

GEOGRAPHY

Semester-III

Core V Environmental Geography and Biogeography

Unit-I:

Learning Outcome:

Understand the concept of the environmental ecosystem, their types, structure, and functions, again they can also get a clear idea about biogeochemical cycles including Carbon, Oxygen, Nitrogen cycle etc.

Environment: Concept, Types and Characteristics and Principles; Environmental Controls and Concept of tolerance; Ecosystem: Concept, Types, Structure and Functions (Food Chain and Food Web, Trophic Level, Ecological Pyramid); Energy flow in Ecosystem; Bio-geo-chemical Cycles (Nitrogen, Carbon, Oxygen); Concept and Types of Biomes: (Equatorial, Subtropical, Temperate and Polar).

Unit-II

Learning Outcome:

Recognize the spatial aspects of biodiversity including the processes, dynamics, and distributions. They also get an idea about the different biodiversity including critical, endangered, and threatened and their related issues.

Introduction to Biogeography: Nature, Scope, Development; Ecological Succession: Succession, Change and Equilibrium; Key processes in Biogeography: Evolution, Speciation, Extinction, Dispersal; World Distribution patterns of Biota: Biogeographical Regions; Distribution of World's Biodiversity hotspots: Critical and Endangered, Threatened, relatively stable/intact.

Unit-III:

Learning Outcome:

Gain the basic knowledge about pedology, including, the origin of soil, factors affecting soil formation, elements of soils and classification of soil on the basis of different criteria.

Soil Colour, Soil Texture and Soil Structure; Soil horizons; Soil forming Processes and Factors; Soils Classification: (a) Soil Classification by Maturity (Entisols, Inceptisols, Alfisols, Spodosols, Ultisols, Oxisols), (b) Soil Classification by Climate (Mollisols, Ardisols, Gelisols), (c) Soils Characterized by Parent Material (Vertisols, Andisols).

Unit-IV: Practical

Learning Outcome:

Students will realize the extension of different biomes and Man-Environment relationship in different biomes.

1. Submission of a Project Report on any environmental problem of global/national/local significance.

Or

2. Prepare a Seminar paper on biodiversity hotspots of India with special reference to the distribution, biotic characteristics, major threats, and possible solutions.
3. Report and Viva-Voce

Suggested Readings:

Text Books:

- ✓ Chandna R. C. (2002). *Environmental Geography*. Kalyani, Ludhiana.
- ✓ Singh S. (1997). *Environmental Geography*. Prayag Pustak Bhawan. Allahabad.

Reference Books:

- ✓ Cunningham W. P. and Cunningham M. A., (2004). *Principles of Environmental Science: Inquiry and Applications*, Tata Macgraw Hill, New Delhi.
- ✓ Goudie A. (2001). *The Nature of the Environment*. Blackwell, Oxford.
- ✓ Huggett, R. John. (1998). *Fundamentals of Biogeography*. Routledge.
- ✓ Miller, G. T., (2004). *Environmental Science: Working with the Earth*. Thomson Brooks Cole, Singapore.
- ✓ Odum, E. P. et al, (2005). *Fundamentals of Ecology*. Ceneage Learning India.
- ✓ Sharma P.D. (2005). *Ecology and Environment*. Rastogi Publications, Meerut, UP.
- ✓ Strahler, A. (2013). *Introduction to Physical Geography*. Sixth Edition, Wiley.