

Jijamata Mahavidyalaya, Buldana

Department of Chemistry

CO and PO

PROGRAMME SPECIFIC OUTCOMES

Programme outcome after successful completion of B.Sc. with Chemistry students should be able to programme specific outcomes

PSO1: - Gain the knowledge of chemistry through theory and practical.

PSO2:- To explain nomenclature stereochemistry, structure, reactivity and mechanism of chemical reaction.

PSO3:- Identify chemical formula and solve numerical problems.

PSO4: Use modern chemical tools models charts and equipments.

PSO5:- Know structure activity relationship.

PSO6:- Understand good laboratory practice and safety.

PSO7:- Develop research oriented skills.

PSO8:- Make aware and handle the sophisticated equipments.

SEMESTER-I INORGANIC CHEMISTRY

COURSE OUTCOMES

CO1:- Get the knowledge of periodic classification of elements.

CO2:- Understand periodic properties.

CO3:- Know the periodic classification in s -Block, p-Block.

CO4:- Discuss the different physical and chemical properties.

SEMESTER-I ORGANIC CHEMISTRY

CO1:- Get the knowledge of inductive effect, electrometric effect, resonance and hyper conjugation.

CO2:- Acquaint about reactive intermediate.

CO3:- To study aliphatic hydrocarbon and their properties.

CO4:- Information about aromatic hydrocarbon.

SEMISTER-I PHYSICAL CHEMISTRY

CO1:- To get knowledge of thermodynamics.

CO2:- Solve numerical problems on thermodynamics.

CO3:- To understand gaseous state.

CO4:- To understand phase rule and different system.

SEMISTER-I ORGANIC PRACTICAL

CO1:- To develop skill regarding different methods of organic preparation.

CO2:- To develop new concept of green synthesis.

CO3:- To develop skill of organic preparation.

SEMISTER-I INORGANIC QUALITATIVE ANALYSIS

CO1:- Identify acidic and basic radical from mixture.

CO2:- To develop skill of inorganic separation.

CO3:- To develop idea about semi microanalysis.

SEMISTER-II INORGANIC CHEMISTRY

COURSE OUTCOMES

CO1:- To understand the concept of polarization, covalent bonding acid and bases.

CO2:- To get the knowledge of P- block and Nobel gas element.

CO3:- To understand concept of hybridization type of hybridization, geometry.

CO4:- Know information regarding gravimetric analysis.

SEMISTER-II ORGANIC CHEMISTRY

CO1:- To get knowledge of alkyl halide, aryl halides preparation properties uses.

CO2:- To develop method of preparation of phenol, ethers and epoxides

CO3:- To get new method of synthesis.

SEMISTER-II PHYSICAL CHEMISTRY

CO1:- To understand chemical kinetics order, molecularity and psudounimolecular reaction.

CO2:- To understand first, second order reaction their characteristics examples.

CO3:- To study electrical properties for polar and non polar molecule.

CO4:- To know magnetic properties paramagnetic, diamagnetic, and ferromagnetic and antiferromagnetic.

CO5:- To measure magnetic susceptibility.

SEMISTER-II ORGANIC CHEMISTRY PRACTICAL

CO1:- Analysis of organic compound and to study different parameter like MP, Element detection, functional group, derivative preparation.

CO2:- Analysis of glucose α -naphthol, β -naphthol, toluidine, anthracine, benzoic acid and salicylic acid.

SEMISTER-II PHYSICAL CHEMISTRY PRACTICAL

CO1:- To measure surface tension, viscosity, parchore value and cleaning power of detergent.

CO2:- To determine activation energy of reaction between $K_2S_2O_8$ and KI.

SEMISTER III INORGANIC CHEMISTRY

COURSE OUTCOMES

CO1:- To understand the concept of covalent bonding, metallic bonding.

CO2:- To get the knowledge of VSEPR Theory.

CO3:- Know frees electron theory, valence bond theory and molecular orbital theory.

CO4:- To understand concept of volumetric analysis.

CO5:- Know information regarding gravimetric analysis.

SEMISTER III ORGANIC CHEMISTRY

CO1:- To get the information of different aldehyde and carboxylic acid.

CO2:- Understand the terms optical isomerism and conformational isomerism.

CO3:- To know meaning of resolution enantiomer, disteriomer R and S configuration.

CO4:- To understand the terms Newman's projection formula, sawhorse's projection formula.

SEMISTER III PHYSICAL CHEMISTRY

CO1:- To get the knowledge of thermodynamic and equilibrium.

CO2:- To solve the numerical problem on thermodynamics.

CO3:- To understand the concept of liquid state surface tension, viscosity.

CO4:- To Understand measurement application of surface tension and viscosity.

CO5:- To understand principal of redox titration.

CO6:- To Inculcate importance of water measurement of different parameters.

CO7:- Importance of different analysis.

CO8:- To develop skill based aptitude among the students.

SEMISTER III INORGANIC CHEMISTRY PRACTICAL

CO1:- To develop concept among the students for preparation of different solutions.

CO2:- To perform redox titration, idiometric and iodometric titration.

SEMISTER III PHYSICAL CHEMISTRY PRACTICAL

CO1:- To determine skill of construction of phase diagram.

CO2:- To develop laboratory skill for study order of reaction.

SEMISTER IV INORGANIC CHEMISTRY

COURSE OUTCOMES

COURSE OUTCOMES: - After completion of these course students able to

CO1:- Knowledge about third transition series elements.

CO2:- To develop skill among the students for extraction of elements.

CO3:- To get the knowledge of metallurgy.

CO4:- To understand inner transition elements.

SEMISTER IV ORGANIC CHEMISTRY

CO1:-Information regarding polynuclear hydrocarbon

CO2:- To understand the chemistry of reactive methylene group

CO3:- To include importance of carbohydrate.

CO4:- To acquire importance of amino acid, diazonium salts and proteins.

SEMISTER IV PHYSICAL CHEMISTRY

CO1:- To know the importance of colligative properties.

CO2:- To solve numerical problems.

CO3:- To understand crystalline state by using different models and videos.

CO4:- To solve numerical problem on crystallography.

SEMISTER IV INORGANIC CHEMISTRY PRACTICAL

CO1:- To know various parameters of water like hardness of water and estimation.

CO2:- Estimation of KMnO_4 colorimetical and also copper.

SEMISTER IV PHYSICAL CHEMISTRY PRACTICAL

CO1:- To develop skill regarding separation of caffeine, nicotine and casein.

CO2:- Determination of equivalent weight of organic acid.

SEMISTER V INORGANIC CHEMISTRY

COURSE OUTCOMES

Co1:- To know the meaning of various terms involved in coordination chemistry.

CO2:- To understand Varner's formulation of complexes and identify the type of vacancies.

CO3:- To get the importance of electronic spectra of transition series element.

CO4:- To solve numerical on crystal field theory.

SEMISTER V ORGANIC CHEMISTRY

CO1:- Information regarding heterocyclic compounds their synthesis physical and chemical properties.

CO2:- The knowledge of various drugs their synthesis and applications.

CO3:- Knowledge about various pesticides and herbicides.

CO4:- Acquaint about mode of action of drugs on various diseases.

SEMISTER V PHYSICAL CHEMISTRY

CO1:- To understand concept of photochemistry.

CO2:- To understand different terms Lambert -Beer's law, quantum yield, fluorescence, phosphorescence.

CO3:- Derive expression for rotational spectra, vibrational spectra, and band spectra.

CO4:- Solve numerical on rotational and vibrational spectroscopy.

SEMISTER V INORGANIC CHEMISTRY PRACTICAL

CO1:- To develop skill for inorganic complex salt preparation.

CO2:- To know idea for preparation of complex like tetra amine Cu(II) sulphate, hexamine nickel (II) chloride Prussian blue, sodium thiosulphate.

SEMISTER V PHYSICAL CHEMISTRY

CO1:- To develop skill for handling various sophisticated equipments.

CO2:- To perform titration and estimation by conductometry and potentiometrically.

SEMISTER VI INORGANIC CHEMISTRY

COURSE OUTCOMES

CO1:- To get the knowledge of substitution of reaction SN1 and SN2 reaction.

CO2:- To understand various concept of Beer's law verification of Beer's law expression.

CO3:- To understand the chromatography types.

CO4:- To get information of organometallic compound.

CO5:- To know the role of sodium, potassium, calcium, magnesium, hemoglobin, myoglobin in biological system.

SEMISTER VI ORGANIC CHEMISTRY

CO1:- To understand different spectroscopic terms in electronic spectroscopy, chromophores, auxochrome, bathochromic shift and hypsochromic shift.

CO2:- Application of electronic spectra for dyeing on saturated aldehydes and ketones aromatic compounds.

CO3:- To understand concept of NMR, Mass spectroscopy and their application in structure determination.

CO4:- Solve numerical on spectroscopy.

SEMISTER VI PHYSICAL CHEMISTRY

CO1:- To get information about redox potential determination types of different electrode.

CO2:- To determine pH solution by using hydrogen glass quinhydrone electrode.

CO3:- To understand different terms of nuclear chemistry, cell model, liquid drop model and meson theory.

CO4:- Knowledge about nuclear fusion and fusion Q value.

CO5:- Application of radio isotope in industries agriculture and medicine.

SEMISTER VI ORGANIC CHEMISTRY PRACTICAL

CO1:- To develop skill among the students to perform titration.

CO2:- To know the idea to perform various titration formaldehyde, ascorbic acid, phenol, aniline, and urea.

CO3:- To develop skill based practical like separation of mixture of dyes.

SEMISTER VI PHYSICAL CHEMISTRY PRACTICAL

CO1:- To give knowledge to students for handling various sophisticated equipments.

CO2:- To develop titration skill for potentiometry and pH metry.

CO3:- To verifies lamberts' beer's law by using colorimeter.