

2

(A) TRABAJANDO CON 1 LITRO DE ÁCIDO COMERCIAL

$$d = \frac{m}{V} \Rightarrow m = d \cdot V = 1,84 \cdot 1.000 = 1.840 \text{ g}$$

ÁCIDO COMERCIAL

$$m = 1.840 \cdot 0,78 = 1.435,2 \text{ g ÁCIDO PURO}$$

$$M = \frac{n}{V} = \frac{\frac{m}{M_m}}{V} = \frac{\frac{1.435,2}{98}}{1} ; \quad \boxed{M = 14,6 \frac{\text{mol}}{\text{L}}}$$

(B) PRIMER MÉTODO

$$m = d \cdot V = 1,84 \cdot 75 = 138 \text{ g ÁCIDO COMERCIAL}$$

$$m = 138 \cdot 0,78 = 107,64 \text{ g ÁCIDO PURO}$$

$$M = \frac{n}{V} = \frac{\frac{m}{M_m}}{V} = \frac{\frac{107,64}{98}}{0,5} \Rightarrow \boxed{M = 2,2 \text{ mol/L}}$$

SEGUNDO MÉTODO

$$V \cdot M = V' \cdot M' \Rightarrow 75 \cdot 14,6 = 500 \cdot M'$$

$$\boxed{M' = 2,2 \text{ mol/L}}$$

(C) PRIMER MÉTODO

$$M = \frac{n}{V} = \frac{\frac{m}{M_m}}{V} \Rightarrow m = M \cdot V \cdot M_m = 2 \cdot 0,5 \cdot 98 = 98 \text{ g}$$

ÁCIDO PURO

$$m = 98 \cdot \frac{100}{78} = 125,64 \text{ g ÁCIDO COMERCIAL}$$

$$V = \frac{m}{d} = \frac{125,64}{1,84} \Rightarrow \boxed{V = 68,3 \text{ mL}}$$

SEGUNDO MÉTODO

$$V \cdot M = V' \cdot M' \Rightarrow 500 \cdot 2 = V' \cdot 14,6 ; \quad \boxed{V' = 68,5 \text{ mL}}$$

3	150 mL $\text{CH}_3\text{-COOH}$	$d = 1,25 \text{ g/cm}^3$
	350 mL $\text{CH}_3\text{-CH}_2\text{OH}$	$d = 0,786 \text{ g/cm}^3$

$$\textcircled{A} \quad C = \frac{V_S}{V_D} \cdot 100 = \frac{150}{150+350} \cdot 100 \Rightarrow C = 30\% \text{ ACIDO ACÉTICO}$$

$$\textcircled{B} \quad m(\text{CH}_3\text{-COOH}) = d \cdot V = 1,25 \cdot 150 = 187,5 \text{ g}$$

$$m(\text{CH}_3\text{-CH}_2\text{OH}) = d \cdot V = 0,786 \cdot 350 = 275,1 \text{ g}$$

$$C = \frac{m_S}{m_D} \cdot 100 = \frac{187,5}{187,5 + 275,1} \cdot 100 \Rightarrow C = 40,5\% \text{ ACIDO ACÉTICO}$$

$$\textcircled{C} \quad M = \frac{n}{V} = \frac{\frac{m}{M_m}}{V} = \frac{\frac{187,5}{60}}{0,5} \Rightarrow M = 6,25 \frac{\text{MOL}}{\text{L}}$$

$$\textcircled{D} \quad m = \frac{n}{m(\text{kg})} = \frac{\frac{187,5}{60}}{0,2751} \Rightarrow m = 11,4 \text{ mol/kg}$$