

TAO NAN SCHOOL

PRIMARY 5 SCIENCE END-OF-YEAR EXAMINATION – 2006

Name: _____ ()

Date: 26 October 2006

Class: Primary 5 ()

Time: 1 h 45 min

Marks: _____ / 100

Section A (30 x 2 marks)

For each question, choose the most suitable answer and shade its correct oval (1, 2, 3 or 4) in the Optical Answer Sheet (OAS) provided.

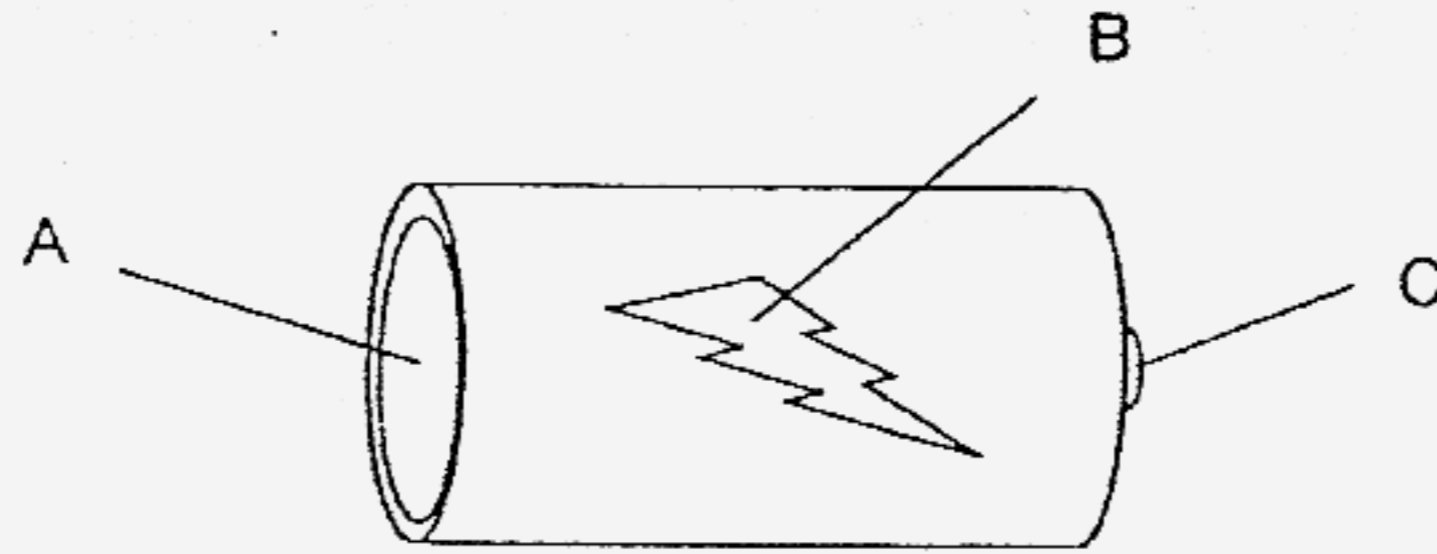
1. Which of the following causes the cycle of day and night on Earth?

- 1) The rotation of the Earth on its own axis
- 2) The rotation of the Moon on its own axis
- 3) The revolution of the Earth around the Sun
- 4) The revolution of the Moon around the Earth

2. How does respiration help living things to stay alive?

- 1) Respiration digests food for living things to use.
- 2) Respiration produces oxygen for living things to breathe.
- 3) Respiration releases energy in food for living things to use.
- 4) Respiration converts carbon dioxide and water to food for living things.

3. The diagram below shows a battery. Which parts are conductors of electricity and which parts are insulators of electricity?



	Conductors of electricity	Insulators of electricity
1)	A	B and C
2)	C	A and B
3)	A and C	B
4)	A, B and C	

4. How does a baby in its mother's womb obtain oxygen?

- 1) The baby breathes using its lungs.
- 2) There is oxygen in its mother's womb.
- 3) There is oxygen in the liquid-filled sac it is in.
- 4) The baby obtains oxygen from its mother's blood.

5. Which of the following statements about human reproduction is FALSE?

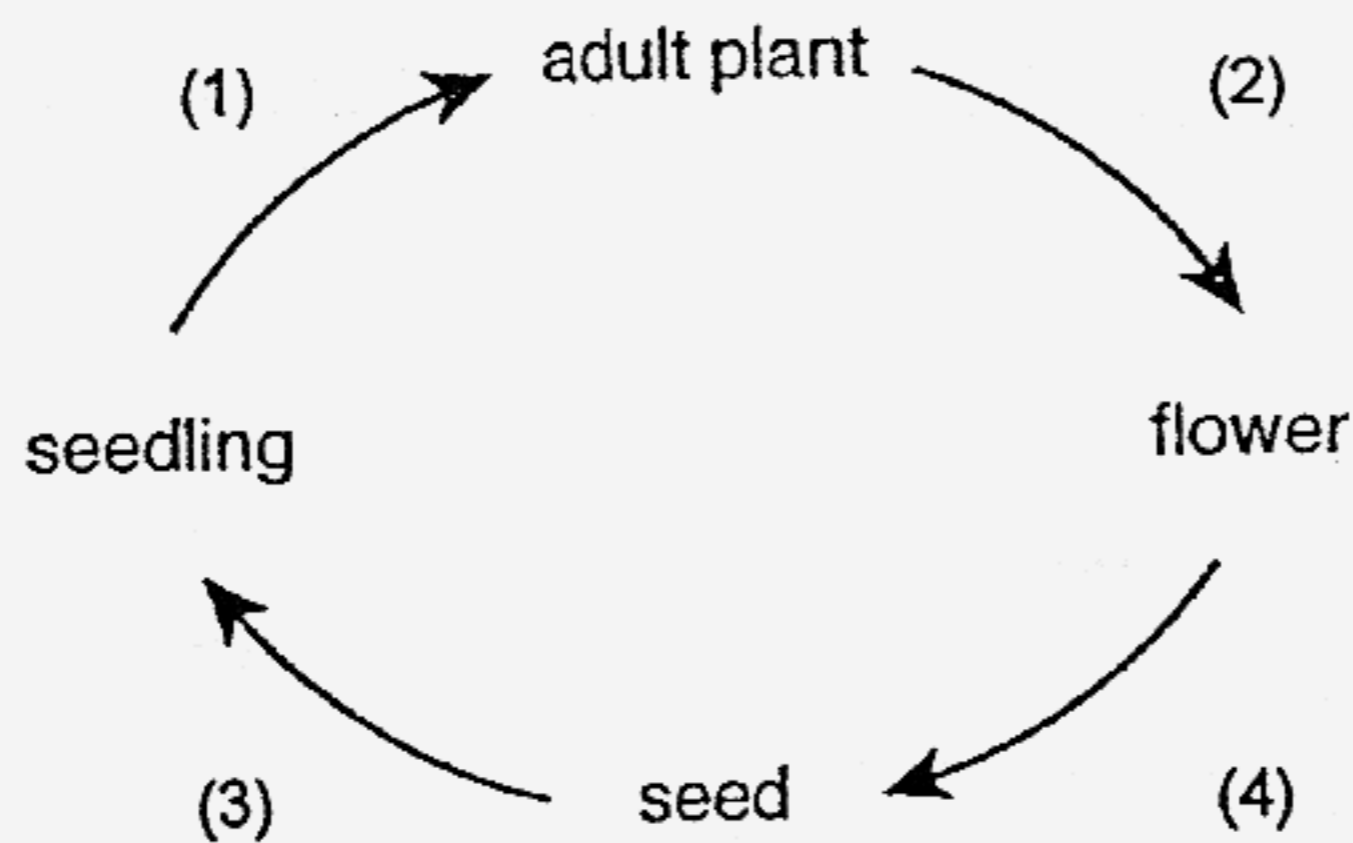
- 1) Sperms are produced by males.
- 2) Only one sperm is needed to fertilise an egg.
- 3) Fertilisation occurs outside the body.
- 4) After fertilisation, new human life develops.

6. Ben wants to find out if the number of batteries affects the brightness of a light bulb in a circuit. Which of the following must be kept unchanged in order for him to conduct a fair experiment?

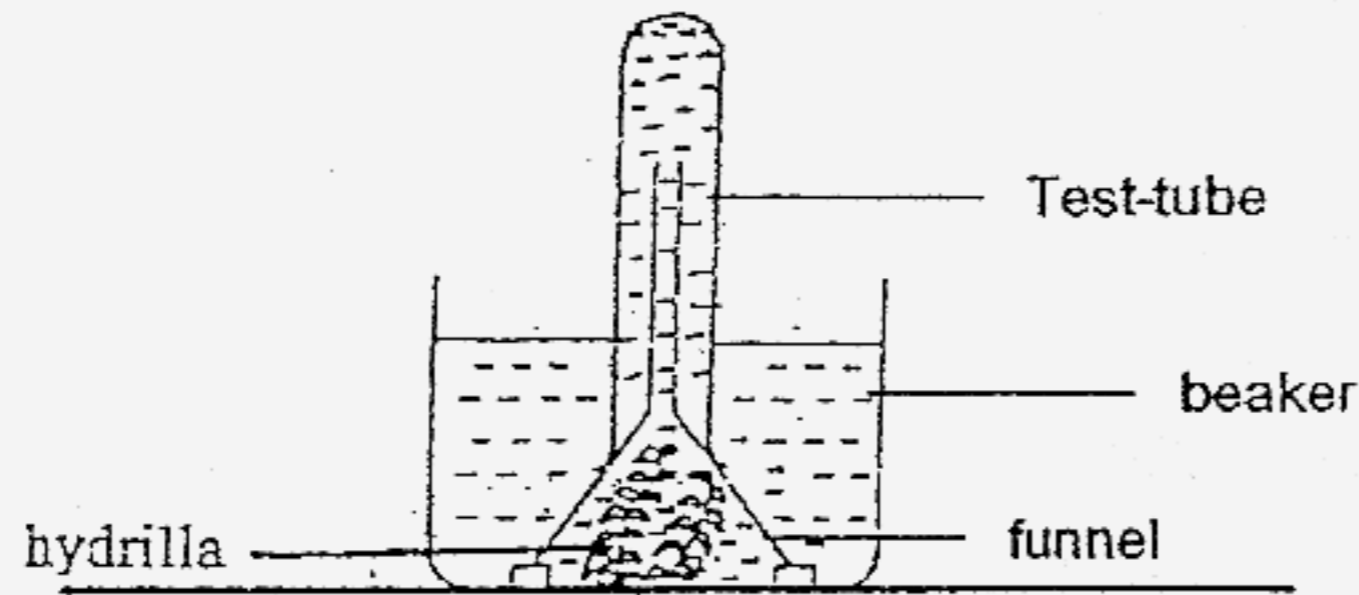
- A: Number of light bulbs
- B: Number of batteries
- C: Arrangement of bulbs
- D: Arrangement of batteries

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

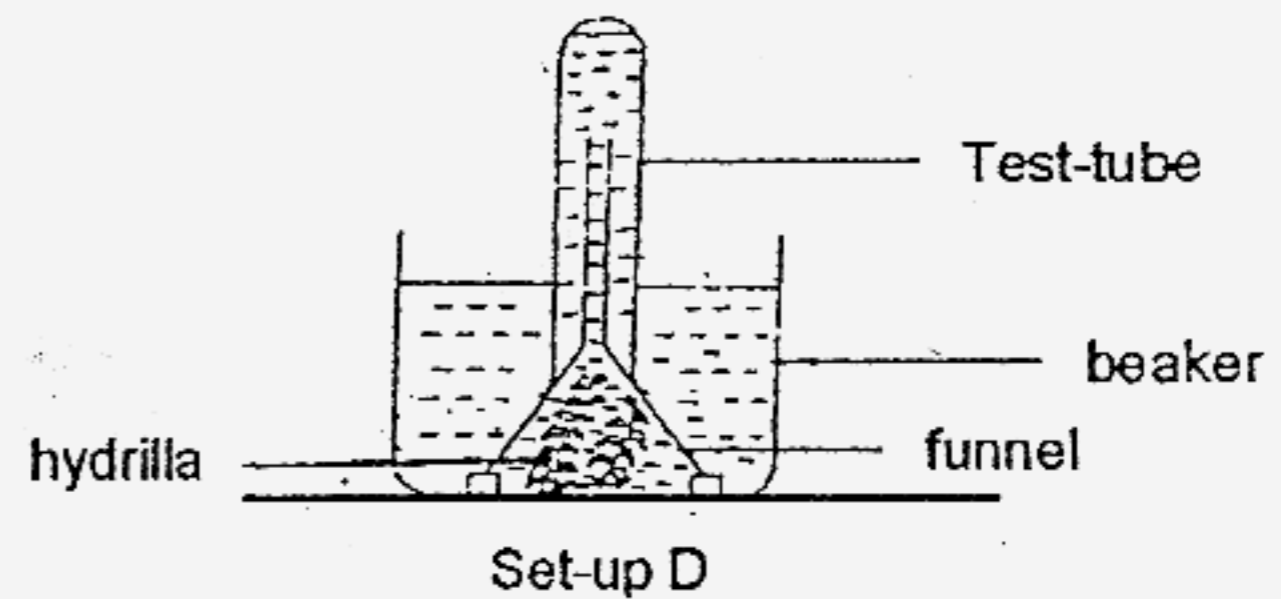
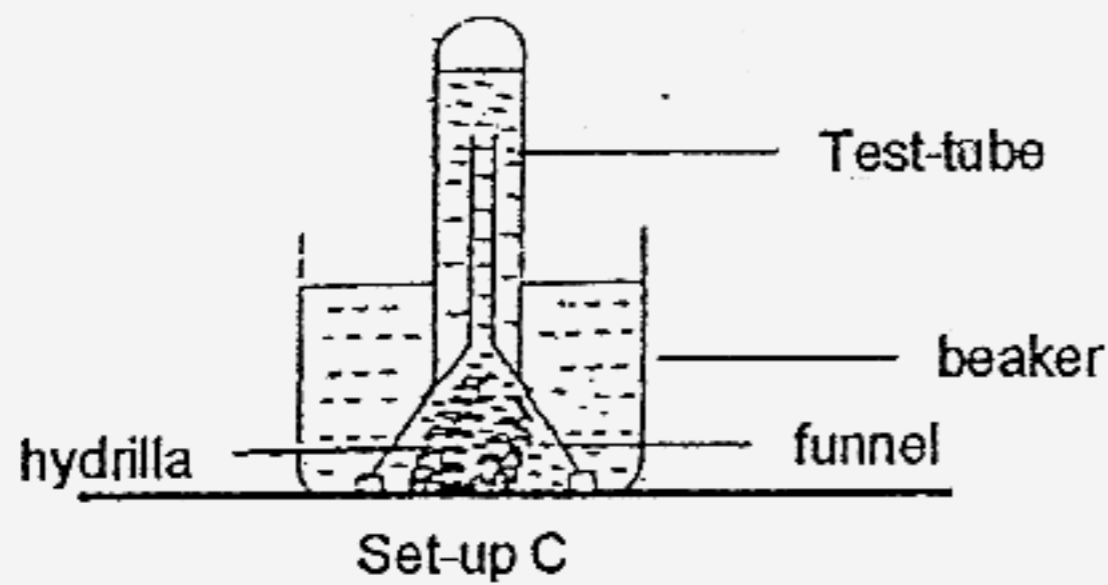
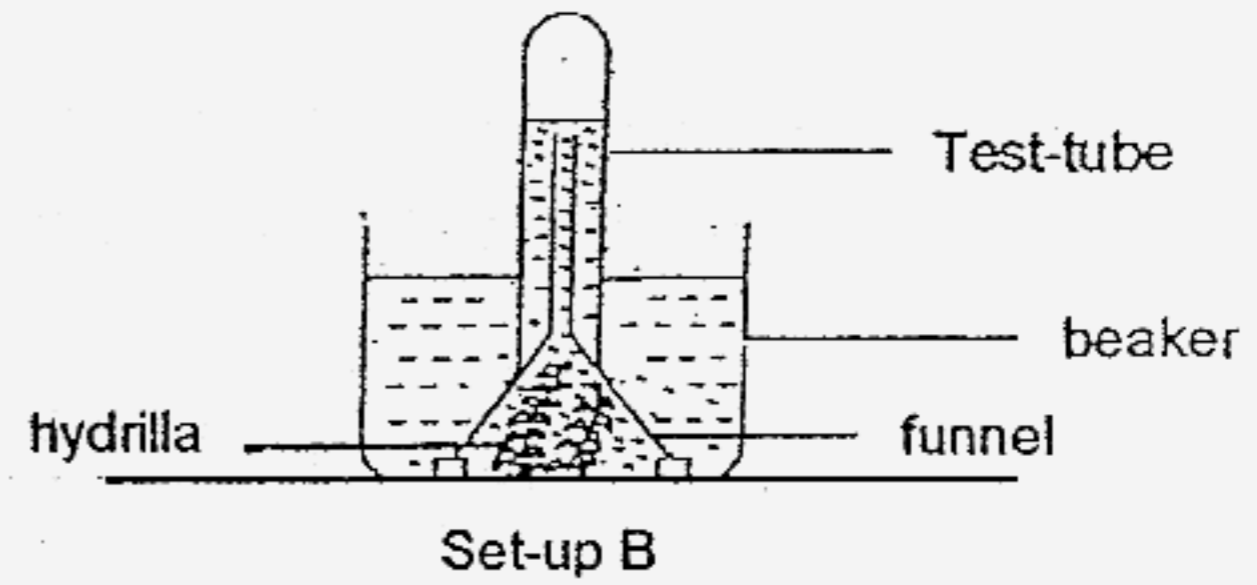
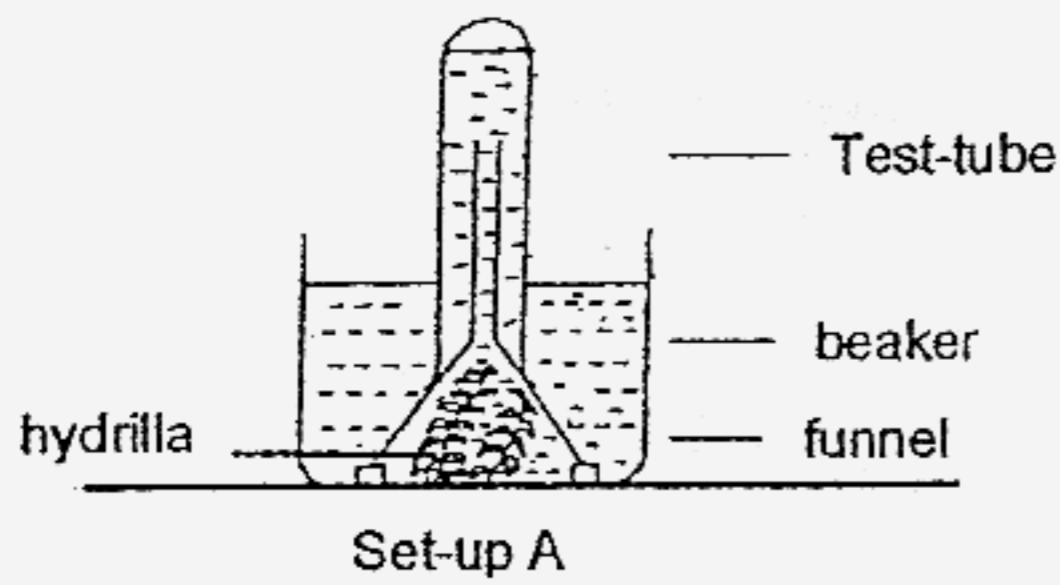
7. The diagram below shows the life cycle of a flowering plant. At which stage does the process of fertilisation takes place?



8. An experiment was carried out to compare the rate of photosynthesis at different locations. The set-up of the experiment is shown below.



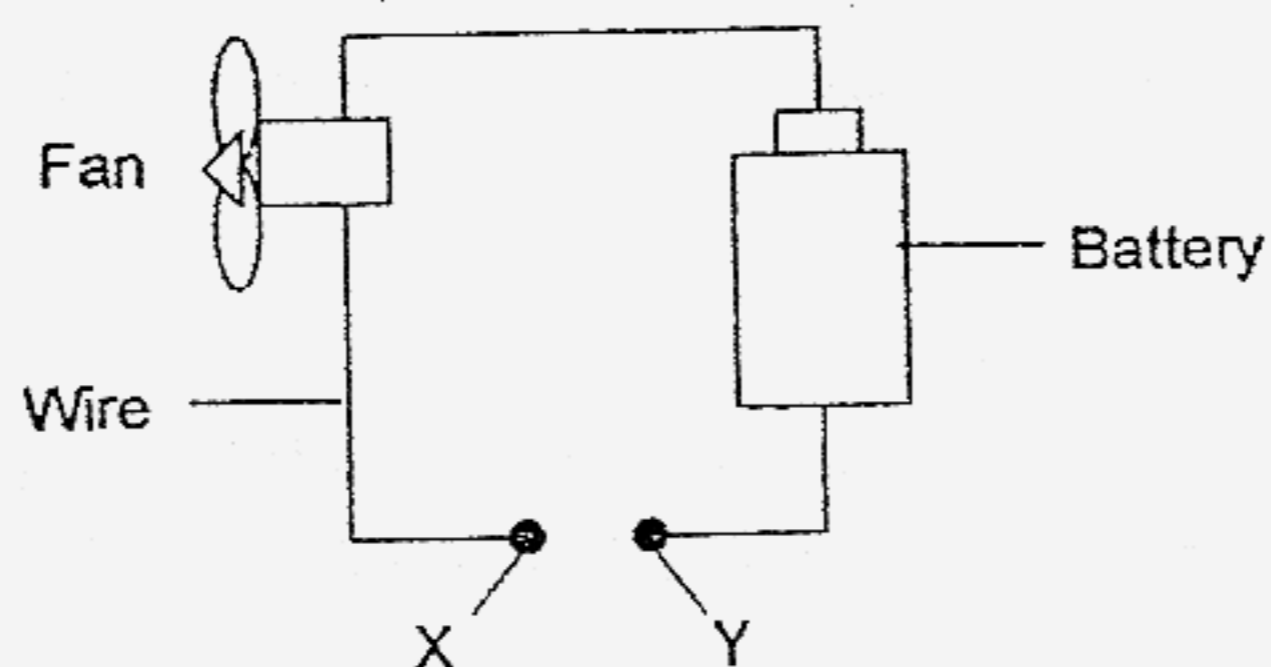
Four identical set-ups were placed at different locations. A gas was collected. The diagrams below show the amount of gas in each test tube at the end of the experiment.



Which set-up was placed in the most sunny place?

- 1) Set-up A
- 2) Set-up B
- 3) Set-up C
- 4) Set-up D

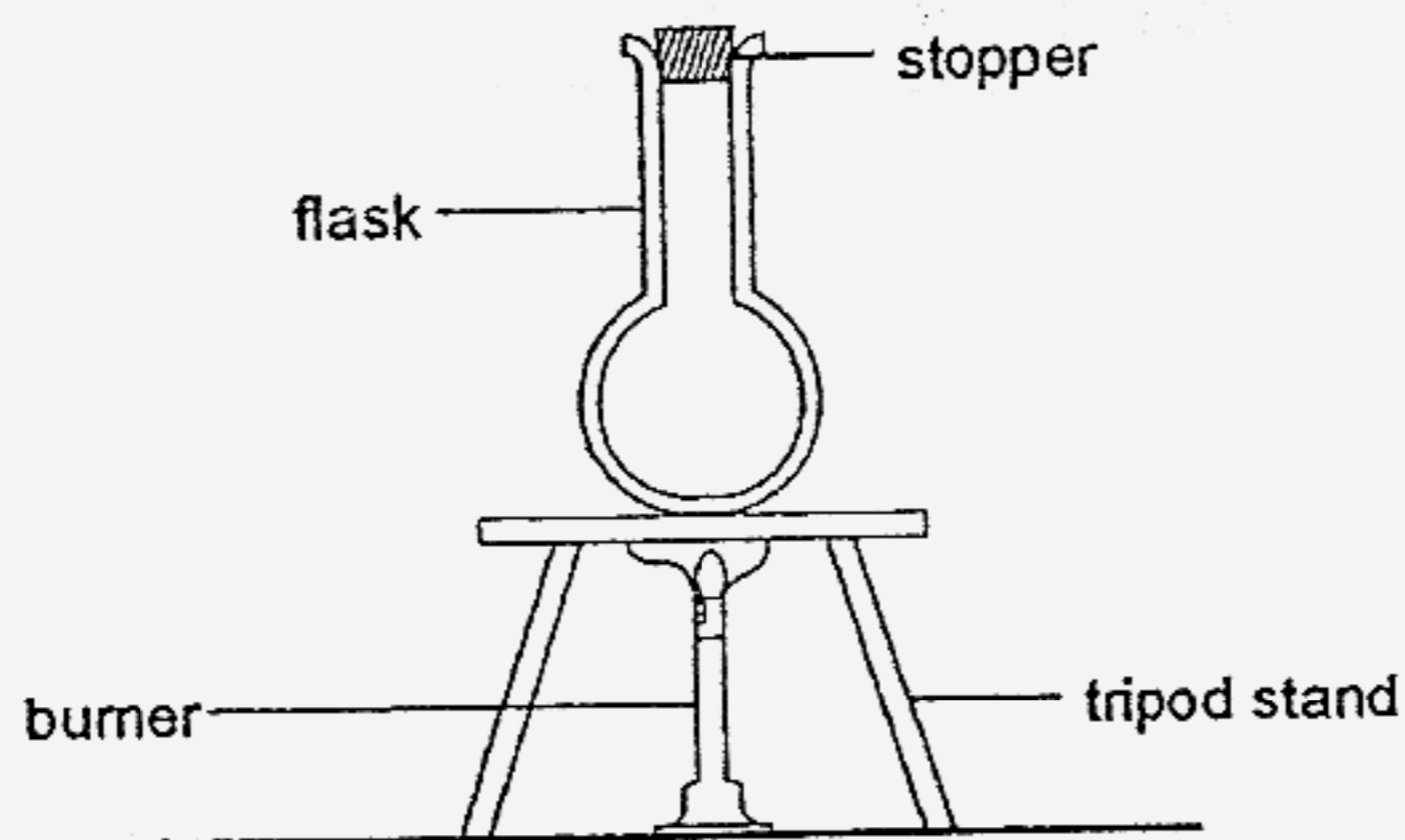
9. The diagram below shows an electric circuit.



Which of the following can be used to connect X and Y to turn on the fan?

- 1) Silver pin
- 2) Drinking straw
- 3) Cotton shoe lace
- 4) Wooden ice cream stick

10. The diagram below shows a flask fitted with a stopper. When the empty flask is heated, its stopper will pop out. Why?



- 1) The flask expands when heated.
- 2) The stopper expands when heated.
- 3) The tripod stand expands when heated.
- 4) The air inside the flask expands when heated.

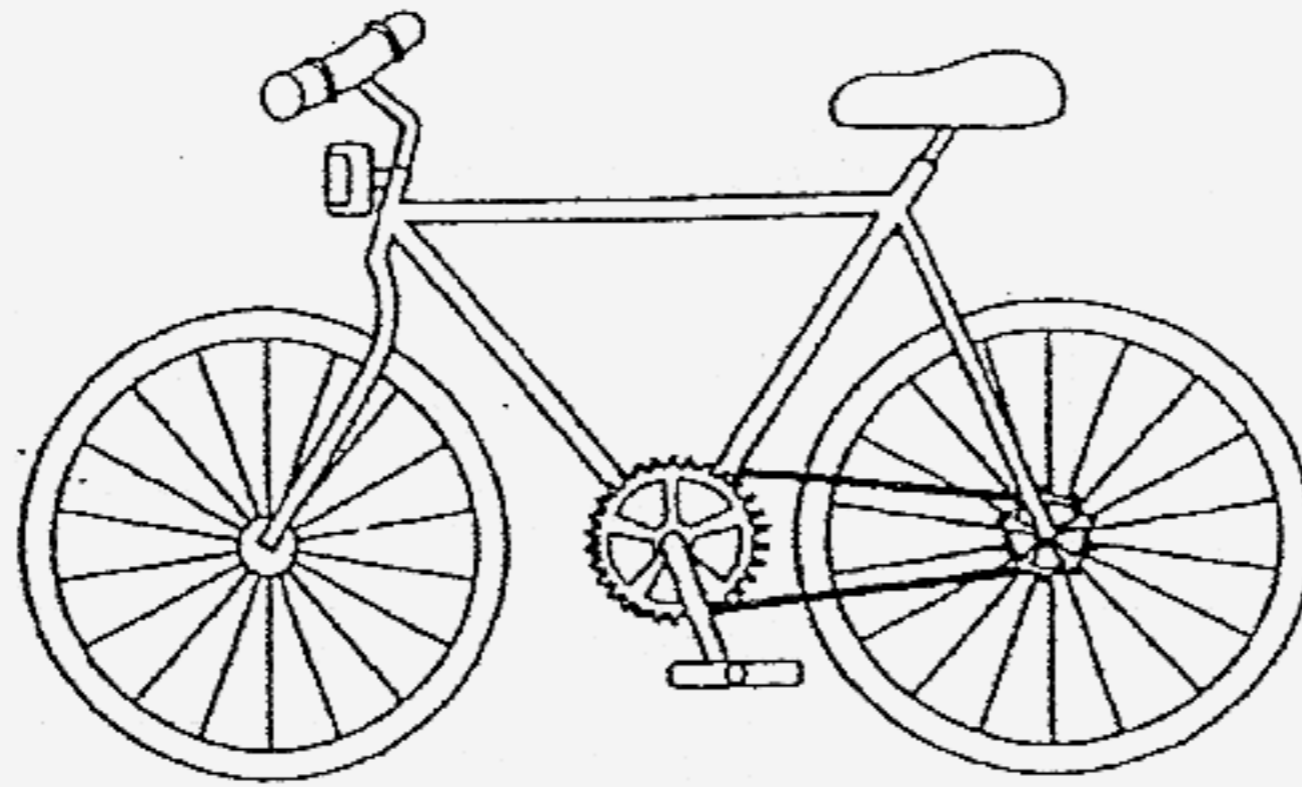
11. Jeremy carried out an experiment to find out which objects, A, B, C and D, are conductors of electricity. He connected each object to the same circuit tester, one at a time. His results were recorded as shown below in the table.

Objects	Bulb of circuit tester
A	Does not light up
B	Lights up brightly
C	Does not light up
D	Lights up dimly

According to the results shown in the table above, which of the following represents A, B, C and D?

	A	B	C	D
1)	Glass	Silver	Plastic ruler	Pencil lead
2)	Clay	Steel nail	Magnet	Wooden chopsticks
3)	Rubber band	Sand	Pencil lead	Steel nail
4)	Pencil lead	Plastic ruler	Gold	Glass

12. The diagram below shows a bicycle with gears that are connected by a chain.



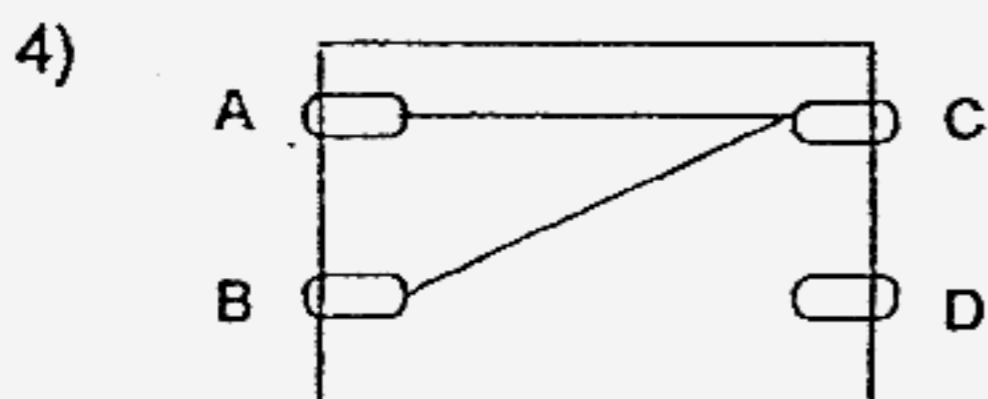
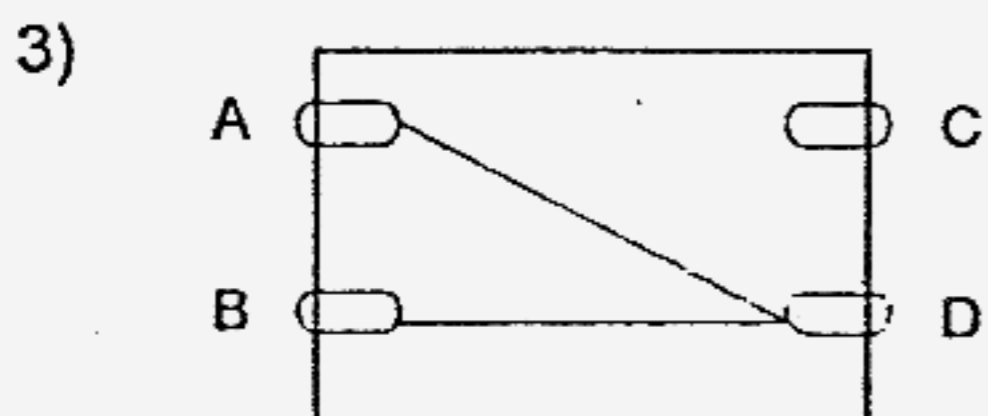
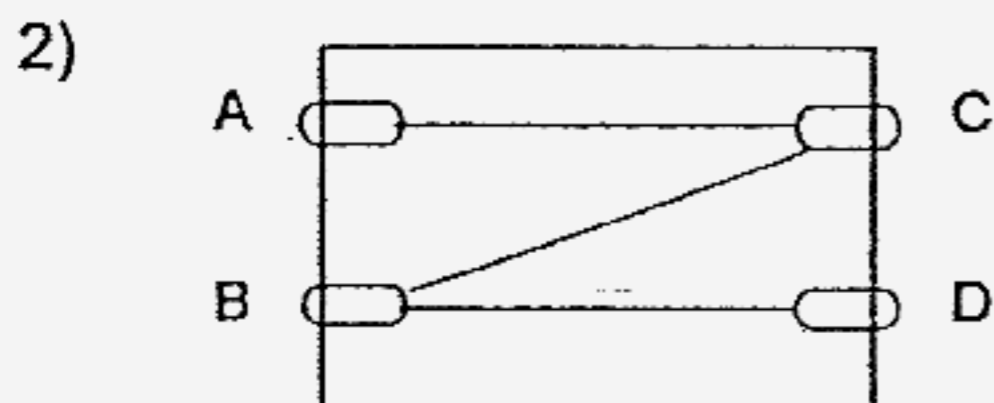
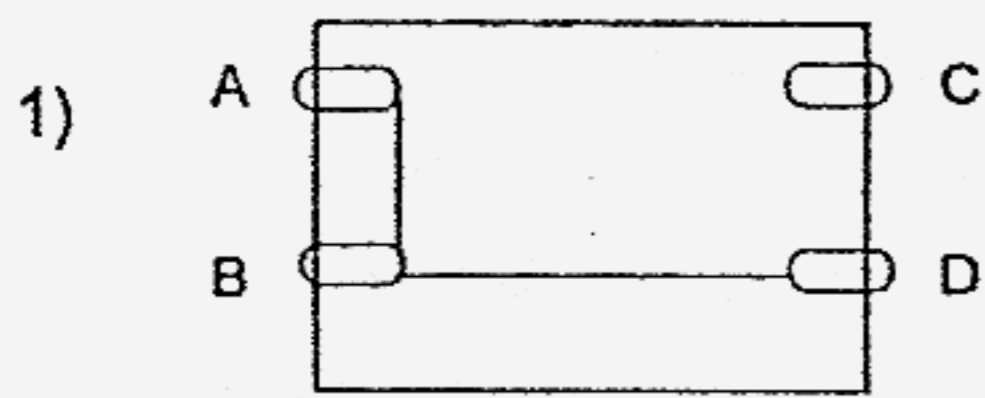
Which of the following statements is correct?

- 1) The smaller gear turns slower than the larger gear.
- 2) The smaller gear turns at the same speed as the larger gear.
- 3) The larger and the smaller gears move in the same direction.
- 4) The larger and the smaller gears move in the opposite direction.

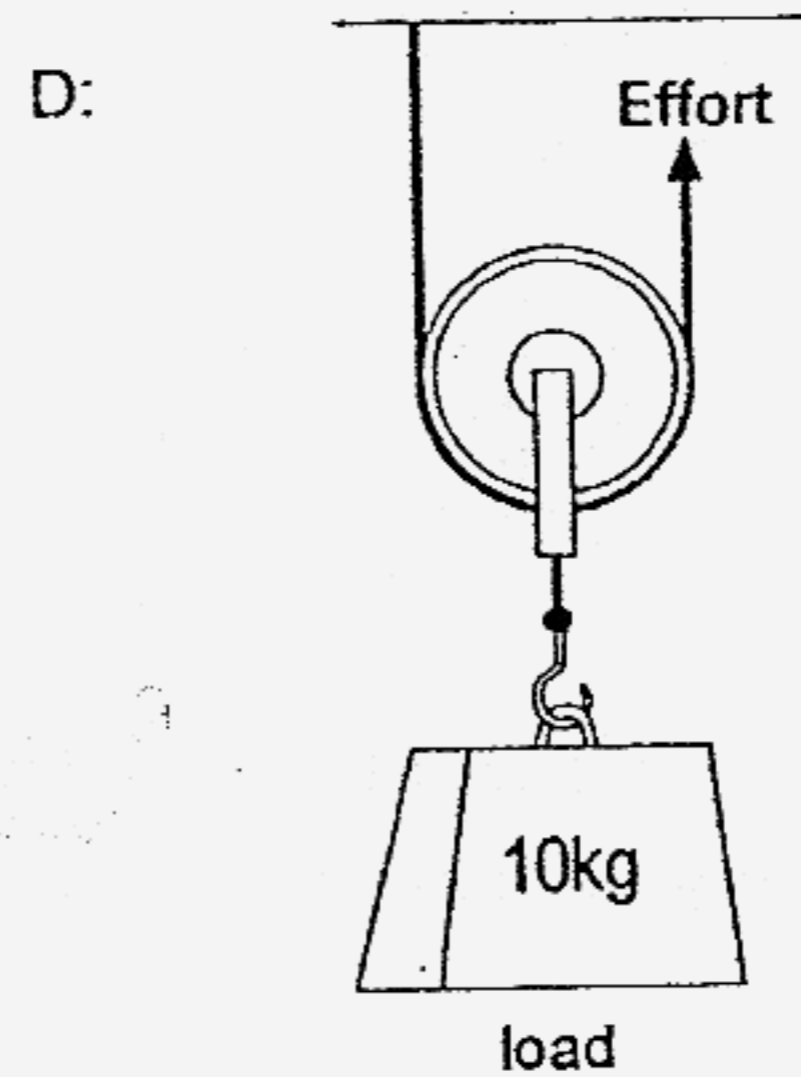
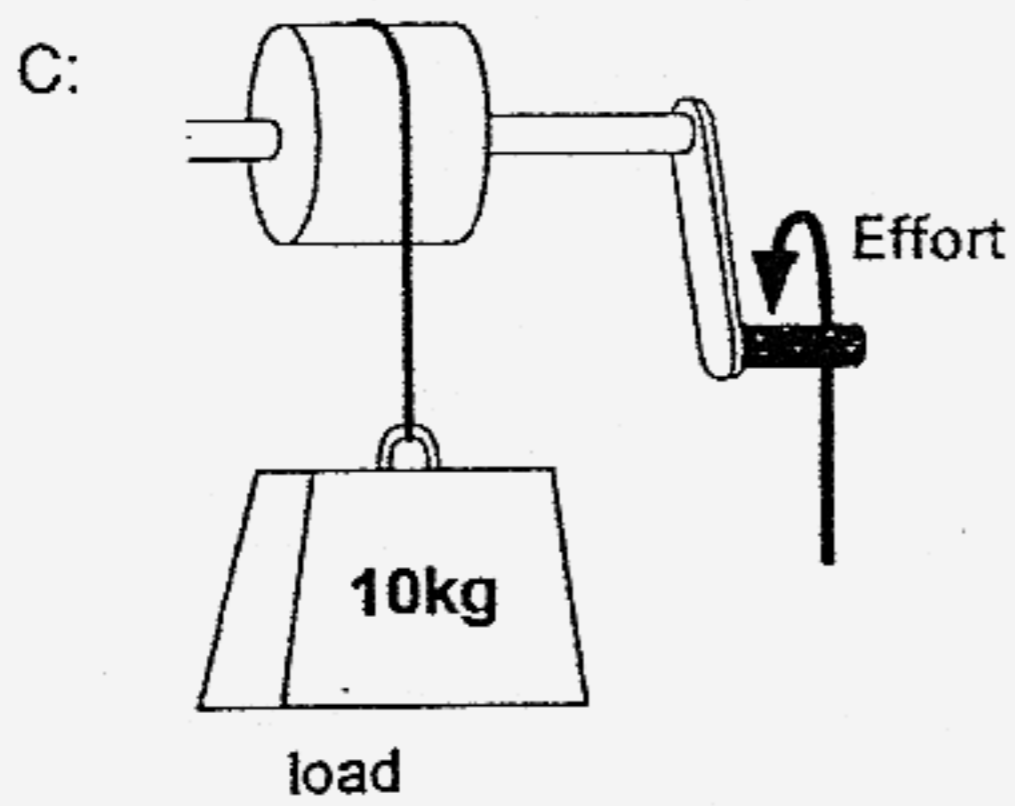
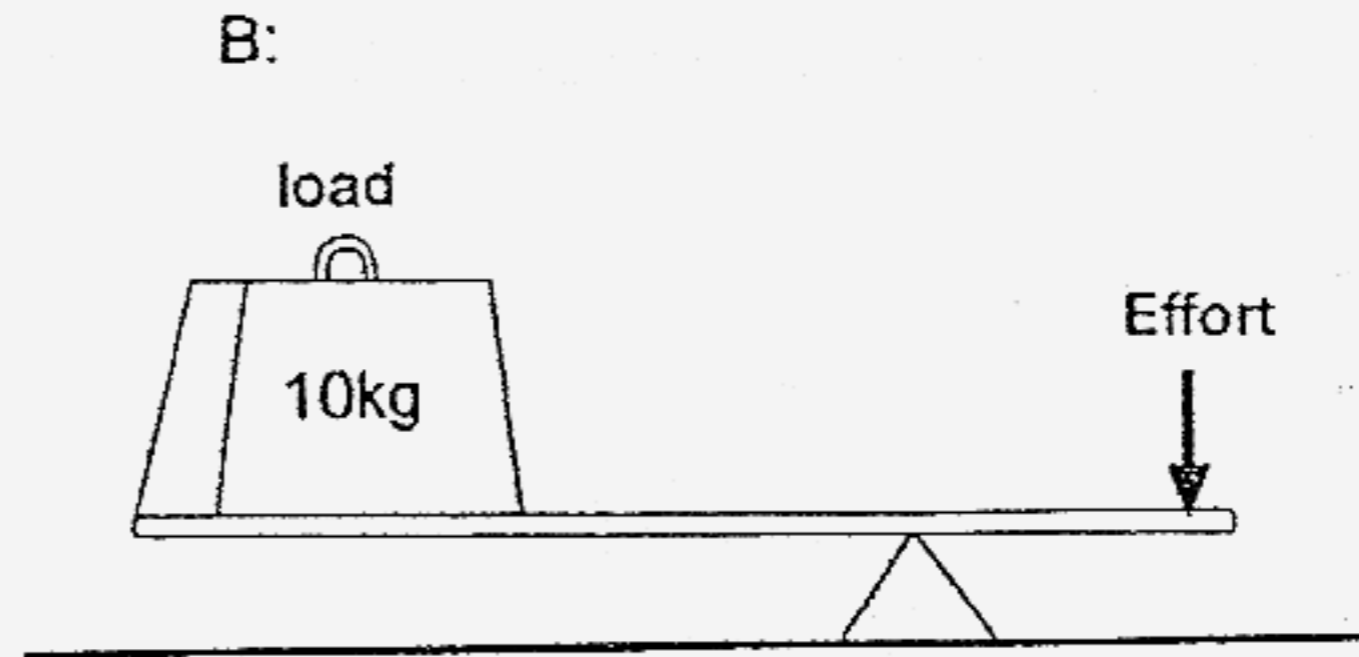
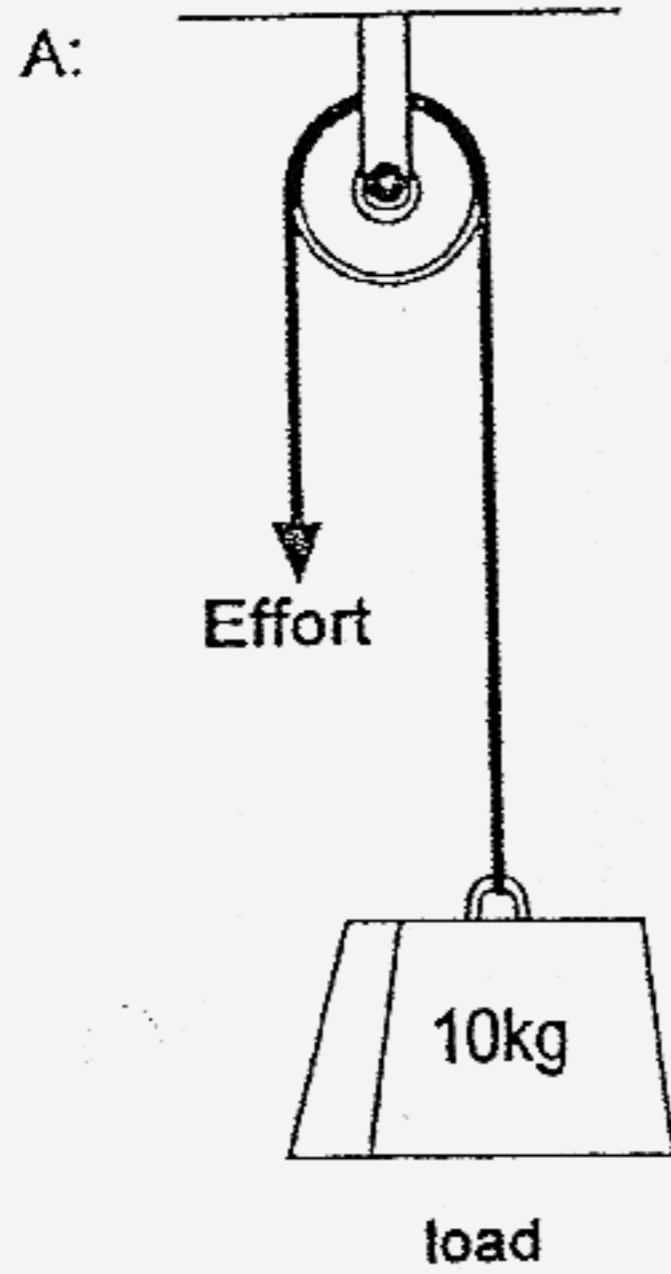
13. A circuit card is tested with a circuit tester. The results are recorded in the table below.

Clips tested	Bulb of circuit tester
A and B	Lights up
A and C	Lights up
B and C	Lights up
Band D	Does not light up
C and D	Does not light up

Which diagram represents the circuit card tested?



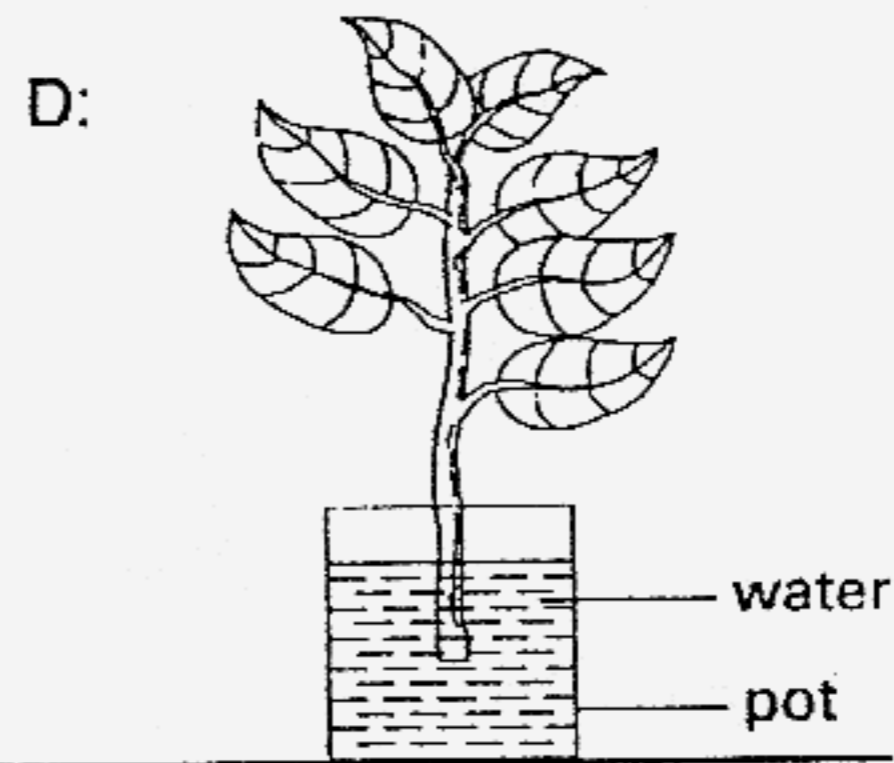
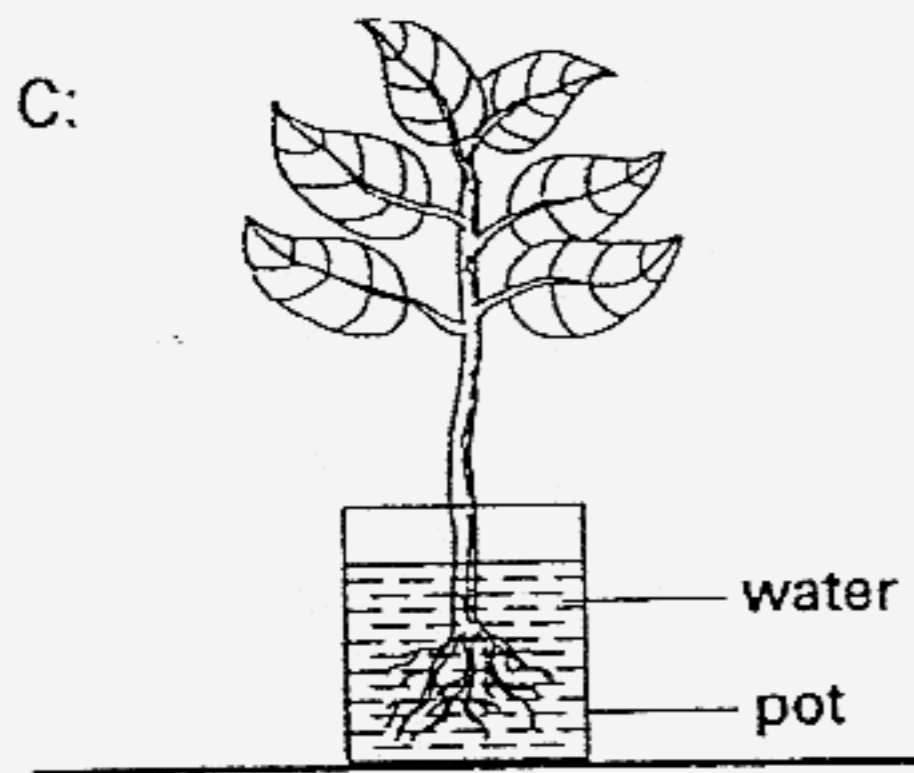
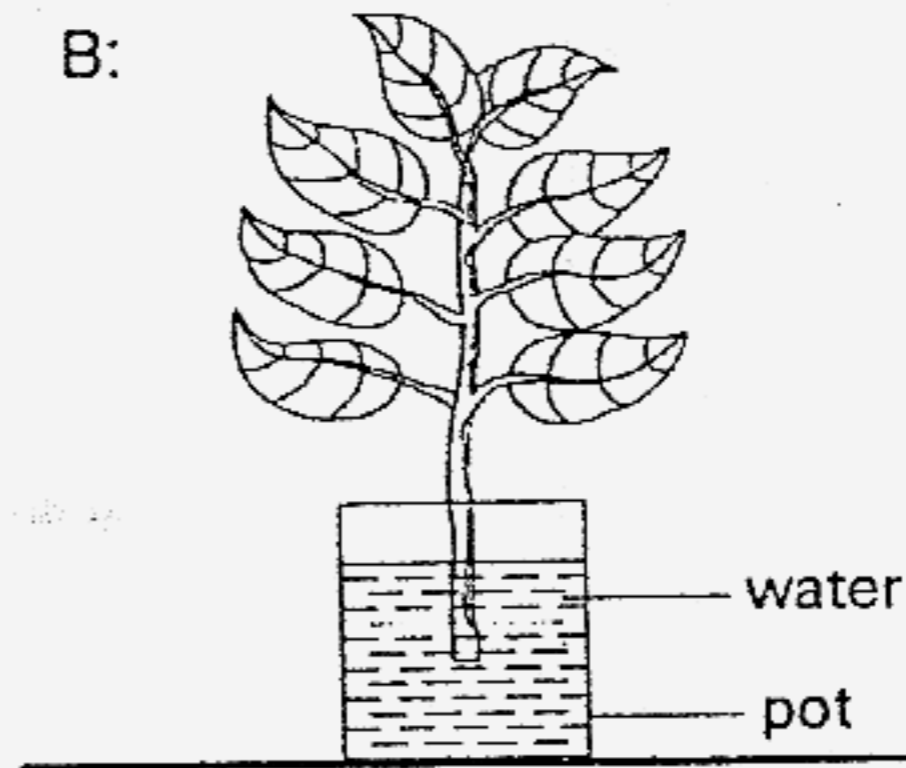
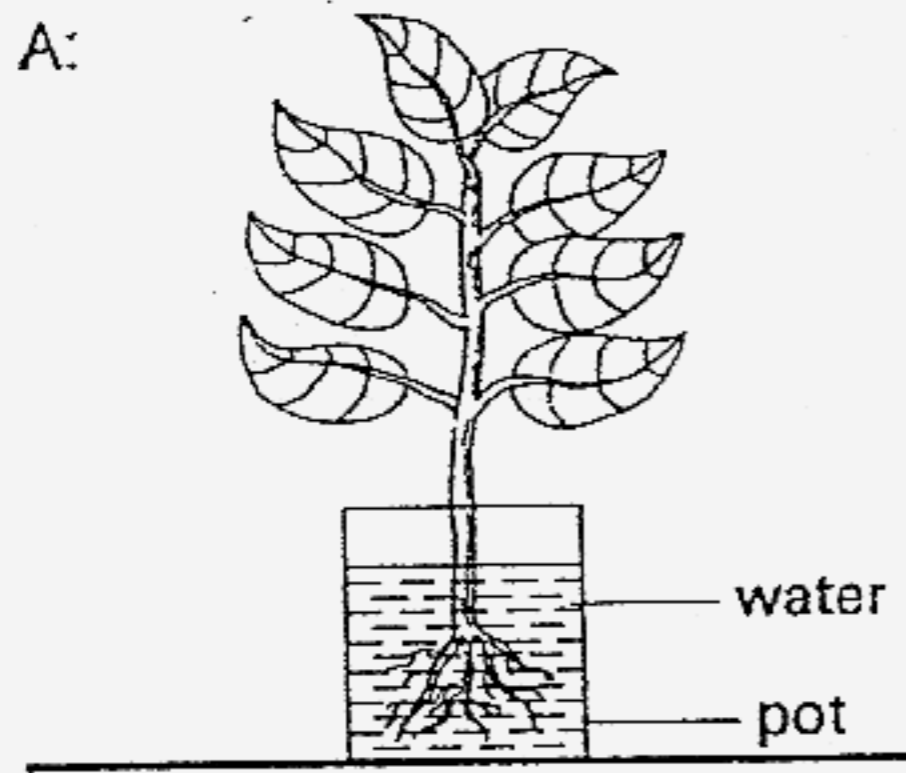
14. Which simple machines use less than 10kg of effort to lift the load?



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

- 2) A and C only
- 4) C and D only

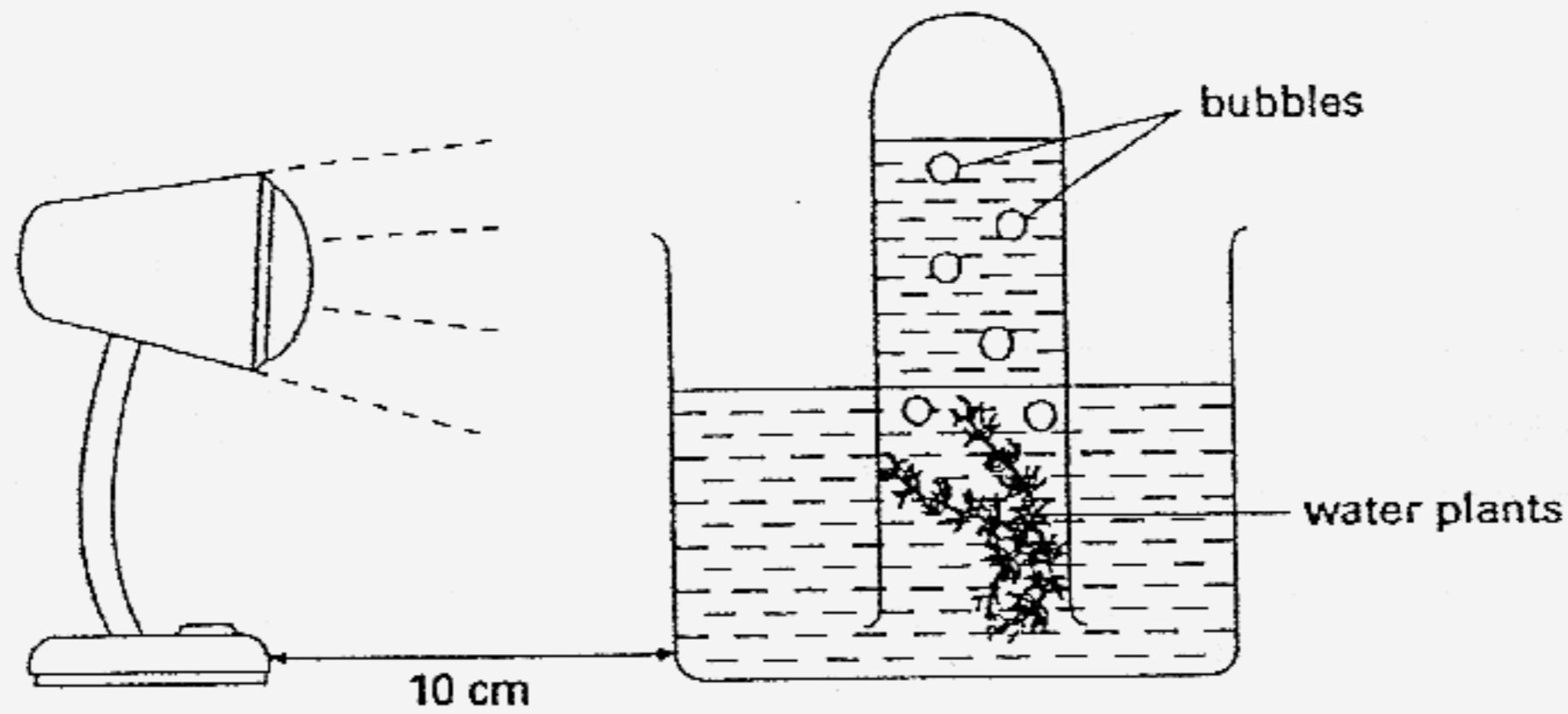
15. The diagrams below show four different set-ups of the same kind of plant in an experiment. The plants are similar except that their number of leaves is different and 2 plants have their roots removed.



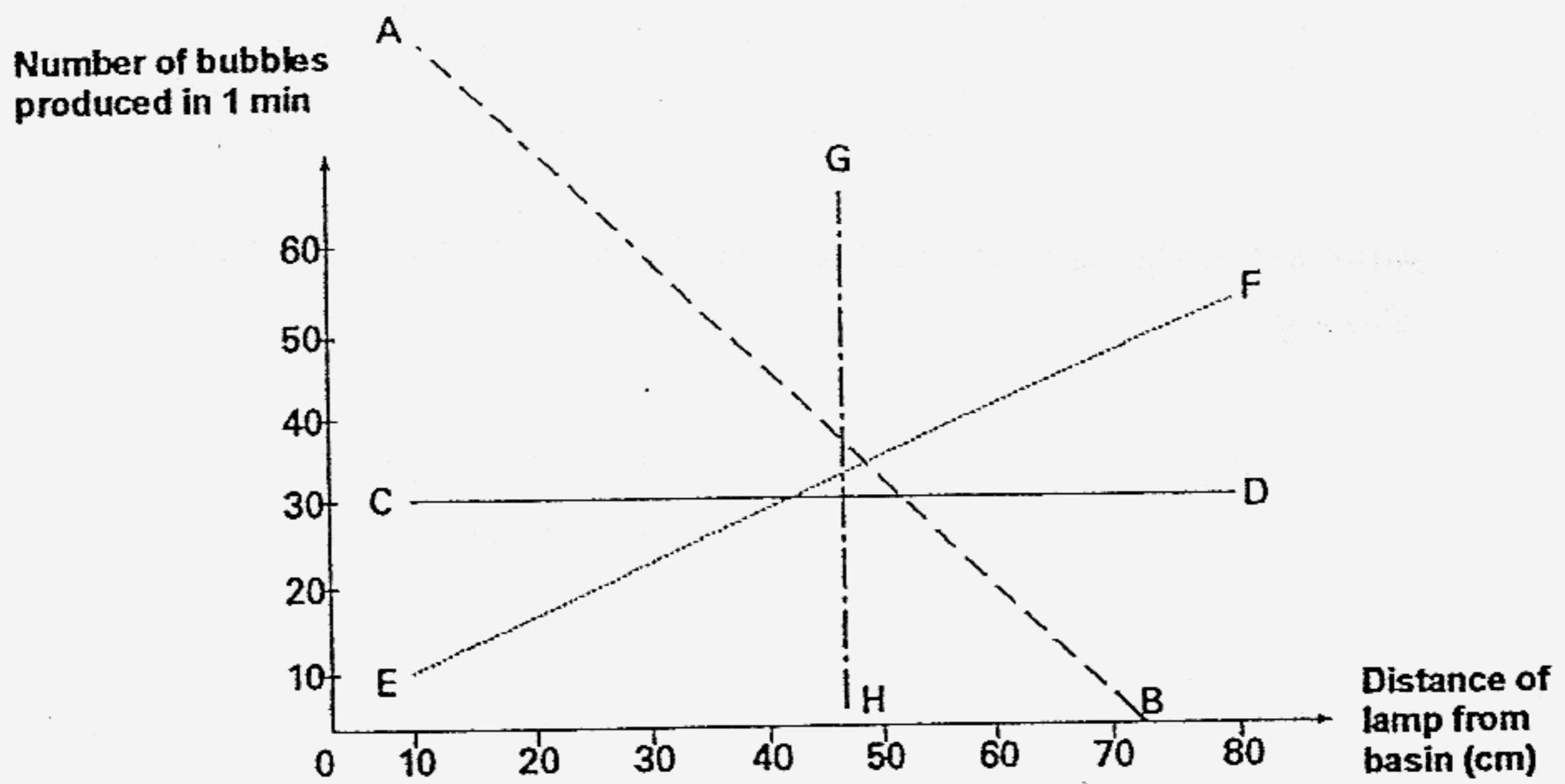
Which set-ups can be used to show how the number of leaves on a plant affects the amount of water evaporated from its pot?

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

16. Gopal placed a big inverted test tube containing some water and water plants into a basin of water. Then, he added a lamp, the light source, about 10 cm away from his set-up as shown in the diagram below.

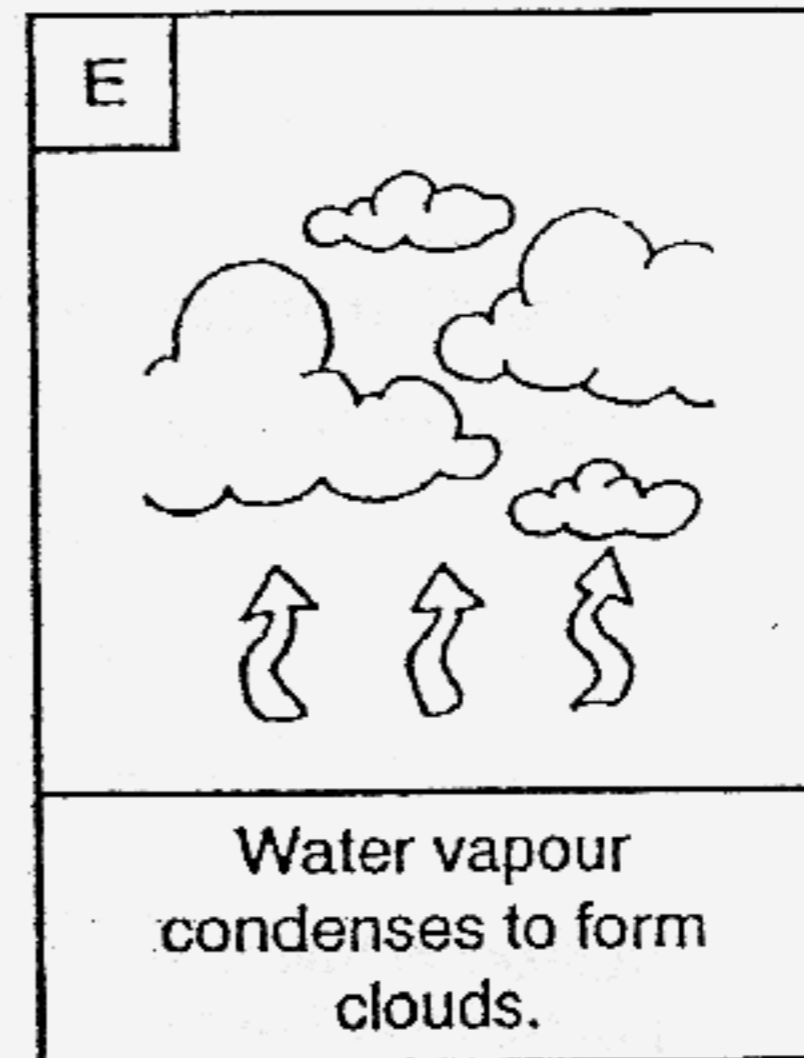
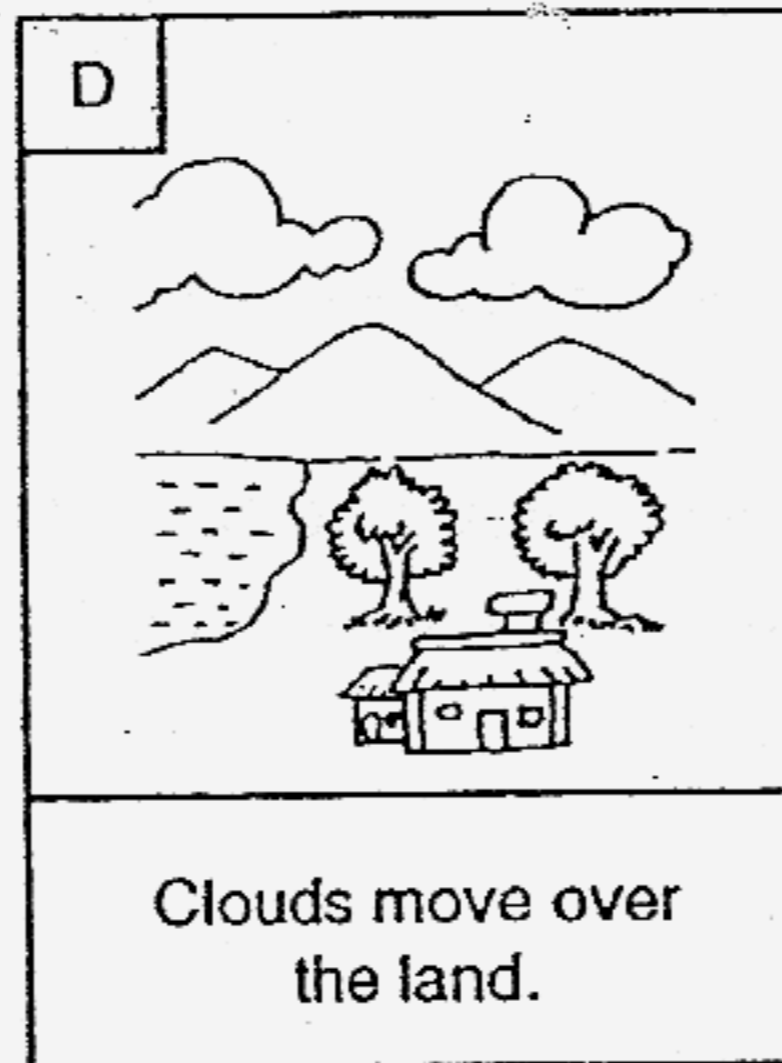
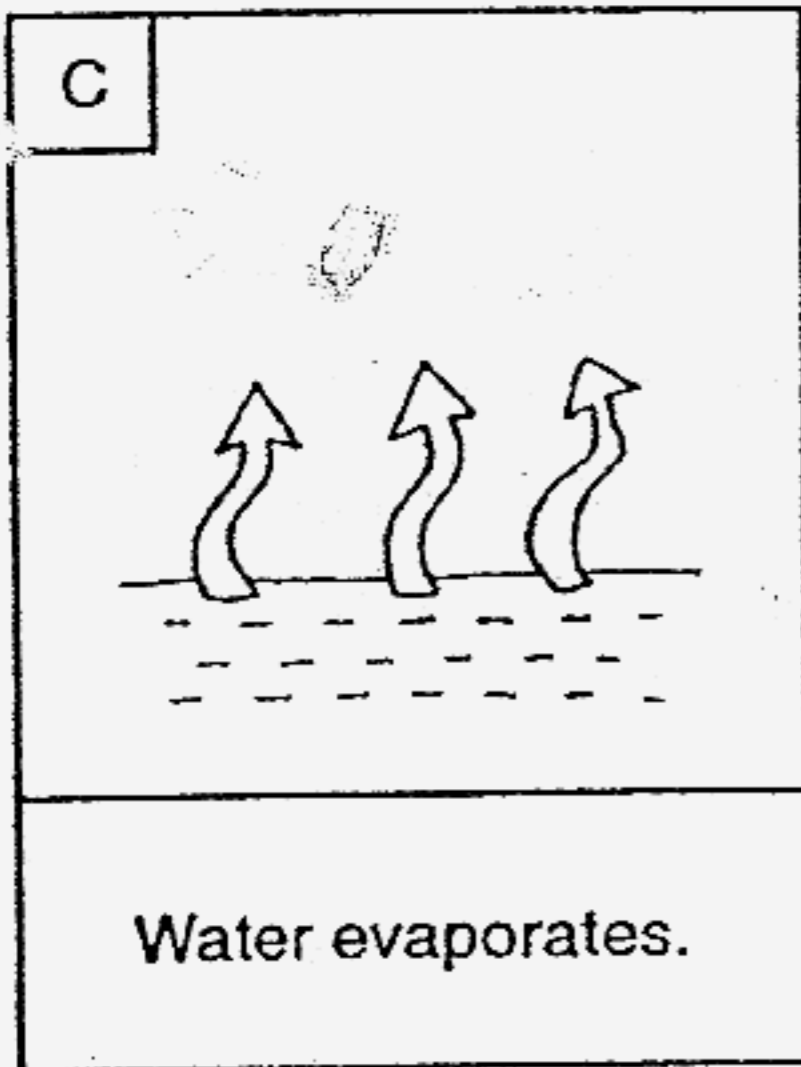
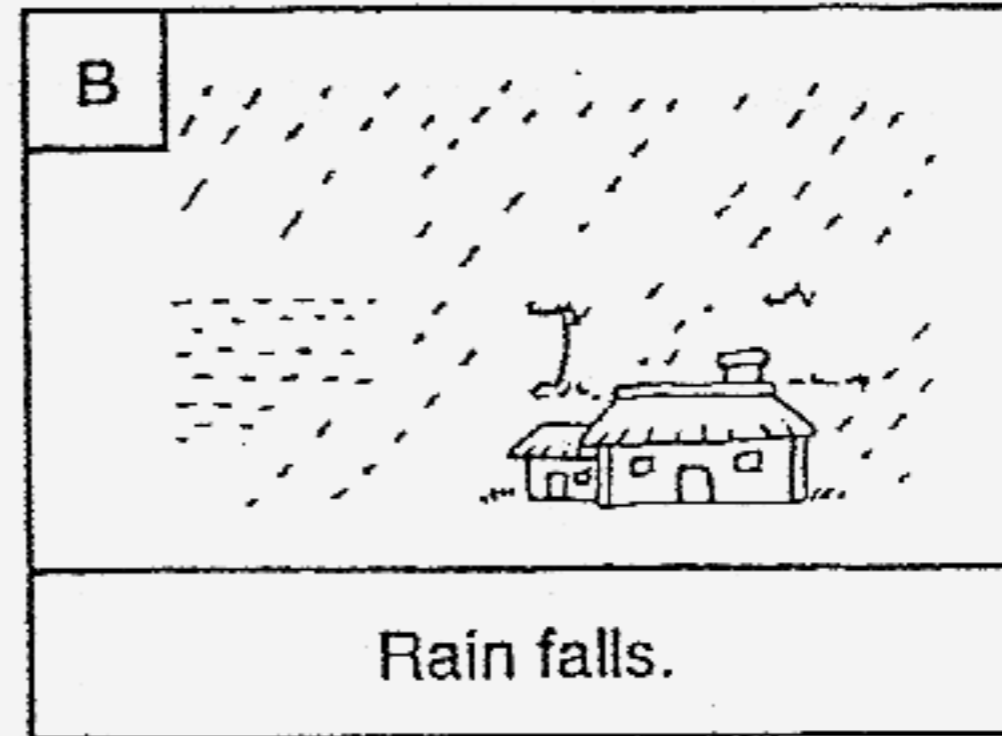
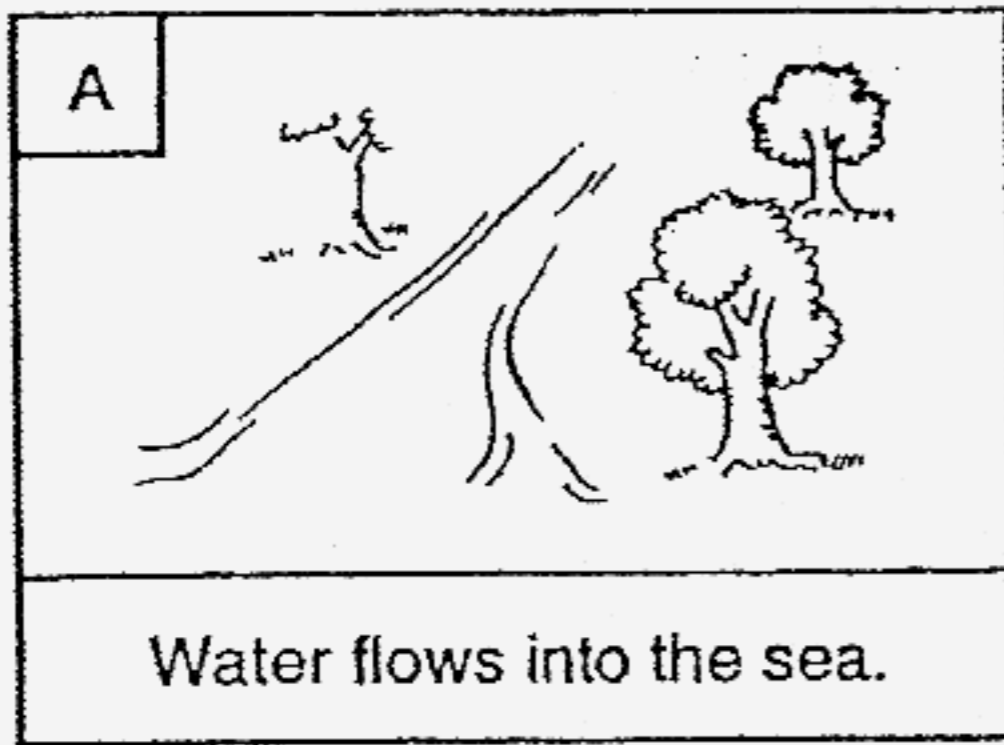


After 10 minutes, he counted the number of bubbles produced by the water plants over a period of 1 minute. He repeated the procedure seven more times, each time increasing the distance between the basin and the lamp by 10 cm. Which line on the graph below correctly shows the trend of the results that Gopal would get?



- | | |
|------------|------------|
| 1) Line AB | 2) Line CD |
| 3) Line EF | 4) Line GH |

17. The diagrams below show the different stages of the water cycle.



Arrange the stages of the water cycle in the correct order, starting from Stage B.

- 1) B, D, E, A, C
- 3) B, A, E, C, D

- 2) B, A, C, E, D
- 4) B, D, E, C, A

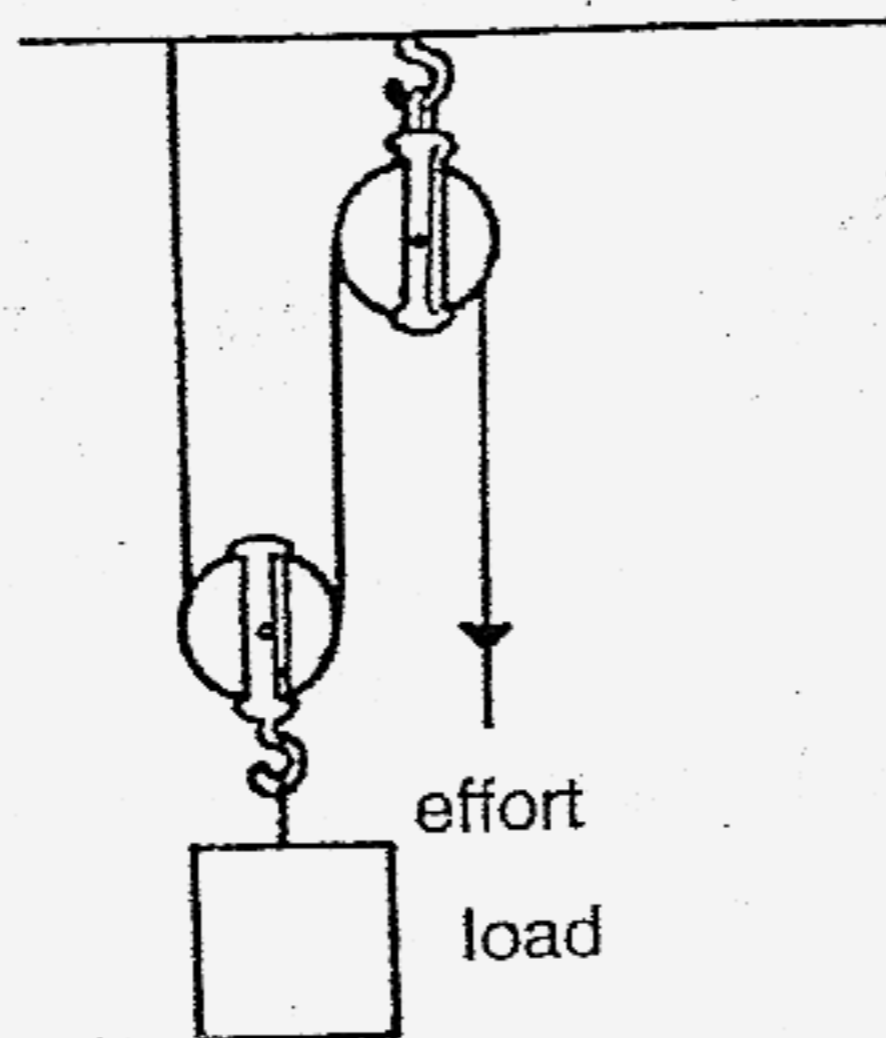
18. Benny conducted an experiment using 4 similar plants. The table below shows the conditions and observations at the end of the experiment, conducted over one week.

Plant	Conditions	Observations at the end of the experiment
A	Watered daily and left in the Sun	Leaves were healthy and bright green
B	Watered daily and left in a dark room	Leaves were limp and yellow
C	Left in the Sun, without water	Leaves were dry
D	Left in a dark room, without water	Leaves were limp and yellow

Which of the following is the conclusion?

- 1) Plants need water only.
- 2) Plants need sunlight only.
- 3) Plants need sunlight and water.
- 4) Plants need sunlight, water and carbon dioxide.

19. The diagram below shows a pulley system.

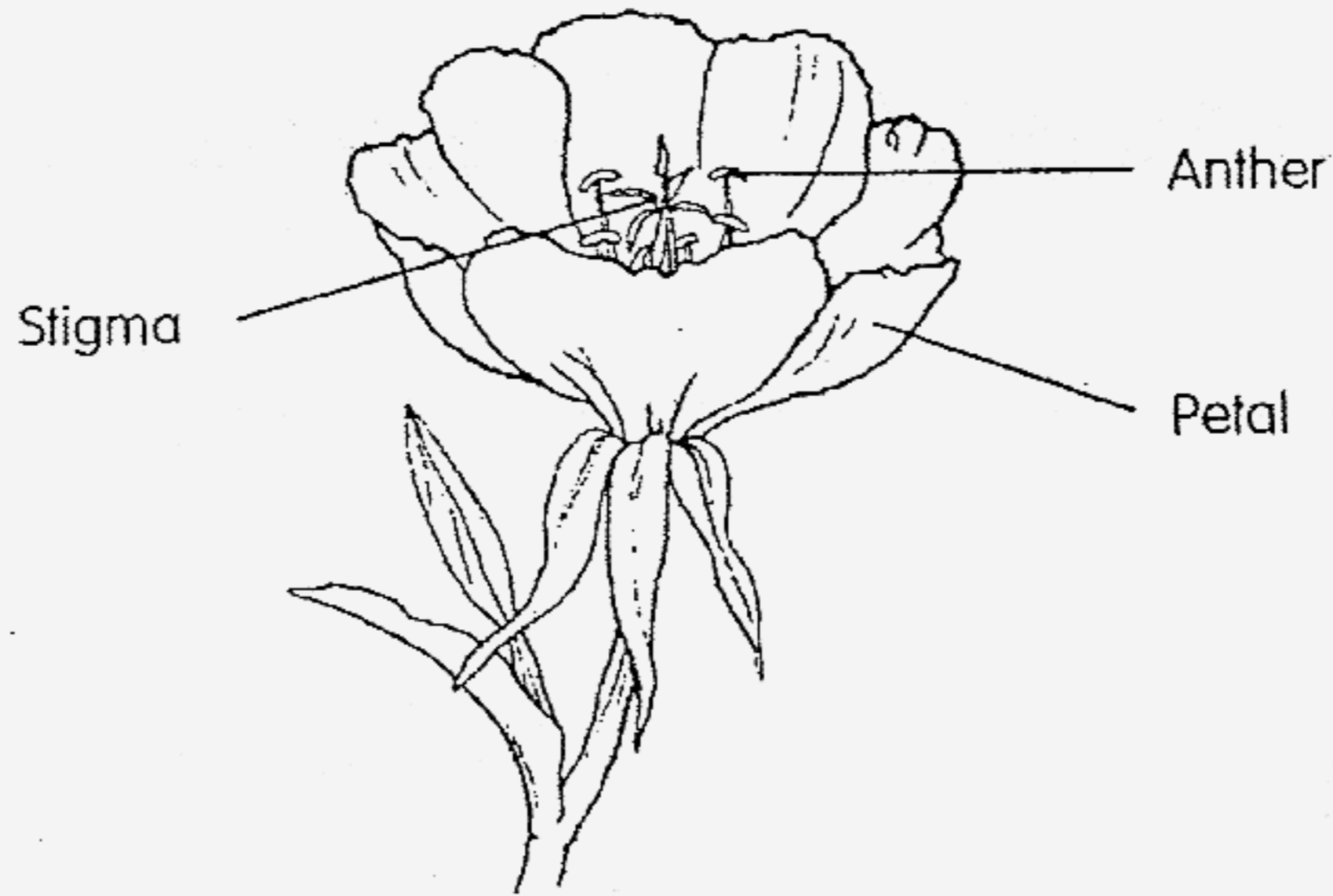


If the distance moved by the load is 20 cm, what is the distance moved by the effort?

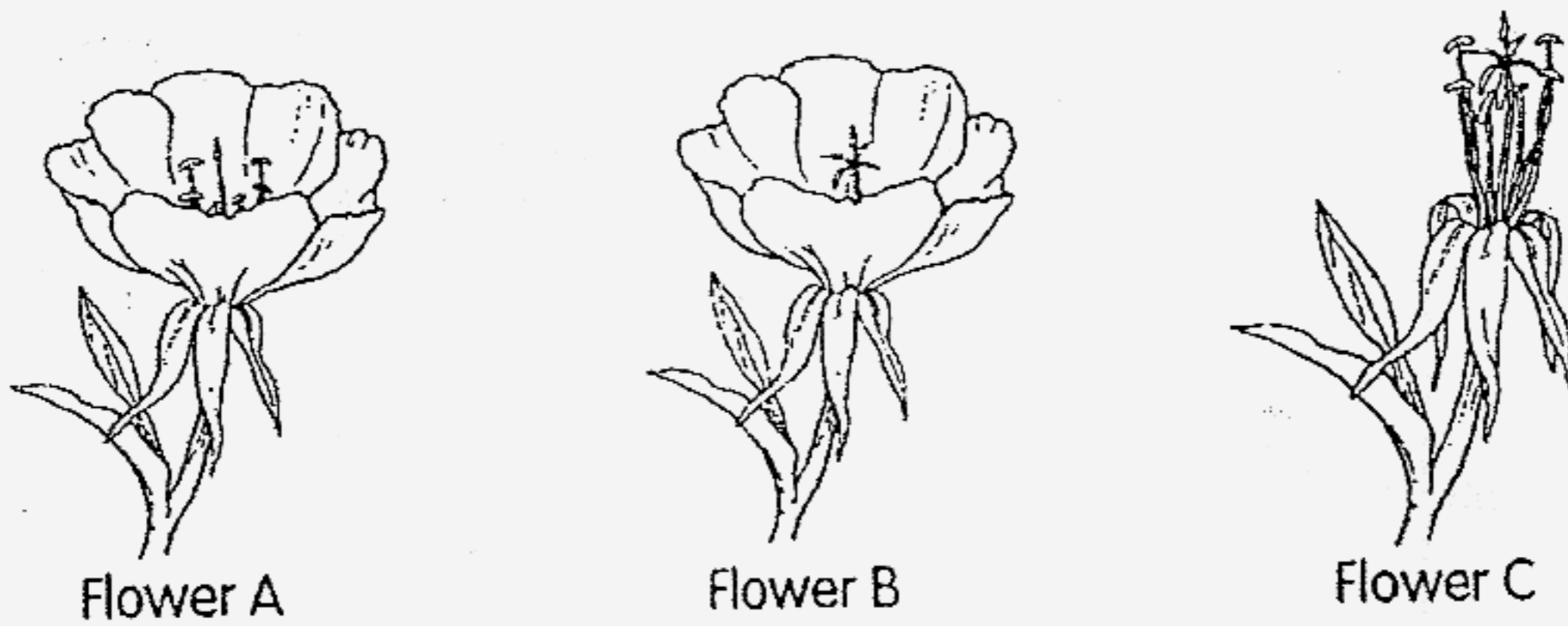
- 1) 10 cm
- 3) 20 cm

- 2) Between 10 cm - 20 cm
- 4) More than 20 cm

20. A plant in Jane's garden produced the type of flowers below.



Jane wanted to find out whether a fruit will develop when a certain part of the flower is removed. What she did to three identical flowers, A, B and C, is shown below.



Jane then dusted the pollen grains from the same type of flowers over flowers A, B and C. She observed the flowers for two weeks. Which of the flowers will most likely develop into a fruit?

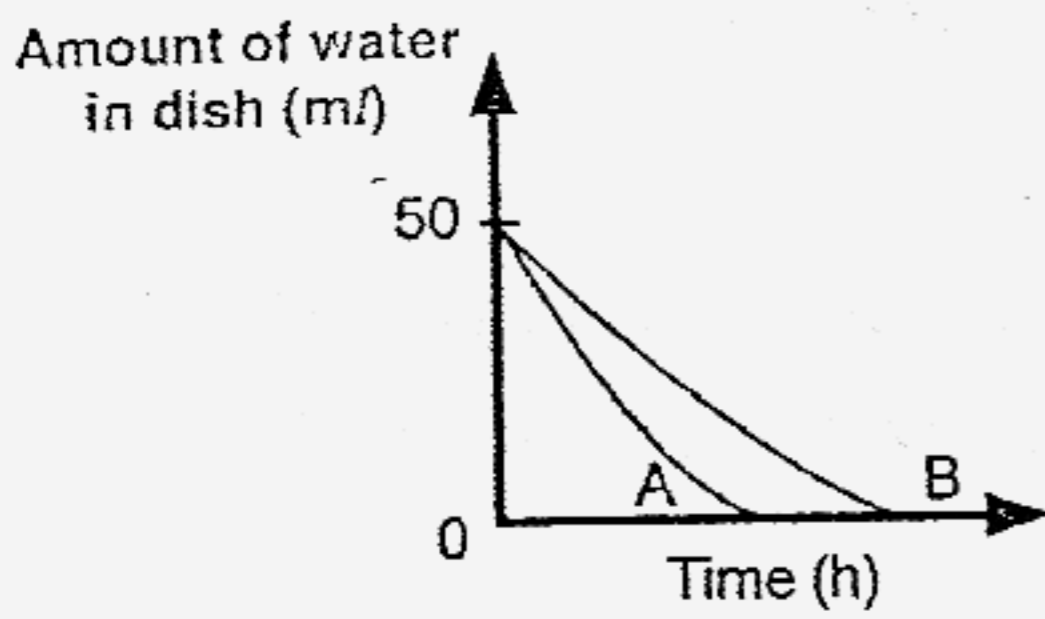
- 1) A only
- 2) B and C only
- 3) A, B and C
- 4) None of them

21. Dorothy places two dishes of water in a dark room.

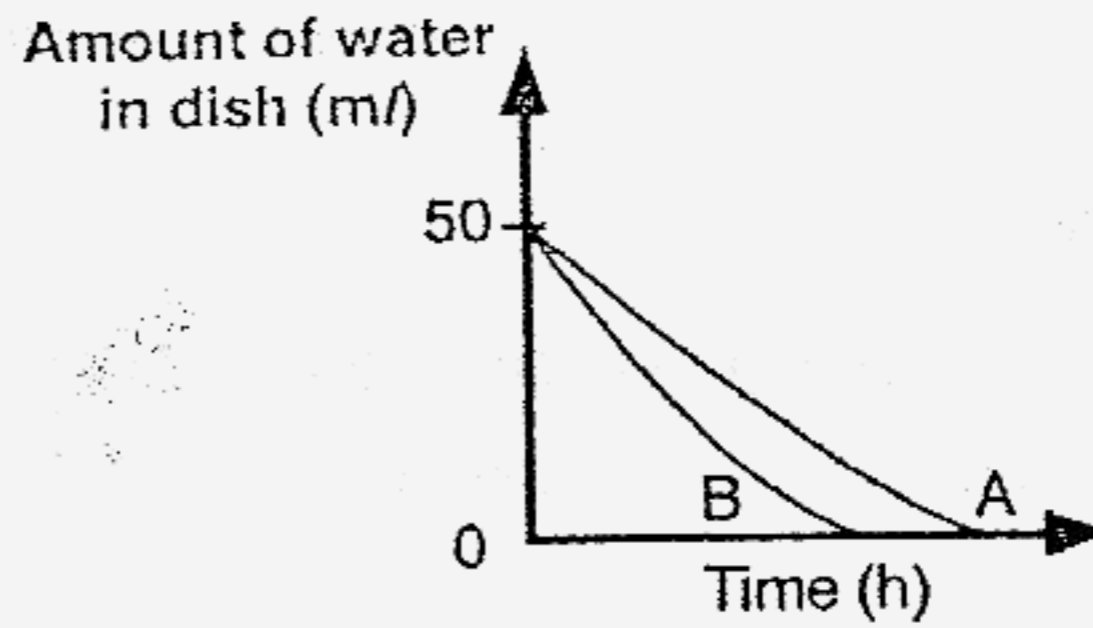


Which graph below shows the change in the amount of water in the dishes?

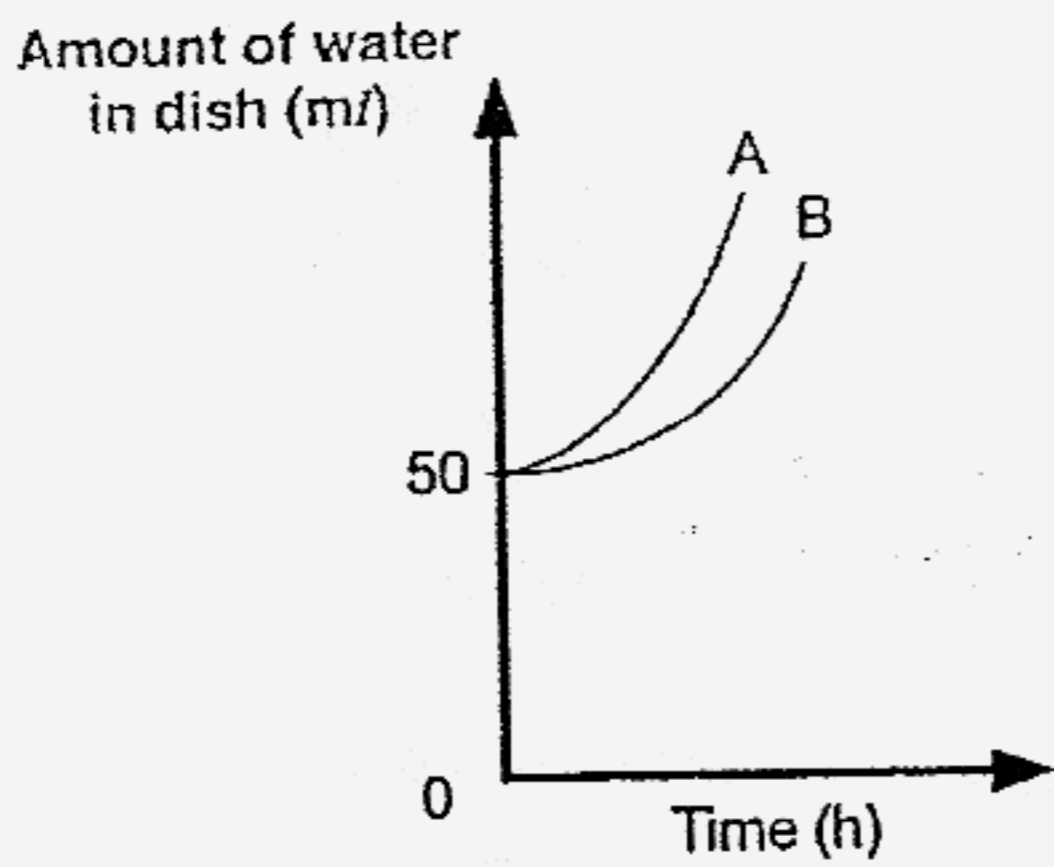
1)



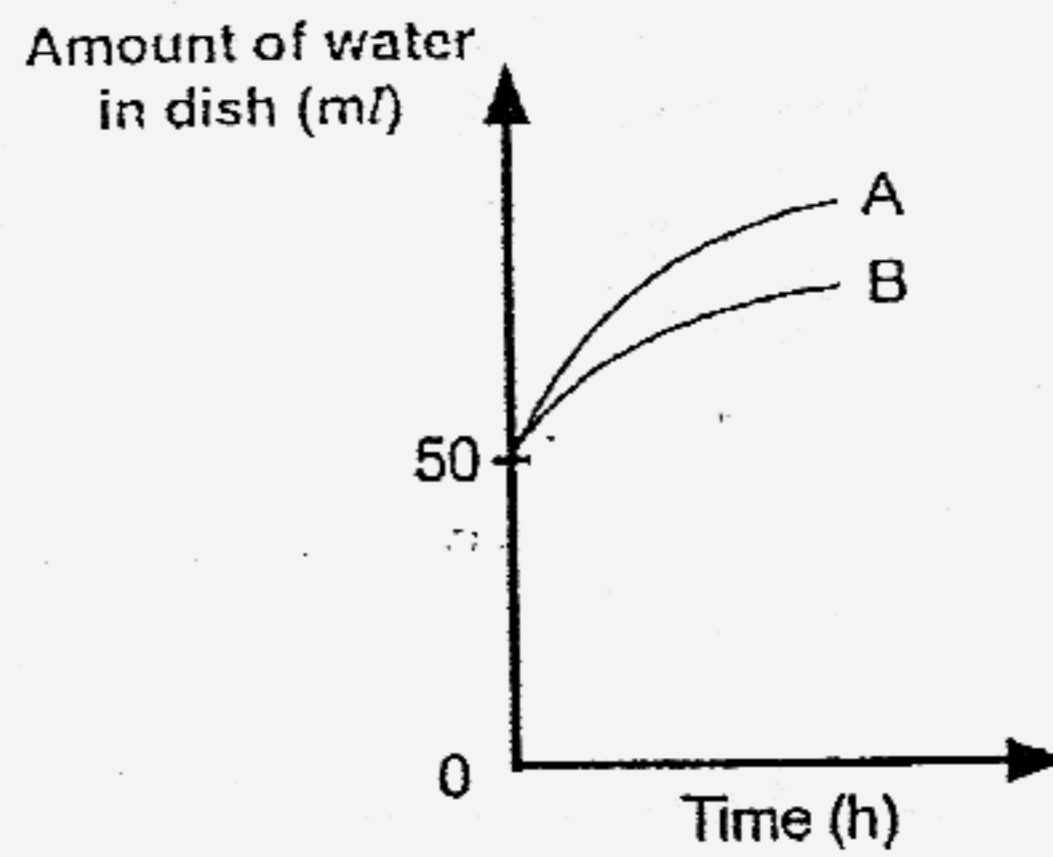
2)



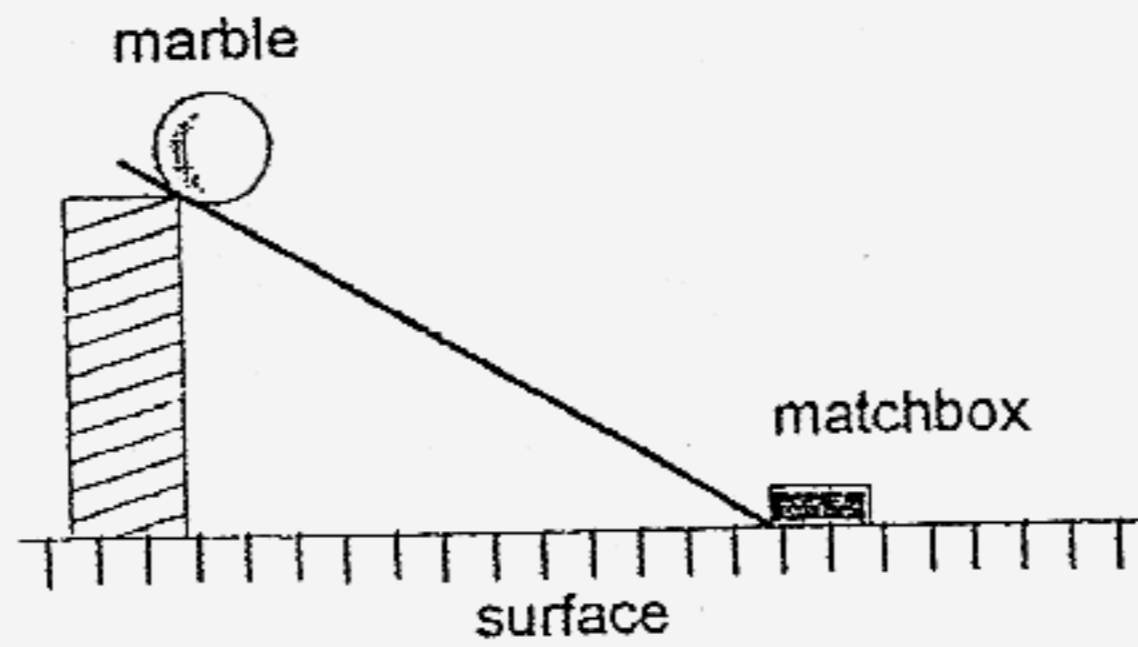
3)



4)



22. A ramp is set up as shown below.



When the marble is released, it pushes the matchbox away to a distance. Which of the following surface should you use so that the matchbox will move the furthest?

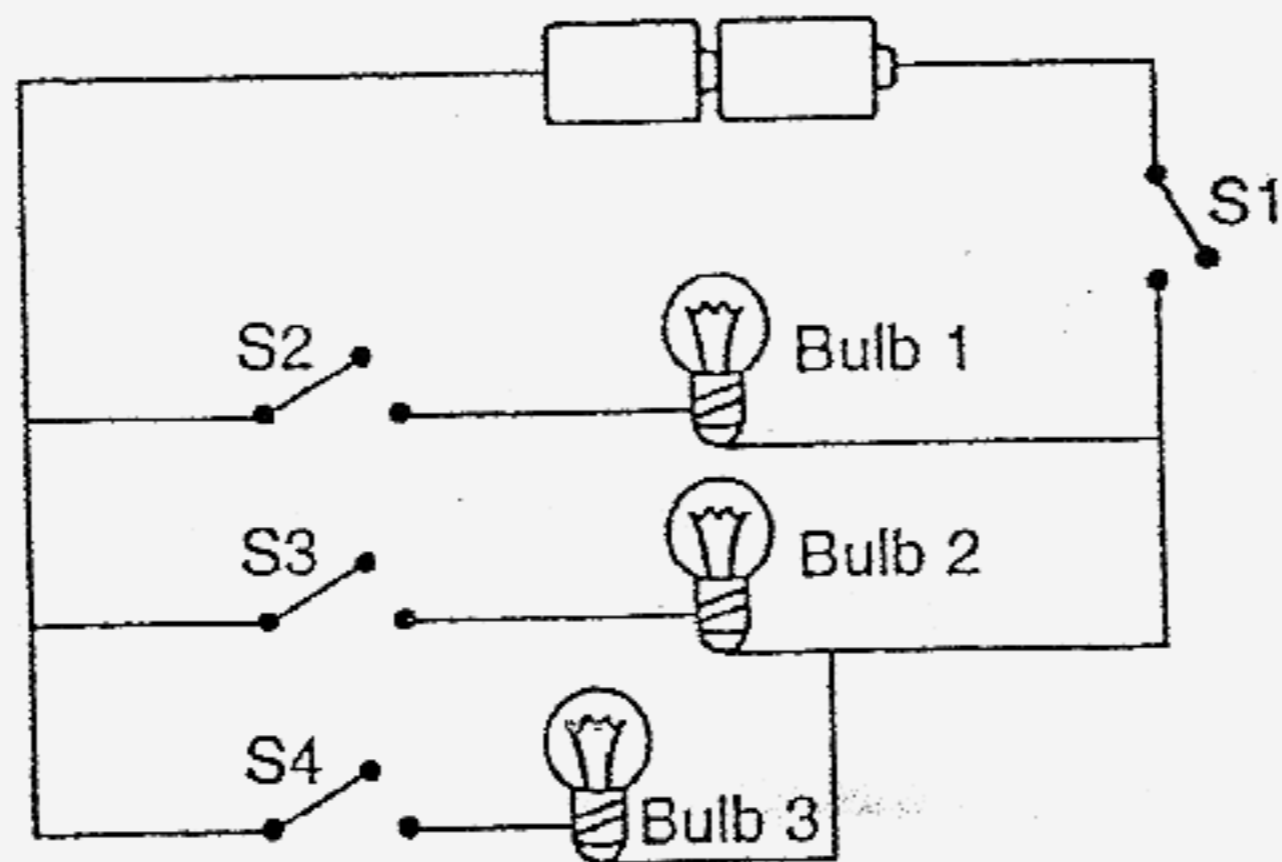
- | | |
|-------------|-----------|
| 1) Glass | 2) Wooden |
| 3) Carpeted | 4) Sandy |

23. Which of the following correctly describes how to conserve electricity?

- A: Clean the lights regularly.
- B: Use the fan instead of the air-conditioner.
- C: Take short hot showers, not long hot baths.
- D: Do not leave electrical appliances at the standby mode, switch them off.

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

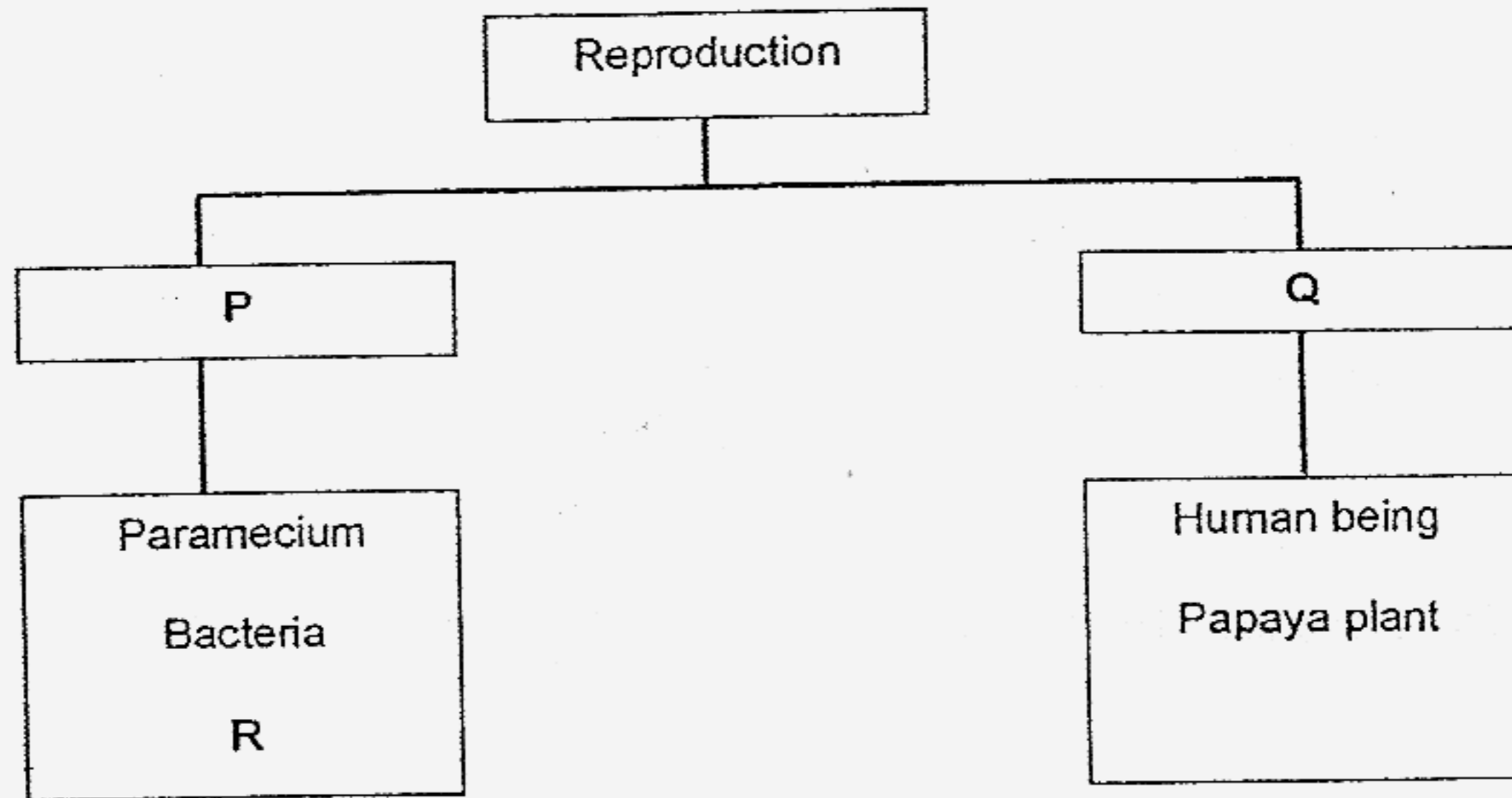
24. Study the circuit below.



Which switches must be closed to light up Bulb 2 only?

- | | |
|-------------------|-------------------|
| 1) S1 and S3 only | 2) S1 and S4 only |
| 3) S2 and S3 only | 4) S3 and S4 only |

25. Study the classification table below.



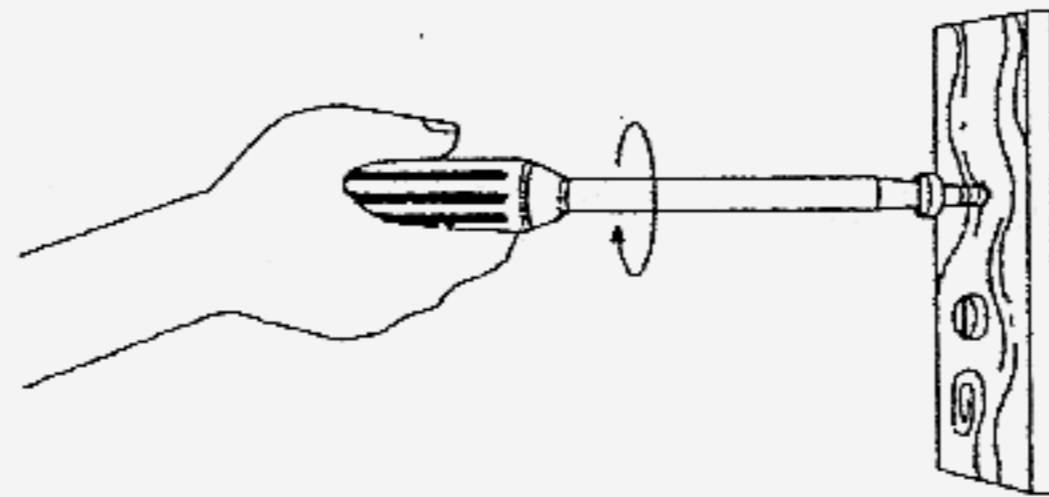
Which of the following would complete the classification table?

	P	Q	R
1)	Asexual reproduction	Sexual reproduction	Yeast
2)	Sexual reproduction	Asexual reproduction	Yeast
3)	Asexual reproduction	Sexual reproduction	Earthworm
4)	Sexual reproduction	Asexual reproduction	Earthworm

26. Which of the following can be found in a plant cell but never in an animal cell?

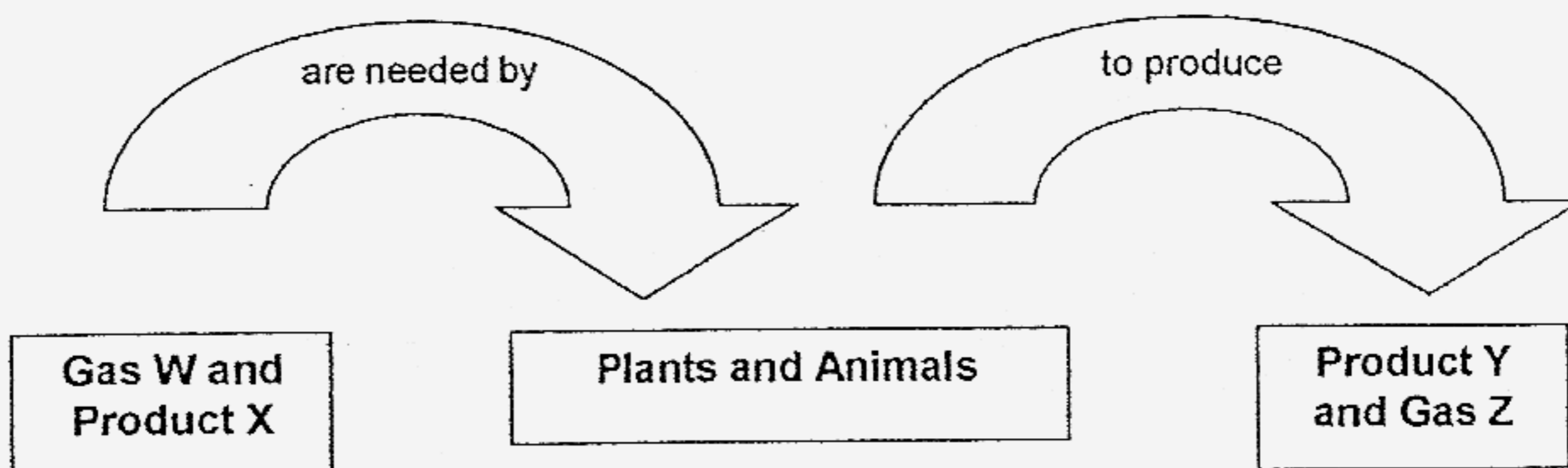
- 1) Nucleus
- 2) Cell wall
- 3) Cytoplasm
- 4) Cell membrane

27. Why is the wheel and axle, the screw driver, useful?



- 1) It makes the effort turn more rounds than the load.
- 2) It makes the load turn more rounds than the effort.
- 3) It enables a smaller effort to overcome a bigger load.
- 4) It causes the load to move a longer distance than the effort

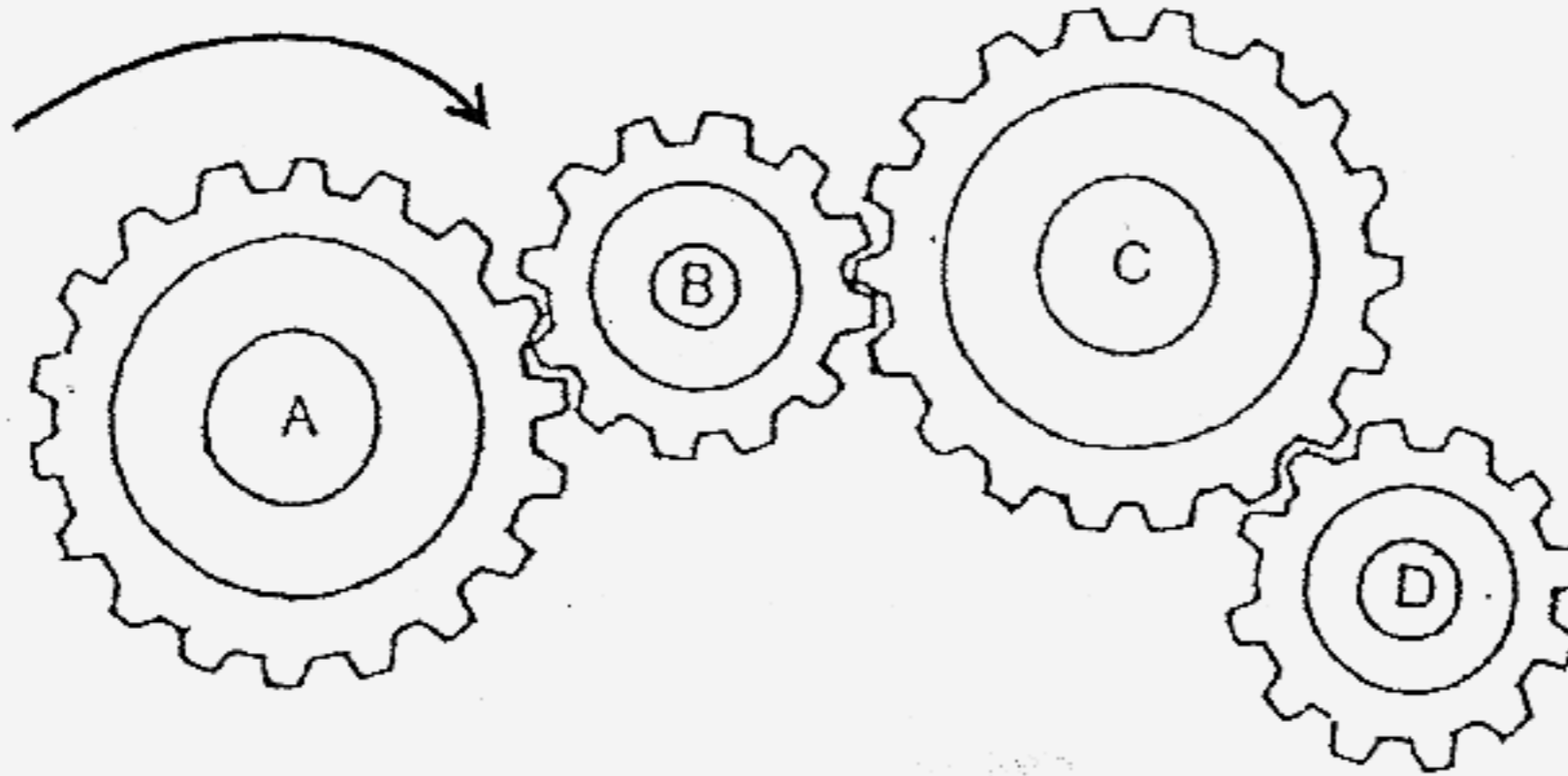
28. Study the diagram below. It gives you information about a process carried out by both plants and animals.



What do W, X, Y and Z represent?

	Gas W	Product X	Product Y	Gas Z
1)	Carbon Dioxide	Sugar	Energy	Oxygen
2)	Oxygen	Sugar	Energy	Carbon Dioxide
3)	Carbon Dioxide	Water	Starch	Oxygen
4)	Oxygen	Water	Starch	Carbon Dioxide

29. The figure below shows four gears.

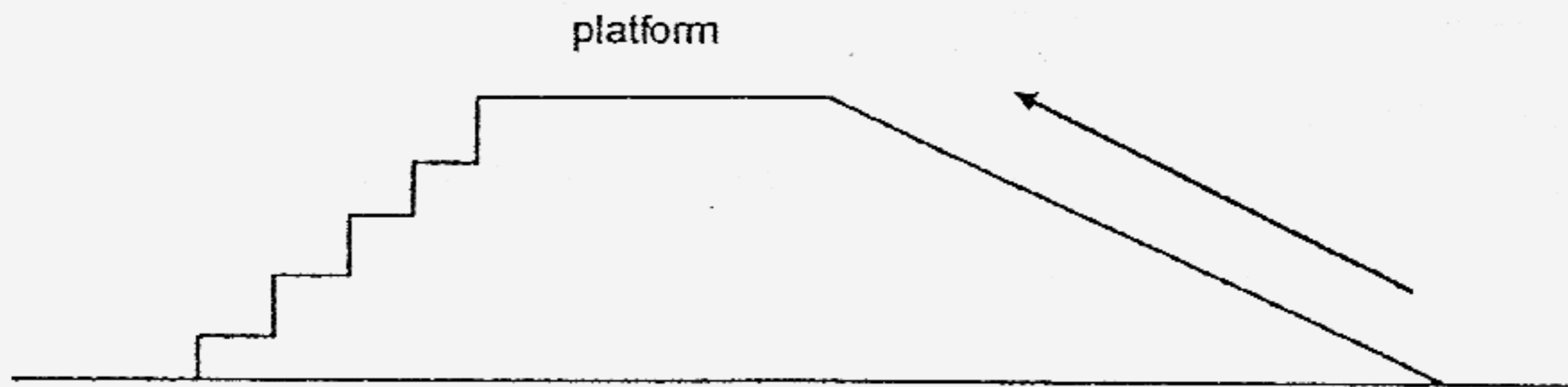


Gear A has the same number of teeth as Gear C while Gear B has the same number of teeth as Gear D.

If Gear A turns in the clockwise direction, which of the following about the other gears is TRUE?

- 1) Gear A makes its turns in the opposite direction from Gear C.
- 2) Gear B makes twice as many turns as Gear A.
- 3) Gear C makes half as many turns as Gear B.
- 4) Gear D makes the same number of turns as Gear B.

30. Jason used the ramp instead of the stairs to move his friend who is on a wheelchair up to the platform, as shown below.



What is his reason for doing so?

- 1) He travelled a longer distance to push the wheelchair up.
- 2) He travelled a shorter distance to push the wheelchair up.
- 3) He used less effort to move the wheelchair up the ramp than up the stairs.
- 4) He used greater effort to move the wheelchair up the ramp than up the stairs.

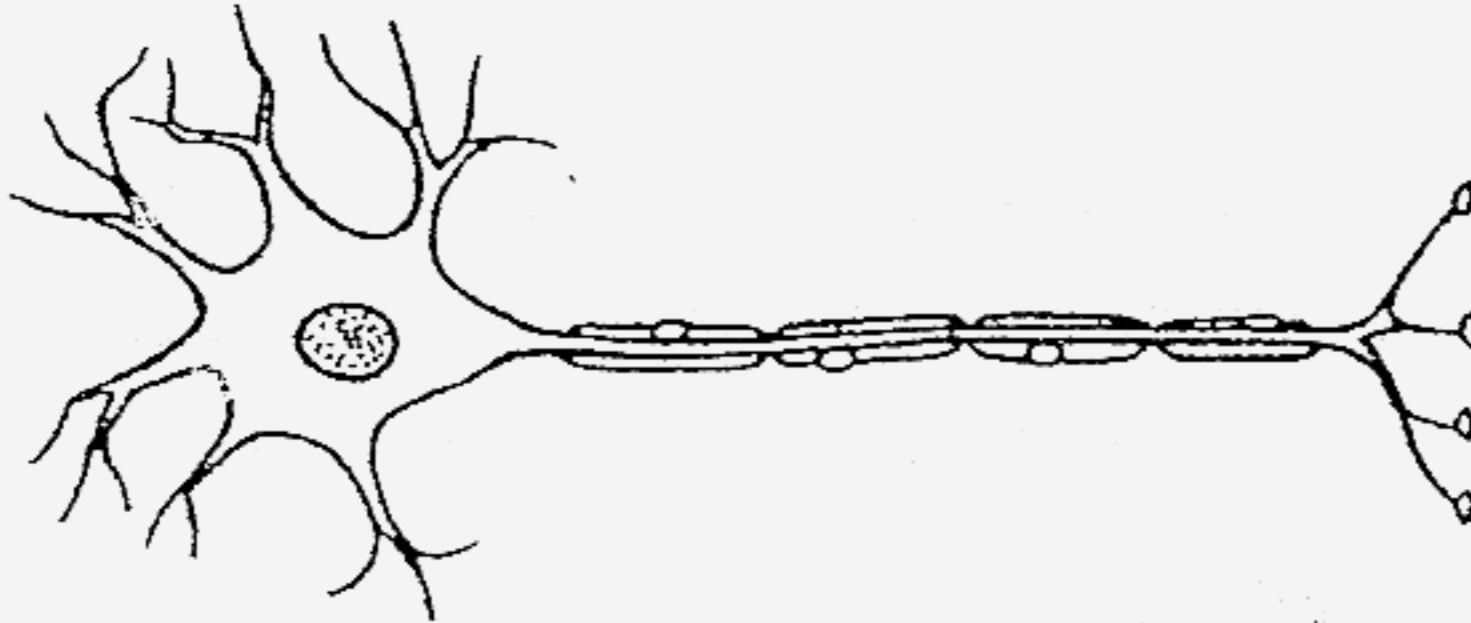
End of Section A

Class: Primary 5 ()

Section B (40 marks)

For questions 31 to 40, write your answers in the spaces provided.

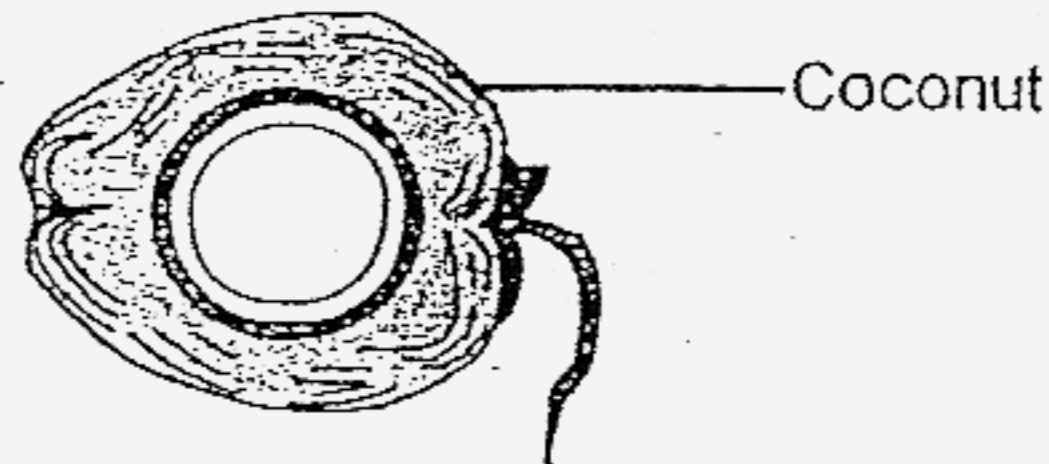
31. The diagram below shows an animal brain cell.



(a) What can you infer about the cell's function from its structure? (1m)

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

32. This is a diagram of a coconut.



(a) How is this coconut dispersed? (1m)

(b) What characteristic of this coconut enables it to be dispersed by the method given in (a)? (1m)

33. For each of the following statements, write "T" for "True" or "F" for "False" in the boxes provided. (2m)

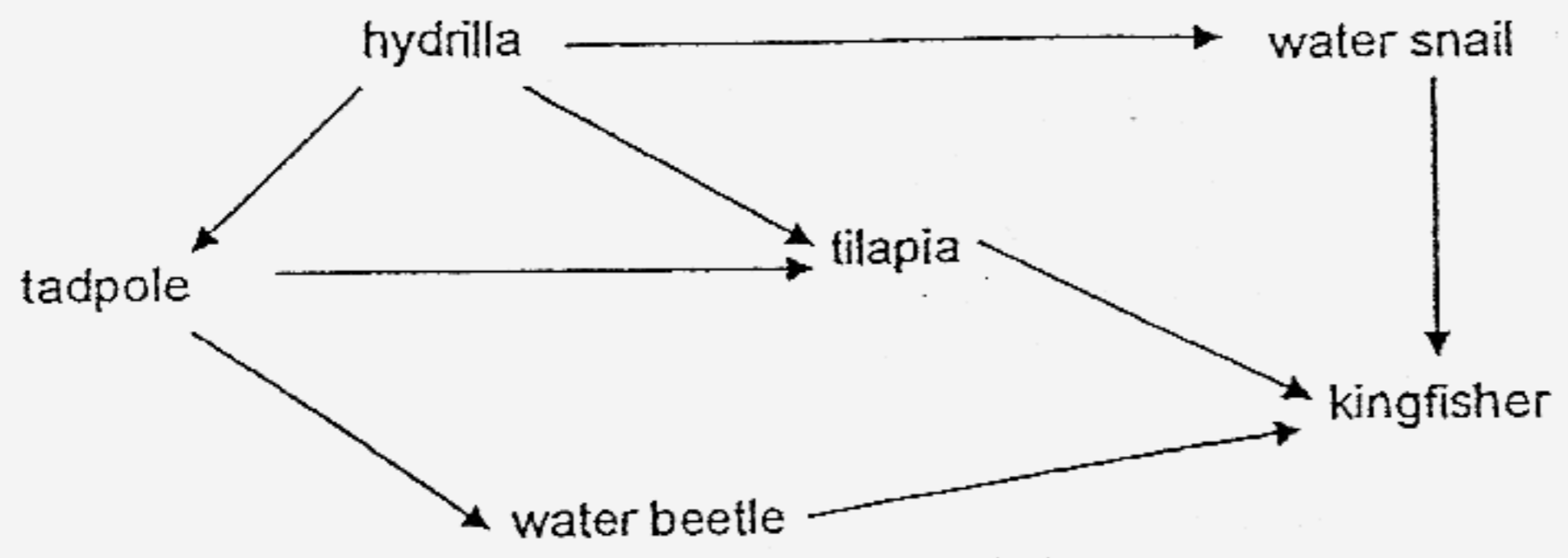
a) There is only one moon in the Solar System.

b) The Sun is the only star in the Solar System.

c) The Moon is nearer to the Earth than the Sun.

d) The phases of the Moon are caused by the orbit of the Moon around the Earth.

34. The food web below shows the food relationships in a pond community.

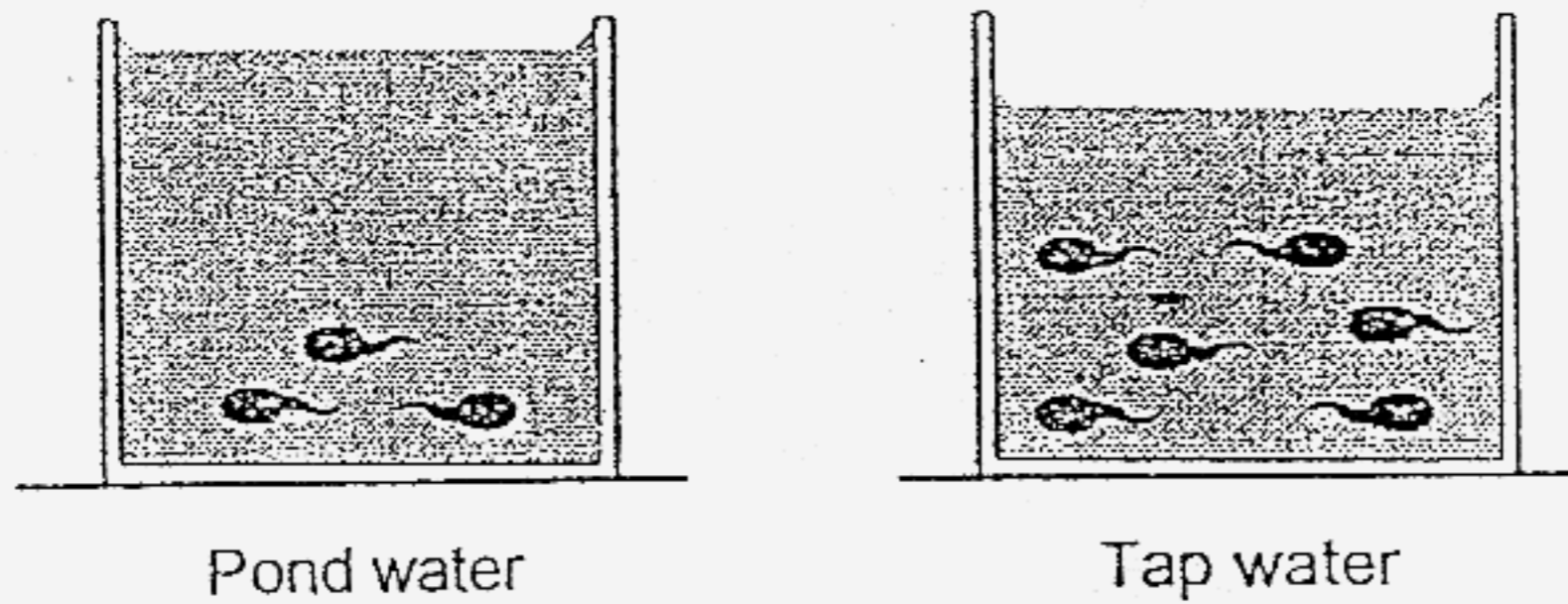


- a) What do the tilapias depend on for food? (1m)

- b) Which animals are both a prey and a predator? (2m)

- c) What is the animals' common (direct or indirect) source of energy? (1m)

35. Jocelyn saw many tadpoles in a pond near her school. She wanted to find out which type of water, pond water or tap water, is more suitable for tadpoles to grow healthily. She caught the tadpoles and placed them in 2 identical containers as shown below. She placed both containers in the same room.



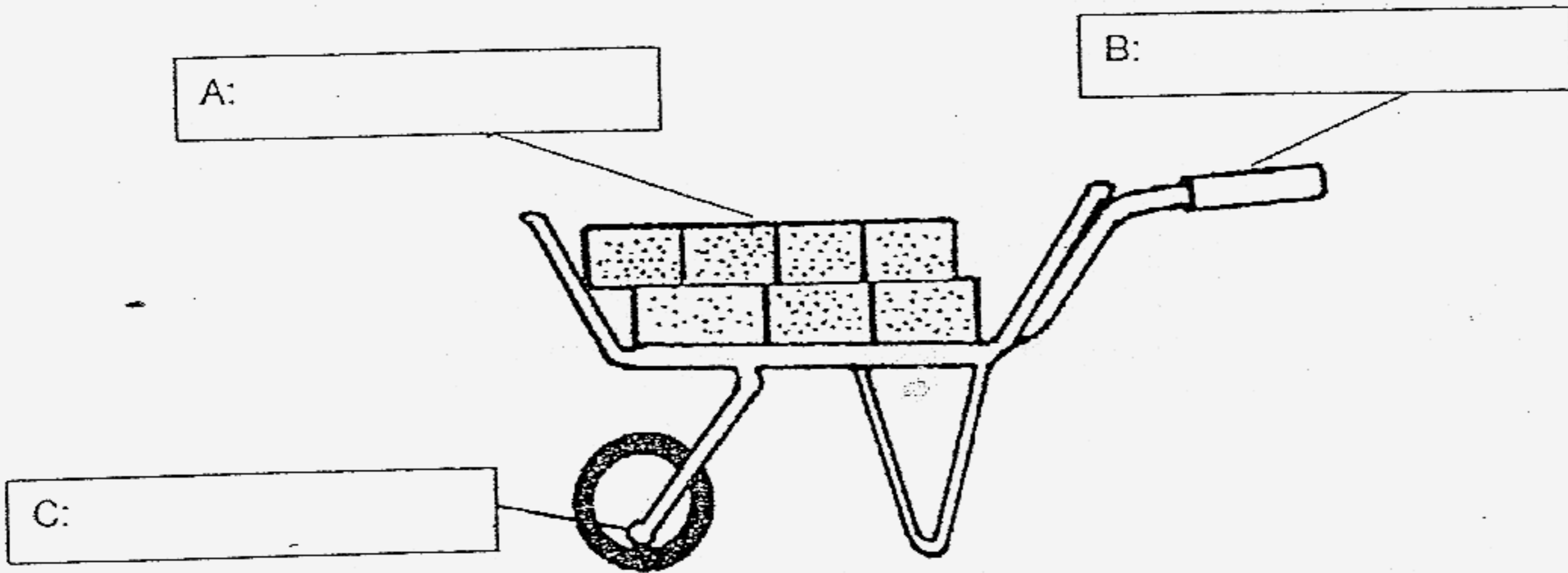
Her teacher said that the experiment was not a fair test because there were two variables that were not kept constant.

State the two variables that were not kept constant. (2m)

i)

ii)

36. The diagram below shows a wheelbarrow. Write in the words "Load", "Fulcrum" and "Effort" in the correct boxes. (3m)



wheelbarrow

37. The table below shows how Meizhu has grouped some objects according to their electrical properties.

Group X	Group Y
Aluminium sheet	Cotton shirt
Nickel coin	Plastic spoon
Brass rod	Wooden chopstick
Steel plate	Paper

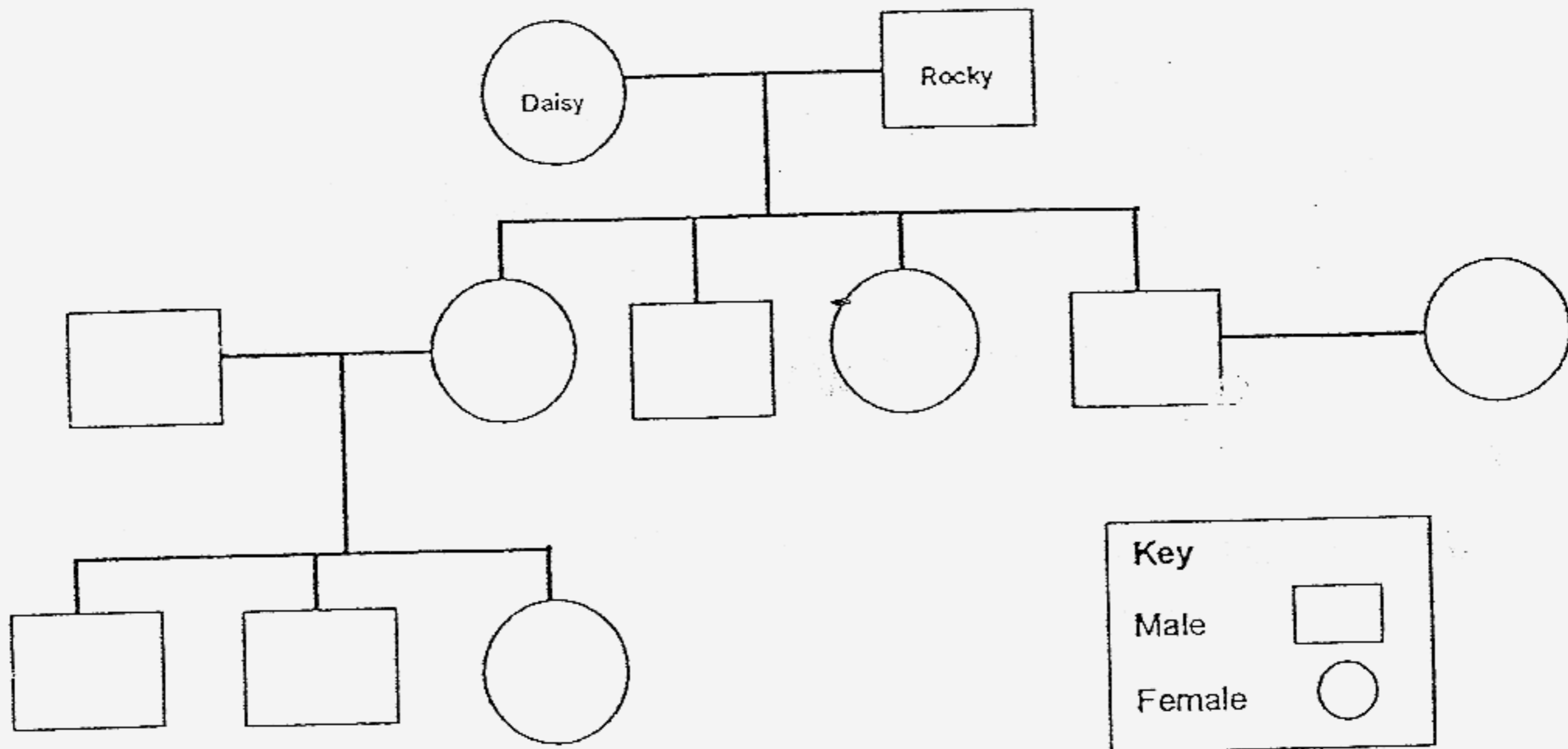
a) What headings will you give to each of the group? (2m)

i) Group X: _____

ii) Group Y: _____

b) Under which group, X or Y, would you place ^{ceramic tiles} ~~brass~~? (1m)

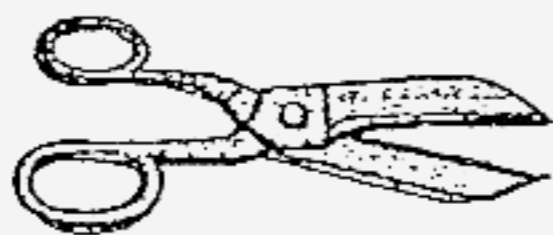
38. Rocky and Daisy are grandparents. Look at their family tree below.



a) How many grandchildren do Rocky and Daisy have? (1m)

- b) i) Shade on the diagram, Rocky's and Daisy's son(s)-in-law (1m)
- ii) Put a cross "X" on the diagram to indicate Rocky's and Daisy's granddaughter. (1m)

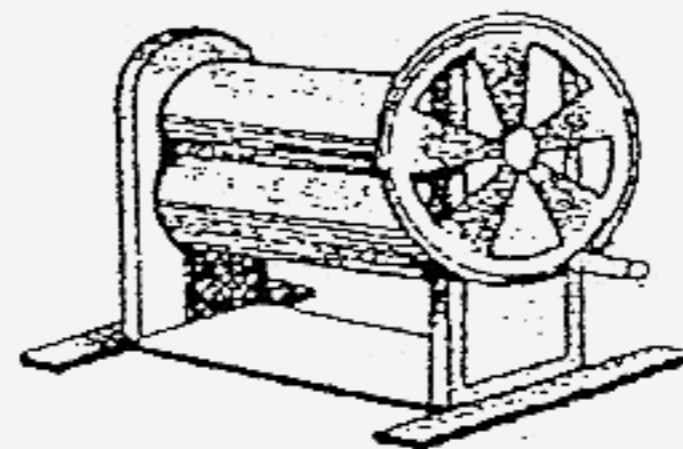
39.



Scissors



Watch



Sugar cane press

Study the different types of simple machines shown above and complete the table below. (3m)

Name of machines	Type of simple machines
Scissors	
Watch	
Sugar cane press	

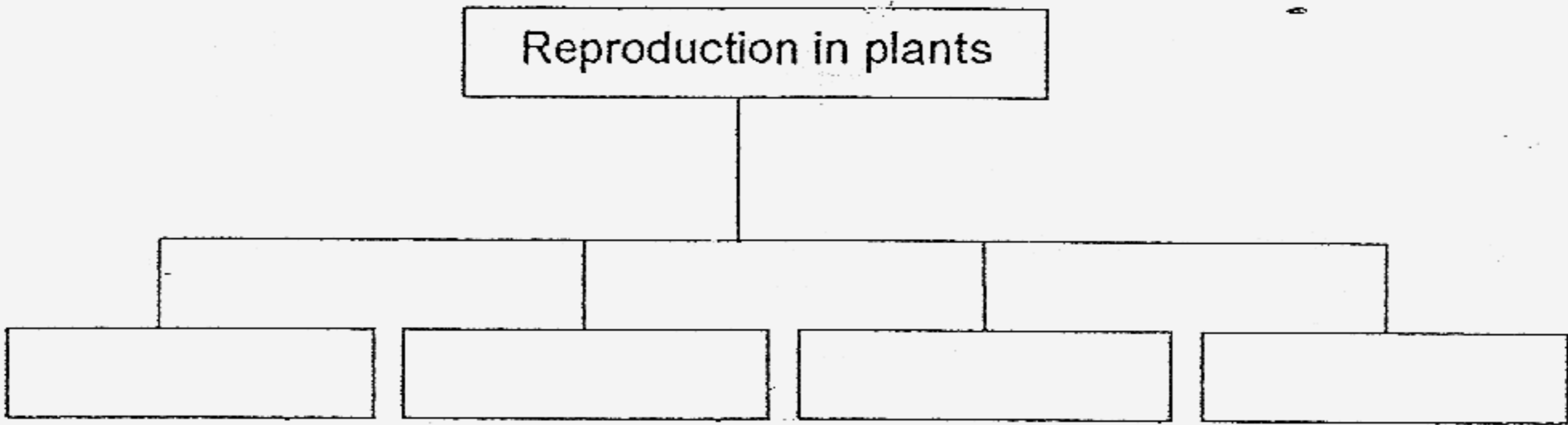
40. Put a tick in the correct boxes for each of the following statements. (2m)

	Statement	True	False
a)	A force can be felt.		
b)	A force can be seen.		
c)	A force only acts downwards.		
d)	A force can be a push or pull.		

41. Complete the classification table using the **Helping Words** below. (2m)

Helping Words

By Leaves By Spores By Seeds By Underground Stems



Begonia

Bird's Nest Fern

Potato

Sunflower

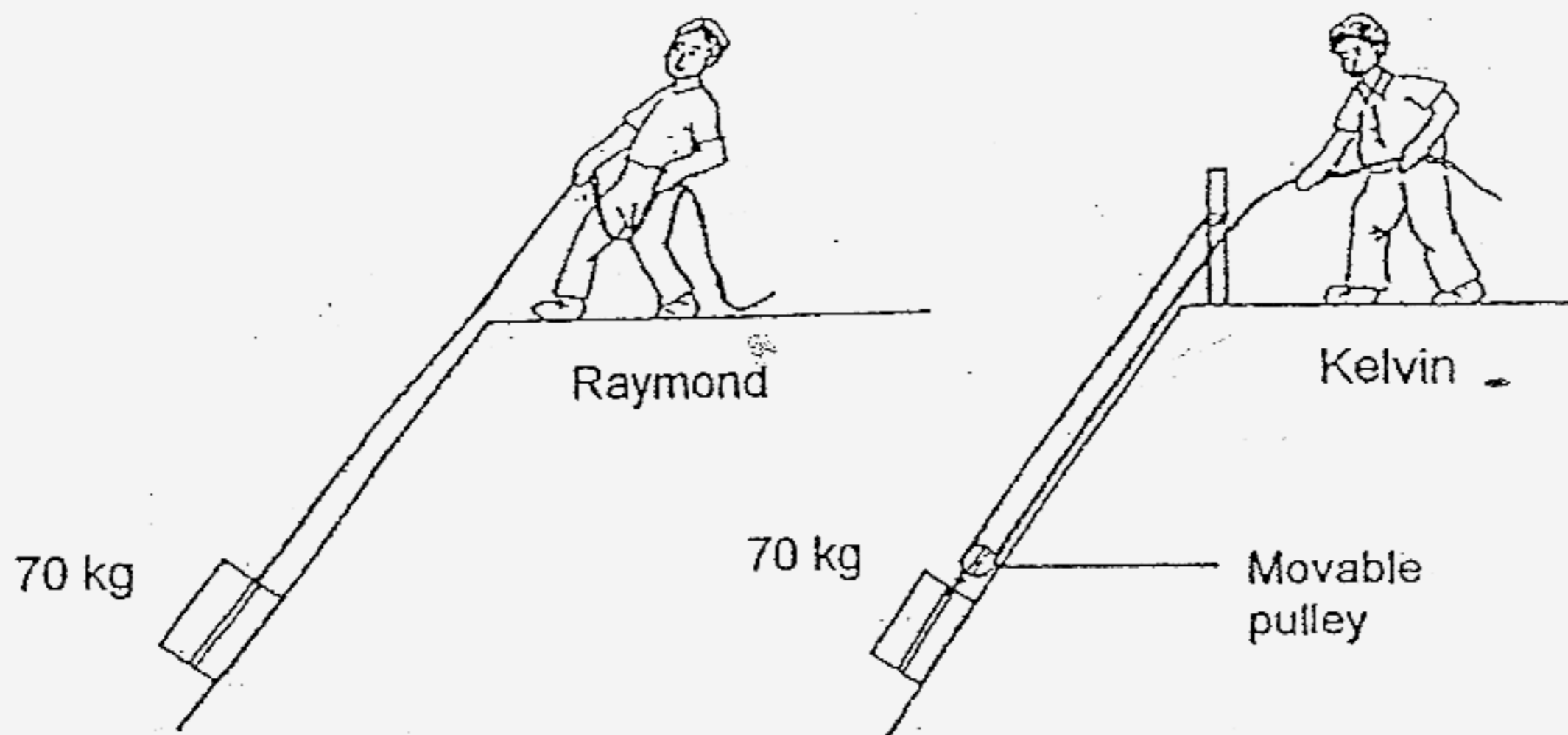
Bryophyllum

Staghorn Fern

Ginger

Balsam

42. Look at the diagrams below.

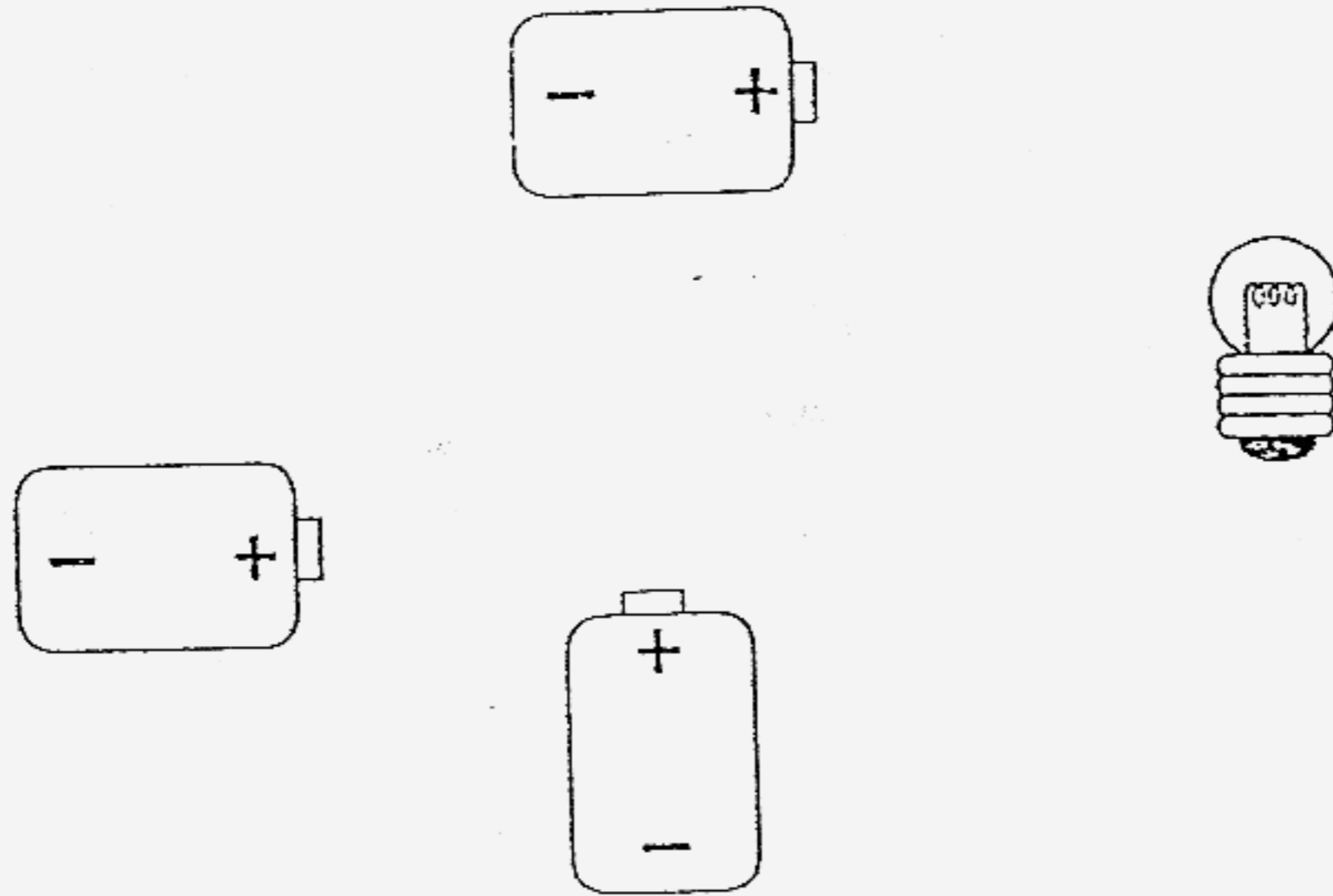


Two boys were trying to pull a box up a same slope using two different methods. Raymond used only a rope to tie around the box to pull the box up the slope, while Kelvin used a movable pulley and a rope to pull the box up the slope.

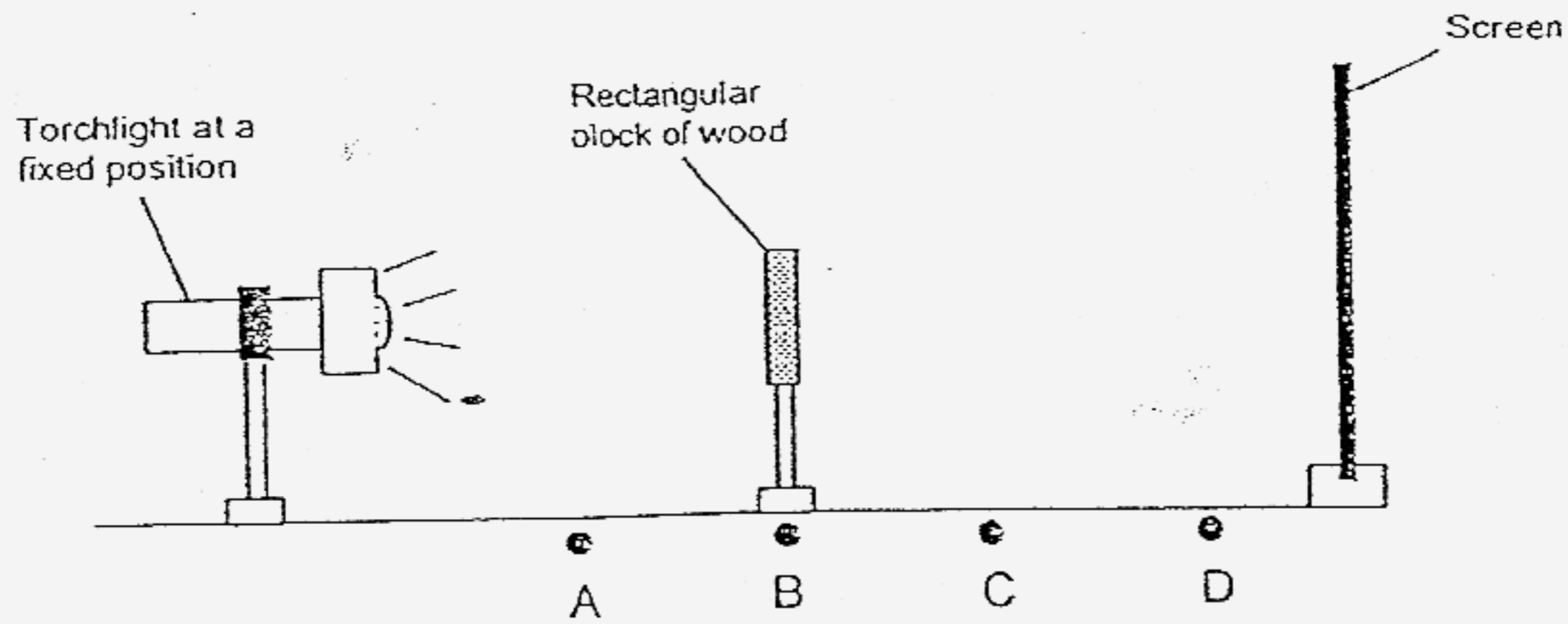
- a) Who would use less effort to pull the load up? (1m)

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

43. Using only 4 wires, connect the 3 batteries and the bulb below to form a circuit so that the bulb will light up most brightly. (2m)



44. A rectangular block of wood is placed between a torchlight and a screen as shown below.



The block is then moved to several positions between the torchlight and the screen. At each position, the height of the shadow made on the screen is measured. The results recorded is shown in the table below.

Position of wooden block	Height of shadow
A	10 cm
B	8.4 cm
C	7.5 cm
D	5 cm

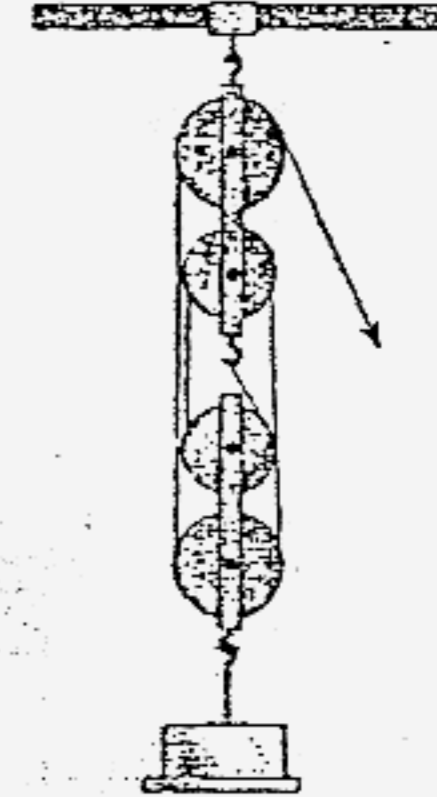
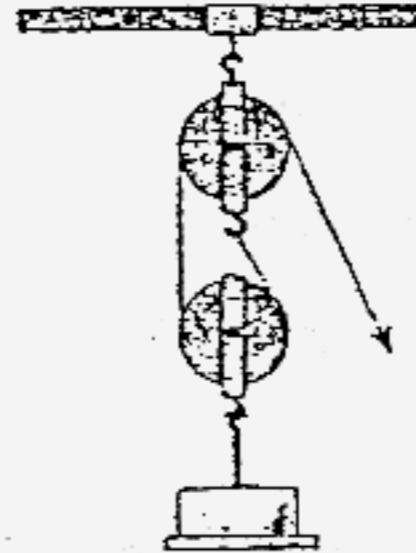
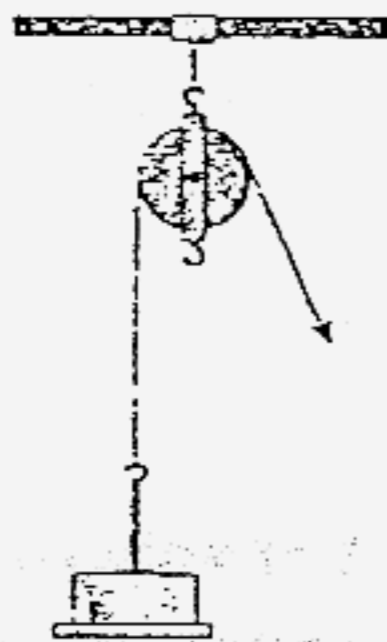
- a) What is the relationship between the height of the shadow and the distance between the block and the screen? (2m)

- b) What will happen to the shadow formed when a translucent plastic sheet is placed between the block and the screen? (1m)

45. Mark moved a load of 20kg with 3 different pulley systems and the results are recorded in the table below.

	Pulley System A	Pulley System B	Pulley System C
Distance travelled by load (cm)	5	5	5
Distance travelled by effort (cm)	20	10	5

- a) Identify the 3 different pulley systems. (1m)

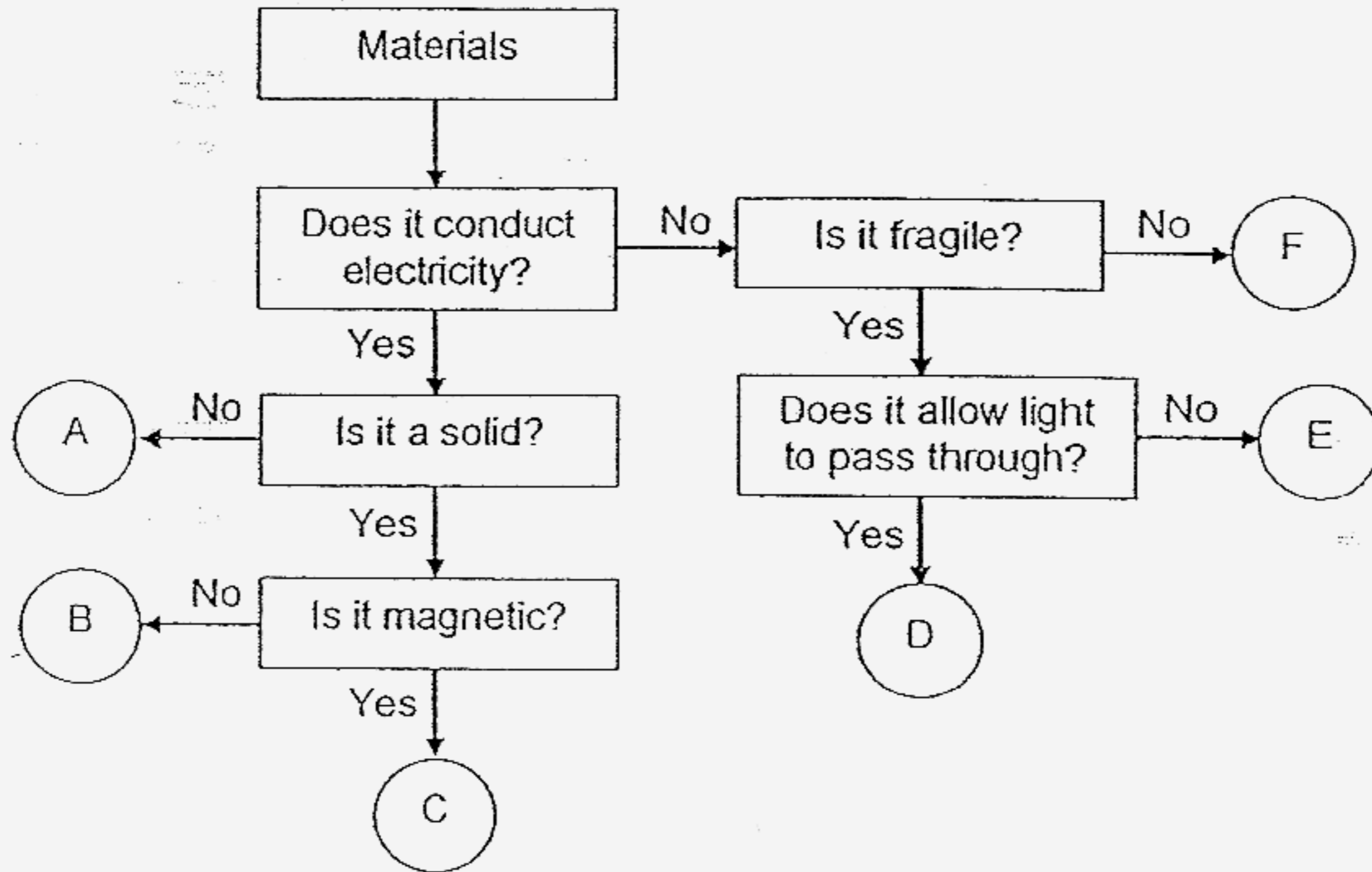


Pulley System _____ Pulley System _____ Pulley System _____

- b) Which pulley system would help you to lift a heavy load using the least amount of effort? (1m)

- c) According to the results shown in the table, name one disadvantage of using the pulley system in your answer in (b). (1m)

46. Study the flow chart below.



- a) Identify the materials below. Write the letters A, B, C, D, E or F in the boxes provided. Use each letter only once. (2m)

Material	Letter
Ceramic	
Water	
Iron	
Copper	

End of Paper

Tao Nan Primary School

SECTION A : (60 MARKS)

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

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

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

SECTION B (40 MARKS)

Qn No.	Answers
31a	It communicates with other cells.
31b	It has long branches like an antenna.

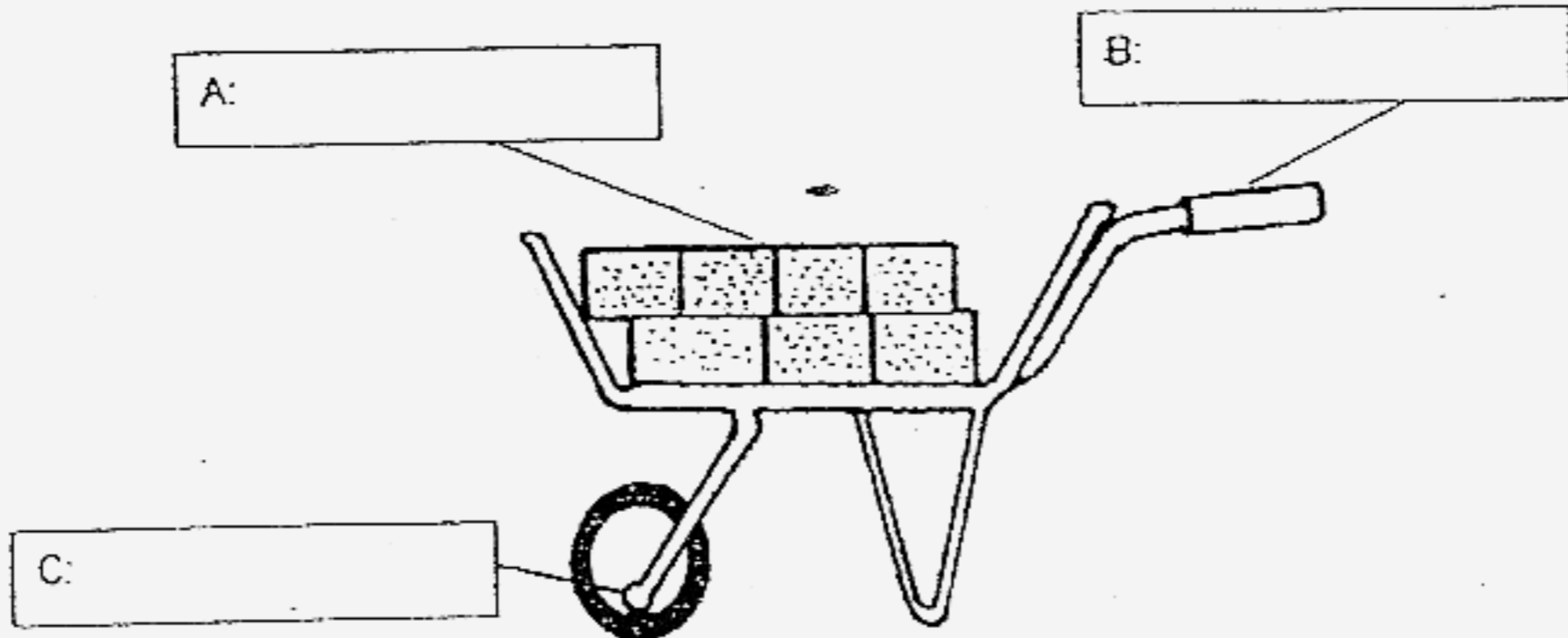
32a	By water.
32b	Coconut has a fibrous husk containing many air spaces which lighten the fruit.

33a	There is only one moon in the Solar System. (False)
33b	The sun is the only star in the Solar System. (True)
33c	The Moon is nearer to the Earth than the Sun. (True)
33d	The phases of the Moon are caused by the orbit of the Moon around the Earth. (True)

Qn No.	Answers
34a	Hydrillas and tadpoles.
34b	Tilapia and water beetle.
34c	Hydrilla

35 (i)	The amount of tadpoles was different in each container.
35 (ii)	The amount of each type of water was different.

36a



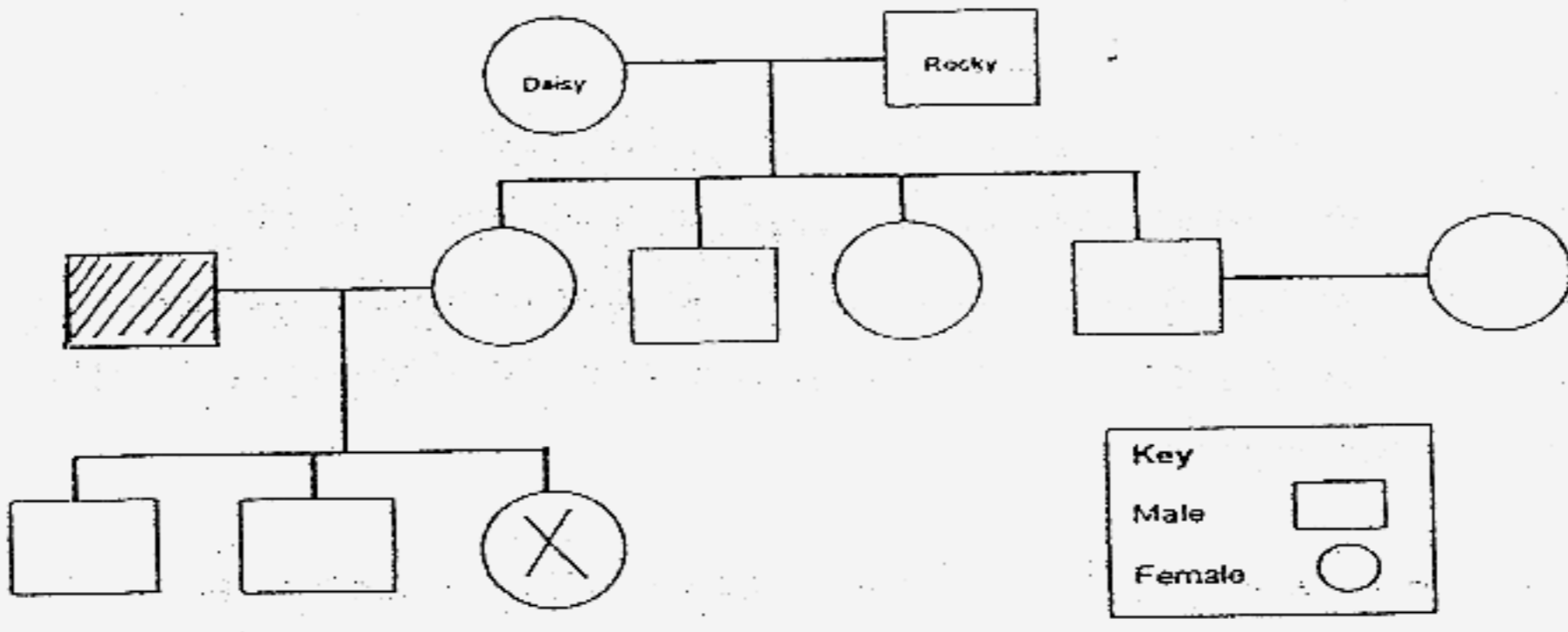
Wheelbarrow

A : Load B : Effort C : Fulcrum

37a (i)	X : Conductors of Electricity
	Y : Insulators of Electricity
37b	Group Y

38a 3 grandchildren's.

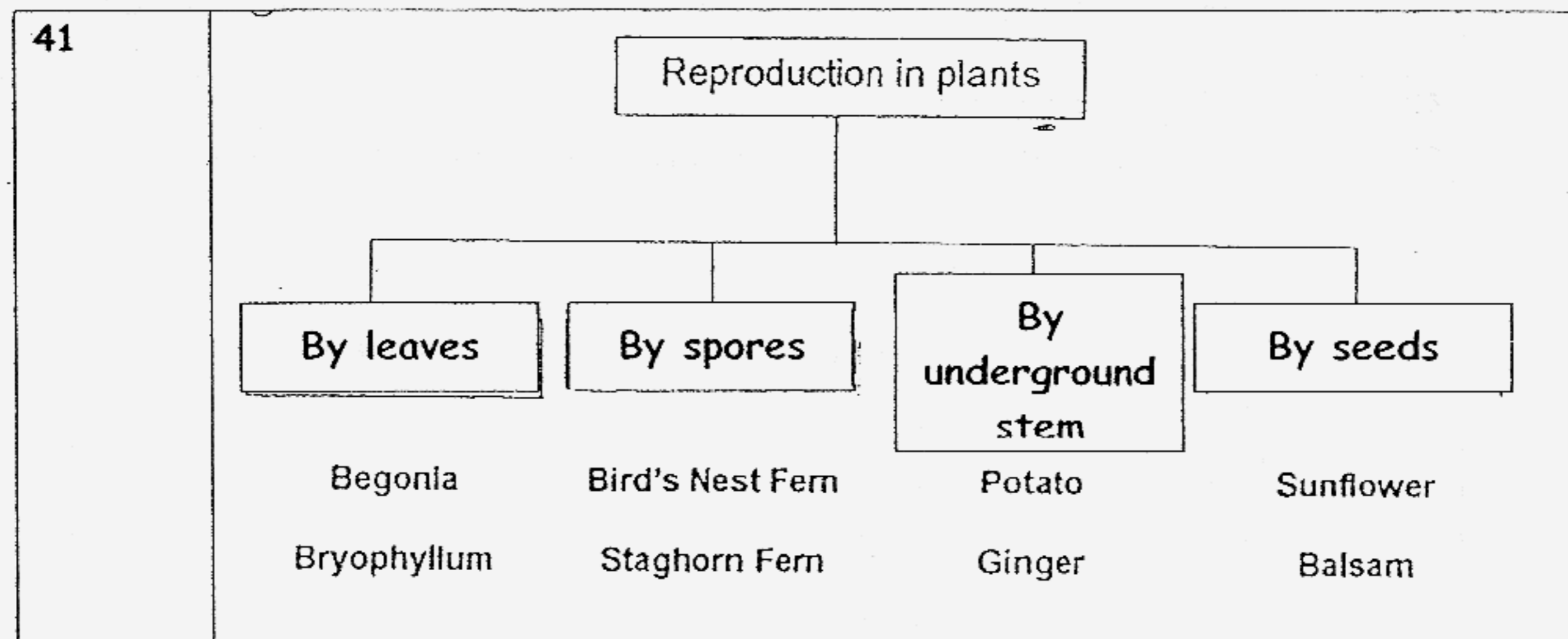
38b



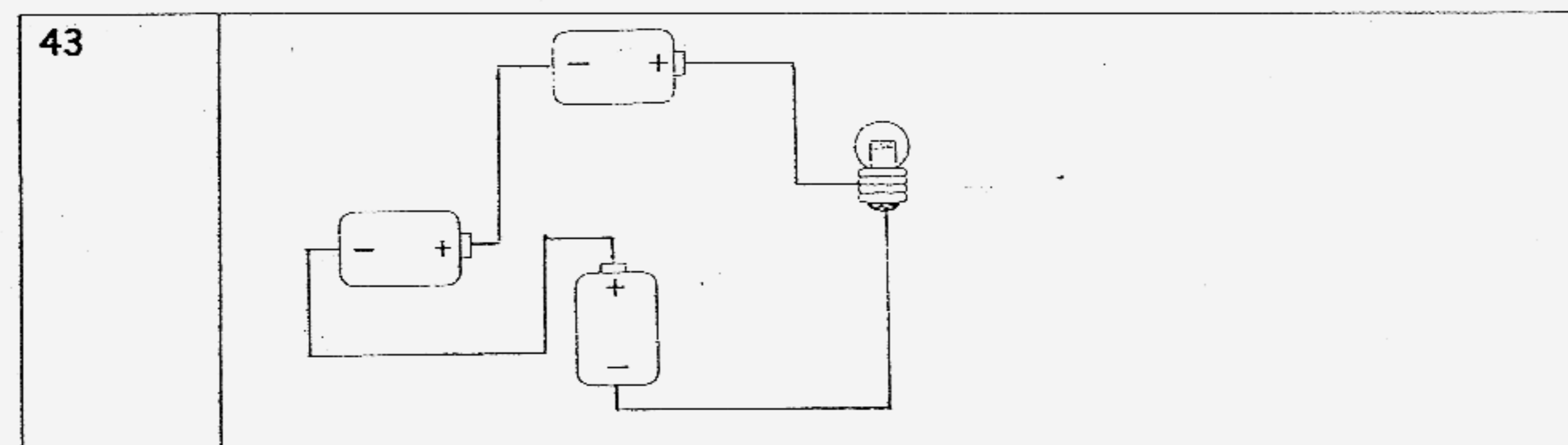
Key
Male □
Female ○

Qn No.	Answers
39	Scissors : Lever
	Watch : Gear
	Sugar Cane press : Wheel and axle

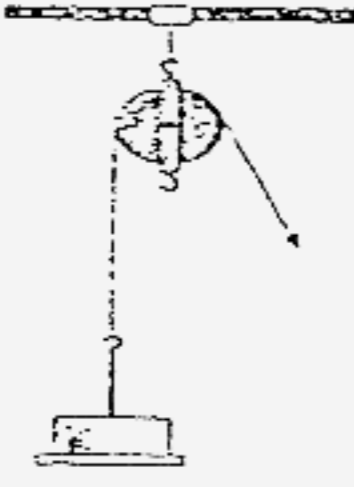
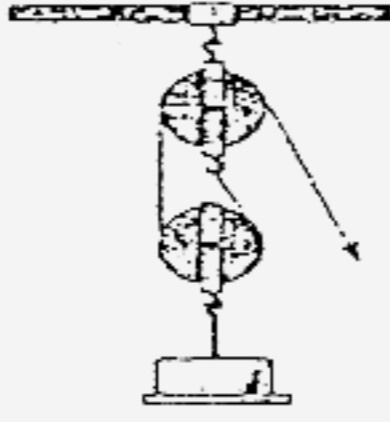
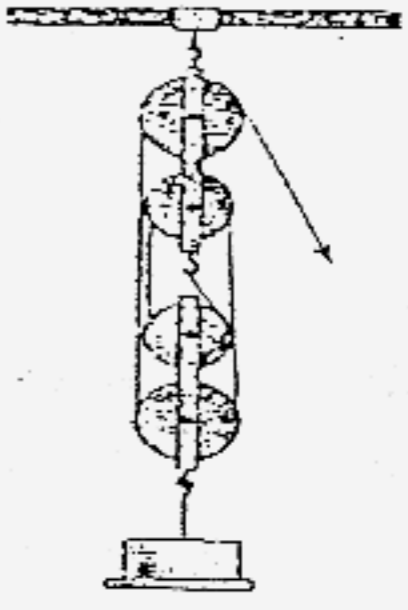
40a	A force can felt (True)
40b	A force can be seen (False)
40c	A force only acts downwards (False)
40d	A force can be a push or pull (True)



42a	Kelvin
42b	The movable pulley allows Kelvin to use less effort to pull up the box.



44a	The further the wooden block from the torchlight, the smaller the shadow is.
44b	The shadow remains the same.

Qn No.	Answers
45a	   <p style="text-align: center;"> <u>Pulley System C</u> <u>Pulley System B</u> <u>Pulley System A</u> </p>
45b	Pulley System A
45c	The effort needs to travel a longer distance than the load.

46a	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Material</th> <th>Letter</th> </tr> </thead> <tbody> <tr> <td>Ceramic</td> <td>E</td> </tr> <tr> <td>Water</td> <td>A</td> </tr> <tr> <td>Iron</td> <td>C</td> </tr> <tr> <td>Copper</td> <td>B</td> </tr> </tbody> </table>	Material	Letter	Ceramic	E	Water	A	Iron	C	Copper	B
Material	Letter										
Ceramic	E										
Water	A										
Iron	C										
Copper	B										