

Chapter 4: Atomic Structure

Worksheet 1

1. Write T for true and F for false statement.

- (i) Atomic number is also known as proton number.
- (ii) According to Neils Bohr, the nucleus of an atom contains neutrons.
- (iii) Atomic number of an atom is represented by the letter Z.
- (iv) Rutherford fired fast moving α -particles at a very thin gold foil.
- (v) James Chadwick discovered proton.

2. Fill in the blanks.

- (i) Electron was discovered by _____ .
- (ii) The _____ number of chlorine is 37.
- (iii) A potassium ion carries a _____ charge, whereas an oxide ion carries a _____ charge.
- (iv) Isotopes are the atoms of the same element having same _____ but different _____.
- (v) Electrons present in the outermost shell of an atom are called _____ .

3. Define the following.

- (i) Anode rays
- (ii) Cathode rays
- (iii) Isotopes
- (iv) Valency
- (v) Radical

4. Answer the following questions.

- (i) What is meant by atomic number?
- (ii) What do you mean by mass number?
- (iii) Write the electronic configuration of sulphur.
- (iv) Mention the maximum number of electrons that can be accommodated in the outermost shell of an atom.
- (v) Mention the difference between cations and anions.

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Worksheet 2

1. Mention the charges present on these ions.

- (i) Magnesium ion
- (ii) Sulphite ion
- (iii) Chloride ion
- (iv) Sodium ion
- (v) Zinc ion

2. Match the columns.

Column A

- (i) Carbon-14 isotope
- (ii) Atomic theory
- (iii) Proton
- (iv) Uranium
- (v) Gold foil

Column B

- (a) Radioactive element
- (b) Goldstein
- (c) John Dalton
- (d) Rutherford's model
- (e) Carbon dating

3. Answer the following questions.

- (i) Who stated that matter around us is made up of very tiny particles whose further division is not possible?
- (ii) Name the three particles that compose an atom.
- (iii) Define the nucleus of an atom.
- (iv) Write the valency of cuprous ion.
- (v) Find the atomic number of oxygen.

4. Solve the following numerical problems.

- (i) Find the number of neutrons present in the nucleus of a carbon atom whose atomic number is 6 and mass number is 12.
- (ii) In ${}_{17}^{37}\text{Cl}$, find the atomic number, mass number and number of neutrons.