

Atomic Structure and Chemical Bonding

Chemistry · Answer Key · 15 Questions

1. Which subatomic particles are found within the nucleus of an atom?

- A) Electrons and protons
- B) Protons and neutrons**
- C) Electrons and neutrons
- D) Only protons

2. What is the smallest particle of matter?

- A) Molecule
- B) Element
- C) Atom**
- D) Ion

3. How is an element defined by its atomic number?

- A) Number of neutrons
- B) Number of electrons
- C) Number of protons**
- D) Total mass

4. Which group of elements in the periodic table are known as noble or inert gases?

- A) Group I
- B) Group II
- C) Group VII
- D) Group VIII**

5. What are electrons in the outermost shell of an atom called?

- A) Core electrons
- B) Valence electrons**
- C) Transition electrons
- D) Inert electrons

6. What type of bond is formed by the transfer of electrons between a metal and a non-metal?

- A) Covalent bond
- B) Ionic bond**
- C) Hydrogen bond
- D) Metallic bond

7. What do we call a charged particle formed when an atom loses or gains electrons?

- A) Molecule
- B) Element
- C) Ion**
- D) Isotope

8. What is the process of changing a solid directly into a gas called?

- A) Evaporation
- B) Condensation
- C) Sublimation**
- D) Melting

9. Which of the following is an example of a physical change?

- A) Burning wood
- B) Melting ice**
- C) Rusting iron
- D) Cooking an egg

10. What is a mixture of a solute and a solvent called?

- A) Compound
- B) Element
- C) Solution**
- D) Suspension

11. Which law states that the volume of a gas is inversely proportional to its pressure at a constant temperature?

- A) Boyle's Law**
- B) Charles's Law
- C) Dalton's Law
- D) Periodic Law

12. What is the movement of molecules from high concentration to low concentration called?

- A) Osmosis
- B) Diffusion**
- C) Distillation
- D) Centrifugation

13. Which group of elements are commonly called the 'salt-makers'?

- A) Alkali metals
- B) Noble gases
- C) Halogens**
- D) Transition metals

14. What is the maximum number of electrons the first energy shell can hold?

- A) 1
- B) 2**
- C) 8
- D) 18

15. Which of the following is a characteristic of covalent bonds?

- A) Transfer of electrons
- B) Sharing of valence electrons**
- C) Formation of ions
- D) Electrostatic attraction between ions