

MANONMANIAM SUNDARANAR UNIVERSITY, TIRUNELVELI

SYLLABUS FOR ENVIRONMENTAL STUDIES FOR

UNDER GRADUATE COURSES -

PART IV- COMPULSORY PAPER

UNIT I: THE MULTIDISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES

Definition, scope and importance

Natural resources and associated problems:

- a) Forest resources: Use and over-exploitation, deforestation, timber extraction, dams and their effects on forests and tribal people.
- b) Water resources: Use and over-utilization of surface and ground water, floods, drought, dams-benefits and problems, water conservation and watershed management.
- c) Mineral resources: Use and exploitation, environmental effects.
- d) Food resources: World food problems, changes, effects of modern agriculture, fertilizer-pesticide problems.
- e) Energy resources: Growing energy needs, renewables and non renewable energy sources, alternate energy sources.
- f) Land resources: Land as a resource, land degradation, man-induced landslides, soil erosion and desertification.

UNIT II: ECOSYSTEMS

- a) Forest Ecosystem
- b) Grassland Ecosystem
- c) Desert ecosystem
- d) Aquatic Ecosystem (Ponds, rivers, oceans, estuaries)
Energy flow in the ecosystem
Ecological succession
Food Chains, Food Webs and Ecological Pyramids.

UNIT III: BIODIVERSITY AND ITS CONSERVATION

Introduction Definition: Genetic, species and ecosystem diversity.

Biogeographical classification of India

Values of Biodiversity

Biodiversity at global, national and local levels

India as a mega-diversity nation

Hot-Spots of biodiversity

Threats to biodiversity

Endangered and endemic species of India

Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

UNIT IV: ENVIRONMENTAL POLLUTION

Definition- Causes, effects and control measures of:-

- a) Air Pollution
- b) Water Pollution
- c) Soil Pollution
- d) Marine Pollution
- e) Noise Pollution.
- f) Thermal Pollution

Solid Waste Management

Disaster Management: Floods, earthquake, cyclone and landslides.

UNIT V: SOCIAL ISSUES AND THE ENVIRONMENT

Climatic change, global warming, acid rain, ozone depletion.

Wasteland reclamation

Consumerism and Waste products, use and through plastics

Environment Protection Act

Air (Prevention and Control of Pollution) Act

Water (Prevention and Control of Pollution) Act

Wildlife Protection Act

Forest Conservation Act

Population Explosion — Family Welfare Programme

Human Rights

REFERENCES:

1. G.S. Vijayalakshmi, A.G. Murugesan and N. Sukumaran. 2006. Basics of Environmental Science, Manonmaniam Sundaranar University Publications, Tirunelveli , pp.160.
2. Agarwal. K.C. 2001. Environmental Biology, Nidi Publications Limited, Bikaner.
3. A.K.De. 1999. Environmental Chemistry, Wiley Eastern Limited, India.
4. Jadhav,H. and Bhosale, V.M.1995. Environmental Protection and Laws, Himalaya Publishing House, Delhi. pp284.
5. Odum, E.P.1971. Fundamentals of Ecology, W.B.Saunders Co., USA. pp.574.