Ionic

Equations 3

Name: _____

Part 1. Supply the correct coefficients to balance the following reaction equations (assume that all formulas are correct). Then classify each reaction as either synthesis, decomposition, single replacement, double replacement or combustion. Type of Reaction

1) ____ $Ca(OH)_2$ (s) + ____ HCl (aq) ------> ____$CaCl_2$ (aq) + ____HOH (l) _____

2) ____$C_{14}H_{30}$ (g) + ____O_2 (g) ------> ____CO_2 (g) + ____H_2O (g) _____

3) ____W (s) + ____F_2 (g) ------> ____WF_5 (s) _____

4) ____NaI (s) + ____F_2 (g) ------> ____I_2 (s) + ____NaF (s) _____

5) ____$FeCl_2$ (aq) + ____ Na_3PO_4 (aq) ------> ____NaCl (aq) + ____$Fe_3(PO_4)_2$ (aq) _____

Part 2. Write the correct formulas for all reactants and products, then supply the necessary coefficients to balance the equations. Then classify each equation according to its reaction type.

6) Aqueous calcium hydroxide and aqueous hydrochloric acid (HCl) react to form aqueous calcium chloride and water.

7) Solid sodium bicarbonate can be decomposed into solid sodium hydroxide and carbon dioxide gas.

8) Solid paraffin ($C_{25}H_{52}$) can be burned in the presence of oxygen gas to produce gaseous carbon dioxide and liquid water.

9) Solid aluminum oxide reacts with aqueous sulfuric acid (H_2SO_4) to form aqueous aluminum sulfate and liquid water.

Part 3: For each of the following redox reactions, identify the element being oxidized and the element being reduced.

10) ____Ru (s) + ____O_2 (g) --> ____RuO_4 (s) Ox:_____ Red: _____

11) ____$FeBr_3$ (aq) + ____Ca (s) --> ____$CaBr_2$ (aq) + ____Fe (s) Ox:_____ Red: _____

12) ____$BiCl_3$ (s) --> ____Bi (s) + ____Cl_2 (g) Ox:_____ Red: _____

13) ____$NiCl_2$ (aq) + ____Mg (s) --> ____$MgCl_2$ (aq) + ____ Ni (s) Ox:_____ Red: _____

Adv Chem

Equations 3

Name: _____

Part 1. Supply the correct coefficients to balance the following reaction equations (assume that all formulas are correct). Then classify each reaction as either synthesis, decomposition, single replacement, double replacement or combustion.

1) ____$CuCl_2$ (aq) + ____Rb_3PO_4 (aq) ------> ____RbCl (aq) + ____$Cu_3(PO_4)_2$ (s) _____

2) ____Na (s) + ____O_2 (g) ------> ____Na_2O (s) _____

3) ____Zn (s) + ____$AgC_2H_3O_2$ (aq) ------> ____ $Zn(C_2H_3O_2)_2$ (aq) + ____ Ag (s) _____

4) ____$Ba(ClO_3)_2$ (aq) ------> ____BaO (aq) + ____Cl_2 (g) + ____ O_2 (g) _____

5) ____C_4H_{10} (g) + ____O_2 (g) ------> ____CO_2 (g) + ____H_2O (g) _____

Part 2. Write the correct formulas for all reactants and products, then supply the necessary coefficients to balance the equations. Then classify each equation according to its reaction type.

6) Rubidium chloride and magnesium sulfate combine to produce rubidium sulfate and magnesium chloride, all in aqueous solution.

7) Solid ammonium nitrate can be decomposed into liquid water and dinitrogen monoxide gas (N_2O).

8) Solid arsenic will react with aqueous sodium hydroxide to form aqueous sodium arsenite and hydrogen gas.

9) Aqueous sucrose ($C_{12}H_{22}O_{11}$) will combust with oxygen gas in the body to form carbon dioxide gas and liquid water.

Part 3: For each of the following redox reactions, identify the element being oxidized and the element being reduced.

10) ____Al (s) + ____$CuClO_3$ (aq) --> ____$Al(ClO_3)_3$ (aq) + ____Cu (s) Ox:_____ Red: _____

11) ____SO_3 (g) --> ____S_8 (s) + ____O_2 (g) Ox:_____ Red: _____

12) ____Zn (s) + ____H_3PO_4 (aq) --> ____H_2 (g) + ____$Zn_3(PO_4)_2$ (s) Ox:_____ Red: _____

13) ____Ni (s) + ____O_2 (g) --> ____Ni_2O_3 (s) Ox:_____ Red: _____