COURSE OUTCOME

DEPARTMENT OF CHEMISTRY

SL. NO.	PAPER TITLE	PAPER CODE	COURSE OBJECTIVES	COURSE OUTCOMES
1	INORGANIC CHEMISTRY-I	CORE-I	The course objective is to acquaint the students with atomic structure, periodicity of elements, ionic bond, covalent bond, and VSEPR theory.	Students will be able to acquire knowledge on the bonding theories used to explain various types of bonds. They will deduce the geometry of molecules, and understand the importance of chemical bonds.
2	PHYSICAL CHEMISTRY-I	CORE-II	The course objective is to acquaint the students with kinetic molecular model of a gas, liquid state, solid state and ionic equilibria.	Students will be able to understand the different properties of the three states of matter and practically determine the chemical equilibrium of a reaction.
3	ORGANIC CHEMISTRY-I	CORE-III	The course objective is to acquaint the students with basics of organic chemistry, stereochemistry, carbon-carbon pi bonds and aromatic hydrocarbons.	Students will acquire knowledge on different types of organic reaction mechanisms and stereochemistry involved and have idea on properties and reactions of various classes of aromatic and aliphatic hydrocarbons.
4	PHYSICAL CHEMISTRY-II	CORE-IV	The course objective is to acquaint the students with chemical thermodynamics, carnot theorem, chemical equilibrium and colligative properties.	Students will be able to understand the laws of thermodynamics and have fair knowledge on the colligative properties of solution and their applications
5	INORGANIC CHEMISTRY-II	CORE-V	The course objective is to acquaint the students with general principles of metallurgy, chemistry of s and p block elements, noble gases.	The students will be able to know about the • principle of metallurgy, chemistry of s and p block elements and noble gases. • Bronsted- lowry concept of acid-base reaction. • Details of boric acids, borates and boron nitrides.

6	**ORGANIC CHEMISTRY-II**	**CORE-VI**	The course objective is to acquaint the students with chemistry of halogenated hydrocarbons, carbonyl compounds, carboxylic acids and their derivatives and properties of alcohols, phenyls, ethers and epoxides.	Students will be able to understand properties and reactions of haloalkanes, haloarenes, oxygen and sulphur containing functional groups and have knowledge on various organic reactions associated with these groups.
7	**PHYSICAL CHEMISTRY-III**	**CORE-VII**	The course objective is to acquaint the students with phase equilibria I and ii , chemical kinetics and catalysis.	The students will be able to know about • chemical kinetics and phase equilibrium. • Phase diagrams of systems of solid – liquid equilibria • Details of chemical kinetics and surface chemistry. • Types of catalyst
8	**INORGANIC CHEMISTRY-III**	**CORE-VIII**	The course objective is to acquaint the students with transition elements, lanthoids, actinoids and bioorganic chemistry.	The students will know about • Werner's theory, transition elements and bioinorganic chemistry. • General group trends with special reference to electronic configuration.
9	**ORGANIC CHEMISTRY-III**	**CORE-IX**	The course objective is to acquaint the students with diazonium salts, heterocyclic compounds, alkaloids, and terpenes.	Students will acquire better understanding of chemistry of compounds having nitrogen containing functional groups, heterocyclics, polynuclear hydrocarbons, alkaloids and terpenes.
10	**PHYSICAL CHEMISTRY-IV**	**CORE-X**	The course objective is to acquaint the students with details of electrochemistry I and ii , conductance I and ii.	Students can get knowledge about • electrochemistry and conductance. • Arrhenius theory of electrolytic dissociation. • Ionic velocities, mobilities and their determinations. • Quantitative aspects of Faraday's laws of

				electrolysis. • Electrical properties of atoms and molecules.
11	**ORGANIC CHEMISTRY-IV**	**CORE-XI**	The course objective is to acquaint the students with organic spectroscopy I, ii, ii and carbohydrates.	The students will be able to know about • UV, IR, NMR Spectroscopy. • Details of carbohydrates. • Details of monosaccharides, disaccharides.
12	**PHYSICAL CHEMISTRY-V**	**CORE-XII**	The course objective is to acquaint the students with chemical bonding, quantum chemistry, molecular spectroscopy I and ii and photochemistry.	The students will know about • molecular spectroscopy, quantum chemistry and chemical bonding. • Details of quantum mechanical operators. • Details of covalent bonding.
13	**POLYMER CHEMISTRY**	**DSE-I**	The course objective is to acquaint the students with history and importance of polymer, polymeric materials, mechanism and kinetics of polymerization.	The students know about • history, importance and properties of polymers. • Details of mechanism and kinetics of polymerization. • preparation, structure, properties and applications of polystyrene, polyvinyl chloride etc.
14	**GREEN CHEMISTRY**	**DSE-II**	The course objective is to acquaint the students with principles of green chemistry and designing a chemical synthesis I and ii and future trends in green chemistry.	The student will know about • principles of Green chemistry and designing a chemical synthesis. • Energy efficient process for synthesis use of microwaves and ultrasonic energy • Green synthesis of adipic acid, catechol, methyl methacrylate.
15	**INORGANIC CHEMISTRY-IV**	**CORE-XIII**	The course objective is to acquaint the students with organometallic compounds I and ii and principles in qualitative analysis.	The course gives a brief idea about • organometallic compounds. • Details of metal carbonyls. • Important structural features of methyl

				lithium.
16	**ORGANIC CHEMISTRY-V**	**CORE-XIV**	The course objective is to acquaint the students with amino acids, enzymes, peptides, proteins, nucleic acids, lipids and concept of energy in biosystems.	The course provides an idea about • concept of energy in biosystems and pharmaceutical compounds. • Details of amino acids • Introduction, classification and characteristics of enzymes. • Components of nucleic acids. • Introduction to oils and fats.
17	**INDUSTRIAL CHEMICALS AND ENVIRONMENT**	**DSE-III**	The course objective is to acquaint the students with industrial gases and inorganic chemicals, water pollution and water purification methods and biocatalysis.	The students will know about • Industrial metallurgy , energy and environment. • Industrial gases, inorganic chemicals, preparation of metals. • Details of ecosystem and its segments. • Sources of energy, importance of green chemistry and chemical industry.
18	**ATOMIC STRUCTURE, BONDING , GENERAL ORGANIC CHEMISTRY AND ALIPHATIC HYDROCARBONS**	**GE-I**	The course objective is to acquaint the students with Organic chemistry, stereochemistry, aliphatic hydrocarbons.	At the end of the course, the students will be able to know about • Bohr's theory, quantum mechanics • Details of ionic bonding • Structure, shape and reactivity of organic molecules • Details of stereochemistry, alkenes, alkenes , alkynes

19	**CHEMICAL ENERGETICS EQUILIBRIA AND FUNCTIONAL ORGANIC CHEMISTRY**	**GE-II**	The course objective is to acquaint the students with chemical energetics, chemical equilibrium, ionic equilibria, aromatic hydrocarbons, alcohols, phenols and ethers	At the end of the course, the students will be able to know about • Laws of thermodynamics and chemical equilibrium • Atomic hydrocarbon and alkyl halides aryl halides and its preparations. • Preparation of alcohols using Grignards reagent

HEAD OF THE DEPARTMENT

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