Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_

**Chemistry Unit 7 Chapter 11 Chemical Reactions Review (select key)**

1. Mixed Naming: If given the name write the formula if given the formula write the name.

* **Remember:** 
  + **Ionic Compunds = metal + nonmetal(s),**
    - **Group 1, 2 and 3 metals just write their name followed by name of nonmetal (or polyatomic)**
    - **transition metal and group 14 metals have roman numeral in name [to show charge of the metal ion] followedby name of nonmetal (or polyatomic)**
  + **Covalent Compunds = 2 nonmetals,**
    - **have prefixes in the name**
  + **Acids = start with H (in formula) or have acid in the name**
    - **2 elements = name with hydro\_\_\_\_\_ ic acid (\_\_\_ is root name of element)**
    - **3+ element = named by looking at polyatomic ion name**
      * **ate turn into ic acid**
      * **ite turns into ous acid**

|  |  |
| --- | --- |
| 1. chromium(III) acetate**Cr(C2H3O2)3** 2. potassium iodide **KI** 3. hydrobromic acid**HBr** 4. chlorous acid **HClO2** 5. diphosphorouspentoxide **P2O5** 6. sodium sulfate **Na2SO4** 7. mercury(I) sulfite 8. strontium chlorite 9. oxygen difluoride 10. carbon tetrachloride 11. gold(I) iodide 12. xenon tetrabromide 13. tin(II) phosphate 14. hydroiodic acid 15. nitric acid **HNO3** | 1. FePO4**iron (III) phosphate** 2. C3F6**tricarbonhexafluorine** 3. OF2 4. H2SO4**sulfuric acid** 5. Ba(ClO3)2**barium chlorate** 6. HF**hydrofluoric acid** 7. HCl 8. LiBr 9. SnSO4**tin (II) sulfate** 10. Hg2O 11. SO2 12. P4O10 13. Cu2O 14. HClO3 15. Sr3(PO4)2 |

1. Types of Reactions: Define/describe
2. Product
3. Reactant
4. Catalyst
5. Combination reaction
6. Decomposition reaction
7. Single replacement reaction
8. Double replacement reaction
9. Neutralization
10. Combustion
11. What type of reaction is shown/described below:
12. Starts with only one compound **decomposition**
13. Starts with two elements **synthesis or combination**
14. Starts with one element and one compound **single replacement**
15. Starts with an acid and a base **neutralization**
16. Produces only carbon dioxide and water **combustion**
17. Produces only one compound **synthesis or combination**
18. produces two simple substances like elements **decomposition**
19. **Balancing:** Identify the type of reaction occurring below and balance the equation.
20. Ca(OH)2 + **2** HNO3🡪 Ca(NO3)2 + **2** H2O type of reaction: **neutralization**
21. \_\_\_Na2O + \_\_\_CO2🡪 \_\_\_Na2CO3 type of reaction: **decomposition**
22. \_\_\_H2  + \_\_\_N2🡪 \_\_\_NH3 type of reaction: \_\_\_\_\_\_\_\_\_\_\_
23. \_\_\_HgO + \_\_\_Cl2🡪 \_\_\_HgCl + \_\_\_O2 type of reaction: \_\_\_\_\_\_\_\_\_\_\_
24. \_\_\_Na + \_\_\_Br2🡪 \_\_\_NaBr type of reaction: \_\_\_\_\_\_\_\_\_\_\_
25. **2** KClO3🡪 **2** KCl + **3** O2 type of reaction: **decomposition**
26. Ca(OH)2 + **2** HNO3🡪 Ca(NO3)2 + **2** H2O type of reaction: **neutralization**
27. \_\_\_HBrO🡪 \_\_\_H2  + \_\_\_Br2 + \_\_\_O2 type of reaction: \_\_\_\_\_\_\_\_\_\_\_
28. **2** C2H6 +  **7** O2🡪 **4** CO2 +  **6** H2O type of reaction: **combustion**
29. \_\_\_Al2O3 🡪 \_\_\_Al + \_\_\_O2 type of reaction: \_\_\_\_\_\_\_\_\_\_\_
30. **Predicting Products:** Identify the type of reaction occurring below and predict products. **DO NOT BALANCE NUMBER OF ATOMS**

Remember when predicting products you MUST balance charges for all COMPUNDS, and for elements write their symbol unless it’s one of the 7 diatomic (Br I N Cl H O F)

1. Cd3(PO4)2 + (NH4)2S → **CdS + (NH4)3 PO4**  type of reaction: **double replacement**
2. Na + O2 → **NaO**  type of reaction: **synthesis or combination**
3. C6H6 + O2 → type of reaction: **\_\_\_\_\_\_\_\_\_\_\_**
4. Al + Pb(NO3)2→ **Al(NO3)3 + Pb**  type of reaction: \_\_\_\_\_\_\_\_\_\_\_
5. Ga+ CaI2→ type of reaction: \_\_\_\_\_\_\_\_\_\_\_
6. Ag2O→ **Ag + O2** type of reaction: **\_\_\_\_\_\_\_\_\_\_\_**
7. Ca(OH)2 + H3PO4 → type of reaction: **neutralization**
8. C12H22 O11 + O2 → **CO2 + H2O**  type of reaction: **combustion**
9. **Word Equations:**
   1. Identify the type of reaction occurring below
   2. write the skeleton equation including **the phase abbreviation** when listed [make sure to balance charges and remember diatomic atoms],

**remember phase abbreviations**

**(s) = solid, crystals, metal, powder, ect**

**(g) = gas, vapor, steam**

**(l) = liquid**

**(aq) = aqueous, dissolved**

* 1. balance the following reactions.

1. When sodium oxide is added to water, aqueous sodium hydroxide is produced.
   1. type of reaction: **synthesis/combination**
   2. **Na2O + H2O → NaOH (aq)**
   3. **Na2O + H2O → 2 NaOH (aq)**
2. Solid iron (III) oxide and carbon monoxide gas produce carbondioxide gas and solid iron.
   1. type of reaction: **does not fit into our 6 types (DR or SR are closest)**
   2. **Fe2O3 (s) + CO (g) → CO2 (g) + Fe (s)**
   3. **Fe2O3 (s) + 3 CO (g) → 3 CO2 (g) + 2 Fe (s)**
3. Iodine crystals react with chlorine gas to produce iodine trichloride.
   1. type of reaction: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. When dissolved barium chloride reacts with dissolved potassium sulfate, barium sulfate precipitate and aqueous potassium chloride are made.
   1. type of reaction: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. When calcium chloride and potassium phosphate are dissolved in water they react to form aqueous potassium chloride and calcium phosphate powder.
   1. type of reaction: **double replacment**
   2. **CaCl2 + K3PO4 → KCl (aq) + Ca3(PO4)2 (s)**
   3. **3 CaCl2 + 2 K3PO4 → 6 KCl (aq) + Ca3(PO4)2 (s)**