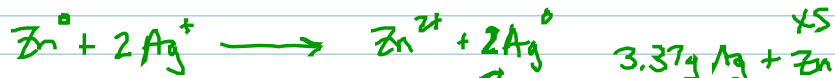


$$4.95 \text{ mL } \text{MnO}_4^- \quad (0.0100\text{M})(0.0240\text{L}) = 2.40 \times 10^{-4} \text{ mol}$$

$$2.40 \times 10^{-4} \text{ mol } \text{MnO}_4^- \times \frac{5 \text{ mol } \text{C}_2\text{O}_4^{2-}}{2 \text{ mol } \text{MnO}_4^-} \times \frac{90.01 \text{ g}}{1 \text{ mol}} = 0.05402 \text{ g } \text{H}_2\text{C}_2\text{O}_4$$

$$\frac{0.05402 \text{ g}}{1.00 \text{ g}} \times 100\% = 5.40\% \text{ H}_2\text{C}_2\text{O}_4$$

4.108



$x = \# \text{ g Ag produced}$

$$x \text{ g Ag} \times \frac{1 \text{ mol}}{107.9 \text{ g}} \times \frac{1 \text{ mol Zn}}{2 \text{ mol Ag}} \times \frac{65.39 \text{ g}}{1 \text{ mol}} = 0.303x \text{ g Zn consumed}$$

$$\frac{2.50 \text{ g Zn}}{\text{start}} - \frac{0.303x \text{ g}}{\text{consumed}} = \# \text{ g Zn remaining}$$

$$\begin{matrix} 3.37 \text{ g} \\ \text{Zn} + \text{Ag} \end{matrix} = x \text{ g} + [2.50 \text{ g} - 0.303x] \text{ g}$$

$$x = 1.25 \text{ g Ag}$$

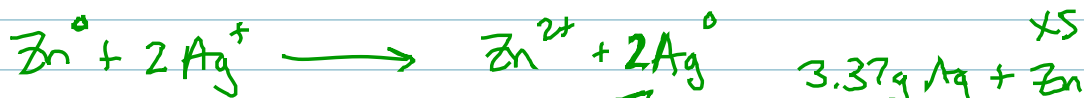
$$3.37 \text{ g} - 1.25 \text{ g Ag} = 2.12 \text{ g Zn}$$

4.95 $\text{mL MnO}_4^- (0.0100\text{M} \times 0.0240\text{L}) = 2.40 \times 10^{-4} \text{ mL}$

$$2.40 \times 10^{-4} \text{ mL MnO}_4^- \times \frac{5 \text{ mL C}_2\text{O}_4^{2-}}{2 \text{ mL MnO}_4^-} \times \frac{90.01 \text{ g}}{1 \text{ mL}} = 0.05402 \text{ g H}_2\text{C}_2\text{O}_4$$

$$\frac{0.05402 \text{ g}}{1.00 \text{ g}} \times 100\% = 5.40\% \text{ H}_2\text{C}_2\text{O}_4$$

4.108



$x = \# \text{ g Ag produced}$

$$x \text{ g Ag} \times \frac{1 \text{ mL}}{107.9 \text{ g}} \times \frac{1 \text{ mL Zn}}{2 \text{ mL Ag}} \times \frac{65.39 \text{ g}}{1 \text{ mL}} = 0.303x \text{ g Zn consumed}$$

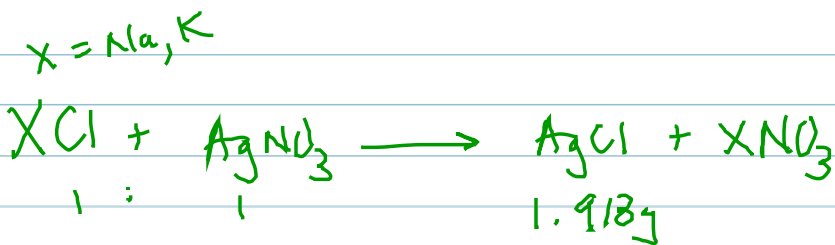
$$\frac{2.50 \text{ g Zn}}{\text{START}} - \frac{0.303x \text{ g}}{\text{CONSUMED}} = \# \text{ g Zn remaining}$$

$$3.37 \text{ g} = x \text{ g Ag} + [2.50 \text{ g} - 0.303x] \text{ g Zn}$$

$$x = 1.25 \text{ g Ag}$$

$$3.37 \text{ g} - 1.25 \text{ g Ag} = 2.12 \text{ g Zn}$$

4.30



$$1.913g AgCl \times \frac{1 \text{ mol}}{143.4g} \times \frac{1 \text{ mol } XCl}{1 \text{ mol } AgCl} = 0.01334 \text{ mol "XCl"}$$

$$\text{let } x = \text{mol NaCl} \quad \therefore \quad 0.01334 - x = \text{mol KCl}$$

$$\#g NaCl + \#g KCl = 0.8870g$$

$$\left[x \text{ mol NaCl} \times \frac{58.44g}{1 \text{ mol}} \right] + \left[(0.01334 - x) \times \frac{74.55g}{1 \text{ mol}} \right] = 0.8870g$$

$$x = 6.673 \times 10^{-3} \text{ mol NaCl} \times \frac{58.44g}{1 \text{ mol}} = 0.39g NaCl$$

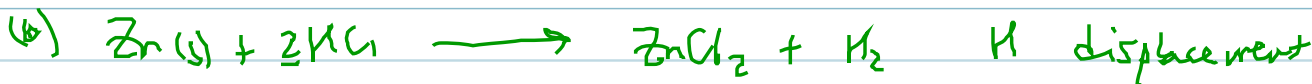
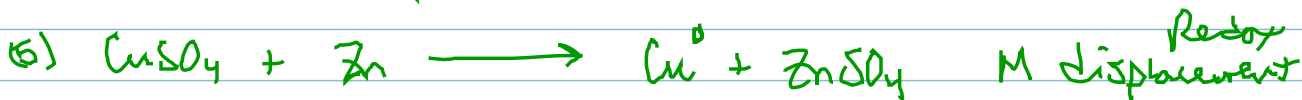
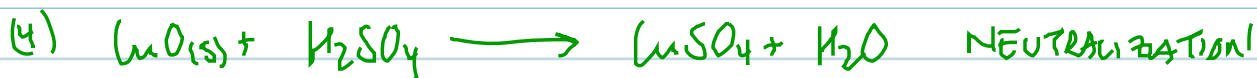
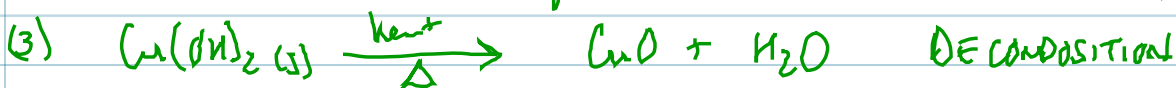
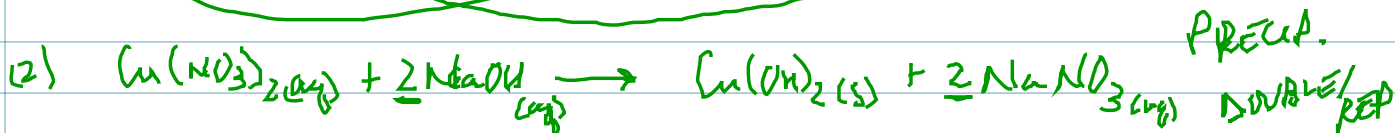
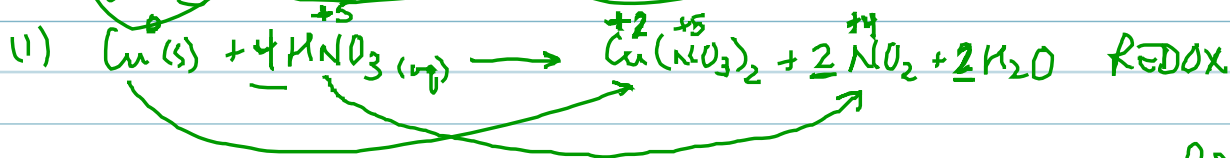
$$0.497g KCl$$

$$\% NaCl = \frac{0.39g}{0.8870g} = 44\% NaCl$$

$$56\% KCl$$

$$65.6g = 1.032 \text{ mol}$$

4.151



19.1 c)

