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Chapter : solution sheet - I

Qus. 1. Calculate the mole fraction of ethylene glycol ($C_2H_6O_2$) in aqueous solution containing 20% of $C_2H_6O_2$ by mass.

Qus. 2. Calculate the amount of benzoic acid (C_6H_5COOH) required for preparing 250 ml of 0.15M solution in methanol.

Qus-3. Calculate the molality of 2.5 g of ethanoic acid in 75 g of benzene.

Qus. 4. ~~If H_2 gas is bubbed through~~ Calculate the mass percentage of benzene (C_6H_6) and carbon tetrachloride (CCl_4) if 22 g of benzene is dissolved in 122 g of carbon tetrachloride.

Ques. 5. Calculate the mole fraction of benzene in a solution, containing 30% by mass in carbon tetrachloride.

Ques. 6. Calculate the molarity of each of the following solutions:
(a) 30 g of $Co(NO_3)_2 \cdot 6H_2O$ in 4.3 L of solution
(b) 30 mL of 0.5M H_2SO_4 diluted to 500 mL

Ques. 7. Calculate the mass of urea (NH_2CONH_2) required in making 2.5 kg of 0.25 molal aqueous sol^n.

Ques. 8. Calculate (a) molality (b) molarity (c) mole fraction of KI if the density of 20% (mass/mass) aqueous KI is 1.202 g mL^{-1}.