**Review of Chemical Equations**

A. For the following reactions, indicate whether the equations are: synthesis, decomposition, single replacement, double replacement or combustion reactions. Balance the equations if necessary.

1. \_\_\_Na3PO4 + \_\_\_KOH 🡪 \_\_\_NaOH + \_\_\_K3PO4 ­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_C6H12  + \_\_\_O2 🡪 \_\_\_CO2 + \_\_\_H2O ­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_CaCO3 🡪 \_\_\_CaO + \_\_\_CO2 ­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_AgNO3 + \_\_\_ Cu 🡪 \_\_\_Cu(NO3)2 + \_\_\_Ag ­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. \_\_\_MgI2 + \_\_\_Mn(SO3)2 🡪 \_\_\_MgSO3 + \_\_\_MnI4 ­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. \_\_\_CF4 + \_\_\_Br2 🡪 \_\_\_CBr4 + \_\_\_F2 ­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. \_\_\_C + \_\_\_H2 🡪 \_\_\_C3H8 ­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B. Net Ionic Equations

A net ionic equation only shows the changes that occurred when reactants are converted to products.

*Procedure:*

-write a complete molecular equation (you know a balanced, regular equation)

- write a complete ionic equation (ionizing or breaking apart those species that can)

- cross out the spectator ions

- write the NIE

*Certain compound ionize completely to give cations and anions. These are the things that DO NOT ionize.*

- gases(g) -weak acids

- solids(s) -weak bases

-pure liquids(l) - insoluble solids (Ksp is very small)

*Examples of ionization:*

NaCl(aq) 🡪 Na+(aq) + Cl-(aq)

K2O(aq) 🡪 2K+(aq) + O-2(aq)

Fe(NO3)2(sq) 🡪 Fe+2(aq) + 2NO3-(aq)

*Example:*

Pb(NO­3)2 (aq) + 2KI(aq) 🡪 PbI2(s) +2KNO3(aq) (complete molecular equation)

Pb+2(aq)  + 2NO3-(aq) + 2K+(aq) + 2I-(aq) 🡪 PbI2(s) + 2K+(aq) + 2NO3-1(aq) (complete ionic equation)

Pb+2(aq)  + 2I-(aq) 🡪 PbI2(s) (net ionic equation)

8. Solutions of Lead (II) Nitrate + Potassium Iodide🡪 solid Lead (II) Iodide and Potassium nitrate solution

ME:

CIE:

NIE:

9. A piece of copper wire is placed in a solution of silver nitrate 🡪 Copper(II) nitrate solution and silver metal.

ME:

CIE:

NIE:

10. Solutions of zinc sulfate and sodium phosphate are mixed yielding solid zinc phosphate and sodium sulfate solution.

ME:

CIE:

NIE: