

CA2



RED SWASTIKA SCHOOL

# RED SWASTIKA SCHOOL

## 2005 CONTINUAL ASSESSMENT 2

### SCIENCE

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

Class : Primary 4 / \_\_\_

Date : 25 August 2005

### BOOKLET A

26 Questions

52 Marks

Duration of Paper : 1 h 15 min

Note:

1. Do not open this Booklet until you are told to do so.
2. Questions 1 - 26 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.
5. Check your answers thoroughly and make sure attempt every question.

**Section A: MCQ (26 Questions x 2 marks = 52 marks)**

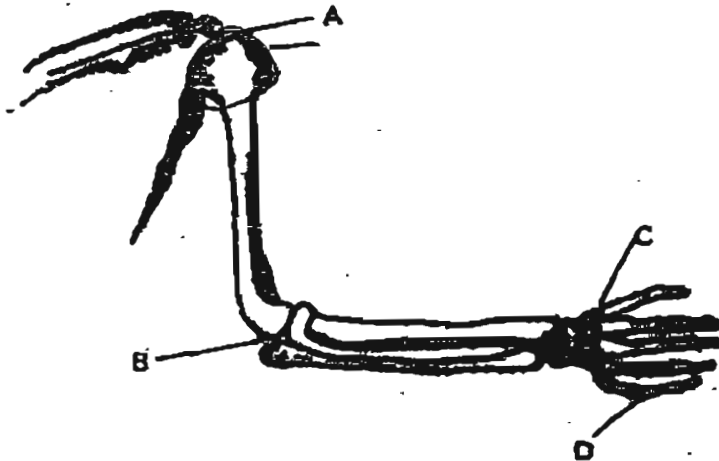
**Choose the most suitable answer and shade its number in the OAS provided.**

1. Our skeleton has a protective role. Which part of our skeleton protects our heart and lungs?
  - (1) Ribcage
  - (2) Skull
  - (3) Backbone
  - (4) Hip bone
  
2. Bones cannot move by themselves even with the presence of joints. What do they need to help them move?
  - (1) Fats
  - (2) Blood
  - (3) Skin
  - (4) Muscles
  
3. Which one of the following statements about joints is not true?
  - (1) Movable joints are joints that allow free movement.
  - (2) The joints in the skull are called immovable joints.
  - (3) Hinge joint allows movement of the bone in three directions.
  - (4) Ball-and-socket allows movement in all directions.
  
4. Which of the following movements is not a result of muscular action?
  - (1) Crunching of our fists
  - (2) Shutting our eyes
  - (3) Chewing action of our mouth
  - (4) Movement of digested food into the blood
  
5. When we do push-ups, which two systems have to work together to produce the movements?
  - (A) Digestive
  - (B) Skeletal
  - (C) Muscular
  - (D) Respiratory
  - (E) Circulatory
  - (1) A & B
  - (2) B & C
  - (3) C & D
  - (4) D & E

6. Muscles are thick, stretchy bands that cover our skeleton. They pull on our \_\_\_\_\_ to make them move. Muscles often work in pairs, when one muscle \_\_\_\_\_, the other \_\_\_\_\_. We can control the movement of some of the muscles in our body.

- (1) bones, contracts, relaxes
- (2) joints, contracts, relaxes
- (3) bones, contracts, expands
- (4) joints, relaxes, stiffens

7. Study the picture of the skeleton of the human arm below.



Which one of the joints labelled A, B, C or D allows the greatest freedom of movement?

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

8. The diagram below shows the arrangement of leaves of a plant as seen from the top. The leaves are arranged like this to \_\_\_\_\_.



- (1) make the plant more beautiful
- (2) get as much sunlight as possible
- (3) attract more insects
- (4) allow easy exchange of gases

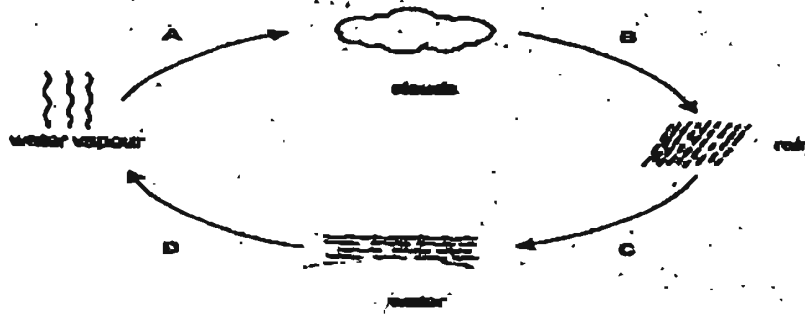
9. While visiting a mangrove swamp, Ali, Ben, Cuiwen and Denny saw the roots of the trees sticking above the surface of the ground and made the following statements about those roots.

- Ali: They help to take in air for the trees.  
Ben: They help the tree to photosynthesise.  
Cuiwen: They trap animals as food for the trees.  
Denny: They prevent animals from eating the leaves.

Whose statement is correct?

- (1) Ali
  - (2) Ben
  - (3) Cuiwen
  - (4) Denny
10. Sue saw a pond and commented that the pond was polluted. Which one of the actions below would not help Sue to check whether the water in the pond was polluted?
- (1) Count the number of dead organisms.
  - (2) Check whether the pond gives out a bad smell.
  - (3) Observe the condition of the aquatic plants.
  - (4) Measure the water level in the pond.
11. Water rationing exercises are held annually. Why does the government carry out such exercises?
- (1) The government wants the people to depend on rain water as a primary water source.
  - (2) The government wants to fine those people who waste water.
  - (3) The government wants to remind us to use water appropriately.
  - (4) There is a problem with our reservoirs.
12. Which of the following parts of a plant traps energy from the Sun to make food?
- (1) Roots
  - (2) Leaves
  - (3) Flowers
  - (4) Stem
13. The blood in our body performs a few functions. Which of the following is not a function of blood?
- (1) To transport dissolved gases to other parts of the body.
  - (2) To fight and eliminate foreign particles in the blood.
  - (3) To send signals to the brain.
  - (4) To transport waste materials.

14. The diagram below shows the water cycle.



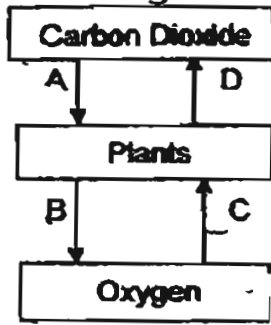
Each arrow represents a stage in the water cycle. Heat from the Sun ensures that the water cycle takes place all the time. At which stage is heat from the Sun needed?

- (1) A
  - (2) B
  - (3) C
  - (4) D
15. In the following table, which combination of activity and energy source is incorrect?

	Activity	Source of Energy
(1)	Fish swimming	Sunlight
(2)	Windmill turning	Wind
(3)	Leopard running	Food
(4)	Grass making food	Sunlight

16. Leo had an asthma attack during a PE lesson. He had difficulties breathing as less air was able to enter his lungs. This was because the muscles in his windpipe \_\_\_\_\_, making it narrower.
- (1) expanded
  - (2) contracted
  - (3) collapsed
  - (4) stayed the same

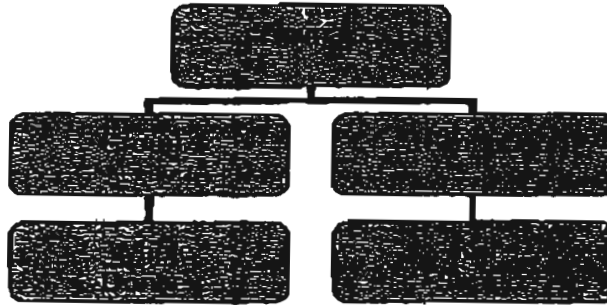
17. Study the diagram below carefully.



Which arrows show the process of respiration in plants?

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

18. Four animals are classified as shown below.



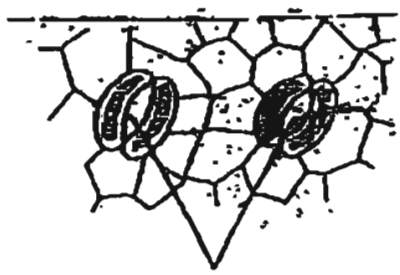
They are classified according to \_\_\_\_\_.

- (1) the way they feed
- (2) the way they move
- (3) their habitats
- (4) the way they breathe

19. Susan had a normal heartbeat when resting. When she measured her heartbeat after an activity, she found out that it was 120 beats per minute. Which of the following activity could she have just done?

- (1) Window shopping
- (2) Tying her shoelace
- (3) Running with her little brother
- (4) Daydreaming

20. The picture below shows some tiny openings found on the underside of a leaf. What are the functions of these openings?



Tiny Openings

- (A) They make food for the plant.
- (B) They take in sunlight.
- (C) They take in air.
- (D) They give out water vapour

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

21. Which of the following shows the correct path of mineral salts taken in by a plant?

- (1) Root hairs → Root → Stem → Leaf
- (2) Root hairs → Root → Leaf → Stem
- (3) Leaf → Stem → Root
- (4) Leaf → Root → Stem

22. Which one of the following gives the correct path in which oxygen is transported in our body?

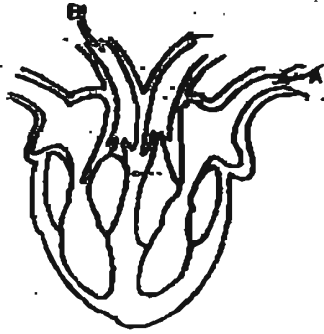
- (1) Windpipe → Heart → Lungs → All parts of the body
- (2) Windpipe → All parts of the body → Blood vessels → Heart
- (3) Windpipe → Lungs → Heart → All parts of the body
- (4) Blood vessels → Windpipe → Heart → All parts of the body

23. Tom put a plant into a beaker of water with red dye. After a few days, he cut across the stem and saw some red stains scattered around the cross-section of the sliced stem. What could he conclude from the experiment?

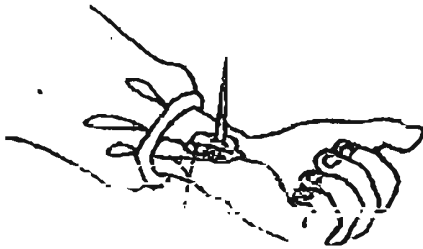
- (1) The stem made food in the presence of red dye.
- (2) The roots had transported the red dye to the stem.
- (3) The plant had withered from taking in red dye.
- (4) The plant is trying to remove excess water.

49

24. Look at the diagram below. If arrow B indicates deoxygenated blood flowing out of the heart, what does arrow A indicate?



- (1) Blood rich in carbon dioxide flowing into the heart.  
 (2) Carbon dioxide entering the heart.  
 (3) Oxygen-rich blood flowing into the heart.  
 (4) Water flowing into the heart.
25. Jonah wants to find out how his heartbeat changes when he is in different positions such as sitting, squatting or lying down. To ensure a fair test, which of the following factors should be kept the same when conducting the test?
- (A) Duration of the experiment  
 (B) The time of the day when the experiment is being conducted.  
 (C) The location where the experiment is being conducted  
 (D) His position
- (1) A only  
 (2) A and B only  
 (3) A, B and C only  
 (4) A, B and D only
26. Wejie placed a small ball of plasticine and stuck a toothpick in the middle as shown in the diagram below. He watched as the toothpick moved. Which part of his body caused the toothpick to move?



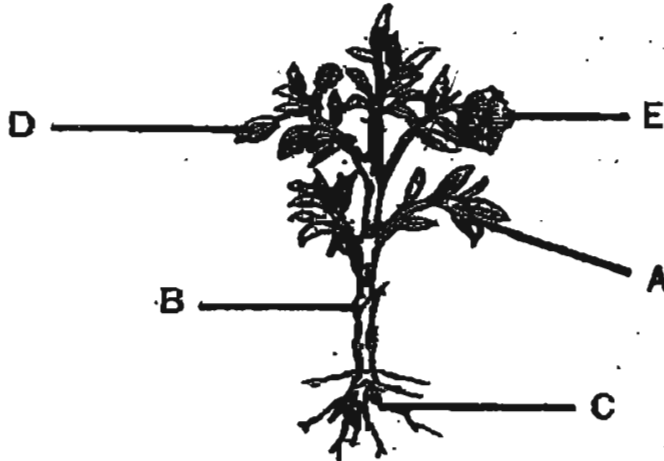
- (1) Stomach  
 (2) Lungs  
 (3) Heart  
 (4) Gullet



**Section B: Open-ended (13 Questions = 38 marks)**

Answer all the questions in the space provided.

27. Study the diagram below. 5 parts of the plant are labelled A, B, C, D and E.



Read the following statements carefully.

Write 'T' if the statement is true or 'F' if the statement is false in the spaces provided. (3m)

(a)	Part E enables the plant to bear fruits and seeds.	
(b)	Part B helps to transport food, water and mineral salts.	
(c)	Part A contains small openings to allow the exchange of gases between the plant and its surroundings.	

28. Compare the circulatory system in plants and Man to our road transport system.

(a) Which part of the Man's circulatory system performs a similar function as the roads? (1m)

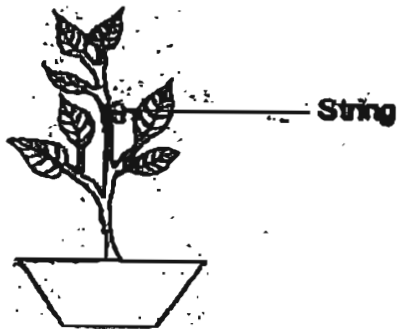
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(b) Which part of the plant's circulatory system performs a similar function as the roads? (1m)

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29. Mrs Lee tied a piece of string tightly round the stem of a plant, about halfway down from the top of the plant. She put the plant near an open window and watered the plant daily. One week later, she observed that some leaves had turned yellow.



- a) On which part of the plants would the leaves be more likely to turn yellow? (1m)

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- b) Explain Mrs Lee's observation in (a). (2m)

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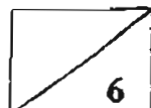
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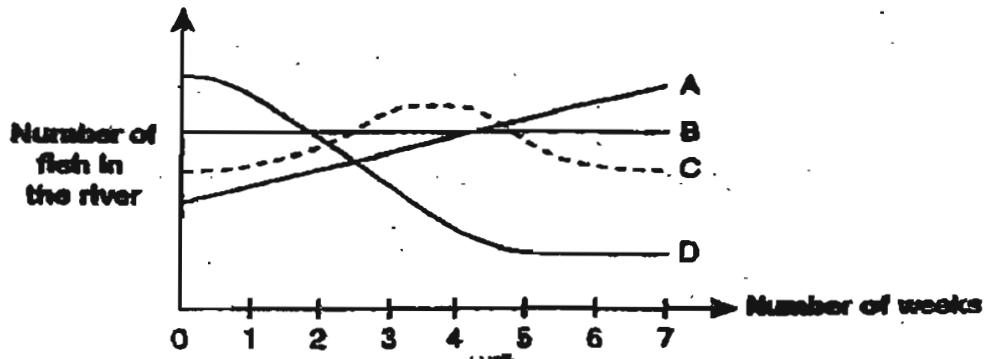
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30. There are different types of bones in our skeletal system. Identify the following bones. (3m)

	Facts/ Descriptions	Which bone am I?
(a)	I am made up of 33 bones joined together to form a column.	
(b)	I am made up of bones firmly locked together to form a helmet and to protect your brain.	
(c)	I am attached to the bottom of the backbone to bear the weight of the body.	

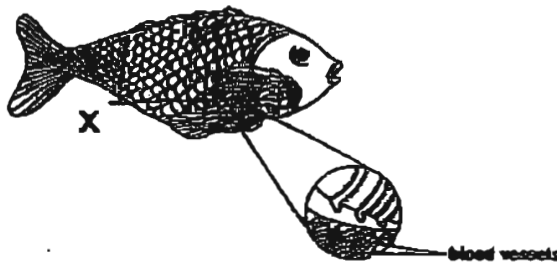


31. Kaiqing made a study of 4 rivers, A, B, C and D, to find out the level of pollution in them. He observed the number of fish in the rivers over a span of 7 weeks. The graph below showed his findings.



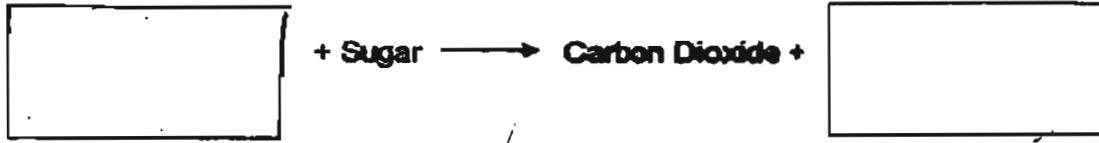
- (a) Which was the least polluted river? (1m)
- 
- (b) Give one reason for your answer in (a). (1m)
- 
- (c) Name one human activity that will pollute the river. (1m)
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32. Study the diagram below carefully.

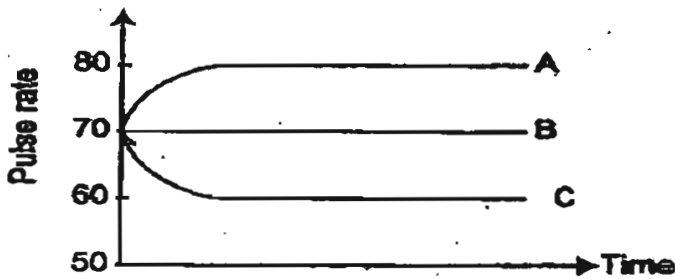


- (a) Name Part X. (1m)
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- (b) The fish will die if Part X is missing from the respiratory system. Why is this so? (1m)
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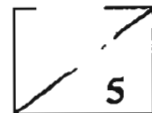
33. The equation below shows the respiration process during which energy is released for our body to use. Fill in the boxes with suitable word(s). (2m)



34. Raj would like to know how his pulse rate will change with the activities he is engaged in. The graph below shows Raj's pulse rate taken when he was involved in 3 different activities.



- (a) Which line, A, B or C, shows Raj's pulse rate when he was jogging at East Coast Park? (1m)
- 
- (b) Raj realised that he was panting after he jogged. Why was that so? (1m)
- 
- (c) What could Raj be doing when his pulse rate is at Line C? (1m)
- 



35. Study the following food chains carefully. The arrows in every food chain show the flow of energy from one organism to the other.

Maize → Chicken → Fox

Grass → Cow → Tiger

Sea grass → Fish → Man

(a) Maize, grass and sea grass are known as food producers. How do they get food?

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(b) The chicken, cow, fish, fox, tiger and Man are known as food consumers. They do not make food. They get the energy from eating other animals or plants. Based only on the diagrams above, which group—food producers or food consumers will be present on Earth in greater number? Explain your answer. (3m)

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36. Minmin likes to place potted plants in her bedroom. In the daytime, she places her potted plants near the window so that the plants can photosynthesise. In the night, she places them on her writing desk in her room. Minmin's mother says that it is not healthy to have plants in the room at night.

(a) Do you think Minmin's mother is right? (1m)

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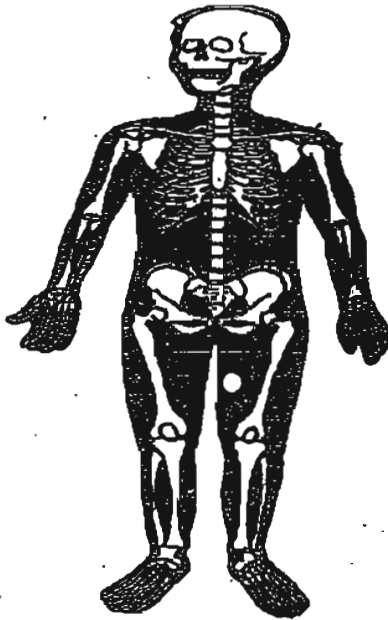
(b) Explain your answer in (a). (2m)

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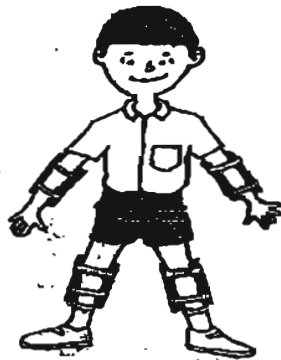
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37. The places where bones meet are called joints. Look at the picture of the skeleton below.



- (a) Identify a hinge joint and draw an arrow to point to it. Label the joint "P". (1m)
- (b) Identify a ball-and socket joint and draw an arrow to point to it. Label the joint "Q". (1m)
- (c) Xiaoqiang had his knees and elbows wrapped around with corrugated cardboard, as shown below. Then he was asked to perform a few tasks like sitting on the floor and scratching his nose. He found great difficulty in performing those tasks. However, when the cardboards are removed, he found that he had no problem performing the same tasks.



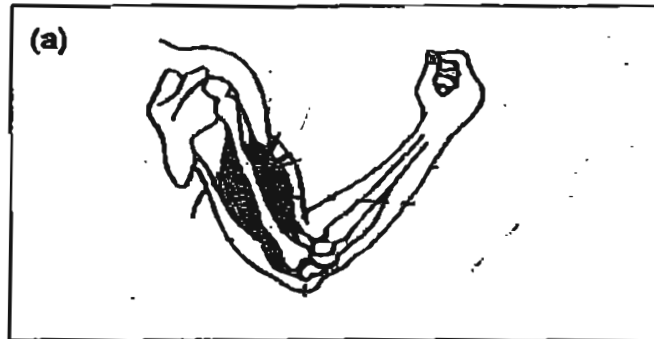
What does the experiment tell us about our joints? (1m)

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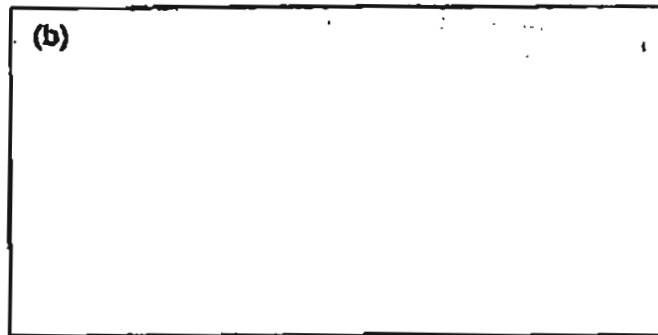
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38. Ali went to the gymnasium to exercise. He started to carry some weights. The picture below shows his upper arm when he lifted the weights.

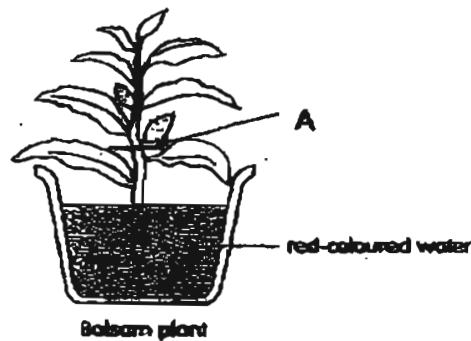
(a) Draw an arrow to point to the muscle that contracted when he lifted the weights. (1m)



(b) Draw in the box below how the arm will look like when the muscle in (a) above relaxes. Label in your drawing the muscle that contracts. (2m)



39. Sally put some red food colouring into a jar of water. She then put a balsam plant into the jar for a night.

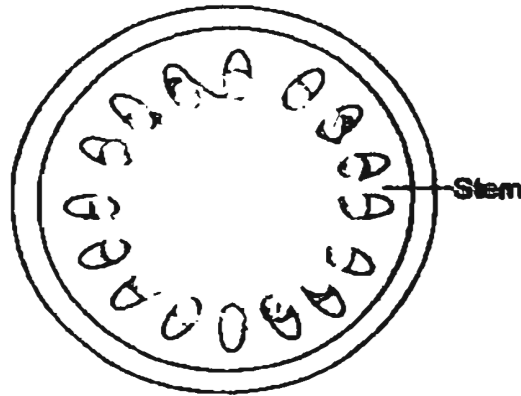


(a) What can Sally observe about the stem and the leaves on the next day? (1m)

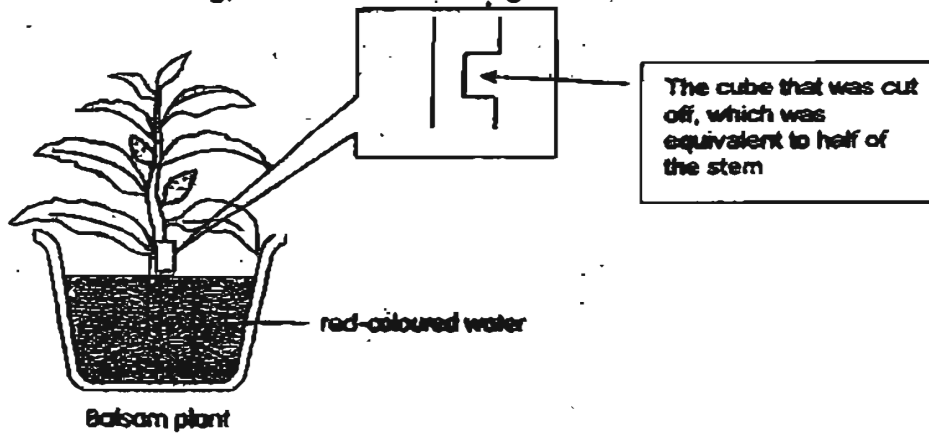
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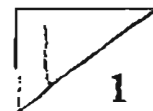
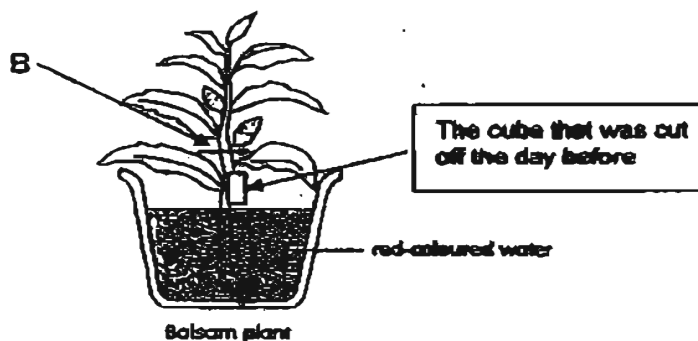
- (b) Sally then cut the stem at Point A, as indicated in the diagram below. Shade the parts that would appear red on the diagram of the cross-section of the stem given below. (1m)



- (c) John also did the same thing as Sally. He also left an identical balsam plant in a jar of coloured water overnight. But before that, he cut off a cube from the stem, leaving half of the stem remaining, as shown in the diagram below.

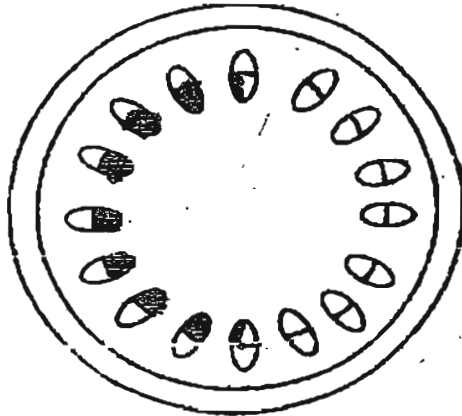


The next day, John then cut the stem at point B, as indicated in the diagram below.





- (c) Shade the parts that would appear red on the diagram of the cross-section of the stem given below. (1m)



- (d) What do these 2 experiments show about the stems of plants? (1m)

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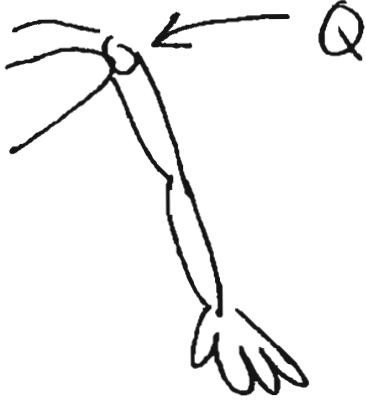
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37) a)



b)



c) The experiment tells us that joint allows us to move freely.

38) a)



39) a) The stem and leaves would turn a little red the next day.

b)



c)

d) The stems of plants carry water and mineral salts up and down the plants.

61  
ZND\*