ENVIRONMENTAL STUDIES
(Compulsory Paper for All Streams at UG Level)

The examination shall consist of a multiple choice based question paper with total 100 questions. Each correct answer will be given 0.75 marks each and each wrong answer will be awarded zero marks. No negative marking. Marks obtained in this paper will be added to the first year optional subjects marks.

Max. Marks=100. Internal: 25 marks, External: 75 marks, Time: 3hrs

Unit – I

The Multidisciplinary Nature of Environmental Studies and Natural Resources.

Definition, scope and importance; Need for public awareness.

Renewable and non-renewable resources : Natural resources and associated problems.

a) **Forest resources :** Use and over-exploitation, deforestation, case studies, Timber extraction, mining dame and their effects on forests and tribal people

b) **Water resources :** Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.

(c) **Minerals resources :** Use and exploitation, environmental effects of extracting and using minerals recourses, case studies.

(d) **Food resources :** World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

(e) **Energy resources :** Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources, Case studies.

(f) **Land resources :** Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

- Role of an individual in conversation of natural resources
- Equitable use of resources for sustainable lifestyles. (10 lectures).

Unit 2 : Ecosystem

- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Ecological succession.

- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristics features, structure and function of the following ecosystem:- a Forest ecosystem, b. Grassland ecosystem, C. Desert ecosystem, d. Aquatic ecosystem (ponds, streams, lakes, rivers, oceans, estuaries) (6 lectures)

Unit 3: Biodiversity and Its conservation

- Introduction – Definition : genetic, species and ecosystem diversity.
- Biogeographically classification of India.
- Value of Biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values.
- Biodiversity at global, national and local levels.
- India as a mega-diversity nation.
- Hot-Spots of biodiversity.
- Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts.
- Endangered and endemic species of India
- Conservation of biodiversity: In-suit and Ex-suit conservation of biodiversity. (8 lectures).

Unit 4: 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. g. Nuclear hazards
- Solid waste Management : Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution.
- Pollution case studies.
- Disaster management: floods, earthquake, cyclone and landslide.
  (8 lecturers)

Unit – 5 : Social Issues and the Environment :

- From Unsustainable to sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people; its problem and concerns, Case studies.
- Environmental ethics : Issues and possible solutions.
- Climatic change, global warming, field rain, ozone layer depletion, nuclear accidents and holocaust, Case studies.
- Wasteland reclamation.
- Consumerism Protection Act.
- Air (Prevention and control of Pollution) Act.
- Water (Prevention and control of Pollution) Act.
- Wild life protection Act.
- Forest conservation Act.
- Issues involved in enforcement of environment legislation

- Public awareness.
- Population growth, variation among actions.
- Population explosion – Family Welfare Programme.
- Environment and human health
- Human Rights
- Value Education.
- HIV/AIDS
- Women and Child Welfare.
- Role of information: Technology in Environment and human health.
- Case Studies

(13 Lectures)

Suggested Readings :

1. Choudhary B.L. and J. Pandey (2004) : Environmental Studies (in hindi) Apex publishing house, Udaipur

2. Purohit S.S. Q.J. Shammi and A.K. Agarwal (2004), A Text Book of Environmental Sciences (In English), Student Edition, Jodhpur