COURSE CODE: UG/MD/I/EVS-Paper-I

COURSE TITLE: ENVIRONMENTAL STUDIES-I

Credit: 2 (Marks: 50)
Exam. Duration: 2Hr **Theory + Internal assessment: 35+15**

Course Objectvie

After completing this unit, students will be able to:

- Understand the concept of natural resources, biodiversity, and ecosystems; identify types of natural resources and ecosystems and their global distribution along with factors affecting the availability, and efforts for their conservation and management.
- Develop a critical understanding of local, regional and global environmental and human health issues and sensitize themselves to adverse health impacts of pollution.

Note for the paper setter: The question paper will consist of five questions in all. The first question will be compulsory and will consist of seven short questions of 1 marks, each covering the whole syllabus. In addition, four more questions will be set unit-wise, two questions from each unit. The candidates are required to attempt to more questions of 14 marks each, selecting at least one question from each unit.

Unit I

Natural Resources, Biodiversity and Ecosystems

Natural resources: Definition and Classification; Biotic resources: forests, grasslands, wetlands, wildlife, fresh water and marine; Water resources: fresh water and marine; Soil and mineral resources: Soil as a resource and its degradation; important minerals, Energy resources: Sources and classification, non-renewable and renewable energy sources, over-exploitation and environmental impact; Biodiversity: definition, levels and types of biodiversity, Biodiversity in India and the world; Biodiversity hotspots; Ecosystem: definition, major ecosystem in India (forests, wetlands, grasslands, agriculture, coastal and marine); Conservation policies: in-situ and ex-situ conservation; National and International conservation efforts

Unit II

Environmental Issues: Local, Regional and Global

Local: Municipal solid waste, Hazardous waste, acid rain, smog, Land use and Land cover change, land degradation, deforestation, desertification, urbanization, biodiversity loss. Regional: Soil pollution: definition and sources of major pollutants, effect on soil and human health, remediation measure. Noise pollution: Definition and sources of noise pollution, Noise standards, effect on human health. Global: Air pollution: definition, major pollutants; Effect on environment and human; National Ambient Air Quality Standards; Indoor air pollution; Water pollution: Definition and sources, surface and groundwater pollution, Water quality parameters and standards, Effect on human and aquatic life. Thermal and Radioactive pollution: Sources and impact on human health and ecosystems. Ozone layer depletion; Climate change.

Suggested readings

1. Chiras, D. D and Reganold, J. P. (2010). Natural Resource Conservation: Management for a Sustainable Future.10th edition, Upper Saddle River, N. J. Benjamin/Cummins/Pearson.
2. John W. Twidell and Anthony D. (2015). Renewable Energy Sources, 3rd Edition, Weir Publisher (ELBS)
3. William P.Cunningham and Mary A. (2015) Cunningham Environmental Science: A Global Concern, Publisher (Mc-Graw Hill, USA)
4. Gilbert M. Masters and W. P. (2008). An Introduction to Environmental Engineering and Science, Ela Publisher (Pearson)
5. Krishnamurthy, K.V. (2003) Textbook of Biodiversity, Science Publishers, Plymouth, UK
6. Harris, Frances (2012) Global Environmental Issues, 2nd Edition. Wiley- Blackwell.
7. Ahluwalia, V. K. (2015). *Environmental Pollution, and Health*. The Energy and Resources Institute (TERI).
8. Jackson, A. R., & Jackson, J. M. (2000). Environmental Science: The Natural Environment and Human Impact. Pearson Education.