

# FIRST YEAR T.D.C., 2007-2008

## ENVIRONMENTAL STUDIES

(Credit Course)

(Compulsory for all Faculties)

The Environmental Studies (Compulsory) Examination shall consist of one theory paper of three hour duration and a field work. The student has to pass in theory as well as in field work separately.

Distribution of Marks	Max. Marks	Min. Pass Marks
Theory Paper	75	27
Field Work	25	09
<b>Total</b>	<b>100</b>	<b>36</b>

### Pattern of question paper in the examination and distribution of marks :

The Environmental Studies (Compulsory) Examination will have a theory paper consisting two parts, A and B and a field work.

**In Part A**, total 10 questions will be set in the paper selecting at least one from each unit. Each question to be answered in about 50 words. All questions are compulsory. Each question carries 2.5 marks, total 25 marks.

**In Part B**, total 10 questions will be set, selecting at least one from each unit. Five questions have to be answered by the student selecting not more one from a unit. Each question to be answered in about 350

words. These questions carries 10 marks each, total 50 marks.

**Field Work** : Student will have to submit a typed/ hand written report of about 20 pages based on study of a local area of environmental interest. The report will be assessed by an internal examiner under the supervision of Dean/Principal of the College.

### Suggested Books :

1. Chaudhary B.L. and J. Pandey (2004) : Environmental Studies (In Hindi), APEX Publishing House, Udaipur.
2. Purohit, S.S., Q.J. Shammi and A.K. Agrawal (2004), A Text Book of Environmental Sciences (In English), Student Edition, Jodhpur.



## SYLLABUS

### UNIT-1 : The Multidisciplinary Nature of Environmental Studies

Definition, Scope and Importance; Need for public awareness (2 lectures).

### UNIT-2 : Natural Resources

**Renewable and Non-renewable Resources** : Natural resources and associated problems.

- a) **Forest Resources** : Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams 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) **Mineral Resources** : Use and exploitation, environmental effects of extracting and using minerals resources, 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 conservation of natural resources.
- \* Equitable use of resources for sustainable lifestyles. (8 Lectures)

### UNIT-3 : 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, characteristic features, structure and function of the following ecosystem - (a) Forest ecosystem, (b) Grassland ecosystem, (c) Desert ecosystem, (d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) (6 lectures).

### UNIT-4 : Bio-diversity and its conservation

- \* Introduction-Definition : Genetic, species and ecosystem diversity.
- \* Biogeographical 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 of biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts.
- \* Endangered and endemic species of India.



- \* Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity **(8 lectures)**

#### **UNIT-5 : 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 landslides. **(8 lectures)**

#### **UNIT-6 : 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, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- \* Wasteland reclamation
- \* Consumerism and waste products
- \* Environment Protection Act

- \* Air (Prevention and Control of Pollution) Act
- \* Water (Prevention and Control of Pollution) Act
- \* Wildlife Protection Act
- \* Forest Conservation Act
- \* Issues involved in enforcement of environment legislation
- \* Public awareness **(7 lectures)**.

#### **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 **(6 lectures)**

#### **UNIT-8 : Field Work**

- \* Visit to a local area to document environmental assets - river/forest/grassland/hill/mountain
- \* Visit to a local polluted site - Urban/Rural/Industrial/Agricultural
- \* Study of common plants, insects, birds
- \* Study of simple ecosystems - pond, river, hill slopes etc. (Field work Equal to **5 lecture** hours).