

Centre for Environmental Science
Environmental Studies

Date of 1st Sessional Exam: 13/10/2017

Syllabus

Unit 1: Multidisciplinary nature of environmental studies

- Definition, scope and importance, need for public awareness

Unit 2: Natural Resources

- Renewable and non-renewable resources: Natural resources and associated problems, Role of an individual in conservation of natural resources, Equitable use of resources for sustainable lifestyles.
- Forest resources: Use and over-exploitation, deforestation, case studies; Timber extraction, mining, dams and their effects on forest and tribal people.
- Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems
- Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies
- Food resources: World food problems, changes caused by agriculture and over-grazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies
- Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources; Case studies
- Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification

Date of IInd Sessional Exam: 01/11/2017

Syllabus

Unit 3: Ecosystem

- Concept, Structure and function of ecosystem; Producers, consumers and decomposers; Food chains, food webs and ecological pyramids; Energy flow in the ecosystem; Ecological succession
- Introduction, types, characteristic features, structure and function of Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 4: Biodiversity and its conservation

- Introduction, Definition: genetic, species and ecosystem diversity
- Value of biodiversity: consumptive, productive, social, ethical, aesthetic and option values
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts
- Conservation of biodiversity: *In-situ* and *Ex-situ* conservation of biodiversity
- India as a mega-diversity nation; Hotspots of biodiversity; Endangered and endemic species of India; Biodiversity at Global, National and local levels; Biogeographical classification of India

Syllabus

Unit 5: Environmental Pollution

- Definition, Cause, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards; Role of an individual in prevention of pollution, Pollution case studies
- Solid waste Management: Causes, effects and control measures of urban and industrial wastes
- Disaster management: floods, earthquake, cyclone and landslides

Unit 6: Social Issues and Environment

- From Unsustainable to Sustainable development, urban problems related to energy
- Water conservation, rain water harvesting, watershed management; Wasteland reclamation, Consumerism and waste products
- Resettlement and rehabilitation of people; its problems and concerns, Case Studies
- Environmental ethics: Issues and possible solutions
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, Case Studies
- 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 environmental legislation

Unit 7: Human Population and 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

Note:

1. Students are directed to contact **Dr. Pragya Sourabh**, Centre for Environmental Science for timings and other details
2. The students have to submit an application to appear in the test.
3. Application should be duly forwarded by the Head of the Centre.
4. Such students who do not submit the duly forwarded application for appearing in the test will not be allowed to appear in the test

AK
10.10.17

(Manoj Kumar)

Head

Centre for Environmental Sciences

Copy to-

1. Head, Centre for Environmental Sciences
2. Coordinator, Centre for Applied Mathematics
3. Head, Centre for Applied Physics
4. Head, Centre for Applied Chemistry
5. Head, Centre for Life Sciences
6. Head, Centre for Nanotechnology
7. Head, Centre for Land Resource Management
8. Head, Centre for Water Engineering & Management
9. Head, Centre for Energy Engineering
10. Coordinator, Centre for Education