

INTRODUCTION TO CHEMISTRY

Grade 9–10 Chemistry Test Paper

By Teacher John Agbor

Multiple Choice Questions (MCQs)

Student Name: _____ Class: _____ Date: _____

Instructions:

- Choose the best answer for each question.
- Write A, B, C, or D.
- Each question carries 1 mark.

SECTION A: INTRODUCTION TO CHEMISTRY

1. Chemistry is the study of:

- A. Living organisms only
- B. Matter and the changes it undergoes
- C. Earth and space
- D. Forces and motion

2. Matter is anything that:

- A. Has energy only
- B. Can be seen only
- C. Has mass and occupies space
- D. Is alive

3. Which of the following is NOT matter?

- A. Water
- B. Air
- C. Heat
- D. Wood

4. Which branch of chemistry deals with carbon compounds?

- A. Physical Chemistry
- B. Organic Chemistry
- C. Analytical Chemistry
- D. Nuclear Chemistry

5. Which branch of chemistry studies the composition of substances?

- A. Analytical Chemistry
- B. Organic Chemistry
- C. Biochemistry
- D. Physical Chemistry

SECTION B: STATES OF MATTER

6. Matter commonly exists in how many states?

- A. 2
- B. 3
- C. 4
- D. 5

7. Which state of matter has a definite shape and volume?

- A. Solid
- B. Liquid
- C. Gas
- D. Plasma

8. Which state of matter takes the shape of its container but has a fixed volume?

- A. Solid
- B. Liquid
- C. Gas
- D. Plasma

9. Gas particles are:

- A. Closely packed
- B. Fixed in position
- C. Far apart and move freely
- D. Motionless

10. Melting is the change from:

- A. Gas to liquid
- B. Solid to liquid
- C. Liquid to gas
- D. Gas to solid

11. Evaporation is the change from:

- A. Liquid to gas
- B. Gas to liquid
- C. Solid to gas
- D. Gas to solid

12. Condensation is the change from:

- A. Solid to liquid
- B. Liquid to gas
- C. Gas to liquid
- D. Solid to gas

13. Freezing is the change from:

- A. Liquid to solid
- B. Solid to gas
- C. Gas to liquid
- D. Solid to liquid

SECTION C: PARTICLE THEORY OF MATTER

14. Matter is made up of:

- A. Cells
- B. Particles
- C. Tissues
- D. Waves

15. Particles in matter are:

- A. Motionless
- B. Always visible
- C. Constantly moving
- D. Square-shaped

16. Diffusion occurs because particles:

- A. Are attracted to magnets
- B. Move randomly
- C. Have color
- D. Are alive

17. Which process demonstrates diffusion?

- A. Ice melting
- B. Sugar dissolving in water
- C. Water boiling
- D. Water freezing

SECTION D: ELEMENTS, COMPOUNDS AND MIXTURES

18. A pure substance containing only one type of atom is called:

- A. Compound
- B. Mixture
- C. Element
- D. Solution

19. Which of the following is an element?

- A. Water
- B. Oxygen
- C. Salt
- D. Carbon dioxide

20. A compound is:

- A. Two or more elements chemically combined
- B. A mixture of substances
- C. A pure metal
- D. A gas

21. Water is a:

- A. Mixture
- B. Compound
- C. Element
- D. Metal

22. Air is a:

- A. Element
- B. Compound
- C. Mixture
- D. Molecule

23. Which of the following is a mixture?

- A. Oxygen
- B. Gold
- C. Air
- D. Hydrogen

24. The smallest particle of an element is:

- A. Atom
- B. Molecule
- C. Cell
- D. Electron

25. The smallest particle of a compound is:

- A. Atom
- B. Molecule
- C. Proton
- D. Neutron

SECTION E: ATOMIC STRUCTURE

26. The center of an atom is called:

- A. Electron shell
- B. Nucleus
- C. Orbit
- D. Molecule

27. Which particle has a positive charge?

- A. Electron
- B. Proton
- C. Neutron
- D. Atom

28. Which particle has no charge?

- A. Electron
- B. Proton
- C. Neutron
- D. Ion

29. Which particle has a negative charge?

- A. Electron
- B. Proton
- C. Neutron
- D. Nucleus

30. Electrons are found:

- A. In the nucleus
- B. Around the nucleus
- C. Inside protons
- D. Inside neutrons

31. The atomic number represents the number of:

- A. Neutrons
- B. Electrons and neutrons
- C. Protons
- D. Molecules

32. An atom is electrically neutral because:

- A. It has no particles
- B. Protons equal electrons
- C. It has no nucleus
- D. Neutrons equal electrons

SECTION F: PERIODIC TABLE

33. The periodic table is arranged according to:

- A. Atomic number
- B. Color
- C. Density
- D. Size

34. Vertical columns in the periodic table are called:

- A. Periods
- B. Rows
- C. Groups
- D. Series

35. Horizontal rows in the periodic table are called:

- A. Groups
- B. Periods
- C. Columns
- D. Blocks

36. Elements in the same group have:

- A. Similar chemical properties
- B. Different properties
- C. Different numbers of electrons
- D. Different masses only

37. Metals are generally:

- A. Poor conductors
- B. Brittle
- C. Good conductors of heat and electricity
- D. Gases

38. Non-metals are generally:

- A. Good conductors
- B. Malleable
- C. Poor conductors
- D. Shiny

SECTION G: PHYSICAL AND CHEMICAL CHANGES

39. A physical change:

- A. Produces a new substance
- B. Changes chemical composition
- C. Does not produce a new substance
- D. Is always permanent

40. Which is a physical change?

- A. Burning paper
- B. Rusting iron
- C. Melting ice
- D. Cooking food

41. Which is a chemical change?

- A. Melting wax
- B. Boiling water
- C. Rusting iron
- D. Freezing water

42. Which indicates a chemical reaction?

- A. Change in state only
- B. Formation of gas
- C. Change in size only
- D. Change in shape only

43. Burning wood is an example of:

- A. Physical change
- B. Chemical change
- C. Condensation
- D. Evaporation

SECTION H: ACIDS, BASES AND INDICATORS

44. Which of the following is an acid?

- A. Soap
- B. Lemon juice
- C. Baking soda
- D. Ammonia

45. Which of the following is a base?

- A. Vinegar
- B. Lemon juice
- C. Soap solution
- D. Orange juice

46. Litmus paper is used to:

- A. Measure mass
- B. Measure temperature
- C. Test acidity and alkalinity
- D. Measure density

47. Blue litmus turns red in:

- A. Acids
- B. Bases
- C. Neutral substances
- D. Metals

48. Red litmus turns blue in:

- A. Acids
- B. Bases
- C. Water
- D. Salt

49. A pH of 7 indicates:

- A. Acidic solution
- B. Basic solution
- C. Neutral solution
- D. Strong acid

50. Which substance is neutral?

- A. Vinegar
- B. Pure water
- C. Lemon juice
- D. Hydrochloric acid

SECTION I: SEPARATION OF MIXTURES

51. Which method is used to separate sand from water?

- A. Distillation
- B. Filtration
- C. Chromatography
- D. Evaporation

52. Which method separates dissolved salt from water?

- A. Filtration
- B. Evaporation
- C. Sieving
- D. Magnetism

53. Which method can separate iron filings from sand?

- A. Magnetism
- B. Distillation
- C. Filtration
- D. Decantation

54. Paper chromatography is used to separate:

- A. Metals
- B. Colored substances
- C. Rocks
- D. Magnets

SECTION J: LABORATORY SAFETY

55. Safety goggles are worn to:

- A. Improve vision
- B. Protect the eyes
- C. Protect the ears
- D. Protect the hands

56. Which should NEVER be done in a laboratory?

- A. Follow instructions
- B. Wear safety equipment
- C. Taste chemicals
- D. Read labels

57. Broken glass should be:

- A. Picked up with bare hands
- B. Swept up carefully
- C. Ignored
- D. Kicked aside

58. Long hair should be:

- A. Left loose
- B. Covered with chemicals
- C. Tied back
- D. Cut immediately

59. If a chemical spills on your skin, you should:

- A. Ignore it
- B. Wash with plenty of water
- C. Taste it
- D. Wipe it with paper only

60. The most important rule in the laboratory is:

- A. Work quickly
- B. Work alone
- C. Follow safety instructions
- D. Memorize formulas