

Chem11 Balancing Word Eq. 1 : W.S. - 110

Rewrite the word equations by substituting the chemical formulae for the chemical names given and balance. State whether the reactions are : synthesis, decomposition, combustion, single replacement, double replacement, or water forming.

1) ammonium hydroxide + sulfuric acid \rightarrow ammonium sulfate + water

2) carbon + oxygen \rightarrow carbon monoxide

3) methane (CH₄) + oxygen \rightarrow carbon dioxide + water

4) zinc + lead (II) acetate \rightarrow lead + zinc acetate

5) copper + sulfur \rightarrow copper (II) sulfide

6) sodium nitrate \rightarrow sodium nitrite + oxygen

7) iron (III) chloride + ammonium sulfide \rightarrow iron (III) sulfide + ammonium chloride.

8) potassium nitrate \rightarrow potassium nitrite + oxygen

9) hydrogen sulfide + sodium hydroxide \rightarrow sodium sulfide + water

Answers : 1) $2\text{NH}_4\text{OH} + \text{H}_2\text{SO}_4 \rightarrow (\text{NH}_4)_2\text{SO}_4 + 2\text{H}_2\text{O}$, (water forming), 2) $2\text{C} + \text{O}_2 \rightarrow 2\text{CO}$, (synthesis, or combustion), 3) $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$, (combustion), 4) $\text{Zn} + \text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2 \rightarrow \text{Pb} + \text{Zn}(\text{C}_2\text{H}_3\text{O}_2)_2$, (single replacement), 5) $\text{Cu} + \text{S} \rightarrow \text{CuS}$, (synthesis), 6) $2\text{NaNO}_3 \rightarrow 2\text{NaNO}_2 + \text{O}_2$, (decomposition), 7) $2\text{FeCl}_3 + 3(\text{NH}_4)_2\text{S} \rightarrow \text{Fe}_2\text{S}_3 + 6\text{NH}_4\text{Cl}$, (double replacement), 8) $2\text{KNO}_3 \rightarrow 2\text{KNO}_2 + \text{O}_2$, (decomposition), 9) $\text{H}_2\text{S} + 2\text{NaOH} \rightarrow \text{Na}_2\text{S} + 2\text{H}_2\text{O}$, (water forming).