RRDS Government Degree College

Department of Chemistry

****

Program Outcomes (POs)

PO1. Critical Thinking: Apply critical thinking and enhance learning in the three major subjects of their choice with scientific reasoning and analytical skills.

PO2. Problem solving: Think logically and organize task into a structured form for problem solving by applying the knowledge of basic science.

PO3. Effective communication: To develop the ability of effective communication of scientific information in written and oral format.

PO4. Individual and team work: Function effectively as an individual and as a member or leader in diverse teams and in multi-disciplinary settings.

PO5. Ethics: Apply ethical, moral and social values in personal and professional life leading to holistic development of the individual.

PO6. Environment and sustainability: Develop interdisciplinary approach to provide better solution and innovative ideas for sustainable development and conservation of natural resources.

PO7. Self-directed and lifelong learning: Recognize the need for and have the ability to engage in independent, lifelong learning and adapt to technological changes to be globally competent.

Program Specific Outcomes (PSOs)

PSO1. Become aware about plant diversity and its conservation through plant tissue Culture and analyze the phytoconstituents of plants and plant drug adulteration.

PSO2. Acquire academic excellence with an aptitude for higher studies, research and to meet competitive exams

PSO3. Understand the current developments in the different areas of Botany and limitations and to solve problem, take real time decisions and innovate, while working with plants.

PSO4. Acquires knowledge and skill in the fundamentals of animal sciences, understand complex interactions among various living organisms.

PSO5. Understands environmental conservation processes and its importance, pollution control, biodiversity and protection of endangered species.

PSO6. Gains knowledge of small scale industries like sericulture, fish farming, butterfly farming and medical diagnostics. Understand the complex evolutionary processes and behavioral patterns of various animals.

PSO7. Develops theoretical and practical knowledge in handling the animals and using them as model organism.

PSO8. Acquire methodical and logical understanding of the fundamental concepts in Physical, Organic, Inorganic, Analytical and all other integrated Chemistry subjects.

PSO9. Achieve the ability to synthesize, separate, estimate and characterize compounds using experimental and instrumentation techniques

PSO10. Develop critical thinking and problem solving skills through solving by adopting research based pedagogical tools

Course Outcomes (COs)

Course – 1 Inorganic and Physical Chemistry

Course Outcomes: By the completion of the course the graduate should able to –

Understand the basic concepts of p-block elements

- Explain the difference between solid, liquid and gases in terms of intermolecular interactions.
- Apply the concepts of gas equations, pH and electrolytes while studying other chemistry courses.

Course – 2 Organic & General Chemistry

Course Outcomes: By the completion of the course the graduate should able to –

- . Understand and explain the differential behavior of organic compounds based on fundamental concepts learnt.
- Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved Learn and identify many organic reaction mechanism including Free Radical Substitution, Electrophonic Addition and Electrophonic Aromatic Substitution.
- Correlate and describe the stereo chemical properties of organic compounds and reactions.

Course – 3 Organic chemistry & Spectroscopy

Course Outcomes: By the completion of the course the graduate should able to –

- Understand preparation, properties and reactions of haloalkanes, haloarenes and oxygen containing functional groups.
- Use the synthetic chemistry learnt in this course to do functional group transformations
- To propose plausible mechanisms for any relevant reaction

Course – 4 Inorganic, Organic and Physical Chemistry

Course Outcomes: By the completion of the course the graduate should able to –

- To learn about the laws of absorption of light energy by molecules and subsequent photochemical reactions.
- To understand the concept of quantum efficiency and mechanisms of photochemical reactions.

Course – 5 Inorganic & Physical Chemistry

Course Outcomes: By the completion of the course the graduate should able to –

- Understand concepts of boundary conditions and quantization, probability distribution, most probable values, uncertainty and expectation values Application Of Quantization
- To Spectroscopy Various types of spectra and their use in structure determination

Course – 6 Environmental Chemistry

Course Outcomes: By the completion of the course the graduate should able to –

1. Understand the environment functions and how it is affected by human activities.
2. Acquire chemical knowledge to ensure sustainable use of the world's resources and ecosystems services.
4. Engage in simple and advanced analytical tools used to measure the different types of pollution.
5. Explain the energy crisis and different aspects of sustainability.
6. Analyze 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.

Course – 7 Green Chemistry and Nanotechnology

Course Outcomes: By the completion of the course the graduate should able to –

1. Understand the importance of Green chemistry and Green synthesis.
2. Engage in Microwave assisted organic synthesis.
3. Demonstrate skills using the alternative green solvents in synthesis.
4. Demonstrate and explain enzymatic catalysis.
5. Analyse alternative sources of energy and carry out green synthesis.
6. Carry out the chemical method of nanomaterial synthesis.