Honors Chemistry

___/__/___

Chapter 6 Reaction Practice

For each of the following reactions, write a balanced equation for the reaction. Coefficients should be in terms of lowest whole numbers.

1. Magnesium ribbon is burned in oxygen.

$$2Mg + O_2 \rightarrow 2MgO$$

2. A bar of strontium metal is immersed in a 1.0 M copper(II) nitrate solution.

$$Sr + Cu(NO_3)_2 \rightarrow Sr(NO_3)_2 + Cu$$

3. A sample of nickel(II) sulfite hexahydrate is heated strongly.

$$NiSO_3 * 6H_2O \rightarrow NiSO_3 + 6H_2O$$

4. Solutions of sodium chromate and lead(II) nitrate are mixed.

$$Na_2CrO_4 + Pb(NO_3)_2 \rightarrow 2NaNO_3 + PbCrO_4$$

5. Liquid bromine is carefully added to a solution of potassium iodide.

$$Br_2 + 2KI \rightarrow 2KBr + I_2$$

6. A solution of sodium iodide is added to a solution of lead(II) acetate.

$$2\text{NaI} + \text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2 \rightarrow \text{PbI}_2 + 2\text{Na}\text{C}_2\text{H}_3\text{O}_2$$

7. Pure solid phosphorus (P₄) is burned in air.

$$P_4 + 5O_2 \rightarrow P_4O_{10}$$

8. Solid sodium carbonate is strongly heated.

$$Na_2CO_3 \rightarrow Na_2O + CO_2$$

9. A piece of copper wire is placed in a solution of silver nitrate.

$$Cu + AgNO_3 \rightarrow CuNO_3 + Ag$$

10. Solutions of strontium nitrate and sodium sulfate are mixed.

$$Sr(NO_3)_2 + Na_2SO_4 \rightarrow 2NaNO_3 + SrSO_4$$

11. A small piece of calcium metal is added to hot distilled water.

$$Ca + 2HOH \rightarrow Ca(OH)_2 + H_2$$

12. Butanol(C₄H₉OH) is burned in air.

$$C_4H_9OH + 6O_2 \rightarrow 4CO_2 + 5H_2O$$

13. A solution of copper(II) chloride is added to a solution of sodium sulfide.

$$CuCl_2 + Na_2S \rightarrow 2NaCl + CuS$$

14. Solid potassium chlorate is heated strongly.

$$2KClO_3 \rightarrow 2KCl + 3O_2$$

15. Powdered strontium oxide is added to distilled water.

$$SrO + H_2O \rightarrow Sr(OH)_2$$

16. Solutions of cobalt(II) nitrate and sodium hydroxide are mixed.

$$Co(NO_3)_2 + 2NaOH \rightarrow Co(OH)_2 + 2NaNO_3$$

17. Ethene(C₂H₄) gas is burned in air.

$$C_2H_4 + 3O_2 \rightarrow 2CO_2 + 2H_2O$$

18. A strip of zinc is added to a solution of hydrochloric acid.

$$Zn + 2HCl \rightarrow ZnCl_2 + H_2$$

19. Solid nickel(II) sulfide is strongly heated in air.

$$2NiS + 3O_2 \rightarrow 2NiO + 2SO_2$$

20. Solid pieces of potassium and iodine are heated strongly

$$2K + I_2 \rightarrow 2KI$$

21. A piece of nickel metal is immersed in a solution of copper(II) sulfate.

22. A solution of potassium phosphate is mixed with a solution of calcium acetate.

$$2K_3PO_4 + 3Ca(C_2H_3O_2)_2 \rightarrow 6KC_2H_3O_2 + Ca_3(PO_4)_2$$