

Methodist Girls' School (Primary)

2004 MID-YEAR EXAMINATION

SAT

Primary 4

SCIENCE

BOOKLET A

Name : \_\_\_\_\_ ( )

Class : \_\_\_\_\_

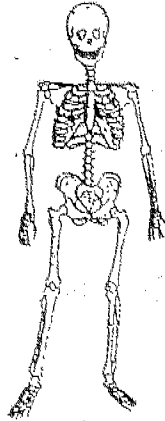
Total time for Booklets A and B : 1 hour 30 minutes

Booklet A : 60 marks

Section A (60 marks)

Choose the correct answer for each question and shade its number (1, 2, 3 or 4) in the OAS provided.

1. The diagram below shows our \_\_\_\_\_ system.



- (1) skeletal
- (2) muscular
- (3) digestive
- (4) circulatory

2. The food that we eat must be chewed into smaller pieces before we swallow so that the food can be \_\_\_\_\_.

- A. digested easily
- B. swallowed easily
- C. completely digested in the mouth

- (1) A and B only.
- (2) A and C only.
- (3) B and C only.
- (4) All of the above.

3. Some green beans were placed on some damp cotton wool in a dish and placed in a dark corner. A few days later, the beans started to grow into seedlings. The beans get their food for growth from the \_\_\_\_\_.

- (1) air
- (2) cotton wool
- (3) seed leaves
- (4) water used to damp the cotton wool

4. Which of the following groups of living things have a blood circulatory system?

- A. Birds
- B. Plants
- C. Fishes
- D. Mammals

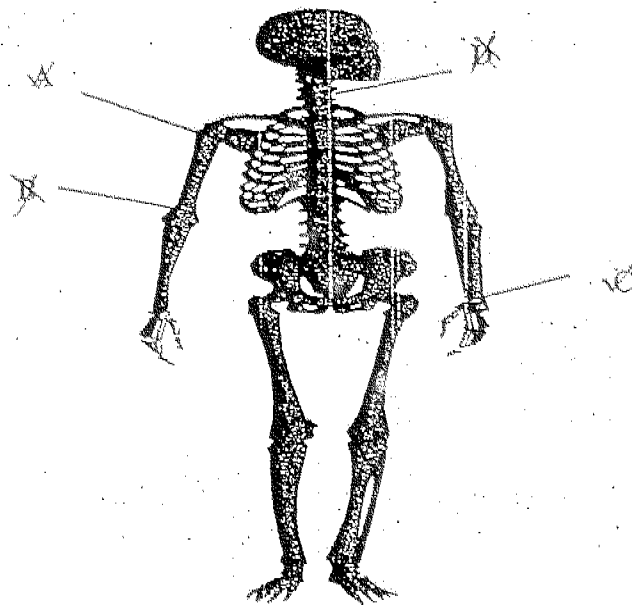
- (1) A and B only.
- (2) C and D only.
- (3) A, C and D only.
- (4) All of the above.

5. Blood carries \_\_\_\_\_.

- A. oxygen
- B. digested food
- C. carbon dioxide
- D. undigested food

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

6. Which of the following joints allow free movement?



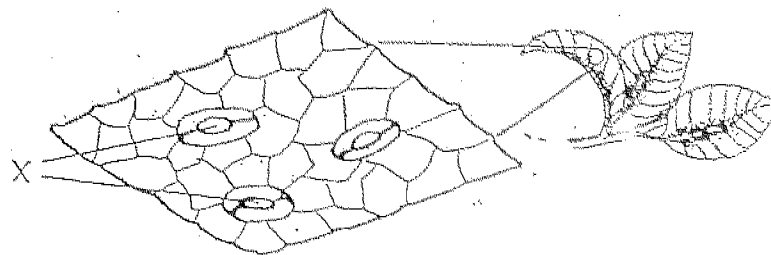
- (1) B only.
- (2) A and C only.
- (3) B and C only.
- (4) All of the above.

7. Blood flowing \_\_\_\_\_ carries the most amount of carbon dioxide.

- (1) towards the toes
- (2) ~~towards the lungs~~: from the lungs to the heart
- (3) towards the brain
- (4) from the heart to the lungs

For questions 8 and 9, refer to the diagram below

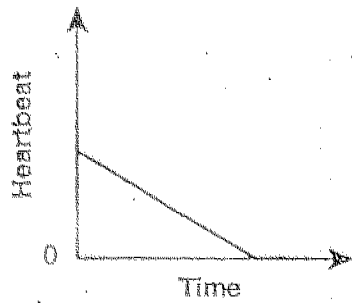
8. Andrew put a leaf under the microscope and the diagram below shows what he saw. What is X?



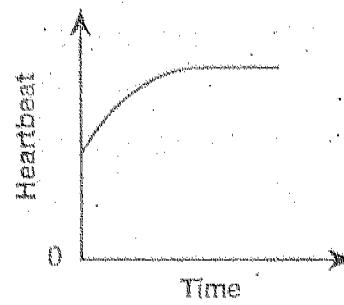
- (1) A stoma
  - (2) A root hair
  - (3) A food-carrying tube
  - (4) A water-carrying tube
9. What is the function of X?
- (1) It lets out a fragrance.
  - (2) A new bean plant will grow from it.
  - (3) It allows the sunlight to pass through.
  - (4) It allows the exchange of gases to take place.

10. Which of the following would show Darren's heart rate during exercise?

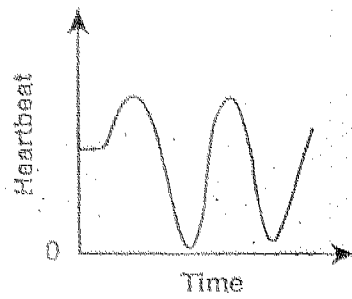
(1)



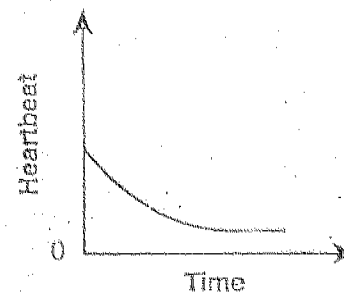
(2)



(3)

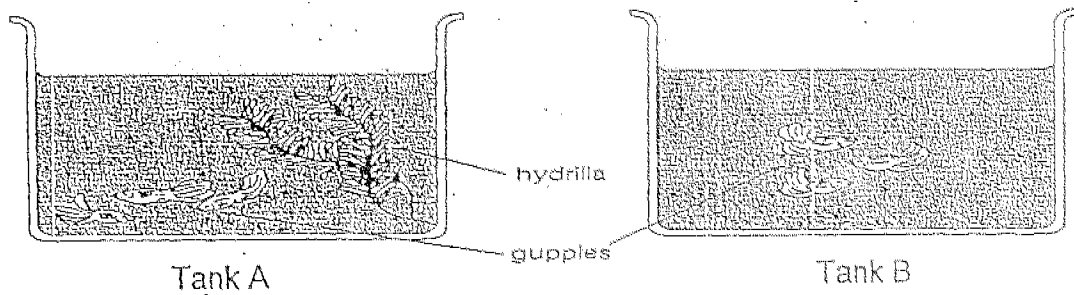


(4)



For questions 11 to 12, refer to the diagram below.

John set up two tanks. He placed three guppies in each tank but he put hydrilla plants in Tank A only. John found that the fishes swam freely in Tank A but the fishes in Tank B swam near to the water surface.



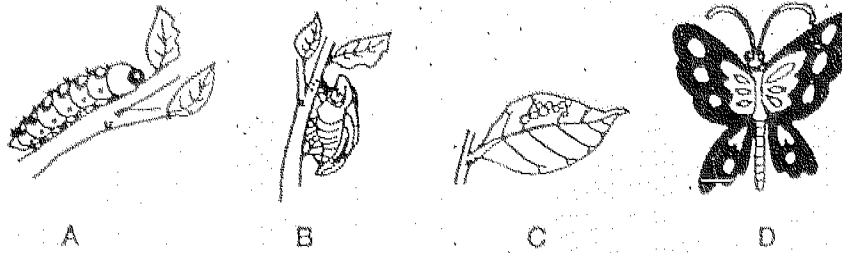
11. John concluded that the hydrilla plants \_\_\_\_\_.

- (1) help to beautify the aquarium
- (2) provide shade for the guppies
- (3) are the main source of food for the guppies
- (4) provide oxygen for the guppies to breathe during photosynthesis

12. In the night, both the guppies and the hydrilla plants take in \_\_\_\_\_ and give out \_\_\_\_\_.

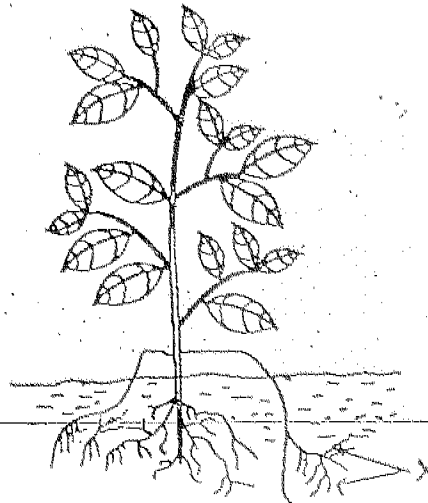
- (1) oxygen; oxygen
- (2) carbon dioxide; oxygen
- (3) oxygen; carbon dioxide
- (4) carbon dioxide; carbon dioxide

13. The diagrams below show the different stages in the life cycle of a butterfly. Arrange them in the correct order of growth.



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

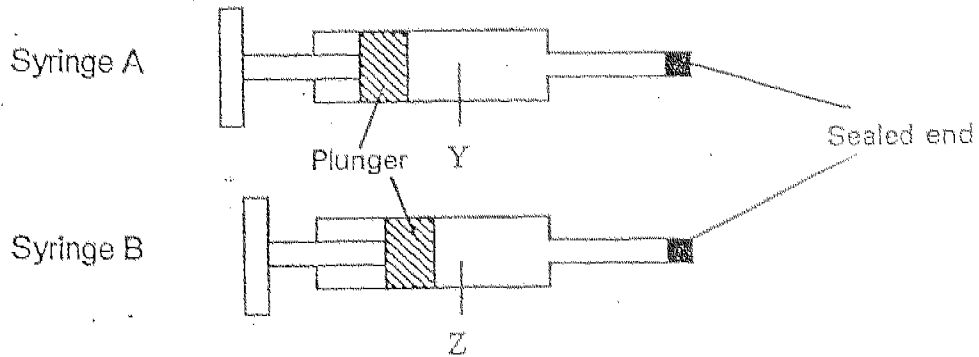
14. The diagram shows a peanut plant. What is the function of the part marked X?



- (1) stores food for the plant.
- (2) makes food for the plant.
- (3) absorbs water from the soil.
- (4) transports water for the plant.



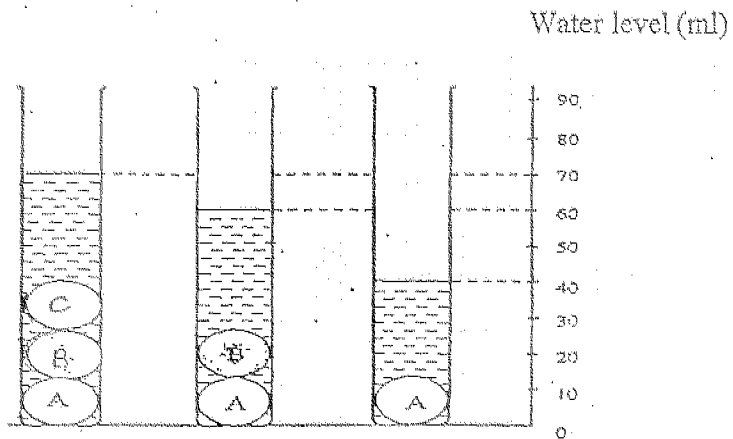
15. Two syringes, A and B contain substances Y and Z respectively. Each end of the syringe is sealed. Syringe A could **not** be pushed in while syringe B could be pushed in slightly as shown in the diagram below.



Which of the following substances are likely to be Y and Z?

- |     | Y        | Z                               |
|-----|----------|---------------------------------|
| (1) | Oil      | Air                             |
| (2) | Water    | <del>Sand</del><br>Orange Juice |
| (3) | Nitrogen | Oxygen                          |
| (4) | Flour    | Limewater                       |

16. When object A is put into a measuring cylinder containing 25 ml of water, the water level rises. Then object B is put in, followed by C. The graph below shows how the water level changes after each object is put in.

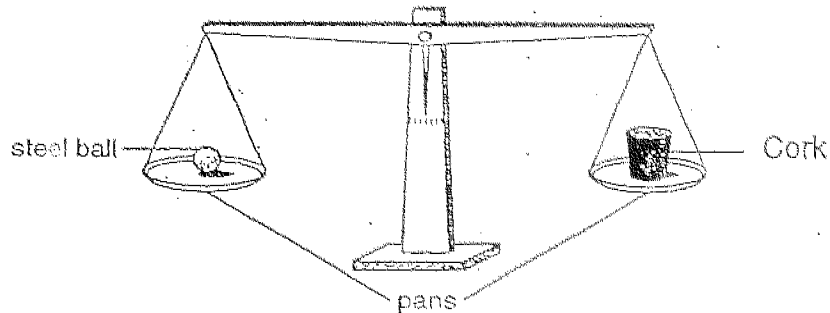


Objects A, B and C are not drawn to scale

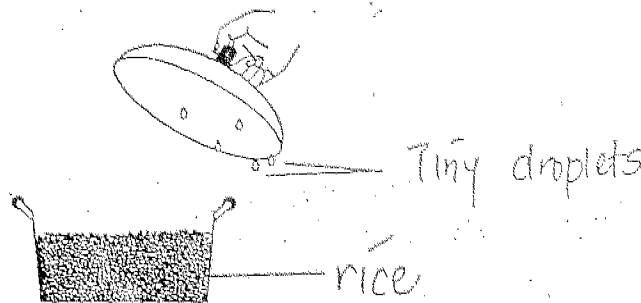
Using information from the graph, which object has the smallest volume?

- (1) A
- (2) B
- (3) C
- (4) The answer cannot be found.

17. Jerry put a big piece of cork and a small steel ball on two pans of a balance as shown below. The pan with the cork on it went up because the cork \_\_\_\_\_.



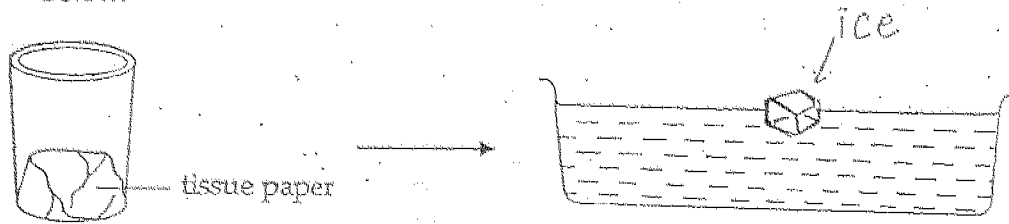
- (1) does not have any mass
  - (2) occupies less space than the ball
  - (3) has greater volume but weighs less
  - (4) weighs more and contains more mass
18. Lilian cooked some rice. When she lifted the lid of the rice cooker, tiny drops of water on the underside of the lid were found.



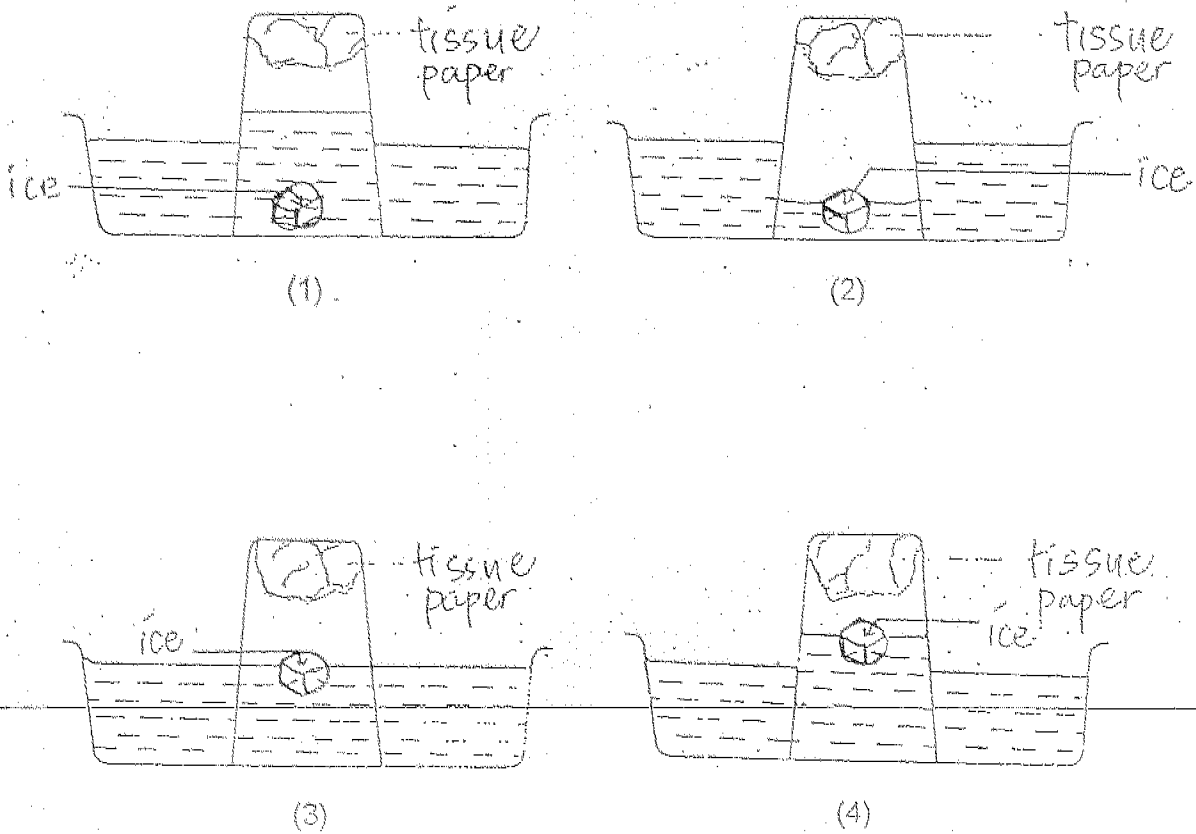
What process causes the water droplets to form?

- (1) Melting
- (2) Boiling
- (3) Evaporation
- (4) Condensation

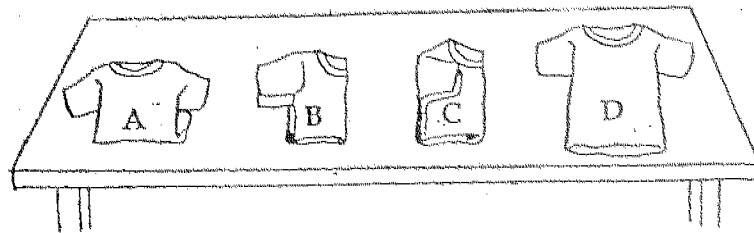
19. Leela taped a piece of tissue paper to the base of a glass. Then she inverted the glass and pushed it vertically down a basin of water as shown below.



Which diagram shows the result of her experiment?



20. Linda carried out an experiment. She took 4 identical shirts. She wetted each shirt with the same amount of water. Then she folded the shirts. Shirt A was folded once. Shirt B was folded twice. Shirt C was folded 3 times and Shirt D was not folded. They were put on a table and left in the open. Which shirt will dry first?

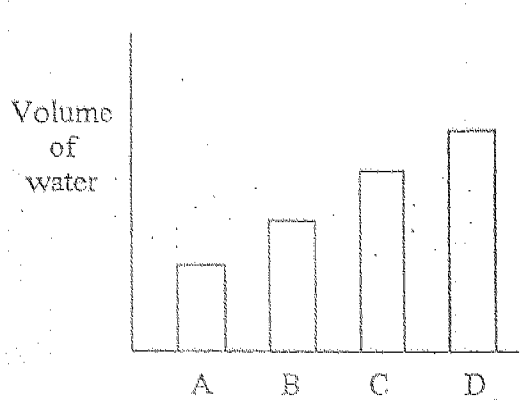


- (1) A  
(2) B  
(3) C  
(4) D
21. Sandy put an ice cube on the table. After five minutes, she observed that the ice had turned into water. This is because when ice melts, there is a change in \_\_\_\_\_.
- (1) state only  
(2) shape and state only  
(3) state and substance only  
(4) shape and substance only

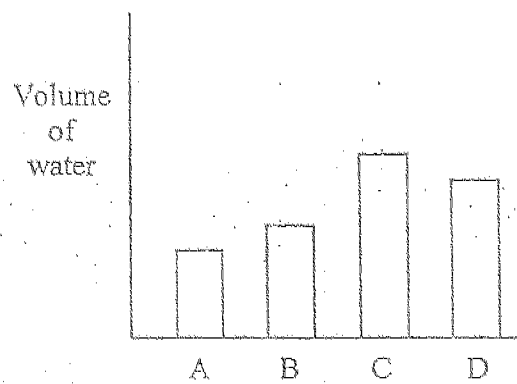
22. Four identical jars A, B, C and D were filled with the same volume of water. They were left in four places with different conditions for 10 hours as shown in the table below.

Jar	A	B	C	D
Conditions	Sunny Windy	Sunny <u>Not</u> windy	Cloudy <u>Not</u> windy	Cloudy Windy

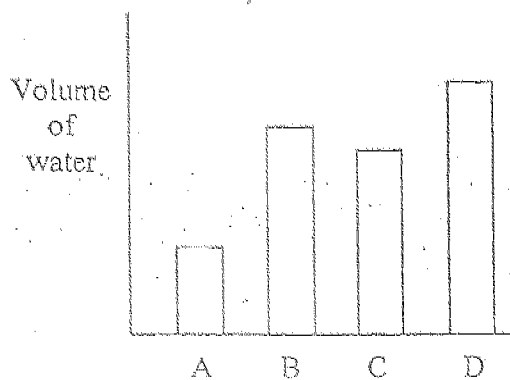
Which of the following correctly represents the amount of water left in each jar at the end of the experiment?



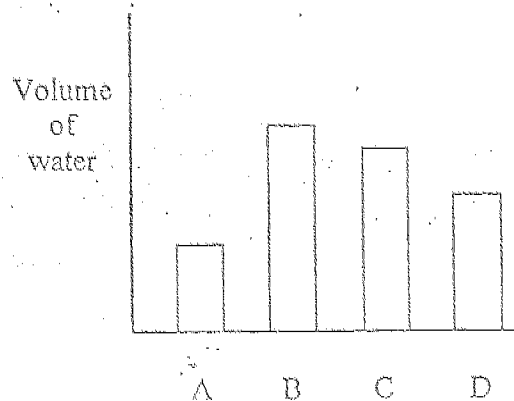
(1)



(2)



(3)



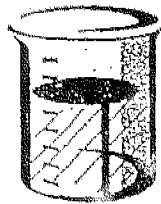
(4)

23. Which of the following are examples of condensation?

- A. Formation of clouds.
- B. Formation of dew.
- C. Formation of mist.

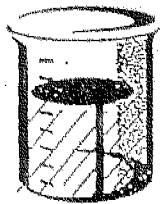
- (1) A and B only
- (2) B and C only
- (3) A and C only
- (4) All of the above

24. Rahim took four similar beakers labelled A to D. He added the same amount of water into each beaker. The temperature in each beaker was different. Answer Questions 24 and 25 based on the set-up shown below.



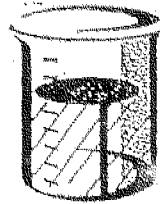
A

Water at 80°C



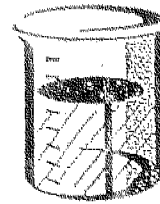
B

Water at 30°C



C

Water at 100°C



D

Water at 9°C

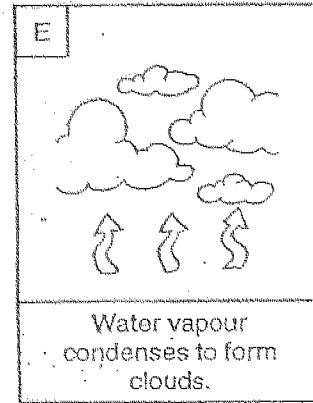
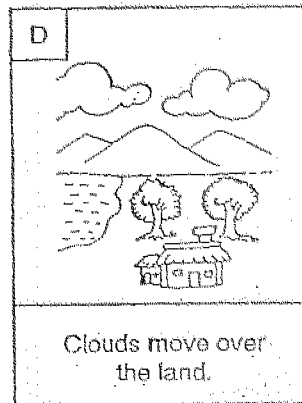
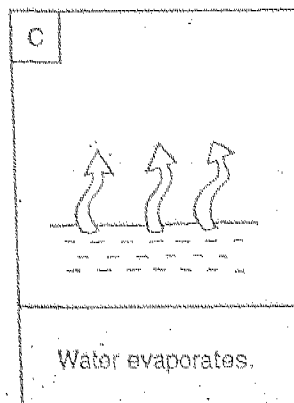
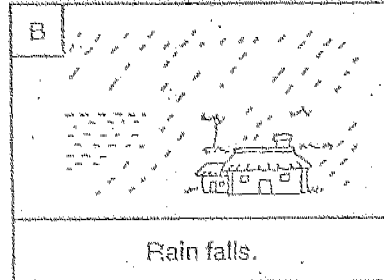
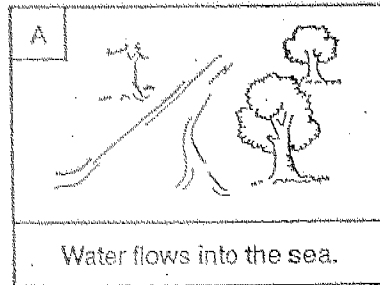
In which beaker/(s) is evaporation taking place?

- (1) A only
- (2) B and C only
- (3) A, B and D only
- (4) All of the above

25. In which beaker is evaporation taking place at the fastest rate?

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

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



Arrange the stages in the correct order, starting from C.

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



27. Which of the following are good habits or practices?
- A. Using waste water from washing to flush the toilet
  - B. Throwing a dead animal into the river at high tide
  - C. Pouring soapy water into an open drain
  - D. Putting refuse in used plastic bags for disposal

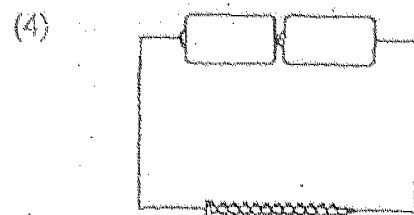
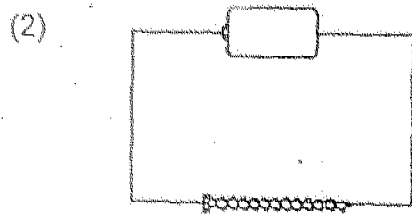
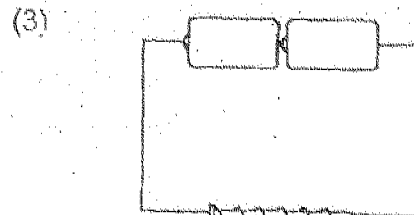
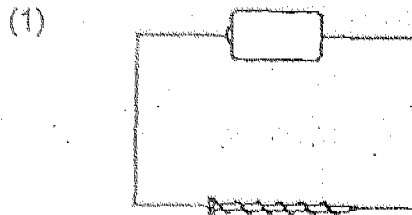
- (1) A and B only
- (2) A and D only
- (3) B and C only
- (4) C and D only

28. Water is used in factories for \_\_\_\_\_.

- A. Washing dirty objects and areas.
- B. Cooling engines in machinery
- C. Manufacturing food and drinks

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) All of the above

29. Which one of the following will give the strongest electromagnet?



30. Terence used the same end of a magnet to stroke an iron nail back and forth. Then, he put the nail near some steel needles. What would he observe?

- (1) The iron nail would attract the needles.
- (2) The iron nail would repel the needles.
- (3) The iron nail would magnetise the needles.
- (4) The iron nail would not attract the needles.

**Section B (40 marks)**

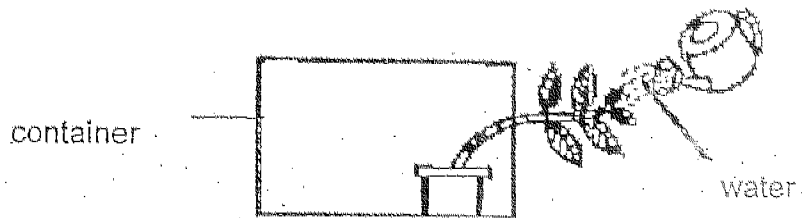
Read each question carefully and fill in the blanks with the answers.

31. Sarah told Alan that we could breathe in air through our nose or mouth. Alan explained that we should breathe in air through our nose and not our mouth to reduce the risk of infection to our body. Give a reason to support Alan's explanation. (2 marks)

---

---

32.



Though Leroy waters the plant daily, the plant died a few days later. This happened because \_\_\_\_\_

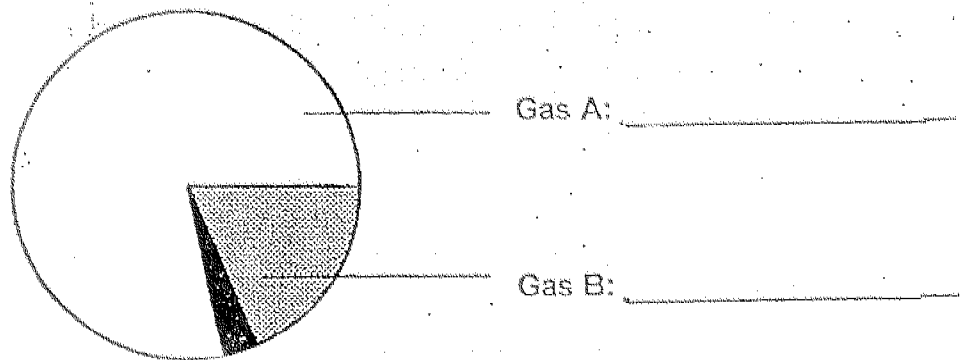
---

---

(2 marks)

33(a) The pie chart below shows the composition of different gases in the air.

Identify Gas A and B. (2 marks)



(b) Name one function of Gas B. (1 mark)

---

---

34(a) Fill in the parts of the system used for gaseous exchange for plants, fish and mammals in the table below. (2 marks)

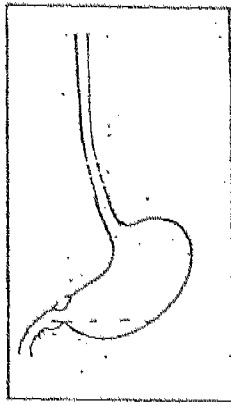
Living Things	Parts used for gaseous exchange
Plants	
Fish	
Mammals	

(b) Name one difference in the gaseous exchange in mammals and in fish. (2 marks)

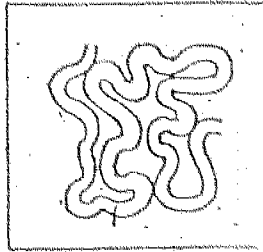
---

---

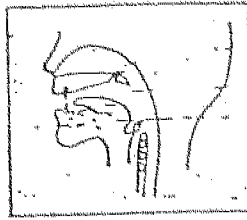
35.



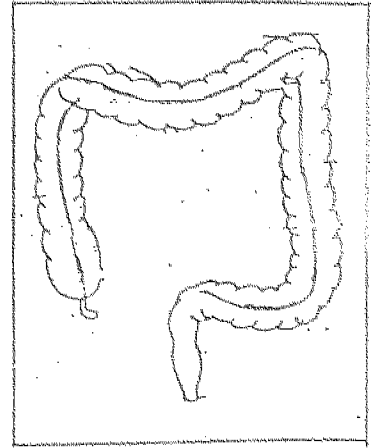
A



D



B



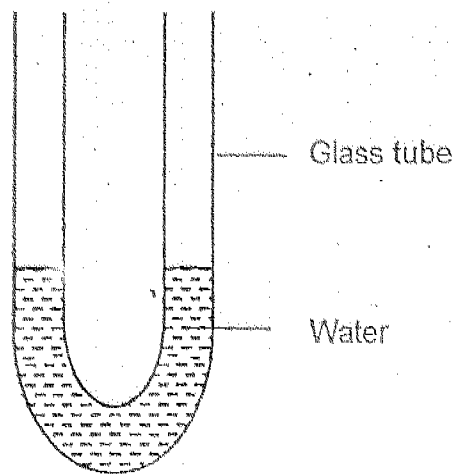
C

- (a) Arrange the letters in the correct order to show how food passes down the digestive system. (1 mark)
- 

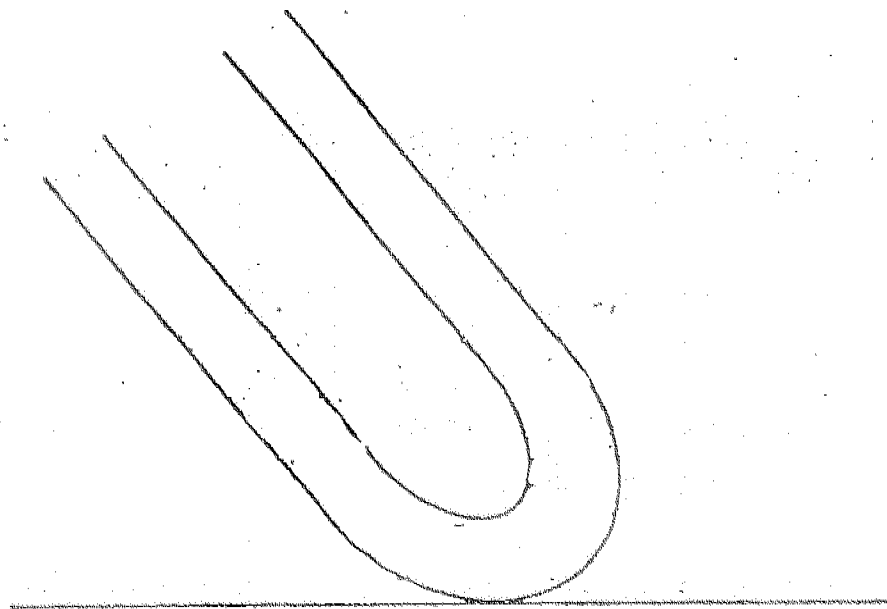
- (b) Box \_\_\_\_\_ shows the part where water is extracted from the undigested food.

(1 mark)

36. The diagram below shows a U-shaped tube containing some water.



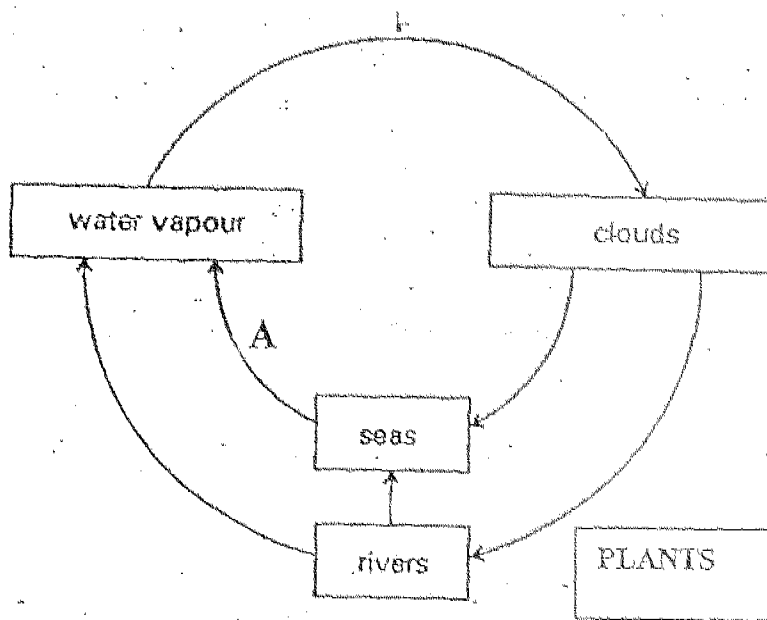
- (a) The tube was then tilted. Draw in the water level in the glass tube.  
(1 mark)



- (b) What property of water does the above set-up show? (1 mark)

---

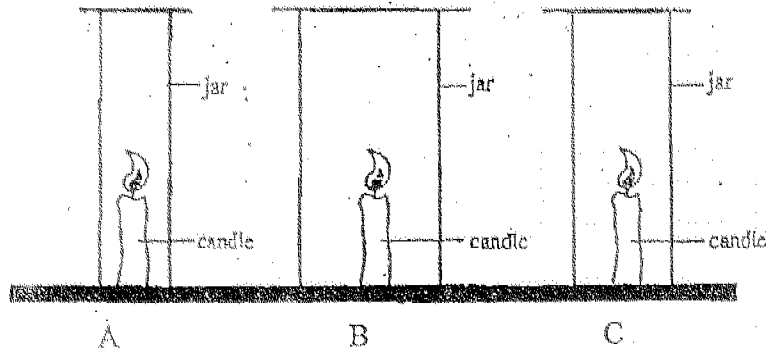
37. The diagram below shows part of the water cycle.



(a) Name the process taking place at A. (1 mark)

(b) In the diagram, draw two arrows to show how plants can be part of this water cycle. (2 marks)

38. A burning candle was each placed in three jars of different sizes, A, B and C. The time taken for each candle to go off was different.



- (a) Which candle will go off first? (1 mark)

---

---

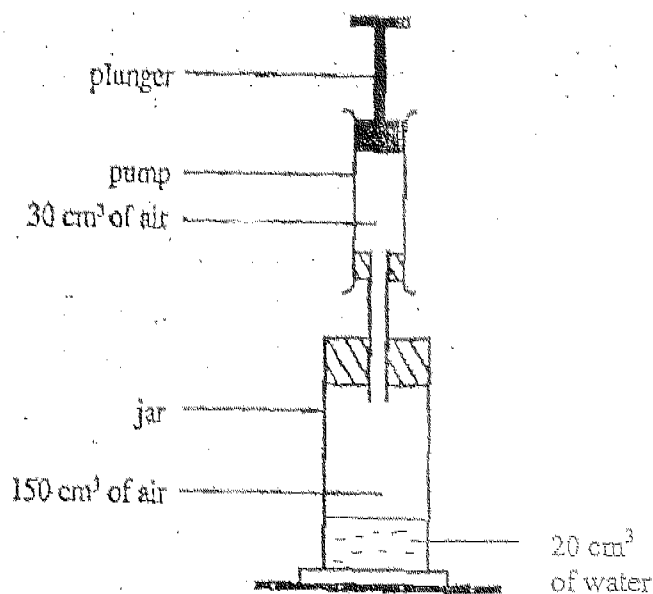
- (b) What is the relationship between the size of the jar and the time taken for the candle to go off? (2 marks)

---

---



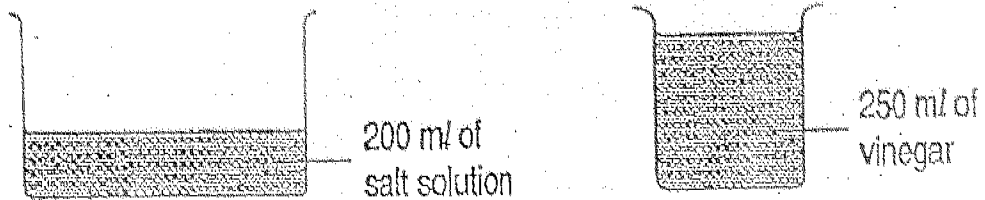
39. The diagram below shows a jar containing  $150 \text{ cm}^3$  of air,  $20 \text{ cm}^3$  of water and a pump containing  $30 \text{ cm}^3$  of air.



- (a) The plunger is pushed all the way into the pump, causing all the air from the pump to go into the jar. What is the volume of the air in the jar now? (1 mark)

- (b) What does this experiment show? (1 mark)

40.



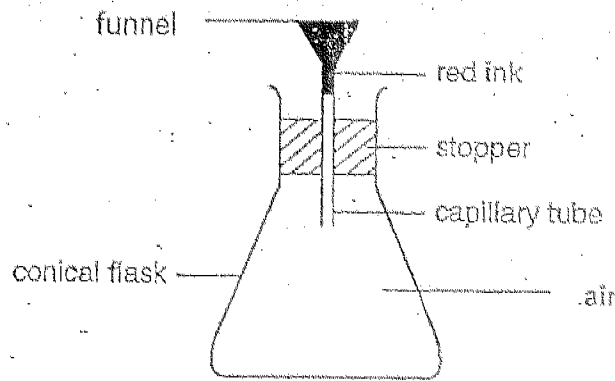
Jeremy wanted to find out which type of liquid will evaporate faster. He set up the experiment as shown above. However, the results of the experiment were not accurate. List two reasons why the test was not a fair one. (2 marks)

---

---

41. Sam took out an apple from the refrigerator and left it on a table. After some time, he saw tiny droplets of water on the apple. The tiny droplets of water came from the \_\_\_\_\_ and were formed by the process of \_\_\_\_\_. The water droplets on the apple disappeared after some time because they had \_\_\_\_\_ into the air. The change is caused by \_\_\_\_\_. (2 marks)

42. Lily set up the following experiment. She poured some red ink into the funnel. However, the ink could not enter the flask easily.



- (a) What stopped the ink from entering the flask easily? (1 mark)

---

- (b) What can Lily do to force the ink to enter the flask? Why? (2 marks)

---

---

43. Fill in the blanks with the correct word. (2 marks)



- (a) \_\_\_\_\_ our water usage.  
(b) \_\_\_\_\_ water for other purposes.  
(c) \_\_\_\_\_ water for use again.  
(d) Name one way we can conserve water at home.

44(a) John decided to hang his clothes out to dry one night, right after it stopped raining. However, the clothes were still damp the next morning. Give two possible reasons why this was so. (2 marks)

---

---

---

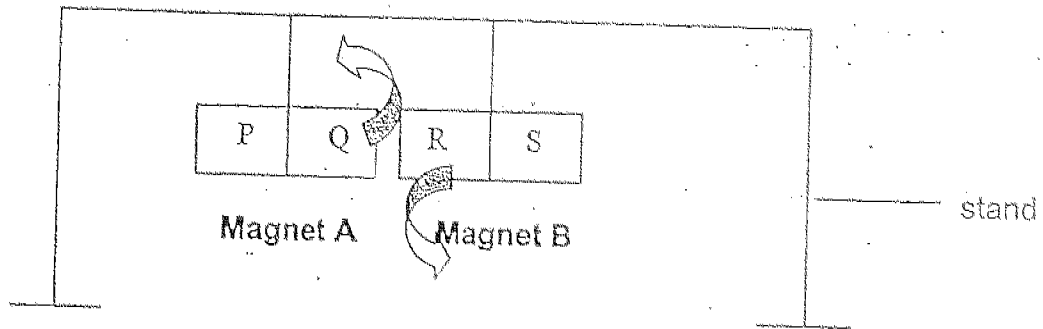
(b) What two other factors affect the rate of evaporation ? (2 marks)

---

---

---

45. Mary hung 2 bar magnets as shown below.

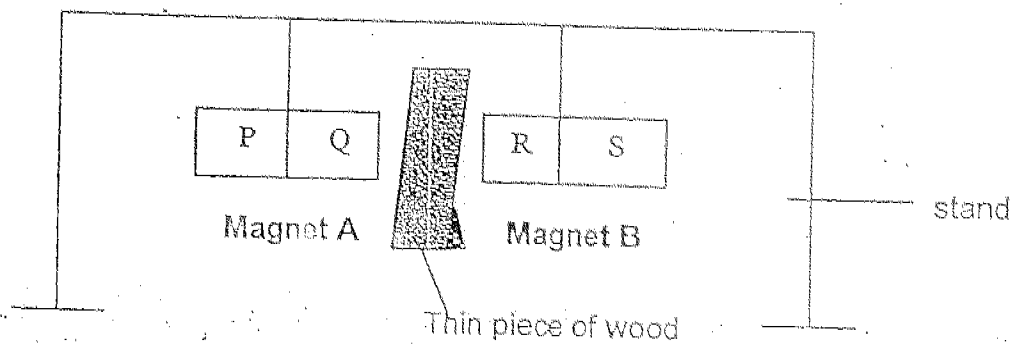


- (a) When Magnet A was brought close to Magnet B, both magnets turned in the direction shown by the arrows. Explain why this happened. (2 marks)

---



---



- (b) If a thin piece of wood was placed between the bars, would the result still be the same? Why? (2 marks)

---



---

END OF PAPER

