CHM 151LL

Practice Major Quiz 3 Key

1. How many moles of $Ni_2(SO_4)_3$ are in 102.3 g of the compound? (*Answer: 0.252mol*)

2. How many grams of NaCl are in 750.0 mL of a solution which is 0.150 M? (*Answer: 6.57g NaCl*)

3. Determine the empirical formula of a compound which percent composition is 39.10% C, 8.700% H, and 52.20% O. (*Answer:* $C_3H_8O_3$)

4. How many grams of $Bi_{(s)}$ are produced from 352.0 g $Bi_2O_{3(s)}$ according to the balanced chemical equation shown: (*Answer: 315.7g Bi*)

$$Bi_2O_{3(s)} + 3C_{(s)} \rightarrow 2Bi_{(s)} + 3CO_{(g)}$$

5. 12.0 grams of aluminum react with 54.0 grams of iron (III) oxide. If 19.5 grams of iron were obtained, what was the percent yield of the reaction? (*Answer: 78.6%)*

$$2Al_{(s)} + Fe_2O_{3(s)} \rightarrow 2Fe_{(s)} + Al_2O_{3(s)}$$

6. How many mL of 0.500 M acetic acid are required to react with 250.0 mL of barium hydroxide solution which is 0.250 M according to the following reaction: (*Answer: 250.mL* $CH_3COOH_{(aq)}$)

$$2CH_3COOH_{(aq)} + Ba(OH)_{2(aq)} \rightarrow Ba(CH_3COO)_{2(aq)} + 2H_2O_{(l)}$$