

**SYLLABUS**  
**B.Sc. Part-II**  
**(Semester III & IV)**  
**SEMESTER III**

**Paper-I : Life and Diversity of Chordates - I**

**External Marks : 40**

**Internal Assessment: 10**

**Time allowed : 3 Hours**

*Note: Nine questions are to be set in all and the candidates are required to attempt five questions including the compulsory question.*

1. Question 1 is compulsory consisting of 10 parts (1.5 marks each) covering the entire syllabus. Answer to each part should not exceed 20 words.
2. Out of remaining eight, four questions are to be set from each section A & B, possibly splitting them in parts. Candidates are required to attempt four questions, two from each section.

**SECTION-A**

Functional morphology of the types included with special emphasis on the adaptations to their modes of life and environment. General characters and classification of all phyla upto orders with examples emphasizing their biodiversity, economic importance and conservation measures where required.

1. **Chordates**: Origin and Evolutionary tree.
2. **Protochordates**: Systematic position, distribution, ecology, morphology and affinities Urochordata *Herdmania* - type study  
Cephalochordata, *Amphioxus* – type study

**SECTION-B**

3. **Cyclostomes**: Type study of *Petromyzon*.
4. **Pisces**: Scales & Fins, Parental care in fishes, fish migration. Types study of Labeo

## SEMESTER – III

### **Paper-II : Mammalian Physiology-I**

**External Marks : 40**

**Internal Assessment: 10**

**Time allowed : 3 Hours**

*Note: Nine questions are to be set in all and the candidates are required to attempt five questions including the compulsory question*

1. Question 1 is compulsory consisting of 10 parts (1.5 marks each) covering the entire syllabus. Answer to each part should not exceed 20 words.
2. Out of remaining eight, four questions are to be set from each section A & B, possibly splitting them in parts. Candidates are required to attempt four questions, two from each section.

#### SECTION-A

1. Introduction, Classification, Structure, function and general properties of proteins, carbohydrates
2. Nomenclature, Classification and mechanisms of enzyme action.
3. Transport through biomembranes (Active and Passive), buffers

#### SECTION-B

4. **Nutrition:** Nutritional components; Carbohydrates, fats, lipids, Vitamins and Minerals. Types of nutrition & feeding, Digestion of dietary constituents, viz. lipids, proteins, carbohydrates & nucleic acids; symbiotic digestion. Absorption of nutrients & assimilation; control of enzyme secretion.
5. **Muscles:** Types of muscles, ultra-structure of skeletal muscle. Bio-chemical and physical events during muscle contraction; single muscle twitch, tetanus, muscle fatigue muscle, tone, oxygen debt., Cori's cycle, single unit smooth muscles, their physical and functional properties.
6. **Bones:** Structure and types, classification, bone growth and resorption, effect of ageing on Skeletal system and bone disorders.