

Chapter-4

Worksheet-2

1. The nucleons are
 - I. Protons and electrons
 - II. Neutrons and electrons
 - III. Protons and neutrons
 - IV. None of these

2. The isotope deuterium of hydrogen has
 - I. No neutrons and one proton
 - II. One neutrons and two protons
 - III. One electron and two neutron
 - IV. One proton and one neutron

3. The electrons present in the outermost shell are called
 - I. Valency electrons
 - II. Octate electrons
 - III. Duplet electrons
 - IV. Valence electrons

4. An alpha particle contains
 - I. 4 positive charge and 2 mass unit
 - II. 2 positive charge and 4 mass unit
 - III. 2 positive charge and 2 mass unit
 - IV. 4 positive charge and 4 mass unit

5. The atomic number of sodium is 11 and its mass number is 23.
It has
 - I. 11 neutrons and 12 protons
 - II. 12 protons and 11 electrons
 - III. 11 electrons and 12 neutrons
 - IV. 12 electrons and 11 neutrons

6. The electronic configuration of chlorine is
 - I. 2,7

II. 2,8,8,7

III. 2,8,7

IV. 2,7,8

7. The isotope used to remove the brain tumours and treatment of cancer is

I. U-235

II. Na-24

III. Iodine

IV. C0-60

8. In an alpha scattering experiment, few alpha particles rebounded because

I. Most of the space in the atom is occupied

II. Positive charge of the atoms very little space

III. The mass of the atom is concentrated in the centre

IV. All the positive charge and mass of the atom is concentrated in small volume

9. Which of the following correctly represents the electronic distribution in the Mg atom?

(a) 3, 8, 1

(b) 2, 8, 2

(c) 1, 8, 3

(d) 8, 2, 2

10. Rutherford's 'alpha (α) particles scattering experiment' resulted in the discovery of

(a) electron

(b) proton

(c) nucleus in the atom

(d) atomic mass

11. What is a proton? How does it differ from a neutron?

12. Which part of an atom was discovered by Rutherford's alpha particles scattering experiment?
13. Give two important applications of radioactive isotopes.
14. Define valence electrons. Which electrons of an atom are involved in the chemical bond formation with other atoms?
15. Why do helium, neon and argon have a zero valency ?
16. List any three distinguishing features between the models of an atom proposed by J.J. Thomson and Ernest Rutherford.
17. The atomic number of lithium is 3. Its mass number is 7.
 - a. How many protons and neutrons are present in a lithium atom?
 - b. Draw the diagram of a lithium atom.
18. What is the gold foil experiment? Name the scientist who performed this experiment. Write the conclusions and shortcomings of Rutherford's model of atom.
19. In what way is the Rutherford's atomic model different from that of Thomson's atomic model?
20. What are the postulates of Bohr's model of an atom?