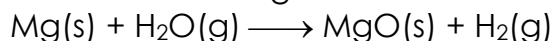


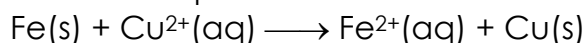
Quiz (Introduction to Redox Reactions)

1. Consider the following reaction:



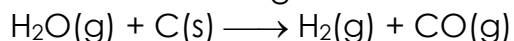
- (a) In the reaction, which species undergoes oxidation? Explain your answer in terms of gain or loss of oxygen.
- (b) Identify the oxidizing agent and the reducing agent in the reaction.
- (c) Which species is oxidized and which species is reduced in the reaction?

2. Consider the displacement reaction:



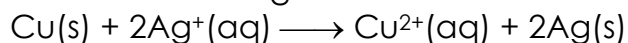
- (a) Explain why the reaction is a redox reaction.
- (b) Which substance is being oxidized? Explain your answer.
- (c) Which substance is the oxidizing agent? Explain your answer.

3. Consider the following reaction:



- (a) Explain why the reaction is a redox reaction in terms of gain or loss of oxygen.
- (b) Identify the oxidizing agent and the reducing agent in the reaction.

4. Consider the following reaction:



- (a) Explain why the reaction is a redox reaction in terms of gain or loss of electrons.
- (b) Identify the oxidizing agent and the reducing agent in the reaction.

Suggested Answer

1. (a) Magnesium undergoes oxidation because it gains oxygen to form magnesium oxide in the process.
(b) Steam is the oxidizing agent while magnesium is the reducing agent.
(c) Magnesium is oxidized while steam is reduced in the reaction.
2. (a) The reaction involves a transfer of electrons (from Fe(s) to Cu²⁺(aq)).
(b) Fe(s) is being oxidized as it loses electrons to Cu²⁺(aq).
(c) Cu²⁺(aq) is the oxidizing agent as it gains electrons in the reaction.
3. (a) Carbon gains oxygen in the reaction. It undergoes oxidation. Steam loses Oxygen in the reaction. It undergoes reduction.
(b) H₂O(g) is the oxidizing agent. C(s) is the reducing agent.
4. (a) During the reaction, each copper atom loses two electrons to form a copper(II) ion. Copper undergoes oxidation. Each silver ion gains one electron to form a silver atom. Silver ion undergoes reduction.
(b) Ag⁺(aq) is the oxidizing agent. Cu(s) is the reducing agent.