

Multiple Choice – Circle The Best Answer.

- Oxidation-reduction (redox) reactions involve the loss and gain of:**
a. electrons b. protons c. neutrons
- A redox reaction equation can be recognized because the:**
a. equation is not balanced
b. reactants and products are all ions
c. oxidation numbers of two of the elements change
d. all of these
- The oxidation number of a neutral atom:**
a. is the charge on the atom
b. can be determined from the element's position on the periodic table
c. is zero
d. none of these
- In a compound, the sum of the oxidation numbers of all the elements equals:**
a. zero c. the charge of the compound
b. +1 d. -1
- In an ionic compound, the oxidation numbers of the elements are:**
a. the charges of the ions c. the apparent charges of the atoms
b. the charges of the atoms d. the apparent charges of the ions
- In a compound or polyatomic ion, the oxidation number for hydrogen is usually:**
a. 0 b. +1 c. -1 d. -2
- In a compound or polyatomic ion, the oxidation number for oxygen is usually:**
a. 0 b. +1 c. -1 d. -2
- The oxidation number of S in H₂SO₄ is:**
a. +6 b. +8 c. -6 d. -2
- The oxidation number of chlorine in Cl₂ is:**
a. -1 b. -2 c. 0 d. +3
- The oxidation number of chlorine in HCl is:**
a. -1 b. -2 c. 0 d. +3

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11. The oxidation number of chlorine in $(\text{ClO}_2)^{-1}$ is:
a. -1 b. -2 c. 0 d. +3
12. In the polyatomic ion, $(\text{NO}_3)^{-1}$, the sum of the oxidation numbers must equal:
a. 0 b. -1 c. -2 d. 3
13. The oxidation number of Na in NaCl is:
a. +1 b. -1 c. 0 d. impossible to determine
14. Oxidation is the:
a. loss of electrons c. loss of protons
b. gain of electrons b. gain of neutrons
15. When an element is oxidized, its oxidation number:
a. increases b. decreases
16. This represents the _____ of copper: $\text{Cu}^{+2} \rightarrow \text{Cu}^0$
a. oxidation b. reduction
17. The study of electricity related redox reactions is called:
a. electricity c. electrolysis
b. electrochemistry d. organic chemistry
18. Which of these reactions is not a redox reaction?
a. $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
b. $\text{Mg} + \text{Cl}_2 \rightarrow \text{MgCl}_2$
c. $\text{NaCl} + \text{KBr} \rightarrow \text{KCl} + \text{NaBr}$
d. $\text{Mg} + \text{CuCl}_2 \rightarrow \text{MgCl}_2 + \text{Cu}$
19. The forced separation of water into hydrogen and oxygen by the use of electricity is an example of:
a. a battery c. electrolysis
b. a reaction that is not redox d. direct exchange of electrons
20. In a battery:
a. an electric current is produced c. chemicals are separated
b. electron exchange occurs through a wire d. all of these