ODM EDUCATIONAL GROUP
Changing your Tomorrow

SUBJECT:BIOLOGY
CHAPTER:1
CHAPTER NAME: TRANSPORTATION IN PLANTS.
PERIOD-3

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osmosis

- Osmosis is the movement of molecules from a region of higher concentration to a region of lower concentration across a semi-permeable membrane until an equilibrium is reached.
- The plant cell wall is freely permeable to substances in solution and water. Osmosis is of two types:

➢ **Endosmosis:** This is the movement of water molecules enters into the cell when the cell is placed in a hypotonic solution.

➢ **Exosmosis:** This is the movement of water molecules out of the cell when the cell is placed in a hypertonic solution.

Plasmolysis

- Plasmolysis is the process in which plant cell loses water when placed in a hypertonic solution. It depends upon three types of solutions:

- **Isotonic:** This refers to two solutions with the same osmotic pressure across the semi-permeable membrane.
- **Hypotonic:** This is the solution which has a lower osmotic pressure than another solution.
- **Hypertonic:** This is the solution with higher osmotic pressure than another solution.

Diffusion

- The movement of molecules from regions of higher concentration to regions of lower concentration is called diffusion.
- Movement by diffusion is passive.
- Diffusion rates are affected by the gradient of concentration, the permeability of the membrane separating them, temperature, and pressure.

- https://www.youtube.com/watch?v=77F0IwkVEX8

Active transport

- The movement of molecules against a concentration gradient, from the region of lower concentration to the region of higher concentration, with the help of ATP is called active transport.
- Active transport is an up-hill transport.

Ascent of sap.

Water enters a root hair → the cell content becomes dilute → cell next to the root hair cell will be more concentrated → Water enters by osmosis into this cell → Water, along with dissolved nutrients moves along from cell to cell and goes into the xylem.
Thus root pressure is the force which pushes water into the xylem. This is also called ascent of sap.

Root pressure.

- Root pressure refers to the osmotic pressure within the cells of a root system that causes sap to rise through a plant stem to the leaves.

Home Assignments.

- Exercise Question No-9 and Long Answer Question No-3

THANKING YOU

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