



RED SWASTIKA SCHOOL

# RED SWASTIKA SCHOOL

## 2009 SEMESTRAL ASSESSMENT 2

### SCIENCE

Name : \_\_\_\_\_ (      )

Class : Primary 4/ \_\_\_\_\_

Date : 29 October 2009

### BOOKLET A

30 Questions

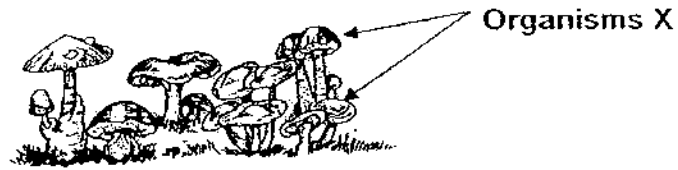
60 Marks

Duration of Paper : 1 hour 30 minutes

Note:

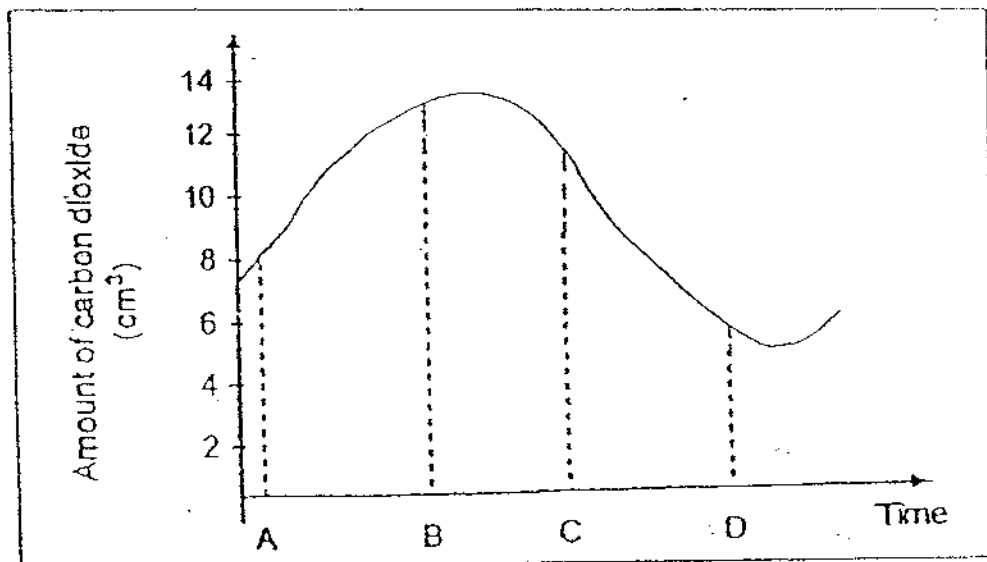
1. Do not open this Booklet until you are told to do so.
2. Questions 1 - 30 are to be done on the OAS provided.
3. Read carefully the instructions given at the beginning of each part of the Booklet.
4. Do not waste time. If a question is difficult for you, go on to the next one.
5. Check your answers thoroughly and make sure you attempt every question.

1. Look at the picture below.



Which one of the following reasons explains why organisms X are classified as fungi but not as plants?

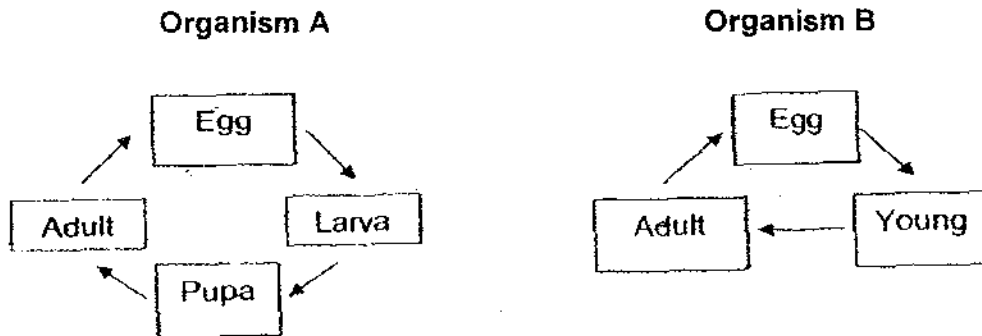
- (1) They reproduce by spores.
  - (2) They usually live on other organisms.
  - (3) They do not have chlorophyll to make their own food.
  - (4) They cannot move freely from one place to another by itself.
2. The graph below shows the amount of carbon dioxide in the air around a garden. A, B, C and D represent the time over a period of 24 hours.



Which of the following shows the correct time for A, B, C and D?

	A	B	C	D
(1)	6 a.m.	1 p.m.	6 p.m.	1 a.m.
(2)	6 p.m.	1 a.m.	6 a.m.	1 p.m.
(3)	12 noon	7 p.m.	12 midnight	7 a.m.
(4)	12 midnight	7 a.m.	12 noon	7 p.m.

3. Study the life cycles of organisms A and B carefully.



Which of the following pairs of animals have their life cycles shown above?

	A	B
(1)	fruitfly	platypus
(2)	dragonfly	cockroach
(3)	guppy	grasshopper
(4)	grasshopper	cow

4. Yi En was observing two organisms, A and B. She used a table as shown below to record her observations. She placed a tick (✓) in the box when she made a particular observation.

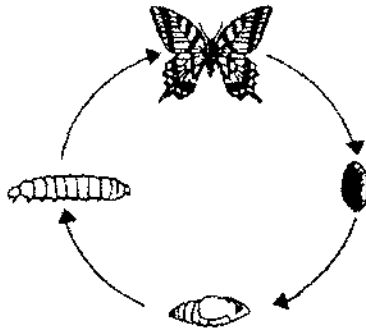
Observations made	Organism A	Organism B
Presence of fruits		✓
Presence of green leaves	✓	✓
Presence of a stem		✓

Which of the following correctly identify the organisms?

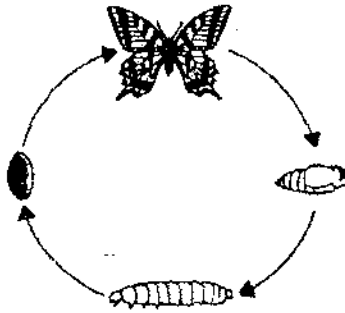
	Organism A	Organism B
(1)	tomato plant	fern
(2)	mushroom	tomato plant
(3)	fern	tomato plant
(4)	tomato plant	mushroom

5. Which one of the following shows the life cycle of a butterfly?

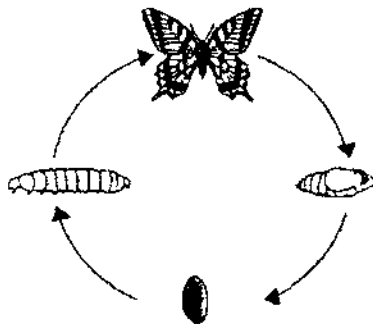
(1)



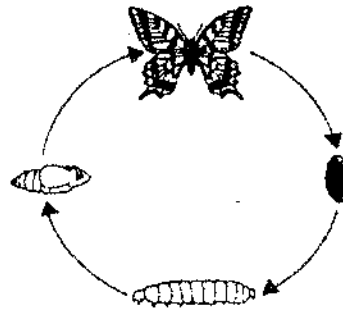
(2)



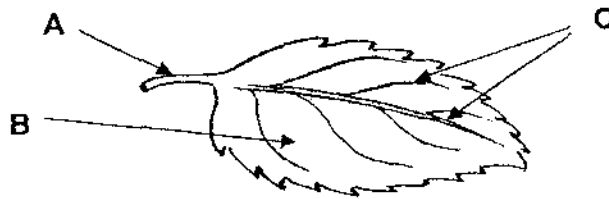
(3)



(4)



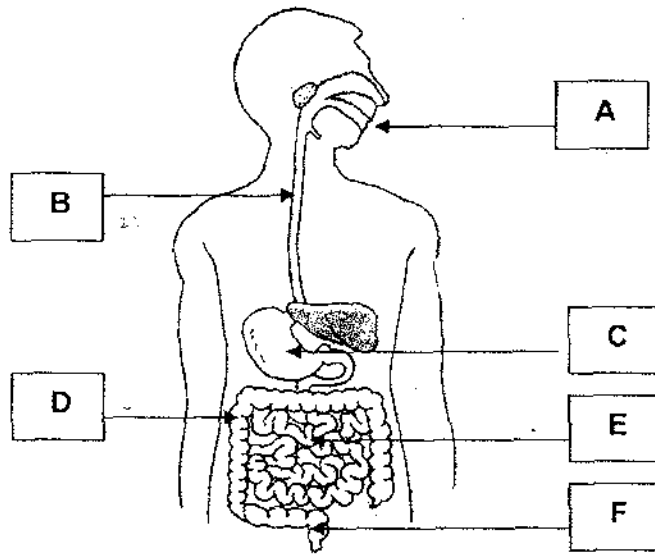
6. Look at the picture of the leaf below.



Which one of the following sets correctly identifies parts A,B and C?

	A	B	C
(1)	leaf stalk	veins	leaf blade
(2)	veins	leaf blade	leaf stalk
(3)	leaf stalk	leaf blade	veins
(4)	veins	leaf stalk	leaf blade

7. Study the diagram below.



Which of the following correctly shows the path food takes in the digestive system?

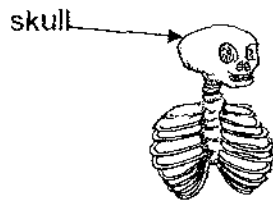
- (1) A → B → C → D → E → F
- (2) A → C → B → D → F → E
- (3) A → B → C → E → D → F
- (4) A → C → B → F → E → D

8. Which of the following systems is/are involved when blood is transported around the body?

- A: Circulatory system
- B: Muscular system
- C: Respiratory system
- D: Skeletal system

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

9. The diagram shows a part of the skeletal system.



Which part of the body does the skull protect?

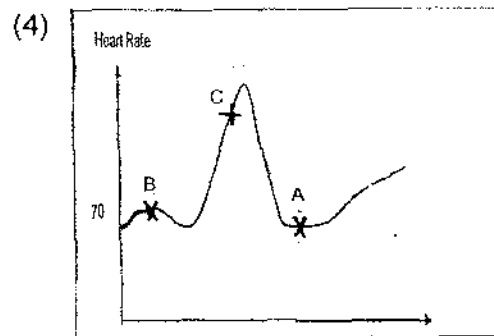
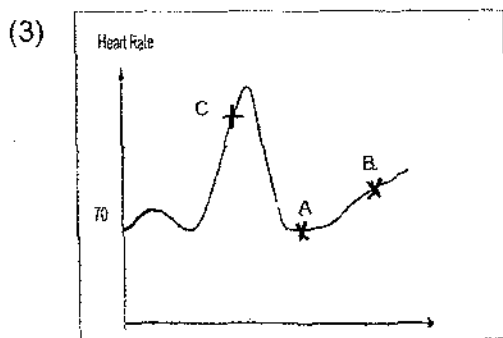
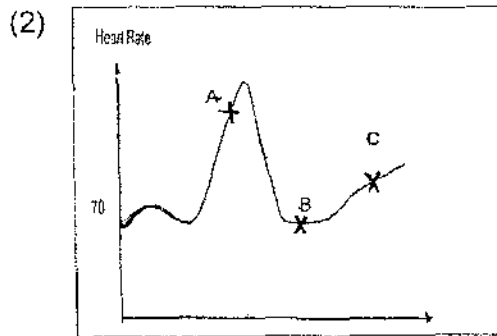
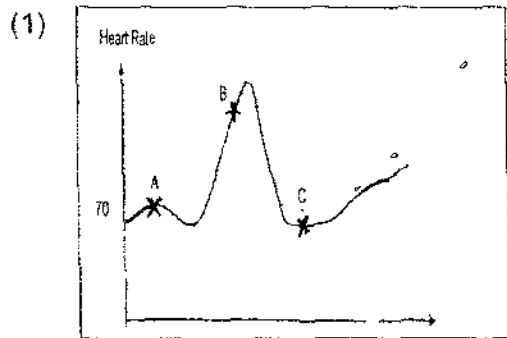
- (1) brain
  - (2) lungs
  - (3) heart
  - (4) stomach
10. Lynn did the following activities one after another.

A: Jog around the park for 10 minutes.

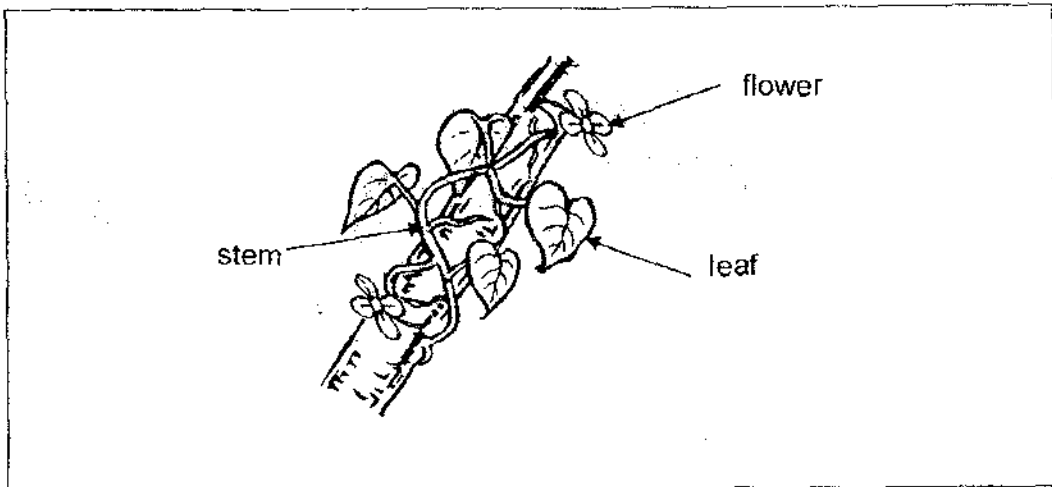
B: Walk slowly for 10 minutes.

C: Climb up the stairs for 10 minutes.

Which one of the following graphs correctly shows Lynn's heart rate when she was doing the three activities?



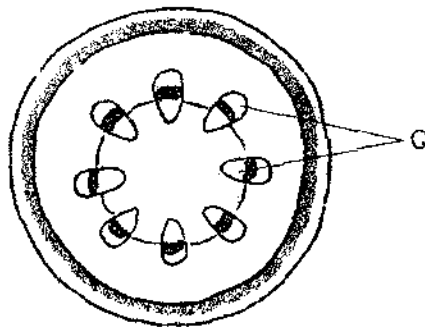
11. Study the plant shown below.



Which part of the plant helps to support itself upright?

- (1) leaf blade
- (2) leaf stalk
- (3) flower
- (4) stem

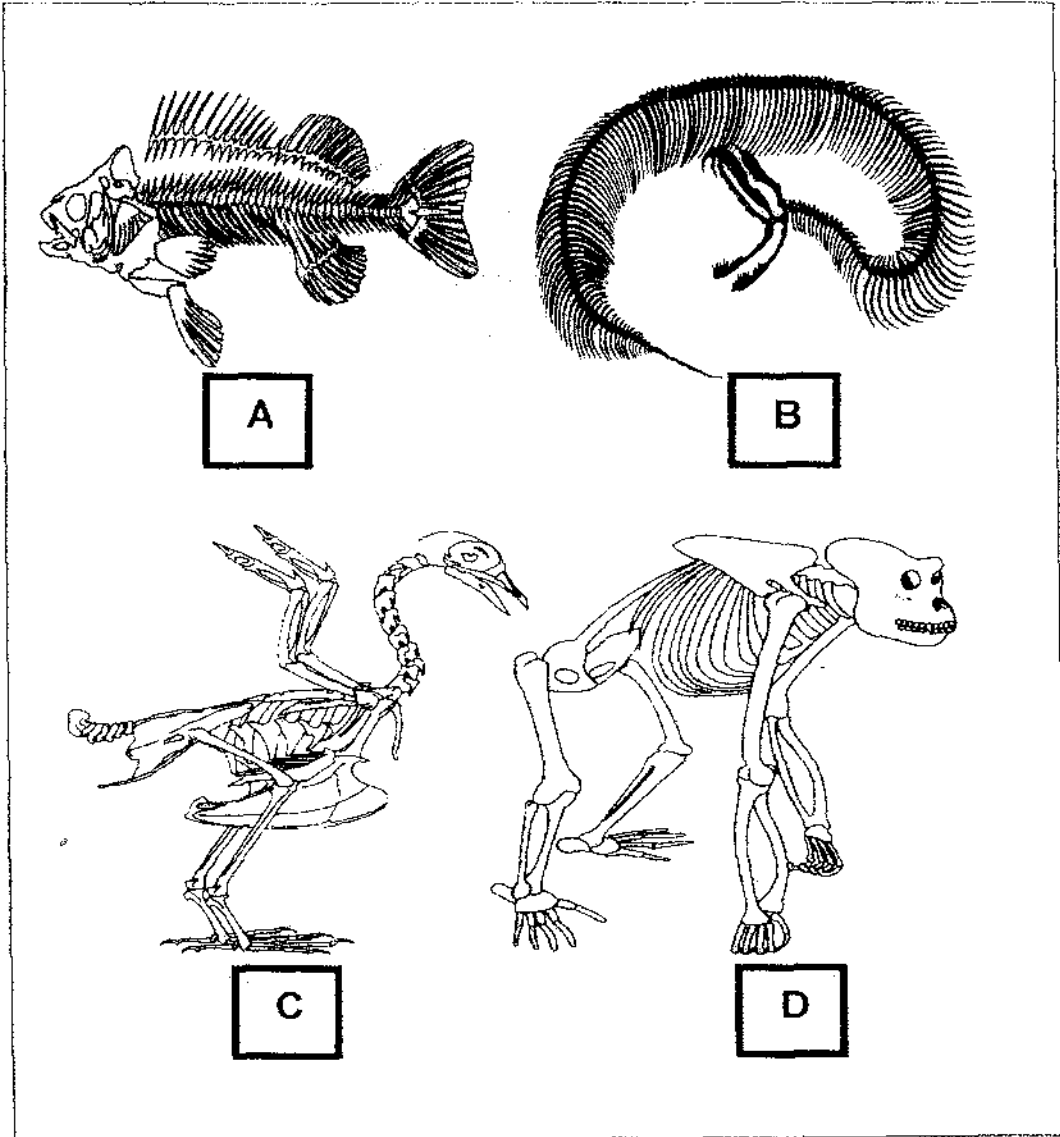
12. The diagram below shows a cross-section of the stem of a plant.



Which one of the following does part Q represent?

- (1) veins
- (2) roots
- (3) underground stem
- (4) transporting tubes

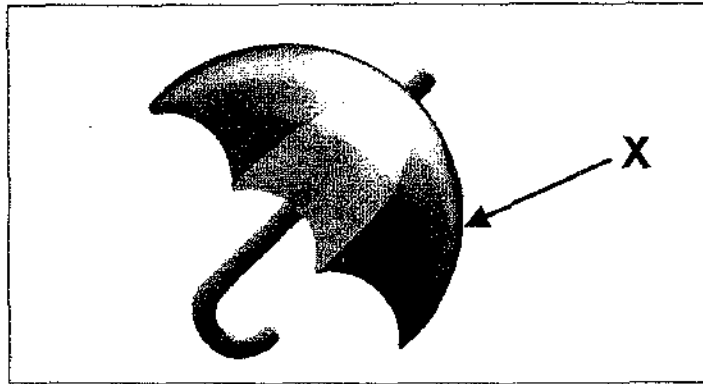
13. Observe the four skeletons shown in the diagram.



Which of the following correctly shows how these animals move?

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
(1)	Slither	Walk	Fly	Swim
(2)	Slither	Walk	Swim	Fly
(3)	Swim	Slither	Fly	Walk
(4)	Swim	Walk	Slither	Fly

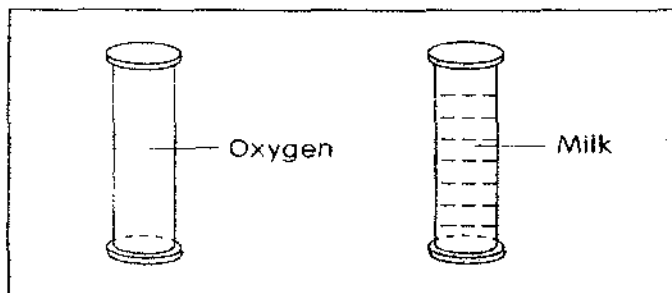
14. The diagram below shows an umbrella with a part marked X.



Based on the information given below, which material will be most suitable for making part X of the umbrella for use on both rainy and sunny days?

	Materials	Waterproof	Transparent	Flexible
(1)	S	Yes	Yes	No
(2)	T	Yes	No	No
(3)	U	Yes	No	Yes
(4)	V	No	No	Yes

15. Xiaoli looks at the two containers as shown below. One of them is filled with oxygen and the other is filled with milk. The volume of each container is  $200 \text{ cm}^3$ .

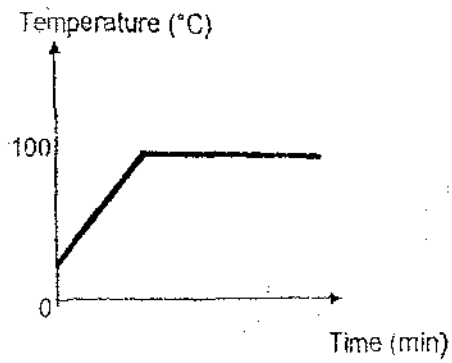


Based on Xiaoli's observation, which one of the following statements is false?

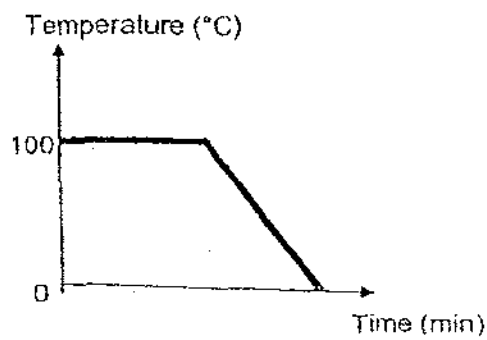
- (1) Oxygen and milk take up space.
- (2) Oxygen and milk do not have weight.
- (3) Oxygen and milk take up the shape of the respective containers.
- (4) The oxygen and milk have a volume of  $200 \text{ cm}^3$  each.

16. Tom heated a beaker of ice cubes until it changed its state from the solid to the gaseous state.  
Which one of the following graphs correctly shows the changes in temperature during the change of state of the ice cubes?

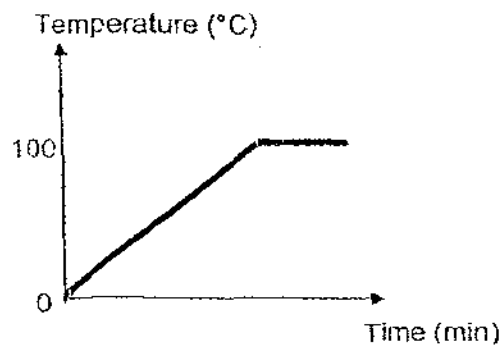
(1)



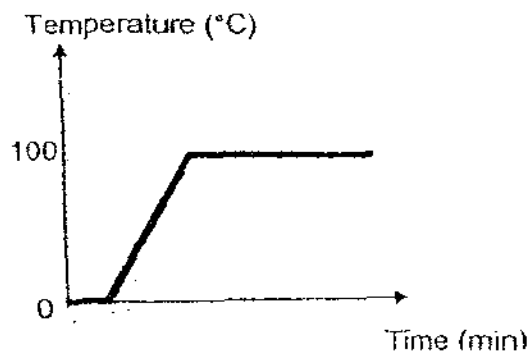
(2)



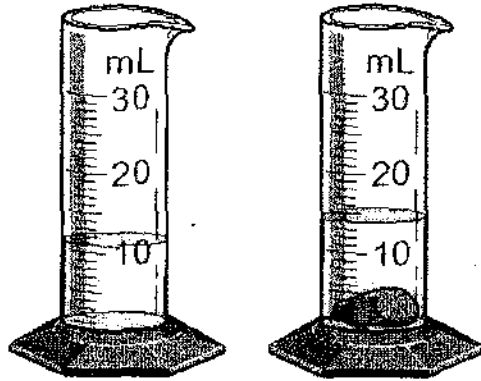
(3)



(4)



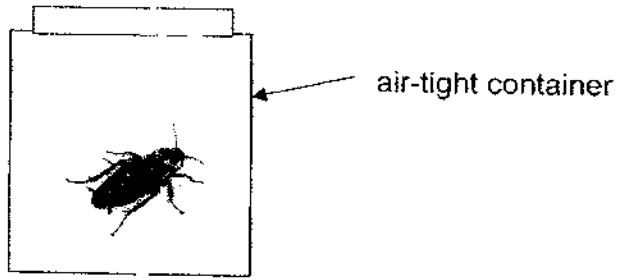
17. Ali carried out an experiment. He used a measuring cylinder to measure 11 ml of water. Then, a stone was added into the measuring cylinder. The new volume read 14 ml.



What is the volume of the stone?

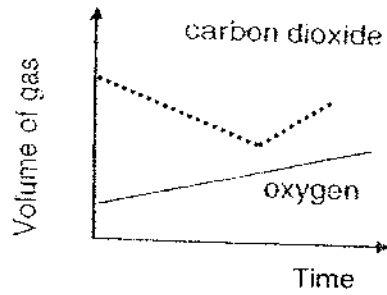
- (1) 10 ml  
(2) 13 ml  
(3) 3 ml  
(4) 23 ml
18. The Sun is important to us because it provides \_\_\_\_\_.
- A: animals with oxygen  
B: light for plants to make food  
C: living things with oxygen  
D: living things with heat and light
- (1) A and B  
(2) B and D  
(3) A and C  
(4) C and D

19. A cockroach was placed in an air-tight container for a short period of time as shown below.

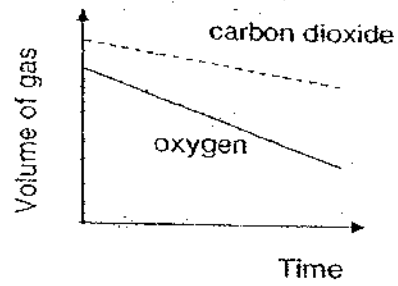


Which of the following correctly shows the change in the volume of carbon dioxide and oxygen in the container?

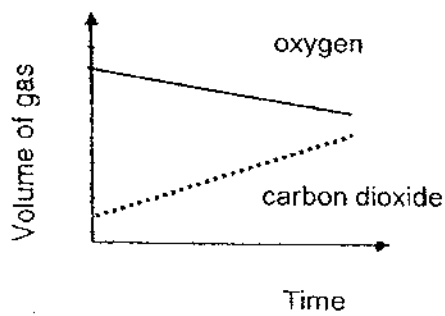
(1)



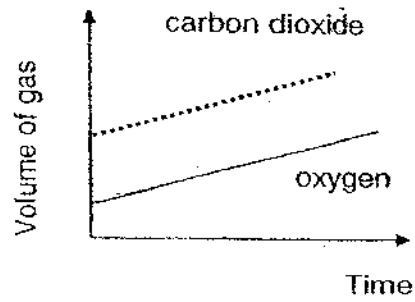
(2)



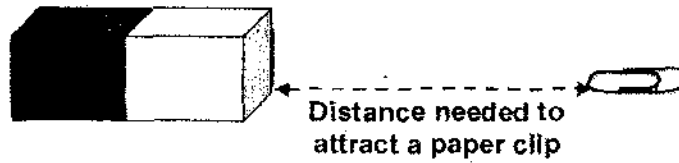
(3)



(4)



20. Gabriel carried out an experiment with three bar magnets, A, B and C to test the strength of each magnet. He measured the distance needed for each magnet to attract a paper clip. The data was recorded in the table below.



Magnet	Distance needed to attract a paper clip (cm)
A	10
B	8
C	5

From the above results, what was the best conclusion that Gabriel could make?

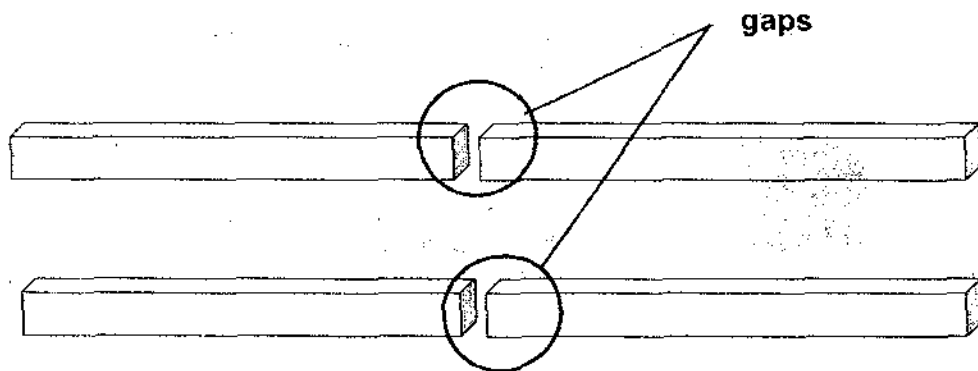
- (1) Magnet C is the strongest.
  - (2) Magnet A is the weakest.
  - (3) Magnet B is stronger than Magnet A.
  - (4) Magnet C is weaker than Magnet B.
21. Mrs Tan wants to buy a rust-proof frying pan which is able to conduct heat quickly. She also wants to buy one which she can hold without burning her hand.



Which materials should parts X and Y of the frying pan be made of?

	X	Y
(1)	steel	plastic
(2)	iron	steel
(3)	ceramic	copper
(4)	copper	iron

22. Joseph works at the Mass Rapid Transit (MRT) station. At the station, he checks the gaps along the train track as shown below.

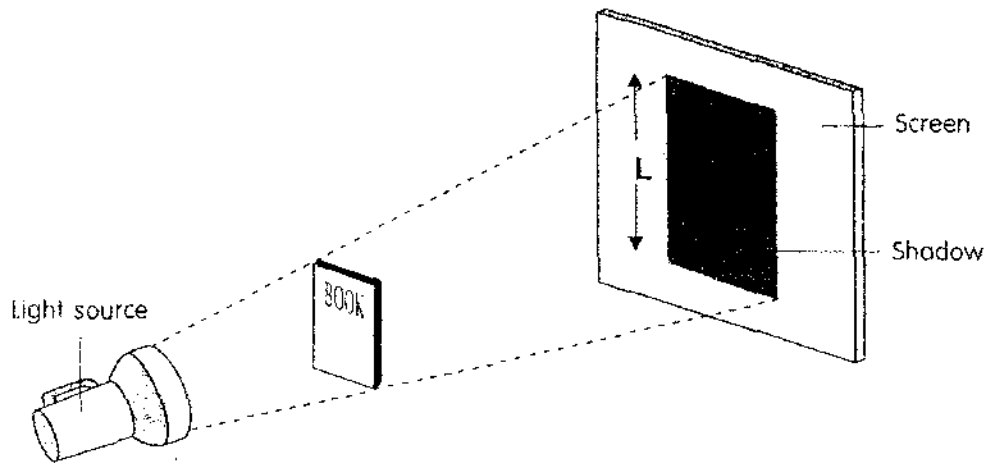


A section of the MRT train track

The gaps on the train track allow \_\_\_\_\_

- (1) smooth travelling by the train
- (2) passengers to step on the track
- (3) the expansion of the track during warm weather
- (4) the contraction of the track during cold weather

23. An electric torch was placed at four different positions, A, B, C and D to form shadows on the screen.



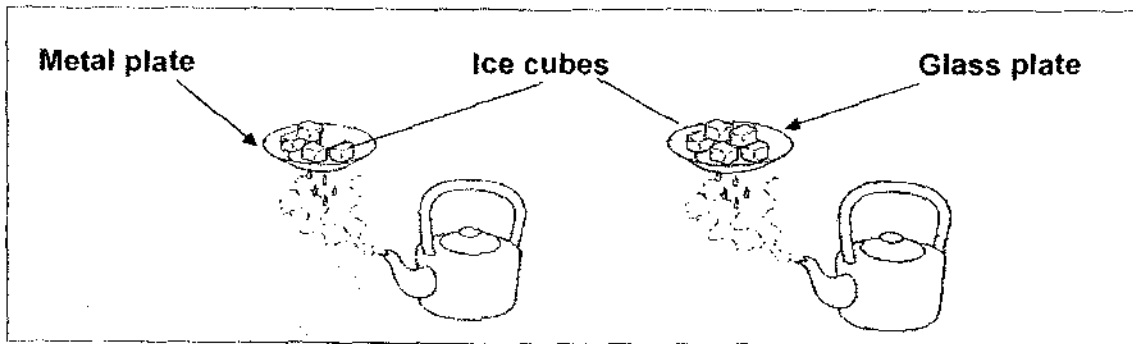
The length of the shadows ( $L$ ) produced when the torch was placed at each position was recorded in a table as shown below.

Position	A	B	C	D
Length of shadow (cm)	5	16	8	14

At which position, A, B, C or D, was the torch placed nearest to the book?

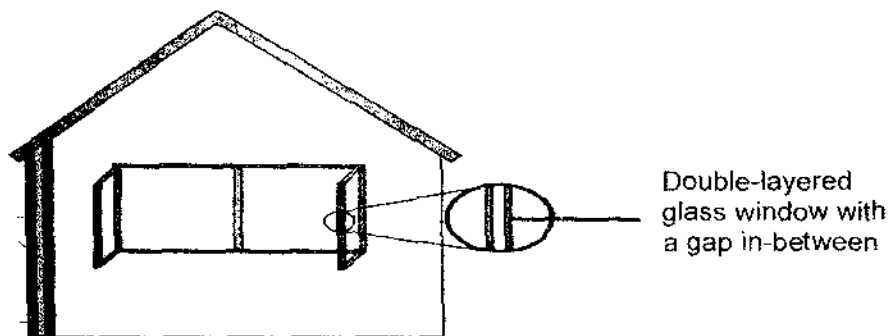
- (1) A
- (2) B
- (3) C
- (4) D

24. Hui Ling would like to test the rate of heat conduction of different materials. She set up the apparatus below with different number of ice cubes and two plates of different materials.



What should she do to ensure a fair test?

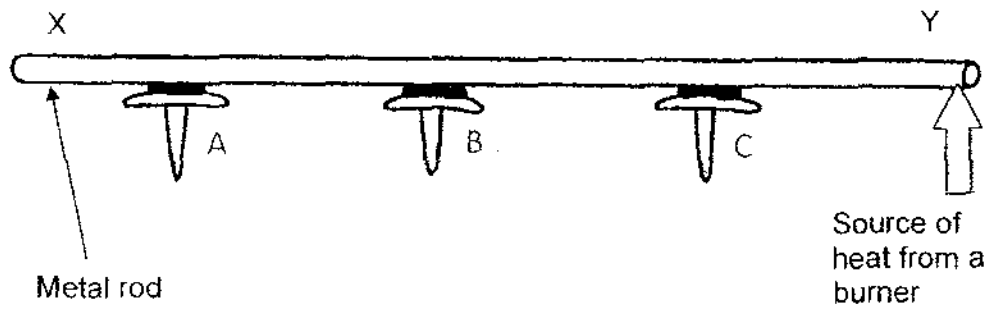
- A: Use the same type of plates.
  - B: Use different types of plates.
  - C: Use different number of ice cubes.
  - D: Use the same number of ice cubes
- (1) A and C only.  
(2) A and D only.  
(3) B and C only.  
(4) B and D only.
25. Some houses in other countries are designed to withstand low temperatures during long winters. One such characteristic is shown below.



How does the double-layered glass window help to conserve heat during winter?

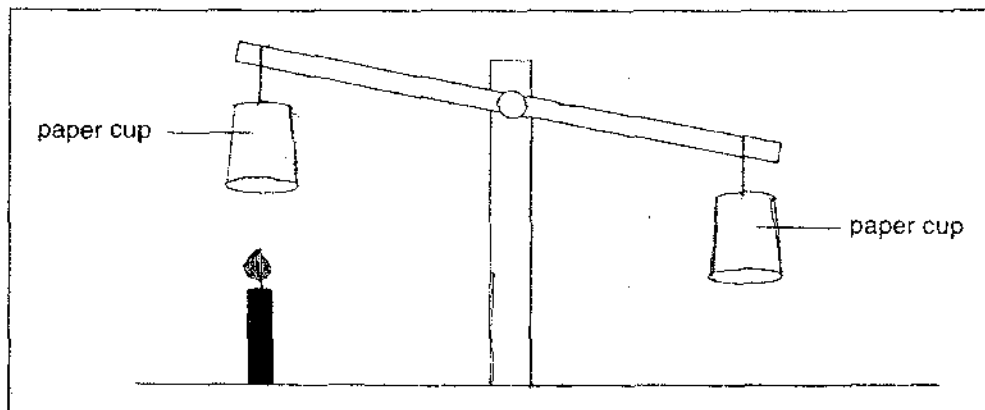
- (1) The two layers of glass make it stronger.
- (2) The air in the gap acts as a poor conductor of heat.
- (3) The gap allows contraction of glass when it is cold.
- (4) The gap allows expansion of glass when it is heated.

26. Look at the diagram below. Nails A, B and C are attached to the metal rod by wax.



Nail A is the last one to fall because \_\_\_\_\_.

- (1) heat travels from X to Y
  - (2) heat travels from Y to X
  - (3) heat is lost from X to Y
  - (4) heat is gained from X to Y
27. May placed two identical inverted paper cups on a balance. Then she placed a lighted candle under one of the cups. After some time, this is what she observed:



This activity shows that heat causes the \_\_\_\_\_.

- (1) air to expand and rise
- (2) air to contract and fall
- (3) paper cup to become lighter
- (4) paper cup to become heavier

28. An object P is brought near a bar magnet and its end marked Z is attracted to the south pole of the magnet as shown below.

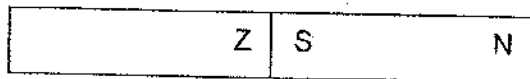
**Before**



Object P

Bar magnet

**After**



Object P

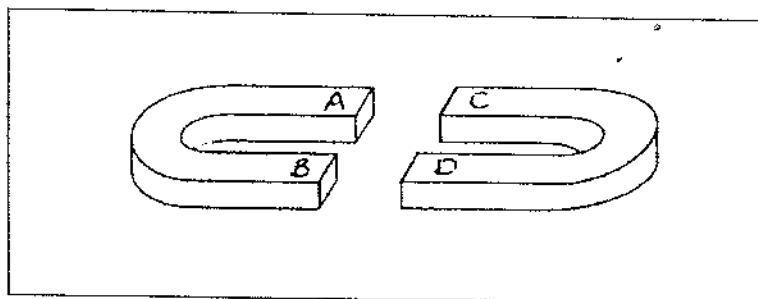
Bar magnet

Based on the information given, object P could be a \_\_\_\_\_.

- A: nickel rod
- B: magnet
- C: copper rod

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

29. The diagram below shows 2 U-shaped magnets. The ends of the two magnets are labelled A, B, C and D.

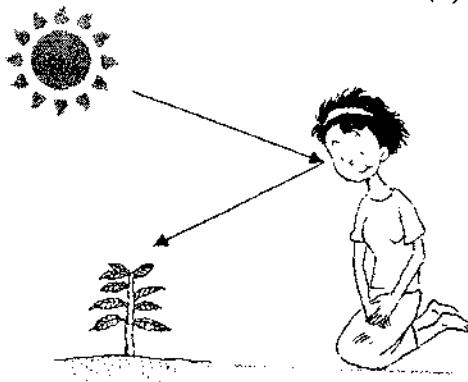


When the 2 magnets were placed together, they attracted each other. Which of the following correctly shows the poles A, B, C and D?

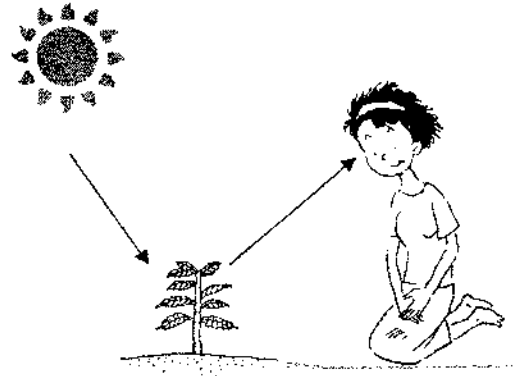
	A	B	C	D
(1)	north	north	south	south
(2)	south	south	north	north
(3)	north	south	south	north
(4)	north	south	north	south

30. Which one of the following diagrams correctly shows how Jane is able to see the plant?

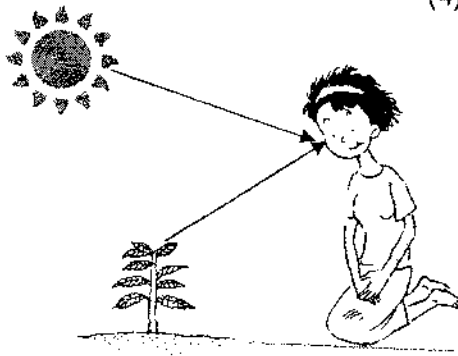
(1)



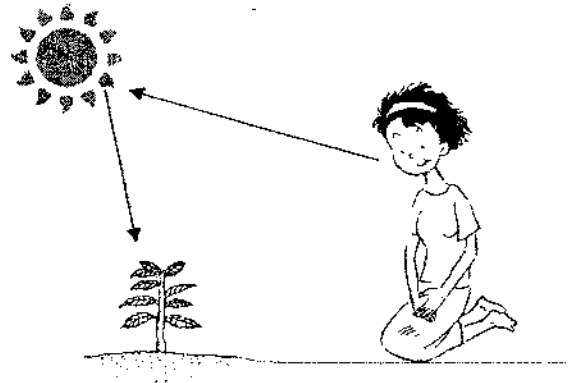
(2)



(3)



(4)



End of Booklet A





RED SWASTIKA SCHOOL

# RED SWASTIKA SCHOOL

## 2009 SEMESTRAL ASSESSMENT 2

### SCIENCE

Name : \_\_\_\_\_ (     )

Class : Primary 4/ \_\_\_\_\_

Date : 29 October 2009

### BOOKLET B

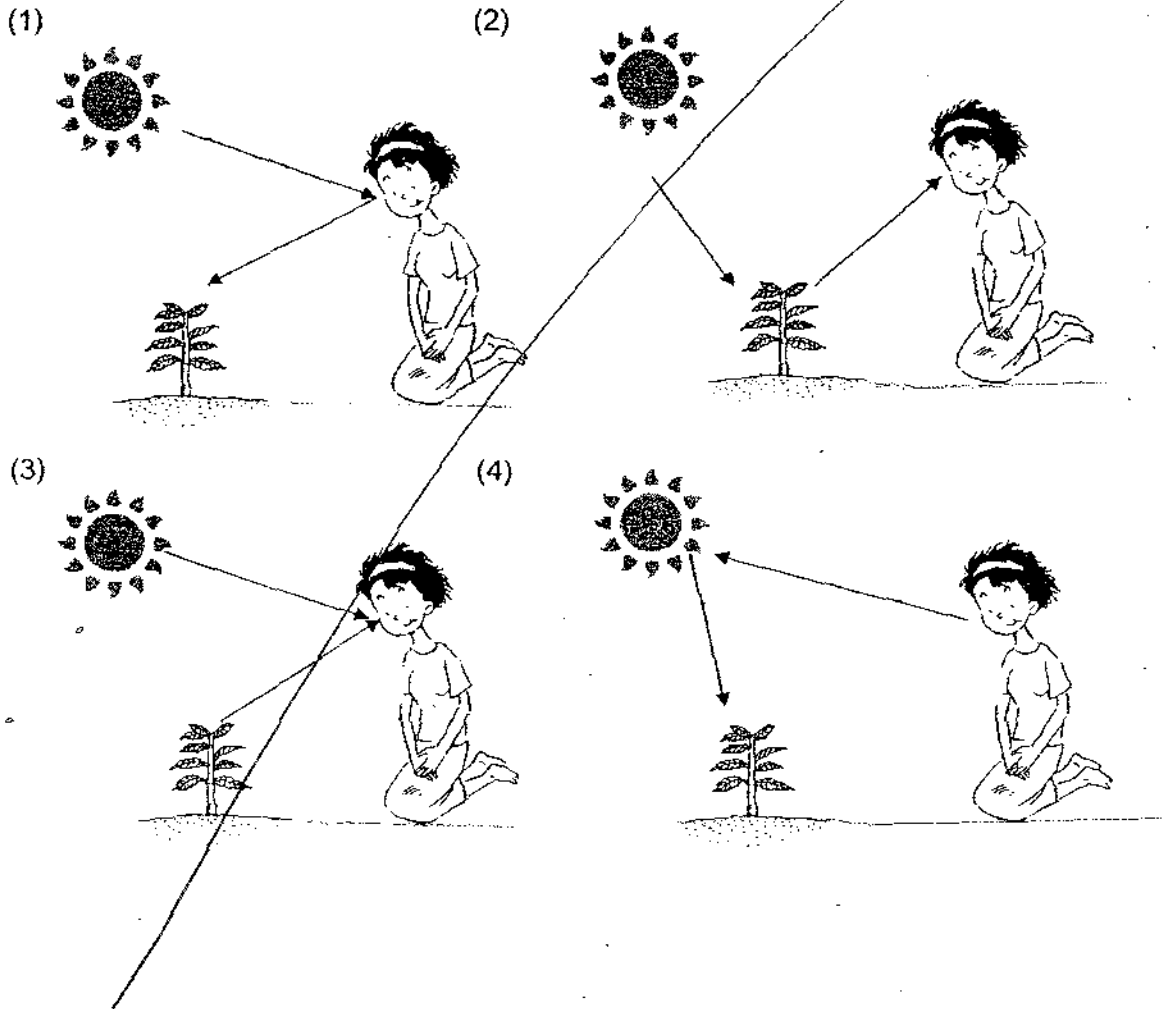
14 Questions  
40 marks

#### MARKS

	OBTAINED	POSSIBLE
BOOKLET A		60
BOOKLET B		40
TOTAL		100

Parent's Signature : \_\_\_\_\_

30. Which one of the following diagrams correctly shows how Jane is able to see the plant?



End of Booklet A

31. Match the following characteristics of living things to the observations listed in the table below by writing W, X, Y and Z into the correct boxes. Use each characteristic once only. (2m)

Characteristics of living things:

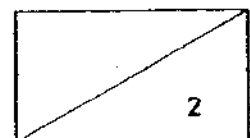
W: They grow.

X: They reproduce.

Y: They respond to changes.

Z: They move by themselves.

	Observations made	Characteristics of living things
a	A bird lays eggs.	
b	A young child who cannot fit into his toddler clothes anymore.	
c	A butterfly flying from one flower to another flower.	
d	A boy blinks his eyes when sand enters them.	

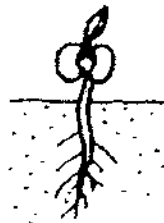


32. Bryan labelled the different stages of growth, A, B, C and D, of a plant as shown below. His teacher told him that the order is incorrect.

Diagram



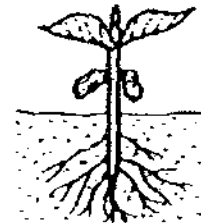
A



B



C



D

- (a) Write down the letters (A, B, C, D) in the correct order. (2 m)

\_\_\_\_\_

- (b) According to the stages labelled in the diagram above, at which stage can the plant reproduce? (1m)

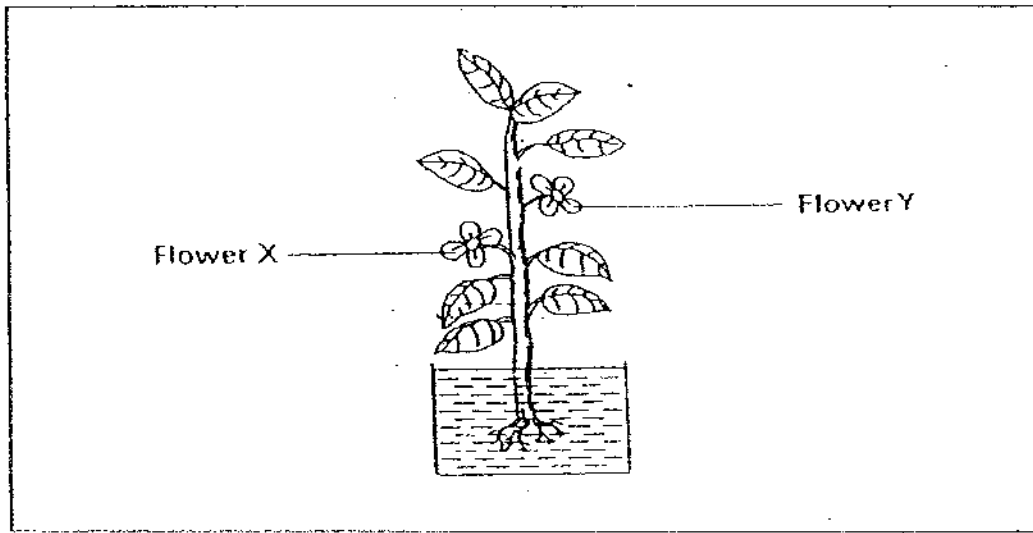
The plant can reproduce at stage \_\_\_\_\_

- (c) State one function of the veins of a leaf. (1m)

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



33. Sharon did an experiment to find out more about plants. She placed a plant into a beaker of red-coloured water for 10 minutes as shown below.



Flowers X and Y were white at the beginning of her experiment. She noticed that the flowers changed colour after 4 hours.

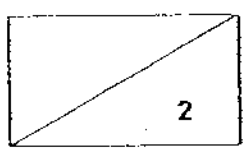
- (a) What would she notice about the colour of the flowers? (1m)

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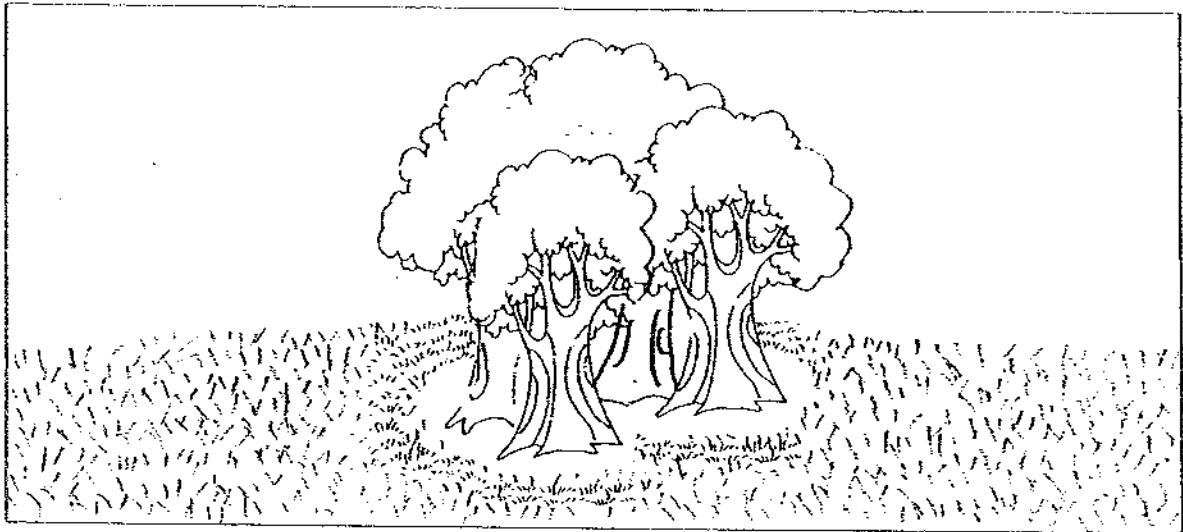
- (b) Explain your answer in (a). (1m)

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34. Carine observed the growth of grass in her garden and found that there was hardly any grass growing under some trees.



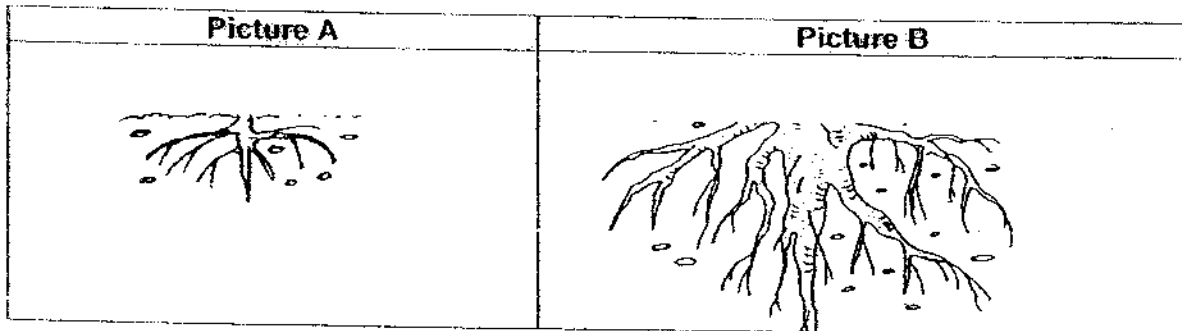
(a) Why do you think there was hardly any grass growing under the trees? (1m)

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(b) The two pictures below show the roots of two trees.  
Which picture most likely shows the roots of the trees in (a)? (1m)



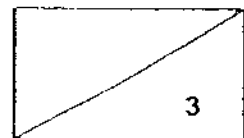
Picture \_

(c) Explain your choice made in (b). (1m)

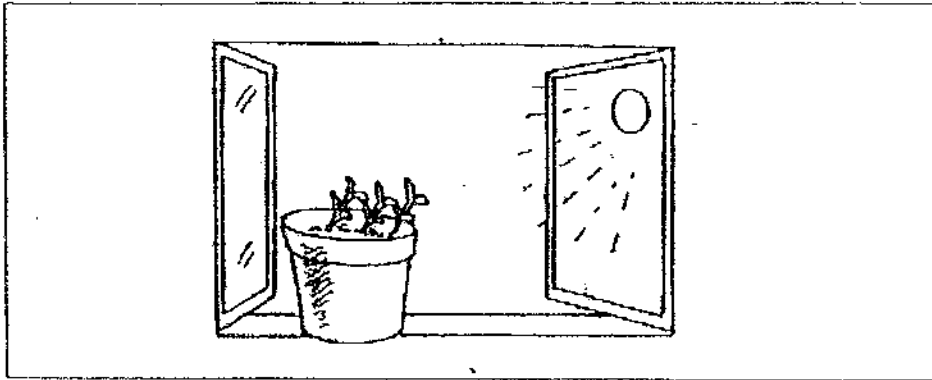
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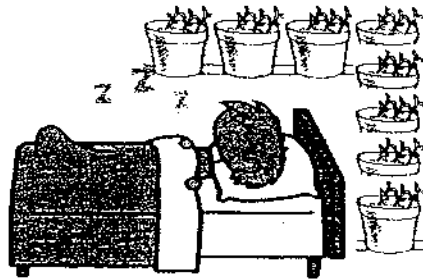
35. Calvin placed a pot of plants on the window ledge as shown below.



There is an exchange of gases taking place around the pot of plants. Name these gases. (1m)

(a) The plants take in \_\_\_\_\_ and give out \_\_\_\_\_ in the presence of light.

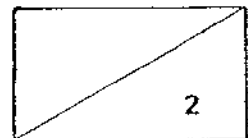
(b) Calvin loves to arrange his potted plants near his bed in his small room.



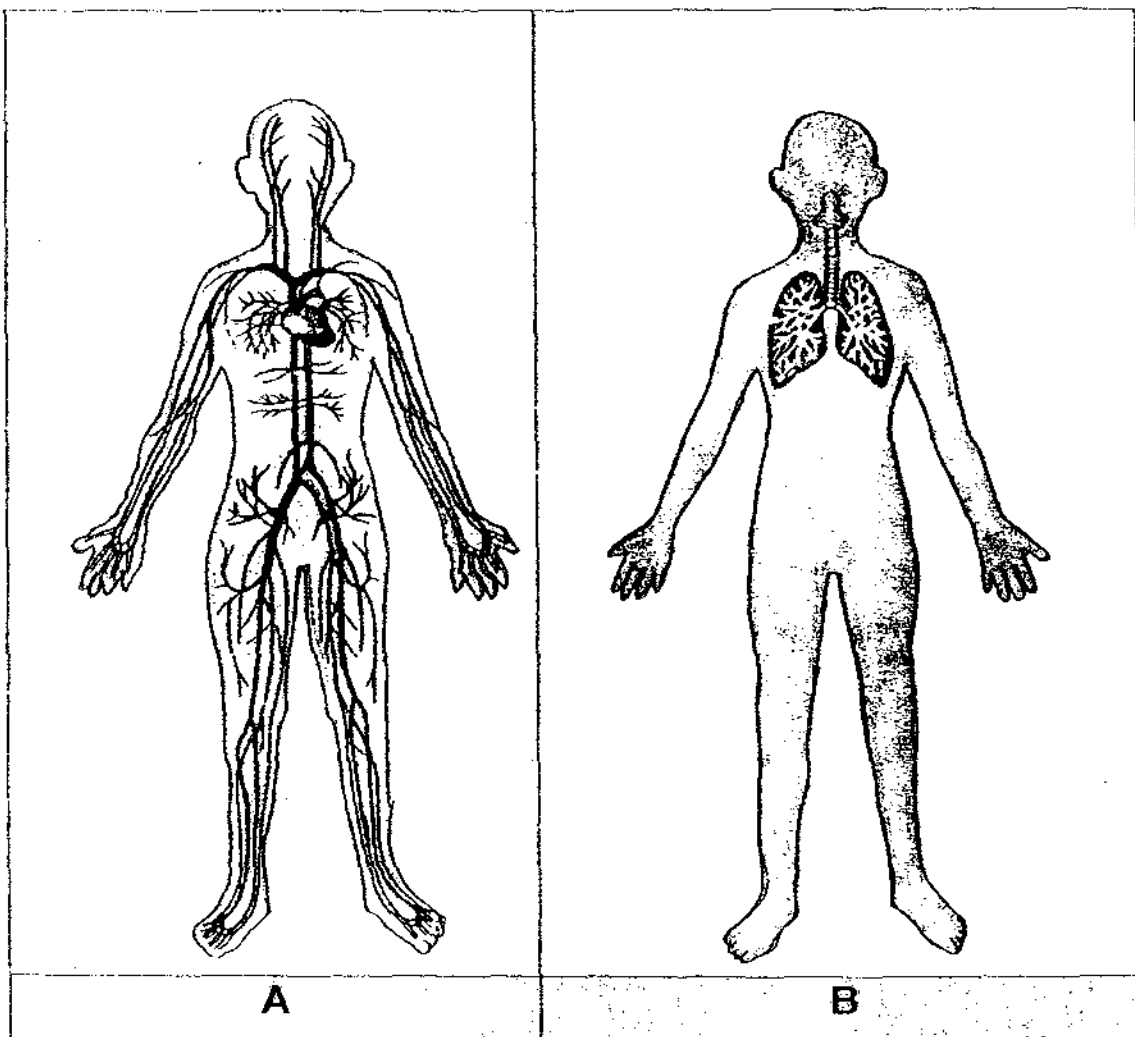
His mother advises him to move his potted plants away from his bed when he sleeps at night. Explain why. (1m)

\_\_\_\_\_

\_\_\_\_\_



36. The diagrams represent the human respiratory and circulatory systems.



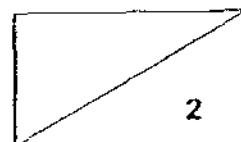
(a) Write A and B in the correct blanks below. (1m)

Respiratory System : \_\_\_\_\_

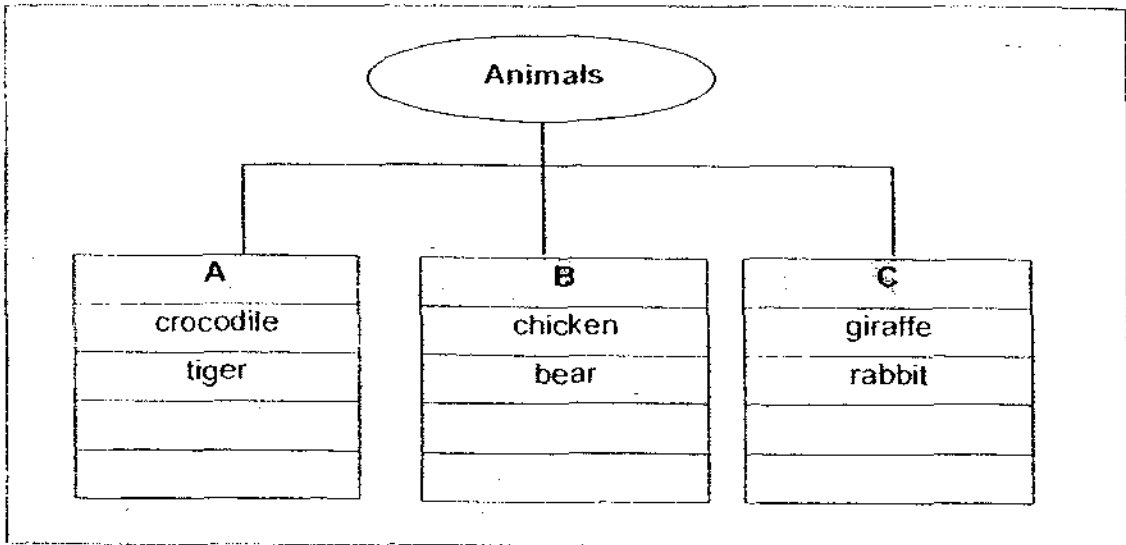
Circulatory System : \_\_\_\_\_

(b) Which one of the above systems has the same function as the transport system found in plants? (1m)

System : \_\_\_\_\_



37. The chart below shows the classification of some animals.



(a) Classify the following animals below into the classification chart by writing their names into the correct boxes above. (2m)

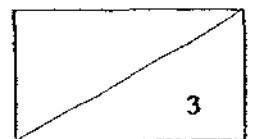
snake	elephant	shark	rat
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(b) Give the correct headings for A, B and C in the classification chart above (1m)

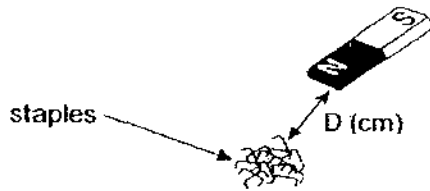
A: \_\_\_\_\_

B: \_\_\_\_\_

C: \_\_\_\_\_

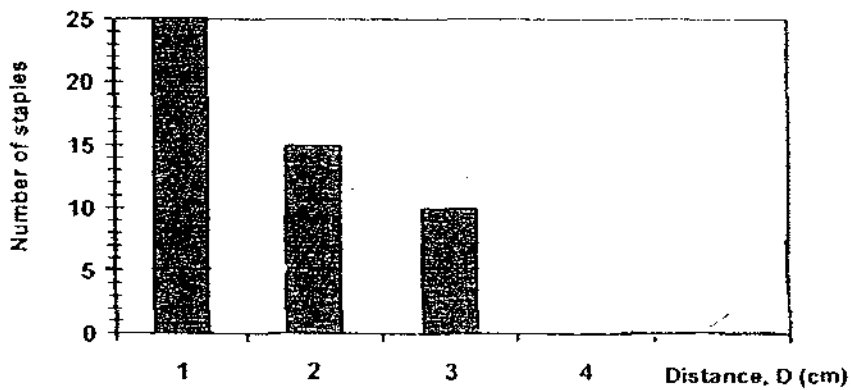


38. The magnet below can attract different number of staples at different distances. The number of staples attracted at various distances is recorded and tabulated.

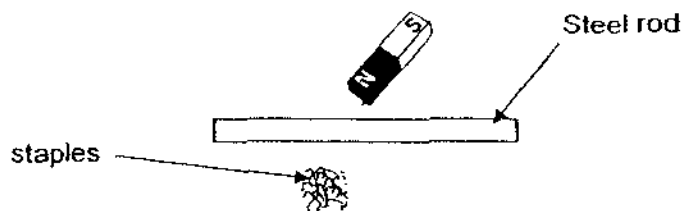


Distance (D)	1 cm	2 cm	3 cm	4 cm
Number of staples attracted	25	15	10	5

- (a) Based on the information tabulated above, please complete the bar graph below. (1m)



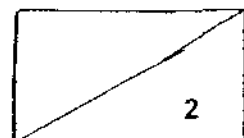
- (b) What happens when a steel rod is placed between the magnet and the staples as shown? Explain your answer. (1m)



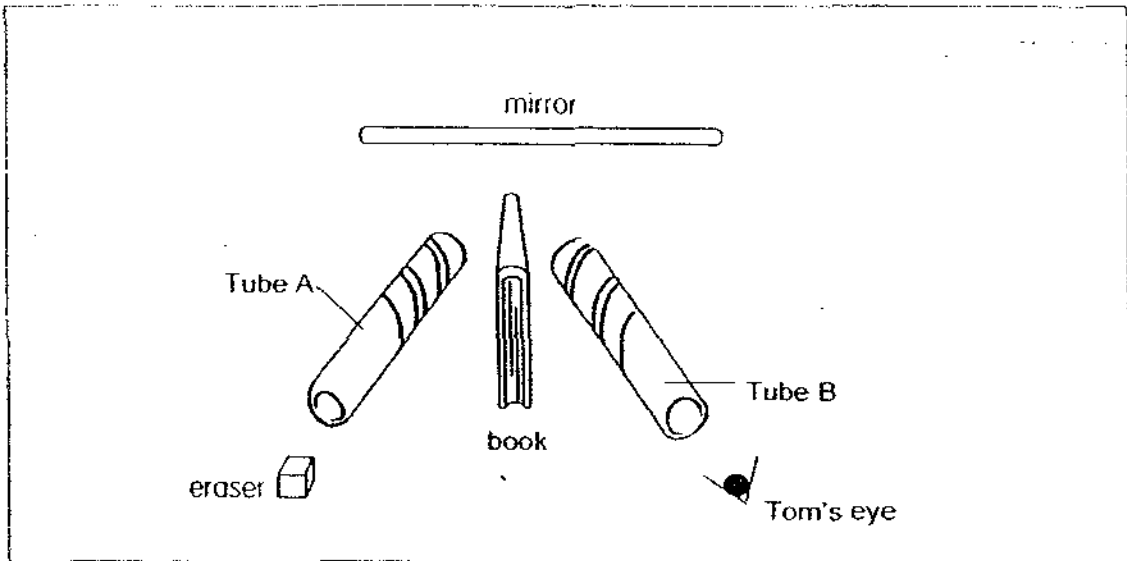

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39. Tom conducted an experiment using a mirror as shown below.



(a) He could see the eraser when he looked into tube B.  
State two properties of light that enabled Tom to see the eraser. (2m)

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

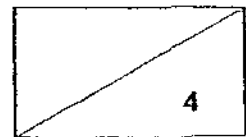
(ii) \_\_\_\_\_

(b) Classify the following materials into the correct groups. (2m)

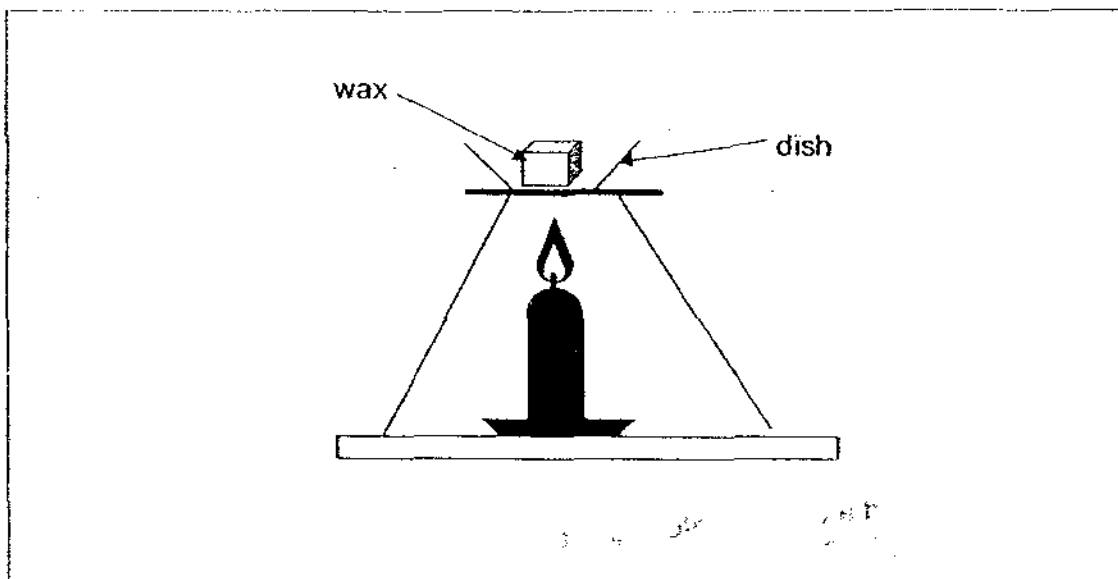
mirror	clear glass	table	tracing paper
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Transparent	Translucent	Opaque



40. Linda did an experiment by heating a piece of wax until it melted completely.



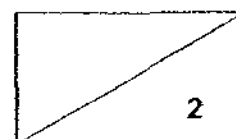
(a) Write down the change of state of the wax during the heating process. (1m)

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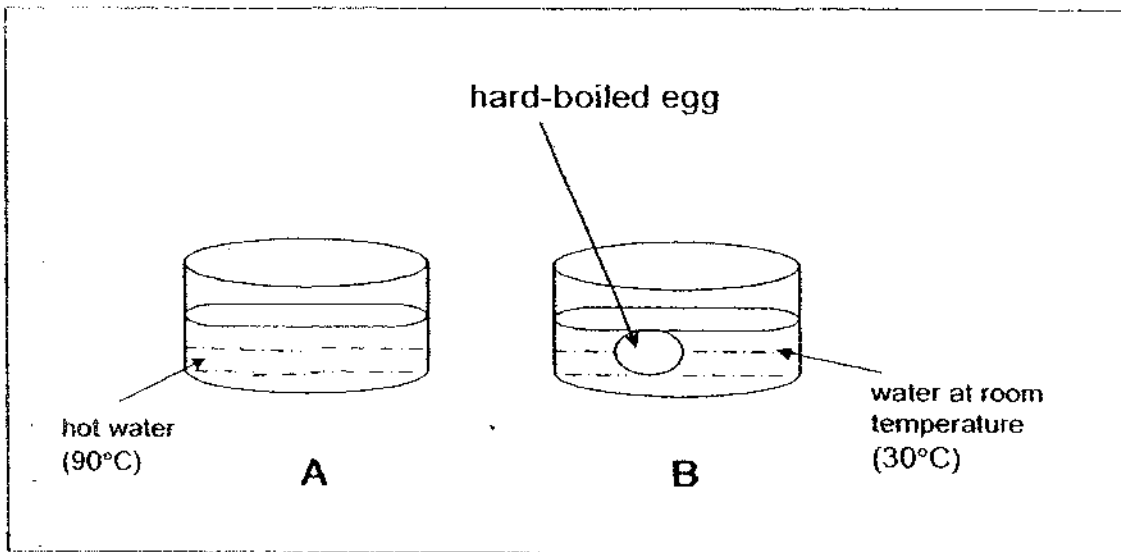
(b) Linda wrote the following statement in her Science report: 'The wax melted because it had lost coldness.' Her teacher said that Linda was wrong. What should the correct statement be? (1m)

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41. Mrs Chong transferred a hard-boiled egg from pot A, which contained hot water, to pot B, which contained water at room temperature.

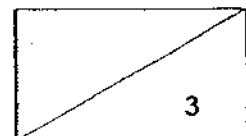


She then used a thermometer to measure the changes in the temperature of water in the two pots.

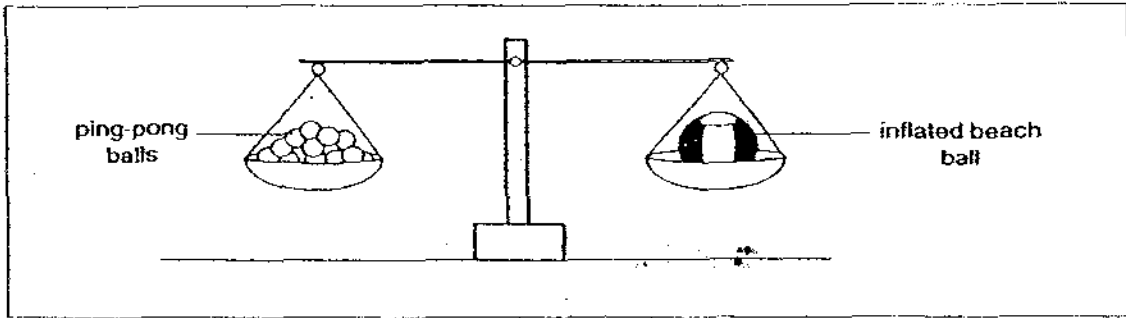
She wrote three statements about her observations.

Tick (✓) the correct box for each statement. (3m)

	Statements	True	False
1.	The egg gained heat from the water in pot B.		
2.	The water in pot B gained heat from the egg.		
3.	Heat travels from the egg to the water in pot B.		



42. Rani did an experiment as shown in the diagram below. She put an inflated beach ball and 14 ping-pong balls on the balance as shown below.



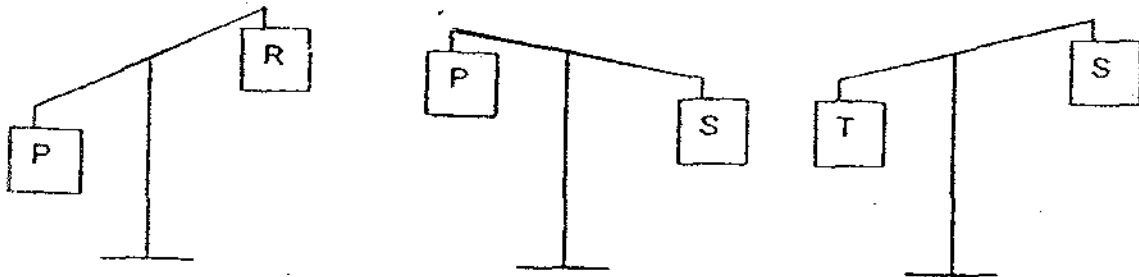
- (a) What will happen to the balance if Rani deflates the beach ball?  
Explain your answer. (2m)

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- (b) 4 objects, P, R, S, T, are paired up differently and placed on the balance as shown below.

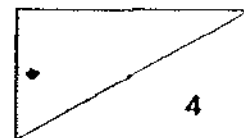


- Study the diagrams carefully and arrange the objects, P, R, S and T according to their mass, from the heaviest to the lightest. (2m)

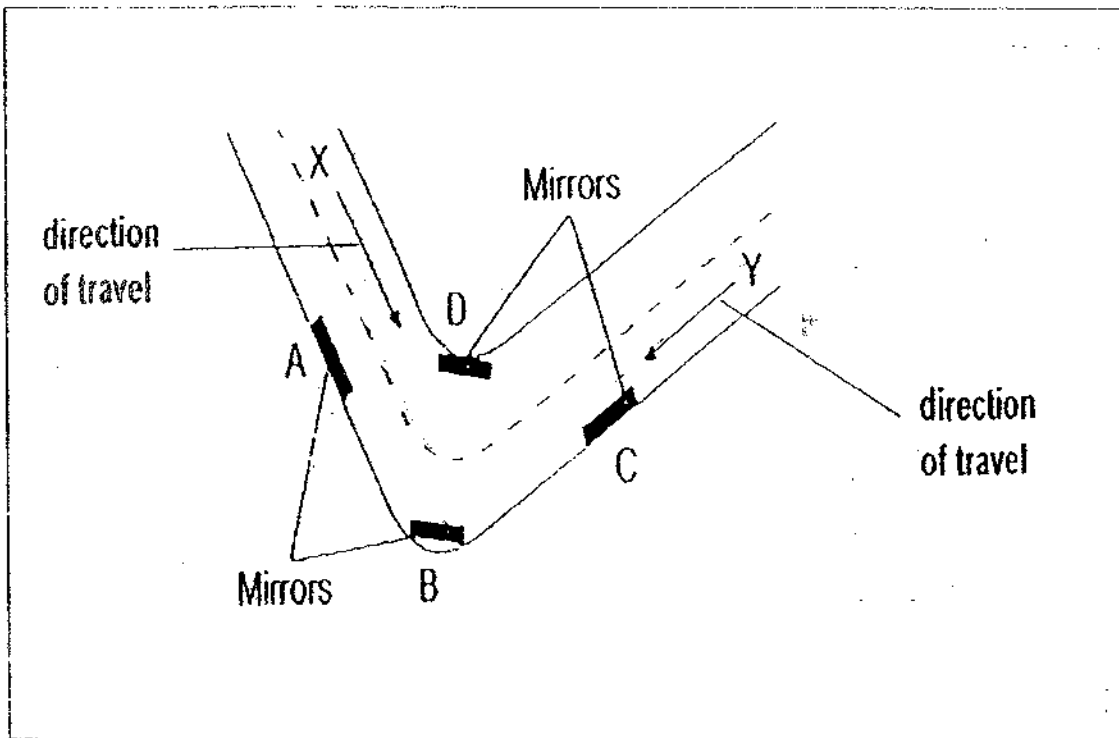


(heaviest)

(lightest)



43. The diagram below shows a very sharp bend along a 2-way road.



(a) Which mirror A, B, C or D will enable motorists at X and Y to see each other before they reach the bend? (1m)

Mirror \_\_\_\_\_

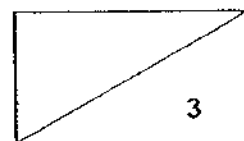
(b) The number of accidents has been greatly reduced after installing mirror(s) at the appropriate place(s). Draw 2 lines in the diagram above to show the path of light that enables a motorist at X to see the motorist at Y. (1m)

(c) Explain how the mirror helps the motorist at X to see the motorist at Y. (1m)

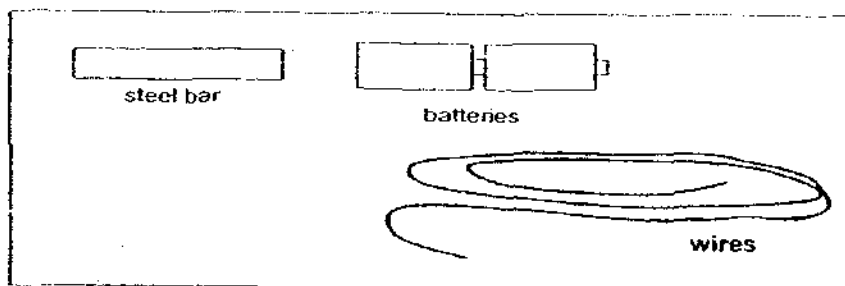
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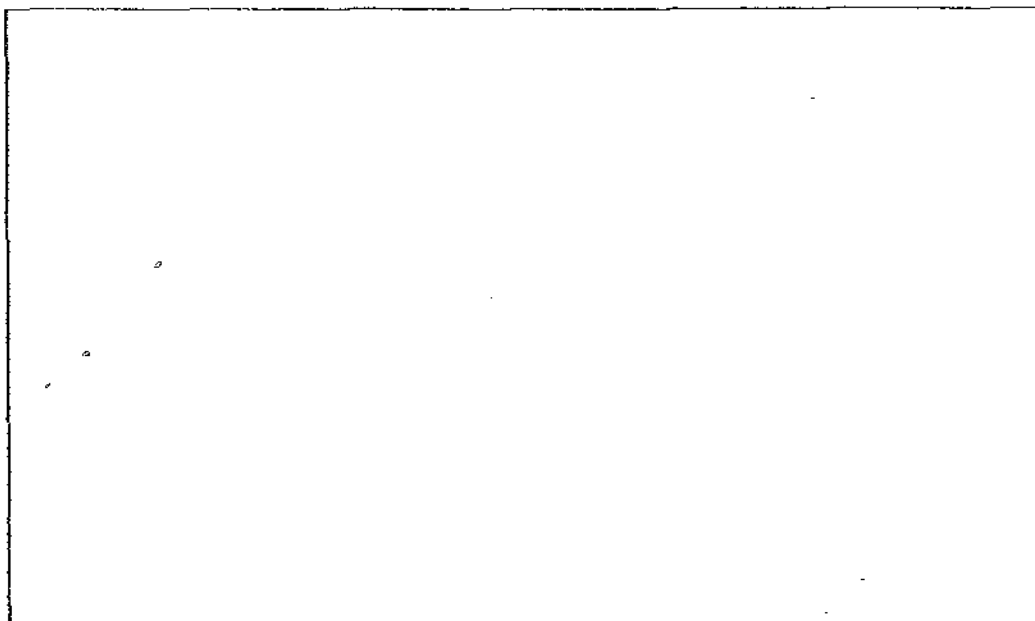
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44. Hassan wanted to make an electromagnet. He was given a steel bar, two batteries and some wires as shown below.



- (a) Using only the above items, draw the correct set-up in the space below to show Hassan how to make an electro-magnet. (Please label your drawing.) (2m)



- (b) List two ways in which Hassan could make the electromagnet stronger. (2m)

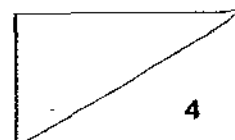
i) \_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

End of Booklet B



# ANSWER SHEET

**EXAM PAPER 2009**

**SCHOOL : RED SWASTIKA PRIMARY**

**SUBJECT : PRIMARY 4 SCIENCE**

**TERM : SA2**

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	2	1	3	4	3	3	2	1	2	4	4	3	3	2	4	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	3	4	1	3	2	4	2	2	1	3	3	2

31)a)X b)W c)Z d)Y

32)a)B, D, C, A

b)A

c)Veins help to transport food.

33)a)She would notice the flower had become red.

b)The roots take in the red-coloured water and transport the red-coloured water to the stem and to the other parts of the plant.

34)a)Not enough sunlight for the grass to grow.

b)B.

c)The roots in Picture A is too small to take in water and nutrients for the tree.

35)a)Carbon dioxide oxygen

b)Plant do not give out oxygen but only out carbon dioxide when there is no light. The plant will be competing with Calvin for oxygen.

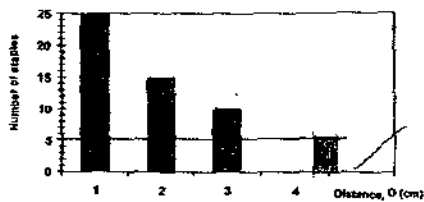
36)a)B, A

b)A

37)a)A: shark, snake B: rat C: elephant

b)A: carnivores B: omivores C: Herbivores

38)a)



b)The magnet cannot attract the staples because magnetism cannot pass through a magnetic material such as steel rod.

39)a)i)Light travel in a straight line.

ii)Light can be reflect.

b)clear glass

tracing paper

mirror  
table

40)a)Liquid.

b)The wax melted because it had gained heat.

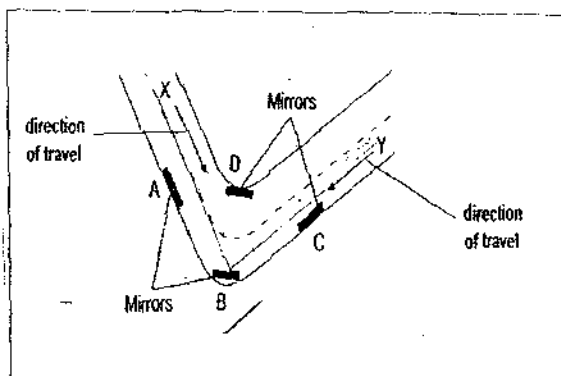
41)1)F 2)T 3)T

42)a)The ping-pong ball will tilt downwards and the deflated balloon will tilt upwards the deflect ball has no air.

b)T S P R

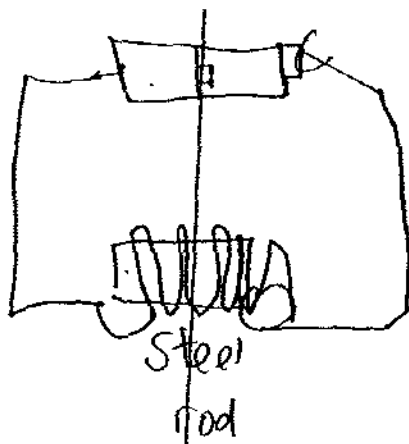
43)a)B.

b)



c)The mirror reflects light coming from Y to X.

44)a)



- b)i) Install more batteries.
- ii) Coil more times.