Max. Marks: 15 marks **Predicate**

Max. Time: 30 minutes **12th, Chemistry - Solutions**

1) Account for the following: $(2\times5 = 10)$
   i) $CaCl_2$ is used to clear snow from roads in hill stations.
   ii) Ethylene glycol is used as antifreeze in radiators of vehicles in cold countries.
   iii) The freezing point depression of 0.01 m NaCl is nearly twice that of 0.01 m glucose solution.
   iv) RBC swell up & finally burst when placed in 0.01% NaCl solution.
   v) When dried fruits & vegetables are placed in water, they slowly swell & return to original form?
2) Urea forms an ideal solution in water. Determine the vapor pressure of an aqueous solution containing 10% by mass of Urea at 40^0C.
   (Vapor pressure of water at 40^0 C = 55.3 mm Hg) (2.5)
3) An aqueous solution containing 3.12 g of barium chloride in 250 g of water is found to boil at 100.0832^0 C. Calculate the degree of dissociation of barium chloride.
   (Molar mass of $BaCl_2$ = 208 g/mol , K_b for water = 0.52 K/m) (2.5)

Max. Marks: 15 marks **Predicate**

Max. Time: 30 minutes **12th, Chemistry - Solutions**

4) Account for the following: $(2\times5 = 10)$
   i) $CaCl_2$ is used to clear snow from roads in hill stations.
   ii) Ethylene glycol is used as antifreeze in radiators of vehicles in cold countries.
   iii) The freezing point depression of 0.01 m NaCl is nearly twice that of 0.01 m glucose solution.
   iv) RBC swell up & finally burst when placed in 0.01% NaCl solution.
   v) When dried fruits & vegetables are placed in water, they slowly swell & return to original form?
5) Urea forms an ideal solution in water. Determine the vapor pressure of an aqueous solution containing 10% by mass of Urea at 40^0C.
   (Vapor pressure of water at 40^0 C = 55.3 mm Hg) (2.5)
6) An aqueous solution containing 3.12 g of barium chloride in 250 g of water is found to boil at 100.0832^0 C. Calculate the degree of dissociation of barium chloride.
   (Molar mass of $BaCl_2$ = 208 g/mol , K_b for water = 0.52 K/m) (2.5)