VAC I: Environmental Studies

Total Credit: 3 **Total Hours: 45**

SYLLABUS

Objective:

Developing an attitude of concern for the environment, creating the awareness and imparting basic knowledge about environmental problems among students, motivating students to participate in environment protection and environment improvement programmes and to understand on Environmental management and sustainable development.

Unit 1: **Multidisciplinary nature of environmental studies**

Definition, scope and importance, Need for public awareness.

Unit 2: **Natural Resources and associated problems (Renewable and non-renewable resources)**

a) Forest resources:
- Forest coverage of India, its different states & Union territories
- Forests of North Bengal (Reserve Forest, Natural Park and Sanctuary)
- Deforestation Timber extraction, mining, poaching and their effects on forest and tribal people.

b) Water resources:
- Brief idea about the major rivers of India.
- Rivers of North Bengal (Origin, distribution & threats)
- Dams-benefits and problems.

c) Mineral resources:
- Use and exploitation, environmental effects of extracting and using mineral resources

d) Energy resources:
- Renewable and non-renewable energy sources, Use of alternate energy sources.

e) Land resources:
- Land degradation, man induced landslides, soil erosion and desertification.
- Role of an individual in conservation of natural resources.

Unit 3: Ecosystems

•Concept of an ecosystem: Structure & Functions
• Energy flow in the ecosystem, Food chains, food webs and ecological pyramids.

Unit 4: Biodiversity and its conservation

• Biodiversity hotspots of India

• Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts.

• Endangered and endemic plant and animal species of India

• Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Unit 5: Environmental Pollution: Prevention and control

• Cause, effects and control measures of: Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Global warming, Nuclear hazards

• Solid waste Management: Causes, effects and control measures of urban and industrial wastes.

• Disaster management: floods, earthquake, cyclone and landslides.

Unit 6: Environmental Policies, Practices and Movements

- 17 Sustainable Development Goals (SDGs), Kyoto Protocol, Carbon Trading, Biodiversity Offset
- Environment Laws of India: Environmental Protection Act, Wildlife Protection Act, Forest Conservation Act
- Environmental movements: Chipko, Silent Valley, Narmada Bachao Andolan

Unit 7: Project: (Any One)

• 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.

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