

# Redox Practice

(Introduction to Redox)

Part One: Multiple Choice - circle the best response

1. What is the oxidation number of C in the  $\text{C}_3\text{H}_5\text{O}_2^-$  ion?

- A.  $-\frac{1}{3}$
- B.  $-\frac{2}{3}$
- C. -1
- D. -2

2. When  $\text{As}_4$  is changed to  $\text{H}_3\text{AsO}_4$  the oxidation number of the As

- A. decreases by 5.
- B. increases by  $\frac{5}{4}$ .
- C. increases by 5.
- D. increases by 20.

3. The reduced substance in a chemical reaction

- A. is the reducing agent and loses electrons.
- B. is the reducing agent and gains electrons.
- C. is the oxidizing agent and loses electrons.
- D. is the oxidizing agent and gains electrons.

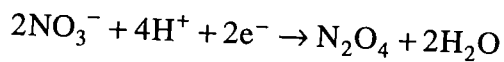
4 Which of the following best describes a *reducing agent*?

- A. a substance that is reduced in a reaction
- B. a substance that gains electrons in a reaction
- C. a substance that shows a decrease in oxidation number in a reaction
- D. a substance that shows an increase in oxidation number in a reaction

5 Which of the following is an equation representing a redox reaction?

- A.  $2\text{NO}_2(g) \rightarrow \text{N}_2\text{O}_4(g)$
- B.  $\text{Mg}(s) + \text{Cl}_2(g) \rightarrow \text{MgCl}_2(s)$
- C.  $\text{Ag}^+(aq) + \text{Cl}^-(aq) \rightarrow \text{AgCl}(s)$
- D.  $\text{NH}_3(aq) + \text{H}^+(aq) \rightarrow \text{NH}_4^+(aq)$

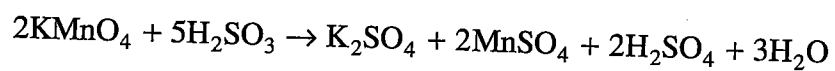
6 Consider the following:



This equation represents

- A. reduction.
- B. oxidation.
- C. neutralization.
- D. decomposition.

7 Consider the following redox equation:

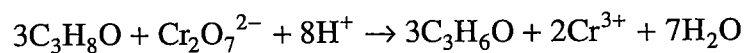


Which species undergoes oxidation?

- A. H in  $\text{H}_2\text{SO}_3$
- B. S in  $\text{H}_2\text{SO}_3$
- C. K in  $\text{KMnO}_4$
- D. Mn in  $\text{KMnO}_4$

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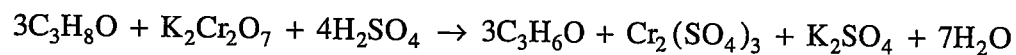
Which statement is correct for the following equation?



- A. Cr in  $\text{Cr}_2\text{O}_7^{2-}$  gains electrons.
- B.  $\text{C}_3\text{H}_8\text{O}$  acts as the oxidizing agent.
- C. The equation is not a redox equation.
- D.  $\text{Cr}_2\text{O}_7^{2-}$  is oxidized and  $\text{C}_3\text{H}_8\text{O}$  is reduced.

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Consider the following redox equation:

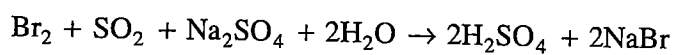


Which species is the oxidizing agent?

- A. C in  $\text{C}_3\text{H}_8\text{O}$
- B. H in  $\text{C}_3\text{H}_8\text{O}$
- C. O in  $\text{C}_3\text{H}_8\text{O}$
- D. Cr in  $\text{K}_2\text{Cr}_2\text{O}_7$

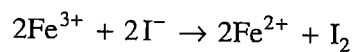
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Identify the substance that is oxidized in the following equation:



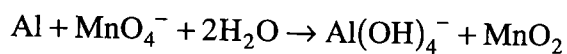
- A.  $\text{Br}_2$
- B.  $\text{SO}_2$
- C.  $\text{H}_2\text{O}$
- D.  $\text{Na}_2\text{SO}_4$

11 What is the reducing agent in the following equation?



- A.  $\text{I}_2$
- B.  $\text{I}^-$
- C.  $\text{Fe}^{2+}$
- D.  $\text{Fe}^{3+}$

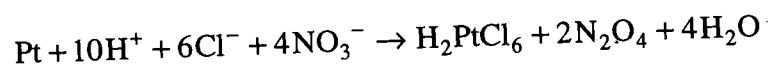
12 Consider the following redox reaction:



The chemical species being oxidized is

- A. Al
- B.  $\text{MnO}_4^-$
- C.  $\text{Al(OH)}_4^-$
- D.  $\text{MnO}_2$

13 Consider the following redox reaction:

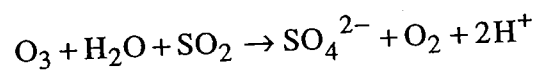


The reactant that gains electrons is

- A. Pt
- B.  $\text{H}^+$
- C.  $\text{Cl}^-$
- D.  $\text{NO}_3^-$

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Consider the following:



In the redox reaction above, the chemical species oxidized is

- A.  $\text{H}^+$
- B.  $\text{O}_3$
- C.  $\text{SO}_2$
- D.  $\text{SO}_4^{2-}$

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When  $\text{W}_2\text{O}_5$  is converted to  $\text{WO}_2$  in a redox reaction, the W has been

- A. reduced since its oxidation number has increased.
- B. reduced since its oxidation number has decreased.
- C. oxidized since its oxidation number has increased.
- D. oxidized since its oxidation number has decreased.

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A product of the oxidation of  $\text{NO}_2$  is

- A.  $\text{NO}$
- B.  $\text{N}_2\text{O}$
- C.  $\text{NO}_2^-$
- D.  $\text{NO}_3^-$