

**A.S.D.GOVERNMENT DEGREE COLLEGE FOR (W),(A), KAKINADA
DEPARTMENT OF BOTANY**

I B.Sc., BOTANY Honors For the Academic year 2023-2024

Course Outcomes :

Semester –I –Paper- 1- INTRODUCTION TO CLASSICAL BIOLOGY

1. Understand the principles of Nomenclature, classification, conservation of Biodiversity, causes, effects and prevention of environmental pollution.
2. Understand the plant taxonomic, physiological and reproductive processes and apply the knowledge of Economic Botany for entrepreneurship.
3. Understand the animal classification, physiology, embryonic development and apply the knowledge gained in Economic Zoology to grow into Entrepreneurs.
4. Differentiate prokaryotic and eukaryotic cells, understand the basic structure and functions of cell organelles, basic concepts of Molecular Biology and Origin of life.
5. Comprehend the chemical principles of Chemistry and apply them in daily life and develop responsibility towards environment by applying the concepts of Green Chemistry.

Semester –I –Paper- 2- INTRODUCTION TO APPLIED BIOLOGY

1. Understand the history, ultrastructure, diversity and importance of microorganisms.
2. Understand the structure and functions of macromolecules.
3. Acquire the knowledge on biotechnology principles and its applications in food and medicine.
4. Compare the techniques, tools and their uses in diagnosis and therapy.
5. Demonstrate the bioinformatics and statistical tools in comprehending the complex biological data.

Semester –II –Paper- 3- NON-VASCULAR PLANTS (Algae, Fungi, Lichens and Bryophytes)

- 1 . Compile the general characteristics of algae and their significance in nature.
- 2 .Compare and contrast the characteristics of different groups of algae.
- 3 . Summarise the important features of fungi and their economic value.

- 4 . Distinguish the characteristics of different groups of fungi.
- 5 . Explain the diversity among non-vascular plants and to get awareness on origin and evolution of life.

Semester –II –Paper- 4- ORIGIN OF LIFE AND DIVERSITY OF MICROBES

- 1 . To get awareness on importance of microbes in nature and agriculture. Illustrate diversity of viruses, multiplication and economic value.
- 2 . Discuss the general characteristics, classification and economic importance of special groups of bacteria.
- 3 . Explain the structure, nutrition, reproduction and significance of eubacteria.
- 4 . Evaluate the interactions among soil microbes.
- 5 . Compile the value and applications of microbes in agriculture

Semester –III –Paper- 3- Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity

- 1 . Understand on the organization of tissues and tissue systems in plants.
- 2 . Illustrate and interpret various aspects of Embryology.
- 3 . Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
- 4 . Appraise various qualitative and quantitative parameters to study the population and community ecology.
- 5 . Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation

Semester –IV –Paper- 4 – Plant physiology and metabolism

- 1 Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.
- 2 Evaluate the role of minerals in plant nutrition and their deficiency symptoms. Interpret the role of enzymes in plant metabolism.
- 3 Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.
- 4 Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms.
- 5 Evaluate the physiological factors that regulate growth and development in plants & to examine the role of light on flowering and explain physiology of plants under stress conditions

Semester –IV –Paper- 5 –CELL BIOLOGY, GENETICS AND PLANT BREEDING

- 1 Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
- 2 Explain the organization of a eukaryotic chromosome and the structure of genetic material.
- 3 Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings. & to Elucidate the role of extra-chromosomal genetic material for inheritance of characters.
- 4 Evaluate the structure, function and regulation of genetic material.
- 5 Understand the application of principles and modern techniques in plant breeding. & to Explain the procedures of selection and hybridization for improvement of crops

Semester –V –Paper- 6A - Plant Propagation

- 1 . Make use of different plant propagation structures for plant multiplication.
- 2 . Assess the benefits of Asexual Propagation of Certain economically valuable plants Apomictics ,and Adventive Polyembryony
- 3 . Demonstrate Skills related to Vegetative Propagation Techniques such as Cutting, Layering,
4. Evaluate and use a suitable Propagation technique for a given plant species
5. Demonstrate Skills related to Vegetative Propagation Techniques such as Grafting & Budding

Semester –V –Paper- 7A SEED TECHNOLOGY

- 1 . Explain the causes for seed dormancy and methods to break dormancy.
2. Understand critical concepts of seed processing and seed storage procedures.
- 3 . Acquire skills related to various seed testing methods.
- 4 . Identify seed borne pathogens and prescribe methods to control them.
- 5 . Understand the legislations on seed production and procedure of seed certification