

RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER
SCHEME & SYLLABUS FOR THE POST OF ASSISTANT
CONSERVATOR FOREST & FOREST RANGE OFFICER GRADE Ist
COMPETITIVE EXAMINATION, 2018
FOREST DEPARTMENT

OPTIONAL SUBJECT - ENVIRONMENTAL SCIENCE

Unit 1

Definition, scope and importance of Ecology & Environmental Science, Biological levels of organization, population, community, ecosystem and biosphere, climatic factors – solar radiations temperature & precipitation. Wind direction and speed. Physiography of Rajasthan. Introduction to Saline tracts and Thar desert of Rajasthan. Important flora and fauna of Rajasthan including State Tree, State flower, State Bird, State Animal and Endangered flora and fauna of Rajasthan.

Unit 2

Natural resources and associated problems: Forest resources: Use and over-exploitation, deforestation, 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. Food resources: World food problems, changes caused by agriculture and overgrazing, 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. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources.

Unit 3

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

Unit 4

Introduction of Biodiversity – Definition : genetic, species and ecosystem diversity. Biogeographical classification of India. Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values , biodiversity at global, National and local levels. India as a mega-diversity nation . Hot-spots of biodiversity. Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts. Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.

Unit 5

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

Unit 6

Social Issues and the Environment, From Unsustainable to Sustainable development, Urban problems related to energy , Water conservation, rain water harvesting, watershed management , Resettlement and rehabilitation of people; its problems and concerns. Environmental ethics: Issues and possible solutions. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Wasteland reclamation. Consumerism and waste products. 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 the Environment. Population growth, variation among nations. Population explosion – Family Welfare Programme. Environment and human health. Population pressure on Environment. Livelihood and Environment, Impact of drought on Environment. Days celebrated to spread awareness regarding Environment, Wildlife, Flora, fauna, forest & pollution .

Unit 8

Definition and principles of Remote Sensing, definition and components of Geographical Information Systems. Definition and Scope of Environmental Impact Assessment (EIA). Historical development of EIA. Regulation and Status of EIA in India. Participants in EIA Process. Methodology of EIA for different projects. Category A and B projects. Public participation in EIA.

Unit 9

Introduction to Wildlife Management. Philosophy of Wildlife Management. Threats to Wildlife and conservation methods. Role of local communities in Wildlife Protection. Role of Bishnoi and other communities in Saving Wildlife. Types of protected areas- Wildlife Sanctuaries & National Parks with reference to Rajasthan. IUCN categories of protected areas, Natural World Heritage sites; concept of core and buffer area in a protected range, Project Tiger, Status and Conservation Strategy of State Bird of Rajasthan.

Unit 10

Role of Ministry of Environment, Forests & Climate Change in Environmental law & Policy making. Role of Central and State Pollution Control Board in maintaining proper environmental conditions and in policy making. National Green Tribunal and its role in Environmental conservation. Stockholm Conference 1972, United Nations Conference on Environment and Development 1992; Rio Declaration, Agenda 21, Montreal Protocol 1987, Kyoto Protocol 1997, Ramsar Convention. Ramsar Sites in Rajasthan .

Note :- **Pattern of Question Paper**

- 1. Objective type paper**
- 2. Maximum Marks : 200**
- 3. Number of Questions : 120**
- 4. Duration of Paper : Three Hours**
- 5. All questions carry equal marks.**
- 6. There will be Negative Marking.**