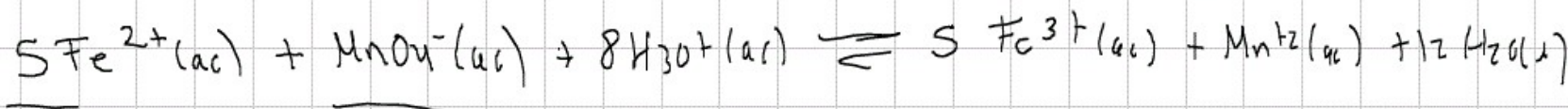
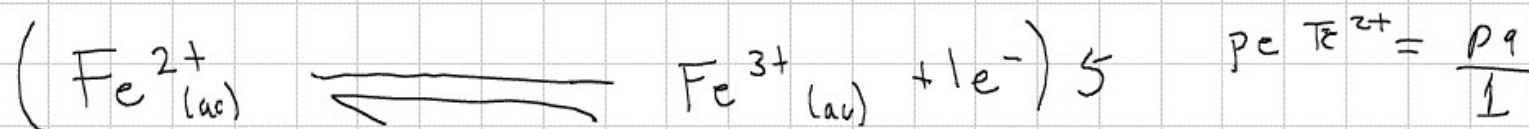
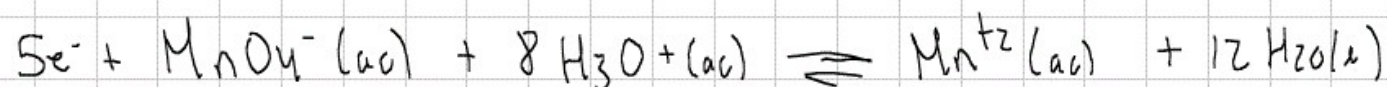


Sesión 5 27 Junio 2025

Título de la nota

27/06/2025



$$eq \text{Fe}^{2+} = eq \text{MnO}_4^-$$

$$p_e \text{MnO}_4^- = \frac{M_{\text{MnO}_4^-}}{5}$$

$$\frac{g \text{Fe}^{2+}}{p_{eq} \text{Fe}^{2+}} = N_{\text{MnO}_4^-} V_{\text{MnO}_4^-}$$

$$g \text{Fe}^{2+} = (N_{\text{MnO}_4^-} V_{\text{MnO}_4^-}) p_{eq} \text{Fe}^{2+}$$

Título de la nota

27/06/2025

$$E = E^{\circ} \text{MnO}_4^- / \text{Mn}^{2+} + \frac{0.06}{5} \log \frac{[\text{MnO}_4^-] [\text{H}_3\text{O}^+]^8}{[\text{Mn}^{2+}]}$$

$$E^{\circ} \text{MnO}_4^- / \text{Mn}^{2+} + \frac{0.06}{5} \log [\text{H}_3\text{O}^+]^8$$

$$= 1.51 \text{ V} + \frac{0.06}{5} \log [\text{H}_3\text{O}^+]^8 \quad \text{pH} = -\log [\text{H}_3\text{O}^+]$$

$$= 1.51 \text{ V} - \frac{0.06 \text{ pH} (8)}{5} = \text{potencial reducido.}$$

$$= 1.51 \text{ V} - \frac{0.06 (8) \text{ pH}}{5}$$

$$= 1.51 \text{ V} - \frac{0.06 (8) (2)}{5} = 1.318 \text{ V}$$

$$\begin{aligned}
 K_2 &= 10 \frac{(ox-red) n_T}{0.06} & pH=0 \\
 &= 10 \frac{(1.51 - 0.77) 5}{0.06} \\
 &= 10 \cdot 61.67
 \end{aligned}$$

n_{ut}	n_{red}	n_T
1	2	2
2	4	4
3	9	9
2	3	6
2	6	6

$$X = 0$$

$$\underline{E = \text{no se calcula}}$$

$$X = 0.1$$

$$E = E^{\circ} \text{Fe}^{3+}/\text{Fe}^{2+} + \frac{0.06}{1} \log \frac{[\text{Fe}^{3+}]_L}{[\text{Fe}^{2+}]_L}$$

$$= 0.77 \text{ V} + 0.06 \log \frac{[\text{Fe}^{3+}]_L}{[\text{Fe}^{2+}]_L}$$

μe

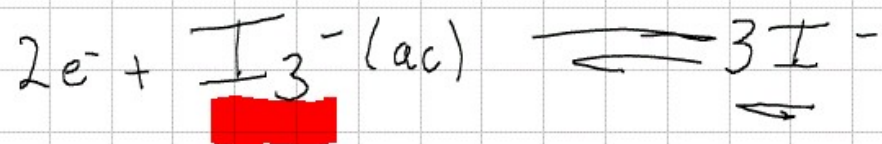
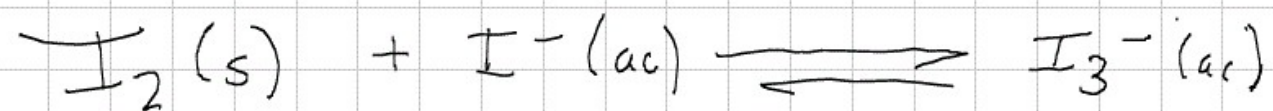
$$\begin{aligned} E &= \frac{E_{ox}(n_{ox}) + E_{red}(n_{red})}{n_{ox} + n_{red}} \\ &= \frac{(1.51V)(5) + 0.77V(1)}{6} \\ &= \underline{1.3867 V} \end{aligned}$$

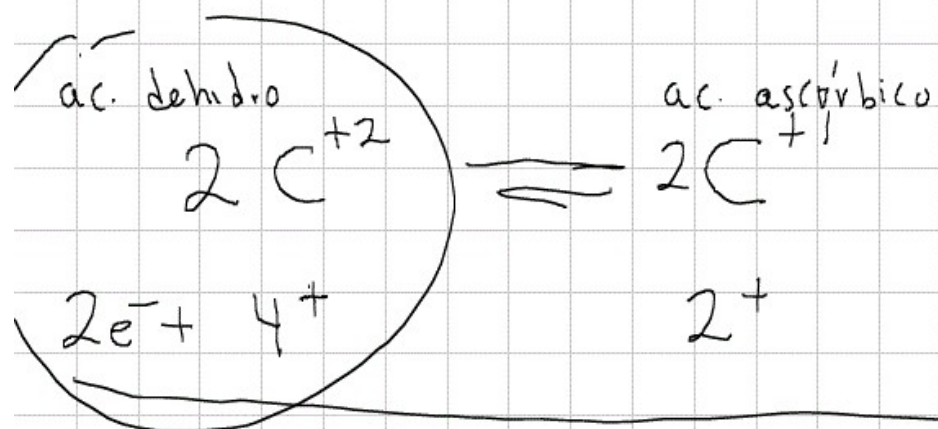
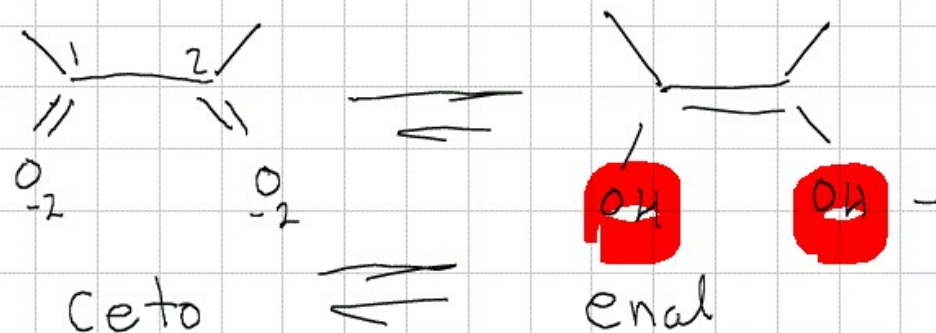
DPE

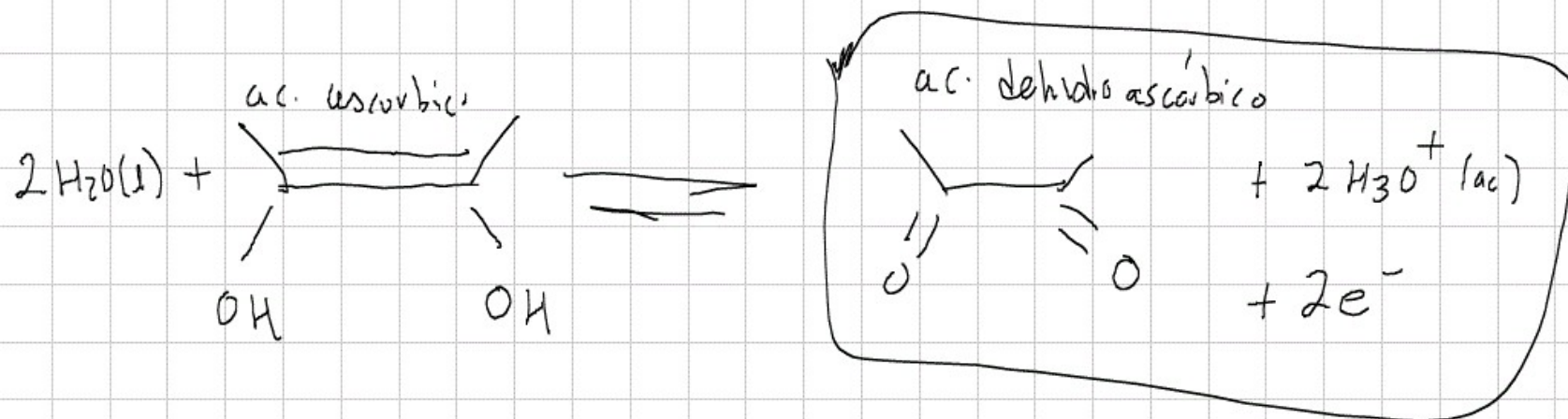
$$pH=0 \quad E^{\circ}=E'$$

$$E = E'_{MnO_4^-/Mn^{2+}} + \frac{0.06}{5} \log \frac{[MnO_4^-]}{[Mn^{2+}]}$$

$$= 1.51V + \frac{0.06}{5} \log \frac{[MnO_4^-]}{[Mn^{2+}]}$$







$$b \text{ moles A} = a \text{ moles B}$$

$$(1) \text{ molo Fe}^{2+} = 5 \text{ molo de MnO}_4^-$$

$$\frac{g \text{ Fe}^{2+}}{M \text{ Fe}^{2+}} = 5 (M_{\text{MnO}_4^-} V_{\text{MnO}_4^-})$$

$$g \text{ Fe}^{2+} = 5 (M_{\text{MnO}_4^-} V_{\text{MnO}_4^-}) M \text{ Fe}^{2+}$$

$$\text{MnO}_4^- \quad \frac{5 \text{ eq}}{\text{mol.}}$$

$$0.1 \text{ M}$$

$$\left(0.1 \frac{\text{mol}}{\text{L}} \right) \left(\frac{5 \text{ eq}}{\text{mol}} \right) = \boxed{\frac{0.5 \text{ eq}}{\text{L}} = N}$$