

Advanced Chemistry Fundamentals

Chemistry · Answer Key · 10 Questions

1. Which element has the highest electronegativity according to the Pauling scale?

- A) Oxygen
- B) Fluorine**
- C) Chlorine
- D) Nitrogen

2. In a covalent bond, what is the term for the sharing of two pairs of electrons between two atoms?

- A) Single bond
- B) Triple bond
- C) Double bond**
- D) Ionic bond

3. Which subatomic particle was discovered by James Chadwick in 1932?

- A) Proton
- B) Electron
- C) Neutron**
- D) Positron

4. What is the electron configuration for a neutral neon atom (atomic number 10)?

- A) 1s² 2s² 2p⁶**
- B) 1s² 2s² 2p⁴
- C) 1s² 2s² 2p⁸
- D) 1s² 2p⁶

5. Which of the following compounds is considered an Arrhenius acid?

- A) NaOH
- B) NaCl
- C) HCl**
- D) NH₃

6. What is the chemical formula for the polyatomic ion known as sulfate?

- A) SO₃(²⁻)
- B) SO₄(²⁻)**
- C) S₂O₃(²⁻)
- D) HSO₄(⁻)

7. Which periodic trend describes the energy required to remove an electron from a gaseous atom?

- A) Electronegativity
- B) Atomic radius
- C) Ionization energy**
- D) Electron affinity

8. Which type of crystal lattice structure does sodium chloride (NaCl) form?

- A) Face-centered cubic**
- B) Body-centered cubic
- C) Hexagonal close-packed
- D) Simple cubic

9. What is the oxidation state of manganese in the compound KMnO_4 ?

- A) +2
- B) +4
- C) +7**
- D) +6

10. According to the Ideal Gas Law, $PV = nRT$, what does 'R' represent?

- A) Rate constant
- B) Reaction quotient
- C) Ideal gas constant**
- D) Reduced pressure