

Che – 104 General chemistry (Core)

Objectives :

- 1) To provide basic understanding of chemicals their uses in day – to – day activities.
- 2) To impart basic knowledge of various types of chemicals, their preparation and properties, their nature of action use and importance in daily life.
- 3) To aware students regarding chemicals of day – to – day use.

Unit – 1

(A) Atomic structure

- Dalton's theory, Rutherford's experiments, cathode tube experiments.
- Electron, proton, neutron, arrangement of electrons. (octane rule).
- Atomic number, mass number atomic weight, molecular weight and equivalent weight of simple chemicals.

(B) Chemical communication

- Symbol formula
- Valency
- Chemical equation, balancing of chemical equation.

Unit – 2

(A) Chemical bond

- Electrovalent and covalent bond
- Hydrogen bond
- Co-ordinate bond

(B) States of matter

- General characteristics of solid
- General characteristics of liquid.
- General characteristics of gases.

Unit – 3

(A) Solution.

- Types of solution
- Methods of expressing concentration of solution normality, molarity, Formality, mole fraction percentage by weight and volume.
- Relation between solute to solvent, nature of solute and solvent.

(B) Gases

- General identification of gases on the basis of their properties.
- Identification of following gases.
H₂, O₂, CO₂, NH₃, H₂O₂, Cl₂, SO₂ etc.

Unit – 4

(A) Electro chemistry

- Oxidation and reduction
- Electrolysis
- Application of electrolysis

(B) Acid and bases

- Properties of Acids
- Theories of acids and bases, Arrhenius theory, Lewis acid, Lowry bronsted theory.
- pH – general information, use of p^H and p^H paper.

Practical:

- Chemicals balance and its use knowledge of general apparatus used in chemistry laboratory.
- Titration of acid and base
 1. Weak acid and strong base.
 2. Strong acid and weak base.
 3. Strong acid and strong base.
- Qualitative analysis of inorganic compounds with one cation and one anion.

References:

- 1) 11th and 12th science Textbook by Gujarat Higher Secondary Board.
- 2) Organic Chemistry – Mounison and Boyed
- 3) Organic Chemistry – I. L. Finer Vol. I & II