SECTION A

(1) Multiple Choice Questions (MCQs)

1. What are the fundamental particles of an atom?
   a) Protons and electrons
   b) Protons, neutrons, and electrons
   c) Only neutrons
   d) None of the above

2. Which of the following particles has a negative charge?
   a) Proton
   b) Neutron
   c) Electron
   d) Nucleon

3. What is the charge on a neutron?
   a) Positive
   b) Negative
   c) Neutral
   d) None of the above

4. Which scientist proposed the "Plum Pudding Model" of an atom?
   a) J.J. Thomson
   b) John Dalton
   c) Ernest Rutherford
   d) Niels Bohr

5. Who discovered the nucleus of an atom?
   a) J.J. Thomson
   b) Ernest Rutherford
   c) James Chadwick
   d) Niels Bohr

6. What is the unit of atomic mass?
   a) Gram
   b) Kilogram
   c) Atomic Mass Unit (amu)
   d) Mole

7. Which subatomic particle is responsible for the chemical properties of an element?
   a) Proton
   b) Neutron
   c) Electron
   d) Nucleus

8. What is the atomic number of an element?
   a) Number of neutrons
   b) Number of protons
   c) Number of electrons
   d) Number of nucleons

9. The number of protons in a neutral atom is always equal to the number of:
   a) Neutrons
   b) Electrons
   c) Nucleons
   d) Orbitals

10. The outermost shell of an atom is called the:
    a) Core shell
    b) Valence shell
    c) Nucleus
    d) Proton shell

(2) Fill in the Blanks

11. The nucleus of an atom contains ___ and ___.
12. The charge of an electron is ___.
13. The mass of a neutron is approximately equal to the mass of a ___.
14. The number of protons in an atom is called its ___.
15. The sum of protons and neutrons in an atom is called its ___.
16. The negatively charged particles in an atom are called ___.
17. The atomic number of carbon is ___.
18. The scientist who discovered the neutron is ___.
19. The path followed by electrons around the nucleus is called ___.
20. The valency of noble gases is generally ___.

(3) True or False

21. Electrons are present inside the nucleus.
22. The neutron carries a positive charge.

23. The nucleus of an atom is positively charged.
24. Isotopes of an element have different atomic numbers.
25. The electron has the least mass among the subatomic particles.
26. The periodic table is arranged based on atomic number.
27. Protons and neutrons together are called nucleons.
28. The number of valence electrons determines the chemical properties of an atom.
29. All elements have the same number of protons and neutrons.
30. The atomic mass of an element is always a whole number.

SECTION B

(4) Odd One Out (Give Reason)

31. Electron, Proton, Neutron, Molecule
32. Carbon, Oxygen, Hydrogen, Chloride Ion
33. J.J. Thomson, Rutherford, Bohr, Mendeleev
34. Oxygen, Nitrogen, Neon, Argon
35. Proton, Neutron, Electron, Nucleus
36. Atom, Molecule, Radical, Ion
37. Sulfur, Sodium, Potassium, Calcium
38. Lithium, Sodium, Oxygen, Potassium
39. Carbon-12, Carbon-14, Oxygen-16, Hydrogen-1
40. Shell, Orbit, Nucleus, Energy Level

(5) Matching Questions

41. Proton - a) Negative charge
42. Neutron - b) No charge
43. Electron - c) Positive charge
44. Atomic Number - d) Number of protons
45. Atomic Mass - e) Sum of protons and neutrons
46. Valency - f) Combining capacity of an element
47. Rutherford - g) Discovered the nucleus
48. J.J. Thomson - h) Proposed the Plum Pudding Model
49. Bohr Model - i) Electrons revolve in fixed orbits
50. Nucleons - j) Protons + Neutrons

(6) Name the Type of Reaction

51. Oxygen combines with hydrogen to form water
52. Carbon dioxide is broken down into carbon and oxygen
53. Sodium reacts with chlorine to form sodium chloride
54. A compound is heated to form simpler substances
55. Zinc displaces copper from copper sulfate solution
56. A solution of silver nitrate reacts with sodium chloride to form a precipitate
57. Water evaporates into water vapor
58. Ice melts into liquid water
59. Carbon reacts with oxygen to form carbon dioxide
60. Hydrogen gas burns in the presence of oxygen

SECTION C

(7) Short Answer Questions

61. What are the three subatomic particles of an atom?
62. What is the charge and mass of an electron?
63. Define atomic number.
64. What is an isotope? Give an example.
65. Why is the nucleus of an atom positively charged?
66. Explain the difference between an atom and a molecule.
67. What is valency? How is it determined?
68. What are the properties of noble gases?
69. What is the significance of the periodic table?
70. Explain Rutherford's gold foil experiment and its conclusions.

(8) Diagram-Based Questions

71. Draw a labeled diagram of an atom showing its subatomic particles.
72. Illustrate Bohr’s atomic model with energy levels.
73. Show the structure of a water molecule.
74. Draw and explain the periodic table's structure.
75. Represent the distribution of electrons in a sodium atom using a diagram.

(9) Reasoning-Based Questions

76. Why do atoms combine to form molecules?
77. Why do noble gases have zero valency?
78. Why do electrons not fall into the nucleus?
79. Why is atomic number more important than atomic mass?
80. Why do isotopes have the same chemical properties?

(10) Chemical Formula & Symbol-Based Questions

81. Write the chemical formula of carbon dioxide.
82. What is the chemical formula of ammonia?
83. Write the symbol for gold.
84. Write the formula for sodium chloride.
85. What is the chemical formula of water?