

# CONTENTS

## ***Chapter 1 : Scope and Components of Environmental Studies***

□□ Introduction; Environment, Classification of Environment; Factors influencing environment; Components of Environment ; Environmental resources; Environmental degradation; Environmental management; Environmental impact assessment ; Methods of environmental impact assessment; Possible questions.

## ***Chapter 2 : Ecology***

□□ Introduction; Objective of ecology; Classification of ecology; Ecological Factors; Climatic Factors (Light, Temperature, Water, Rainfall, Wind, Humidity, Atmospheric gases); Edaphic factors (Definition, Formation of soil, Soil erosion, Soil conservation); Topographic factors (Altitude, Steepness and exposure of the slope, Direction of Maintain chains); Biotic factors (Positive and negative interactions); Limiting factors, Laws of Limiting factors; Ecological balance (Homeostatic mechanisms, Diversity or Stability theory); Ecosystem instability; Ecological concepts and principles; Possible questions.

### **Chapter 3 : Ecosystem and Its Structure**

□□ Kinds of ecosystem; Components of ecosystem; Biotic components; Abiotic components; Ideal ecosystem; Major ecosystems (Pond as an ecosystem, Grassland as an ecosystem, Forest as an ecosystem, Desert as an ecosystem, Processes in ecosystem, Operations in ecosystem; Energy flow in ecosystem; Food chain; Food web; Ecological pyramids (Pyramid of number, Pyramid of biomass, Pyramid of energy); Productivity; Biogeochemical cycles; Hydrologic cycle; Gaseous cycles (oxygen cycle, Carbondioxide cycle, Nitrogen cycle); Sedimentary cycles (Suplhur cycle, Phosphorous cycle); Community; Ecological Succession; Causes, Characteristics and types of Ecological succession; General processes of succession; Possible questions.

### **Chapter 4 : Natural Resources**

□□ Introduction, Classification of resources; Land resurces; Formation of soil, Soil erosion, Water resouces; Sources of fresh water; Uses of water;Causes for the depletion of water resources; Management of water resources; Marine resources; Uses and stresses on marine resources; Forest resources; Deforestation consequences of deforestation; Efforts to control deforestation; Marine resources; Impact of mineral activities on environment; Conservation of mineral resources; Renewable and Nonrenewable resources; Conventional energy resources (Coal, Petroleum and natural gases, Fuel woods, Hydropower, Nuclear energy); Nonconventional energy resources (Solar energy, Wind energy, Tidal energy, Geothermal energy, Biomas based energy, Biogas, Petroplants, Dendrothermal energy, Energy from urban wastes); Possible questions.

### **Chapter 5 : Biodiversity and its Conservation**

□□ Concept of biodiversity, Types of biodiversity (Genetic diversity, Species diversity, Ecosystem diversity); Biodiversity of India; Importance of biodiversity; Uses of biodiversity; Threats to biodiversity, Conservation of biodiversity; Conservation methods; In situ conservation (Protected areas, National parks, Sanctuaries, Biosphere reserves, Ex situ conservation; Hot spots; Possible

questions.

### **Chapter 6 : Environmental Pollution**

□□ Introduction; Pollutants; Types of pollutants; Agents causing pollution; Classification of pollution; Effects of pollution; Radiation pollution; Sources; Effects and Control of radiation pollution; Thermal pollution; Sources and effects of thermal pollution; Industrial pollution; Process waste; Chemical waste; Effects and Control of Industrial pollution Biological Concentration and Biomagnification; Sewage and sewage treatment; Possible questions.

### **Chapter 7 : Air Pollution and its Control**

□□ Atmosphere; Structure and Composition of atmosphere; Energy balance; Air pollution; Classification of air pollutants; Sources of air pollution; Some important air pollutants (carbon-monoxide, Sulphur dioxide, Oxides of nitrogen, Hydrocarbon, Particulates); Consequences of air pollution (Ozone layer depletion, Greenhouse effect, Smog, Acid rain); Control of air pollution; Air quality and standards; Possible questions.

### **Chapter 8 : Water Pollution and its Control**

□□ Hydrosphere; Importance of water; Sources and Uses of Water; Water pollution; Sources of water pollution; Types of water pollutants; General effects of water pollution; Classification of water pollution; Ground water pollution; River water pollution; Lake water pollution; Natural water and its quality; water quality parameters and standards; Possible questions.

### **Chapter 9 : Land Pollution and its Control**

□□ Lithosphere; Classification of soil, Soil profile, Composition of soil, Soil organism, Uses of soil; Land pollution; Sources of land pollution; Detrimental effects of land pollution; Disposal of solid waste (Open dumping, Natural treatments, Mechanical treatment); Minimisation of solid waste level; Management of solid wastes; Possible questions.

### **Chapter 10 : Noise Pollution and its Control**

□□ Introduction; Noise; Sources of Noise Pollution; Effects of noise pollution; Permissible noise levels, Prevention and control of noise pollution; Possible questions.

### **Chapter 11 : Environmental Management**

□□ Concept of environmental management; Scope and aspects of environmental management; Management of resources; Forest resource management; Water resource management, Mineral resource management; Land resource management; Energy resource management, Wildlife management; Agriculture resource management, Waste management; Management of solid waste; Management of liquid waste; Management of gaseous waste, Disaster management; Meaning and concept of disaster; Classification of environmental hazards and disasters; Earthquake and its Management; Flood and its management; Cyclone and its management; Concept of sustainable development; Possible questions.

### **Chapter 12 : Environmental Laws**

□□ Constitutional provisions (Article 21; Article-47; Article-48A; Article-51A(g); Wildlife (Protection) Act. 1972; Water (Prevention and control of Pollution) Act. 1974; Forest (conservation) Act. 1980; Air (Prevention and Control of Pollution) Act 1981; Environmental Protection Act 1986 (EPA-1986); Central Pollution Control Board; State Pollution Control Board; Miscellaneous Environmental acts and rules; Possible questions.

### **Chapter 13 : Human Population and Environmental Problems**

□□ Introduction; Human being a rational and social partner in environmental action; Impact of human activities on environment; Environmental Problems of urban areas; Environmental Problems of rural area; Stress on civic amenities; Water Supply; Electricity Supply; Transport services; Health services; Population: Population density; Natality, Mortality; Age structure; Life table, Biotic potential; Survivor curves; Population growth curve;

Population dispersion; Population explosion; Population explosion in India; Family welfare programme; Population variation amongst nations; Environment and human health; Sanitation, diseases: Types of disease transmission; Contagious and infectious diseases, Classification of diseases on the basis of transmission; Importance of immunisation, Some important diseases and their symptoms; AIDS; Role of Information technology in environment; Value education; Women and child care; Human rights; Possible questions;

***Projects***

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