

SEMESTER-IV

MEN-C 401 : Faunistic Taxonomy and biodiversity conservation M.M.: 70

UNIT- I

Definition and basic concepts of biosystematics and taxonomy, Importance of applications of bio-systematics, Recent trends in biosystematics: (Chemotaxonomy, cytotaxonomy and molecular taxonomy), Taxonomic procedures, collection, preservation, correcting, process of identification, taxonomic keys, taxonomic characters, theories of biological classification, origin of reproductive isolation, biological mechanism of genetic incompatibility.

UNIT –II

General characters, classification and affinities of Main faunistic groups: Protozoa, Platyhelminthes, Aschelhelmithe Annelida, Arthropoda, Mollusca up to class level giving suitable Classification of chordates: Pisces, Amphibia, Reptilia, Birds and Mammalia up to order level giving suitable examples of Indian Himalayan region only.

UNIT-III

Concepts of Biodiversity in Indian Himalayan regions, IUCN categorizations of major endemic and exotic species in groups: Pisces, Reptiles, Birds and Mammals. Value of their biological diversity, loss of biological diversity, causes of species extinctions. Public participation in biodiversity conservation.

UNIT- IV

Biodiversity indices: α , β , γ diversity, Shannon-Weiner index, Simpson index, Similarity and dissimilarity index, Associated index. Calculating various biotic indices through given data. Dimension of speciation and taxonomic characters, species concept: Species category, different species concepts, sub-species and other intra-specific categories, mechanism of speciation in panmictic and apomictic species, International Code of Zoological Nomenclature (ICZN), Interpretation and application of important rules

UNIT-V

Conservation and Management – National Legislation – Protection of Wild flora and Fauna -Protection of National Habitats - National and International Protected Areas – Current Practices in Conservation - *in situ* Conservation and *ex situ* Conservation of Threatened Species — Patent Act (1970) –Biodiversity Conventions — NBSAP – Megadiversity zones and Hot Spots: Concepts, Distribution and Importance – Use of Biodiversity: Source of food, medicine, raw material, aesthetic and cultural – Biodiversity Prospecting.

NOTE: The question paper shall consist of two sections (A & B). Section A shall contain ten short answer type questions of six marks each and student has to attempt any five questions in about 150 words each. Section B shall consist eight long answer type questions of ten marks each and student shall be required to attempt any four questions in detail. Questions shall be uniformly distributed from the entire syllabus. The previous year paper can be used as a guideline and the following syllabus should be strictly followed while setting the question paper.