

All UG Courses – IInd Year (3 Semester) Environmental and Road Safety Awareness
Session: 2022-23, 2023-24 & 2024-25

Total Marks: 100
Theory: 70 marks
Internal Assessment: 15
(5 for Attendance & 10 for MST)
Mandatory field visit to PG
Science City & Report: 15 Marks

Max Time: 3 hrs.
Lectures per week 5
Credits: 04

INSTRUCTIONS FOR THE PAPER SETTERS (Regular Students)

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus. Each question shall carry 10 marks. Section C will consist of 10 short answer type questions of 3 marks each.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt any two questions from each section A and B. Section C is compulsory.

PRIVATE/DISTANCE EDUCATION STUDENTS

Max Marks: 100

Max Time: 3hrs.
Lectures per week 5

INSTRUCTIONS FOR THE PAPER SETTERS

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus. Each question shall carry 10 marks. Section C will consist of 10 short answer type questions of 3 marks each.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt any two questions from each section A and B. Section C is compulsory.

SECTION-A

INTRODUCTION TO ENVIRONMENTAL STUDIES:

The multidisciplinary nature of environmental studies. Definition, scope and importance Concept of Biosphere - Lithosphere, Hydrosphere, Atmosphere.

ECOSYSTEM & BIODIVERSITY CONSERVATION

Ecosystem and its components, Types of Ecosystems Biodiversity - Definition and Value, Threats to biodiversity and its conservation Level of biological diversity, genetic, species and ecosystem diversity; bio-geographic zones of India; biodiversity patterns and global biodiversity hot spots. India as Mega-biodiversity nation; Endangered and endemic species of India. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and informational value.


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NATURAL RESOURCES-RENEWABLE AND NON RENEWABLE RESOURCES

Land resources and land use change; land degradation soil erosion and desertification
Deforestation: causes and impacts due to mining, dam building on environment, Forests, Biodiversity
and tribal populations.

Water: Use and over-exploitation of surface and ground water Floods, droughts, conflicts over water
(international & inter state)

Energy resources: renewable and nonrenewable energy sources, use of alternate energy sources,
growing energy needs, case studies

Environmental Pollution

Environmental Pollution: types, causes, effects and controls; Air, Water, Soil and noise pollution

Nuclear hazards and human health risks Solid waste management, Source Segregations: Control
measures of urban and Industrial waste. Pollution case studies

SECTION-B

ENVIRONMENTAL PROTECTION LAWS IN INDIA

Environmental protection act for: Air (Prevention and control of pollution) Water (Prevention and
Control of pollution) Wild life Forest Conservation Issues involved in the enforcement of
environmental legislation Role of an individual in prevention of pollution.

Environmental policies & Practices; Climate change, global warming, ozone layer depletion, acid rain
and impacts on human communities and agriculture.

Human Communities and the Environment

Human population growth: Impacts on environment, human health and welfare Sanitation &
Hygiene, Resettlement and rehabilitation of project affected persons: case studies Disaster
management: floods, earthquake cyclones and landslides. Environment movements: Chipko, Silent
valley, Bishnois of Rajasthan. Environmental ethics: Role of Indian and other religions and cultures in
environmental conservation for a Clean green pollution free state.

Environmental communication and public awareness, case studies (e.g. CNG vehicles in Delhi)

ROAD SAFETY AWARENESS

Concept and significance of Road safety, Traffic signs, Traffic rules Traffic Offences and penalties,
How to obtain license, Role of first aid in Road Safety.

Stubble Burning

Meaning of Stubble burning.

Impact on health & environment.

Management and alternative uses of crop stubble

Environmental Legislations and Policies for Restriction of Agriculture Residue Burning in Punjab.

Field Work

Visit to an area to document environmental assets: river/Forest Flora/Fauna etc.

Visit to Local polluted site urban/Rural/Industrial/Agricultural

Study of common Plants Insects, Birds and basic principles of identification

Study of simple ecosystems-pond river, Delhi Ridge etc.

Suggested Readings

- 1 Carson, R. 2002 Silent Spring Houghton Mifflin Harcourt
- 2 Gadgil M. & Guha R. 1993. This Fissured Land: An Ecological History of India Univ of California Press
- 3 Gleeson, B. and Low, N. (eds) 1999 Global Ethics and Environment London Routledge.
- 4 Gleick P.H. 1993 Water in Crisis Pacific Institute for Studies in Dev. Environment & Security Stockholam Env. Institute. Oxford Univ. Press.
- 5 Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalayas dams Science, 339:36-37.
7. McCully, P. 1996. Rivers no more: the environmental effects of dams (pp.29-64). Zed Books
McNeill John R. 2000 Something New Under the Sun: An Environmental History of the Twentieth Century.
- 9 Odum E.P. & T. & Andrews J. 1971. Fundamentals of Ecology Philadelphia: Saunders
10. Pepper, IL., Gerba, C.P & Brusseau, M.L. 2011. Environmental and Pollution Sciences. Academic Press
11. Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt.Ltd
- 12 Raven, P.H., Hassenzahl, D.M & Berg R. 2012. Environment 8Th edition John Wiles & Sons
13. Rosencranz, A., Divan, S., & Nobie, M.L. 2001. Environmental law and policy in India Tripathi 1992
14. Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing. New Delhi.
- 16 Sodhi N.S, Gibson L. & Raven P.H (eds) 2013 Conservation Biology: Voices from the Tropics. John Wiley & Sons.
17. Thapar V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent
18. Warren, C.E. 1971. Biology and Water Pollution Control WB Saunders
- 19 Wilson, E.O. 2006. The Creation: An appeal to save life on earth. New York: Norton.
- 20 World commission on Environment and Development 1987 Our Common Future Oxford University Press.


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