



9. - 2024 (30 Jan Shift 1)

The mass of sodium acetate ( $\text{CH}_3\text{COONa}$ ) required to prepare 250 mL of 0.35M aqueous solution is

7 g. (Molar mass of  $\text{CH}_3\text{COONa}$  is  $82.02 \text{ g mol}^{-1}$ )

10. - 2024 (30 Jan Shift 2)

If a substance 'A' dissolves in solution of a mixture of 'B' and 'C' with their respective number of moles as

$n_A$ ,  $n_B$  and  $n_C$ , mole fraction of C in the solution is:

(1)  $\frac{n_C}{n_A \times n_B \times n_C}$

(2)  $\frac{n_C}{n_A + n_B + n_C}$

(3)  $\frac{n_C}{n_A - n_B - n_C}$

(4)  $\frac{n_B}{n_A + n_B}$

11. - 2024 (27 Jan Shift 2)

The quantity which changes with temperature is:

(1) Molarity

(2) Mass percentage

(3) Molality

(4) Mole fraction

12. - 2024 (06 Apr Shift 1)

The density of 'x' M solution ('X' molar) of NaOH is  $1.12 \text{ g mL}^{-1}$ , while in molality, the concentration of the solution is 3 m (3molal). Then x is (Given : Molar mass of NaOH is  $40 \text{ g/mol}$ )

(1) 3.5

(2) 3.8

(3) 2.8

(4) 3.0

13. - 2024 (06 Apr Shift 2)

Molality ( m ) of 3M aqueous solution of NaCl is :

(Given : Density of solution =  $1.25 \text{ g mL}^{-1}$ , Molar mass in  $\text{gmol}^{-1}$  : Na – 23, Cl – 35.5)

(1) 1.9 m

(2) 3.85 m

(3) 2.79 m

(4) 2.90 m

14 - 2024 (09 Apr Shift 1)

Molarity (M) of an aqueous solution containing  $x$  g of anhyd.  $\text{CuSO}_4$  in 500 mL solution at  $32^\circ\text{C}$  is  $2 \times 10^{-1}\text{M}$ . Its molality will be 164  $\times 10^{-3}$  m. (nearest integer). [Given density of the solution  $\approx 1.25$  g/mL]

15 - 2024 (04 Apr Shift 1)

The Molarity (M) of an aqueous solution containing 5.85 g of NaCl in 500 mL water is : (Given : Molar Mass Na : 23 and Cl : 35.5  $\text{gmol}^{-1}$ )

(1) 2

(2) 20

(3) 4

✓ (4) 0.2

16 - 2024 (08 Apr Shift 2)

A solution is prepared by adding 1 mole ethyl alcohol in 9 mole water. The mass percent of solute in the solution is 22 (Integer answer) (Given : Molar mass in  $\text{gmol}^{-1}$  Ethyl alcohol : 46 water: 18)

17 - 2024 (08 Apr Shift 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) 74