

Oxidation-Reduction

Activity 1: Two Truths and a Lie

Question Group 1

Question 1

Some chemical reactions involve oxidation but not reduction; and vice versa.

An element that is oxidized is one that loses electrons.

A reducing agent is a reactant containing the element that is oxidized.

Question 2

An element that is reduced is one that gains electrons.

In a redox reaction, reduction occurs in an early step and oxidation occurs in a later step.

An element that is oxidized experiences an increase in its oxidation number.

Question 3

An element that is oxidized experiences an increase in its oxidation number.

A reducing agent is an electron donor.

Some chemical reactions involve oxidation but not reduction; and vice versa.

Question Group 2

Question 4

An element that is oxidized experiences a decrease in its oxidation number.

It is not possible to have oxidation without also having reduction.

An element that is oxidized is one that loses electrons.

Question 5

It is not possible to have oxidation without also having reduction.

An element that is reduced experiences an increase in its oxidation number.

An element that is oxidized is one that loses electrons.

Question 6

An oxidizing agent is an electron acceptor.

An element that is reduced is one that gains electrons.

An element that is oxidized experiences a decrease in its oxidation number.

Question Group 3

Question 7

A substance that is oxidized is one that gains electrons.

An oxidizing agent is a reactant containing the element that is reduced.

An element that is oxidized is one that loses electrons.

Question 8

An oxidizing agent is a reactant containing the element that is reduced.

A substance that is reduced is one that loses electrons.

An element that is reduced is one that gains electrons.

Question 9

A reducing agent is a reactant containing the element that is oxidized.

An element that is oxidized is one that loses electrons.

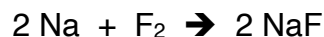
A substance that is oxidized is one that gains electrons.

Activity 2: Redox Analysis 1

Question Group 4

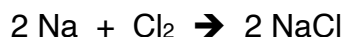
Question 10

Identify the oxidation states of all elements in the reactants and products. Then identify the elements that are oxidized and reduced.



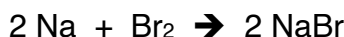
Question 11

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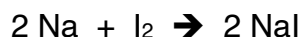
Question 12

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Question 13

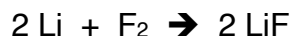
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Question Group 5

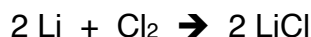
Question 14

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Question 15

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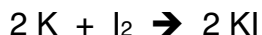


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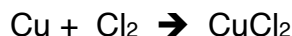
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**Question 17**

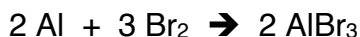
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**Question Group 6****Question 18**

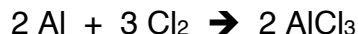
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**Question 19**

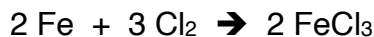
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**Question 20**

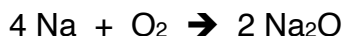
Identify the oxidation states of all elements in the reactants and products. Then identify the elements that are oxidized and reduced.

**Question 21**

Identify the oxidation states of all elements in the reactants and products. Then identify the elements that are oxidized and reduced.

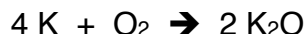
**Question Group 7****Question 22**

Identify the oxidation states of all elements in the reactants and products. Then identify the elements that are oxidized and reduced.

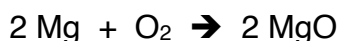


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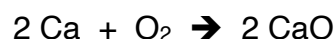
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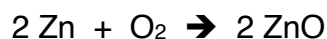
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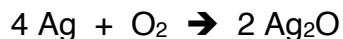
Identify the oxidation states of all elements in the reactants and products. Then identify the elements that are oxidized and reduced.

**Question Group 8****Question 26**

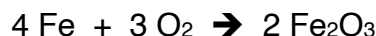
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**Question 27**

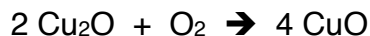
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**Question 29**

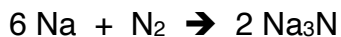
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Question Group 9

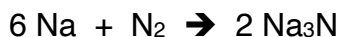
Question 30

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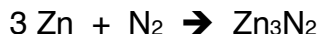
Question 31

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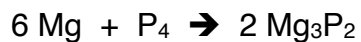
Question 32

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Question 33

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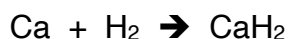


Activity 3: Redox Analysis 2

Question Group 10

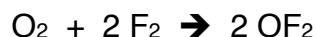
Question 34

Use oxidation states to determine which elements are being oxidized and reduced. Then identify the oxidizing and reducing agents.



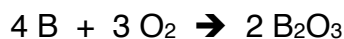
Question 35

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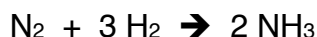
Question 36

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Question 37

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Question Group 11

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Question 39

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**Question Group 12****Question 42**

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Question Group 13**Question 46**

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**Question 47**

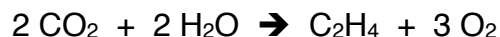
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**Question 49**

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**Question Group 14****Question 50-**

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**Question 51**

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**Question 52**

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Question 53

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Question Group 15

Question 54

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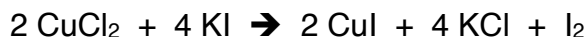
Question 55

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