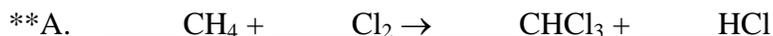**Chemistry 130**
Worksheet 2

Name: _____

1. (1.pt.) *A. Find the number of moles of Cr in 97.3g of Cr. (Cr = 52.0amu)

   B. Find the number of grams of H_2SO_3 in 1.35×10^{24} molecules of H_2SO_3 (H = 1.0, S = 32.0, O = 16.0amu)

2. (1.0pt.) Balance each of the following chemical equations.

   **A.   _____CH_4 + _____$Cl_2 \rightarrow$ _____$CHCl_3$ + _____HCl

   B.   _____CO + _____$Fe_2O_3 \rightarrow$ _____CO_2 + _____ Fe

3. Given the following balanced chemical equation: $C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$
(C = 12.0, H = 1.0, O = 16.0amu)

   ***A. (0.5pt.) Calculate the theoretical yield of CO_2 when 30.0g of C_3H_8 reacts with an excess of O_2.

   B. (0.5pt.) Calculate the theoretical yield of CO_2 when 30.0g of C_3H_8 reacts with 115g O_2.

****4. (1.0pt.) Find the molar concentration of KOH in a solution prepared by dissolving 98.2g of KOH in enough H_2O to make 250mL of solution. (K = 39.1, H = 1.0, O = 16.0amu)

5. (1.0pt.) Find the volume of 2.50M $C_6H_{12}O_6$ that contains 90.0g of $C_6H_{12}O_6$. (H = 1.0, C = 12.0, O = 16.0amu)

6. (0.8pt.) Indicate the charge expected when each of the following form ions.

   Ca _____, Te _____, Ga _____, I _____

7. (0.4pt.) Give the formula and charge for each of the following polyatomic ions:

Ammonium ion _____

Bicarbonate ion _____

Phosphate ion _____

Nitrite ion _____

8. (0.8pt.) Name each of the following compounds:

KI _____

Fe_2O_3 _____

$CoCl_3$ _____

$Mg(OH)_2$ _____

9 (0.8pt.) Give the formula for each of the following:

Stannic oxide _____

Sodium oxide _____

Lead(IV) sulfide _____

Zinc nitrate _____

10. (1.0pt.) Draw the Lewis electron dot structure for each of the following. Show electrons needed, available, and shared calculations.

A. $AsCl_3$

B. C_2H_4

11. (0.2pt.) In the molecule CH_3OH there would be _____ polar bonds.

12. (1.0pt.) Given the atomic weights, calculate the molecular weight of each of the following. (C = 12.0, H = 1.0, O = 16.0, Ca = 40.0, N = 14.0amu)

A. HNO_3 _____

B. $Ca(HCO_3)_2$ _____