

Chapter 16 Practice Questions

1) Reduction involves which of the following?

1. Loss of electron(s).
2. Gain of electron(s).
3. Decrease in oxidation state.

A) 3 only B) 1 only C) 2 only D) 1 and 2 only E) 2 and 3 only

2) The reducing agent typically:

- A) gains electrons.
- B) is the oxidized substance.
- C) is itself reduced.
- D) always remains unchanged during a reaction.
- E) none of the above

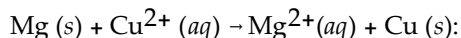
3) Identify the substance being oxidized in the following reaction: $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$.

- A) CH_4
- B) O_2
- C) CO_2
- D) H_2O
- E) none of the above

4) Identify the reducing agent in the following reaction: $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$.

- A) CH_4
- B) O_2
- C) CO_2
- D) H_2O
- E) none of the above

5) In the following reaction,



- A) Mg^{2+} is the reducing agent and Cu is the oxidizing agent.
- B) Mg is the reducing agent and Cu^{2+} is the oxidizing agent.
- C) Mg is the reducing agent and Cu is the oxidizing agent.
- D) Cu^{2+} is the reducing agent and Mg is the oxidizing agent.
- E) Cu is the reducing agent and Mg^{2+} is the oxidizing agent.

6) What is the oxidation state of the underlined atom in the compound: H_2SO_4 ?

A) +1 B) +2 C) -2 D) +6 E) +4

7) What is the oxidation state of the underlined atom in the reaction: $\text{Cl}_2 + \text{Mg} \rightarrow \text{MgCl}_2$

A) 0 B) +2 C) -2 D) +4 E) -4

8) What is the oxidation state of the underlined atom in the reaction: $\text{NaHCO}_3 + \text{HCl} \rightarrow \text{NaCl} + \text{CO}_2 + \text{H}_2\text{O}$

A) 0 B) +1 C) -1 D) +2 E) -2

9) What is the oxidation state of the underlined atom in the reaction: $\underline{\text{Na}}\text{HCO}_3 + \text{HCl} \rightarrow \text{NaCl} + \text{CO}_2 + \text{H}_2\text{O}$

- A) 0 B) +1 C) -1 D) +2 E) -2

10) What is the oxidation state of sulfur in SO_3^{2-} ?

- A) 0 B) -2 C) +3 D) +4 E) +6

11) Which substance below would contain a nitrogen atom with the highest oxidation number of all those shown?

- A) NO_2 B) NO_3^{1-} C) NH_3 D) NH_4^{1+} E) N_2

12) For the reaction $\text{KMnO}_4 + \text{Li} \rightarrow \text{LiMnO}_4 + \text{K}$, which atom is being reduced?

- A) O
B) Li
C) K
D) Mn
E) none of the above

Answer Key

Testname: PRACTICEQ_CH16

- 1) E
- 2) B
- 3) A
- 4) A
- 5) B
- 6) D
- 7) A
- 8) C
- 9) B
- 10) D
- 11) B
- 12) C