SYLLABUS

Life and Diversity from Mollusca to Hemichordata & Genetics – II

External Marks: 40
Internal Assessment : 10 **Time allotted : 3 Hours**

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

1. Question 1 is compulsory consisting of 10 parts (1.0 marks each) converting 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 is required to attempt four questions, two from each section

1. Phylum - Mollusca:

i) General characters and classification up to order level
ii) Biodiversity and economic importance
iii) Type study of - *Pila*
iv) Torsion and detorsion in gastropoda
v) Respiration and foot

2. Phylum – Enchinodermata :

i) General characters and classification up to order level
ii) Biodiversity and economic importance
vii) Type study – *Asteries* (Sea Star)
viii) Echinoderm larvae
ix) Aristotle's Lantern

3. **Phylum Hemichordate :** General Character; Type Study of Ballanglosus

3. **Multiple alleslism :** Eye colour in Drosophila; A, B, O blood group in man.
4. **Human genetics :** Human karyotype, Chromosomal abnormalities involving autosomes and sex chromosomes, monozygotic and dizygotic twins.
5. **Inborn errors of metabolism** (Alcaptonuria, Phenylketonuria, Albinism, sickle-cell anaemia).
6. **Nature and function of genetic material :** Structure and type of nucleic acids; Protein synthesis.
7. Eugenics, euthenics and euphenics; spontaneous and induced (chemical and radiations) mutations; gene mutations; chemical basis of mutations; transition,

transversion, structural chromosomal aberrations (deletion, duplication, inversion and translocation); Numerical aberrations (autoploidy, euploidy and polyploidy in animals)

8. **Applied genetics :** genetic counseling, pre-natal diagnostics, DNA-finger printing, transgenic animals.