

- (d) 15.40 and 6.50



Answer: (a)

Explanation:

Active mass represents molarity (mol/L). It can be calculated directly from density (d) and molar mass (M) using the formula:

$$\text{Active Mass} = \frac{\text{Density in g/L}}{\text{Molar Mass}}$$

1. Methyl Alcohol (CH_3OH):

1. Molar mass = $12 + 3 + 16 + 1 = 32$ g/mol
2. Density = $0.5 \text{ g/mL} = 500 \text{ g/L}$
3. Active Mass = $\frac{500}{32} = \mathbf{15.625 \text{ M}}$

2. Carbon Tetrachloride (CCl_4):

1. Molar mass = $12 + 4(35.5) = 154 \text{ g/mol}$
2. Density = $1.2 \text{ g/mL} = 1200 \text{ g/L}$
3. Active Mass = $\frac{1200}{154} = \mathbf{7.79 \text{ M}}$

Question 36

8.5 g of ammonia is present in a vessel of 0.5-litre capacity. The concentration of ammonia will be:

 Ask a follow-up