

High School Advanced Chemistry Fundamentals

Chemistry · Answer Key · 18 Questions

1. What is the chemical formula for sulfuric acid?

- A) H_2SO_3
- B) H_2SO_4**
- C) $\text{H}_2\text{S}_2\text{O}_7$
- D) SO_3

2. Which noble gas is the most abundant in Earth's atmosphere?

- A) Helium
- B) Neon
- C) Argon**
- D) Krypton

3. What is the atomic number of oxygen?

- A) 6
- B) 7
- C) 8**
- D) 9

4. Which type of bond involves the sharing of electrons between atoms?

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

5. What is the pH range for a neutral solution at 25°C?

- A) Less than 7
- B) Exactly 7**
- C) Greater than 7
- D) Between 0 and 14

6. Which element is the central atom in the molecule methane (CH_4)?

- A) Hydrogen
- B) Carbon**
- C) Oxygen
- D) Nitrogen

7. What is the state of matter for water at 100°C at standard atmospheric pressure?

- A) Solid
- B) Liquid
- C) Gas**
- D) Plasma

8. Which of the following is a strong acid?

- A) Acetic acid
- B) Hydrochloric acid**
- C) Carbonic acid
- D) Phosphoric acid

9. What is the molar mass of water (H₂O)? (Approximately)

- A) 16 g/mol
- B) 18 g/mol**
- C) 20 g/mol
- D) 22 g/mol

10. Which subatomic particle has a negative charge?

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

11. What is the process by which a liquid changes into a gas?

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

12. Which group on the periodic table contains alkali metals?

- A) Group 1**
- B) Group 2
- C) Group 17
- D) Group 18

13. What is the empirical formula of glucose (C₆H₁₂O₆)?

- A) C₆H₁₂O₆
- B) C₃H₆O₃
- C) C₂H₄O₂
- D) CH₂O**

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

- A) Charles's Law
- B) Gay-Lussac's Law
- C) Boyle's Law**
- D) Avogadro's Law

15. What is the common name for sodium chloride?

- A) Baking soda
- B) Table salt**
- C) Washing soda
- D) Bleach

16. Which type of reaction involves the gain of electrons by a substance?

- A) Oxidation
- B) Reduction**
- C) Combustion
- D) Neutralization

17. What is the name of the transition metal commonly used in catalysts for the Haber-Bosch process?

- A) Copper
- B) Iron**
- C) Nickel
- D) Platinum

18. Which term describes the ability of a substance to dissolve in a solvent?

- A) Viscosity
- B) Density
- C) Solubility**
- D) Conductivity