

Department of Chemistry

Course Outcomes

Semester : B.Sc. I

Subject Name & Code : CHEMISTRY

Students are able to learn and understand the following concepts

- CO1. Structure of the Atom.
- CO2. Factors affecting the formation different types of chemical bonds.
- CO3. Properties of compounds.
- CO4. Errors in Quantitative analysis.
- CO5. Precipitation and iodometric titrations.
- CO6. General principle of Chromatography.
- CO7. Geometrical isomerism and Optical isomerism.
- CO8. Principle of UV spectroscopy and Types of transition.
- CO9. Relationship between critical constants and Vanderwaals constants.
- CO10. Henry's law.
- CO11. Types of salts and degree of hydrolysis and State Nernst distribution law.

Semester : B.Sc. II

Subject Name and Code : CHEMISTRY

Students are able to comprehend the following concepts

- CO1. Salient features of hybridization.
- CO2. Bond order for H_2 , He_2 , Li_2 , B_2 , N_2 , O_2 , O_2^+ , O_2^- and O_2^{-2} molecules.
- CO3. Advantages of organic reagents over inorganic reagents.
- CO4. Chemical reactions of alkenes.
- CO5. Aromaticity in benzene, furan, pyridine and [10]-annulene.
- CO6. Conversion of Naphthalene to 1, 4-naphthaquinone.
- CO7. Laws of thermodynamics.
- CO8. Bond energy and bond dissociation energies for simple molecules.
- CO9. Effect of temperature on surface tension.

CO10. Applications of Liquid crystals.

CO11. Applications of colloids.

CO12. Derivation of Brag's equation.

Department : Chemistry

Semester : B.Sc. III

Subject Name and Code : CHEMISTRY

Students are able to comprehend the following concepts:

CO1. Thermodynamic concepts of selection of reducing agents using Ellingham diagram.

CO2. Production of tungsten powder from wolframite.

CO3. Water as universal solvent and leveling effect.

CO4. Classification of acids & bases.

CO5. Orientation of substituent in aromatic compound with functional groups like –OH.

CO6. Halogenation and nitration reactions.

CO7. Difference between primary, secondary and tertiary alcohols by Lucas reagent.

CO8. Applications of dettol.

CO9. Principle of Infrared spectroscopy.

CO10. Preparation of Lithium dialkylcuprate.

CO11. Molecular weight determination by Berkely and Hartley method and Carnot's cycle.

Semester : B.Sc. IV

Subject Name & Code : CHEMISTRY

Students are able to comprehend the following concepts

CO1. Electronic configuration of d block elements.

CO2. Biological role of K, Fe & Zn.

CO3. Definition of BOD and the treatment of sewage and industrial effluents

CO4. Different compounds like Aldehydes & ketones.

CO5. Aldol condensation reaction.

CO6. Description of the acid strengths of mono, di and t richloroacetic acids.

- CO7. Mechanism of Hoffmann rearrangement.
- CO8. Uses of crown ethers as phase transfer catalysts.
- CO9. Transport number and its determination by Hittorff's method.
- CO10. Derivation of the rate constant equation of second order reaction when concentration of the reactions are equal(a=b).
- CO11. Comparison between transition state theory and collision theory.

Department : Chemistry
Semester : B.Sc. V
Subject Name & Code : CHEMISTRY P-I

Students are able to comprehend the following concepts

- CO1. Limitations of Valence bond theory.
- CO2. Conditions for precipitation.
- CO3. Applications of phosphonitrilic halides.
- CO4. Description of the 12 principles of green chemistry.
- CO5. Comparison of basicity between pyridine, piperidine and pyrrole.
- CO6. Mechanism of keto-enol tautomerism.
- CO7. Classification of alkaloids .
- CO8. Energy level diagram of diatomic molecules.
- CO9. Vibrational degrees of freedom of molecules.
- CO10. Description of the qualitative relation between force constant and bond dissociation energy.

Department : Chemistry
Semester : B.Sc. V
Subject Name & Code : CHEMISTRY P-II

Students are able to learn & understand the following concepts

- CO1. Classification and applications of alloys.
- CO2. Manufacture of white lead.
- CO3. Mechanism of OsO₄.

- CO4.** Principle of Mass Spectroscopy.
- CO5.** Classification of dyes.
- CO6.** BET equation.
- CO7.** Industrial applications of catalysis.
- CO8.** Description of the variation of K_p and K_c with temperature and pressure.
- CO9.** Chain inhibition.
- CO10.** Kinetics of branching chain reactions.

Semester : B.Sc. VI

Subject Name & Code : CHEMISTRY P-I

Students are able to learn & understand the following concepts

- CO1.** Description of Jahn-Teller distortion.
- CO2.** Magnetic moment using Gouy's method.
- CO3.** Factors affecting the stability of the metal complexes with reference to
- CO4.** Nature of metal ion and ligand.
- CO5.** Classification of the organotransition metal complexes
- CO6.** Killani's synthesis.
- CO7.** Structure of peptides.
- CO8.** Classification of proteins.
- CO9.** Measurement of dipole moment by temperature variation method.
- CO10.** Induced dipole moment.
- CO11.** Classification of Polymers and de-Broglie equation.

Semester : B.Sc. VI

Subject Name & Code : CHEMISTRY P-II

Students are able to learn & understand the following concepts

- CO1.** Applications of column chromatography.
- CO2.** Flame photometric determination of Na and K.
- CO3.** Determination of nitrogen by alkaline permanganate method.

- CO4. Trace metals in soil.
- CO5. Diagrammatic presentation of Orgel- energy level diagram for d^1 and d^2 states.
- CO6. Synthesis of Antipyretics–antipyrine, paracetamol
- CO7. Applications of Antimalarial drugs.
- CO8. Distinguish between soaps and detergents.
- CO9. Emulsifiers and stabilizers.
- CO10. Benzillic acid rearrangement.
- CO11. Principle of NMR Spectroscopy.
- CO12. Classification of Types of electrodes.
- CO13. Beer-Lambart's Law.

Department of Chemistry

Course Outcomes

CBCS Syllabus

Semester : B.Sc. I

Subject Name & Code : CHEMISTRY (CHEDSCT 1.1)

Students are able to learn and understand the following concepts

- CO1. Structure of the Atom.
- CO2. Factors affecting the formation different types of chemical bonds.
- CO3. Properties of compounds.
- CO4. Fundamentals of Organic Chemistry.
- CO5. Alkenes, Dienes and alkynes.
- CO6. Purification of organic compounds.
- CO7. General principle of Chromatography.
- CO8. Geometrical isomerism and Optical isomerism.

Semester : B.Sc. II

Subject Name and Code : CHEMISTRY (CHEDSCT 1.1)

Students are able to comprehend the following concepts

- CO1.** Laws of thermodynamics.
- CO2.** Ionic equilibrium and chemical equilibrium.
- CO3.** Spectroscopy.
- CO4.** Principle of UV spectroscopy.
- CO5.** Alkyl and Aryl Halides.
- CO6.** Different compounds like Aldehydes & ketones.
- CO7.** Aldol condensation reaction.
- CO8.** Description of the acid strengths of mono, di and t richloroacetic acids.
- CO9.** Uses of crown ethers as phase transfer catalysts.