

- Osmotic pressure ( $\pi$ ) = CRT where  $R = \frac{1}{12} \text{ l atm mol}^{-1} \text{ K}^{-1}$

- $P = \frac{n}{V} RT = CRT$  for ideal gases

- Van't Hoff factor ( $i$ ) =  $\frac{\text{Normal molar mass}}{\text{Abnormal molar mass}}$   
 $= \frac{\text{Observed colligative property}}{\text{Calculated colligative property}}$

Also  $i = \frac{\text{Total no of moles of particles after association/dissociation}}{\text{Number of moles of particles before association/dissociation}}$

- Relative lowering of Vapour Pressure (RLVP) of solvent

$$\hookrightarrow \frac{P_1^0 - P_1}{P_1^0} = i \frac{n_2}{n_1}$$

- Elevation of Boiling point,  $\Delta T_b = i K_b m$

- Depression of Freezing point,  $\Delta T_f = i K_f m$

- Osmotic pressure of solution,  $\pi = i n_2 \frac{RT}{V}$