Practise Worksheet - Chemical Equations

DIRECTIONS: In the space below each of the following word equations write the chemical formulas and adjust the coefficients of each in accordance with the law of conservation of mass.

1. sodium + chlorine ⟶ sodium chloride

2. carbon + oxygen ⟶ carbon dioxide

3. hydrogen + nitrogen ⟶ ammonia

4. iron + oxygen ⟶ iron(III) oxide, Fe_2O_3

5. silver nitrate + sodium chloride ⟶ silver chloride + sodium nitrate

6. iron + copper(II) sulfate ⟶ iron(II) sulfate + copper

7. Copper + silver nitrate ⟶ copper(II) nitrate + silver

8. aluminum + copper(II) nitrate ⟶ aluminum nitrate + copper

9. iron + hudrochloric acid ⟶ iron(II) chloride + hydrogen

10. silver + nitric acid ⟶ nitrogen dioxide + water + silver nitrate

11. calcium carbonate + sodium chloride ⟶ sodium carbonate + calcium chloride

12. magnesium + hydrochloric acid ⟶ magnesium chloride + hydrogen

13. ammonia + oxygen ⟶ Nitrogen + water

14. CH_4 methane + oxygen ⟶ carbon dioxide + water

15. octane, C_8H_{18} + oxygen ⟶ carbon dioxide + water

16. potassium chlorate ⟶ potassium chloride + oxygen

17. calcium carbonate ⟶ calcium oxide + carbon dioxide

MANCHESTER REGIONAL HIGH SCHOOL — Chemistry

Practise Worksheet 2 - Chemical Equations

DIRECTIONS: In the space below each of the following word equations write the chemical formulas and adjust the coefficients of each in accordance with the law of conservation of mass.

1. sodium + water ⟶ sodium hydroxide + hydrogen

2. barium oxide + sulfuric acid ⟶ barium sulfate + hydrogen oxide (WATER)

3. calcium chloride + potassium phosphate ⟶ calcium phosphate + potassium Chloride

4. zinc + hydrochloric acid ⟶ hydrogen + zinc chloride

5. lead (II) acetate + hydrogen sulfide ⟶ lead (II) sulfide + acetic acid

6. magnesium + sulfuric acid ⟶ magnesium sulfate + hydrogen

7. calcium oxide + diphosphorous pentoxide ⟶ calcium phosphate

8. calcium + water ⟶ calcium hydroxide + hydrogen

9. sodium bicarbonate + sulfuric acid ⟶ sodium sulfate + water + CARBON dioxide

10. copper (II) oxide + hydrogen ⟶ water + copper

11. magnesium carbonate + hydrochloric acid ⟶ MAGNESIUM chloride + water + carbon dioxide

12. aluminum hydroxide + sulfuric acid ⟶ aluminum sulfate + water

13. silver nitrate + hydrochloric acid ⟶ silver chloride + nitric acid

14. ammonia + oxygen ⟶ nitric acid + water

15. zinc chloride + ammonium sulfide ⟶ zinc sulfide + ammonium chloride

16. aluminum + iron (III) oxide ⟶ aluminum oxide + iron

17. iron + sulfur ⟶ iron (II) sulfide

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EQUATIONS WORKSHEET III

DIRECTIONS: Suggest products for each of the following reactions. Write formulas and balance each equation.

1. Zinc Chlorate + Aluminum Nitrate

2. Sodium Iodate + Ammonium Phosphate

3. Potassium Chromate + Lead (II) Nitrate

4. Nickel (II) Carbonate + Bismuth(III) Fluorate

5. Iron (III) Bromate + Silver Nitrate

6. Antimony (III) Sulfate + Barium Hydroxide

7. Lead (IV) Acetate + Sodium Carbonate

8. Calcium Sulfate + Tin (IV) Oxalate

9. Lithium Arsenate + Mercury (I) Chromate

10. Aluminum Fluorate + Lithium Acetate

11. Tin (II) Nitrate + Magnesium Chlorate

12. Copper (II) Sulfate + Potassium Hydroxide

13. Iron (II) Chromate + Ammonium Phosphate

14. Arsenic (III) Nitrate + Copper (I) Oxalate

15. Ammonium Hydroxide + Mercury (II) Fluorate

16. Strontium Bisulfate + Rubidium Monohdrogen Phosphate

17. Manganese (II) Dihdrogen Phosphate + Chrominum (III) BiCarbonate

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Equation Worksheet 4

DIRECTIONS: Complete and balance the following.

1. Barium Fluorite + Sodium Acetate

2. Mercury (I) Nitrite + Ammonium Chloride

3. Silver Perphosphate + Potassium Arsenite

4. Lithium Hypochlorite + Magnesium Periodate

5. Lead (II) Sulfite + Mercury (II) Chlorite

6. Sodium Sulfide + Copper (I) Chromate

7. Nickel (II) Hypoiodite + Aluminum Oxalate

8. Barium Hydroxide + Arsenic(III) Sulfite

9. Lithium Phosphite + Zinc Hypochlorite

10. Antimony (V) Carbonate + Copper(II) Perbromate

11. Iron (II) Bromide + Magnesium Acetate

12. Zinc Nitrite + Bismuth (III) Iodide

13. Sodium Chloride + Lithium Sulfide

14. Lead(II) Fluoride + Potassium DiChromate

15. Manganese (II) Bioxalate + Rubidium Bisulfite

16. Radium Bisulfate + Strontium Bicarbonate

17. Cesium Hydroxide + Beryllium Bisulfide

MANCHESTER REGIONAL HIGH SCHOOL CHEMISTRY 1

Practise Worksheet 5 - Chemical Equations

DIRECTIONS: In the spaces below give chemical formulas as required and balance the resulting equation.

1. zinc + sulfur ⟶ zinc sulfide

2. calcium oxide + water ⟶ calcium hydroxide

3. magnesium bromide + chlorine ⟶ magnesium chloride + bromine

4. sodium fluoride + sulfuric acid ⟶ sodium sulfate + hydrogen fluoride

5. aluminum + iron(III) oxide ⟶ aluminum oxide + iron

6. ammonium nitrite ⟶ nitrogen(g) + water

7. ammonia + oxygen ⟶ nitric acid + water

8. zinc + lead(II) acetate ⟶ zinc acetate + lead

9. calcium iodide + bromine ⟶ calcium bromide + iodine

10. barium carbonate ⟶ barium chloride + oxygen

11. ammonium carbonate ⟶ ammonia + water + carbon dioxide

12. aluminum sulfate + calcium hydroxide ⟶ aluminum hydroxide + calcium sulfate

13. alcohol, $(C_2H_5OH,)$ + oxygen ⟶ carbon dioxide + water

14. calcium carbonate ⟶ calcium dxide + carbon dioxide

15. hydrochloric acid + sodium carbonate ⟶ sodium chloride + water + carbon diox.

16. carbon dioxide + calcium hydroxide ⟶ calcium carbonate + water

17. iron(III) oxide + carbon monoxide ⟶ iron + carbon dioxide

18. hydrochloric acid + copper(II) oxide ⟶ copper(II) chloride + water

Balance each of the following reactions after predicting the product

1. copper plus silver nitrate (replacement; copper (II) is formed)
2. magnesium plus oxygen (synthesis)
3. hydrochloric acid plus silver nitrate (double replacement)
4. magnesium plus hydrochloric acid (replacement)
5. zinc plus hydrochloric acid (replacement)
6. iron plus oxygen (synthesis; iron (III) is formed)
7. iron plus sulfur (synthesis; iron (II) is formed)
8. calcium hydroxide plus sulfuric acid (H_2SO_4) (double replacement)
9. zinc plus sulfur (synthesis)
10. magnesium plus nitrogen (synthesis)

Substitute symbols for names and balance each of the following equations.

1. copper (II) carbonate decomposes to copper (II) oxide and carbon dioxide gas
2. sodium reacts with water to produce sodium hydroxide and hydrogen gas
3. ammonium nitrite decomposes to nitrogen gas and water
4. copper combines with sulfur to form copper (I) sulfide
5. potassium displaces hydrogen gas from water, with potassium hydroxide being formed as the othe product
6. calcium carbonate reacts with hydrochloric acid to produce calcium chloride, water and carbon dioxide gas
7. ammonium nitrate decomposes to water and nitrogen (I) oxide
8. chromium displaces hydrogen from hydrochloric acid, with chromium (II) chloride as the other product
9. barium hydroxide reacts with carbon dioxide to form barium carbonate and water.