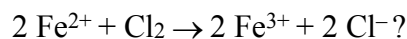
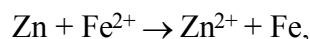


1. Which is the oxidizing agent in the reaction



- A) Fe^{2+} B) Cl_2 C) Fe^{3+} D) Cl^-

2. In the reaction



the reducing agent is

- A) Zn B) Fe^{2+} C) Zn^{2+} D) Fe

3. In the reaction



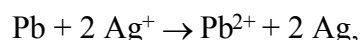
copper is

- A) reduced and is the oxidizing agent
B) reduced and is the reducing agent
C) oxidized and is the oxidizing agent
D) oxidized and is the reducing agent

4. According to Reference Table J, which species is the strongest oxidizing agent?

- A) Li(s) B) Li^+ C) $\text{F}_2(\text{g})$ D) F^-

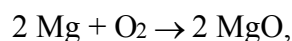
5. In the reaction



the oxidizing agent is

- A) Ag^+ B) Ag C) Pb D) Pb^{2+}

6. In the reaction



the magnesium is the

- A) oxidizing agent and is reduced
B) oxidizing agent and is oxidized
C) reducing agent and is reduced
D) reducing agent and is oxidized

7. According to Reference Table J, which is the strongest reducing agent?

- A) Li(s) B) Na(s)
C) $\text{F}_2(\text{g})$ D) $\text{Br}_2(\ell)$

8. A reducing agent is a substance that

- A) gains protons B) loses protons
C) gains electrons D) loses electrons

9. In a redox reaction, a reducing agent will always

- A) lose electrons B) lose protons
C) gain electrons D) gain protons

10. When a substance is oxidized, it

- A) loses protons
B) gains protons
C) acts as an oxidizing agent
D) acts as a reducing agent

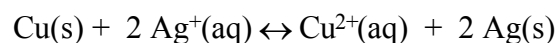
11. As the elements in Period 3 of the Periodic Table are considered in order of increasing atomic number, the ability of each successive element to act as a reducing agent

- A) decreases B) increases
C) remains the same

12. In a redox reaction, the species reduced

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

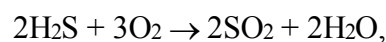
13. In the equation:



the oxidizing agent is

- A) Cu^0 B) Ag^+ C) Cu^{2+} D) Ag^0

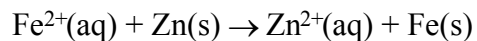
14. In the reaction:



the oxidizing agent is

- A) oxygen B) water
C) sulfur dioxide D) hydrogen sulfide

15. Given the redox reaction:



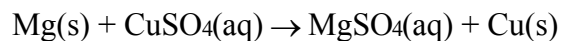
Which species acts as a reducing agent?

- A) Fe(s) B) Fe²⁺(aq)
C) Zn(s) D) Zn²⁺(aq)

16. In a redox reaction, the reducing agent will

- A) lose electrons and be reduced
B) lose electrons and be oxidized
C) gain electrons and be reduced
D) gain electrons and be oxidized

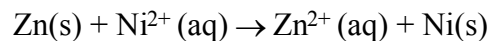
17. Given the redox reaction:



Which species acts as the oxidizing agent?

- A) Cu(s) B) Cu²⁺(aq)
C) Mg(s) D) Mg²⁺(aq)

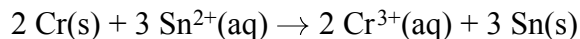
18. Given the electrochemical cell reaction:



Which species is the reducing agent?

- A) Zn B) Ni²⁺ C) Zn²⁺ D) Ni

19. Given the redox reaction:



Which species serves as the reducing agent?

- A) Cr B) Sn²⁺ C) Cr³⁺ D) Sn

20. The oxidation number of a reducing agent can change from

- A) -1 to -3 B) -2 to -1
C) 3 to -1 D) 4 to -3

