



CHEMISTRY

CH: 2 SOLUTIONS

Class: XII

- I Answer the following
1. Define the following: a) ebullioscopic constant b) cryoscopic constant c) van't Hoff factor d) osmosis e) osmotic pressure f) reverse osmosis.
 2. Why does molarity of a solution changes with temperature?
 3. A and B liquids on mixing produced a warm solution. Which type of deviation is there and why?
 4. What is the van't Hoff factor for a compound which undergoes tetramerisation in an Organic solvent?
 5. What is the advantage of using osmotic pressure as compared to other colligative properties for the determination of molar masses?
 6. Define azeotropes. What type of azeotrope is formed by positive deviation from Raoult's law.
 7. What type of deviation is shown by a mixture of ethanol and acetone?
 8. On mixing liquid X and liquid Y, volume of the resulting solution decreases. What type of deviation from Raoult's law is shown by the resulting solution? What change in temperature would you observe after mixing liquids X and Y ?
 9. Will the elevation in boiling point be same if 0.1 mol of sodium chloride or 0.1 mol of sugar dissolved in 1 L of water ? Explain.
 10. Henry's law constant K_H for the solution of CH_4 in benzene at 298 K is 4.27×10^5 mm Hg. Calculate the solubility of methane in benzene at 298 K 760 mm Hg.
 11. A solution is prepared by dissolving 5g of a nonvolatile solute in 95 g of water. It has a vapour pressure of 23.375 mm Hg at 25 °C. Calculate the molar mass of solute at 25 °C. Vapour pressure of pure water at 25 °C is 23.75 mmHg.
 12. A 1.00 molal aqueous solution of trichloroacetic acid is heated to its boiling point. The solution has a boiling point of 100.18 °C. Determine the van't Hoff factor for trichloroacetic acid. K_b for water = $0.512 \text{ K kg mol}^{-1}$
 13. Assuming complete dissociation calculate the expected freezing point of a solution prepared by dissolving 6 g Glauber's salt $Na_2SO_4 \cdot 10 H_2O$ in 0.1 Kg of water.