Department of Chemistry

Programme Outcomes – B.Sc.

Subject – Chemistry

Department of Chemistry	**After successful Completion of B.Sc with Chemistry Students should able to**
Programme Outcomes	PO-1 .Demonstrate, solve and an understanding of major concepts in all discipline of chemistry. PO-2.Solve the problem and also think methodically, independently and draw a logical conclusion. PO-3 Employ critical thinking and scientific knowledge to design, carryout, record and analyze the result of chemical analysis. PO-4. Create an awareness of the impact of chemistry on the environment, society and development outside the scientific community. PO-5. Find out green route for chemical reaction. For sustainable development. PO-6. To inculcate the scientific temperament in the students and outside the scientific community. PO-7. Use modern techniques, decent equipments and chemistry software.
Programme Specific Outcomes	PSO-1. Gain the knowledge of chemistry through theory and practical. PSO-2. To explain nomenclature stereochemistry, structure, reactivity and mechanism of chemical reactions. PSO-3. Identify chemical formulae and solve numerical problems. PSO-4. Use modern chemical tools Models Charts and equipment. PSO-5 Know structure activity relationship. PSO-6. Understand good laboratory Practices and safety. PSO-7. Develop research oriented skills PSO-8. Make aware and handle the sophisticated equipment.
Course outcomes of B.Sc Chemistry Semester –I	
Course Outcomes	**After completion of these courses students should able to ;**
Inorganic Chemistry	CO-1. Get knowledge of periodic classification of elements. CO-2. Understand periodic Properties. CO-3. Know the periodic classification in S-block,P-block CO-4. Discuss different physical and chemical properties.
Organic Chemistry	CO-1.Get the knowledge of Inductive effect, electromric effect, resonance and hyper conjugation. CO-2 Aquaint about reactive intermediate. CO-3. To study Aliphatic hydrocarbon and their properties. CO-4. Information about aromatic hydrocarbon.

Physical chemistry	CO-1. To get knowledge of Thermodynamics CO-2. Solve numerical problems on thermodynamics CO-3. To understand gaseous state. CO-4 To solve the problem on gaseous state CO-5 To understand phase rule and different systems.
Organic Practicals	CO-1. To develop skill in student regarding different methods of organic preparation. CO-2. To develope new concept of green synthesis. CO-3. To develop skil of organic preparation.
Inorganic Qualitative Analysis	CO-1. Identify acidic and basic radicals from mixtures. CO-2. To develop skill of inorganic separation. CO-3 To develop idea about semimicro analysis
Course outcomes B.Sc Chemistry Semester II	
Course Outcomes	**After completion of these courses students able to**
Inorganic Chemistry	CO-1. To understand the concept of polarization, covalent bonding acid and bases. CO-2. To get the knowledge of p-block and nobel gas elements. CO-3. To understand concept of hybridization, type of hybridization, geometry. CO-4 .Know information regarding gravimetric analysis.
Organic chemistry	CO-1. To get knowledge of alky halides, aryl halides preparation properties uses. CO-2. To develope method of preparation of phenols, Ethers and Epoxide. CO-3. To get newers method of synthesis.
Physical chemistry	CO-1. To understand concept of chemical kinetics Order, moleclarity, psuedounimolcular reaction CO-2 To understand first, second orde reaction their characterestics example. CO-3.To study electrical properties for polar and nonpolar molecule CO-4 to know magnetic properties paramagnetic diamagnetic,ferromagnetic and antiferromagnetic CO-5.To measure magntic susceptibility.
Organic chemistry practicals	CO-1 Analysis of organic compound and to study different parameters like m.p., Element detection, functional group, derivative preparation. CO-2. -Analysis of Glucose, a-naphthol, b-naphthol Toludine, Anthracine, Benzoic acid, Salicylic acid.
Physical chemistry practicals	CO-1. To measure surface tension, Viscosity, Parachor value, Cleaning power of detergent. CO-2. To determine activation energy of reaction betweenK2S2O8 and KI

Course outcomes B.Sc. Chemistry	
Semester III	
Course Outcomes	After completion of these courses students able to
Inorganic Chemistry	CO-1. To understand the concept of covalent bonding,metallic bonding CO-2. To get the knowledge of VSPER theory. CO-3 Know frees electron theory, Valence bond theory and molecular orbital theory. CO-4. To understand concept of volumetric analysis. CO-5 .Know information regarding gravimetric analysis.
Organic Chemistry	CO-1 To get the information of different of aldehyde and caboxylic acid. CO-2. Understand the terms Optical isomerism and conformational isomerism. CO-3. To Know meaning of resolution ,enatomers Diasteromers, Rand S Configuration. CO-4. To understand the terms Newmans projection formula, Sawhorse projection formula.
Physical Chemistry	CO-1. To get the Knowledge Thermodynamic and Equilibrium. CO-2. To solve the numerical problem on thermodynamics. CO-3. To understand the concept of liquid state surface tension, Viscosity. CO-4. Understand measurement applicaton of suface tension and viscosity.
Practicals	CO-1. To understand principal of redox titration. CO-2. To inculcate importance of water, measurement of different parameters. CO-3 Importance of different analysis. CO-4 To develop skill based aptitude among the students
Inorganic Chemistry Practicals	CO-1.To develop concept among the students For prepation of different solution. CO-2.To performs redox titration, iodometry and iodimetric titration.
Physical Chemistry Practicals	CO-1.To develop skillforconstruction of phase diagram. CO-2.To devlope laboratory skill for study order of reaction.
Course outcomes B.Sc Chemistry Semester IV	
Course	**Outcomes After completion of these courses students able to**
Inorganic Chemistry	CO-1.Knowledge about 3d trasition series elements. CO-2. To develop skill among the students for extraction of elements. CO-3. To get the knowledge of metallurgy. CO-4. To understand inner trasition elements.
Organic Chemistry	CO-1. Information regarding olynuclear hydrocarbon. CO-2. To understand the chemistry of reactive methylene group. CO-3. To inculcate importance of carbohydrate. CO-4. To acquire importance of amino acids, diazonium salt and proteins.

Physical Chemistry	CO-1. To know the importance of colligative properties. CO-2. To solve numerical problems. CO-3.To understand crystalline state by using different models. CO-4. To solve numerical problem on crystallography.
Inorganic Chemistry practicals	CO-1 To know various parameters of water like hardness of water and its estmation. CO-2 Estimation of KMnO4 colorometrically and also copper
Physical Chemistry practicals	CO-1 To develope skill regarding separation of Casein, nicotine, caffeine. CO-2 Determination of equivalent weight of organic acid
Course outcomes B.Sc Chemistry Semester V	
Course	**Outcomes After completion of these courses students able to**
Inorganic Chemistry	CO-1. Know the meaning of various terms involved in coordination chemistry. CO-2. To understand Werners formulation of complexes and identify the type of valencies. CO-3. To get importance of electronic spectra of trasition series elements. CO-4. To solve numerical on crystal field theory.
Organic Chemistry	CO-1. Information regarding heterocyclic compound their synthesis, physical and chemical Properties. CO-2. Have the knowledge of various drugs their synthesis and application. CO-3. Knowledge about various pesticides and herbicides. CO-4.Acquaint about mode of action of drugs on various diseases.
Physical Chemistry	CO-1. Understand concept of photochemistry. CO-2.To understand different terms Lamberts law Beers law, Quantum yield, Fluorescence, phosphorescence. CO-3.Derive expression for rotational spectra, vibrational spectra, band spectra. CO-4. Solve numerical on rational and vibrational spectroscopy.
Inorganic Chemistry Practicals	CO-1. To develope skill for inorganic complex salt prepation. CO-2.Know idea for preparation of complexes like tetrammine Cu(II) sulphate,hexamine Ni(II) chloride,prussian blue,Sodium thiosulphate.
Physical Chemistry	CO-1. To develop skill for handling various sophisticated equipments CO-2.To perform titration and estimation by conductometry,potetiometry,polriometrically.
Course out comes B.SC semester VI	
Course	**Outcomes After completion of these courses students able to**
Inorganic Chemistry	CO-1.To get the knowledge of different reaction SN1 and SN2 substitution reaction . CO-2. To understand various concept of beers law verification beerslaw,expressions. CO-3. To understand chromatography types. CO-4. To get information of organometallic compound.

	CO-5. To know the role Na ,K,Ca,Mg haemoglobin myoglobin in biological system.
Organic Chemistry	CO-1.To understand different spectroscopic terms In electronic spectroscopy chromophore,auxochrome bathochromic shift,hypsochromic shift CO-2. Application of electronic specra for dienes unsaturated aldydes and ketones,aromatic compound. CO-3.To understand concept of NMR,Mass spectroscopy and their application in structure determination. CO-4.To solve numerical on spectroscopy.
Physical Chemistry	CO-1.To get information about redox potential, determination types of different electrode. CO-2 Determination pH of solutionby using hydrogen ,glass,quinhydrone electrode. CO-3.To understand different terms of nuclear chemistry Shell model,liquid drop model,meson theory. CO-4. Knoledge about nuclear fusion and fission,Q value CO-5.application of radioisotope in industries agriculture and medicine.
Organic chemistry practicals	CO-1 To develop skill among the students for performing titrations. CO-2. Know the idea to perform various titration formaldehyde,ascorbic acid,phenol ,aniline, urea CO-3. To develop skill based practicals like separation of mixtures of dyes.
Physical Chemistry practicals	CO-1.To give knowledge to students for handling various sophisticated equipments. CO-2.To develop titration skill for conductometry,potetiometry ,pHmetry. CO-3.To verify Lamberts Beers law by using colorimeter.