

1. What is the atomic number of carbon?

- a) 5
- b) 12
- c) 6
- d) 14

2. Which of the following is a noble gas?

- a) Oxygen
- b) Neon
- c) Chlorine
- d) Nitrogen

3. What is the chemical symbol for gold?

- a) Gd
- b) Au
- c) Ag
- d) Ge

4. How many valence electrons does an oxygen atom have?

- a) 4
- b) 6
- c) 8
- d) 2

5. What is the molecular formula for methane?

- a) CH<sub>3</sub>
- b) CO<sub>2</sub>

c)  $\text{C}_6\text{H}_{12}\text{O}_6$

d)  $\text{NH}_3$

6. Which of the following is an example of an alkali metal?

a) Sodium (Na)

b) Chlorine (Cl)

c) Calcium (Ca)

d) Iron (Fe)

7. What is the pH of a neutral solution?

a) 7

b) 5

c) 10

d) 14

8. How many moles are there in 18 grams of water ( $\text{H}_2\text{O}$ )?

a) 1 mole

b) 2 moles

c) 0.5 moles

d) 3 moles

9. Which gas is responsible for the greenhouse effect?

a) Oxygen

b) Carbon dioxide

c) Nitrogen

d) Hydrogen

10. What is the chemical formula for sulfuric acid?

- a) HCl
- b)  $\text{H}_2\text{SO}_4$
- c) NaOH
- d)  $\text{CO}_2$

11. Which subatomic particle is negatively charged?

- a) Proton
- b) Neutron
- c) Electron
- d) Positron

12. How many electrons are in the outermost shell of a chlorine atom?

- a) 1
- b) 7
- c) 2
- d) 8

13. What is the formula for the compound formed between potassium and sulfur?

- a)  $\text{K}_2\text{S}$
- b) KS
- c)  $\text{K}_2\text{SO}_4$
- d)  $\text{KSO}_4$

14. What is Avogadro's number?

- a)  $6.02 \times 10^{23}$
- b)  $3.14 \times 10^9$

c)  $1.21 \times 10^6$

d)  $9.8 \times 10^5$

15. Which element is present in all organic compounds?

a) Hydrogen

b) Carbon

c) Oxygen

d) Nitrogen

16. What is the molecular formula for glucose?

a)  $C_6H_{12}O_6$

b)  $CH_4$

c)  $CO_2$

d)  $H_2O$

17. What is the boiling point of water in Celsius?

a)  $100^\circ C$

b)  $0^\circ C$

c)  $-100^\circ C$

d)  $50^\circ C$

18. Which of the following is a halogen?

a) Fluorine (F)

b) Sodium (Na)

c) Potassium (K)

d) Calcium (Ca)

19. What is the chemical formula for ammonia?

- a)  $\text{NH}_3$
- b)  $\text{NO}_2$
- c)  $\text{N}_2\text{O}$
- d)  $\text{N}_2\text{H}_4$

20. What is the mass number of an atom?

- a) The number of protons
- b) The number of neutrons
- c) The sum of protons and neutrons
- d) The number of electrons

21. What is the main component of natural gas?

- a) Methane
- b) Ethane
- c) Propane
- d) Butane

22. Which law states that the total pressure of a gas mixture is the sum of the partial pressures of its individual gases?

- a) Boyle's Law
- b) Charles's Law
- c) Dalton's Law
- d) Gay-Lussac's Law

23. What is the chemical formula for common table salt?

- a)  $\text{NaCl}$
- b)  $\text{KCl}$

c)  $\text{MgCl}_2$

d)  $\text{CaCl}_2$

24. Which element is essential for the process of photosynthesis?

a) Carbon (C)

b) Oxygen (O)

c) Nitrogen (N)

d) Chlorine (Cl)

25. What is the name of the process by which a gas changes directly to a solid without passing through the liquid state?

a) Sublimation

b) Condensation

c) Evaporation

d) Freezing

26. Which of the following is a transition metal?

a) Sodium (Na)

b) Iron (Fe)

c) Calcium (Ca)

d) Potassium (K)

27. What is the chemical formula for hydrogen peroxide?

a)  $\text{H}_2\text{O}_2$

b) HO

c)  $\text{H}_2\text{O}$

d) HCl

28. What is the chemical symbol for lead?

- a) Ld
- b) Le
- c) Pb
- d) Pt

29. How many atoms are there in one mole of a substance?

- a)  $6.02 \times 10^{23}$
- b)  $1 \times 10^6$
- c)  $2 \times 10^{23}$
- d)  $1 \times 10^9$

30. Which of the following is an example of a non-metal?

- a) Sodium (Na)
- b) Chlorine (Cl)
- c) Calcium (Ca)
- d) Iron (Fe)

31. What is the chemical formula for carbon dioxide?

- a) CO
- b) CO<sub>2</sub>
- c) C<sub>2</sub>O
- d) C<sub>3</sub>O<sub>2</sub>

32. Which gas is responsible for the color and smell of rotten eggs?

- a) Hydrogen
- b) Sulfur dioxide

- c) Methane
- d) Oxygen

33. What is the name of the process by which plants make their own food using sunlight?

- a) Respiration
- b) Photosynthesis
- c) Combustion
- d) Fermentation

34. How many electrons can the first energy level of an atom hold?

- a) 2
- b) 8
- c) 18
- d) 32

35. What is the chemical formula for hydrochloric acid?

- a)  $\text{H}_2\text{O}$
- b)  $\text{HCl}$
- c)  $\text{HOCl}$
- d)  $\text{HClO}_4$

36. Which of the following is a greenhouse gas?

- a) Nitrogen ( $\text{N}_2$ )
- b) Oxygen ( $\text{O}_2$ )
- c) Carbon dioxide ( $\text{CO}_2$ )
- d) Hydrogen ( $\text{H}_2$ )



37. What is the chemical formula for methane?

- a) CH<sub>4</sub>
- b) C<sub>2</sub>H<sub>6</sub>
- c) C<sub>3</sub>H<sub>8</sub>
- d) C<sub>4</sub>H<sub>10</sub>

38. What is the process of removing salt from seawater to obtain fresh water called?

- a) Distillation
- b) Filtration
- c) Evaporation
- d) Precipitation

39. Which of the following is a characteristic property of metals?

- a) Brittle
- b) Malleable
- c) Non-conductor of electricity
- d) Low melting point

40. What is the chemical formula for sodium hydroxide?

- a) NaOH
- b) HCl
- c) Na<sub>2</sub>CO<sub>3</sub>
- d) Na<sub>2</sub>O

41. In which group of the periodic table is helium located?

- a) Alkali metals
- b) Noble gases
- c) Halogens
- d) Transition metals

42. What is the chemical formula for table sugar (sucrose)?

- a)  $C_6H_{12}O_6$
- b)  $C_{12}H_{22}O_{11}$
- c)  $CH_4$
- d)  $CO_2$

43. Which of the following is a diatomic molecule?

- a)  $O_2$
- b)  $HCl$
- c)  $CO_2$
- d)  $CH_4$

44. What is the unit of measurement for the amount of substance in chemistry?

- a) Mole
- b) Gram
- c) Liter
- d) Kelvin

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

- a) Boyle's Law
- b) Charles's Law
- c) Avogadro's Law

d) Gay-Lussac's Law

46. What is the chemical formula for nitric acid?

a)  $\text{HNO}_2$

b)  $\text{H}_2\text{SO}_4$

c)  $\text{HNO}_3$

d)  $\text{H}_2\text{CO}_3$

47. What is the name of the bond formed when electrons are shared between two non-metal atoms?

a) Ionic bond

b) Covalent bond

c) Metallic bond

d) Polar bond

48. What is the chemical symbol for iron?

a) Ir

b) Fe

c) In

d) F

49. Which gas is produced during the process of respiration?

a) Oxygen

b) Carbon dioxide

c) Nitrogen

d) Hydrogen

50. What is the formula for the compound formed between magnesium and chlorine?

- a) MgCl
- b) MgCl<sub>2</sub>
- c) Mg<sub>2</sub>Cl
- d) Mg<sub>2</sub>Cl<sub>3</sub>

Here are the answers to the 50 multiple-choice questions:

- 1. c) 6
- 2. b) Neon
- 3. b) Au
- 4. b) 6
- 5. a) CH<sub>3</sub>
- 6. a) Sodium (Na)
- 7. a) 7
- 8. a) 1 mole
- 9. b) Carbon dioxide
- 10. b) H<sub>2</sub>SO<sub>4</sub>
- 11. c) Electron
- 12. b) 7
- 13. a) K<sub>2</sub>S
- 14. a)  $6.02 \times 10^{23}$
- 15. b) Carbon
- 16. a) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>
- 17. a) 100°C
- 18. a) Fluorine (F)
- 19. a) NH<sub>3</sub>
- 20. c) The sum of protons and neutrons

- 21. a) Methane
- 22. c) Dalton's Law
- 23. a) NaCl
- 24. b) Oxygen (O)
- 25. a) Sublimation
- 26. b) Iron (Fe)
- 27. a) H<sub>2</sub>O<sub>2</sub>
- 28. c) Pb
- 29. a)  $6.02 \times 10^{23}$
- 30. b) Chlorine (Cl)
- 31. b) CO<sub>2</sub>
- 32. b) Sulfur dioxide
- 33. b) Photosynthesis
- 34. a) 2
- 35. b) HCl
- 36. c) Carbon dioxide (CO<sub>2</sub>)
- 37. a) CH<sub>4</sub>
- 38. a) Distillation
- 39. b) Malleable
- 40. a) NaOH
- 41. b) Noble gases
- 42. b) C<sub>12</sub>H<sub>22</sub>O<sub>11</sub>
- 43. a) O<sub>2</sub>
- 44. a) Mole
- 45. a) Boyle's Law
- 46. c) HNO<sub>3</sub>
- 47. b) Covalent bond

48. b) Fe

49. b) Carbon dioxide

50. b)  $\text{MgCl}_2$