

Mrs. Sunanda Singh

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Kline Memorial School of UBS

Biology Worksheet-5

Chapter 5-Absorption by Roots

Class X- A,B

I. Name the following:

- i) The pressure which is responsible for the movement of water molecule across the cortical cells of the root.
- ii) The tissue responsible for the ascent of sap in plants.
- iii) The pressure exerted by cell contents on the cell wall of the plant.
- iv) A solution whose concentration is lower than that of the cell sap.
- v) The inward movement of solvent molecules through the plasma membrane of a cell.
- vi) The condition of a cell in which cell contents are shrunken.
- vii) The process by which water absorption needs metabolic energy.

II. Define:

- i) Diffusion ii) Osmosis iii) Root pressure iv) Turgor pressure
- v) Imbibition vi) Guttation vii) Active Transport

III. Differentiate between:

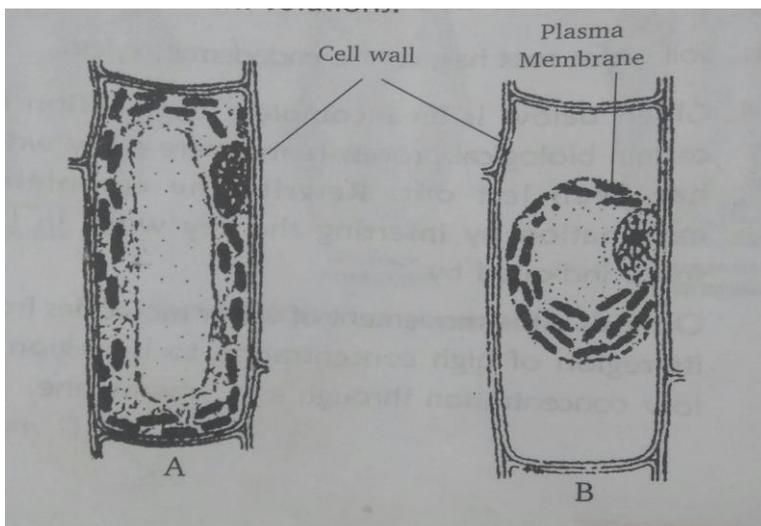
- i) Osmotic pressure and Turgor pressure
- ii) Endosmosis and Exosmosis
- iii) Diffusion and Osmosis
- iv) Hypertonic solution and Hypotonic solution
- v) Xylem and Phloem

IV. What is the importance of turgidity to plants?

V. Explain why?

- i) The raisins swell up in water.
- ii) We gargle with saline water in case of throat infection.
- iii) Bacteria and fungi do not grow in pickles, jams and jellies.
- iv) A closed can of dried seeds burst open if some water enters it by accident.

VI. Given below are diagrams of plant cells as seen under the microscope after having been placed in two different solutions:



(a) What is the technical term for the condition of:

- i) Cell A
- ii) Cell B

(b) From the solutions given in brackets (Water strong sugar solution, 1% salt solution) Name the solution into which:

- i) Cell A
- ii) Cell B was placed before being viewed under the microscope.

(c) Under what conditions in the soil will the root hair cell resemble:

- i) Cell A
- ii) Cell B

(d) Name the pressure responsible for the movement of water from the root hair cell to the xylem of the root. How is it setup?

(e) Name the pressure that helps in the movement of water up the xylem of the root.