WORKSHEET 1

CHAPTER 4 – ABSORPTION BY ROOTS

A. Name the following.

1. Shrinkage of cytoplasm when a cell is kept in a hypertonic solution.
2. Movement of solvent molecule from its higher concentration to its lower concentration through a semi-permeable membrane.
3. The tissue which conducts manufactured food in plants.
4. The condition of a cell when it is kept in a hypotonic solution.
5. The force which helps in the conduction of water.

B. Fill in the blanks.

1. Wooden doors swell up in rainy season due to _____
2. Leaves get wilted if _____ is removed from the plant.
3. _____ helps in the opening of stomata.
4. Recovery of cytoplasm when a cell is kept in a hypotonic solution is _____
5. The diffusion of a _____ across the semi-permeable membrane is known as osmosis.

C. State whether the following statements are True or False.

1. Leaves wilt due to exosmosis.
2. The cell membrane is semi-permeable.
3. Bleeding is because of root pressure.
4. Cells with shrunken protoplasm are called turgid.
5. Raisins swell up when placed in a medium which is hypertonic.

D. Choose the correct option.

1. Which of the following has the highest osmotic potential?
   a. 10% salt solution b. 60% salt solution c. Sugar solution d. Water
2. Movement of water out of cell is
   a. diffusion. b. endosmosis. c. osmosis. d. exosmosis.
3. Wilting is due to lack of
   a. sugar. b. salt. c. water. d. none of these.
4. The pressure exerted by the cell wall on the contents of the cell is
   a. turgor pressure. b. wall pressure. c. root pressure. d. osmotic pressure.

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5. Active transport needs

a. energy. b. osmotic pressure. c. root pressure. d. all of these.

E. In the figure, i shows a cell in the normal state and ii shows the same cell after leaving it in a certain solution for a few minutes. Answer the following questions based on the given figure.

i. ii.

1. Describe the change which has occurred in the cell **ii**.
2. Give the technical terms for the condition of the as seen in **ii.** and in **i**.
3. Define the process which led to this condition.
4. What was the solution – isotonic, hypotonic or hypertonic in which the cell was kept?
5. How can the cell in **ii.** be brought back to its original condition?

ANSWERS

WORKSHEET 1

A. Name the following.

1. Plasmolysis
2. Osmosis
3. Phloem
4. Turgidity
5. Transpiration pull/cohesive force

B. Fill in the blanks.

1. imbibition
2. xylem
3. turgor pressure
4. deplasmolysis
5. solvent

C. State whether the following statements are True or False.

1. True
2. True
3. False
4. False
5. False

D. Choose the correct option.

1. d.
2. d.
3. c.
4. b.
5. a.

E. In the figure, i shows a cell in the normal state and ii shows the same cell after leaving it in a certain solution for a few minutes. Answer the following questions based on the given figure.

1. The cytoplasm shrinks away from the cell wall due to plasmolysis
2. **i.** Turgid

   ii. Flaccid
3. When a plant cell is kept in hypertonic solution, the cytoplasm shrinks and moves away from cell wall. This is known as plasmolysis.
4. Hypertonic
5. By keeping the plasmolysed cell in hypotonic solution.