ZERO DOUBTS

CHEMISTRY (BY BHANU SIR)

Class-12TH WEEKLY ASSIGNMENT (22- 28/06/24)

CHAPTER- SOLUTIONS

SATURDAY (22/06/24)

1. The molarity (M) of an aqueous solution containing 5.85g NaCl in 500 ml water is:
   GIVEN : molar mass Na: 23 & Cl: 35.5 gmol^{-1}
   a. 20
   b. 0.2
   c. 2
   d. 4

   (Ans- b)

2. The density of 'x' M solution ('x' molar) NaOH is 1.12 gml^{-1}. while in molarity, the concentration of the solution is 3m (3 molal). Then x is ? (molar mass of NaOH is 40 gml^{-1})
   a. 3.5
   b. 3.0
   c. 3.8
   d. 2.8

   (Ans-b)

SUNDAY (23/06/24)

1. Molality (m) of 3M aqueous solution of NaCl is: (Given: Density of solution = 1.25 gml^{-1}, Molar mass in gmol^{-1} : Na-23, Cl-35.5)
   a. 2.90 m
   b. 2.79 m
   c. 1.90 m
   d. 3.85 m

   (Ans- b)

2. Molality of an aqueous solution of urea is 4.44 m. Mole fraction of Urea in solution is $x \times 10^{-3}$.
   Value of x is …………………….(integer answer)

   (Ans- 74)

MONDAY (24/06/24)

1. An open beaker of water in equilibrium with its water vapour is in a sealed container. When a few grams of glucose are added to the beaker of water, the rate at which water molecules
   a. Leaves the solution increases
   b. Leaves the vapour increases
   c. Leaves the vapour decreases
   d. Leaves the solution decreases

   (Ans- d)

2. Which one of the following statements regarding Henry's law is not correct?
   a. Different gases have different K$_H$ (Henry's law constant) values at the same temperature.
   b. The value of K$_H$ increases with increase of temperature and K$_H$ is a function of the nature of the gas.
   c. The partial pressure of the gas in vapour phase is proportional to the mole fraction of the gas in the solution.
   d. Higher the value of K$_H$ at a given pressure, higher is the solubility of the gas in the liquid.

   (Ans- d)

TUESDAY (25/06/24)

1. The vapour pressures of pure liquids A and B are 400 and 600 mm Hg, respectively at 298 K. On mixing the two liquids, the sum of their initial volumes is equal to the volume of the final mixture. The mole fraction of liquid B is 0.5 in the mixture. The vapour pressure of the final solution, the mole fractions of components A and B in vapour phase respectively, are
   a. 500 mm Hg, 0.4, 0.6
   b. 500 mm Hg, 0.5, 0.5
   c. 450 mm Hg, 0.4, 0.6
   d. 450 mm Hg, 0.5, 0.5

(Ans- a)

2. The osmotic pressure of a dilute solution is 7×10^5 Pa at 273K. Osmotic pressure of the same solution at 283K is ………………………$\times 10^4$ Nm^{-2}.

(Ans-73)

WEDNESDAY (26/06/24)

1. What happens to freezing point of benzene when small quantity of napthalene is added to benzene?
a. Increases
b. Remains unchanged
c. First decreases and then increases
d. Decreases

(Ans-d)

2. The solution from the following with highest depression in freezing point/lowest freezing point is
a. 180 g of acetic acid dissolved in water
b. 180 g of acetic acid dissolved in benzene
c. 180 g of benzoic acid dissolved in benzene
d. 180 g of glucose dissolved in water

(Ans-a)

THURSDAY (27/06/24)

1. 2 g of a non-volatile non-electrolyte solute is dissolved in 200 g of two different solvents A and B whose ebullioscopic constants are in the ratio of 1: 8. The elevation in boiling points of A and B are in the ratio of x/y (x: y). The value of y ………………………(Nearest Integer).

(Ans-8)

2. Boiling point of a 2% aqueous solution of a non-volatile solute A is equal to the boiling point of 8% aqueous of a non- volatile solute B. The relation between molecular weights of A and B is
a. $M_a = 4 M_B$
b. $M_B = 4 M_A$
c. $M_a = 8 M_B$
d. $M_B = 4 M_A$

(Ans-b)

FRIDAY (28/06/24)

1. A solution of two miscible liquids showing negative deviation from Raoult's law will have:
a. increased vapour pressure, increased boiling point
b. increased vapour pressure, decreased boiling point
c. decreased vapour pressure, decreased boiling point
d. decreased vapour pressure, increased boiling point

(Ans-d)

2. Two open beakers one containing a solvent and the other containing a mixture of that solvent with a non-volatile solute are together sealed in a container. Over time.
a. The volume of the solution and the solvent does not change.
b. The volume of the solution increases and the volume of the solvent decreases.
c. The volume of the solution does not change and the volume of the solvent decreases.
d. The volume of the solution decreases and the volume of the solvent increases.

(Ans-b)