

ENVIRONMENTAL BIOLOGY AND ECOLOGY

MODULE-I

Ecology, Definition, Branches and Scope of ecology. Ecological adaptation & concept of limiting factor. Different types of ecosystem in India. Structural and functional attributes of an ecosystem. Biotic and Abiotic components, Food chain, Food web and energy flow. Ecological succession. Biogeochemical cycle.

MODULE-II

Concept of population & population attributes. Concept of carrying capacity and environmental resistance. Development and evolution of ecosystem. Population interaction. Qualitative and quantitative characteristic of a plant community.

MODULE-III

Effects of different types of pollution on aquatic biota, Effect of eutrophication. Concept of stress & strain. Definition and function of Biomonitoring. Biotechnology- Fermentation, Vermiculture and Biofertilizer technology.

MODULE-IV

Eco-toxicology: Background, Importance & measurement, Ecosystem response to de-oxygenation, Eutrophication, Pesticides & Bio-accumulation. Ecosystems and the Millennium Development Goals, Landscape ecology. Biodiversity conservation methods: In situ and Ex situ techniques.

Text Books & Reference Books:

1. Fundamentals of Ecology by M.C.Dash & Satya Prakash Dash Tata Mc Graw-Hill Publishing company limited, New Delhi
2. Ecology & Environment by P.B.Sharma – Rastogi Publication.
3. Introduction to Environmental Engg. – G.M.Masters. Prentice Hall of India (1991).
4. Ecology by N .S. Su bramanyanetal - Narosa publishing House, New Delhi.
5. Biological indicators of fresh water pollution and environmental management, Elsevier, London.
6. Environmental pollution monitoring & control - S.M. Khopkar- New Age, New Delhi.
7. Fundamentals of Ecology by E.P. Odum – W.B. Foundation company