

AURCET - 2013 SYLLABUS
TEST NO. – 05: ENVIRONMENTAL SCIENCES

PAPER - II

Definition of Ecology – Energy Flows, Ecological Pyramids, Food Chains and Food Webs- Ecological Succession – Population and Communities - Ecosystem- Structure- Components (Abiotic and Biotic factors) and Functions. - Terrestrial and Aquatic (Fresh Water and Marine) Ecosystems. Ecotones - Ecological Niches- Classification of Biomes and Bio-geographical Regions of the World.

Bio diversity- Definition & Significance of Biodiversity - Ecological, Economical and Aesthetic importance. Distribution of climatic regions of India and Vegetation types- Biodiversities of Tropical and Temperate regions of the World-Measures of Bio Diversity- Alfa, Beta and Gamma diversities. Conventions on Biological Diversity - Forest and Environmental Protection Acts, Wildlife (Protection) Act 1972, Biosphere reserves, National Parks, and Wildlife Sanctuaries, Man & Biosphere Programmes.

Microbial groups: Bacteria, Fungi, Algae, Viruses, and Protozoa; their place in the classification of living world; their biology, nutrition, metabolism and reproduction – Types and composition of culture media and sterilization – Physical factors (Temperature and light, Osmotic pressure, Hydrostatic pressure), Chemical factors (pH, O₂ and CO₂), Diversity of Microbial Habitats: (Air, Soil and Water), their general physical features.

STRUCTURE OF ATMOSPHERE: Temperature Profile – Air Pollutants: Oxides of Sulphur – Oxides of Nitrogen – Carbon monoxide – Particulate matter, and impacts – Photochemical smog – Green house effect – Ozone depletion – Acid Rains – Sources and effects of noise pollution, – impacts of Air Pollution-.Classification of water and Water bodies – Abnormal properties of water – Water cycle- Water Quality Parameters – Water Pollution – Sources – Classification, nature, types and Toxicology of water pollutants: – Eutrophication – Ground water pollution – Marine pollution – Ecological and Economic impacts of water pollution. Soil Texture – Ecological and Economic impacts of soil erosion and soil pollution.

Environmental Problems of India and some Ecofriendly Solutions-Over population, Food security, Health security, Energy security, Environmental security, Negative side of green revolution, Desertification, Deforestation. Concepts of Environmental Risks Definitions for Environmental Risk – concepts of Hazard, exposure, dose and response with special reference to Risk – Public perception of Environmental Risk – Communication of Risk – Developmental activities/projects/programmes required to carry out Risk assessments and propose Contingency Plans for Risk Management.

.....