



AI TONG SCHOOL

**2006 SEMESTRAL ASSESSMENT TWO
PRIMARY FIVE SCIENCE**

DURATION : 1 HR 45 MINS

DATE: 31 OCTOBER

INSTRUCTIONS

Do not open the booklet until you are told to do so.

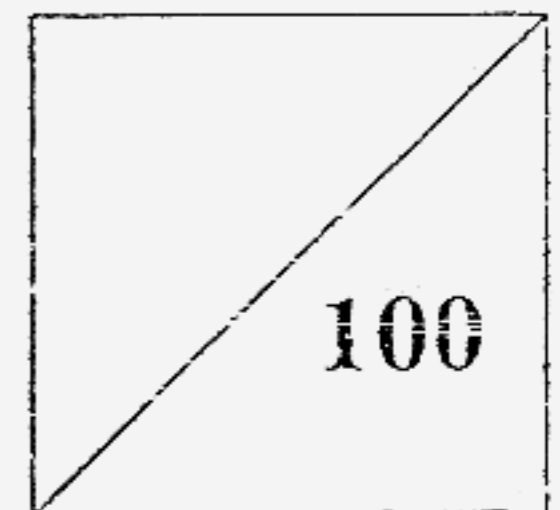
Follow all instructions.

Answer all questions.

Name :

Marks :

Class : Primary _____



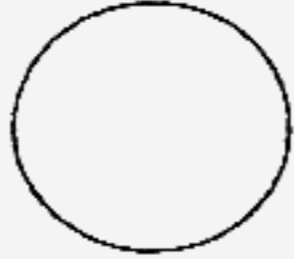



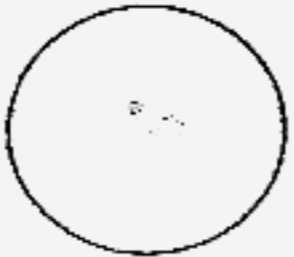
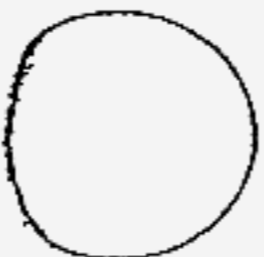


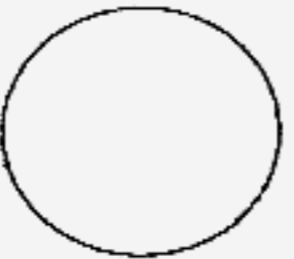



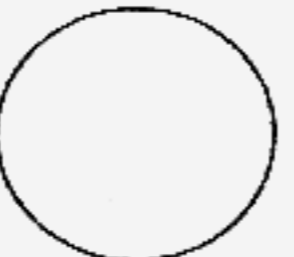


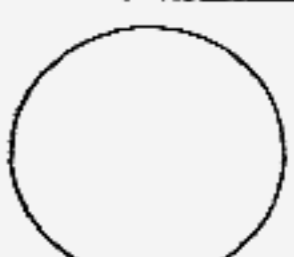
Parent's Signature : _____

Date : _____

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.**

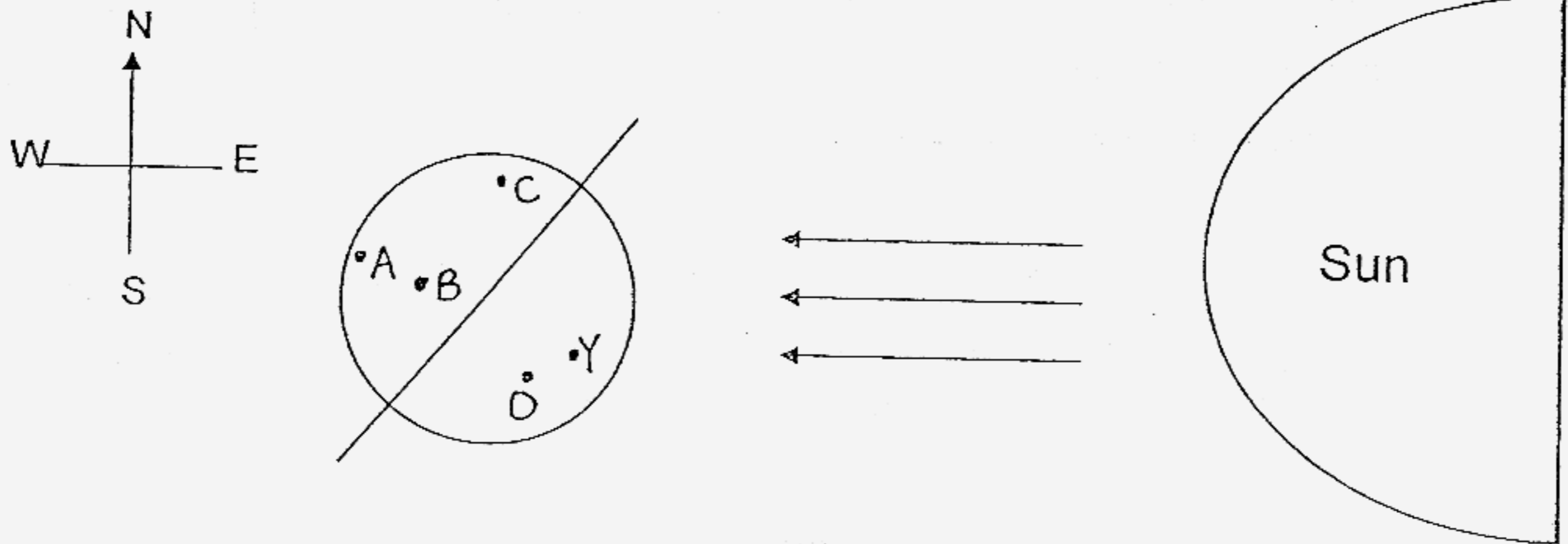
1. Simon saw a Full Moon on 30 September. He observed the Moon every night until 6 October. Which one of the following shows the changes in the shape of the Moon from 30 September to 6 October?

	30 September	2 October	4 October	6 October
(1)				
(2)				
(3)				
(4)				

2. There will be a _____ Moon when the Earth is between the Sun and the Moon.

- (1) Full
- (2) Half
- (3) Gibbous
- (4) Crescent

3. The diagrams below show the Earth and the Sun.



It is day in city Y. Which city, A, B, C or D, would be the first to turn from night to day?

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

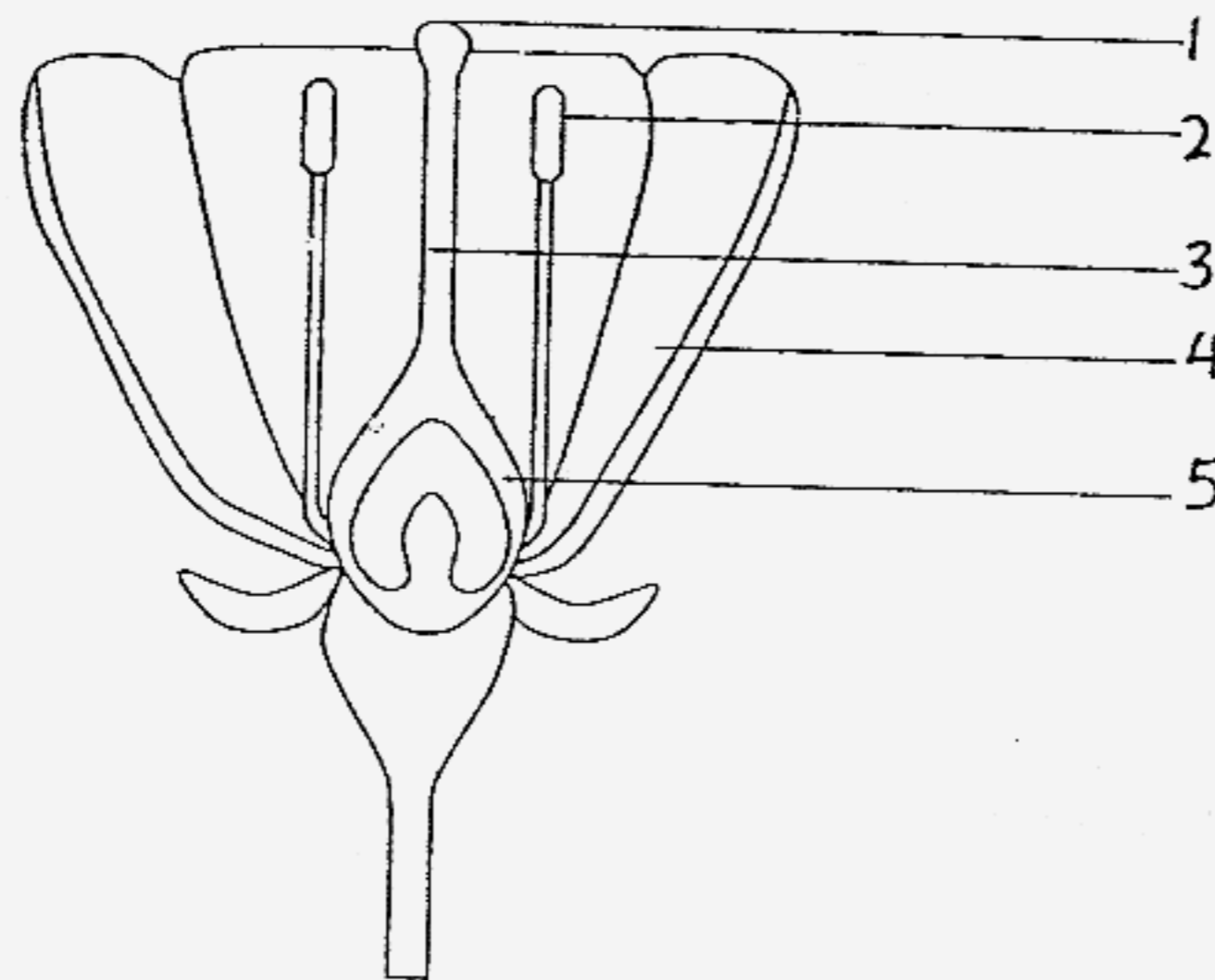
4. Which of the following comparisons between the number of cells in the 3 organisms is correct?

	A Cat	A Blue Whale	A Bee
(1)	Few cells	Many cells	More cells than a cat
(2)	Many cells	Few cells	No cells at all
(3)	Less cells than a blue whale	Many Cells	Less cells than a cat
(4)	More cells than a bee	Few cells	Few cells

5. Characteristics of parents are usually passed on to their children.
Which one of the following is not an example of a characteristic that can be inherited?

- (1) Height of a person.
- (2) Length of eyelashes.
- (3) Ability to roll the tongue.
- (4) Length of finger nails.

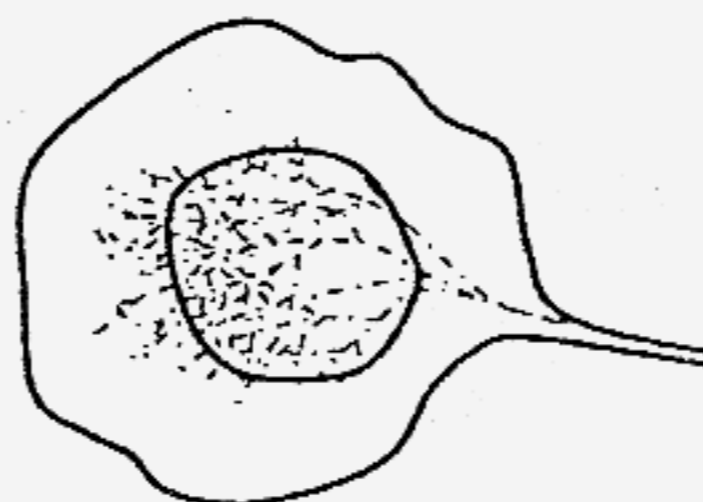
6. The diagram below shows the cross-section of a flower.



The female part of a flower is made up of the structures labelled

- _____.
- (1) 1, 3 and 5 only
 - (2) 2, 3 and 5 only
 - (3) 2, 4 and 5 only
 - (4) 1, 3, 4 and 5 only

7. John released an angkana fruit from a height of 4 metres and measured how long it stayed in the air. He then cut off the wing-like structure of the fruit and repeated the experiment.

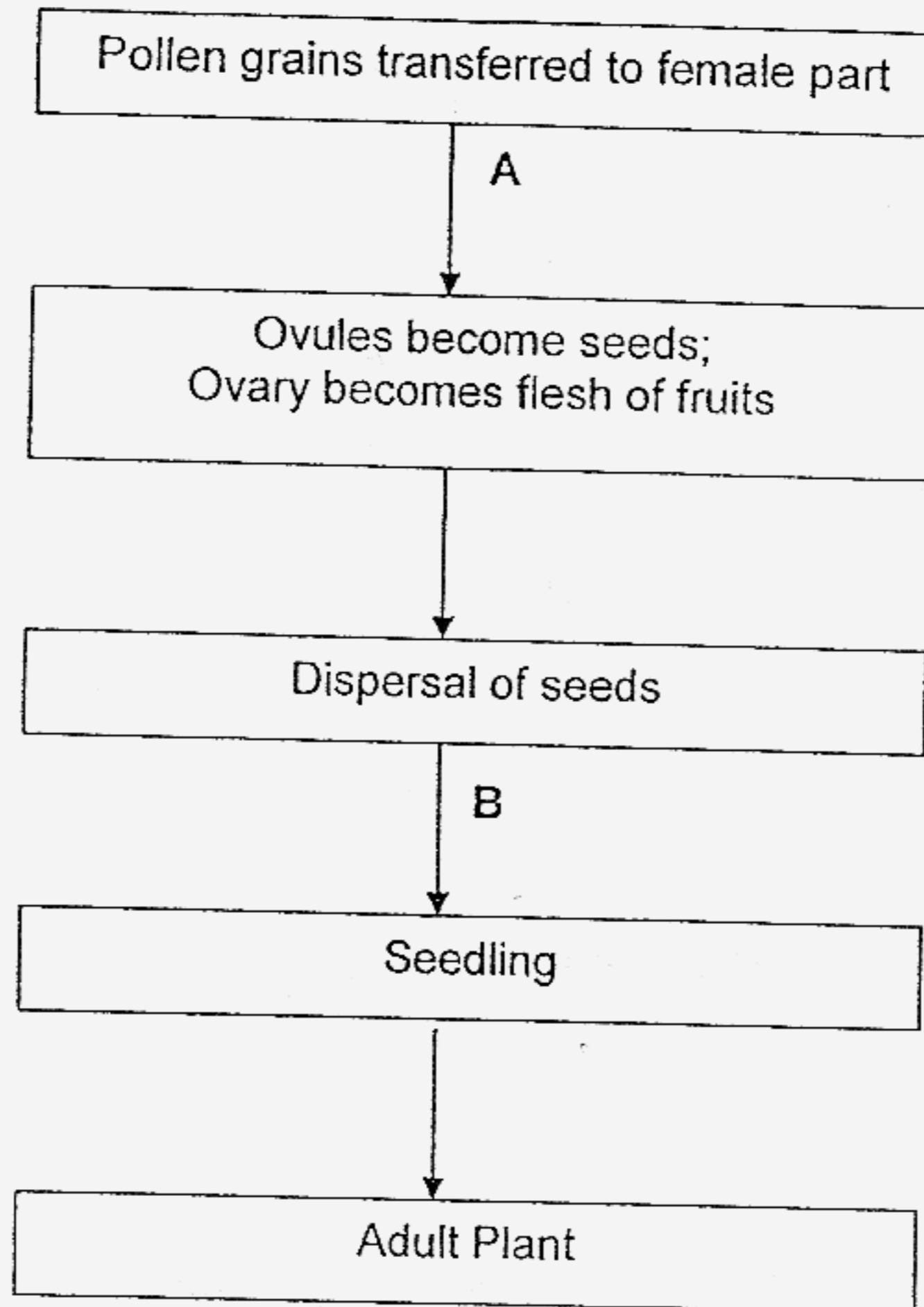


Which one of the following timings is **most** likely to be correct?

	With Wing-like Structure	Without Wing-like Structure
(1)	3.8 s	4.9 s
(2)	4.9 s	3.8 s
(3)	4.9 s	4.9 s
(4)	3.8 s	3.8 s

8. Which one of the following is true of a germinating red bean seed?
- (1) The seed leaves make food for the baby plant.
 - (2) The young shoot emerges from the seed before the root.
 - (3) The seed leaves are the initial source of food for the baby plant.
 - (4) As the seed germinates, more and more food is stored in the seed leaves.

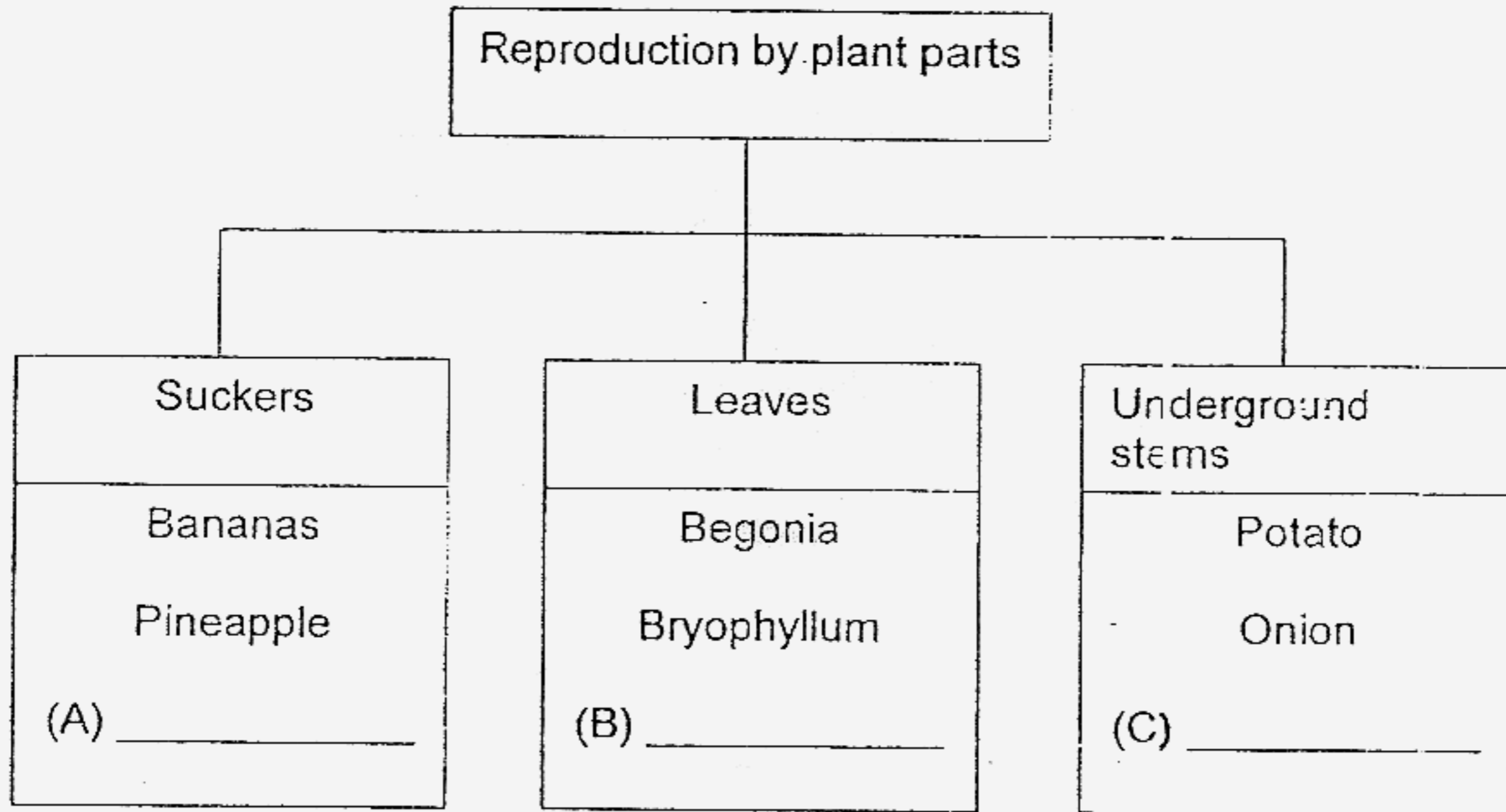
9. The diagram below shows the growth of a plant.



Identify the processes indicated by **A** and **B** respectively.

- (1) Pollination and Fertilisation.
- (2) Germination and Fertilisation.
- (3) Fertilisation and Germination.
- (4) Cross pollination and Germination.

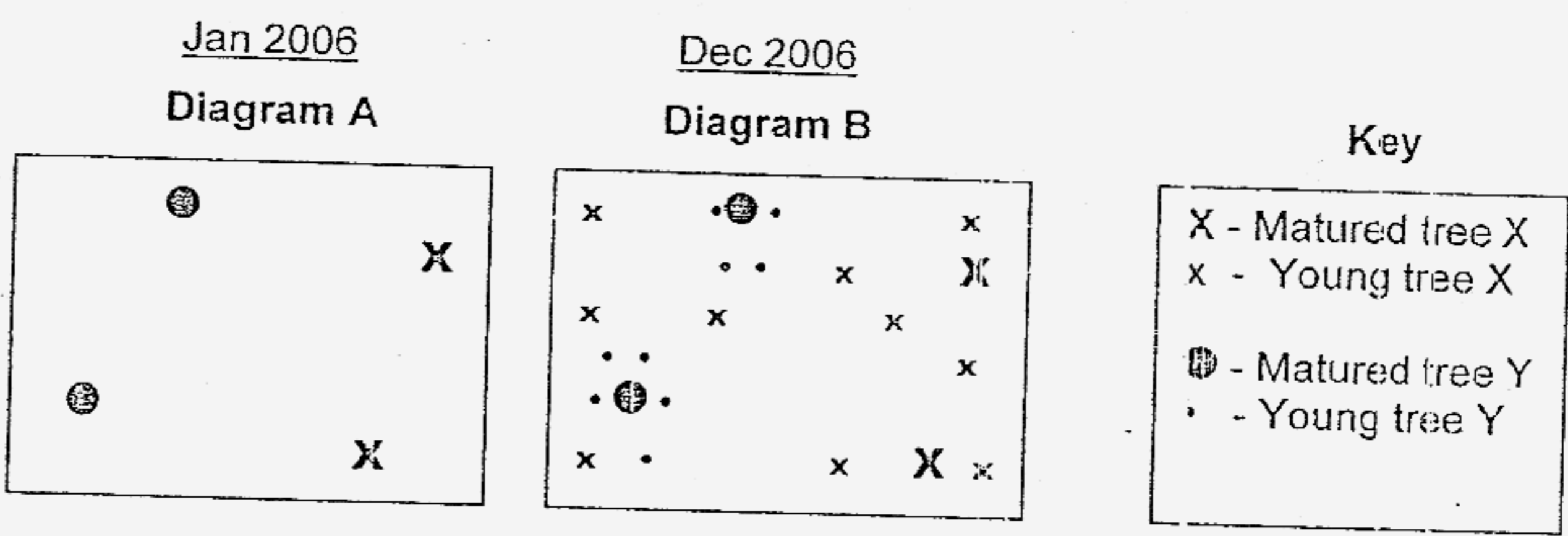
10. Study the diagram below.



Which of the following lists completes the diagram above correctly?

	A	B	C
(1)	Tomato	Orchid	Lotus seed
(2)	Groundnut	Water Hyacinth	Water chestnut
(3)	Green Bean	Balsam	Soya Bean
(4)	Heliconia	African Violet	Ginger

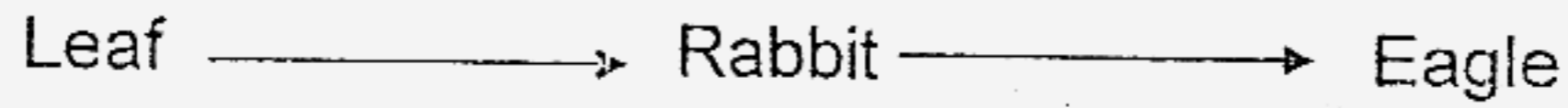
11. Sally and Tom went to an open field at the beginning of the year 2006 and noted the position of the trees shown in Diagram A. At the end of that year, they visited the open field again. They noticed that there were a number of young plants in the field and marked their positions in Diagram B.



How are the seeds of Trees X and Trees Y dispersed?

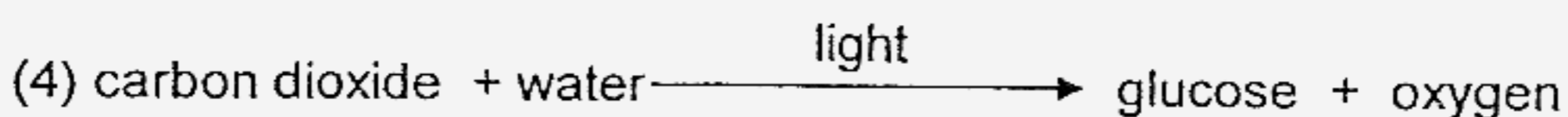
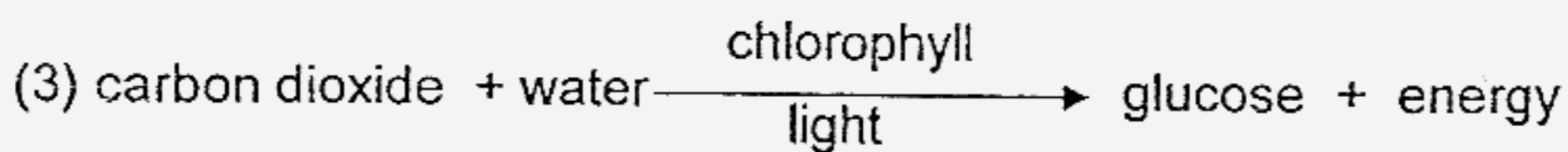
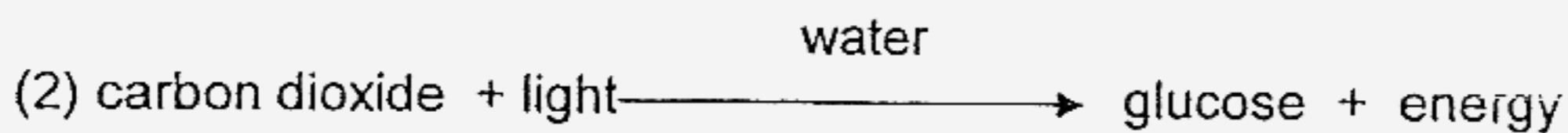
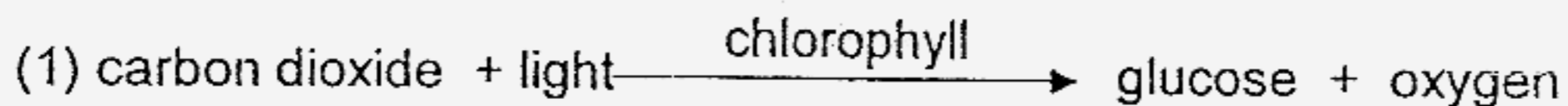
	Tree X	Tree Y
(1)	By water	By wind
(2)	By animals	By splitting
(3)	By splitting	By wind
(4)	By wind	By water

12. The diagram below shows the transfer of energy from one living thing to another through the food they eat.



Which other animals can be the direct energy source for the eagle?

- A Lion.
B Frog.
C Snake.
D Leopard.
- (1) A and B only
(2) B and C only
(3) B and D only
(4) A and D only
13. Which one of the following equations best represents photosynthesis in plants?

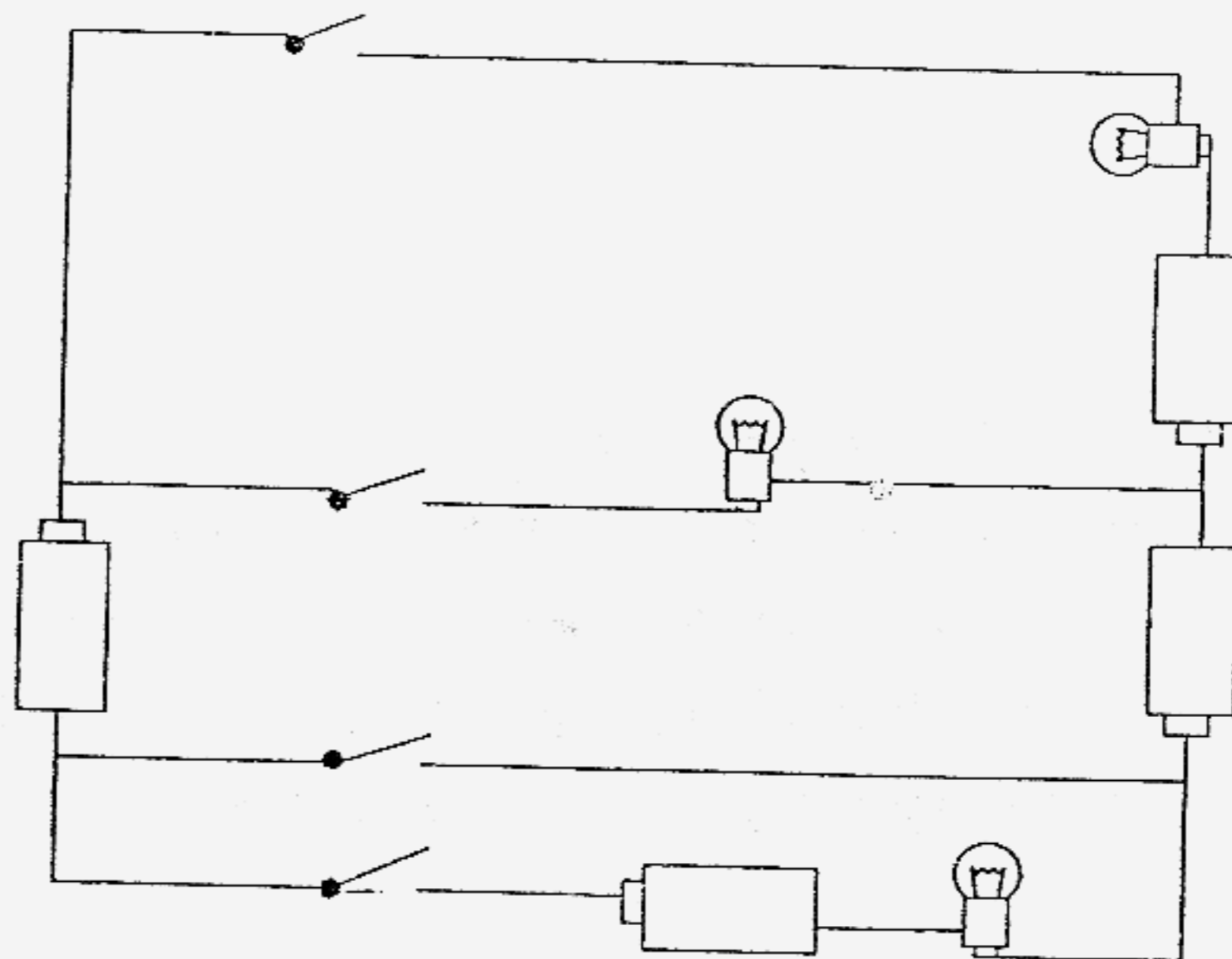


14. Rearrange the following sentences to show how food is changed to energy in our body.

- A The digested food enters the body cells.
- B The glucose is broken down by respiration.
- C Food is eaten and digested in the digestive system.

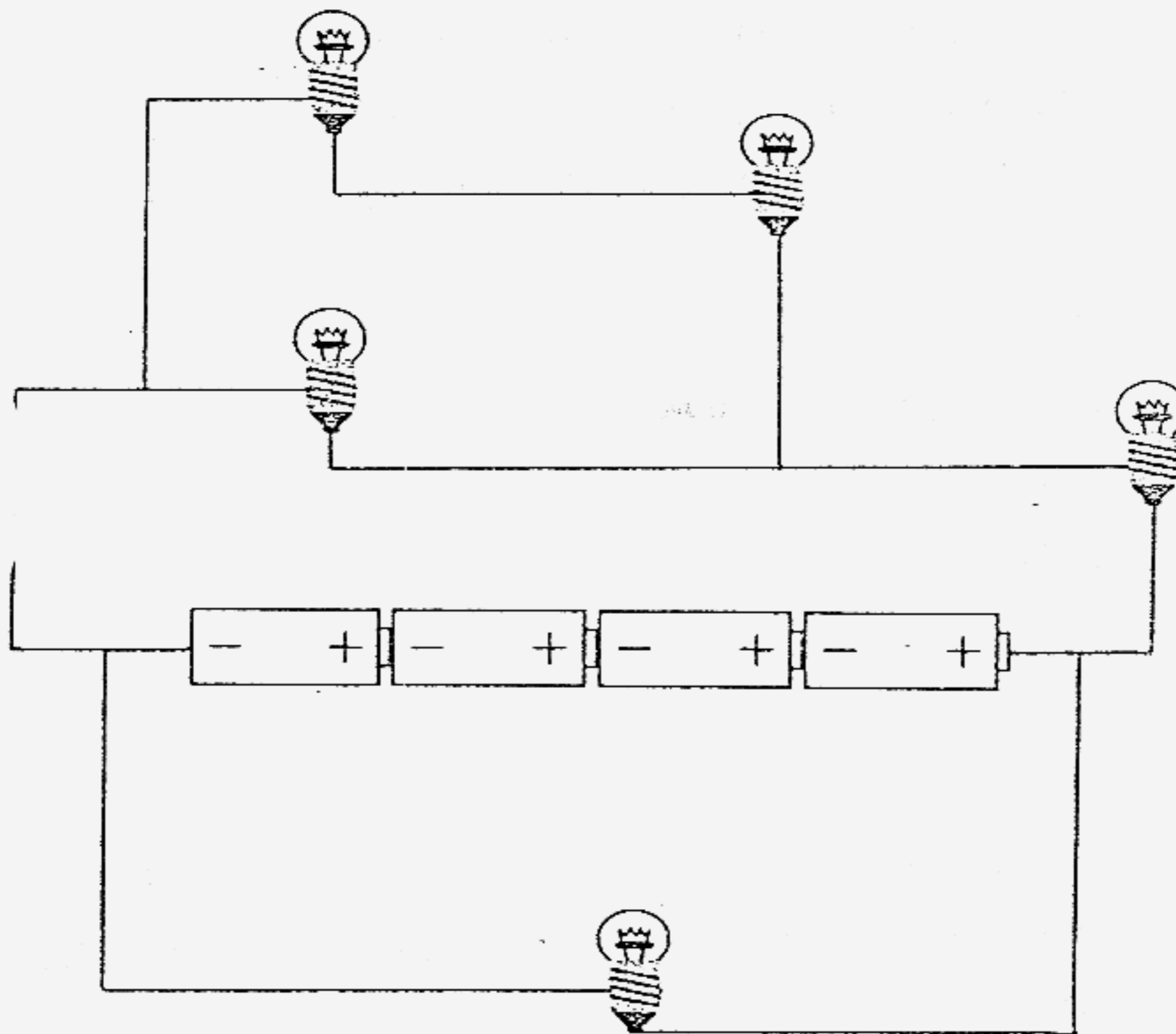
- (1) B, A and C
- (2) B, C and A
- (3) C, A and B
- (4) C, B and A

15. The circuit diagram below shows 4 switches and 3 light bulbs. In order for all the bulbs to light up, what is the minimum number of switches that need to be closed?



- (1) 2
- (2) 3
- (3) 4
- (4) 5

16. The circuit diagram below shows 5 bulbs lit up by 4 batteries. Use the diagram to answer the following question.

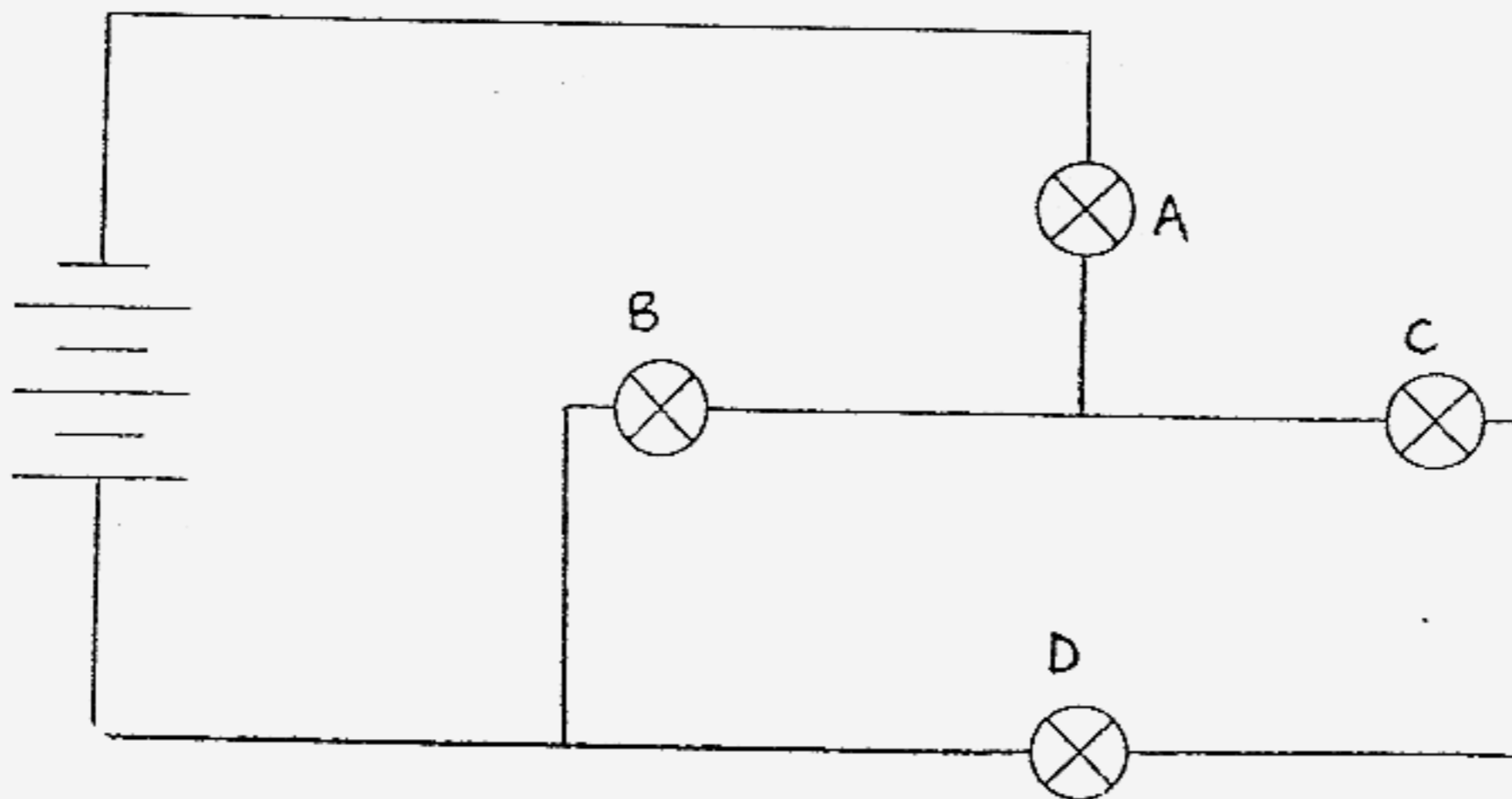


Which of the following statements are true?

- A When bulb A is faulty, bulb B would not light up.
- B When bulb D is faulty, only bulb E would light up.
- C When bulb B is faulty, bulbs A and E would not light up.
- D When bulb E is faulty, all the other bulbs would still light up.

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

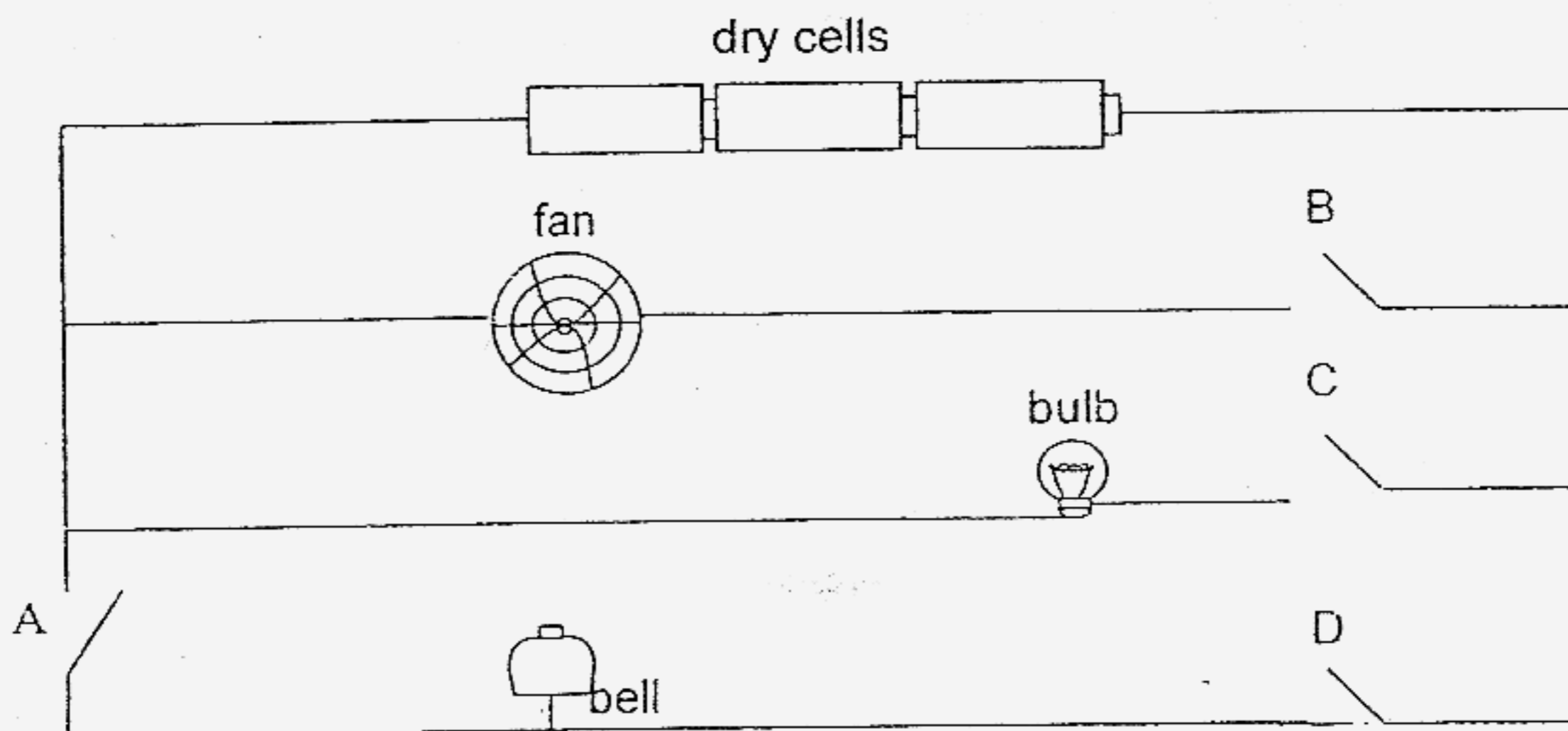
17. The diagram below shows four bulbs, A, B, C and D connected to 3 batteries. When one particular bulb blows, the other three will still be lighted.



Which is the bulb that blows?

- (1) Bulb A
 - (2) Bulb B
 - (3) Bulb C
 - (4) Bulb D
18. Su Yen set up an experiment and found out that copper wire conducts electricity the best. Which of the following variables had she kept constant when conducting the experiment?
- A Type of wire
 - B Length of wire
 - C Number of batteries
 - D Arrangement of batteries
- (1) A, B and C only
 - (2) B, C and D only
 - (3) A, B and D only
 - (4) A, B, C and D

19. In the diagram, which switches should be closed to turn on the fan and ring the bell?



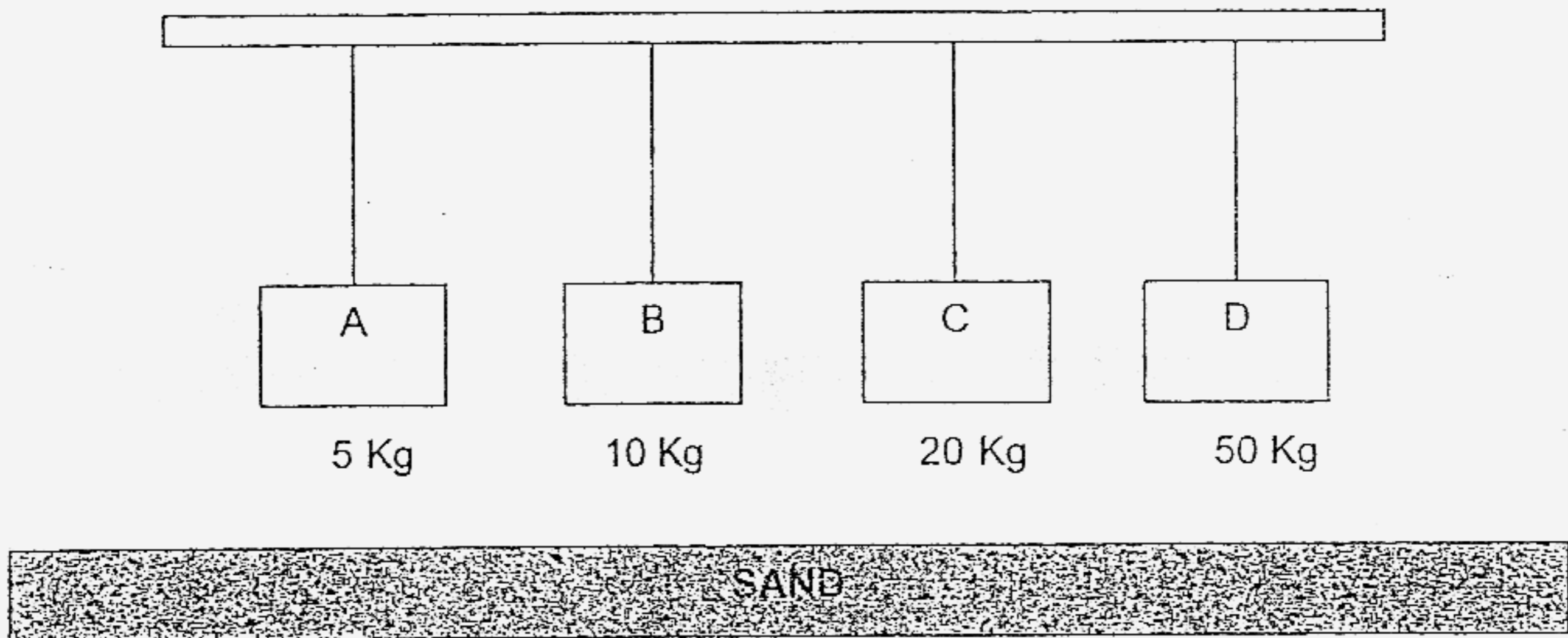
- (1) A and B only
 (2) A and C only
 (3) A, B and D only
 (4) B, C and D only
20. Peter placed four different objects between the metal tips of a circuit tester and noted whether the bulb lit up or not. The results were shown below.

Object	Lit Up?
W	No
X	Yes
Y	No
Z	No

What was the aim of the experiment?

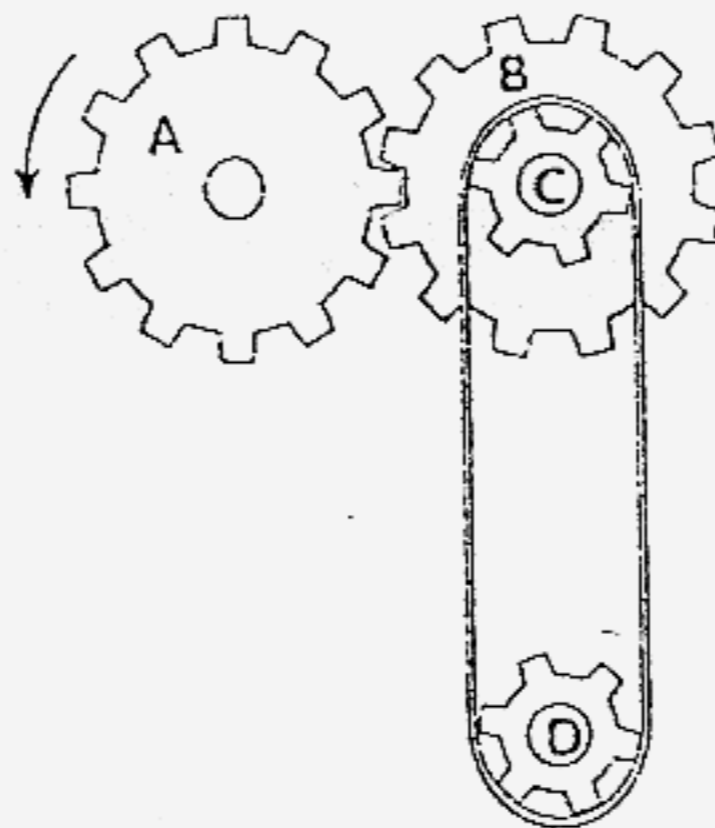
- (1) To find out if the bulb would light up.
 (2) To find out if the circuit tester was set up correctly.
 (3) To find out which object was a conductor of electricity.
 (4) To find out which brand of batteries would last the longest.

21. The diagram below shows four weights suspended at the same height above the ground.



Which one of the weights would create the deepest hole when they dropped in the sand?

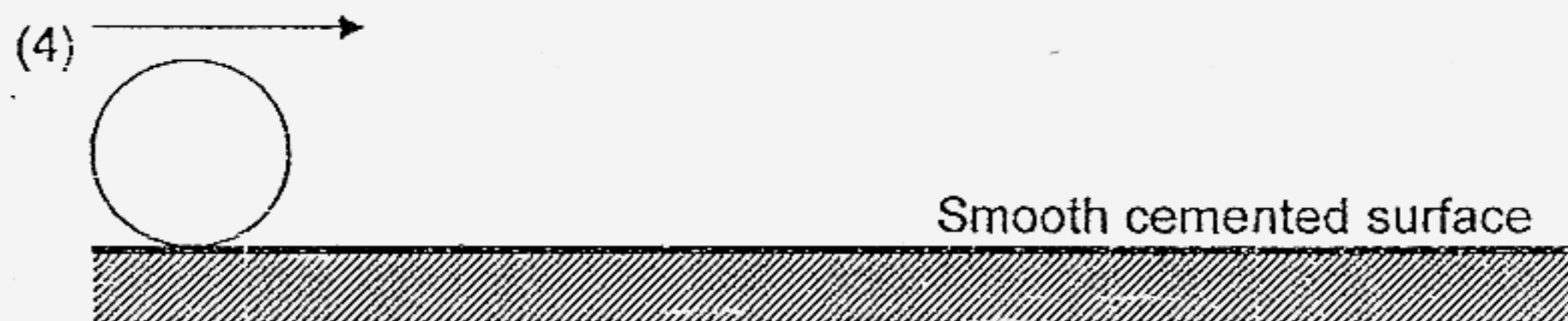
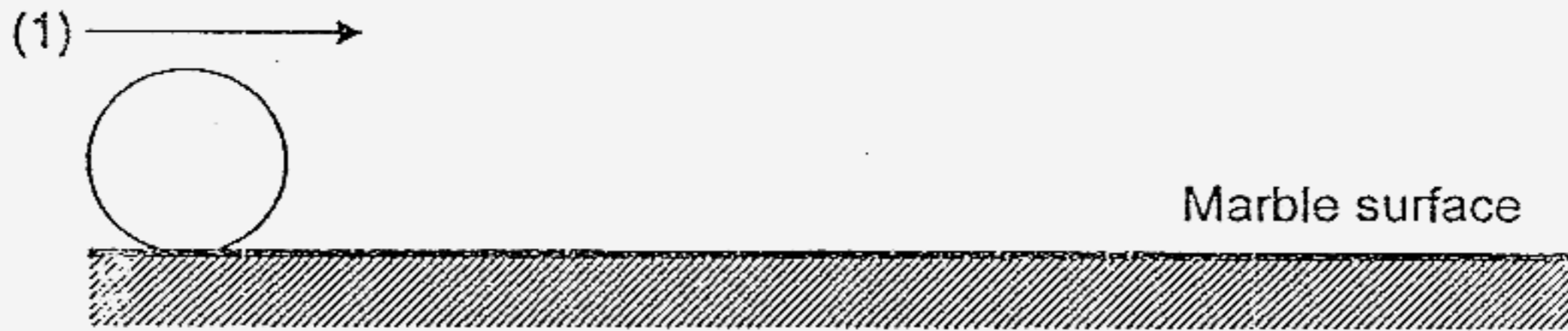
- (1) A
 - (2) B
 - (3) C
 - (4) D
22. Gear C is joined to gear B as shown in the diagram below.



In which directions would gears C and D turn if gear A turns anti-clockwise?

	C	D
(1)	Anti-clockwise	Clockwise
(2)	Clockwise	Anti-clockwise
(3)	Clockwise	Clockwise
(4)	Anti-clockwise	Anti-clockwise

23. Each of the diagrams below shows a metal ball being pushed with the same amount of force across four different types of surfaces. On which surface would the metal ball stop first?



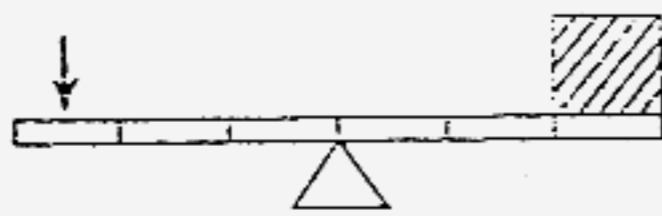
24. The picture shows a farmer carrying 2 baskets of vegetables on a pole.



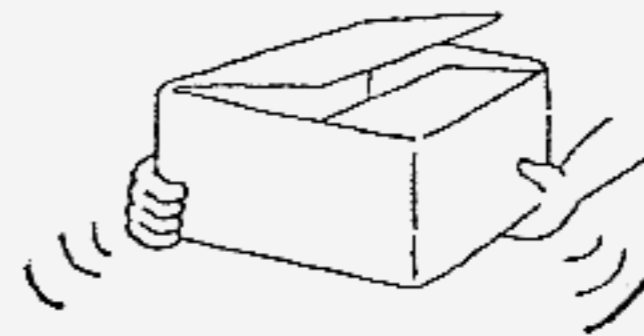
What should she do to balance the baskets?

- (1) Move basket A away from her body.
 - (2) Move basket B closer to her body.
 - (3) Move basket B to the end of the pole.
 - (4) Place herself in the middle of the pole.
25. In which one of the following diagrams is the force used smaller than the load?

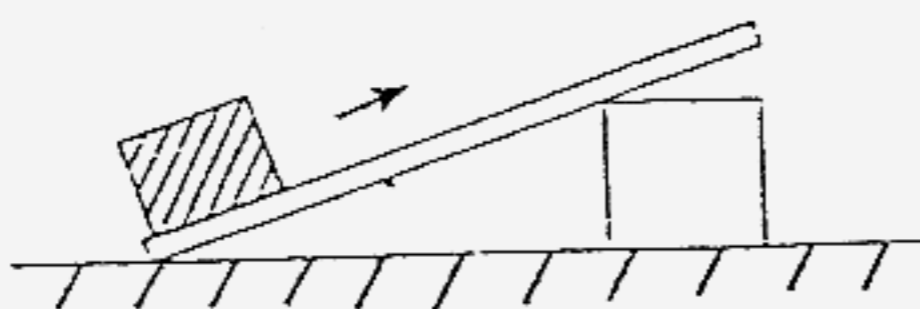
(1)



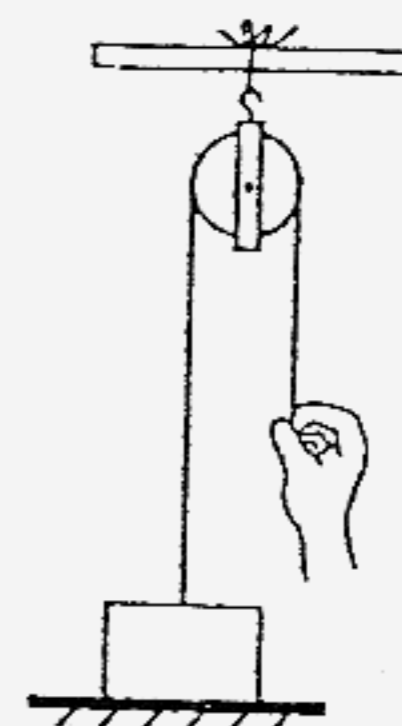
(2)



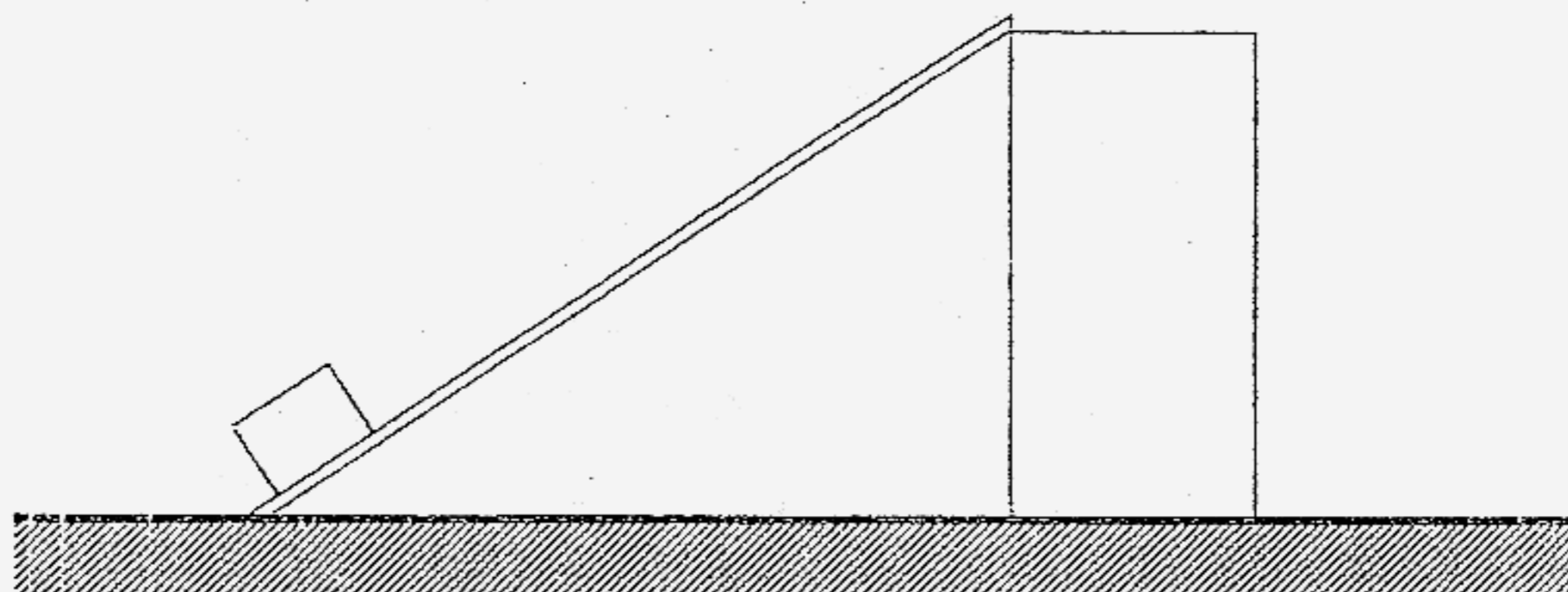
(3)



(4)



26. Susan carried out the experiment shown below to study how the texture of a plank affects the effort needed to move a load.



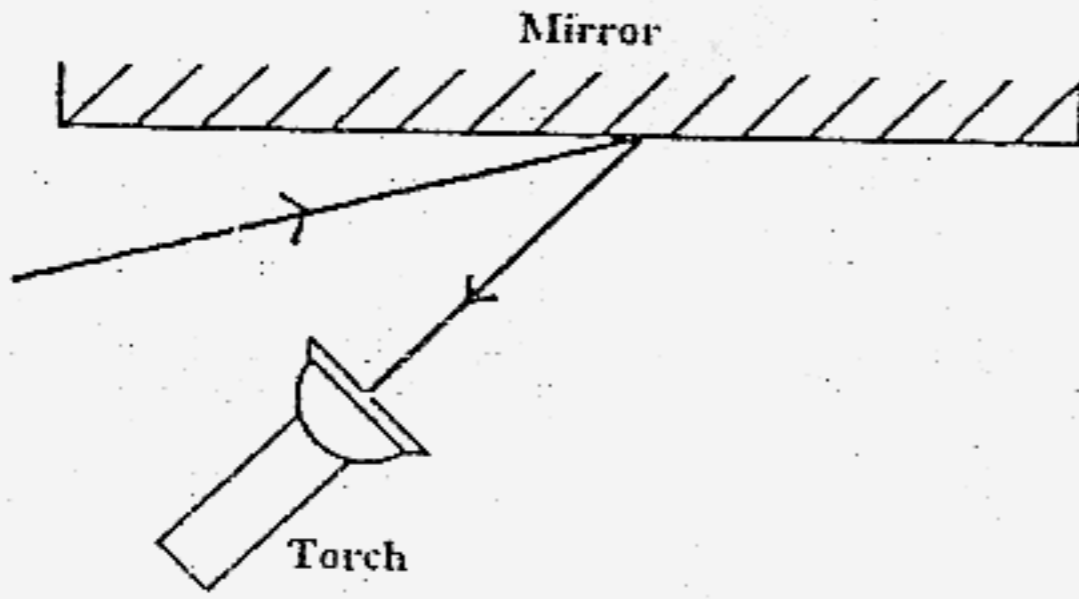
Which one of the following variables must be kept the same for the experiment to be a fair one?

- A The type of plank.
- B The size of the load.
- C The mass of the load.
- D The steepness of the inclined plane.

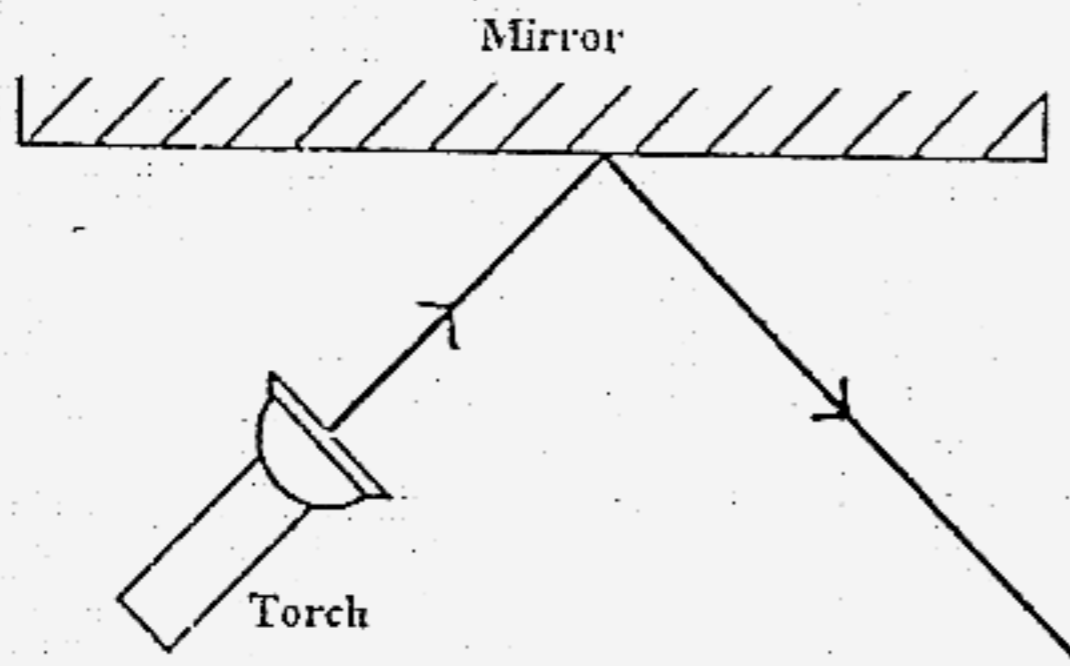
- (1) A and B only
- (2) B and C only
- (3) A, B and D only
- (4) B, C and D only

27. Which one of the following shows how light is reflected by a mirror?

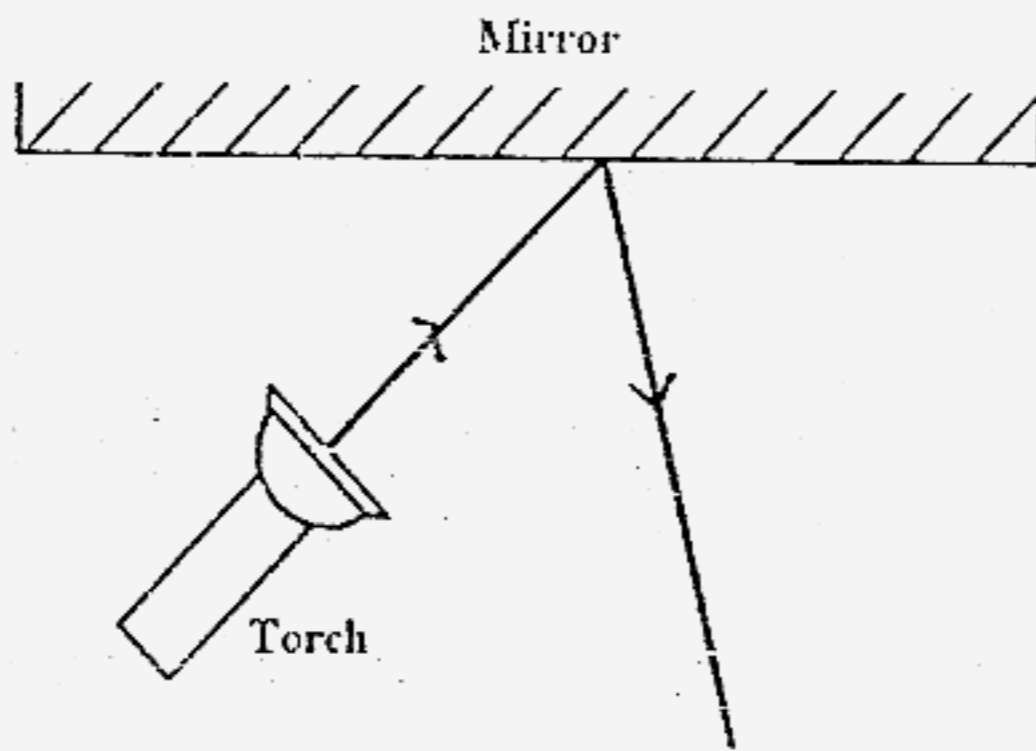
(1)



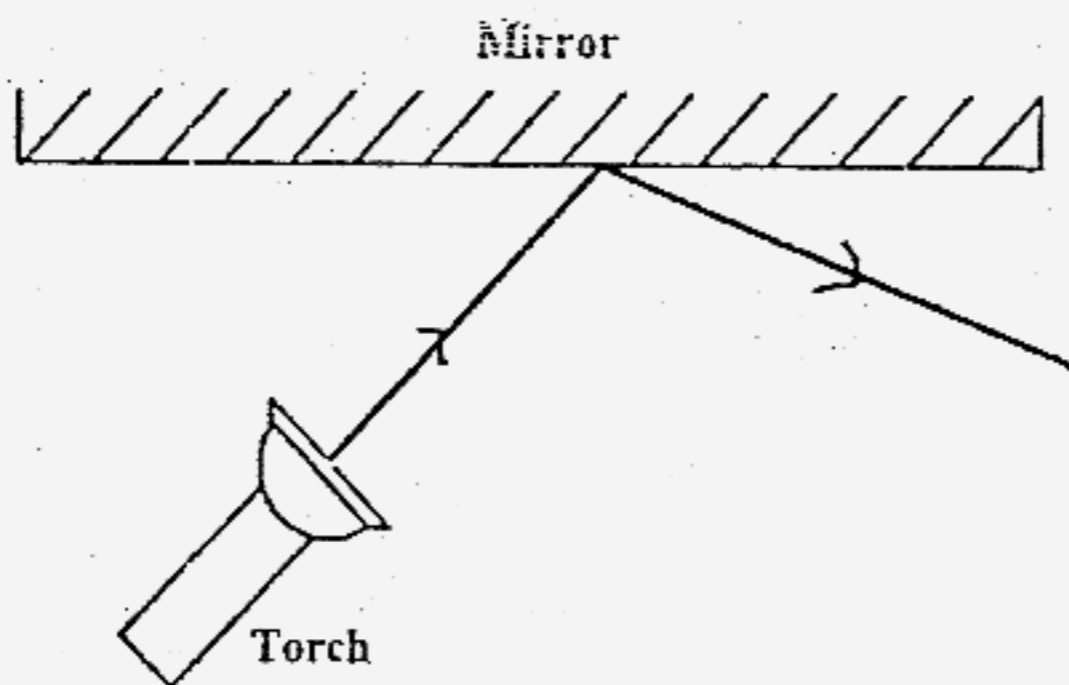
(2)



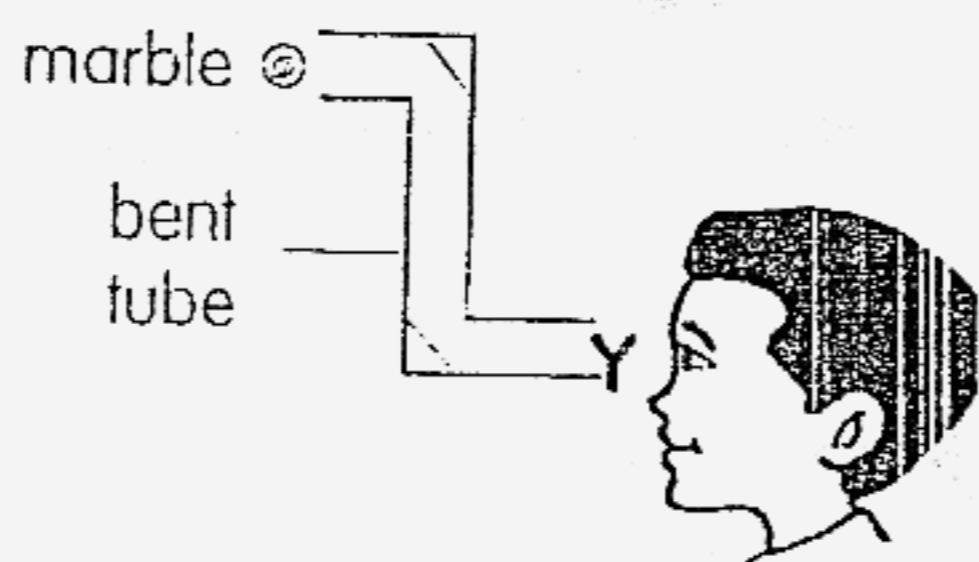
(3)



(4)



28.



If Simon wants to see the marble by peeping through a bent tube at Y, he would need to put mirrors in the tube. What is the least number of mirrors needed?

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

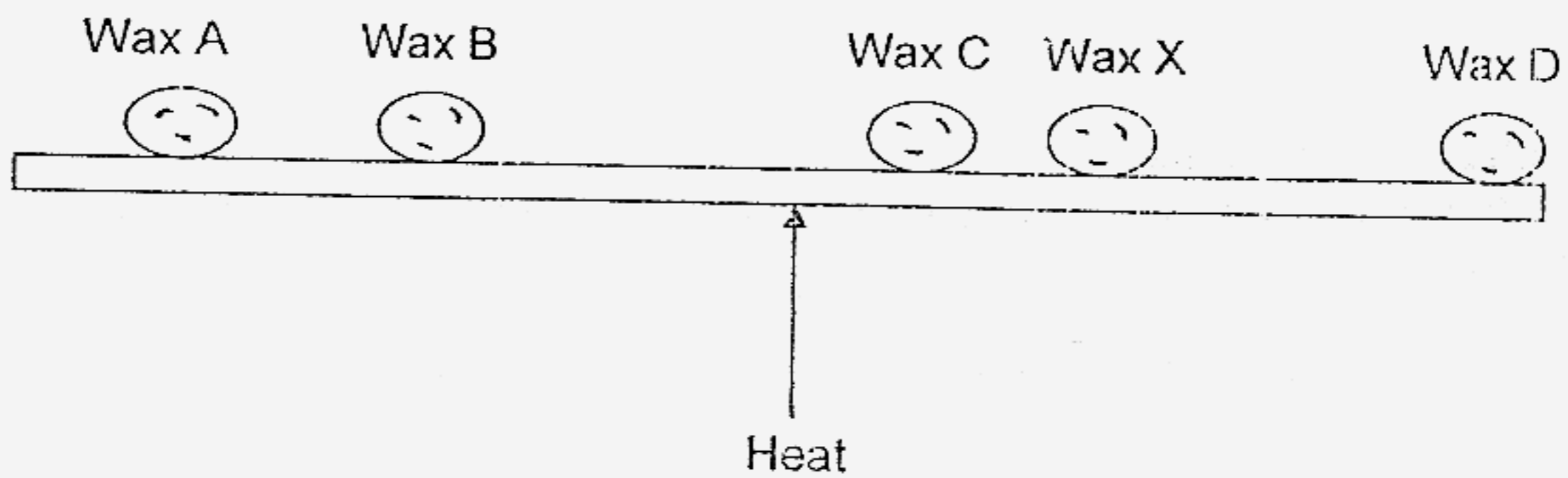
29. Four similar mugs contain different amounts of water at the temperatures indicated in the table below.

Beaker	A	B	C	D
Temperature of water	40°C	40°C	35°C	30°C
Volume of water	80ml	20ml	30ml	15ml

Which two mugs of water, when added together into a much larger container, would be the hottest?

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

30. 5 pieces of wax were put on an iron rod as shown in the diagram below. The iron rod was heated at the point shown.



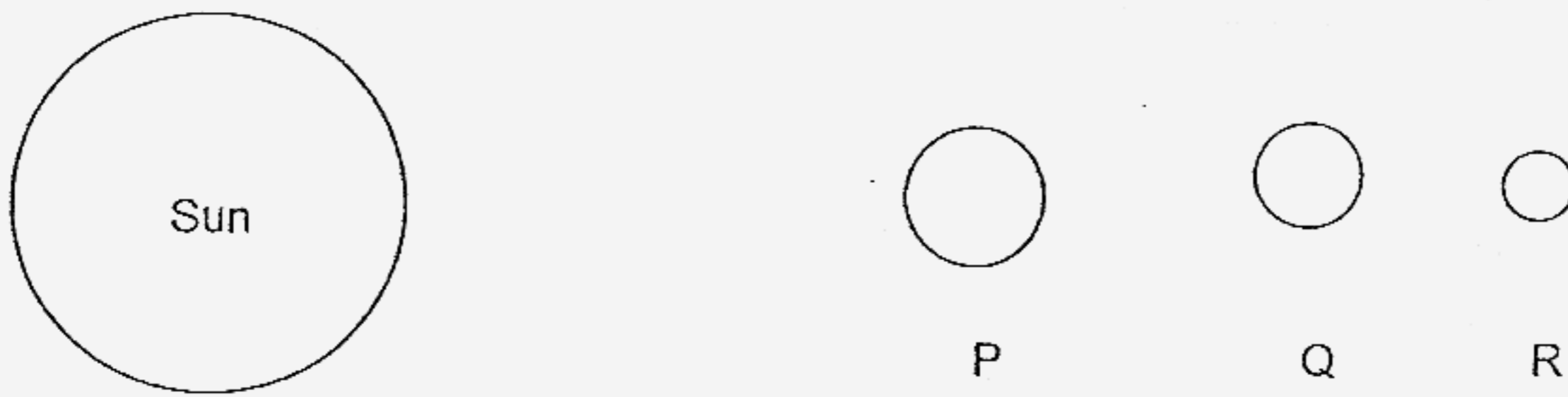
When Wax X melts, which piece, A, B, C or D would be the next one to melt?

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

Section B: 40 marks

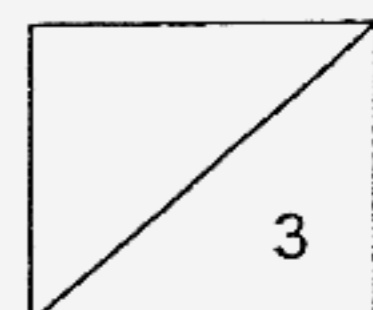
Read the questions carefully and write your answers in the spaces provided.

31. The diagram below shows three planets, P, Q and R found in the Solar System.

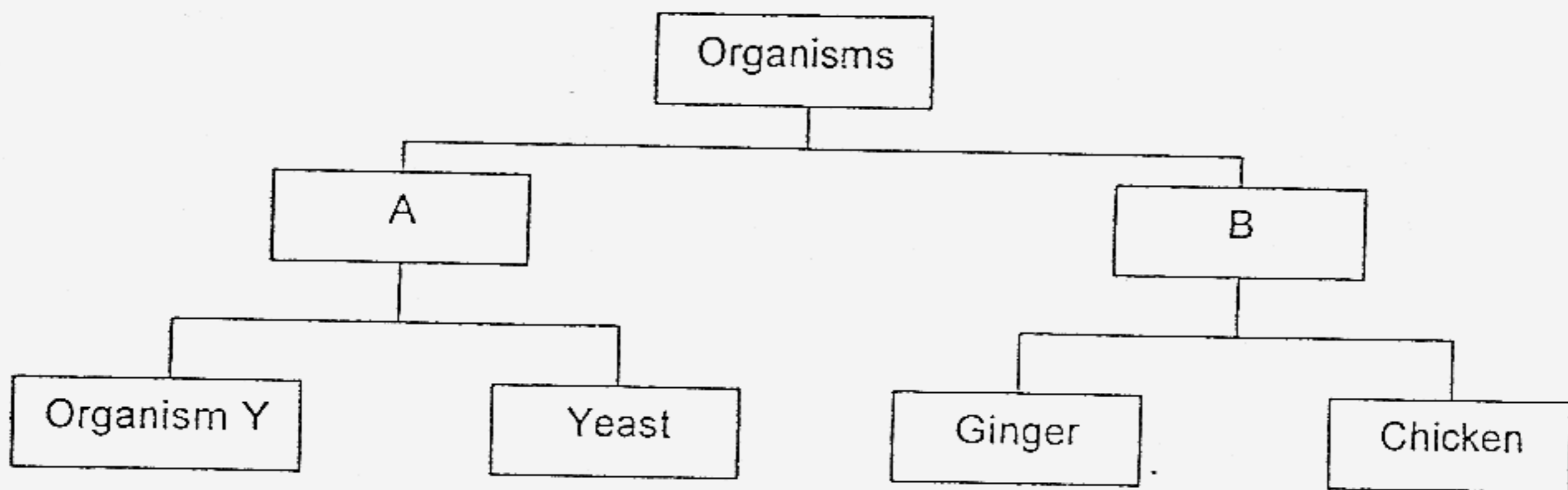


- (a) Which planet has the lowest surface temperature? Why? [2]

- (b) Which planet has a shortest orbit around the sun? [1]



32. The chart below shows the classification of some organisms.



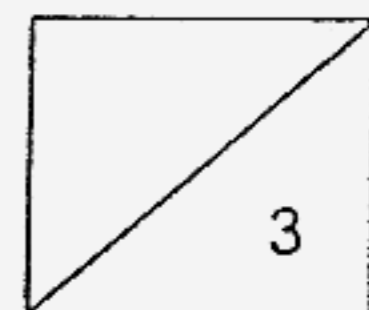
(a) Write down the sub-headings for Boxes A and B. [1]

A: _____

B: _____

(b) Give an example of Organism Y. [1]

(c) How does yeast reproduce? [1]



33. The table below shows a comparison of 3 kinds of cells. Look at the data carefully and answer the questions.

Parts of a Cell	Cell A	Cell B	Cell C
Cell wall	No	Yes	Yes
Chloroplast	No	No	Yes
Cytoplasm	Yes	Yes	Yes
Cell membrane	Yes	Yes	Yes
Nucleus	Yes	Yes	Yes

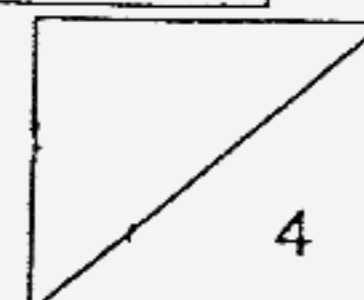
- (a) What function can Cell C perform that Cell B cannot? [1]

- (b) What is the difference between Cell A and the other two types of cells? [1]

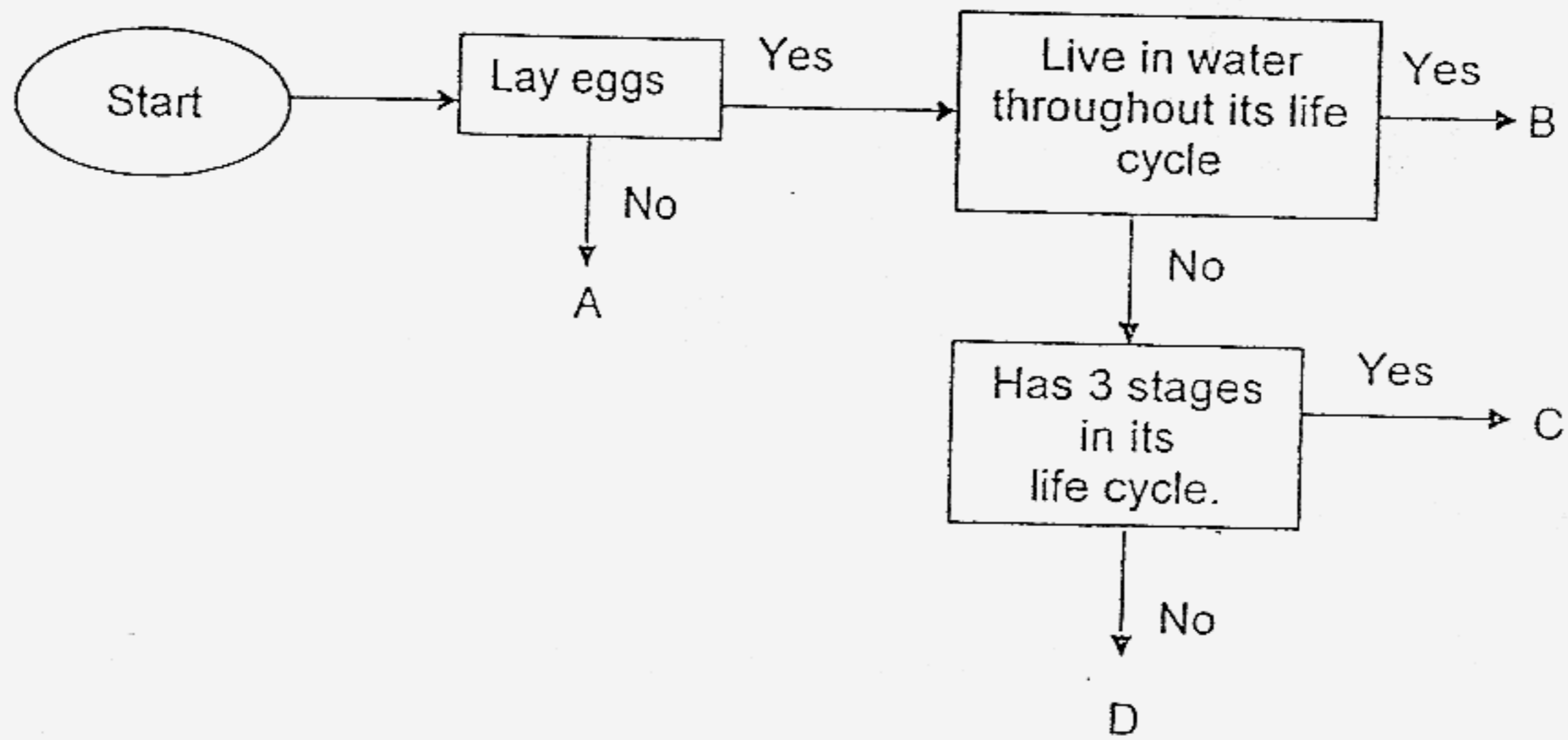
34. Dominic found a plant part in the soil. The plant part has buds and leaf scars. Some shoots are growing from the buds. Dominic listed his inferences in the table below.

Which of the following statements are correct inferences that Dominic made? Put a tick (✓) against the correct statements and a cross (X) against those that are wrong. [2]

(a)	The plant part is an underground stem.	
(b)	The plant part has undergone fertilization.	
(c)	The plant part is developed from a flower.	
(d)	A new plant can grow from each bud if the conditions are favourable.	



35. Study the following flow chart about organisms in a pond.



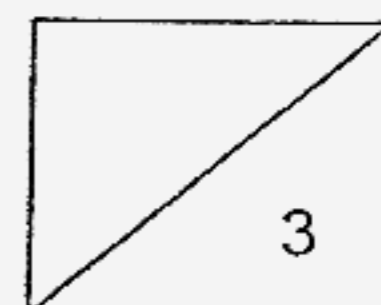
(a) Which animal, A, B, C or D is most likely to be a frog? [1]

(b) Which animal, A, B, C or D is most likely to be a guppy? [1]

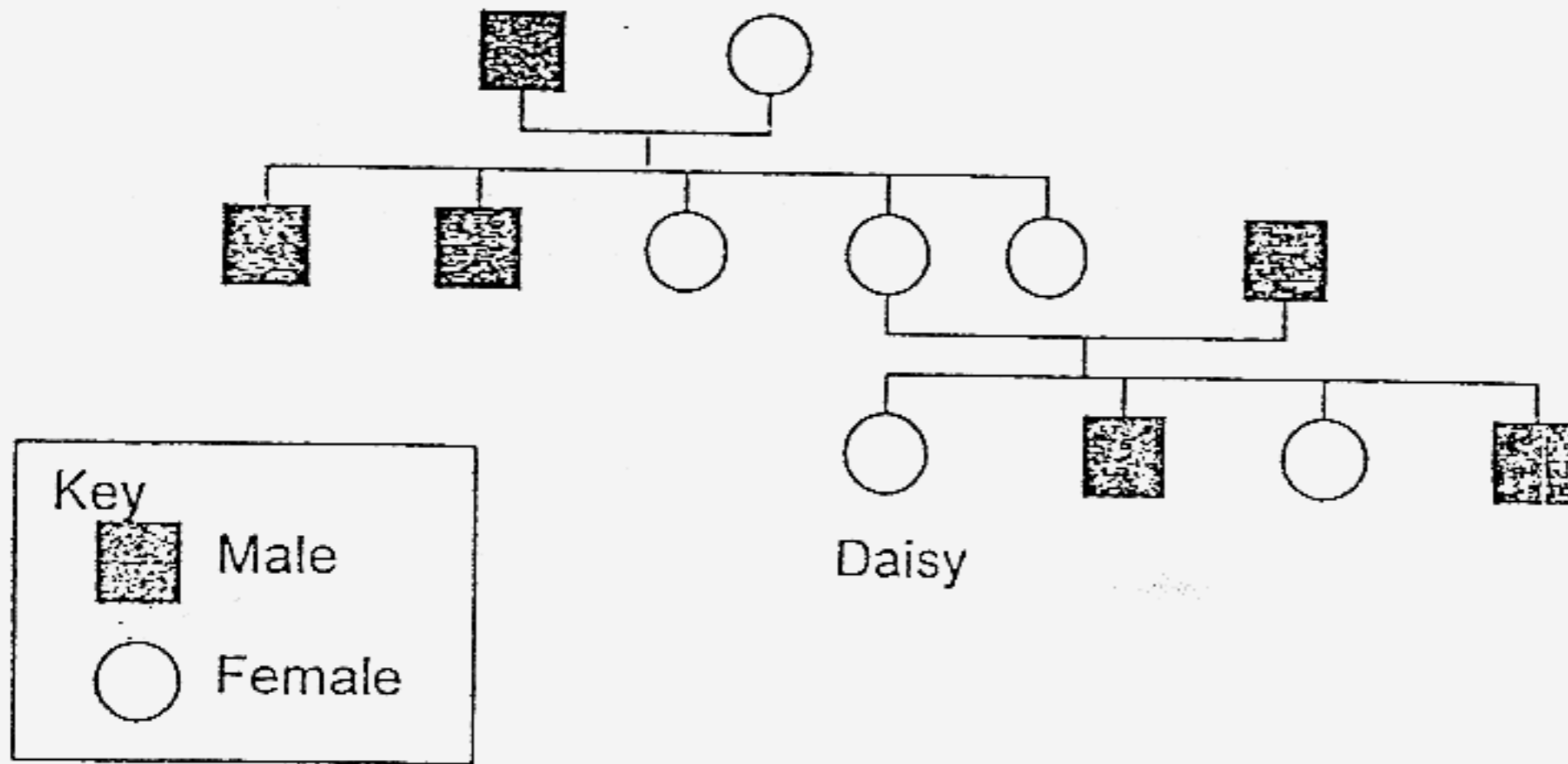
(c) State 2 similarities between Animals C and D. [1]

(i) _____

(ii) _____



36. Daisy drew her own family tree as shown below.



(a) Whose side of the family tree did Daisy draw? [1]

(b) Based on the family tree shown, how many uncles and aunts does Daisy have? [1]

Uncles : _____

Aunts : _____

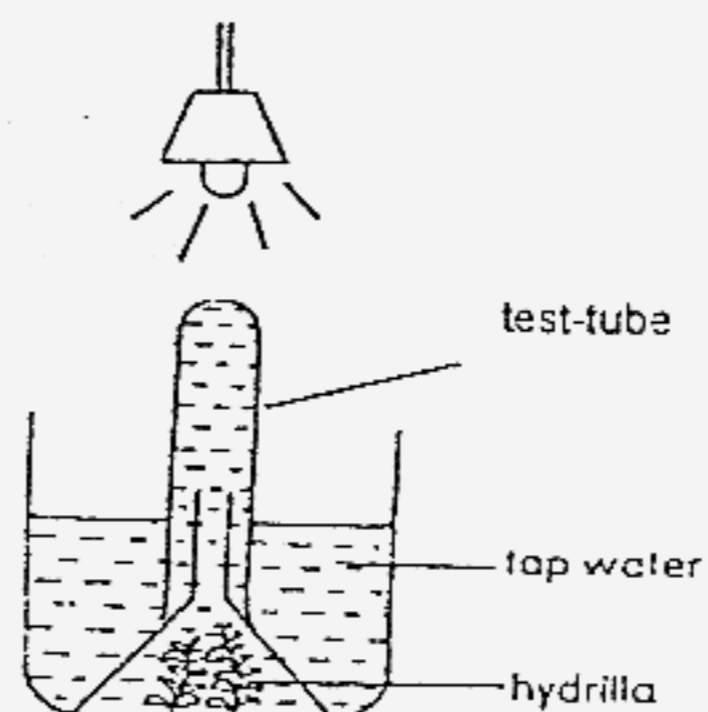
37 Some descriptions that show the interaction among the organisms in a community are listed below.

- A is a herbivore
- B is a food producer
- C feeds on A
- D is a carnivore

(a) Based on the descriptions, draw a food chain in the box. [1]

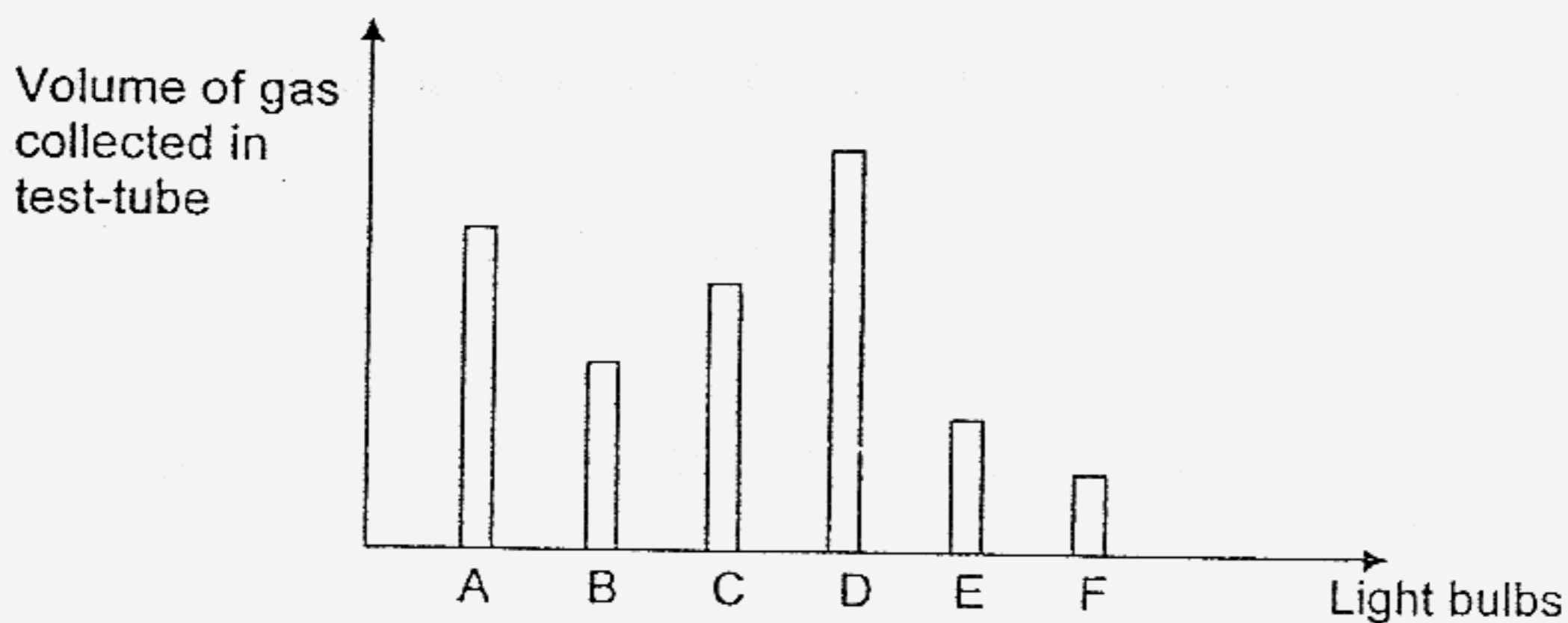
(b) How does Organism D depend on Organism B? [1]

38. Brenda set up an experiment as shown below. The experiment was carried out using bulbs of different voltage A, B, C, D, E and F, one at a time.



She then measured the amount of gas collected in the test-tube after a fixed amount of time.

The result of Brenda's experiment is shown in the graph below.



- (a) What is the aim of Brenda's experiment? [1]

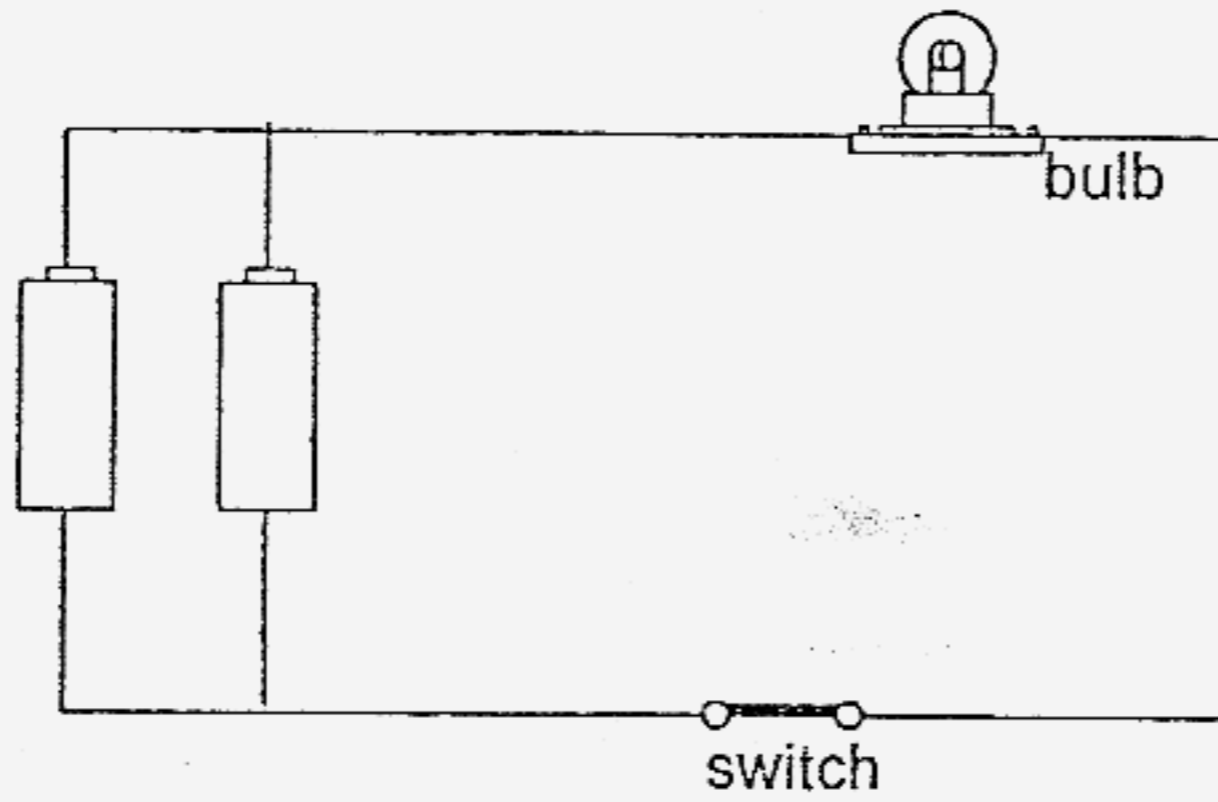
- (b) What is the gas collected in the test-tube? [1]

- (c) State two variables which must be kept constant in the experiment. [1]

(i) _____

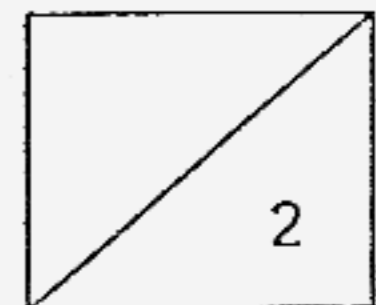
(ii) _____

39. Study the set-up below. The bulb gives off orange light.

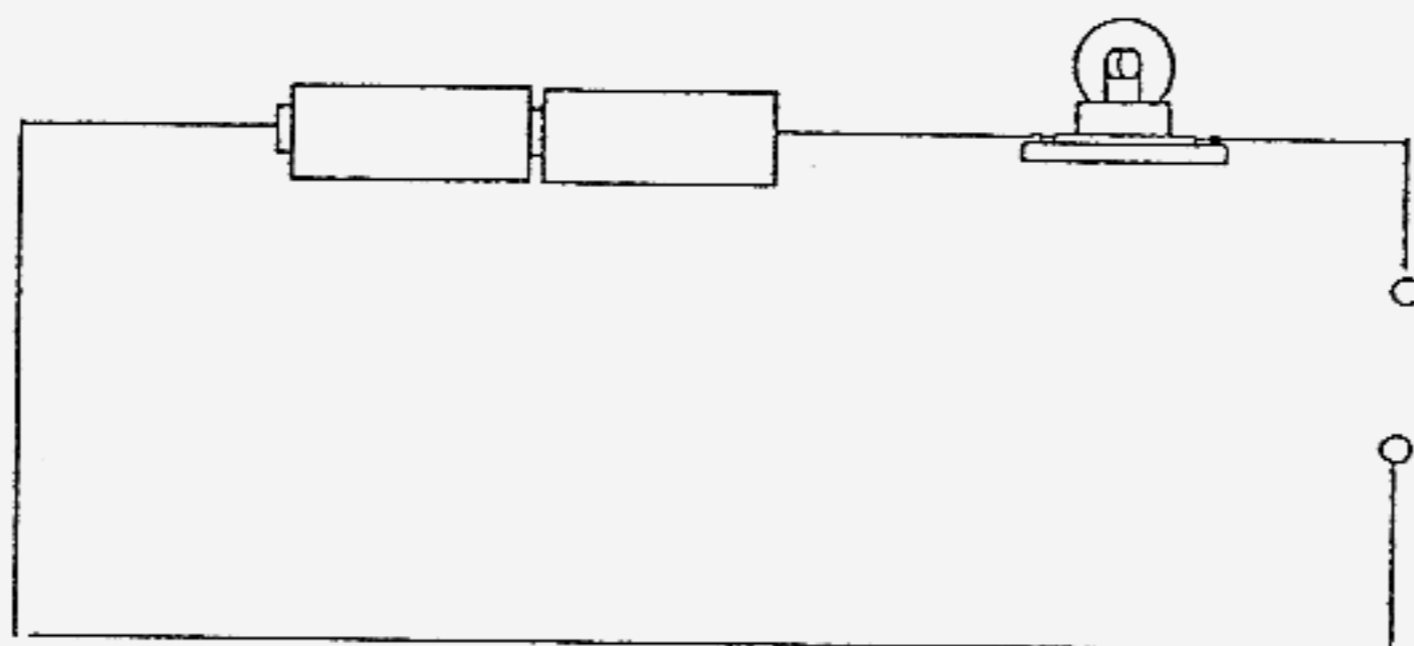


(a) Will the bulb still light up if one battery is removed? Why? [1]

(b) How can you make the bulb in the circuit brighter without adding more batteries? [1]



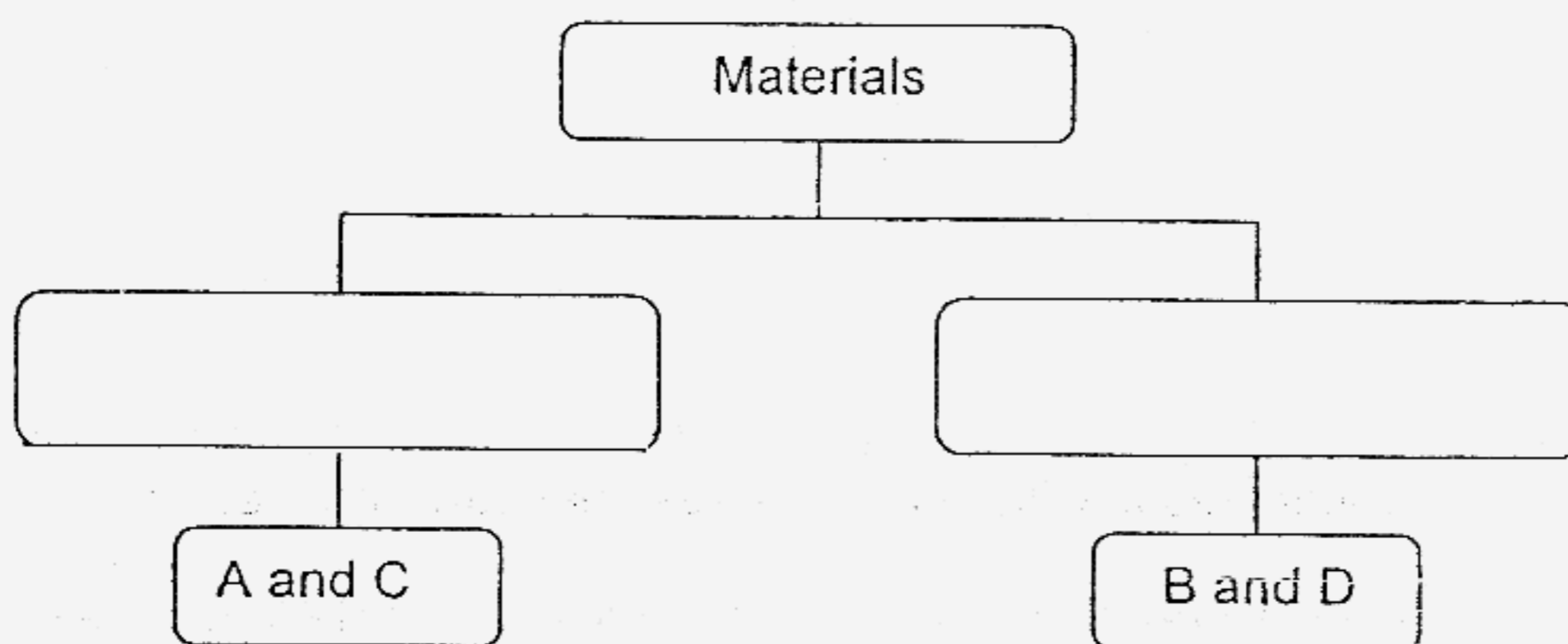
40. Yong Hwee made the circuit tester shown below to test if some materials A, B, C and D are conductors of electricity.



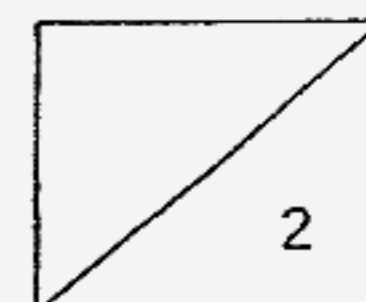
He used the materials, one at a time, to close the circuit and recorded the results in the table below.

Materials	Did the bulb light up?
A	Yes
B	No
C	Yes
D	No

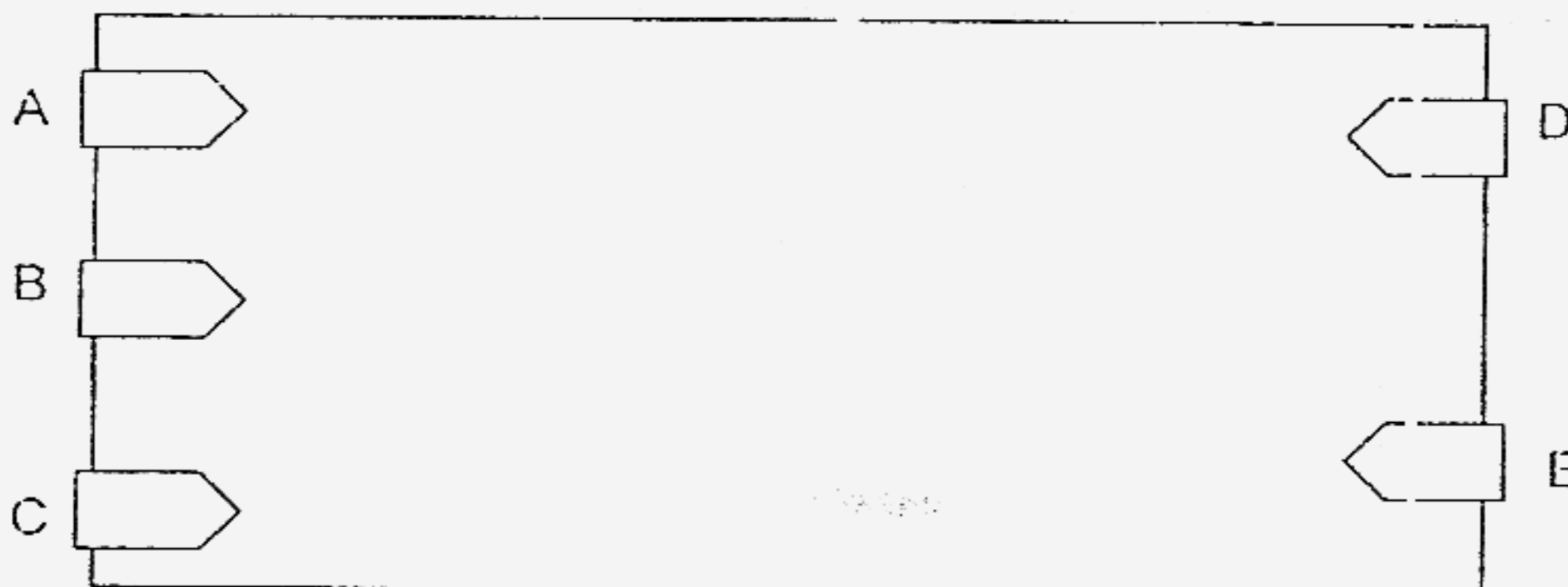
- (a) Complete the classification chart below using the information given in the above table. Write a suitable sub-heading in the boxes provided. [1]



- (b) Yong Hwee then used Object P to close the circuit. He observed that the bulb lit up very dimly. What could Object P be? [1]



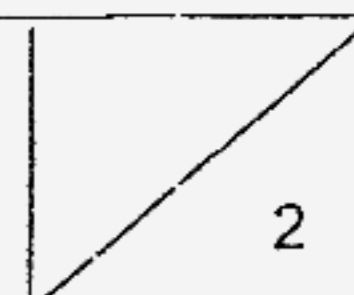
41. Khalid designed a circuit card using some wires and paper clips A, B, C, D and E as shown below.



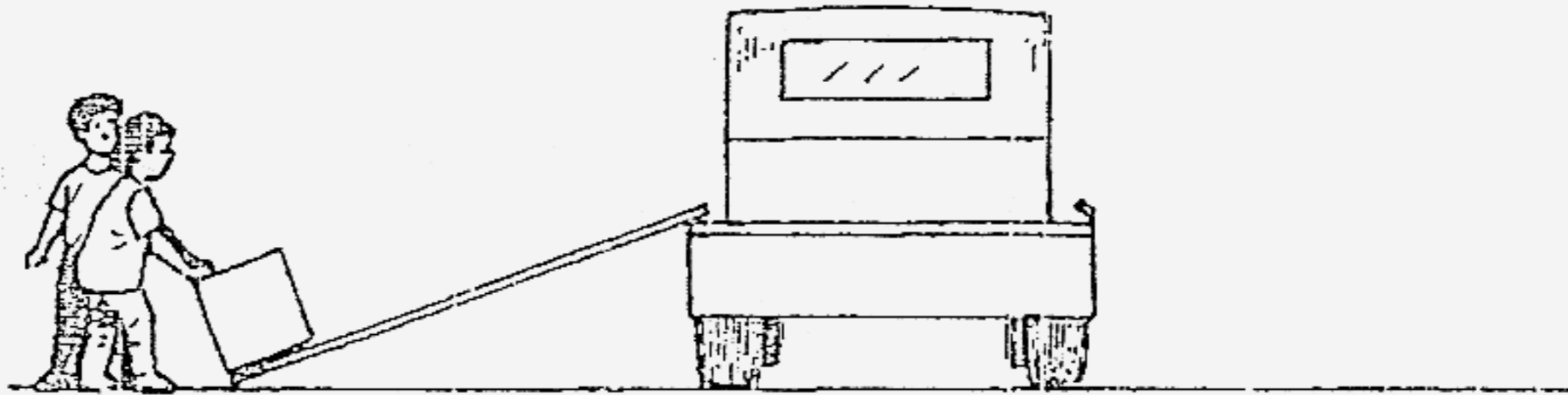
The following results are obtained when a circuit tester is used on the card.

Clips tested	Does the bulb light up?
A and B	Yes
B and C	No
C and A	No
A and D	Yes
B and D	Yes
C and D	No
A and E	Yes
B and E	Yes
C and E	No
D and E	Yes

- (a) Draw only 3 wires on the circuit card above to show how they are connected in order to get the results shown above. [1]
- (b) Khalid's teacher told him that it is not advisable to use insulated paper clips for this experiment. Why is it so? [1]

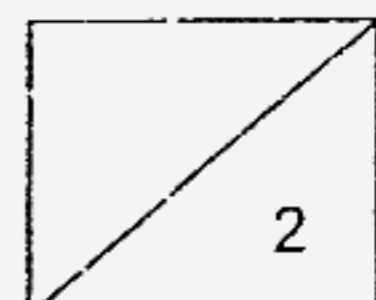


42. Two workers decided to load a crate weighing 70 kg onto a lorry using a ramp.

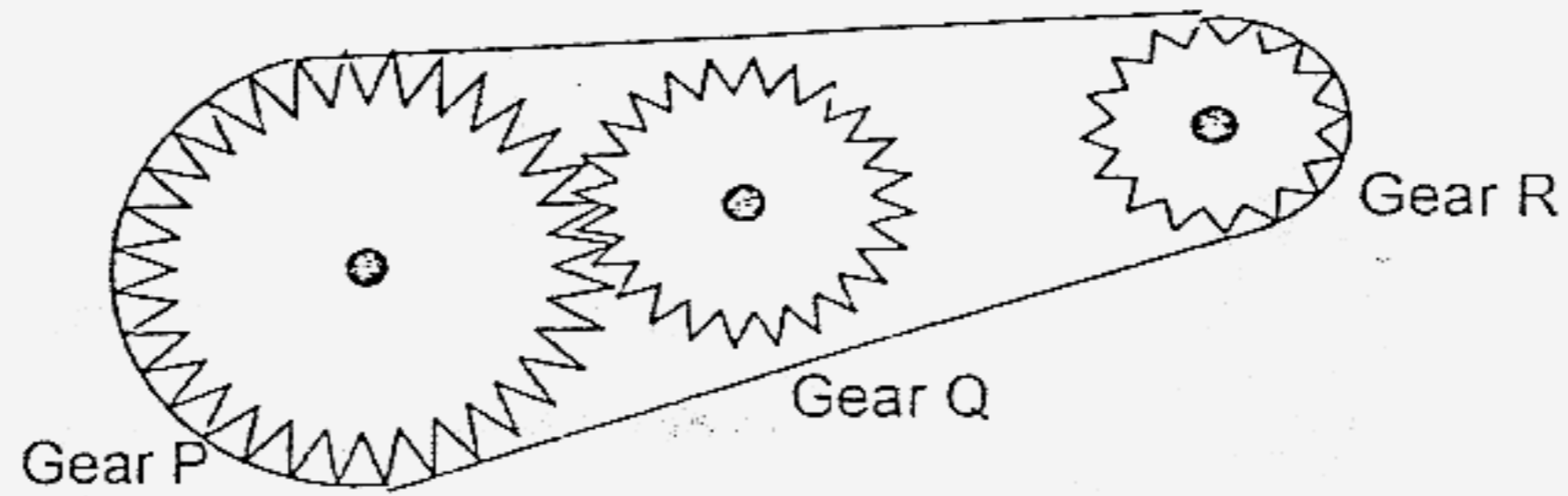


- (a) What type of simple machine is the ramp? [1]

- (b) How does the simple machine help the workers to do work easily? [1]



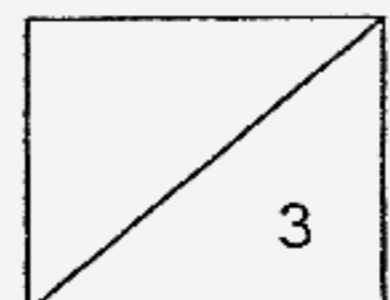
43. The diagram below shows 3 gears P, Q and R.



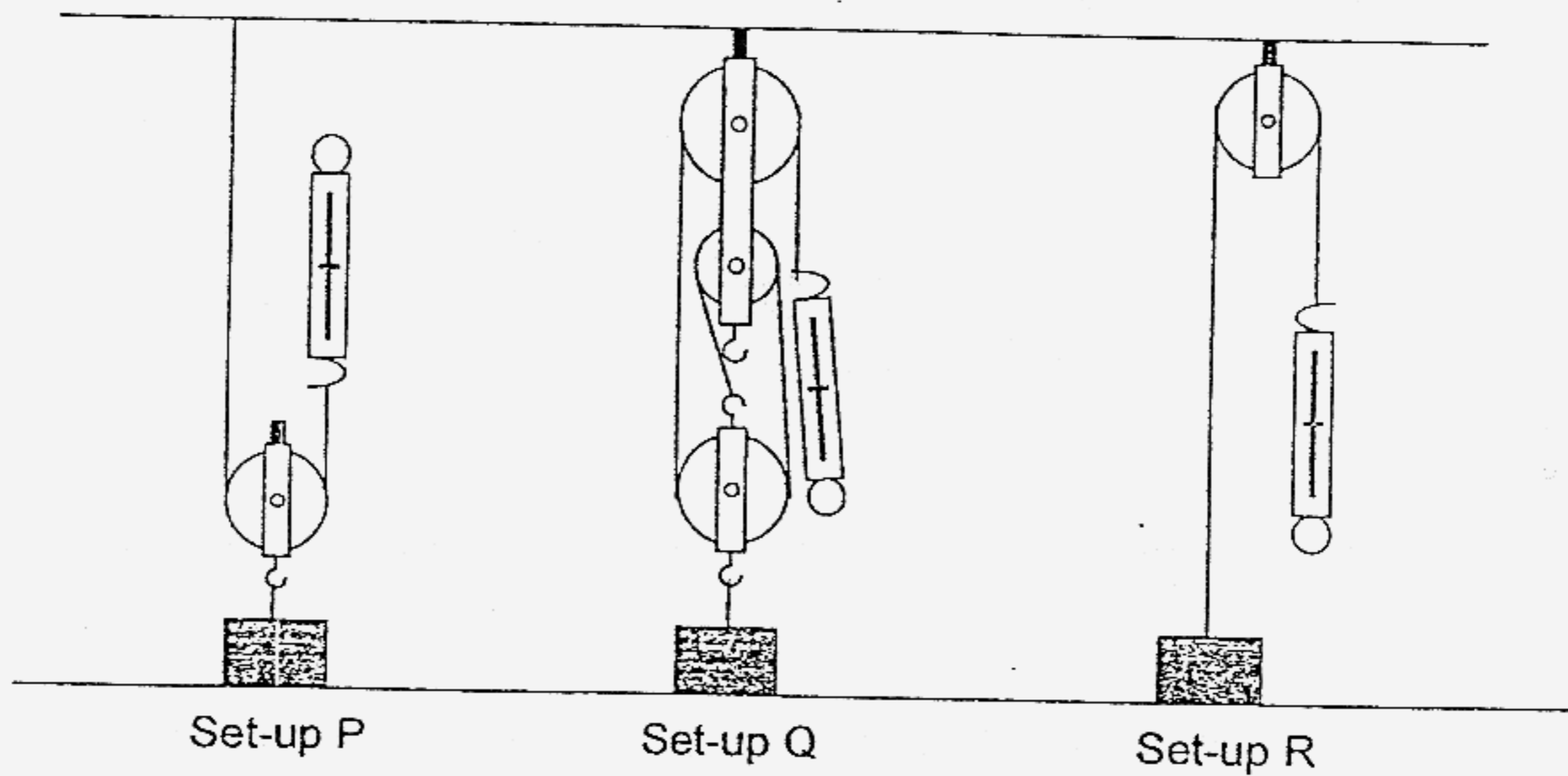
(a) If Gear P turns in the clockwise direction, in which direction will Gears Q and R turn? [1]

(b) How many turns will Gear P make if Gear Q makes 6 turns? [1]

(c) State one reason why the use of gears is necessary in a manual egg-beater. [1]

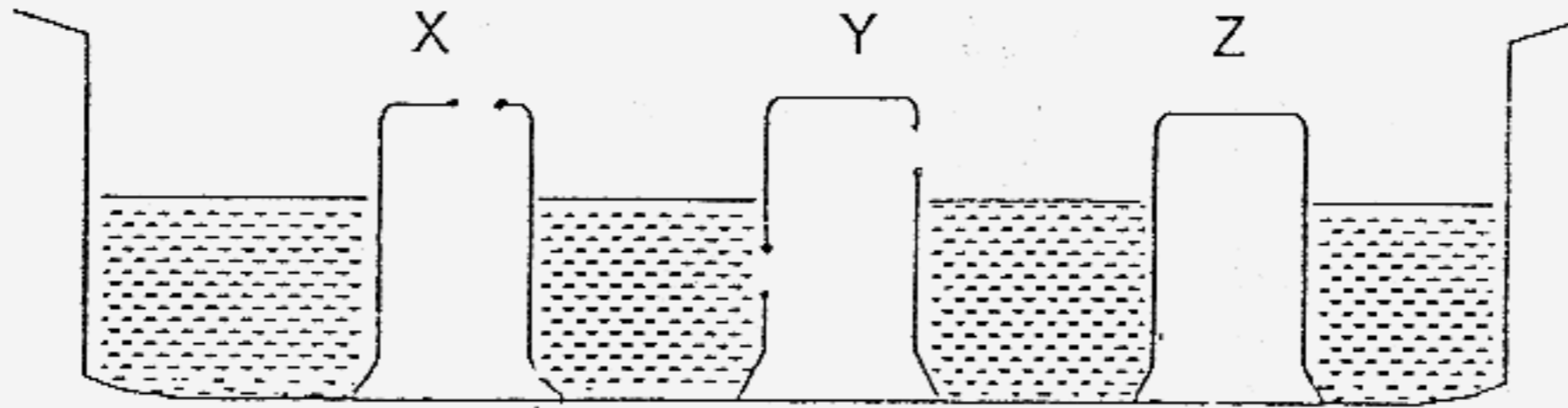


44. The diagrams below show 3 different ways a fixed load can be lifted.

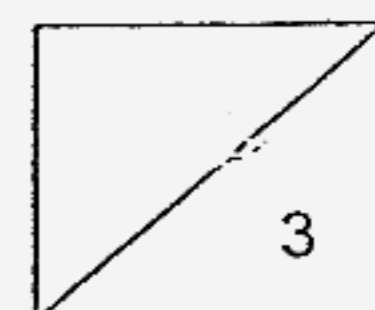


- (a) Which of the above set-ups allow a smaller effort to overcome a heavier load? [1]
- _____
- (b) State a similarity in the relationship between the load and the effort in Set-up Q and Set-up R. (1)
- _____
- (c) In lifting the load, what disadvantage does Set-up Q have when compared to Set-up R? [1]
- _____

45. Three plastic containers are inverted into a basin of water. Container X has one hole on top and Container Y has two holes at the side. Container Z has no holes on it.



- (a) Draw the water levels in Containers X, Y and Z in the diagram above. [1]
- (b) Explain why there is a difference in the water levels in the 3 containers. [2]

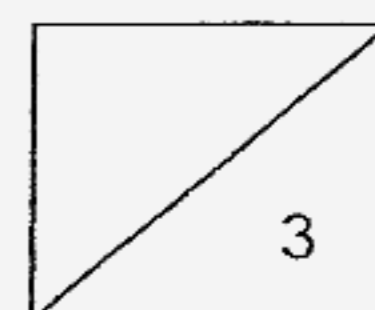


46. Lily's teacher told her to set up an experiment to show that air expands when heated. She was given the following materials but need not use all.

a conical flask	a balloon	a beaker of red water
a basin of hot water	a lump of plasticine	

Describe how Lily should conduct her experiment and how she arrived at the conclusion . [3]

Number the steps to be carried out in the space provided below:



Ai Tong Primary School

SECTION A : (60 MARKS)

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

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

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

SECTION B (40 MARKS)

Qn No.	Answers
31a	Planet R. It is the furthest away from the sun and got the least sunlight.
31b	Planet P.

32a	A : One cell b : Many cells
32b	Bacteria
32c	Budding

33a	Cell C can trap sunlight and make food but Cell B cannot.
33b	The other two types of cells have cell walls but Cell A does not have a cell wall.

34a	The plant part is an underground stem	(✓)
34b	The plant part has undergone fertilization.	(x)
34c	The plant part is developed from a flower.	(x)
34d	A new plant can grow from each bud if the conditions are favorable.	(✓)

35a	Animal C
35b	Animal A
35c (i)	They both lay eggs.
(ii)	They do not live in water throughout their life cycle.

Qn. No	Answers
36a	Mother's side of the family tree.
36b	Uncles : 2
	Aunts : 2

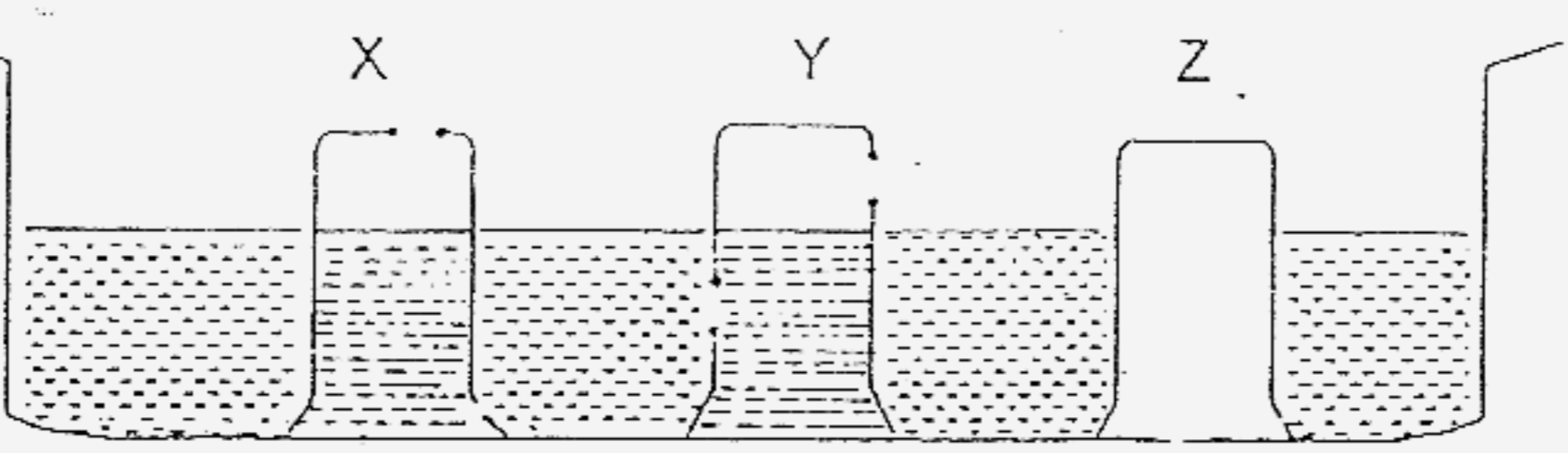
37a	B → A → C → D
37b	The energy from organism B passes through the food chain to organism D.

38a	To find out how bulbs of different voltage affect the rate of photosynthesis.
38b	Oxygen
38b (i)	Number of hydrilla
(ii)	Amount of tap water.

39a	Yes, it will still light up. The batteries are arranged in parallel arrangement and it only uses one battery's energy even if there are two batteries.
39b	Arrange the batteries into series arrangement.

40a	<div style="text-align: center;"> <pre> graph TD Materials[Materials] --> Conductors[Conductors of electricity] Materials --> Insulators[Insulators of electricity] Conductors --> AC[A and C] Insulators --> BD[B and D] </pre> </div>
40b	Another bulbs

41a	
41b	Insulated paper clips do not conduct electricity and Khalid will get a wrong answer for this experiment.

Qn. No	Answers
42a	Inclined plane
42b	The workers use less effort to move the load as the effort travels a greater distance than the load.
43a	Gear Q will turn in an anti-clockwise direction while Gear R will turn in a clockwise direction.
43b	$4\frac{1}{2}$ turns
43c	It makes work done faster.
44a	Set-up P and Set-up Q
44b	The effort moves in the opposite direction as the load.
44c	The effort in Set-up Q has to move over a longer distance than the load but the effort in Set-up R moves the same distance as the load.
45a	
45b	In X and Y, air escapes through the holes. Water goes in to take up the space in the containers. In Z the air cannot escape and only a bit of water goes into the container as the air is compressed.
46	First attach the balloon to the conical flask. Next, put the lump of plasticine around the balloon and the flask. Then, put the conical flask into a basin of hot water. Finally, observe if the balloon is inflated. Air expands.