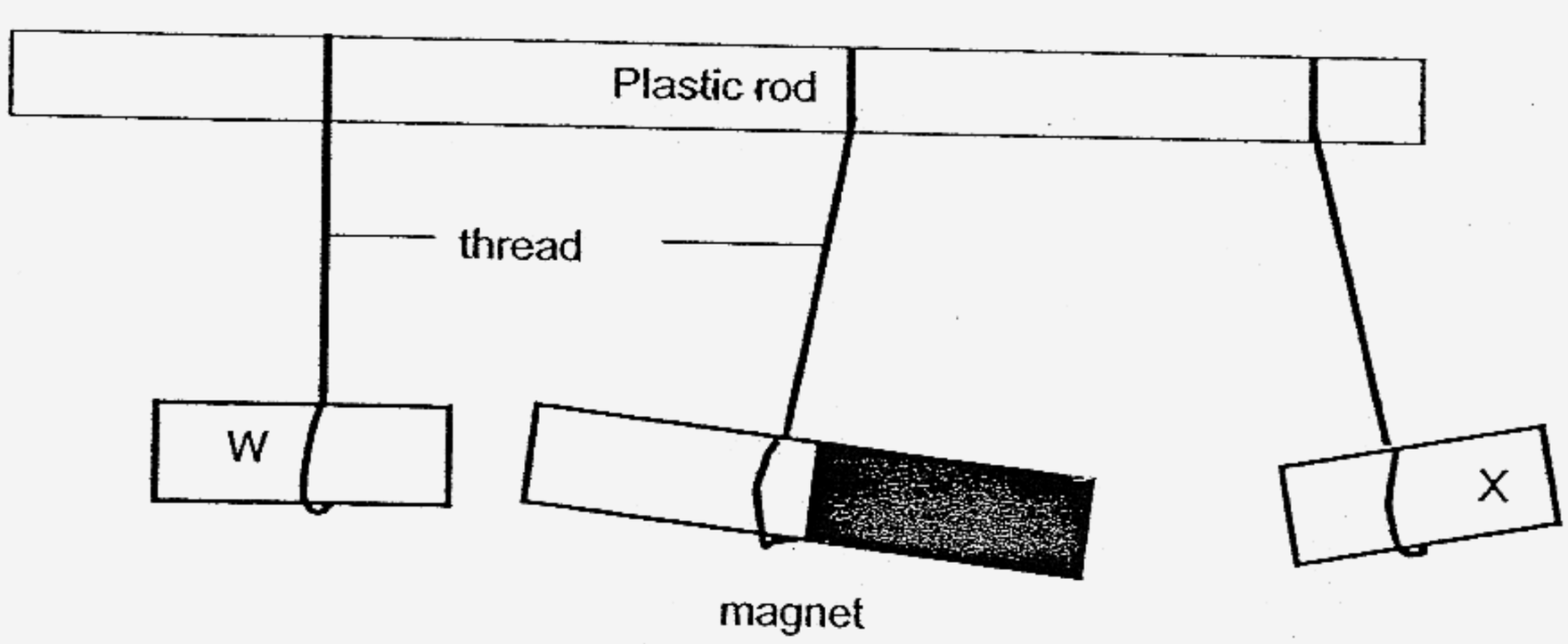
(1) 3
(2) 4
(3) 5
(4) 6

22) Which of the following pulleys below allows the user to use the least effort to lift the same load?



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

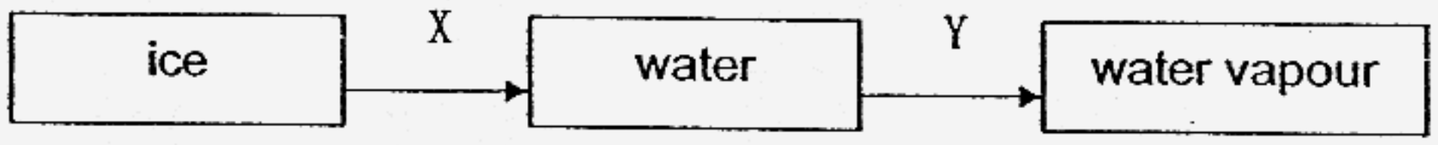
23) Study the diagram below carefully.



Two pieces of unknown metals, W and X, together with a bar magnet, are hung from a plastic rod as shown above. Which of the following statements is true?

(1) W and X are magnets.
(2) W is a magnet but X is a non-magnetic metal.
(3) W is made of iron and X is made of aluminium.
(4) W is made of copper and X is made of steel which has been magnetized.

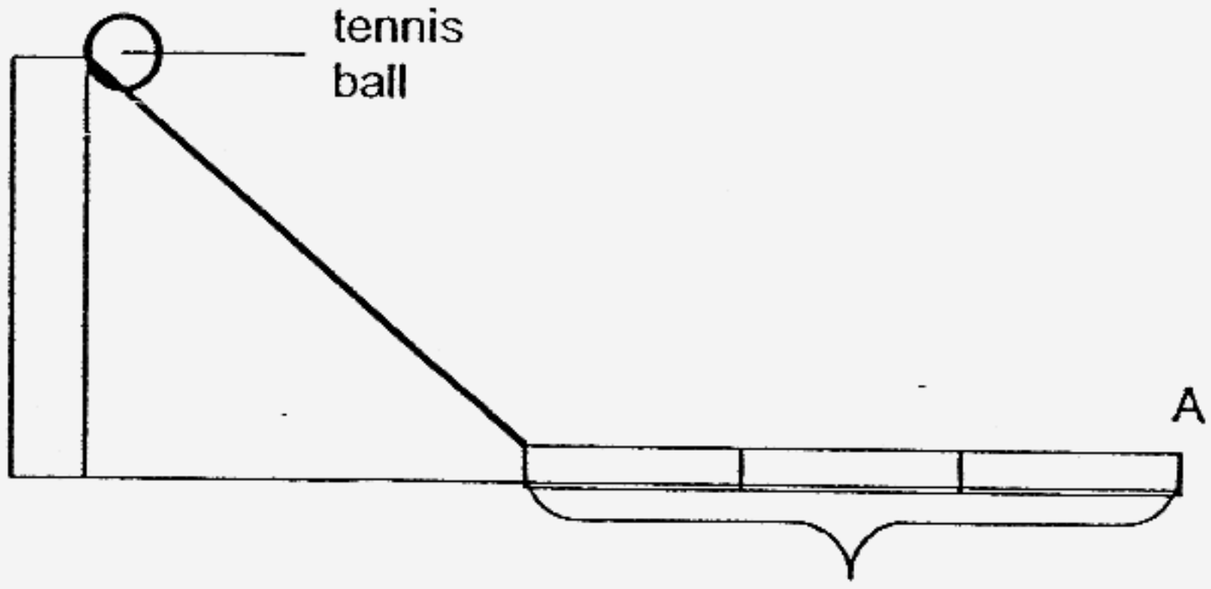
24) Water can change from one state to another as shown below.



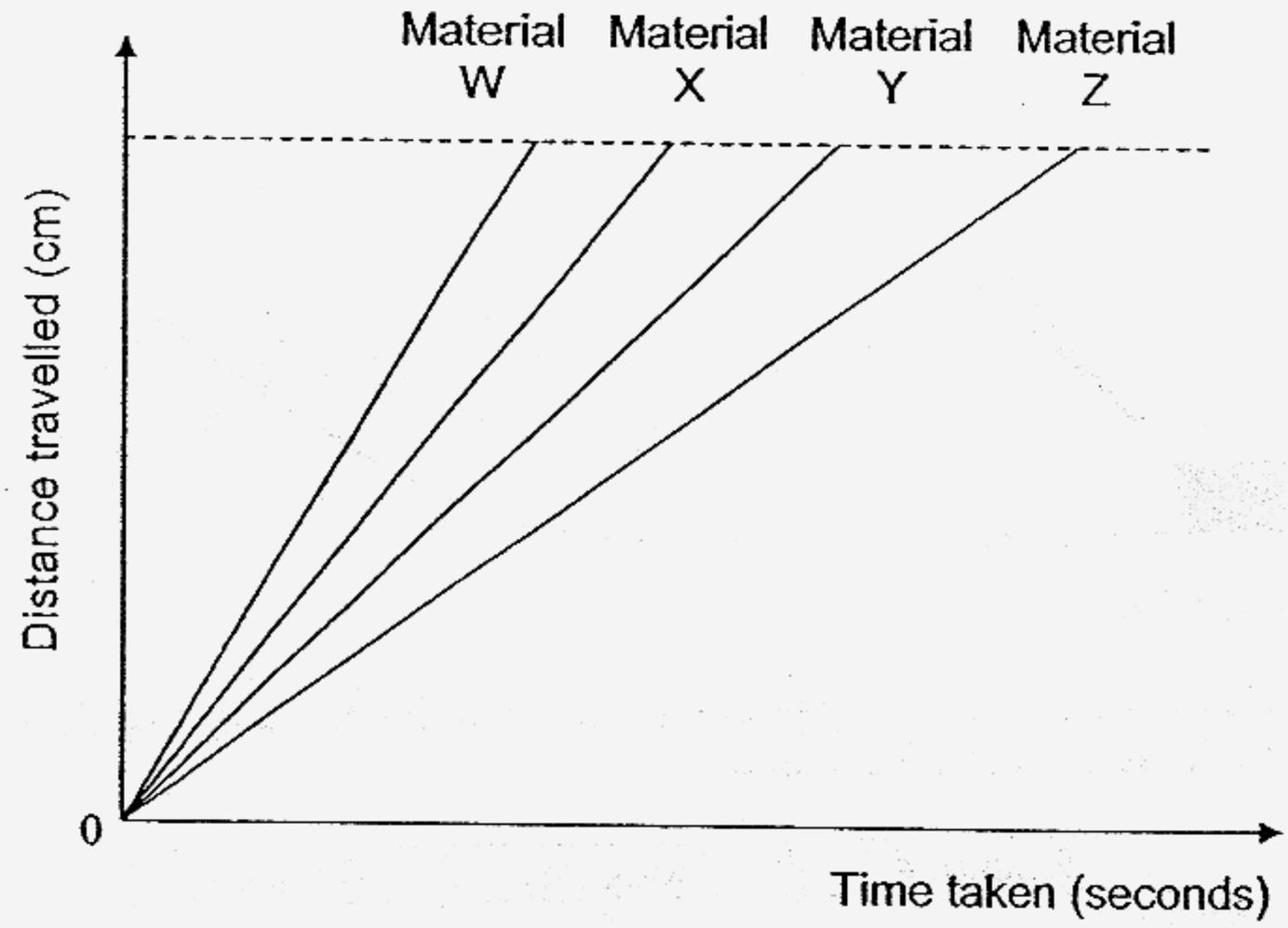
X and Y represent the processes which change water from one state to another. Which of the following statements is true about X and Y?

(1) Ice and water gain heat during X and Y respectively.
(2) Ice and water lose heat during X and Y respectively.
(3) Ice gains heat during X but water loses heat during Y.
(4) Ice loses heat during X but water gains heat during Y.

25) Kassim set up an experiment to find out the time taken for a tennis ball to reach Point A as shown in the diagram below.



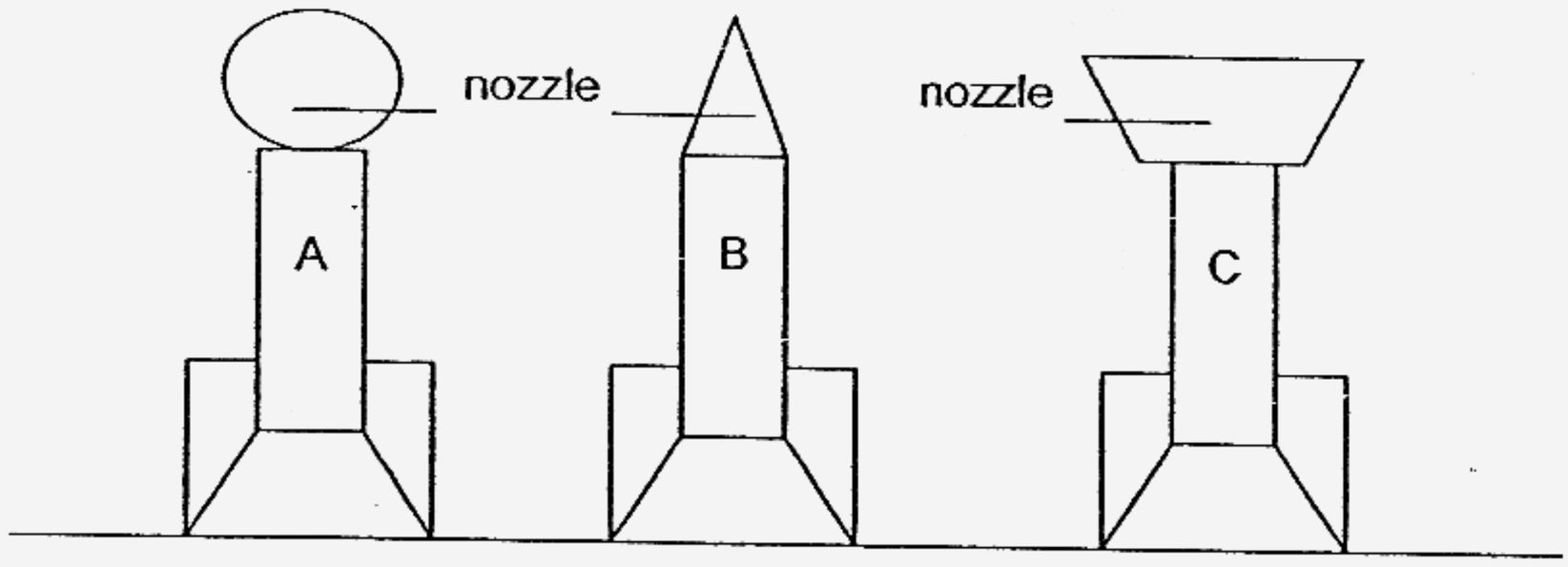
He repeated the experiment with tiles made of Material X, Y and Z.
The graph below shows the time taken for the tennis ball to reach Point A on each of the materials.



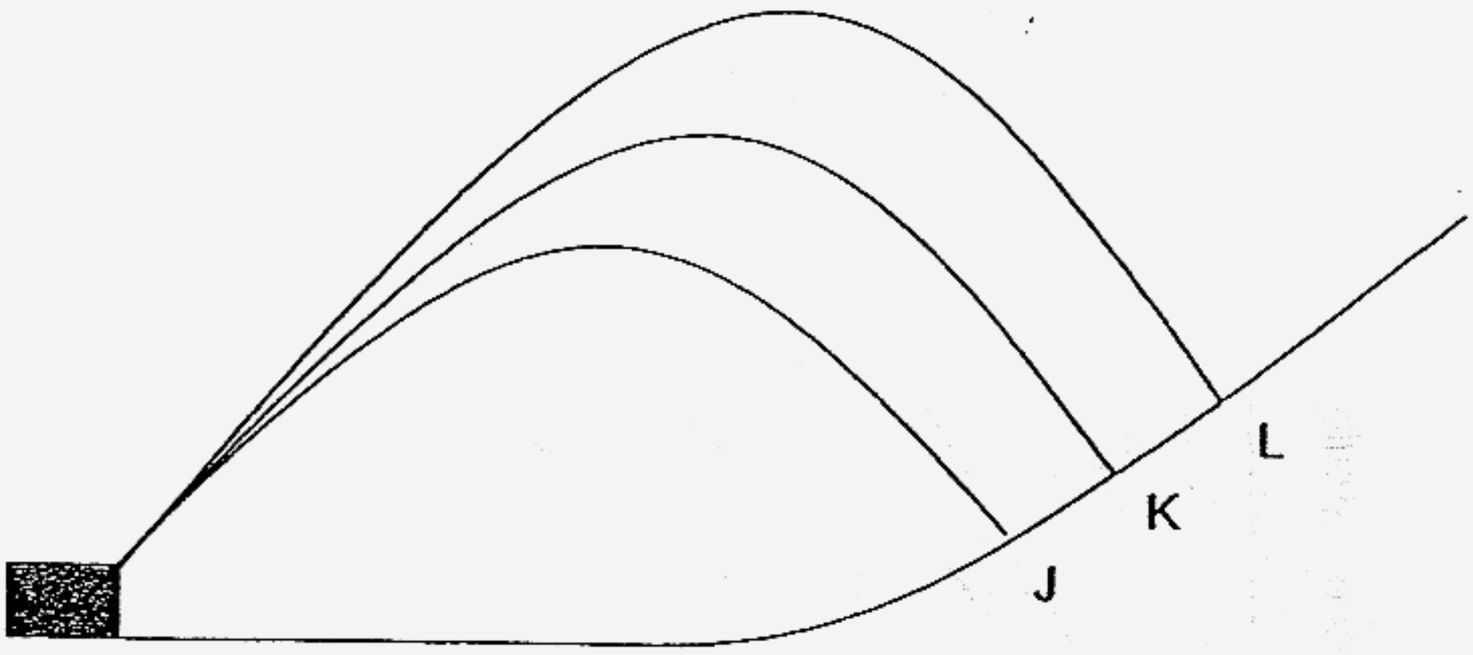
Which material, W, X, Y or Z, is most suitable to make bathroom tiling which is the least slippery?

(1) W
(2) X
(3) Y
(4) Z

26) Three rockets, A, B and C, of the same mass are shown below.



The diagram below shows the paths of flight taken by Rocket A, B and C, after they were launched. They landed on a slope at Point J, K and L.

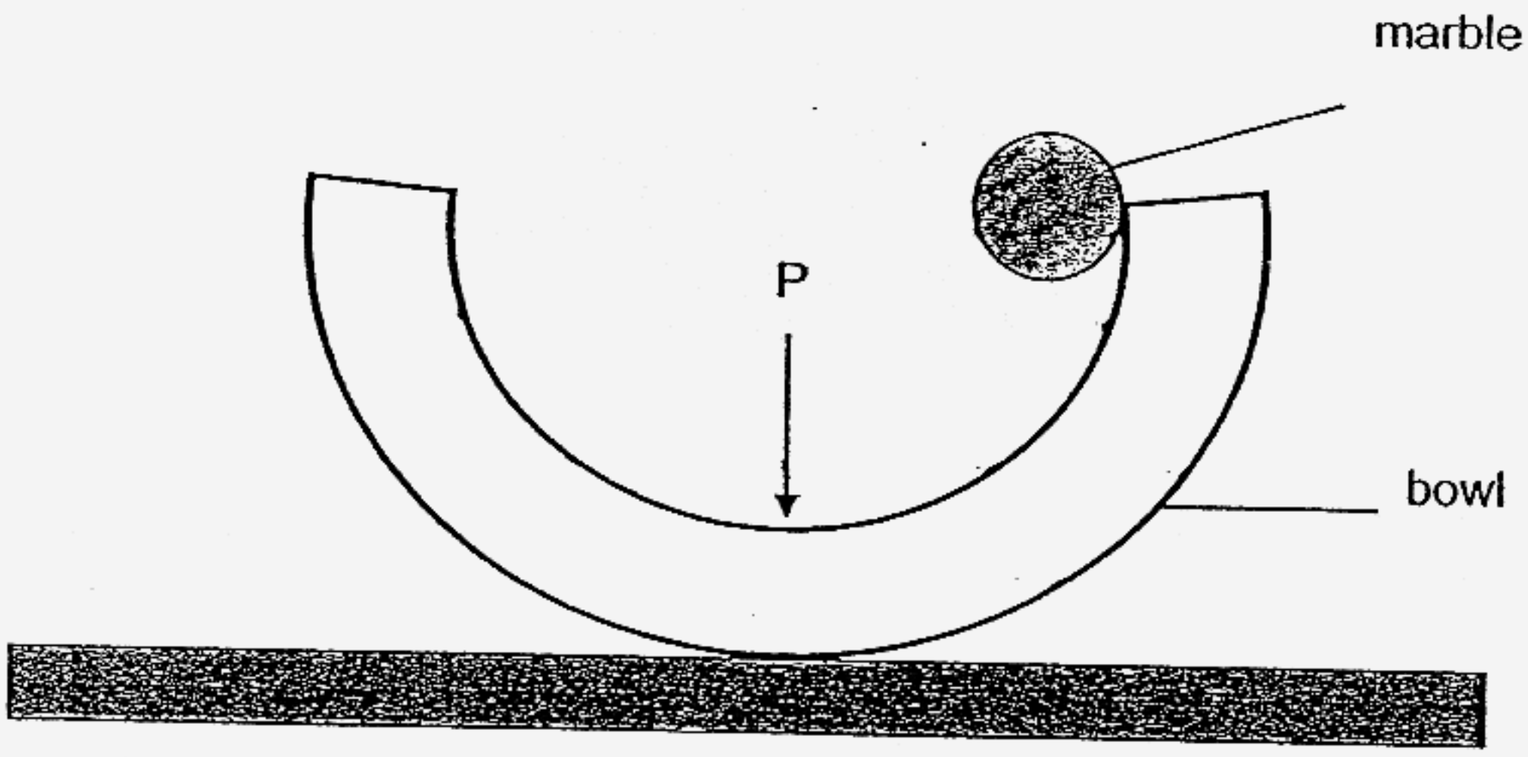


Launch pad

Match the rockets to their correct flight path if the only variable that is changed is their nozzle shape.

	Rocket A	Rocket B	Rocket C
(1)	J	K	L
(2)	J	L	K
(3)	L	J	K
(4)	K	L	J

27) A marble is released from the side of a bowl as shown below. Point P is the lowest point of the bowl.

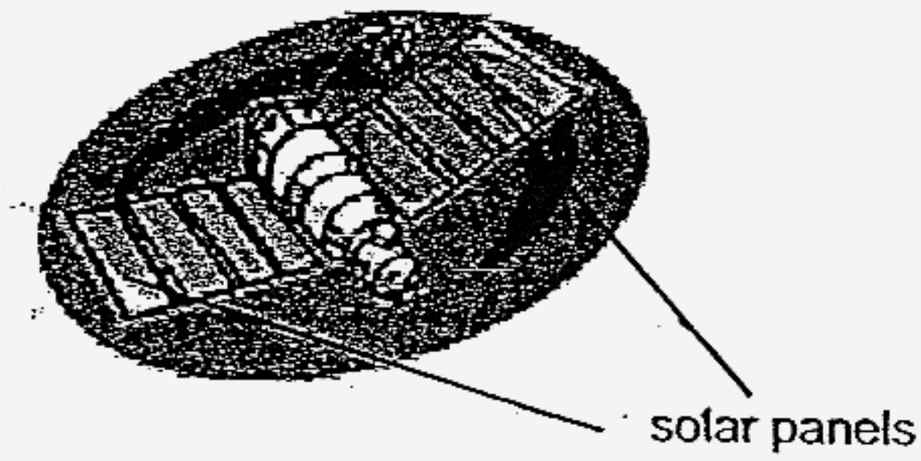


Which of the following statement(s) is/are true about the marble when it first reaches point P after it is released?

A The marble has no kinetic energy.
B The marble has less gravitational potential energy than before.
C All the gravitational potential energy has been converted into sound and heat.

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

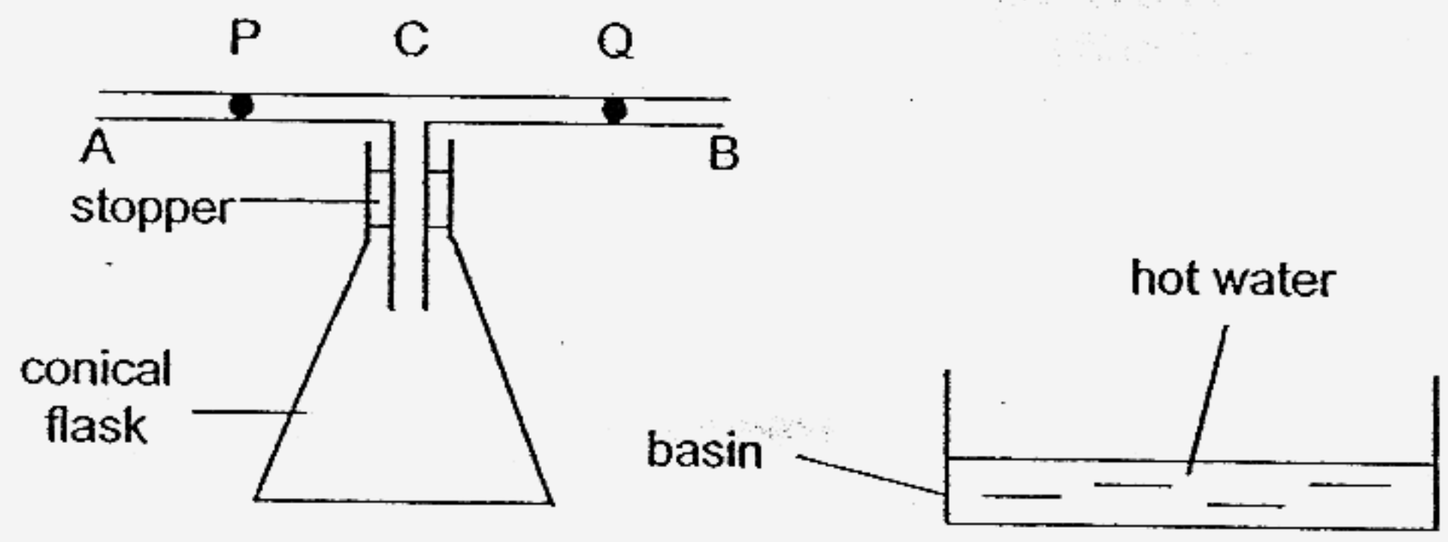
28) The diagram below shows a picture of a communications satellite.



Which of the following statements about the communications satellite is **FALSE**?

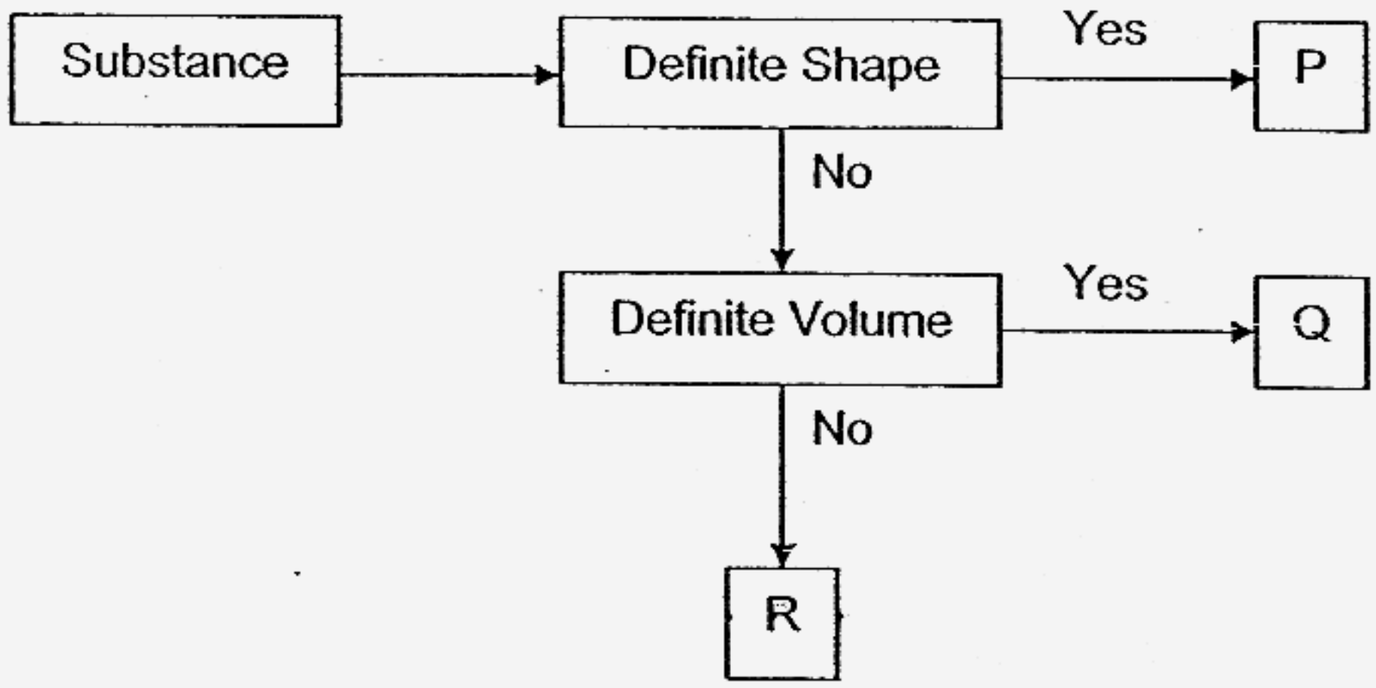
(1) It is a man-made satellite.
(2) It transmits signals from telephones, radios and television.
(3) It receives signals from and sends signals to certain parts of the Earth.
(4) It has solar panels that convert solar energy into electricity for use on Earth.

29) The diagram below shows an empty conical flask with a T-shaped tube. P and Q are two drops of ink in the tube. What will happen if the conical flask is immersed in a basin of hot water?



(1) P and Q will move towards A.
(2) P and Q will move towards B.
(3) P will move towards A and Q will move towards B.
(4) P will move towards C and Q will move towards B.

30) John made use of the flow chart below to classify some examples of matter, P, Q and R.



What could P, Q and R be?

	P	Q	R
(1)	marble	oil	oxygen
(2)	kerosene	glass	carbon dioxide
(3)	carbon dioxide	oxygen	oil
(4)	glass	kerosene	marble

Section B (40 marks)
For questions 31 to 46, write your answers in the blanks provided.

31) The diagrams below show 2 different views of the cells of a leaf.

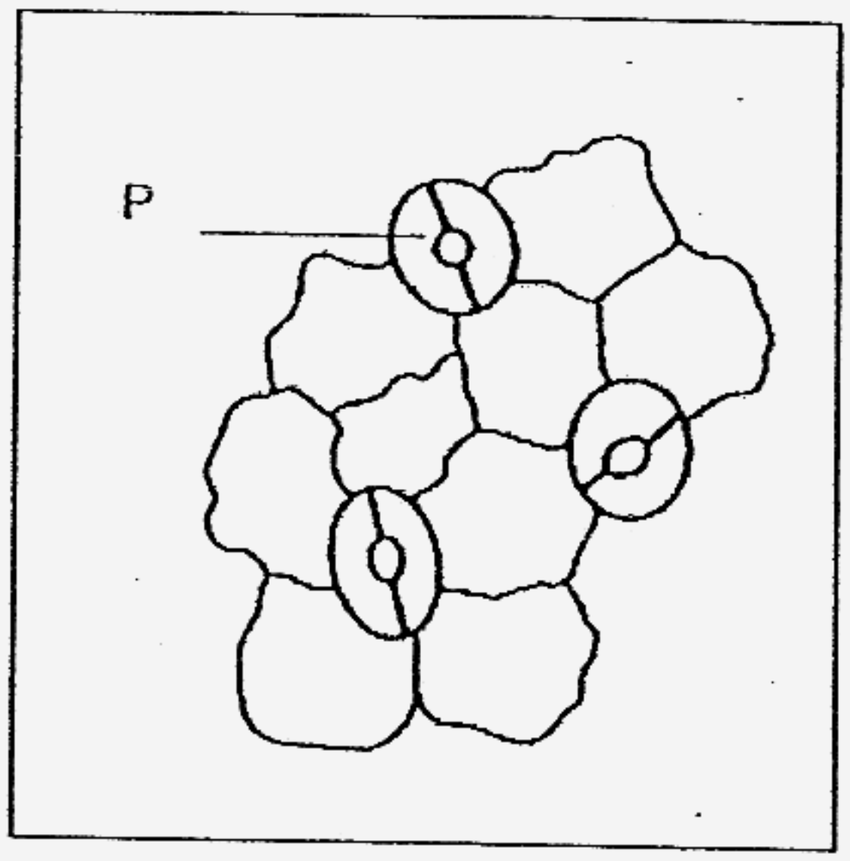


Diagram 1 (bottom view)

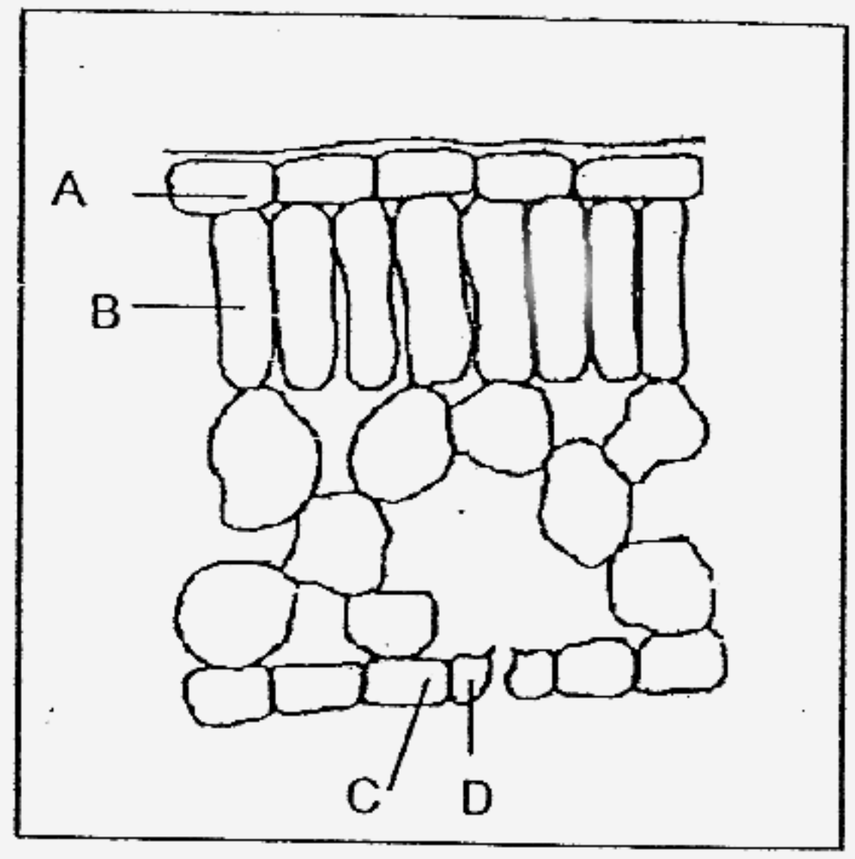


Diagram 2 (side view)

(a) Which cell, A, B, C or D, in Diagram 2 is the same as Cell P in Diagram 1 ? [1]

_____

(b) What is the function of Cell P? [1]

_____

_____

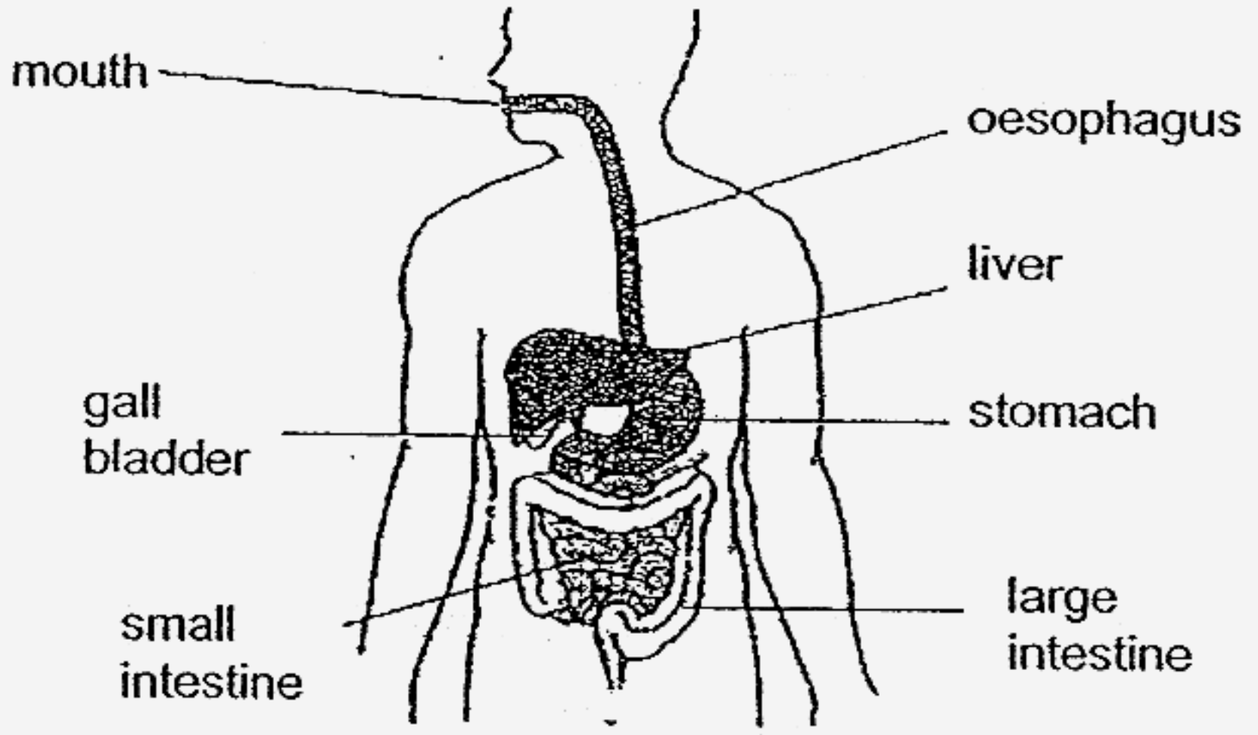
32) The classification table below shows how some plants have been grouped according to their method of reproduction. The letters V, W, X, Y and Z represent 5 different types of plants.

Method of reproduction in plants				
Group A	Group B	Group C	Group D	Group E
onion	pineapple	moss	tomato	begonia
ginger	heliconia	fern	chilli	bryophyllum
V	W	X	Y	Z

Based on the classification table above, put a tick (√) in the correct boxes for the following statements. [2]

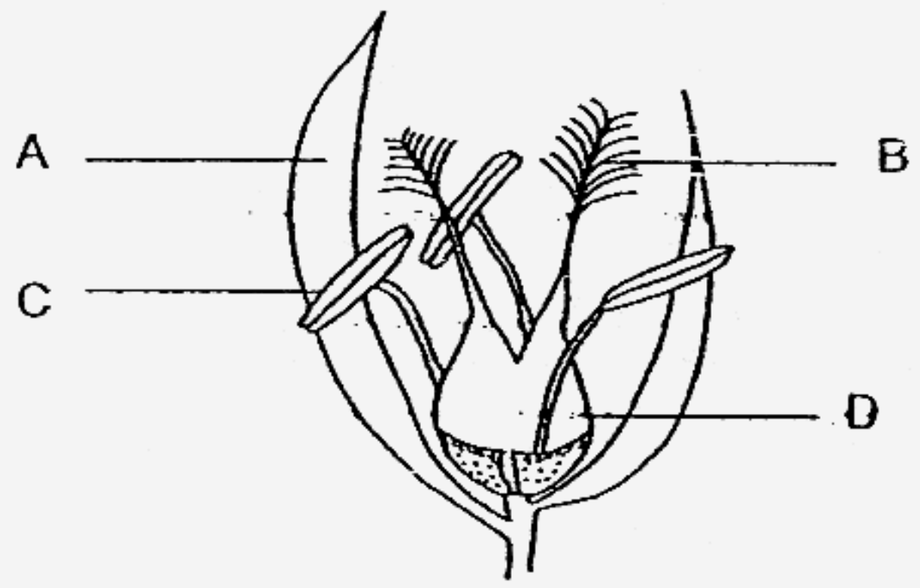
Statement	True	False	Not possible to tell
Plant Y is edible.			
Plant W can be banana.			
Plant X reproduces from leaves.			
Plant Z reproduces from spores.			

33) The diagram below shows the digestive system of the human body.



Digestion of the food we eat starts at the _____ and ends at the _____. [2]

34) The diagram below shows the flower of a plant.



(a) Which part, A, B, C or D, produces pollen grains? [1]

(b) Which part, A, B, C or D, receives pollen grains during pollination? [1]

(c) What will happen to Part D after fertilisation? [1]

35) Jebo, Lushido, Portanella and Fango represent different organisms in a community. Three food chains showing their food relationships are given below.

Jebo → Lushido → Portanella → Fango

Jebo → Portanella → Fango

Jebo → Lushido → Fango

(a) Draw a food web involving all the three food chains. [1]

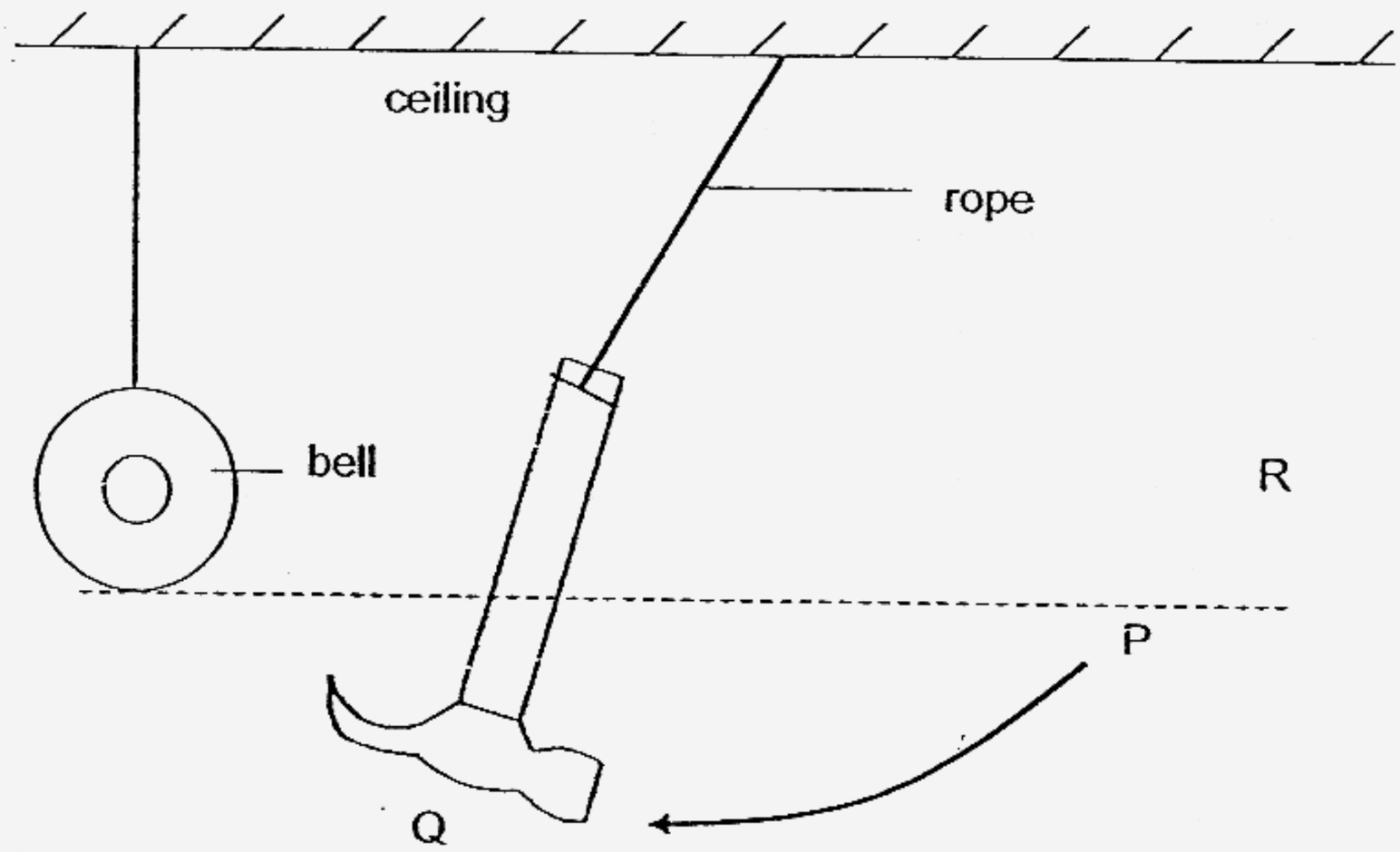
(b) Which organism is an omnivore ? [1]

_____

(c) Which organism is both a predator and a prey ? [1]

_____

36) A hammer and a ~~ball~~ bell are hung from a ceiling. The hammer is released at Point P. The hammer moves to Point Q as shown in the diagram below. It swings back and forth till it comes to a rest.



Using the information given and the diagram above, put a tick (√) in the appropriate box.

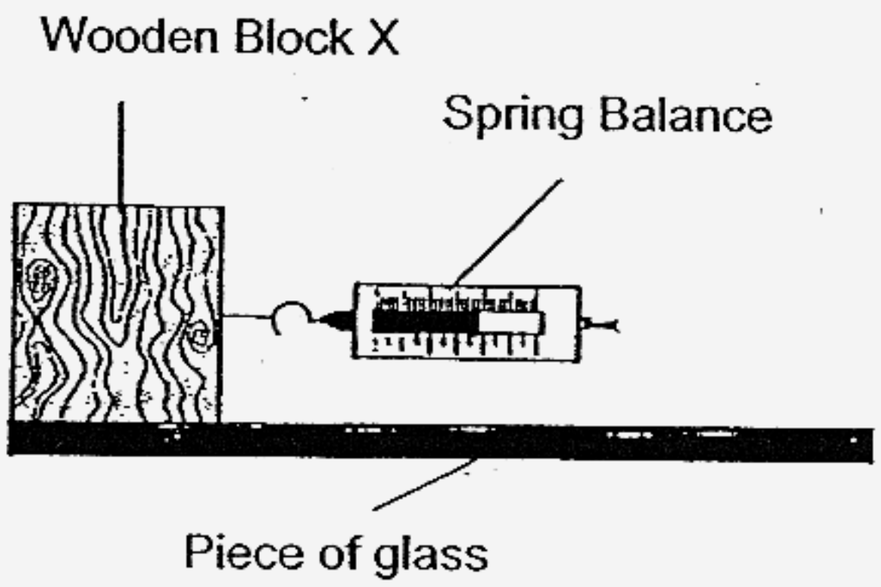
[2]

Statement	True	False	Not possible to tell
The bell will repel the hammer.			√
The speed of the hammer at Point P is greater than the speed at Point Q.			
After a few swings, the hammer will return to Point P.			
If the hammer is brought to Point R and released, it will strike the bell. Kinetic energy (in the hammer) will be converted into sound energy (in the bell).			

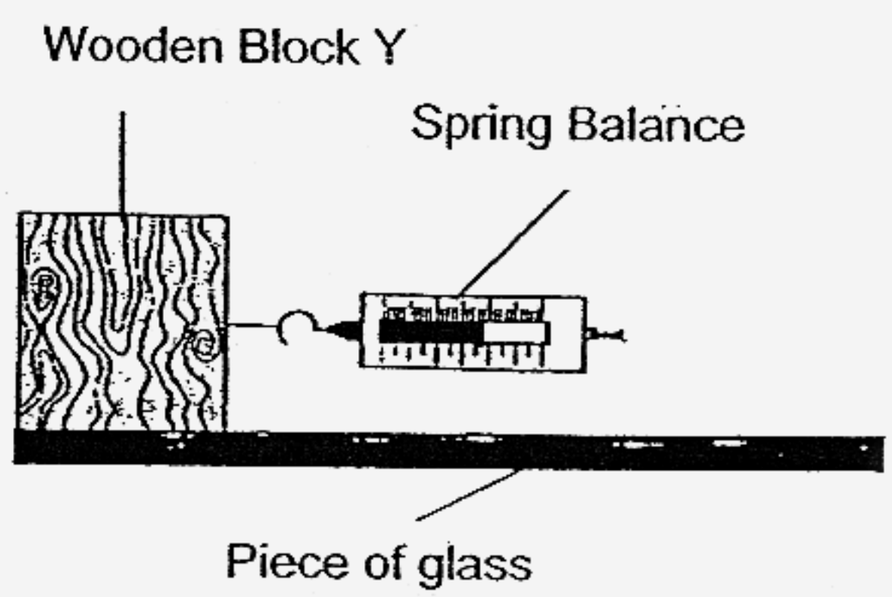
37) Kenneth was given the following things to carry out an experiment.

They are :
2 different wooden blocks
1 spring balance
1 piece of glass and 1 piece of wood of the same shape and size

He wanted to find out how the type of surface affects the distance moved by a wooden block. A force was applied on the wooden blocks to move them over a glass surface. The forces needed to move the wooden blocks were measured.



Set-up K



Set-up L

Kenneth's teacher, Mrs Lim, observed Kenneth's experiment and said that what he did was wrong. List two things that Kenneth must do to Set-up L to achieve the aim of the experiment? [2]

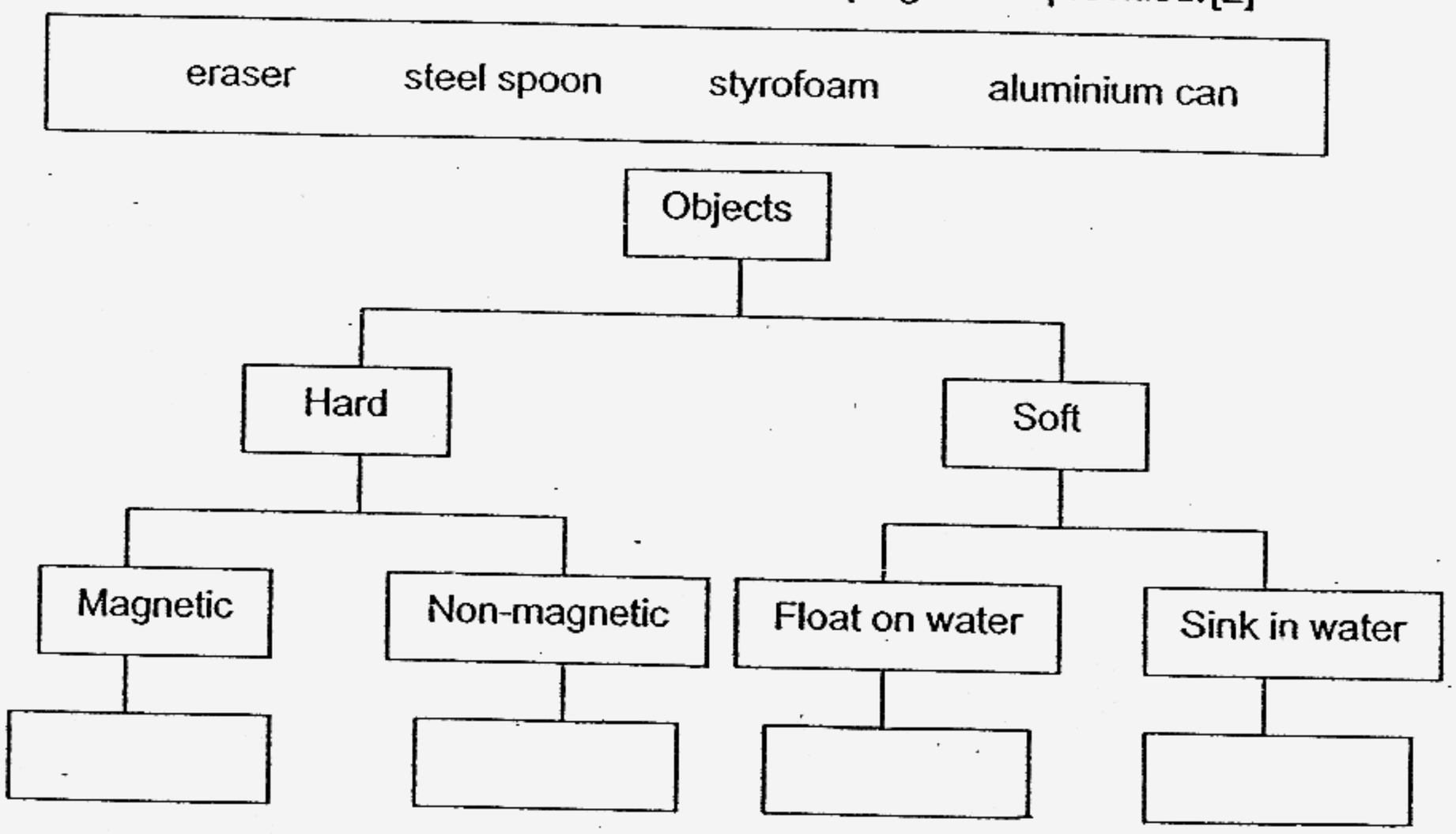
(a) _____

_____

(b) _____

_____

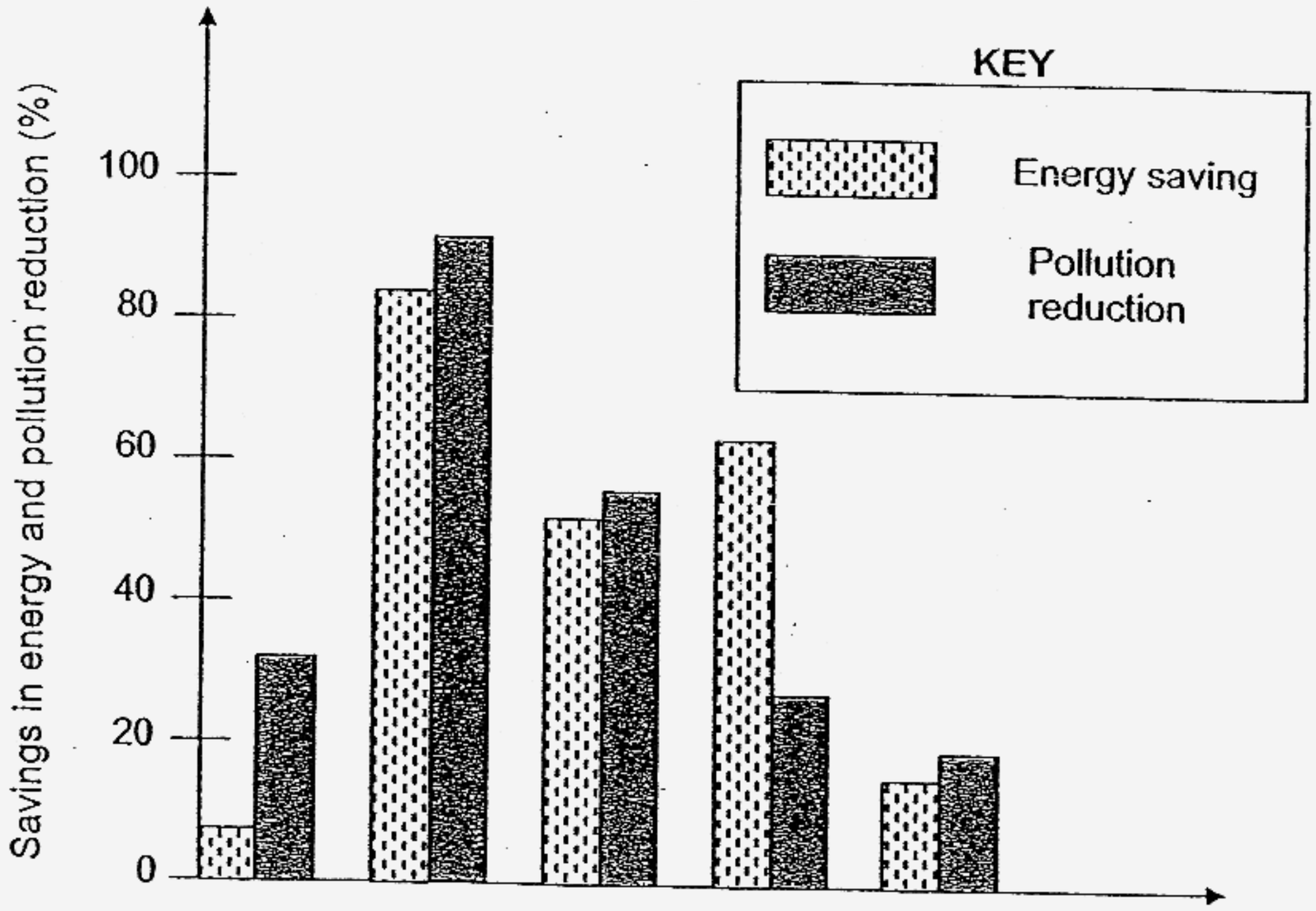
38) Fill in the classification chart below with the helping words provided. [2]



39) Electrical appliances change electrical energy into different forms of energy. Put a tick (√) in the table below to show the **useful** form(s) of energy for each appliance. [2]

Appliance	Kinetic energy	Sound energy	Heat energy	Light Energy
Table fan				
Television set				
Juice blender				
Hair dryer				

40) The graph below shows the percentage savings in energy and pollution reduction, when some materials were recycled.



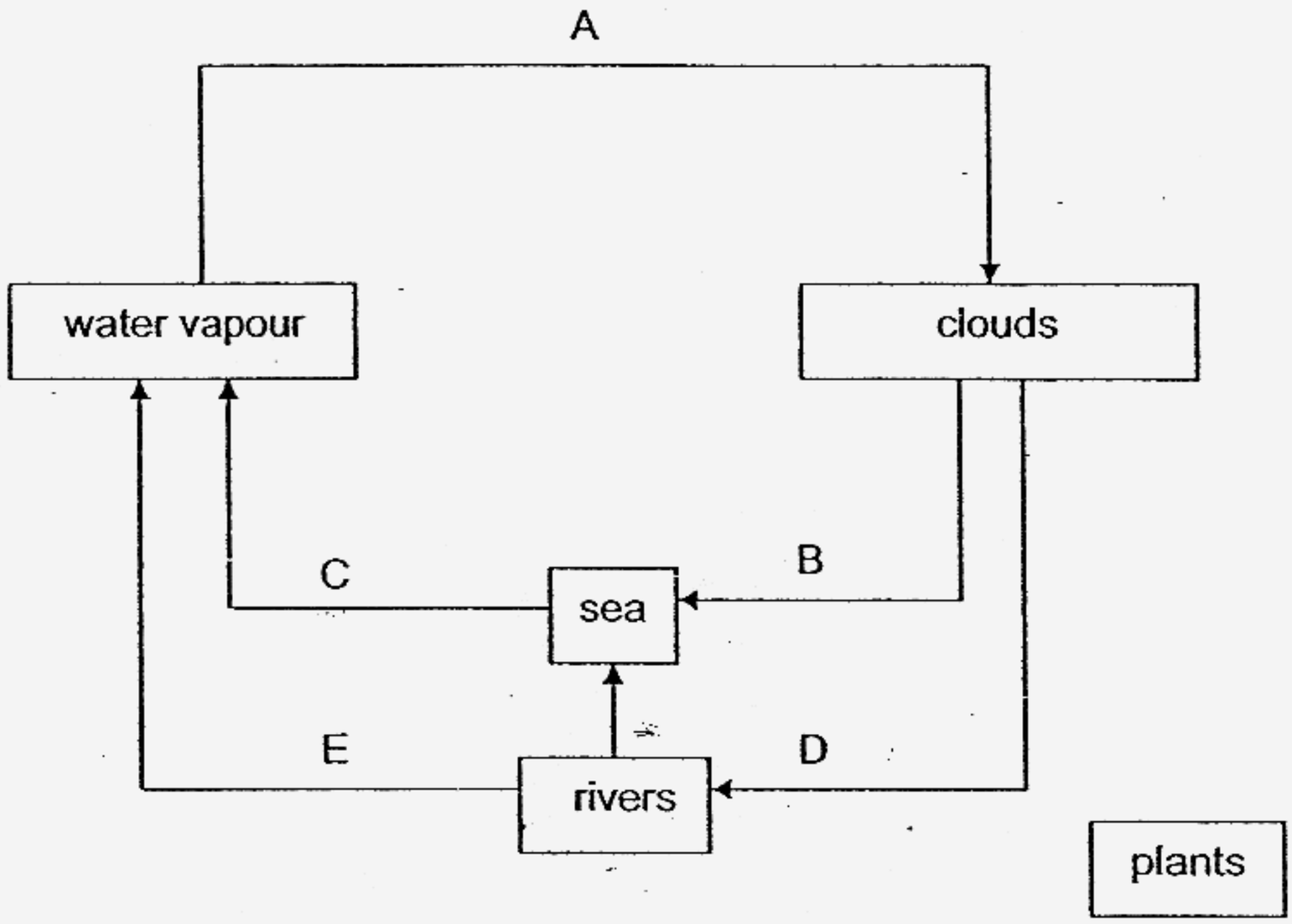
The table below shows the pollution level, energy usage and economic activities of Town W, X, Y and Z.

Town	Pollution level	Energy usage	Economic activity
W	Very high	Moderate	Aluminium and Copper mining
X	Low	High	Tin and Copper mining
Y	High	Very high	Paper and Glass production
Z	High	Low	Paper and Glass production

(a) Town _____ should recycle more of _____ than _____ to lower its very high pollution level. [2]

(b) Town _____ should recycle more of _____ than _____ to lower its very high energy usage. [2]

41) Study the water cycle below.



(a) In the diagram, draw **two** arrows to show how plants can be part of this water cycle. [1]

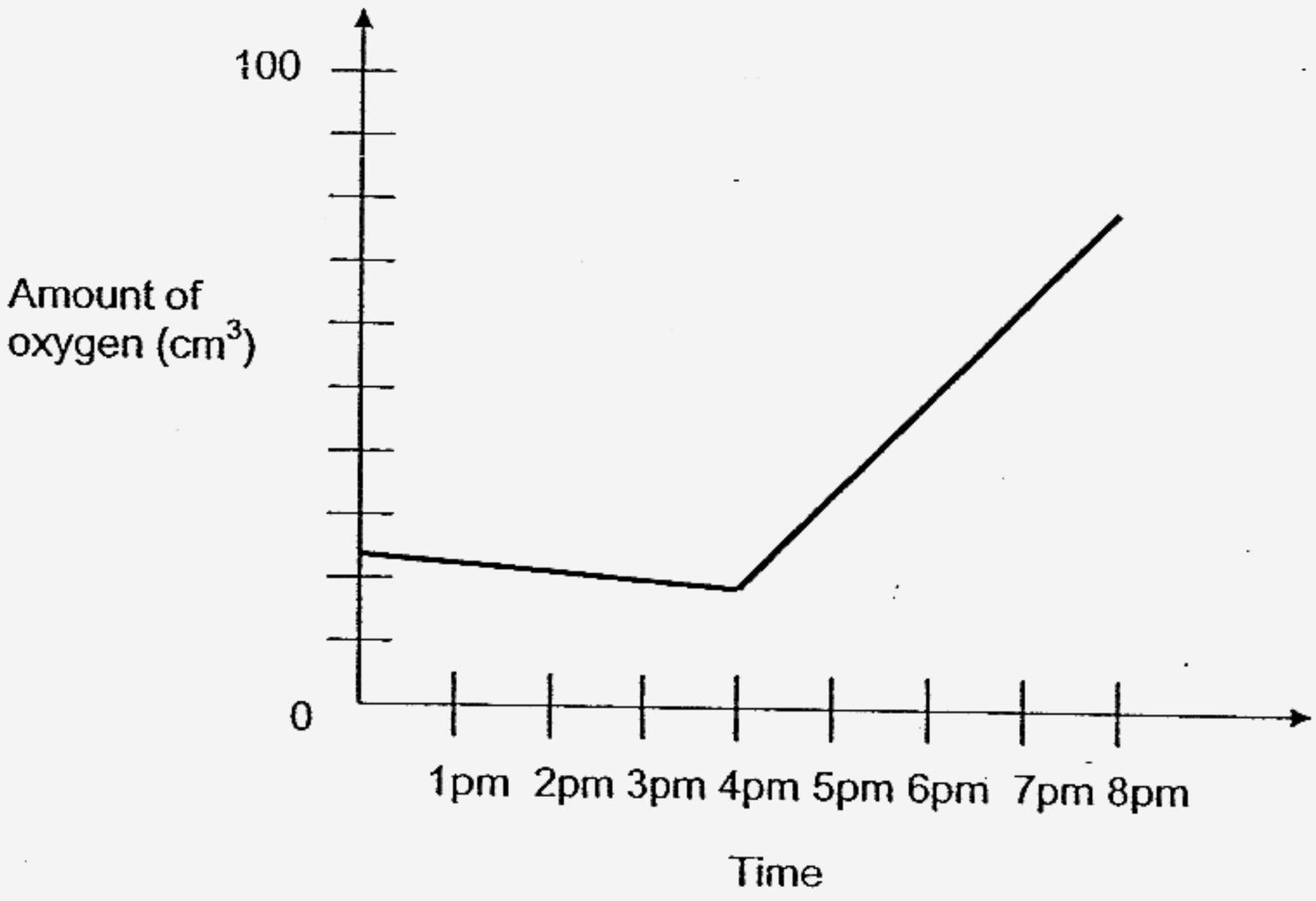
(b) Fill in the blanks with the letters A, B, C, D and E to depict the processes of the water cycle. [3]

(i) Change from liquid state to gaseous state : _____

(ii) Change from gaseous state to liquid state : _____

(iii) No change in state : _____

42) The graph below shows the result of an investigation on the amount of oxygen given out by a green plant under different light conditions for 8 hours in a dark box. A light in the dark box was turned on after some time.



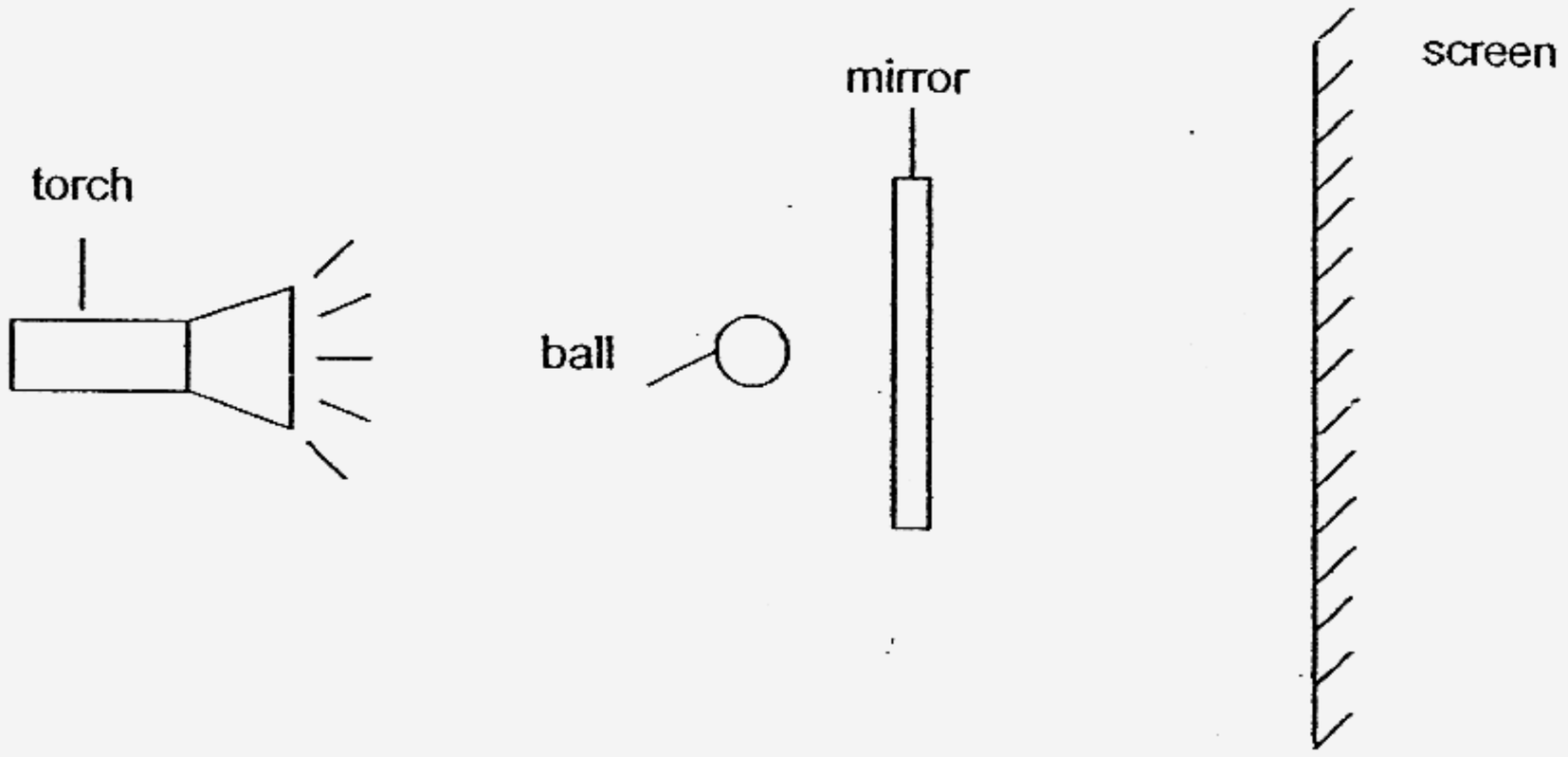
(a) When was the light turned on? [1]

_____

(b) What was the amount of oxygen in the dark box at 7pm? [1]

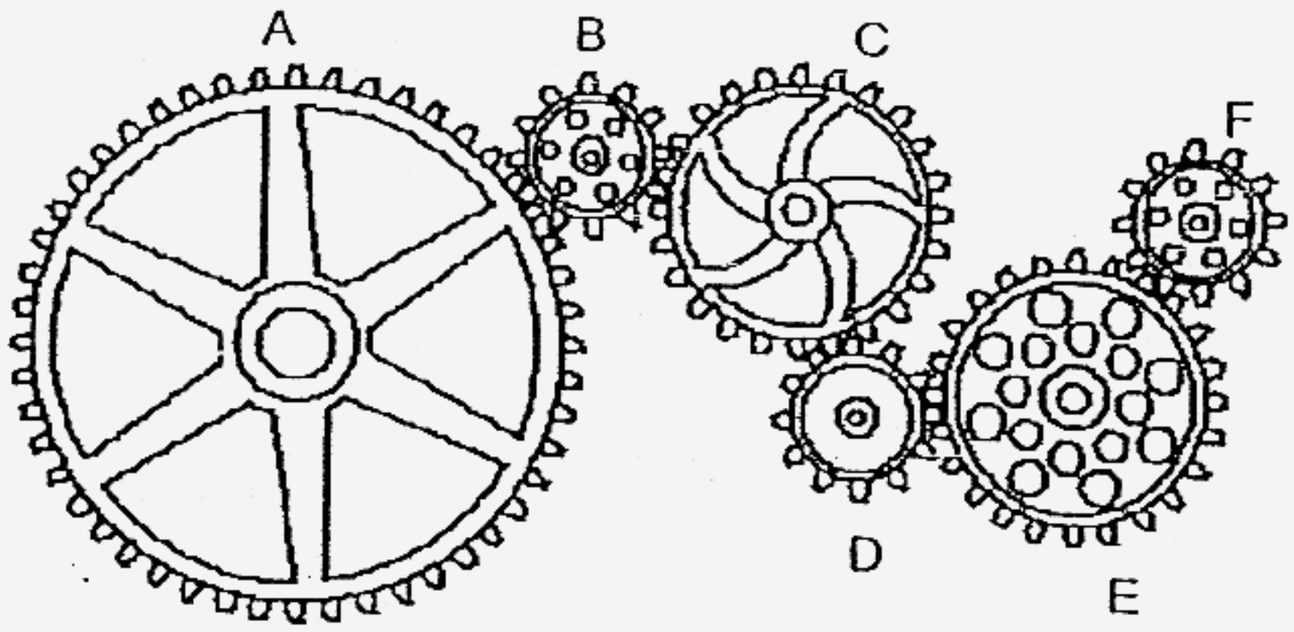
_____

43) The diagram below shows a torch shining on a ball and a square mirror.
A shadow is cast on the screen. Draw the shadow as seen on the screen.
[2]



Screen

44) 6 gears were set up as shown below.

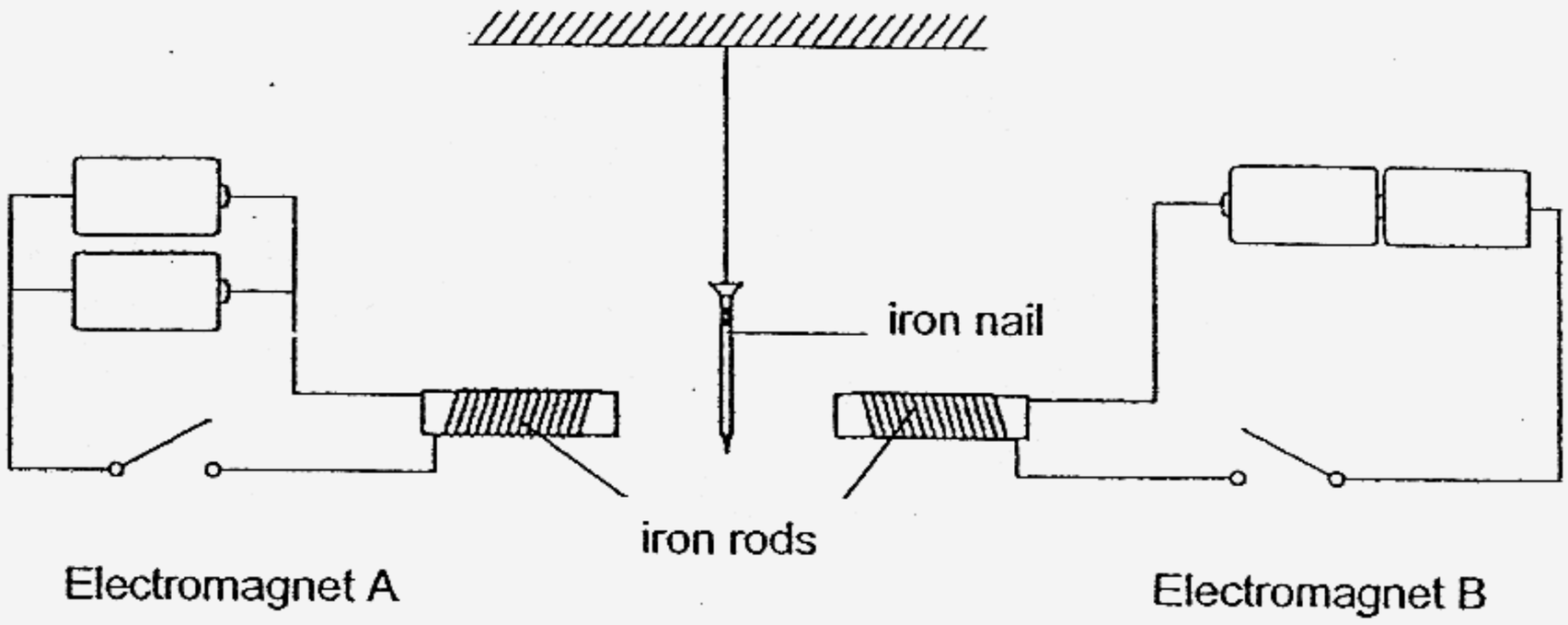


(a) Which gear rotates the slowest? [1]

(b) When Gear A makes 2 turns in the clockwise direction, how many turns will Gear E make, and in which direction? [2]

---

45) The diagram below shows an iron nail suspended between two electromagnets, A and B. The batteries, wires, iron rods and switches are identical in both electromagnets.



(a) What will happen to the iron nail when both switches are closed at the same time? [1]

(b) Explain your answer in (a). [1]

46) The table below shows some information about 4 planets of our solar system.

Planet	Surface	Number of moons	Speed around the sun (km/s)	Distance from the sun (millions of km)
Pluto	Solid	1	5	5 946
Earth	Solid	1	30	150
Jupiter	Gas	15	13	778
Neptune	Gas	6	5	4496

Simon grouped them into 2 groups as shown below.

Group A	Group B
Pluto	Jupiter
Earth	Neptune

(a) What characteristic did Simon use to group the planets? [1]

Group A : _____

Group B : _____

(b) What other characteristic can be used to group the planets such that there are only 2 planets in each group? [1]

Group C : _____

Group D : _____

(c) Which is the warmest of the 4 planets? [1]

Planet _____

End of paper

SECTION A : (60 MARKS)

Qn no.	Ans
1	2
2	3
3	4
4	1
5	1
6	1
7	3
8	3
9	4
10	3

Qn no.	Ans
11	2
12	3
13	4
14	3
15	4
16	2
17	3
18	1
19	2
20	1

Qn no.	Ans
21	1
22	2
23	4
24	1
25	4
26	4
27	1
28	4
29	3
30	1

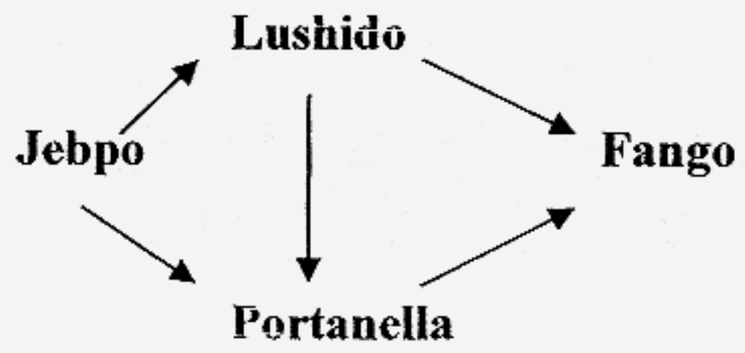
SECTION B (40 MARKS)

Qn No.	Answers
31a	D
31b	To control the size of opening.

32	Plant Y ⟶ Not possible to tell.
	Plant W ⟶ True
	Plant X ⟶ False
	Plant Z ⟶ False

33	Digestion of the food we eat starts at the mouth and ends at the small intestine.

34a	C
34b	B
34c	It will swell and become a fruit.

35a	
35b	Protanella
35c	Protanella

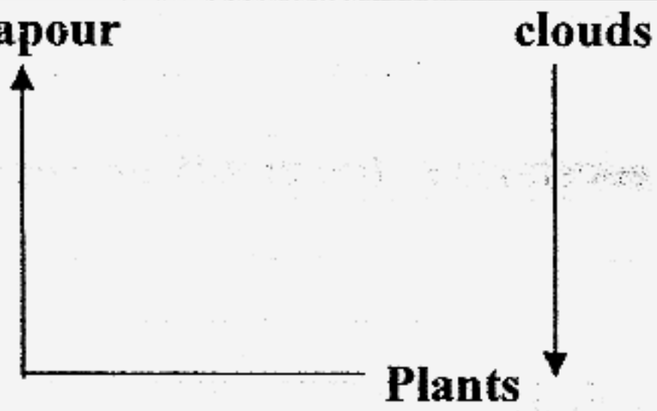
36	False
	False
	False
	True

37a	Change the piece of glass to the piece of wood that is the same shape and size of the piece of glass.
37b	In set-up L, he should use wooden block X instead of wooden block Y.

38	Steel spoon, aluminium can, styrofoam, eraser.

39	Table fan → kinetic energy
	Television set → sound energy, light energy
	Juice blender → kinetic energy
	Hair dryer → kinetic energy, heat energy

40a	Town W should recycle more of aluminium than copper to lower its very high pollution level.
40b	Town Y recycle more of glass than paper to loer its very high energy usage.

41a	
41b (i)	C, E
41c (ii)	A
41c (iii)	B, D

Qn No.	Answers
42a	4pm
42b	65cm^3

43	 Mirror

44a	A
44b	4 turns. Clockwise direction

45a	The iron nail will more towards the iron rod of electromagnet B.
45b	Electromagnet B is arranged in series arrangement so it had a higher voltage than electromagnet A which is arranged in parallel arrangement so the iron nail more towards the iron rod of electromagnet B.

46a	Group A : solid surface
46b	Group B : Gas surface