

**M.Sc (Previous) Environmental Sciences  
Semester I**

**Paper I**

**BASIC CONCEPTS AND ELEMENTS OF ECOLOGY AND ENVIRONMENT**

**Unit I**

Basic concept of ecology and Environment, Scope of ecology and its relations with other disciplines of ecology; Principles pertaining to ecosystem; ecosystem components; Ecosystem energetics; processes of primary productivity, gross and net productivity; Homeostasis; Principles of limiting factors.

**Unit II**

Biogeochemical cycles in Environment: concept and significance; Carbon cycle, Nitrogen cycle, Phosphorus cycle, Sulphur cycle; Autecology: Basic principles; concept of population growth and survivorship; population characteristics and dynamics; population growth forms and concept of carrying capacity; Population regulation,

**Unit III**

Biotic community: concept and classification; community characteristics; Ecotone and continuum concept, Life form and biological spectrum; Community coefficients; Ecological dominance and ecological niche; ecological succession, concept of climax and community stability.

**Unit IV**

Aquatic ecosystems: Physicochemical characteristics of fresh water environment, Biotic communities of pond and lakes, thermal stratification of lakes, conservation and management of fresh water habitats. Physicochemical characteristics of Marine ecosystem, biotic communities of oceanic regions, coral reefs and mangroves, Estuarine ecology.

**Unit V**

Terrestrial Environment: Physicochemical characteristics; Forest Biomes, Grassland Biomes, Desert Biomes, Tundra Biomes; Flora and Vegetation of India; Endemism; Age and Area hypothesis, Dispersal dynamics.