

ACTIVITY 12

DETERMINATION OF OSMOSIS IN LIVING PLANT CELLS OF ONION OR RHEODISCOLOUR LEAF OR SPIROGYRA

(Plasmolysis and Deplasmolysis)

Theory:

The movement of solvent (water) from the solution of low solute concentration to the solution of high solute concentration through a differentially permeable membrane is called osmosis.

Plasmolysis: The shrinkage of protoplasm due to exosmosis when cells are placed in a hypertonic solution is called plasmolysis.

Deplasmolysis: When the plasmolysed cells are placed in hypotonic solution or pure water, the protoplasm returns back to its actual position, due to endosmosis, the process is called deplasmolysis.

Procedure: (For Plasmolysis)

- (i) Take three slides and put few drops of 10% sugar solution on 1st slide, 20% sugar solution on 2nd slide and 30% sugar solution on 3rd slide.
- (ii) Placed a piece of onion epidermis or RheodiscoLOUR leaf epidermis or spirogyra filaments in the drops of sugar solution of each slide.
- (iii) Cover them with cover slip and observe under microscope.

Observation of Plasmolysis

Time	10% sucrose solution	20% sucrose solution	30% sucrose solution
0 min	Normal	Normal	Normal
5 min	+	+ +	++++
10 min	+	+ +	++++
15 min	+	+ +	++++
20 min			