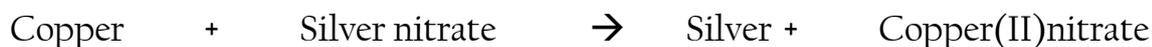


**Write the chemical equations:**

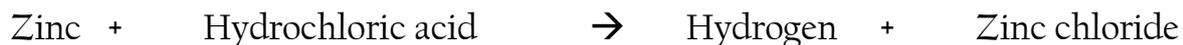
1. Rusting



2. Copper wire placed in silver nitrate



3. Zinc metal added to a hydrochloric acid solution



4. Calcium chloride + sodium sulfate  $\rightarrow$  Calcium sulfate + sodium chloride

5. Barium Carbonate reacts when heated to produce Barium Oxide and Carbon Dioxide

6. Silver Nitrate reacts with Potassium Chloride to produce Silver Chloride and Potassium Nitrate

**Write the word equation to represent the following chemical reactions:**

- a. Carbon dioxide and water are produced in human cell respiration. The reactants are sugar and an important gas that humans need to survive
- b. Stalactites form in caves when calcium bicarbonate reacts to form calcium carbonate, water and carbon dioxide gas.

**Translate the following word equations into formulaic equations and then balance them:-**

1. Sodium combines with chlorine to produce sodium chloride.
2. When solid copper reacts with aqueous silver nitrate, the products are aqueous copper II nitrate and silver metal.
3. Solid iron III oxide and carbon monoxide gas produce iron metal and carbon dioxide gas.
4. Sulfuric acid and sodium hydroxide react to form sodium sulfate and water.
5. Vanadium II oxide with iron III oxide results in the formation of vanadium V oxide and iron II oxide.
6. Aluminum reacts with oxygen to produce aluminum oxide.
7. Mercury II oxide decomposes to produce mercury and oxygen
8. Sodium carbonate decomposes to produce sodium oxide and carbon dioxide

9. Carbon dioxide gas reacts with solid lithium hydroxide to produce solid lithium carbonate and water.
10. Ammonia gas reacts with oxygen gas to produce nitrogen monoxide gas and steam.
11. Solid ammonium nitrate decomposes to produce dinitrogen monoxide gas and water.
12. Carbon monoxide reacts with hydrogen to produce methanol.
13. Liquid carbon disulfide reacts with oxygen gas to produce carbon dioxide gas and sulfur dioxide gas.
14. Aluminum metal reacts with aqueous copper II chloride to produce aqueous aluminum chloride and solid copper.
15. Solid ammonium chloride decomposes to produce ammonia gas and gaseous hydrochloric acid.

**Translate the following word equations:**

- a) Aluminum metal reacts with copper(II) chloride to produce aluminum chloride and copper metal.
- b) Lead(II) nitrate reacts with sodium bromide to produce lead(II) bromide and sodium nitrate.
- c) Zinc metal reacts with oxygen gas to produce zinc oxide
- d) Aluminum sulfate reacts with barium iodide to produce aluminum iodide and barium sulfate.
- e) At temperatures reached during baking, sodium bicarbonate (baking soda) decomposes (reacts) to produce sodium carbonate, carbon dioxide, and dihydrogen monoxide
- f) Sodium metal reacts with water to produce sodium hydroxide and hydrogen gas.
- g) Lead(IV) sulfide reacts with oxygen gas to produce lead(IV) oxide and sulfur dioxide.
- h) Zinc metal reacts with phosphoric acid to produce zinc phosphate and hydrogen gas.