

” بسمه تعالی ”

سوالیات جزء هفتم - ۳۰ تا ۳۷

$$\begin{array}{l} 20 \text{ g A} \\ 100 \text{ kg آب} \end{array} \quad \text{ppm} = \frac{20}{100,000} \times 10^4 = 200 \text{ ppm} \quad -24$$

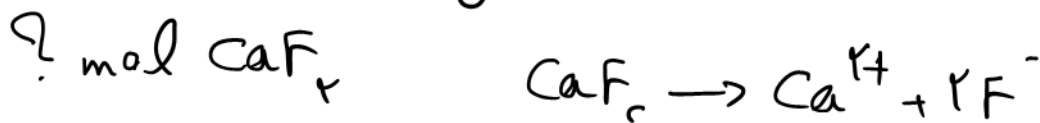
$$\begin{array}{l} 10 \text{ mg NH}_4 \\ 200 \text{ g آب} \end{array} + \begin{array}{l} 200 \text{ g آب} \\ 1 \text{ ppm} \end{array} \quad -25$$
$$x = \frac{1}{200} \times 10^4 \Rightarrow x = 10^{-2} = 0.01 \text{ g حل شده}$$

$$\text{ppm} = \frac{10 \times 10^{-3} + 1 \times 10^{-4}}{200 + 200} \times 10^4 = \frac{14 \times 10^{-3}}{400} \times 10^4 = 35$$

$$1000 \times 10^3 \text{ mL} \times \frac{1 \text{ g}}{1 \text{ mL}} = 10^4 \text{ g آب} \quad -26$$

$$\text{ppm} = 10 = \frac{x}{10^4 \text{ g}} \times 10^4 \Rightarrow x = 10 \text{ g}$$

$$19 \text{ ppm F}^- = \frac{x}{10 \text{ kg}} \Rightarrow x = 190 \text{ mg F}^- = \underline{\underline{0.19 \text{ g F}^-}} \quad -27$$



$$0.19 \text{ g F}^- \times \frac{1 \text{ mol F}^-}{19 \text{ g F}^-} = 0.01 \text{ mol F}^-$$

$$0.01 \text{ mol F}^- \times \frac{1 \text{ mol CaF}_2}{2 \text{ mol F}^-} = 0.005 \text{ mol CaF}_2$$

$$1 \text{ mol HF} \times \frac{20 \text{ g HF}}{1 \text{ mol HF}} = 20 \text{ g HF} \quad - 28$$

آب = 10g

$$\text{درصد} = \frac{20}{20+10} \times 100 = 66.7\%$$

200g محلول

٪ 50 \Rightarrow $\frac{100 \text{g محلول}}{200 \text{g محلول}}$

$$200 \text{g محلول} \times \frac{100 \text{g A}}{200 \text{g محلول}} = 100 \text{g A} \Rightarrow \text{درصد} = \frac{100 \text{g A}}{200+200} \times 100 = 25\%$$

200g محلول

٪ 50 \Rightarrow ٪ 20

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آب = ؟

$$200 \text{g محلول} \times \frac{100 \text{g A}}{200 \text{g محلول}} = 100 \text{g A}$$

$$20 = \frac{100 \text{g}}{x} \times 100 \Rightarrow x = 500 \text{g محلول} \Rightarrow 500 - 200 = 300 \text{g آب}$$

200g محلول

٪ 10

200g محلول \times $\frac{10 \text{g}}{100 \text{g محلول}} = 20 \text{g محلول}$ - 30

$$200 - 20 = 180 \text{g آب} \Rightarrow 90 \text{g آب باقی مانده}$$

$$\text{درصد} = \frac{20}{20+90} \times 100 = \frac{20}{110} \times 100 = 18.2\%$$

200g محلول

٪ 10

10 = $\frac{x}{200} \times 100 \Rightarrow x = 20 \text{g A}$ - 31

200g محلول \times $\frac{20 \text{g A}}{100 \text{g}} = 40 \text{g A}$

درصد = $\frac{20+40}{200+200} \times 100$

$\frac{40}{400} \times 100 = 10\%$

$$NaCl = 20 + 35,5 = 55,5 \text{ g/mol}$$

$$11 \text{ g NaCl} \times \frac{1 \text{ mol}}{55,5 \text{ g}} = 0,2 \text{ mol NaCl}$$

$$\text{الحل} = \frac{0,2 \text{ mol}}{0,4 \text{ L}} = 0,5 \frac{\text{mol}}{\text{L}}$$

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$$400 \text{ mL} \quad 2 \frac{\text{mol}}{\text{L}} + 600 \text{ mL} \quad 1 \frac{\text{mol}}{\text{L}}$$

$$2 = \frac{n}{V} \Rightarrow n = 0,8 \text{ mol A}$$

$$1 = \frac{n}{V} \Rightarrow n = 0,6 \text{ mol A}$$

$$\Rightarrow \text{الحل} = \frac{0,8 + 0,6}{1 \text{ L}} = 1,4 \frac{\text{mol}}{\text{L}}$$

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$$\frac{40 \text{ g}}{100 \text{ g}} \xrightarrow{\text{حجم}} \frac{\text{mol}}{\text{L}}$$

$$\text{الحل} = \frac{10 \text{ mol}}{70} = \frac{10 \times 40 \times 1,4}{490} = \frac{10}{7} = 1,43 \frac{\text{mol}}{\text{L}}$$

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$$200 \text{ mL} \quad 2 \frac{\text{mol}}{\text{L}}$$

$$120 \text{ mL} \quad 1,5$$

$$\times 1,5$$

$$\rightarrow 1,5 \frac{\text{mol}}{\text{L}}$$

$$\text{الحل} = \frac{10 \times 1,5 \times 1,4}{20} = 1,05 \frac{\text{mol}}{\text{L}}$$

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$$0,1 \text{ L} \times 2 \frac{\text{mol}}{\text{L}} = 0,2 \text{ mol}$$

$$0,15 \text{ L} \times 1,5 \frac{\text{mol}}{\text{L}} = 0,225 \text{ mol}$$

$$\Rightarrow \text{الحل} = \frac{0,2 + 0,225}{0,25} = \frac{0,425}{0,25} = 1,7 \frac{\text{mol}}{\text{L}}$$

$$\frac{400 \text{ mL}}{2 \frac{\text{mol}}{\text{L}}} \Rightarrow 0,2 \text{ mol}$$

$$0,2 \text{ L} \times 2 \frac{\text{mol}}{\text{L}} = 0,4 \text{ mol A}$$

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$$0,2 \frac{\text{mol}}{\text{L}} = \frac{0,4 \text{ mol}}{2 \text{ L}} \Rightarrow 2 = 0,4 \text{ L} = 400 \text{ mL}$$

$$\Rightarrow 2 = 0,4 \text{ L} = 400 \text{ mL}$$

$$400 - 200 = 200 \text{ mL}$$

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