(20) $E = E^\circ - \frac{RT}{nF} \ln Q$

$Sn^{+2} + 2e^- \Rightarrow Sn \quad -0.14$

$Ni \Rightarrow Ni^{+2} + 2e^- \quad +0.23$

$Sn^{+2} + Ni^0 \Rightarrow Ni^{+2} + Sn^0 \quad +0.09$

$E^\circ = \frac{RT}{nF} \ln K$

$0.09 = \frac{(8.314)(298)}{2(96500)} \ln [Ni^{+2}]$

$K = \frac{[Ni^{+2}]}{[Sn^{+2}]} = \frac{[Ni^{+2}]}{1}$

Apr 4-7:38 AM

(22) $Co^\circ_{(s)} + 2H^+ \Rightarrow Co^{+2} + H_{2(g)}$

$K = \frac{[Co^{+2}][H_2]}{[H^+]^2}$

$E^\circ = \frac{RT}{nF} \ln K$

$0.28 = \frac{(8.314)(298)}{2(96500)} \ln K$

Apr 4-7:56 AM

(23) Ni^{0}, $Ni^{+2}SO_4$, 5 amps, 100g Ni, time?

$\frac{1\text{ mole Ni}}{2\text{ mole e}^-}$ $\frac{5\text{ coul}}{\text{sec}}$ $\frac{96500\text{ coul}}{1\text{ mole e}^-}$

$$\frac{1\text{ sec}}{5\text{ coul}} \left|\frac{96500\text{ coul}}{1\text{ mole e}^-}\right| \frac{2\text{ mole e}^-}{1\text{ mole Ni}} \left|\frac{100\text{ g Ni}}{59\text{ g Ni}}\right| =$$

Apr 4-8:01 AM

$$2O_3 \rightarrow 3O_2$$

$$\Delta S = n\Sigma_{prod} - n\Sigma_{react}$$

$$= 3(O_2) - 2(O_3)$$

$$= 3(205) - 2(239)$$

Apr 4-8:06 AM

$\Delta G = \Delta H - T\Delta S$

Gibbs Free E

Spont ΔG°, ΔE° $\longrightarrow K > 1$

Apr 4-8:07 AM

$2Al^\circ_{(s)} + 3I^\circ_{2(s)} \Rightarrow 2Al^{+3}_{(aq)} + 6I^-_{(aq)}$ $E^\circ = 2.20V$

$4.5\times10^{-3}M$ $0.15M$ Find E

$E = E^\circ - \frac{RT}{nF}\ln Q$ $Q = \frac{[Al^{+3}]^2[I^-]^6}{(1)(1)}$

$E = 2.20 - \frac{8.314(298)}{6(96500)}\ln\left[(4.5\times10^{-3})^2(0.15)^6\right]$

$= 2.20 - 0.095$

$= 2.295V$

Apr 4-8:12 AM

(17) (9) $Cu \rightarrow Cu^{+2}$ -0.337

$Li^{+} \rightarrow Li$ -3.05

(18) $Cu^{+2} + 2e^- \rightarrow Cu^{\circ}$ $+0.337\,V$

$Sn^{\circ} \rightarrow Sn^{+2} + 2e^-$ $+0.136\,V$

$Cu^{+2} + Sn^{\circ} \rightarrow Cu^{\circ}_{(s)} + Sn^{+2}$ $+0.473\,V$

Apr 4-8:19 AM

$H^+ + OH^- \rightarrow \overset{+}{H}(OH)^-$

Apr 4-8:28 AM