

3. The atomic number of an element is determined by the number of:

- A) Protons
- B) Neutrons
- C) Electrons
- D) Nucleons

Correct Answer: A) Protons

4. Which of the following is a noble gas?

- A) Oxygen
- B) Nitrogen
- C) Neon
- D) Chlorine

Correct Answer: C) Neon

5. Which of these elements is a halogen?

- A) Sodium
- B) Chlorine
- C) Calcium
- D) Helium

Correct Answer: B) Chlorine

6. What is the molecular formula of methane?

- A) CH_4
- B) C_2H_6
- C) C_6H_6
- D) C_4H_{10}

Correct Answer: A) CH_4

7. The process of converting a liquid into gas at its boiling point is called:

- A) Evaporation
- B) Condensation
- C) Freezing
- D) Boiling

Correct Answer: D) Boiling

8. Which of the following compounds is used in the preparation of hydrochloric acid?

- A) Sodium chloride
- B) Potassium chloride
- C) Sodium carbonate
- D) Sulfuric acid

 **Language Resources**

Correct Answer: D) Sulfuric acid

9. The main component of natural gas is:

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

Correct Answer: C) Methane

10. Which of these is an example of an exothermic reaction?

- A) Melting of ice
- B) Boiling of water
- C) Combustion of fuel
- D) Dissolving of salt in water

 **Chemistry**

Correct Answer: C) Combustion of fuel

13. What is the electronic configuration of the element with atomic number 11?

- A) $1s^2 2s^2 2p^6 3s^2$
- B) $1s^2 2s^2 2p^6 3s^2 3p^1$
- C) $1s^2 2s^2 2p^6 3s^2 3p^2$
- D) $1s^2 2s^2 2p^6 3s^1$

Correct Answer: D) $1s^2 2s^2 2p^6 3s^1$

14. The substance that speeds up a chemical reaction without itself being consumed is called a:

- A) Catalyst
- B) Reagent
- C) Solvent
- D) Product

Correct Answer: A) Catalyst

15. Which of the following is a property of acids?

- A) Bitter taste
- B) Slippery feel
- C) Turns red litmus paper blue
- D) Sour taste

 **Physics**

Correct Answer: D) Sour taste

16. Which of the following is a non-metal?

- A) Copper
- B) Carbon
- C) Iron
- D) Silver

Correct Answer: B) Carbon

D) Silver

Correct Answer: B) Carbon

17. What is the name of the compound with the formula NaCl?

A) Sodium hydroxide

B) Sodium chloride

C) Sodium nitrate

D) Sodium sulfate

 **Chemistry**

Correct Answer: B) Sodium chloride

18. The  chemical symbol for Iron is:

A) Fe

B) Ir

C) I

D) In

Correct Answer: A) Fe

11. Which of the following is not an alkaline earth metal?

- A) Magnesium
- B) Calcium
- C) Strontium
- D) Sodium

Correct Answer: D) Sodium

12. What is the unit of the rate constant in a first-order reaction?

- A) $\text{L/mol}\cdot\text{s}$
- B) $1/\text{s}$
- C) $\text{mol/L}\cdot\text{s}$
- D) mol/L



Fun & Trivia

Correct Answer: B) $1/\text{s}$

Correct Answer: A) Fe

19. Which of the following gases is responsible for global warming?

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

Correct Answer: C) Carbon dioxide

20. What is the product formed when sodium reacts with water?

- A) Sodium hydroxide and hydrogen gas
- B) Sodium chloride and water
- C) Sodium carbonate and oxygen
- D) Sodium bicarbonate and hydrogen gas

Question: In a combustion reaction, what is always a product?

- A) Carbon dioxide (CO_2)
- B) Water (H_2O)
- C) Oxygen (O_2)
- D) Both A and B

Answer: D) Both A and B

Question: Which functional group is present in alcohols?

- A) $-\text{COOH}$
- B) $-\text{OH}$
- C) $-\text{CHO}$
- D) $-\text{NH}_2$

Answer: B) $-\text{OH}$

Question: Which law of thermodynamics states that energy cannot be created or destroyed?

- A) Zeroth Law
- B) First Law
- C) Second Law
- D) Third Law

Question: Which law of thermodynamics states that energy cannot be created or destroyed?

- A) Zeroth Law
- B) First Law
- C) Second Law
- D) Third Law

Answer: B) First Law

Question: In an electrochemical cell, oxidation occurs at which electrode?

- A) Cathode
- B) Anode
- C) Both electrodes
- D) Salt bridge

Answer: B) Anode

Question: What is the effect of a catalyst on a  chemical reaction?

- A) Increases the activation energy
- B) Decreases the activation energy
- C) Does not affect the activation

Answer: B) Decreases the activation energy

Question: How many moles of oxygen are required to completely react with 2 moles of hydrogen to form water?

- A) 1 mole
- B) 2 moles
- C) 0.5 moles
- D) 4 moles

Answer: A) 1 mole

Question: What is emitted during alpha decay?

- A) An electron
- B) A helium nucleus
- C) A photon
- D) A neutron

Answer: B) A helium nucleus

Question: What is the term for a solution that contains the maximum amount of solute at a given temperature?

- A) Unsaturated
- B) Saturated
- C) Supersaturated
- D) Dilute

Answer: B) Saturated

Question: In the reaction $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$, which element is oxidized?

- A) Magnesium (Mg)
- B) Oxygen (O)
- C) Both
- D) Neither

Answer: A) Magnesium (Mg)

Question: What is the coordination number of the central metal ion in $[\text{Co}(\text{NH}_3)_6]^{3+}$?

- A) 2
- B) 4