

Zoology

15

					Morning & Evening
Total Semester III & IV			40	260	

Scheme of B.Sc. III

Semester-V

Sr. No.	Paper	Paper	Marks		Exam. Duration
			Internal Assessment*	External Marks	
1.	Paper-I	Environmental Biology	10	40	3 hrs.
2.	Paper-II	Evolution and Developmental Biology	10	40	3 hrs.

Semester-VI

3.	Paper-I	Aquaculture and Pest Management-I	10	40	3 hrs.
4.	Paper-II	Aquaculture and Pest Management-II	10	40	3 hrs.
5.	Paper-III	Practical	--	100	6 hrs. (Two session) Morning & Evening
Total Semester V & VI		40	260		
Grand Total Semester I – VI			900		

* 10 Percent on the basis of two hand written assignments, 5 percent on the basis of one class test and 5 percent on the basis of attendance of the student.

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SCHEME OF EXAMINATION FOR B.SC. SEMESTER SYSTEM

Scheme of B.Sc. I

<i>Semester-I</i>					
Sr. No.		Paper	Marks		Exam. Duration
			Internal Assessment*	External Marks	
1.	Paper-I	Life and Diversity from Protozoa to Porifera and Cell Biology-I	10	40	3 hrs.
2.	Paper-II	Life and Diversity from Coelentrata to Helminthes and Cell Biology-II	10	40	3 hrs.
<i>Semester-II</i>					
3.	Paper-I	Life and Diversity from Annelida to Arthropoda and Genetics-I	10	40	3 hrs.
4.	Paper-II	Life and Diversity from Molluaska to Hemichordata and Genetics-II	10	40	3 hrs.
5.	Paper-III	Practical	--	100	6 hrs. (Two session) Morning & Evening
Total Semester I & II			40	260	

Scheme of B.Sc. II

<i>Semester-III</i>					
Sr. No.		Paper	Marks		Exam. Duration
			Internal Assessment*	External Marks	
1.	Paper-I	Life and Diversity of Chordates-I	10	40	3 hrs.
2.	Paper-II	Mammalian Physiology-I	10	40	3 hrs.
<i>Semester-IV</i>					
3.	Paper-I	Life and Diversity of Chordates-II	10	40	3 hrs.
4.	Paper-II	Mammalian Physiology-II	10	40	3 hrs.
5.	Paper-III	Practical	--	100	6 hrs. (Two session)


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Programme Specified Outcomes

Sample PSOs of B.Sc. Zoology

PSO1. Understand the nature and basic concepts of Cell biology, Biochemistry, Taxonomy and Ecology.

PSO2. Analyse the relationships among animals, plants and microbes

PSO3. Perform procedure as per laboratory standards in the areas of Biochemistry, Bioinformatics, Taxonomy, Economic Zoology and Ecology

PSO4. Understand the applications of biological sciences in apiculture, aquaculture and medicine.

PSO5. Understood the applied biological sciences or economic Zoology such as sericulture, Apiculture, aquaculture, Industrial microbiology, rDNA technology and medicine for their career opportunities

PSO6. Explained how organisms function at the level of the gene, genome, cell, tissue, organ and organ-system. Drawing upon this knowledge, they are able to give specific examples of the physiological adaptations, development, reproduction and behaviour of different forms of life.

PSO7. Characterized the biological, chemical, and physical features of environments (e.g., terrestrial, freshwater, marine, host) that animals inhabit. Explained how animals function and interact with respect to biological, chemical and physical processes in natural and impacted environments.


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CO1. LIFE AND BIODIVERSITY FROM ARTHROPODA TO HELMINTHES

- Came to knowing the basic concept of biosystematics and procedure in taxonomy.
- Identified the taxonomic status of the entire non-chordates up to helminthes and discuss the evolutionary model of the group.
- Described the general biology of few selected non-chordates useful to mankind.
- Know about some of the important and common protozoan of parasitic nature causing diseases in human beings.

CO2. CELL BIOLOGY

- Understood the structure of cells and cell organelles in relation to the functional aspects and understanding of the working principles and applications of microscopes
- Described the composition of prokaryotic and eukaryotic cells.
- Understood the structure and functions of chromosome; mitotic and meiotic cell divisions and their significance
- Understood the properties and treatment of cancer cells.

CO3. LIFE AND BIODIVERSITY FROM ANNILIDA TO HEMICHORDATA

- Understood the diversity and classification and functional aspects of different systems of phylum Annilida, Arthropoda, Mollusca, Echinodermata and Hemichordata.
- Described the social life and economic importance of insects.
- Understood the physiology of pearl formation and pearl oyster formation.
- Described the advanced characteristic features of cephalopod molluses.
- Came to know that the resemblance and evolutionary significance of larval forms of echinoderms.

CO4. GENETICS

- Understood the theories of classical genetics and blood group inheritance in man
- Described the genetic variation through linkage and crossing over, chromosomal aberrations and sex determination.
- Understood the genetic defects and inborn errors of metabolism and genetic counseling and role of inbreeding and outbreeding.

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- Understood the molecular structure of genetic materials and understood the mechanism of gene expression and regulation character formation.
- Understood the inheritance of mendelian traits by direct observation among students.
- Acquired knowledge skill development and observation of blood group identification and pedigree chart preparations

CO5. LAB - BIODIVERSITY OF INVERTEBRATE

- Understood the anatomy and physiology of invertebrate animals by dissection.
- Came to knowing the rules of taxonomy and the principle of animal classification.
- Understood the diversity morphology, biological characters and taxonomical importance some selected museum specimens of different animal groups.

CO6. BIODIVERSITY OF CHORDATES

- Identified the taxonomic status of the entire chordates and discussed the evolutionary model of the group.
- Imparted the knowledge on ecology of some important fishes.
- Impart knowledge in comparative anatomy and development systems of chordates.
- Make able to discuss some and very important phenomena in Chordates.
- Know about the conservation and management strategies of the chordate fauna.

CO7. ANIMAL PHYSIOLOGY

- Understood about the composition of food and mechanism of digestion absorption and assimilation.
- Attained knowledge of respiration and excretion and understood the mechanism of transport of gases and urine formation.
- Described the mechanism of circulation and composition of blood
- Knowledge of neuromuscular coordination and the mechanism of osmoregulation in animals and endocrine system and their function is attained.
- Understood the menstrual cycle and the role of contraceptive in population control


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CO8. BIODIVERSITY OF CHORDATES

- Imparted the knowledge on ecology of some important amphibians, reptiles, birds and mammals.
- Impart knowledge in comparative anatomy and development systems of chordates.
- Make able to discuss some and very important phenomena in Chordates.
- Know about the conservation and management strategies of the chordate fauna.

CO9. BIOCHEMISTRY

- Comprehended the energy source, chemical bonds and the principles of thermodynamic understood the importance of acid base balance
- Attained the knowledge of macromolecule such as carbohydrates, protein and fat, their types and significance.
- Understood the knowledge of cholesterol and its biological significance
- Described the enzymes, mechanism of enzyme action and factors affecting the enzyme activity
- Understood the types and importance of vitamins

CO10. LAB -CHORDATES, ANIMAL PHYSIOLOGY, BIOCHEMISTRY

- Obtained the knowledge about direct observation of Bones and important specimen of chordates.
- Attained knowledge of qualitative analysis of macromolecules, excretory products, blood glucose and cholesterol.
- Understood the enzyme reaction and influence of temperature on enzyme action.
- Skill development for the observation of blood cells and haemin crystals.
- Understood the working principle and applications of physiological instruments.

CO11. ENVIRONMENTAL BIOLOGY

- Understood and appreciate the environment and ecological services of life on earth.
- Understood the abiotic factors of environment and biogeochemical cycle and intraspecific relationships of animals.
- Acquired knowledge of ecosystem, food chain, energy flow and productivity and
- understood pond as a model ecosystem Imparted knowledge of habitat ecology, pollution and bioremediation of polluted environment

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CO12. DEVELOPMENTAL BIOLOGY AND EVOLUTION

- Understood the process of development of animals.
- Understood the process of organogenesis of selected organs, development of extra embryonic membrane and the nature and physiology of placenta.
- Came to know the inducer and inductor role in embryogenesis and knowledge about metamorphosis and the process of regeneration.
- Understood the theories of evolution and highlighted the role of evidences in support of evolution
- Described the evolutionary knowledge through the concepts of coloration and mimicry.

CO13. AQUACULTURE

- Described the fisheries and fishery industries
- Understood the various types and methods of aquaculture practices.
- Understood the physiology and reproductive mechanisms of important fishes.
- Understood the modern techniques and methods of fishery industries.
- Attained knowledge about important cultivable fin fishes, shell fishes and importance of value added fishery products

CO14. PEST MANAGEMENT

- Described Taxonomy, Morphological sex differences in larva and adult.
- Understood the culture of mulberry plants
- Came to know about the culture methods of *B.mori* and mulberry silk
- Described the diseases and pests of *B.mori*.
- Studied the quality of silk, silk gland and marketing strategies of silk

CO15. LAB - EVOLUTION, AQUACULTURE AND PEST MANAGEMENT

- Obtained the knowledge about direct observation of fossils and evolutionary important specimen by which evolutionary relationship of animal groups.
- Attained knowledge on the observation of preserved specimens and instruments of sericulture and fisheries



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