

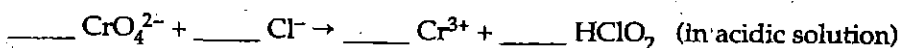
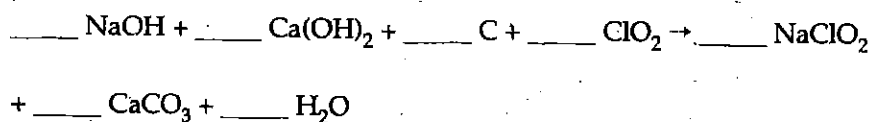
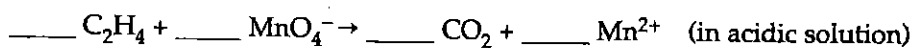
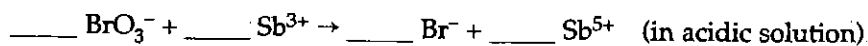
20 Practice Problems

1. Balance the following equation and identify the element oxidized and the oxidizing agent.
$$\text{Cu} + \text{HNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + \text{NO}_2 + \text{H}_2\text{O}$$
2. Balance the following equation and identify the element oxidized and the oxidizing agent.
$$\text{Cu} + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{SO}_2 + \text{H}_2\text{O}$$
3. Balance the following equation and identify the element oxidized and the oxidizing agent. The reaction occurs in an acidic solution.
$$\text{Fe}^{2+} + \text{MnO}_4^- \rightarrow \text{Fe}^{3+} + \text{Mn}^{2+}$$
4. Balance the following equation and identify the element oxidized and the oxidizing agent. The reaction occurs in an acidic solution.
$$\text{SO}_3^{2-} + \text{MnO}_4^- \rightarrow \text{SO}_4^{2-} + \text{Mn}^{2+}$$
5. Balance the following equation and identify the element oxidized and the oxidizing agent. The reaction occurs in an acidic solution.
$$\text{Zn} + \text{NO}_3^- \rightarrow \text{Zn}^{2+} + \text{N}_2\text{O}$$
6. Balance the following equation and identify the element oxidized and the oxidizing agent. The reaction occurs in an acidic solution.
$$\text{MnO}_4^- + \text{I}^- \rightarrow \text{MnO}_2 + \text{IO}^-$$
7. Balance the following equation and identify the element oxidized and the oxidizing agent. The reaction occurs in an acidic solution.
$$\text{P} + \text{NO}_3^- \rightarrow \text{H}_2\text{PO}_4^- + \text{NO}$$
8. Balance the following equation and identify the element oxidized and the oxidizing agent. The reaction occurs in an acidic solution.
$$\text{NO}_3^- + \text{I}_2 \rightarrow \text{IO}_3^- + \text{NO}_2$$
9. Balance the following equation and identify the element oxidized and the oxidizing agent. The reaction occurs in an acidic solution.
$$\text{I}^- + \text{ClO}^- \rightarrow \text{IO}_3^- + \text{Cl}^-$$
10. Balance the following equation and identify the element oxidized and the oxidizing agent. The reaction occurs in an acidic solution.
$$\text{SO}_3^{2-} + \text{MnO}_4^- \rightarrow \text{SO}_4^{2-} + \text{MnO}_2$$

20 Review and Reinforcement (continued)

2

Balance the following equations in the space provided.



Balance the following equation, which occurs in a basic solution.

