



# SMT N P S GOVT COLLEGE (W), CHITTOOR



## DEPARTMENT OF ZOOLOGY

### B.Sc.,

(Revised on 2021-2022)

### COURSE OUTCOMES

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1. Improving the knowledge about criteria for animal classification.
2. Study of salient features of chordates and non-chordates.
3. Improving the knowledge of animals about their special adaptations and evolutionary relationship.
4. Scientific study of their nature of habitant with environment.
5. Improving information about external morphology and anatomy of animals including human being
6. Acquire basic knowledge of various branches of Zoology and General biology.
7. Inculcate interest and love of nature with its myriad living creatures.
8. Understand the unity of life with the rich diversity of organisms.
9. Be aware of the ecological and evolutionary significance of the organisms in the environment
10. Acquire basic skills in observation and study of nature.
11. Learn the different biological techniques.
12. Develop experimental skills and research aptitude

## **Semester-1**

- CO1. Know the General characters and classification of Invertebrate phyla and Hemichordata
- CO2. Understand the type studies of Elphidium, Sycon, Fasciola hepatica, Leech, Prawn.
- CO3. Explain canal system in Sponges, corals and coral reef formation, Polymorphism in Coelenterates.
- CO4. Understand Vermiculture and vermi compost, Pearl formation in Pelecypoda, water vascular system in star fish.
- CO5. Learn about various invertebrate larval forms

## **SEM II PAPER II**

- CO1. Distinct features and classification of Chordates, Origin of Chordates.
- CO2. General characters and classification of Protochordates, Cyclostomes, Fishes, Amphibia, Reptelia, Aves and Mammalia.
- CO3. The structure and Life history of Herdmania (Retrogressive Metamorphosis).
- CO4. The types of scales in fishes, Migration of fishes, Flight adaptations in Birds, Bird Migration, Dentition in Mammals.
- CO5. Geographical features and faunal distribution of Oriental, Australian and Ethiopian regions.

## **SEM III PAPER III**

- CO1. Prokaryotic and eukaryotic cells, virus, viroids, Mycoplasma, Electron microscopic structure of eukaryotic cell, Plasma Membrane
- CO2. Structure and functions of Endoplasmic Reticulum, Golgi complex, Ribosomes, Lysosomes, Mitochondria, Nucleus, Chromosomes.
- CO3. Mendel's work on transmission of traits, Principles of inheritance, Incomplete dominance and co-dominance, Lethal alleles, Epistasis, Pleiotropy
- CO4. Sex Determination, Sex Linked inheritance, Linkage and crossing over, Extra chromosomal inheritance, Human Karyotyping.

CO5. Origin of life, Lamarckism, Darwinism, Neo-Darwinism, Hardy-Weinberg Equilibrium, Variations, isolating mechanisms, natural selection, Speciation (Allopatric and Sympatric), Macro evolutionary principles.

#### **SEM IV PAPER IV**

CO1. Gametogenesis, Fertilization, Types of eggs, Development of Frog upto gastrulation, Foetal membranes and Placentation in Mammals.

CO2. The Physiology of Digestion, Respiration, Circulation, Excretion, Muscle contraction, Nerve impulse, Endocrine glands.

CO3. Meaning and Scope of Ecology, Biotic and Abiotic Factors, Pond Ecosystem, Food chain, Energy flow, Biogeochemical cycles, Ecological Succession, Community Interactions.

CO4. Animal behaviour definition and Types, Innate behaviour, Learned behaviour (Associate learning). CO5. Learning and Memory, Biological clocks, Circadian rhythms

#### **SEM V PAPER V**

CO1. Tools of Recombinant DNA technology

CO2. Techniques of Recombinant DNA technology

CO3. Animal Cell Technology

CO4. Reproductive Technologies & Transgenic Animals

CO5. Different types of Fermentation, Downstream processing - Filtration, centrifugation, extraction, chromatography, spray drying and lyophilization.

#### **SEM V PAPER VI**

CO1. Poultry farming, Management of chicks, growers and layers, Broilers.

CO2. Principles of feeding, Poultry diseases – viral, bacterial, fungal and parasitic

CO3. Selection, care and handling of hatching eggs

CO4. Classification of Indian Cattle breeds, exotic breeds and Indian buffalo breeds. Systems of inbreeding and crossbreeding, Housing of dairy animals, Cleaning and

sanitation of dairy farm. Weaning of calf, Castration and dehorning, Deworming and Vaccination programme, Records to be maintained in a dairy farm.

CO5. Care and management of calf, heifer, milk animal, dry and pregnant animal, bulls and bullocks.

#### **SEM VI PAPER VII**

CO1 .Basic concepts in Immunology, Innate and adaptive immunity, Cells and organs of Immune system

CO2. Basic properties of antigens,B and T cell epitopes, haptens and adjuvants, Factors influencing immunogenicity.

CO3. Structure of antibody, Classes and functions of antibodies , Monoclonal antibodies.

CO4. Structure and functions of major histocompatibility complexes, Exogenes.

