**I.P.S.Sr.Sec.School**

**Max Time : 1 hr** **Class : 12th Chemistry Max Marks : 30**

**Unit Test**

1. What do you expect to happen when Red blood corpuscles (RBCs) are placed in 0.5 % NaCl solution?

[ 1 ]

1. What are isotonic solutions? [ 1 ]
2. If 20 cm3 of 1 M CaCl2 and 60 cm3 of 0.2 M CaCl2 are mixed, what will be the molarity of the final solution ? [ 2 ]
3. Calculate the mass percentage of aspirin (C9H8O4) in acetonitrile (CH3CN) when 6.5 g of C9H8O4 is dissolved in 450 g of CH3CN. [ 2 ]
4. An aqueous solution of glucose boils at 100.01. The molal elevation constant for water is 0.5 K kg mol – 1. What is the number of glucose molecules in the solution containing 100 g of water? [ 2 ]
5. The conductivity of 0.2 M solution of KCl at 298 K is 0.0248 S/cm. Calculate its molar conductivity.

[ 2 ]

1. Write two differences between a solution showing positive deviation and a solution showing negative deviation from Raoult’s law. [ 2 ]
2. Define Molar conductivity and Cell constant. [ 3 ]
3. Explain Reverse osmosis and Molality. [ 3 ]
4. The vapour pressures of benzene and toluene at 293 K are 75 mm and 22 mm Hg respectively. 23.4 g of benzene and 64.4 g of toluene are mixed. If the two form an ideal solution, calculate the mole fraction of benzene in the vapour phase assuming that the vapours are in equilibrium with the liquid mixture at this temperature. [ 3 ]
5. At 50˚C, the vapour pressure of pure CS2 is 854 torr. A solution of 2 g of Sulphur in 100 g of CS2 has vapour pressure of 848.9 torr. Determine the formula of Sulphur molecule. [ 3 ]
6. Conductivity of 0.00241 M acetic acid solution is 7.896 x 10 – 5 S cm – 1. Calculate its molar conductivity in this solution. If for acetic acid be 390.5 S cm2 mol – 1, what would be its dissociation constant ?

[ 3 ]

1. A solution is prepared by dissolving 8.95 mg of a gene fragment in 35 mL of water has an osmotic pressure of 0.335 torr at 25. Assuming that the gene fragment is a non-electrolyte. Calculate its molar mass. [ 3 ]