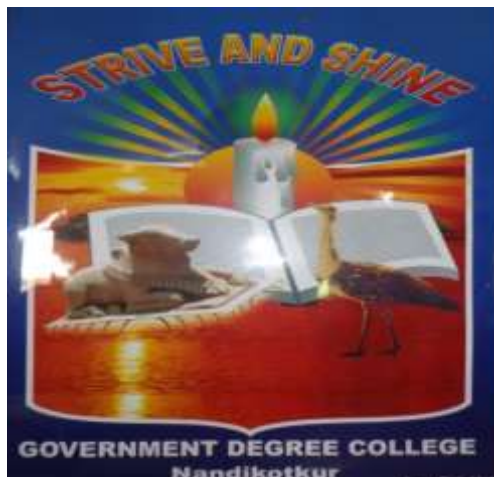


GOVERNMENT DEGREE COLLEGE

NANDIKOTKUR, Nandyal (Dist.,)

DEPARTMENT OF CHEMISTRY



Programme Outcomes (POs) Programme Specific Outcomes(PSOs) & Course Outcomes (COs)

POs, PSOs & COs Mapping

PROGRAMME OUTCOMES

Students admitted in to B.Sc. Programme are expected to acquire the following outcomes

PO1	Domain Knowledge: Students understand the basic scientific principles and theories related to various phenomena in their disciplines and their relevance in the day-to-day life .Students develop demonstrating comprehensive knowledge and understanding of one or more other disciplines that form a part of an undergraduate programme of study.
PO2	Communication Skills: Students able to express thoughts and ideas effectively in writing and orally and communicate with others using appropriate media, confidently share views and express herself/himself,
PO3	Critical thinking: Student will be able to analyze and synthesize data from a variety of sources and draw valid conclusions and support them with evidence and examples.
PO4	Creativity: Students will be able to • create, perform, or think in different and diverse ways about the same objects or scenarios, • innovate and perform tasks in a better manner
PO5	Teamwork / Coordination: Being able to facilitate a group's cooperative effort and act together as a group or team to achieve a common goal. Work effectively as an individual as well as a member of the team.
PO6	Digital and technological skills: The graduates will be able to demonstrate the capability to: • use ICT in a variety of learning and work situations, • access, evaluate, and use a variety of relevant information sources, and use appropriate software for analysis of data.
PO7	Research-related skills: The graduates will be able to demonstrate: • a keen sense of observation, inquiry, and capability for asking relevant/ appropriate questions, • the capacity to develop appropriate methodology and tools for data collection
PO8	Environmental awareness and action: The graduates should be able to demonstrate the acquisition of and ability to apply the knowledge, skills, attitudes, and values required to take appropriate actions for effective waste management, conservation of biological diversity, management of biological resources and biodiversity, forest and wildlife conservation, and sustainable development and living
PO9	Community engagement and service: The graduates will be able to demonstrate the capability to participate in community-engaged services/ activities for promoting the wellbeing of society
PO10	Career opportunities: Students after graduation have several career and employment opportunities such as research firms, agriculture industry, health care industry, pharmacy industry, chemical industry, diagnostic laboratories, software companies, banks, higher studies etc.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

The Department of chemistry Government Degree College, Nandikotkur, Nandyal Dist. offers Three Year (comprising 6 semesters) Undergraduate Programme in chemistry with objective of empowering students to acquire comprehensive understanding of chemistry as an academic discipline. Upon completion of B.Sc. chemistry Degree Programme successfully, the students shall acquire the following skills and competencies.

PSO1	Demonstrate, solve and an understanding of major concepts in all disciplines of chemistry
PSO2	Solve the problem and also think methodically, independently and draw a logical conclusion
PSO3	Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of chemical reactions.
PSO4	To inculcate the scientific temperament in the students and outside the scientific community
PSO5	Use modern techniques, various equipments and Chemistry softwares
PSO6	Create an awareness of the impact of chemicals on the environment, society, and development outside the scientific community

PSO-PO Mapping

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COURSE OUTCOMES (COs)

SEMESTER-I

Course Code: 20C1302A

Course Name: Inorganic and Physical Chemistry

On successful completion of this course, the student will be able to:		PSO	PO
CO1	Understand the basic concepts of p, d and f-block elements	1,3	1,3,4
CO2	Understand the reasons behind various properties exhibited by solid, liquid and gases	1,2	1,3,4
CO3	Understand the basic concepts of qualitative analysis of inorganic salt	4	1,4
CO4	Understand different types of molecules formed by the elements of varied shapes and the theories explaining it.	1	1,3,7
CO5	Understand the properties of liquid crystals	6	6,7,8

SEMESTER-II

Course Code: 20C2302A

Course Name: Organic and General Chemistry

	On successful completion of this course, the student will be able to:	PSO	PO
CO1	Understand and explain the differential behavior of organic compounds based on fundamental concepts learnt	1	1,3,4
CO2	Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved	3	3,4,8
CO3	Learn and identify many organic reaction mechanisms including Free Radical Substitution, Electrophilic Addition and Electrophilic Aromatic substitution	1,2	1,3,4
CO4	Correlate and describe the stereochemical properties of organic compounds and reactions	1,6	3,4
CO5	Understand the aromatic and electrophilic substitution behaviour of benzene.	1,3	1,4,7

SEMESTER-III

Course Code: 20C3302A

Course Name: Organic Chemistry and Spectroscopy

	On successful completion of this course, the student will be able to:	PSO	PO
CO1	Understand preparation, properties and reactions of haloalkanes, haloarenes and oxygen containing functional groups	1	1,3,4
CO2	Use the synthetic chemistry learnt in this course to do functional group transformations	3	3,4,8
CO3	Propose possible mechanisms for any relevant reaction	2,4	3,4
CO4	Acquire knowledge on the chemistry of halogenated hydrocarbons	1,3	1,3
CO5	Gain knowledge on various types of spectroscopy	5,6	1,3

SEMESTER-IV

Course Code: 20C4302AA

Course Name: Inorganic, Organic and Physical Chemistry

	On successful completion of this course, the student will be able to:	PSO	PO
CO1	Learn about the laws of absorption of light energy by molecules and the subsequent photochemical reactions, quantum efficiency	1	1,3,4
CO2	Understand the concept of quantum efficiency and mechanism of photochemical reactions	1,2	1,3
CO3	Apply importance of carbohydrates, amino acids and proteins in their life	3,6	1,3,7
CO4	Acquire knowledge on the laws of Thermodynamics	2,5	1,3,4
CO5	Understand the chemical properties of heterocyclic and nitrogen based compounds.	3,4	1,3,4

Course Code: 20C4302BA

Course Name: Inorganic and Physical Chemistry

	On successful completion of this course, the student will be able to:	PSO	PO
CO1	Understand theories related to co-ordination compounds, Crystal field effect to understand the chemical and physical properties of co-ordination compounds.	1	1,3,4
CO2	Learn substitution reactions in square planar compounds and understand stability of the compounds	1,2	1,3,4
CO3	Understand the Phase diagrams of mono and bi-component systems.	2,4	1,3,8
CO4	Gain knowledge on Electrochemistry	1,5	1
CO5	Understand reaction rate, rate laws and apply the principles of order of reaction kinetics	2	1,3,7

SEMESTER-V

Course Code: 20C53026B

Course Name: Analytical Methods in Chemistry-I

	On successful completion of this course, the student will be able to:	PSO	PO
CO1	Identify the importance of solvent extraction and ion exchange method.	2,6	1,3
CO2	Acquire knowledge on the basic principles of volumetric analysis and gravimetric analysis.	4	1,3,4
CO3	Demonstrate the usage of common laboratory apparatus used in quantitative analysis. Learn concentration terms such as molarity, molality and normality.	4,6	1,3,4,7
CO4	Understand the theories of different types of titrations	1,2	1,3
CO5	Demonstrate skills related to analysis of water using different techniques.	4,6	1,3,7

Course Code: 20C53027B

Course Name: Analytical Methods in Chemistry-II

	On successful completion of this course, the student will be able to:	PSO	PO
CO1	Identify the importance of chromatography in the separation and identification of compounds in a mixture	5,6	1,3,7
CO2	Acquire a critical knowledge on various chromatographic techniques	1,5	1,3,10
CO3	Understand the principles of spectrophotometry in the determination of concentration of metal ions.	1,5	1,7
CO4	Understand the principles of spectro chemistry in the determination of metal ions.	2,5	1,3,4,10
CO5	Comprehend the applications of atomic spectroscopy	3,6	7,10