Environmental Studies

F.E. Sem. I

EVALUATION SYSTEM

	Time	Marks
Theory Exam	2 Hrs.	60
Practical Exam	–	–
Oral Exam	–	–
Term Work	–	–

SYLLABUS

1. **Module 1 : Multidisciplinary Nature of Environmental Studies:**
   - Scope and Importance
   - Need for Public Awareness
   - Depleting Nature of Environmental resources such as Soil, Water, Minerals, and Forests.
   - Global Environmental Crisis related to Population, Water, Sanitation and Land.
   - Ecosystem: Concept, Classification, Structure of Ecosystem, overview of Food chain, Food web and Ecological Pyramid

2. **Module 2 : Sustainable Development**
   - Concept of sustainable development
   - Social, Economical and Environmental aspect of sustainable development.
   - Control Measures: 3R (Reuse, Recovery, Recycle), Appropriate Technology, Environmental education, Resource utilization as per the carrying capacity.

3. **Module 3 : Environmental Pollution:**
   - Air Pollution: Sources, Effects of air pollution with respect to Global Warming, Ozone layer Depletion, Acid Rain,
     Photochemical smog, Two Control Measures- Bag house Filter, Venturi scrubber.
     Case Study: Bhopal Gas Tragedy
   - Water Pollution: Sources and Treatment, Concept of waste waters -Domestic &Industrial and treatment.
     Case Study: Minamata Disease.
   - Land Pollution: Solid waste, Solid waste Management by Land filling, Composting.
   - Noise Pollution; Sources and Effects
   - E-Pollution: Sources and Effects.

4. **Module 4 : Environmental Legislation:**
   - Overview
   - Ministry of Environment and Forests (MoE&F). Organizational structure of MoE&F.
   - Functions and powers of Central Control Pollution Board.
   - Functions and powers of State Control Pollution Board.
   - Environmental Clearance, Consent and Authorization Mechanism.
   - Environmental Protection Act
   - Any two case studies pertaining to Environmental Legislation.

5. **Module 5 : Renewable sources of Energy:**
   - Limitations of conventional sources of Energy.
   - Various renewable energy sources.
   - Solar Energy: Principle, Working of Flat plate collector & Photovoltaic cell.

- Wind Energy: Principle, Wind Turbines.
- Hydel Energy: Principle, Hydropower generation.
- Geothermal Energy: Introduction, Steam Power Plant

6. Module 6 : Environment and Technology

- Role of Technology in Environment and health
- Concept of Green Buildings, Indoor air pollution
- Carbon Credit: Introduction, General concept.
- Disaster Management: Two Events: Tsunami, Earthquakes, Techniques of Disaster Management
- Case Study: Earthquake in Japan

Mumbai University Question Paper Format

1) Question paper will comprise of total 6 questions, each of 15 marks.
2) Total four questions need to be solved.
3) Question Number One will be compulsory and it will be based o entire syllabus wherein sub questions of 2 to 3 marks will be asked.
4) Remaining questions i.e Q.2 to Q.6 will be mixed in nature and will be divided in three parts (a), (b) & (c) and they will belong to different modules.
5) In question paper, weight of each module will be proportional to number of respective lecture hours as mentioned in the syllabus.

Reference books :

1) Textbook of Environmental studies (*Erach Bharucha*), University Press.
2) Environmental Studies (*R. Rajagopalan*), Oxford University Press.
3) Essentials of Environmental Studies (*Kurian Joseph & Nagendran*), Pearson Education
4) Renewable Energy (*Godfrey Boyle*), Oxford Publications.
5) Perspective of Environmental Studies (*Kaushik and Kaushik*), New Age International
6) Environmental Studies (*Anandita Basak*), Pearson Education
7) Textbook of Environmental Studies (*Dave and Katewa*), Cengage Learning
8) Environmental Studies (*Benny Joseph*), TataMcGraw Hill

❑ ❑ ❑ ❑ ❑