Oxidation and Reduction Quiz Answer Key PDF

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Which of the following is a characteristic of oxidation?

A. Gain of electrons
B. Loss of electrons ✓
C. Gain of hydrogen
D. Loss of oxygen

Which of the following are true about oxidation numbers?

A. They indicate the charge of an atom in a compound. ✓
B. They are always positive.
C. They help identify redox reactions. ✓
D. They are the same as the number of valence electrons.

In a redox reaction, which of the following can occur?

A. Transfer of electrons ✓
B. Change in oxidation states ✓
C. Formation of a precipitate
D. Release of energy ✓

Provide an example of a redox reaction in everyday life and explain the process.

A. True
B. False
C. Not applicable
D. Not applicable

Discuss the importance of redox reactions in biological systems.

A. True
B. False
C. Not applicable
D. Not applicable

What is the oxidation number of an element in its elemental form?

A. +1
B. -1
C. 0 ✓
D. +2

In a redox reaction, which substance is reduced?

A. The one that gains electrons ✓
B. The one that loses electrons
C. The one that gains oxygen
D. The one that loses hydrogen

Which term describes a reaction involving the transfer of electrons?

A. Precipitation
B. Redox ✓
C. Acid-base
D. Decomposition

How can you determine if a chemical reaction is a redox reaction?

A. True
B. False
C. Not applicable
D. Not applicable

What is the oxidation state of oxygen in most compounds?

A. +1
B. -1
C. -2 ✓

D. 0

Describe the role of an oxidizing agent in a redox reaction.

A. True
B. False
C. Not applicable
D. Not applicable

Explain why the oxidation state of hydrogen is typically +1 in compounds.

A. True
B. False
C. Not applicable
D. Not applicable

Which of the following is an example of a reducing agent?

A. Oxygen
B. Hydrogen ✓
C. Water
D. Carbon dioxide

Explain the difference between oxidation and reduction in terms of electron transfer.

A. True
B. False
C. Not applicable
D. Not applicable

What is the role of an oxidizing agent in a chemical reaction?

A. It donates electrons
B. It accepts electrons ✓
C. It donates protons
D. It accepts protons

Which reactions are considered redox reactions?

A. Combustions ✓
B. Neutralization
C. Single displacement ✓
D. Double displacement

In the reaction $2H_2 + O_2 \rightarrow 2H_2O$, which element is oxidized?

A. Hydrogen ✓
B. Oxygen
C. Water
D. None

Which of the following are examples of oxidizing agents?

A. Chlorine ✓
B. Potassium permanganate ✓
C. Sodium
D. Hydrogen peroxide ✓

What changes occur during reduction?

A. Gain of electrons ✓
B. Loss of electrons
C. Gain of hydrogen ✓
D. Loss of oxygen ✓

Which statements about redox reactions are correct?

A. They involve the transfer of protons.
B. They are essential in metabolic processes. ✓
C. They always produce heat.
D. They involve changes in oxidation states. ✓