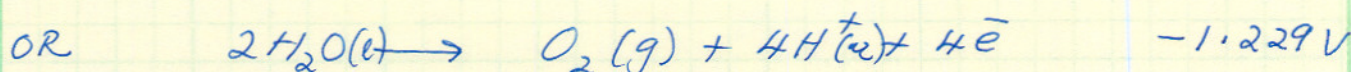
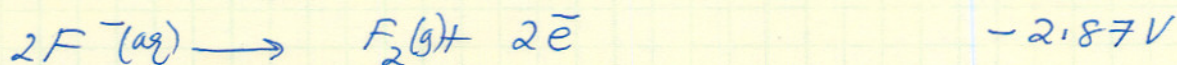


INTRODUCTION TO NATURAL SCIENCE
CHEMISTRY HOMEWORK - SPRING - WEEK 9

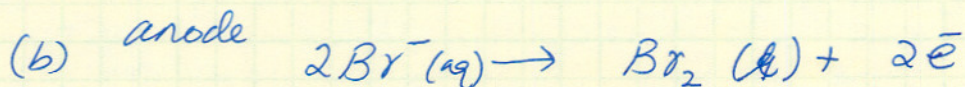
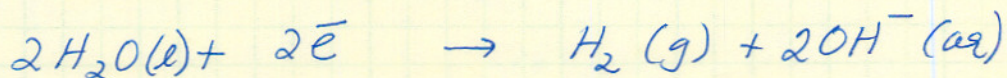
Chapter 20

(41) anode reactions

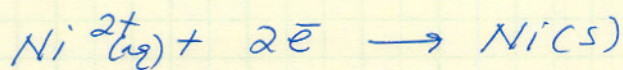


Since oxidation of H_2O requires less voltage,
 O_2 will be produced at the anode.

(43) (a) cathode

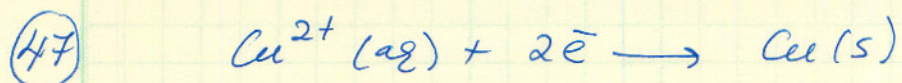


(45) Charge = $(0.150A)(12.2 \times 60s) = 109.8 C.$



$$\left(\frac{1 \text{ mol } e^{-}}{96,500 C} \right) \times 109.8 C \times \left(\frac{1 \text{ mol Ni}}{2 \text{ mol } e^{-}} \right) \times \left(\frac{58.69g}{1 \text{ mol Ni}} \right)$$

$$= \underline{\underline{3.34 \times 10^{-2} g}}$$

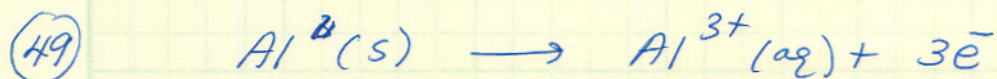


$$0.50 \text{ g Cu} \times \left(\frac{1 \text{ mol Cu}}{63.55 \text{ g Cu}} \right) \times \left(\frac{2 \text{ mol } \bar{e}}{1 \text{ mol Cu}} \right) \times \left(\frac{96,500 \text{ C}}{1 \text{ mol } \bar{e}} \right)$$

$$= 1518.49 \text{ C} = (0.66 \text{ A})(t \text{ s})$$

$$t(\text{s}) = \frac{1518.49}{0.66} = 2300.74 \text{ s}$$

$$= \underline{\underline{38.3 \text{ min}}}$$



$$84 \text{ g Al} \times \left(\frac{1 \text{ mol}}{26.98 \text{ g}} \right) \times \frac{3 \text{ mol } \bar{e}}{1 \text{ mol Al}} \times \left(\frac{96,500 \text{ C}}{1 \text{ mol } \bar{e}} \right) = 9.013 \times 10^5 \text{ C}$$

$$\frac{9.013 \times 10^5 \text{ C}}{1.0 \text{ A}} = \text{time (s)}$$

$$\text{time} = 9.013 \times 10^5 \text{ s} = \underline{\underline{250.4 \text{ hrs}}}$$