Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E (Full Time) - END SEMESTER EXAMINATIONS, APRIL/MAY 2025

B.E. GEOINFORMATICS
Fourth Semester
GI23406 & ENVIRONMENTAL SCIENCES AND SUSTAINABILITY

(Regulation 2023)

Time: 3hrs Max.Marks: 100

CO 1	Understand fundamental principles of environmental science, including biodiversity, pollution, energy sources, sustainability, and management practices, and their relevance to modern-day challenges
CO 2	Critically assess how human actions, such as deforestation, industrialization, and resource consumption, contribute to environmental degradation and biodiversity loss
CO 3	Apply both traditional and modern strategies for environmental conservation, including the management of renewable energy sources, pollution control, and biodiversity preservation.
CO 4	Design and implement sustainable practices in different sectors, focusing on energy efficiency, waste management, sustainable agriculture, and green technologies
CO 5	Think critically about the implications of environmental issues at global, regional, and local levels, and explore innovative solutions for promoting environmental sustainability through policies, technologies, and lifestyle changes

BL – Bloom's Taxonomy Levels
(L1 - Remembering, L2 - Understanding, L3 - Applying, L4 - Analysing, L5 - Evaluating, L6 - Creating)

PART- A (10 x 2 = 20 Marks)
(Answer all Questions)

Q. No	Questions	Marks	CO	BL
1	What are the components of an ecosystem on Earth?	2	1	L1
2	Explain the meaning of point richness in biodiversity.	2	1	L2
3	How do synthetic detergents act as pollutants and affect the environment?	2	2	L3
4	Write a short note on the process of pyrolysis.	2	2	L2
5	List the primary aims of energy management.	2	3	L1
6	Analyse the disadvantages of using hydrogen as a source of energy.	2	3	L4
7	What mechanisms are involved in the development process of a country?	2	4	L4
8	What is meant by the Gender Equality Index?	2	4	L2
9	Define the term "social equity" with relevant examples.	2	5	L2
10	Evaluate the role of carbon sequestration in addressing climate change.	2	5	L5

PART- B (5 x 13 = 65 Marks)

(Restrict to a maximum of 2 subdivisions)

Q. No	Questions	Marks	CO	BL
11 (a)	Explain in detail how energy flows through various trophic levels in an ecosystem, including relevant examples and diagrams.	13	1	L2
	OR			
11 (b)	Explain the concept of biodiversity hotspots and describe the significance of identifying endangered species in India.	13	1	L2
12 (a)	Analyze the process of solid waste management by breaking down its key stages. Discuss how each stage contributes to environmental conservation.	13	2	L4
	OR			
12 (b)	Analyze how hazardous waste is classified and examine various control measures used to manage it.	13	2	L4
13 (a)	Explain how tidal energy is generated and describe its main advantages and disadvantages compared to other energy sources.	13	3	L2
	OR			
13 (b)	Summarize the concept of geothermal energy and differentiate between the types of geothermal power plants.	13	3	L2
14 (a)	Evaluate the effectiveness of the Sustainable Development Goals (SDGs) in promoting long-term global sustainability. Support your response with relevant examples.	13	4	L5
	OR			
14 (b)	Evaluate the impact of carbon credits and carbon footprints on environmental policy and individual behavior.	13	4	L5
15 (a)	Define green engineering and describe its role in promoting environmentally sustainable design.	13	5	L2
	OR			
15 (b)	Explain the concept of sustainable urbanization and describe how green technologies and smart city principles support it.	13	5	L2

PART- C (1 x 15 = 15 Marks)

(Q.No.16 is compulsory)

Q. No	Questions	Marks	CO	BL
16.	Analyze the major causes and contributing factors of climate change, supported by scientific explanations and real-world examples.	15	4	L4