

T.Y.B.Sc. Course Title: Plant Ecology, Diversity and Conservation

W.E.F.: Academic Year 2026-27

Credits: 2 (No. of Lectures =30)

Credit 1 (15 Lectures) (15 Hours)

Topic 1: Plant Ecology-

8L

Introduction, Types: Autoecology and Synecology.

Ecological concepts: Ecological indicators, Ecological niche, Ecological pyramids, Ecological restoration, Ecological succession, Ecotourism.

Ecological grouping of the plants with reference to their significance of adaptive external and internal features:

- a) Hydrophytes
- b) Mesophytes
- c) Xerophytes
- d) Halophytes with examples.

Topic 2: Introduction to Plant diversity

7L

- Plant diversity: Definition, Concept.
- Ecosystem diversity: Definition, Structure and function of ecosystems; Energy flow in an ecosystem, food chains and webs.
- Major ecosystems: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystem (Ponds, streams, lakes, rivers, oceans, estuaries).

Topic 3: Conservation of Plant diversity

15 L

- Concept, Methods of Conservation: *In-situ* and *Ex-situ* enlisting, Study of Biosphere reserve programs, National parks.
- Study of Sacred Groves and Eco sensitive zones in Maharashtra, Botanical gardens and importance.
- Forest Types in India, Chipko movement, Contribution of Hon. Maruti Chitampalli (Aranyvrishi).
- Threats to Plant diversity: Habitat loss, Poaching of wild life, man-wildlife conflicts, IUCN Red List Categories, Endemism: Concept, Endemic plants in India, Hot spots in India.
- Status of Plant Diversity of Pune District, Importance of Plant diversity, Plant diversity Conservation strategies, Status of Plant diversity Conservation in India