J.S.M. COLLEGE, ALIBAG- RAIGAD

Department of Chemistry

Programme outcome (POS)
Programme Specific Outcomes (PSO)
and Course Outcomes (COS)

Programme Outcome: On completion of B.Sc. Chemistry, students will acquire:

PO1: Core competency: Students will acquire core competency in the subject Chemistry, and in allied subject areas.

PO2: A systematic and coherent understanding of the fundamental concepts in Physical, Organic, inorganic and Analytical Chemistry and all other related allied chemistry subjects.

PO3: Students will be able to characterize, identify and separate components of organic or inorganic origin and will also be able to analyze them by making use of the modern instrumental methods learned.

PO4: Students will be able to use the evidence-based comparative chemistry approach to explain chemical synthesis and analysis.

PO5: Students will be able to understand the basic principle of equipment and instruments used in the chemistry laboratory.

PO6: Students will be able to demonstrate the experimental techniques and methods of their area of specialization in Chemistry.

PO7: The course curriculum also includes components that can be helpful to graduate students to develop critical thinking ability by way of solving problems/numerical using basic chemistry knowledge and concepts.

PO8: Appreciate the central role of chemistry in our society and use this as a basis for ethical behaviour in issues facing chemists including an understanding of safe handling of chemicals, environmental issues, and key issues facing our society in terms of energy, health and medicine.

PO9: Lifelong Learner: The course curriculum is designed to inculcate a habit of learning continuously through use of advanced ICT techniques and other available techniques/books/journals for personal academic growth as well as for increasing employability opportunity.

PROGRAMME SPECIFIC OUTCOMES

- Students acquire knowledge about Basics of Drugs and Dyes
- Students will gain knowledge of synthesis of many drugs.
- They understand therapeutic actions of many drugs and their use in day to day life.
- Demonstrate knowledge and understanding in Current applications of different Dyes.
- Practically students will prepare Dyes and its use for coloring cloth through projects.
- They also understand the analysis of many drugs through practical.

Course Outcomes:

F.Y.B.Sc. Sem I & II		
Paper I	CO1	To understand reaction kinetics, rate constant, order of reaction.
	CO2	To identify stereochemistry of various chemicals. To provide best practices of semi-micro qualitative analysis
	CO3	To define specific terms of states of matter, oxidation and reduction.
Paper II	CO1	To understand purification method for solid compounds
	CO2	To solve numericals on Molarity, Normality and Molality
	CO3	To understand basics of Inorganic chemistry
	CO4	To identify unknown organic compound
S.Y.B.Sc. SEM III & IV		
Paper I	CO1	To become proficient in analysing the various observations and chemical phenomena presented to student during the course.
	CO2	To understand & solve problems related to thermodynamics and kinetics.
	CO3	To understand the preparation and reactions of alcohol, phenols
	CO4	To understand the preparation and reactions of carboxylic acid, diazonium compounds, sulphonic acids, amines and carbonyl compounds.
Paper II	CO1	To know specific principles of Inorganic chemistry.
	CO2	To know specific facts about instrumental methods of analysis
	CO3	To know specific trends of transition metals, catalysis and electrochemistry
	CO4	To understand the concepts of Gravimetry and Volumetry
Paper III	CO1	To find basics calculations of mean, mode, median
	CO2	To understand basic analytical chemistry
	CO3	To solve numericals based on analytical methods for understanding concepts in detail.
T.Y.B.Sc. SEM V & VI		
Paper I	CO1	To understand details about spectroscopic techniques, stereochemistry.
	CO2	To know specific terms involved in organic and inorganic reaction mechanisms.
	CO3	To understand concepts of molecular spectroscopy
Paper II	CO1	To know specific terms of symmetry, molecular orbital theory, solid state chemistry, inner transition metals.
	CO2	To know the various types of methods for analysis of compounds.
	CO3	To know various methods of preparation of Inorganic compounds
	CO4	To solve numericals

Paper III	CO1	To know about various chemotherapeutic agents, dyes and dye-stuff intermediates.
	CO2	To understand concept of stereochemistry
	CO3	To solve numericals on spectroscopy
	CO4	To know about natural products, heterocycles, photochemistry, pericyclic reactions.
	CO5	To identify unknown organic compound
Paper IV	CO1	To understand concepts of Atomic absorption and emission spectroscopy
	CO2	To find details of various types of titrations
	CO3	To solve numericals based on various topics of analytical chemistry
M.Sc. SEM I, II, III & IV		
Paper I	CO1	To know specific techniques: disconnection of molecules, synthesis of target molecules..
	CO2	To know new name reactions, reagents and rearrangements.
	CO3	To know in detail about natural products, group theory and solid state chemistry.
Paper II	CO1	To know more specific terms involved in asymmetric synthesis, pericyclic reactions and photochemistry.
	CO2	To solve critical problems spectroscopy and two-dimensional spectroscopy
	CO3	To know new name reactions, reagents and rearrangements.
Paper III	CO1	To know about drug discovery, green chemistry, biomolecules.
	CO2	To study the behavior of inorganic solids, their bonding, Preparation and reactions including mechanisms.
	CO3	To understand thermal and magnetic properties of inorganic Materials.
Paper IV	CO1	To understand ternary mixture separation and identification
	CO2	To perform organic synthesis