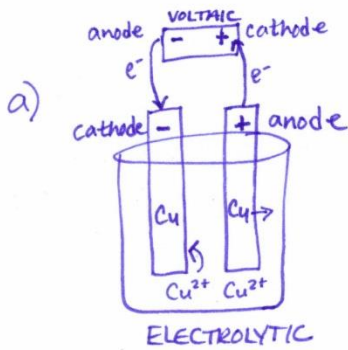
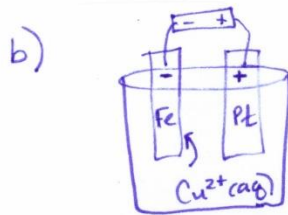
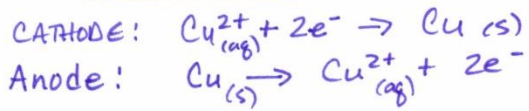


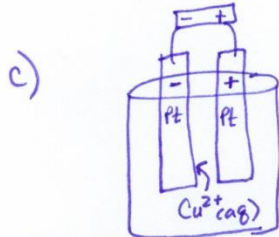
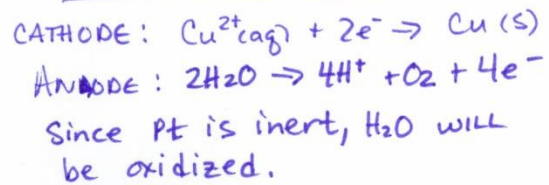
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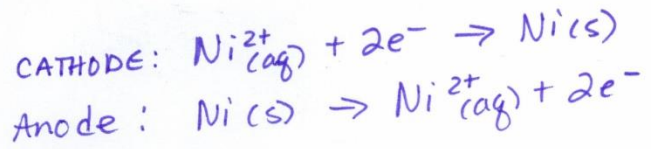
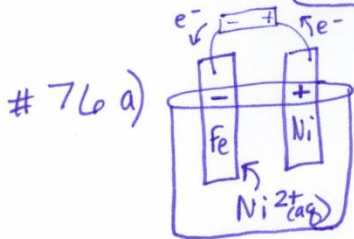
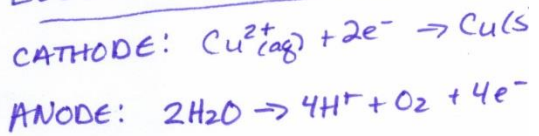
ELECTROLYTIC CELL



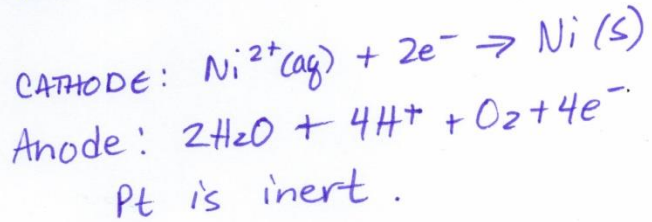
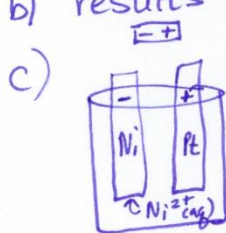
ELECTROLYTIC CELL



ELECTROLYTIC CELL



b) results are the same as "a". CATHODE is Pt.



83) NaCl will not form from NaNO_3 because water will be much more easily reduced. Of the remaining solutions, AgNO_3 yields the greatest # of moles of solid because 1 mole of Ag is formed for every mole of electrons ($\text{Ag}^+ + e^- \rightarrow \text{Ag}$) whereas only one-half mole of Cu & Zn will form because 2 moles of e^- are required to form one mole of metal.

84) The electrolysis that requires the greatest # of moles of electrons to produce the required change in concentration requires the longest time.

$$\star a) 0.25 \text{ mol Cu}^{2+} \times \frac{2 \text{ mol } e^-}{\text{mol Cu}^{2+}} = 0.50 \text{ mol } e^-$$

$$b) 0.38 \text{ mol H}^+ \times \frac{1 \text{ mol } e^-}{\text{mol H}^+} = 0.38 \text{ mol } e^-$$

$$c) 0.40 \text{ mol Ag}^+ \times \frac{1 \text{ mol } e^-}{\text{mol Ag}^+} = 0.40 \text{ mol } e^-$$

$$d) 0.15 \text{ mol Zn}^{2+} \times \frac{2 \text{ mol } e^-}{\text{mol Zn}^{2+}} = 0.30 \text{ mol } e^-$$

Sol'n (a) requires the longest time.