

B.Sc. IV Semester (Zoology)
Subject: Genetics, Taxonomy and Evolution
Course Code- ZO (N) -202.

Marks 70+30=100

Credit: 3

Syllabus

Block I: Genetics

Unit 1: Mendalism and Elements of heredity .Elements of heredity and variation, Mendel's principles of heredity, linkage (Coupling and repulsion), crossing-over (mechanism, theories and importance). Chromosomal mapping (Three points cross).

Unit 2: Chromosomal Mutation: Classification, Translocation, Inversion, Deletion, Duplication, Euploidy, Aneuploidy and Polysomy

Unit 3: Genetic interaction: Gene structure and function

Unit 4: Human genetics : Recessive inherited disorder, dominant inherited disorder, inborn errors

Block II: Taxonomic concept

Unit 5: Taxonomy and Systematic: Introduction to taxonomy and its relationship with systematic.Importance and applications of biosystematics.

Unit 6: Zoological Nomenclature: International Code of Zoological Nomenclature, Binomial and Trinomial components of classification.

Unit 7: Kinds of taxonomic characters and classification: Taxonomic characters: Morphological, Embryological, Cytogenetically, Biochemical and Numerical. The components of classification and Linnaean hierarchy.

Unit 8: Concepts of Species: Concept of species and speciation and potential modes of speciation.

Block III. Evolution

Unit 9: Origin of life : Special creation theory, theories of spontaneous generation, cosmozoic theory, theory of chemical evolution and spontaneous origin of life at molecular level

Unit 10: Concept of organic evolution: Concept of organic evolution: evidences from paleontology (types of fossils and determination of age of rocks and fossils), taxonomy, comparative anatomy, comparative embryology, physiology and biochemistry and cytology.

Unit 11: Theory of organic evolution: Theories of organic evolution: Lamarckism, Darwinism, Mutation theory and modern synthetic theory

Unit 12: Evolutionary concept: Modern evolutionary Concept and details of micro, macro and mega evolution

Unit 13: Zoogeographical realms Major Zoo-geographical realms and distribution patterns of animals in different zoogeographical realms .The Bio geographically regions in India.

