Name:_____

SCH 3U Balancing from Word Descriptions

1. The synthesis reaction between magnesium oxide and water

   $MgO + H_2O \rightarrow Mg(OH)_2$

2. The decomposition of sodium hydroxide to produce two compounds (i.e. not three elements)

   $2NaOH \rightarrow Na_2O + H_2O$

3. The single replacement between magnesium and silver phosphate

   $3Mg + 2Ag_3PO_4 \rightarrow Mg_3(PO_4)_2 + 6Ag$

4. The single replacement between chlorine gas and ammonium iodide

   $Cl_2 + 2NH_4I \rightarrow 2NH_4Cl + I_2$ (or $2I$)

5. The double displacement between sodium sulphate and aluminum nitrate

   $3Na_2SO_4 + 2Al(NO_3)_3 \rightarrow Al_2(SO_4)_3 + 6NaNO_3$

6. The neutralization between calcium hydroxide and phosphoric acid (hint #1 – a neutralization reaction is double displacement the produces a salt and water (a.k.a. hydrogen hydroxide, hint #2 – phosphoric acid has the same formula as hydrogen phosphate)

   $3Ca(OH)_2 + 2H_3PO_4 \rightarrow Ca_3(PO_4)_2 + 6H_2O$ (HOH)

7. The double displacement decomposition reaction between sodium bicarbonate and hydrochloric acid

   $NaHCO_3 + HCl \rightarrow NaCl + H_2O + CO_2$

8. The combustion of C_5H_{12}

   $C_5H_{12} + 8O_2 \rightarrow 5CO_2 + 6H_2O$

9. A reaction that produces lithium carbonate and auric nitrate

   $6LiNO_3 + Au_2(CO_3)_3 \rightarrow 3Li_2CO_3 + 2Au(NO_3)_3$

10. The decomposition reaction of ammonium chloride

    $NH_4Cl \rightarrow NH_3 + HCl$ ($2NH_4Cl \rightarrow N_2 + 4H_2 + Cl_2$)