Ch.10 Review Wkst KEY

Vocab

1. percent composition
2. empirical formula
3. 22.4 L
4. molar mass
5. mole
6. Avagadro's number
7. standard temperature & pressure

Practice Problems

10.1

1. $144 + 22 + 176 =$ 342 g/mol
2. a. $171.5 + 31 =$ 208 g/mol
   b. $114 + 238 =$ 352 g/mol
3. $\frac{3.52 \times 10^{24} \text{ molecules}}{} \left| \frac{1 \text{ mole}}{6.02 \times 10^{23} \text{ molecules}} \right. =$ 5.85 moles
4. $\frac{0.6 \text{ mol}}{} \left| \frac{6.02 \times 10^{23} \text{ atoms}}{1 \text{ mol}} \right. =$ 3.6×10^{23} atoms
5. O_2 molar mass = 32 g/mol aka for every 1 mole there is 32 g

10.2

1. a. $72+12+96 = 180\ g/mol$

   b. $23+1+12+48 = 84\ g/mol$

2. a. $8\ mol \left| \frac{223\ g}{1\ mol} \right. = 1784\ g$

   b. $0.75\ mol \left| \frac{34\ g}{1\ mol} \right. = 25.5\ g$

   c. $1.50\times10^{-2}\ mol \left| \frac{32\ g}{1\ mol} \right. = 3.2\times10^{-2}\ g$

3. $1.73\ mol \left| \frac{108\ g}{1\ mol} \right. = 186.84\ g$

4. $0.658\ mol \left| \frac{310\ g}{1\ mol} \right. = 203.98\ g$

5. a. $0.5\ g \left| \frac{1\ mol}{102\ g} \right. = 0.0049\ mol$

   b. $0.001\ g \left| \frac{1\ mol}{50.5\ g} \right. = 1.98\times10^{-5}\ mol$

6. $435\ g \left| \frac{1\ mol}{80\ g} \right. = 5.44\ mol$

7. $2.66\ mol \left| \frac{22.4\ L}{1\ mol} \right. = 59.6\ L$

8. $135\ L \left| \frac{1\ mol}{22.4\ L} \right. = 6.03\ mol$

10.3

1. $\frac{5.34\ g\ C}{52.84\ g} \times 100\% = 10.1\%$ $\frac{0.42\ g\ H}{52.84\ g} \times 100\% = 0.8\%$ $\frac{47.08\ g\ Cl}{52.84\ g} \times 100 = 89.1\%$

2. $\frac{5.74\ g\ Sn}{18.35\ g} \times 100\% = 31.3\%$ $\frac{12.61\ g\ Cl}{18.35\ g} \times 100\% = 68.7\%$

3. a. CCl_4 b. $CHCl_3$