

Assignment

- Q1. The vapor pressure of deliquescent substance is less or more than that of water vapors in air?
- Q2. If α is the degree of dissociation of Na_2SO_4 then write the Vant Hoff factor used for calculating the molecular mass.
- Q3. If 6.023×10^{20} molecules of urea are present in 100 ml of its solution. then what is the conc. of urea solution?
- Q4. Why camphor is used in molecular mass determination?
- Q5. 0.004 M solⁿ of Na_2SO_4 is isotonic with 0.01 M solⁿ of glucose at the temp. What is the apparent degree of dissociation of Na_2SO_4 ?
- Q6. What happen when mango is placed in dilute aqueous solution of HCl?
- Q7. Out of (a) 200 ml of 2 M NaCl Solution and (b) 200 ml of 1 M glucose Solution which one has higher osmotic pressure?
- Q8. Out of (a) 0.01 M KNO_3 (b) 0.01 M Na_2SO_4 which aqueous Solution will exhibit high Boiling point?
- Q9. Out of (a) 1 M CaCl_2 (b) 1 M AlCl_3 which aqueous Solution will show maximum vapor pressure at 300 K?
- Q10. Out of (a) $\text{HNO}_3 + \text{H}_2\text{O}$ and (b) $\text{C}_6\text{H}_6 + \text{C}_6\text{H}_5\text{CH}_3$ which will form maximum boiling azeotrope?
- Q11. Two Solutions of a substance (non-electrolyte) are mixed in the following manner: 480 ml of 1.5 M (First Solution) + 520 ml of 1.2 M (Second Solution). What is the molarity of the final mixture?
- Q12. To get the hard boiled eggs, why common salt is added to water before boiling the eggs?
- Q13. Equimolal Solution of NaCl and BaCl_2 are prepared in H_2O . Freezing point of NaCl is found to be -2°C . What freezing point do you expect from BaCl_2 Solution?
- Q14. Why water cannot be separated completely from ethyl alcohol by fractional distillation?
- Q15. Why a person suffering from high blood pressure is advised to take minimum quantity of common salt?
- Q16. Chloro acetic acid is a mono-protic acid and has $K_a = 1.36 \times 10^{-3}$. Calculate boiling point of 0.01 M aqueous solution? ($K_b = 0.51 \text{ k kg/mol}$)
- Q17. Which colligative property is preferred for the molar mass determination of macro molecules? Why?
- Q18. How much ethyl alcohol must be added to 1 litre of water so that the solution will freeze at 14°F ? (K_f for water = 1.86°C/mol)

Assignment

- Q19. 75.2 g of phenol is dissolved in solvent of $K_f = 14$, if the depression in freezing point is 7 k. What is the % association of phenol?
- Q20. How many ml of 0.1 M HCl are required to react completely with 1 gm mixture of Na_2CO_3 & NaHCO_3 containing equimolar mixture of both?

