

Fundamental Chemistry Knowledge Challenge

Chemistry · Answer Key · 20 Questions

1. What is the atomic number of the element with the chemical symbol Au?

- A) 79
- B) 47
- C) 63
- D) 82

2. Which of the following is an allotrope of carbon, known for its extreme hardness and often used in cutting tools?

- A) Graphite
- B) Fullerene
- C) Amorphous carbon
- D) Diamond

3. What is the common name for the compound H_2O_2 ?

- A) Water
- B) Carbon dioxide
- C) Hydrogen peroxide
- D) Ozone

4. The process by which a solid changes directly into a gas is called:

- A) Condensation
- B) Evaporation
- C) Sublimation
- D) Deposition

5. What is the molar mass of pure water (H_2O) in grams per mole, rounded to two decimal places?

- A) 16.00
- B) 18.02
- C) 34.01
- D) 2.02

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

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

7. The pH scale measures the acidity or alkalinity of a solution. A pH of 7 is considered:

- A) Acidic
- B) Neutral**
- C) Basic
- D) Strongly acidic

8. What is the primary component of natural gas?

- A) Ethane
- B) Propane
- C) Methane**
- D) Butane

9. Which element is known as the 'king of metals' due to its resistance to corrosion and high value?

- A) Silver
- B) Platinum
- C) Gold**
- D) Copper

10. What type of chemical bond involves the sharing of electron pairs between atoms?

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

11. The process of a liquid turning into a solid is called:

- A) Melting
- B) Freezing**
- C) Boiling
- D) Vaporization

12. What is the chemical formula for sulfuric acid?

- A) HCl
- B) HNO₃
- C) H₂SO₄**
- D) H₃PO₄

13. Which of these is a halogen?

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

14. The phenomenon where a substance absorbs moisture from the air is known as:

- A) Dehydration
- B) Deliquescence**
- C) Efflorescence
- D) Adsorption

15. What is the common name for solid carbon dioxide (CO₂)?

- A) Liquid nitrogen
- B) Dry ice**
- C) Snow
- D) Melted butter

16. Which element has the chemical symbol Fe?

- A) Fluorine
- B) Iron**
- C) Phosphorus
- D) Fermium

17. The law of conservation of mass states that matter is neither created nor destroyed in a chemical reaction. What is the approximate percentage of Earth's atmosphere that is nitrogen?

- A) 21%
- B) 78%**
- C) 1%
- D) 50%

18. What is the basic unit of matter?

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

19. Which of the following is a transition metal?

- A) Sodium
- B) Potassium
- C) Calcium
- D) Copper**

20. What is the process by which plants convert light energy into chemical energy?

- A) Respiration
- B) Fermentation
- C) Photosynthesis**
- D) Combustion