

# Course outcome (CO)

## B.Sc.-1

### Physical Chemistry

#### Understand and have concept of

1. Mathematical concepts and computers.
2. Gaseous states
3. Liquid state
4. Solid state
5. Colloidal state and macromolecules
6. Chemical kinetics and catalysis

### Inorganic Chemistry

#### Understand and have concept of

1. Atomic structure and periodic table
2. periodic properties of elements
3. Chemical bonding
4. General studies of s and p block elements
5. Occurrence, extraction and isolation of Li, Be and F<sub>2</sub>
6. Preparation, Properties and structures of diborane, borazine, interhalogen polyhalides and fluorides of xenon and structure and basicities of oxyacids of B, P and S.

### Organic Chemistry

#### Understand and have concept

1. Structure and Reactivity.
2. Alkene, Alkynes, Alkadienes and cycloalkanes.
3. Stereochemistry.
4. Alkyl halides and Grignard reagent.
5. Alcohols and Ethers.
6. General reaction of carbonyl compounds.
7. Carboxylic acids.
8. Example of compounds containing reactive methylene group.
9. Nitrogen containing compounds.
10. Numerical questions based on determination of structural formula.

## **B.Sc.- II**

# **Physical Chemistry**

Understand and have concept of

- 1- Thermodynamics I
- 2- Thermodynamics II
- 3- Chemical equilibrium
- 4- Phase equilibrium
- 5- Electro Chemistry I
- 6- Electro Chemistry II

Inorganic Chemistry

Understand and have concept of

- 1- Concept of electrode Potential
- 2- Transition elements
- 3- Coordination Compounds
- 4- Non-aqueous Solvents
- 5- Acid-Base Concept

Organic Chemistry

Understand and have concept of

- 1- Carbohydrates.
- 2- Aromatic hydrocarbons.
- 3- Mechanism of aromatic electrophilic substitutions.
- 4- Aromatic halogen Compounds.
- 5- Aromatic nitro Compounds .
- 6- Aromatic amino Compounds and diazonium salts.
- 7- Aromatic sulphonic acids.
- 8- Phenols.
- 9- Aromatic alcohols, aldehydes and ketones
- 10- Aromatic acids
- 11- Polynuclear hydrocarbons.
- 12- Heterocyclic Compounds.
- 13- Numerical problems for the determination of structures based on chemical reactions.

## **B.Sc.- III**

### **Physical chemistry**

Understand and have concept of

1. Elementary quantum mechanics.
2. Nuclear chemistry.
3. Statistical/molecular thermodynamics.
4. Spectroscopy.
5. Photochemistry.
6. Surface chemistry.
7. Solutions, dilute solutions and colligative properties.

Inorganic chemistry

Understand and have concept of

1. Chemistry of lanthanides and actinides.
2. Co-ordination chemistry.
3. Metal carbonyls, metal nitrosyls.
4. Environmental chemistry.

Organic Chemistry

Understand and have concept of

1. Reaction intermediates.
2. Treatment of E1, E2 and E1CB mechanism.
3. Molecular rearrangements and name reactions.
4. Polymers.
5. Dyes.
6. Polynuclear hydrocarbons.
7. Heterocycles.
8. Amino acids, peptides and proteins.

Analytical and Biological chemistry

Understand and have concept of

1. Errors and evaluation.
2. Volumetric analysis.
3. Gravimetric analysis.
4. Separation techniques.
5. Biological membranes.
6. Nucleic acids.
7. Enzymes and Coenzymes.
8. Role of metals in Biological systems.