passage of solvent into solution through a semipermeable membrane is called osmotic pressure.

- Osmotic pressure is a colligative property as it depends on the number of solute particles and not on their identity.
- For a dilute solution, osmotic pressure (π) is directly proportional to the molarity (C) of the solution i.e. π= CRT
- Osmotic pressure can also be used to determine the molar mass of solute using the equation $M_2 = \frac{w_2RT}{\pi V}$
- Isotonic solution: Two solutions having same osmotic pressure at a given temperature are called isotonic solution.
- Hypertonic solution: If a solution has more osmotic pressure than other solution it is called hypertonic solution.
- Hypotonic solution: If a solution has less osmotic pressure than other solution it is called hypotonic solution.
- Reverse osmosis: The process of movement of solvent through a semipermeable membrane from the solution to the pure solvent by applying excess pressure on the solution side is called reverse osmosis.
- Colligative properties help in calculation of molar mass of solutes.
- Abnormal molar mass: Molar mass that is either lower or higher than expected or normal molar mass is called as abnormal molar mass.
- Van't Hoff factor: Van't Hoff factor (i)accounts for the extent of dissociation or association.

$$i = \frac{\text{Normal molar mass}}{\text{Abnormal molar mass}}$$

$$= \frac{\text{Observed collogative property}}{\text{Calculated collogative property}}$$

$$= \frac{\text{Total number of moles of particles after association / dissociation}}{\text{Total number of moles of particles before association / dissociation}}$$

- Value of i is less than unity in case solute undergo association and the value of i is greater than unity in case solute undergo dissociation.
- Inclusion of van't Hoff factor modifies the equations for colligative properties as: