

Chemistry Chapter 10-12 Review Worksheet Answer Key (except multiple choice)

Section 10.1- The Mole: A Measurement of Matter

- a. 208.2 g/mol      b. 352.0 g/mol      c. 158.0 g/mol      d. 310.2 g/mol
- 5.85 mol H<sub>2</sub>O      3. 3.6 X 10<sup>23</sup> atoms      4. 32.0 g

Section 10.2- Mole-Mass and Mole-Volume Relationships

- a. 1.8 x 10<sup>3</sup> g      b. 3.20 x 10<sup>-2</sup> g      c. 0.480 g      d. 1.43 x 10<sup>2</sup> g
- 1.87 X 10<sup>2</sup> g
- a. 4.9 X 10<sup>-3</sup> mol      b. 9.10 X 10<sup>-2</sup> mol      c. 1.98 X 10<sup>-5</sup> mol      d. 1.98 X 10<sup>-5</sup> mol
- 15.1 g
- 59.6 L CH<sub>4</sub>

Section 10.3- Percent Composition and Chemical Formulas

- Percent C = (5.34 g C /52.84 g) x 100 = 10.1% C  
Percent H = (0.42 g H/52.48 g) x 100 = 0.79%  
Percent Cl = (47.08 g Cl/52.84 g) x 100= 89.1% Cl
- Mass of Cl= 18.35- 5.74 g = 12.61 g Cl  
% Sn = (5.74 g Sn/18.35 g compound) x 100 = 31.3% Sn
- Percent C= (48.0 g C/158.1 g Ca(C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>)) x 100 = 30.4% C  
0.304 x 65.3 = 19.8 g C
- 13.2 g

Section 11.1- Describing Chemical Reactions

- Fe(s) + S(s) → FeS(s)
- MgCO<sub>3</sub>(s) → MgO(s) +CO<sub>2</sub>(g)
- silver + sulfur → silver sulfide  
Silver metal and sulfur react to produce solid silver sulfide. There are 2 silver atoms and 1sulfur atom on each side of the equation, and the coefficients are in their lowest possible ratio. Thus, the equation is balanced correctly.
- 2AgNO<sub>3</sub>(aq) +Cu(s) → 2Ag(s) +Cu(NO<sub>3</sub>)<sub>2</sub>(aq)

Section 11.2- Types of chemical Reactions

- 2Al(s) + 3F<sub>2</sub> (g) → 2AlF<sub>3</sub>(s)
- Ca(s) +2HCl(aq) → H<sub>2</sub>(g) +CaCl<sub>2</sub>(aq)
- C<sub>3</sub>H<sub>8</sub>(g) +5O<sub>2</sub>(g) → 3CO<sub>2</sub>(g) + 4H<sub>2</sub>O(g)
- FeCl<sub>3</sub>(aq) + 3NaOH(aq) → Fe(OH)<sub>3</sub>(s) + 3NaCl(aq)
- combination reaction: 1      single-replacement reaction: 2  
double-replacement reaction: 4      combustion reaction: 3
- a. no reaction  
b. Ca(s) +Mg(NO<sub>3</sub>)<sub>2</sub>(aq) → Ca(NO<sub>3</sub>)<sub>2</sub>(aq) +Mg(s)

Section 12.1 - The Arithmetic of Equations

- 10A + 2C + Ci → A<sub>10</sub>C<sub>2</sub>Ci  
25 A<sub>10</sub>C<sub>2</sub>Ci x 10A/ A<sub>10</sub>C<sub>2</sub>Ci = 250 apples