

DEPARTMENT OF ENVIRONMENTAL STUDIES
GITAM INSTITUTE OF SCIENCE
GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)
(Declared as Deemed to be University u/s 3 of the UGC Act, 1956)
GRCET - 2019
Syllabus
PART-A

Research Methodology: Meaning of Research, Objectives of Research, Motivation in Research, Types of Research, Research Approaches, Significance of Research, Research Methods versus Methodology.

Defining the Research Problem: What is a Research Problem? Selecting the Problem, Necessity of Defining the Problem.

Research Design: Meaning of Research Design, Need for Research Design, Features of a Good Design.

Sampling Design: Census and Sample Survey, Implications of a Sample Design, Steps in Sampling Design, Criteria of Selecting a Sampling Procedure.

PART-B

UNIT – I

Ecosystem Introduction, types of Ecosystems; structure and function of an ecosystem; Major ecosystems: Pond ecosystem; Ocean (marine) ecosystem, Grassland Ecosystem, Forest Ecosystems, Desert Ecosystem and Cropland Ecosystem. Functional aspects of an ecosystem; Food web, Food chains; Ecological Pyramids. Ecological energetics. Biodiversity: definition, types, importance, threats, hot spots & conservation.

Water Resources: Types of Water sources, Ground Water, Surface Water etc, Water Conservation, Watershed Management, Rainwater Harvesting & Cloud seeding for artificial rains. Energy Resources: Conventional & Non-conventional energy Advantages & disadvantages of Fossil fuels, Nuclear energy, Hydel power, Geothermal & Tidal Energy, Wind Energy and Solar Energy. Biofuels

UNIT – II

Air Pollution: Types and sources of air pollutants; Effects of pollutants on human beings, plants, animals and materials. **Water Pollution:** Sources of pollution of surface and ground water, Types of water pollutants; Effects of water pollution on water bodies - eutrophication, **Soil Pollution:** Sources, effects and control of soil pollution. Biomagnification. **Noise Pollution:** Noise pollution – source, measurement, effects and control. Municipal solid waste management- Sources and types, composition and properties, collection and transportation, disposal methods (landfilling, incineration, composting). Recycling of paper, plastics, glass and metals. Hazardous Waste Management: Sources, characteristic, handling & disposal methods. Management of Biomedical & Nuclear Wastes.

UNIT – III

Global and National Environmental Issues: Climate change, ozone depletion, greenhouse effect, Acid rain, *el nino* & *la nina* effects, Deforestation and Biodiversity loss . Types of natural disasters and their Management Environmental consequences of Dams. Mining: Types of mining. Environmental consequences of Mining and control methods.

Environmental movements: Major environmental movements in India. Chipco movement, Silent Valley movement, Appiko movement, Narmada Bachavo Andolan and Tehri Dam conflict. International Conventions on Global Environmental issues.

UNIT – IV

Land degradation: Land use pattern in India, causes of land degradation, environmental consequences of land degradation due to Mining, soil erosion, desertification, Salination and water logging. Control of land degradation. Waste Lands: Causes of waste land formation and reclamation of waste lands. Wetlands: Importance and types of wetlands and their management. Ramsar convention. Environmental Legislation: Environmental Laws in India. Green benches: Structure and functions of green bench.

**GITAM INSTITUTE OF SCIENCE
GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)
(Declared as Deemed to be University u/s 3 of the UGC Act, 1956)
GRCET- 2019**

Model Paper

PART-A

Section- I: Consists of FIFTY Objective type questions. 50 x 1 = 50 Marks

1. The statement of purpose in a research study should:
 - (a) Identify the design of the study
 - (b) Specify the type of people to be used in the study
 - (c) Identify the intent or objective of the study
 - (d) Describe the study

2. Which of the following would generally require the largest sample size?
 - (a) Cluster sampling
 - (b) Simple random sampling
 - (c) Systematic sampling
 - (d) Proportional stratified sampling

Section- II: Consists of TEN two mark questions. 10 x 2 = 20 Marks

PART-B

Section- I: Consists of FIFTY Objective type questions. 50 x 1 = 50 Marks

1. For the survival of fish in a river stream, the minimum dissolved oxygen is prescribed.
A .3 ppm B. 5 ppm C. 4 ppm D 10ppm

2. Global atmospheric temperatures are likely to be increased due to:
A. Burning of fossil fuel B. Water pollution
C. Soil erosion D. None of the above

3. Ozone day is observed on:
A. January 03 B. March 26 C. November 10 D. September 16

Section-II Fill in the blanks 10x2 Marks = 20 Marks

1. Smog is _____
2. Give 2 examples of point-source pollution. _____
3. DDT _____