

**Chapter-4**  
**Worksheet-1**

Q.1. Who discovered the electron?

- (a) Rutherford
- (b) Chadwick
- (c) Thomson
- (d) Goldstein

Q.2. Which isotope is used in the nuclear power plants to generate electricity?

- (a) Uranium 235
- (b) Iodine 131
- (c) Cobalt 60
- (d) Uranium 238

Q.3. What was the source of alpha particles in Rutherford scattering experiment?

- (a) Hydrogen nucleus
- (b) Argon nucleus
- (c) Helium nucleus
- (d) None of these

Q.4. What property of an element determines its chemical behaviour?

- (a) Size of an element
- (b) Valency of an element
- (c) Molar mass of the element
- (d) None of these

Q.5. Which of the following does not match the characteristics of an Isotope?

- (a) Isotopes of some elements are radioactive
- (b) Isotopes are the atoms of different elements
- (c) Isotopes differ in number of neutrons
- (d) Isotopes have similar chemical properties

Q.6. Which of the two will be chemically more reactive, Sulphur(S) with atomic number 16 or Chlorine (Cl) with atomic number 17?

- (a) Chlorine
- (b) Sulphur
- (c) Both are equally reactive
- (d) Can't say

Q.7. Which of the following elements does not exhibit the electrovalency?

- (a) Sodium

(b) Calcium

(c) Carbon

(d) Chlorine

Q.8. What prevents an atom from being collapsed?

(a) The nuclear forces

(b) Movement of electrons in discrete energy levels

(c) The electron-electron repulsions

(d) All of these

Q.9. Which of the following is an incorrect statement in reference with observation in Rutherford's  $\alpha$ -particle scattering experiment?

(a) Some of the  $\alpha$ -particles rebound after hitting the gold foil

(b) Some of the particles deflected from their path

(c) Some of the particles not pass through the gold foil

(d) Most of the particles pass straight through the gold foil

Q.10. Why do most of the elements try to participate in the chemical combinations?

i. To gain more electrons

ii. To achieve Inert Gas configuration

iii. To complete their octet

iv. To complete their inner shells

Choose the correct option among the following

- (a) Both (i) & (iii)
- (b) Both (ii) & (iii)
- (c) Only (ii)
- (d) Both (i) & (iv)

Q.11. Name the central part of an atom where protons and neutrons are held together.

Q.12. How do you know that nucleus is very small as compared to the size of atom?

Q.13. Name the particles which actually determine the mass of an atom.

Q.4. What is the electronic configuration of a hydrogen atom?

Q.15. Write two characteristics of the canal rays.

Q.16. What name is given to the pair of atoms such as  $^{14}_7\text{N}$  and  $^{15}_7\text{N}$ ?

Q.17. What is the maximum number of electrons which can be accommodated in the:

Q.18. Innermost shell of an atom?

Q.19. Outer shell of an atom?

Q.20. The atomic number of Al and Cl are 13 and 17, respectively.

What will be the number of electrons in  $\text{Al}^{3+}$  and  $\text{Cl}^-$ ?