A.S.D.Govt.Degree College for Women(A), Kakinada

Department of Chemistry

COURSE OUTCOMES

B.Sc 2019-2020

SEMESTER-1

Paper- INORGANIC & ORGANIC CHEMISTRY

Course Outcomes	DESCRIPTION
CO1	Gains knowledge of importance of p-block elements & synthetic applications of organometallic compounds.
CO2	Understands the role of reagents and reaction mechanism, basics of organic compounds
CO3	The student will demonstrate knowledge of the principles of unsaturated hydrocarbons (alkenes, alkynes and aromatic compounds)
CO4	Acquire knowledge on Concept of Benzene and it's aromaticity, orientation of Benzene.
CO5	Understand the basic Concepts of isomerism and physical properties

SEMESTER-II
Paper- PHYSICAL & GENERAL CHEMISTRY

Course Outcomes	DESCRIPTION
CO1	Explainthe difference between solid,liquid and gases in terms of intermolecula rinteractions. Apply the concepts of gas equations
CO2	Understand the relationship between concentration,Volume, moles and colligative properties of solutions
CO3	understand the formation of bonds and interaction between the atoms, molecule ions crystals and other substanances. Useful for the Quntam mechanics.
CO4	chemical bonding mainly give information to know the bonding order and bond strength of the molucules.
CO5	stereochemistry is useful in understanding the special arrangements of atoms to determine the structure

SEMESTER -III
Paper-INORGANIC AND ORGANIC CHEMISTRY

Course Outcomes	Description
CO 1	Understand the basic concepts of P-block, D-block and F- block elements.
CO 2	Acquire theoretical knowledge about metals and how they help in the preparation of various useful products
CO3	Get the knowledge of the bond nature of C-OH and C-X and how they are used in daily life and industries.
CO4	Acquire the knowledge about carbonyl compounds, carboxylic acids and how they become backbone of organic chemistry.

SEMESTER -IV
Paper- SPECTROSCOPY AND PHYSICAL CHEMISTRY

Course Outcomes	Description
CO 1	Able to understand various phase diagrams and apply them to new systems
CO 2	Gains knowledge of principles of electrolysis and galvanic cells
CO3	Under stands the application of colligative properties in determination of molecular weight
CO4	Acquire the knowledge of analysis of materials by using UV and Visible light which helps in identification of m and conjugation in organic compounds and biological macro molecules

CO5	Capable of identifying the functional groups present in organic molecules by using I.R spectroscopy and molecular structure determination by using NMR spectroscopy which are useful in research

SEMESTER – V
Paper –V INORGANIC, PHYSICAL & ORGANIC CHEMISTRY

Course Outcomes	DESCRIPTION
CO1	Acquire knowledge about basic concepts and applications of Organic, Inorganic and Physical Chemistry, these are very useful in synthesis and design (to Create) of new important organic and inorganic compounds.
CO2	Get knowledge on bonding theories of Complex Compounds, Stability of complexes. Able to predict the feasibility of a reaction by HSAB principle. Acquire knowledge about the preparation, applications of Nitro hydrocarbons and Nitrogen compounds
CO3	Apply the thermodynamics knowledge entropy, enthalpy and free energy in predicting the direction of chemical transformations, spontaneity and equilibrium of a chemical process.
CO4	Analyse the organic compounds in qualitatively.
CO5	Create new routes for the preparation of organic and inorganic compounds.

PAPER -VI INORGANIC, ORGANIC & PHYSICAL CHEMISTRY-VI

Course Outcomes	DESCRIPTION
CO1	Get knowledge on the reactivity of Complex Compounds, preparation and applications of Hetero Cyclic Compounds and Carbohydrates, these enables to design and synthesis of new organic compounds.
CO2	Acquire knowledge about the preparation, applications of Nitro hydrocarbons and Nitrogen compounds Understand the role of light in

	effecting chemical change and its applications.
CO3	Apply the Chemical kinetics knowledge to set conditions to speed up a chemical reaction and to get high yields of desired products. To predict the direction of a chemical reaction.
CO4	Can analyse the importance of natural products like amino acids, proteins and carbohydrates in biological system and synthesize them.

ELECTIVE PAPER – VII-(B) : ENVIRONMENTAL CHEMISTRY

Course Outcomes	DESCRIPTION
CO1	Get knowledge about Renewable/ Non renewable energy resources of environment, toxic chemicals in the environment and their impact.How environment is affected by human activities.
CO2	Understand the energy crisis and different aspects of sustainability. Learn criteria for finding of water quality and how to convert hard water into soft water and purification of sewage waste water.
CO3	Acquire chemical knowledge to ensure sustainable use of the world's resources and ecosystems services
CO4	Analyse key ethical challenges concerning biodiversity

SEMESTER – VI

CHEMISTRY CLUSTER ELECTIVE-VIII-A-1

PAPER – VIII-A-1: POLYMER CHEMISTRY

Course Outcomes	DESCRIPTION
CO1	Get knowledge about Renewable/ Non renewable energy resources of environment, toxic chemicals in the environment and their impact. How environment is affected by human activities.
CO2	Understand the energy crisis and different aspects of sustainability. Learn criteria for finding of water quality and apply this for analysis of water. How to convert hard water into soft water and purification of sewage waste water.
CO3	Acquire chemical knowledge to ensure sustainable use of the world's resources and ecosystems services
CO4	Analyse key ethical challenges concerning biodiversity and understand the moral principles, goals and virtues important for guiding decisions that affect Earth’s plant and animal life.

CHEMISTRY CLUSTER ELECTIVE-VIII-A-2

PAPER – VIII-A-2: INSTRUMENTAL METHODS OF ANALYSIS

Course Outcomes	DESCRIPTION
CO1	Get knowledge about UV-VISIBLE, IR, **NMR spectroscopy, Mass** spectrometry and Chromatographic techniques.
CO2	Predict structure of given organic compound by spectroscopy techniques. Identify which functional group present in the given organic compound by IR spectroscopy, molecular weight of the compound by Mass spectrometry, Bonding connectivity by NMR and prescence of conjugation by UV-VISIBLE spectroscopy.
CO3	Predict purity of organic compound, Progress of reaction and separation of mixture by Chromatographic techniques.
CO4	Knowledge gained in this course is preliminary to work in pharmaceutical industry, research and development of Industry and Nation.

CHEMISTRY CLUSTER ELECTIVE-VIII-A-3

PAPER -VIII-A-3 : ANALYSIS OF DRUGS, FOODS , DAIRY PRODUCTS & BIO-CHEMICAL ANALYSIS

Course Outcomes	DESCRIPTION
CO1	Acquire knowledge about analysis , formulation and therapeutic uses of various drugs like anlgesics, antipyretics, antimalerials, anti tuberculous , antihistamines
CO2	Identity aduterants present in food materials. Analyse constituents present in Milk and milk products and blood.
CO3	Predict purity of organic compound, Progress of reaction and separation of mixture by Chromatographic techniques.
CO4	Knowledge gained in this course is preliminary to work in pharmaceutical industry, research and development of Industry and Nation.

SEMESTER-VI
CHEMISTRY CLUSTER ELECTIVE-VIII-B-1

PAPER-VIII-B1 : FUEL CHEMISTRY AND BATTERIES

Course Outcomes	DESCRIPTION
CO1	To Introduce importance and components of fuels, concept of coal current scenario and allied process in industries
CO2	Understand of Fuel Chemistry and Batteries and its relation to other disciplines
CO3	Ability to list of chemical process and corresponding equipment performing fractional distillation and cracking.
CO4	Introduction with the Petroleum refinery world wide.
CO5	Student can aware of primary and secondary batteries ,Battery components and their role, characteristics. (For example Pb Acid, Lithium battery)

CHEMISTRY CLUSTER ELECTIVE -VIII-B-2

PAPER-VIII-B2 : INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE

Course Outcomes	DESCRIPTION
CO1	Students can understand important sources of raw materials used in the manufacturing of certain Inorganic Chemicals.
CO2	Students can learn various industrial methods of preparations like Glass, Ceramics.
CO3	Students gain knowledge in manufacturing of different types of fertilizers like Urea, Ammonium nitrate.
CO4	Student can also distinguish between paints and pigments of their formulation, composition and properties.
CO5	Students can understand important sources of raw materials used in the manufacturing of certain Inorganic Chemicals.

CHEMISTRY CLUSTER ELECTIVE-VIII - B - 3

PAPER-VIII-B-3:ANALYSIS OF APPLIED INDUSTRIAL PRODUCTS VIII - B - 3

Course Outcomes	DESCRIPTION
CO1	Students understand various identification tests for Oils & Fats
CO2	Students acquire identification skills in saturated and unsaturated fats.
CO3	Students acquire practical skill to perform the experiment in the real lab.
CO4	The students will distinguish between soaps and detergents of cleansing action and be able to their structure and properties.
CO5	Students empower the knowledge about fertilizers and pesticides.
CO6	Students can understand the chemical reactivity of the powerful pesticides like DDT,BHC used in agricultural field.

CHEMISTRY CLUSTER ELECTIVE-VIII - C - 1

PAPER-VIII-C-1 : ORGANIC SPECTROSCOPIC TECHNIQUES

Course Outcomes	Description
CO 1	Acquires knowledge to interpret the spectra and use the information to determine the structure of various complex molecules
CO 2	Able to understand various energy levels, electronic transitions and electronic spectra of di atomic molecule and polyatomic molecules.
CO3	Analyse the study of molecules with greater sensitivity and speed along with greater resolution
CO4	Acquires Knowledge to apply in the research of biological free radicals for quantitative and qualitative analysis of reactive oxygen species.

CHEMISTRY CLUSTER ELECTIVE-VIII -C-2

PAPER-VIII-C-2 : ADVANCED ORGANIC REACTIONS

Course Outcomes	Description
CO1	Acquires Knowledge to formulate the macroscopic and quantum laws of the absorption of light by molecules
CO2	Gains knowledge to characterize the kinetics of molecular excited states and their role in the photochemical reactivity
CO3	Create new routes for the preparation of compounds depending on the requirement
CO4	Understands the background pf organic reaction mechanisms,structure elucidation of organic molecules,molecular rearrangements

CHEMISTRY CLUSTER ELECTIVE-VIII - C - 3

PAPER-VIII-C-3 : PHARMACEUTICAL AND MEDICINAL CHEMISTRY

Course Outcomes	Description
CO1	Gains complete knowledge about all fundamental aspects of Pharmaceutical chemistry
CO2	Get the knowledge on Chemotherapeutic drugs, Phsychotherapeutic drugs and Pharmacodynamic drugs
CO3	Understands the mechanism of drug action and synthesis of the various classes of drug molecules
CO4	Acquires knowledge on prevention of AIDS, action of CD4 and CD8 cells, drugs available with structures

A.S.D.GOVT.DEGREE COLLEGE (W) AUTONOMOUS KAKINADA

M. Suvarchala
PRINCIPAL
A.S.D.GOVT.DEGREE COLLEGE (W)
AUTONOMOUS
KAKINADA