

### 3. COMPULSORY PAPER OF ENVIRONMENTAL STUDIES

Compulsory in I Year for all streams at undergraduate level

#### Scheme of examination

Time	Min Marks	Max. Marks
3 hrs	36	100

This paper will contain 100 multiple choice questions. Each question will carry 1 mark.

Students should be encouraged to visit places of Environmental Importance including Natural and Manmade Habitat.

#### Note:

1. The marks secured in this paper shall not be counted in awarding the division to a candidate.
2. The candidates will have to clear this compulsory paper in three chances.
3. Non-appearing or absence in the examination of compulsory paper will be counted as a chance.

#### Unit.1: The Multidisciplinary nature of environmental studies

Definition, scope and importance- Relationship between Environmental Studies, and other branches of science and social sciences.

Need for Environmental awareness, Environmental education in present day context.

#### Unit.2: Natural Resources and Challenges

- a. Natural resources and associated problems, Classification of resources: renewable resources, non renewable resources, classes of earth resources, resources regions: Definition and criteria, resource conservation.
- b. Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people.
- c. Water resources: Use and over-utilization of surface and groundwater, floods, drought conflicts over water, dams-benefits and problems.
- d. Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

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- e. Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticides problems, water logging, salinity, case studies.
  - f. Energy resources: Growing energy need, renewable and nonrenewable energy sources, use of alternate energy sources. Case studies.
  - g. Land resources: Land as a resource, Land degradation man induced Landslides, soil erosion and desertification.
- Role of an individual in conservation of natural resources.
  - Equitable use of resources for sustainable lifestyles.

### Unit 3: Ecosystems, Concepts, Structure, Functions and Types


- 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, Tropical Temperate and Alpine Ecosystem
  - b. Grassland ecosystem and Their Types
  - c. Desert ecosystem with emphasis on Thar Desert
  - d. Aquatic ecosystems(ponds, streams, lakes, rivers, oceans, estuaries) and Wet Lands

### Unit 4: 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 level
- India as a mega-diversity nation
- Hot-spot of biodiversity
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts
- Endangered, Threatened and endemic species of India
- Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity
- Red Data Book

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**Unit 5 : Environmental Pollution and Control Measures**  
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 landslides

**Unit 6 : Social issues, Environment, Laws and Sustainability**


- From Unsustainable to Sustainable development
- Urban problems related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns. Case studies
- Environmental ethics: Issues and possible solution.
- Climate change, global warming, acid rain ozone layer depletion, nuclear accidents and holocaust. Case studies
- Wasteland reclamation.
- Consumerism and waste product.
- Environmental Protection Act.
- Air (Prevention and Control of Pollution) Act
- Wild life protection Act
- Forest Conservation Act
- Biological Diversity Act
- Issues involved in enforcement of environmental legislation
- Public Awareness.

**Unit 7: Human Population and the Environment**

- Population growth, variation among nations
- 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

Session 2021-22

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**Suggested Readings:-**

1. Chauhan, Surendra Singh. 2001. Biodiversity, Biopiracy and Biopolitics: The Global Perspectives, Kalinga Publications, New Delhi.
2. Chauhan, Surendra Singh. 2004. Environmental Protection and Management: From Stockholm to Rio and After, Kalinga Publications, New Delhi.
3. Diwan A.P. and Arora D.K.1995. Human Ecology Anmol Publication Pvt.Ltd.,New Delhi.
4. Dubey, R.M.1992. Human Ecology and Environmental Education,Chaug Publications,Allahabad.
5. Goudie,Andrew.The Human Impact.
6. Husain Maxia.1994 Human Geography,Rawat Publication,Jaipur.
7. Johnston, R.J.Ed.1986 Dictionary of Human geography,National Publication,New Delhi.
8. Malik,S.L.and Bhattacharya D.K.1986. Aspects of Human Ecology,Northern Book Center,New Delhi.
9. Mishra,R.P and Bhooshan,B.S.1979.Human Settlements in Asia.Public,Polices and programmes Haritage publisher,New Delhi.
- 10.Nathawat, G.S.1985. Human Ecology,An Indian perspective,Indian Human Ecology Council,Jaipur.
- 11.Russel, Bartrand, 1976.Impact of Science of society Unwin,Publisher,Indian. (paper back).
- 12.Sinha Rajiv, 1996.Gloobal Biodiversity Ina.,Shri publication,Jaipur.
- 13.Sinha Rajiv K., 1994. Development without Desertction
- 14.Envirenmentalst,Jaipur. Sinha Rajiv K., 1996.Environmental Crises and Human at Risk,In A Shri Publication,Jaipur.
- 15.Smith, Dianne, 1984.Urban Ecology,George Allen,London.
- 16.Swarnkar, R.C.1985.Indian Tribes.Printwell publisher,Jaipur.
- 17.Tivy,Joy and O'Hugegreg, 1985.Human Impact on the Ecosystem Edinburgh George Allen Boyd.
18. United Nations Development Report, 1996.Human Development Report, 1996.Oxford University Press,Delhi.
- 19.Vannathony & Rogers Paul, 1974. Human Ecology and World Development,Flehum Press,New York.

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