

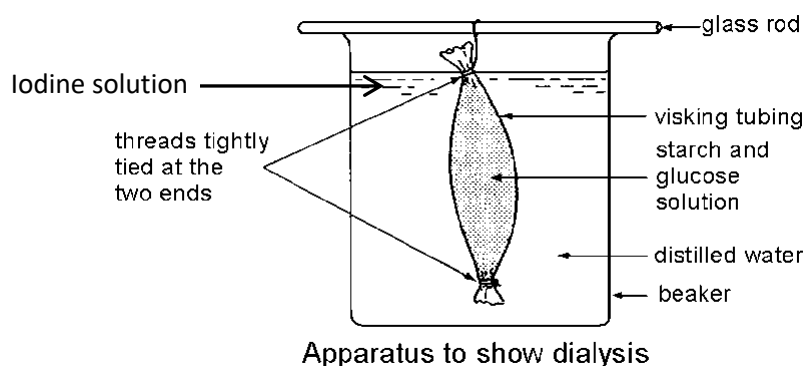
BIOLOGY AND HUMAN BIOLOGY (FORM FOUR)

The questions below involve cell organelles, water relation and Food test

1. What sort of cells is surrounded by the cell surface membrane?
2. What happens inside the mitochondrion?
3. State which part of the cell
 - I. Makes food by photosynthesis
 - II. Controls what goes in and out of the cell
 - III. Stores information about making proteins
 - IV. Contains cell sap
 - V. Protects the outside of the cell.
4.
 - i. Which is larger: a water molecule or a sugar molecule
 - ii. What is meant by partially permeable membrane?
 - iii. How would you describe a solution which has a high concentration of water molecule?
5.
 - i. What happens to an animal cell in pure water
 - ii. Explain why this does not happen to a plant cell in pure water.
6. Which part of the plant is fully permeable
7. What is plasmolysis
8. How can plasmolysis be brought about
9. Which of these is an example of (a) Diffusion (b) Osmosis or (c) Neither? Explain your answer in each case.
 - i. Water moves from a dilute solution in the soil to into the cells in the plant roots
 - ii. Saliva flows out of the salivary gland in to the mouth
 - iii. A spot of blue ink drops into a glass of still water quickly colours all the water blue

- iv. Carbon dioxide goes into the plant leaves when it is photosynthesizing

10. An experiment is set up as shown below. Starch and Glucose molecules are too big to go through the Visking tubing. Water and iodine solution goes through.



- (a) In which direction would the iodine solution move to? Explain your answer
- (b) In which direction would the water molecules diffuse. Explain your answer
- (c) Draw and label the diagram to show what the apparatus would look like after an hour. Label the colours of the two solutions.
- (d) What would you observe if the iodine solution was replaced with Benedict solution? Explain your answer

NB: Form 3 lessons on water relations have to be reviewed before attempting some of the questions.

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