Balance the following reactions. Classify the reactions as synthesis, decomposition, single displacement, or double displacement.

1. Fe + Ag₂SO₄ → FeSO₄ + Ag
2. Fe + O₂ → Fe₂O₃
3. H₂O₂ → H₂O + O₂
4. Cl₂ + KI → KCl + I₂
5. CaCO₃ + HCl → CaCl₂ + H₂CO₃
6. (NH₄)₂Cr₂O₇ → N₂ + H₂O + Cr₂O₃
7. Fe₂O₃ + Al → Al₂O₃ + Fe
8. C₂H₆ → C + H₂
9. BaCl₂ + NaOH → Ba(OH)₂ + NaCl
10. N₂ + H₂ → NH₃

Write complete equations for the following reactions. Balance each equation.

11. Aluminum and sulfur react in a synthesis reaction.
12. Lead (II) nitrate and sodium carbonate react in a double replacement reaction
13. Zinc metal and tin (II) chloride solution undergo a single replacement reaction.
14. Water is decomposed with an electrical current.
15. Magnesium metal and iron (II) nitrate undergo a single replacement reaction.