CHE 111 - Homework - Ch 7h

OER 6.2 and 7.4 **Titrations, Gravimetric Analysis and Combustion Analysis** Score: _____/40

Name: _____ Date: _____

[5 pt] 1. Given the following reaction: $2HCl(aq) + Pb(OH)_2(aq) \longrightarrow 2H_2O(l) + PbCl_2(s)$ If 12.0 grams of $Pb(OH)_2$ react with 25.0 mL of 0.355 M HCl how many grams of $PbCl_2$ will be produced?

1. _____

[5 pt] 2. How many mL of a 0.25 M solution of NaOH are required to neutralize 175.0 mL of 0.15 M solution of HCl? ($HCl + NaOH \longrightarrow NaCl + H_2O$)

2. _____

[5 pt] 3. 115.5 mL of 0.45 M H_2SO_4 is required to neutralize 255.0 mL of KOH solution. What is the molarity of the KOH solution? ($H_2SO_4 + 2KOH \longrightarrow K_2SO_4 + 2H_2O$)

3. _____

[5 pt] 4. What is the Percent Composition of CH_3OH?

(a) C: 4(a) _____

(b) H: 4(b) _____

(c) O: 4(c) _____

[5 pt] 5. What is Molecular formula of a compound with a molecular weight of 180.15 g/mol and an Empirical formula of $C_1H_2O_1$

5. _____

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[5 pt] 6. A 2.50 g mixture of $Al_2(SO_4)_3$ and $NaNO_3$ is reacted with excess $Ba(NO_3)_2$ resulting in the precipitation of 3.50 g of $BaSO_4$ (s). What is the percentage of $Al_2(SO_4)_3$ in the sample?

6. _____

[5 pt] 7. A 4.68 g sample of Manganese (?) Phosphate is reacted with excess Barium Nitrate to produce 5.40 g of Barium Phosphate (s) precipitate.

(a) What is the chemical formula of the compound. 7(a) _____

(b) What is the charge on Manganese? 7(b) _____

(c) What is the name of the compound? 7(c) _____

[5 pt] 8. 8.00 grams of an unknown hydrocarbon CxHy was burned to produce 26.04 g of CO_2 (g) and 7.99 g of H_2O (g). What is the empirical formula of the compound?

8. _____