

December 2023

B.Tech. (ENVIRONMENTAL ENGINEERING)

Vth SEMESTER

GREEN TECHNOLOGY (PEC-ENV-501)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) Define Green Technology. (1.5)
- (b) Name *one* principle of sustainable development. (1.5)
- (c) Why is Life Cycle Assessment important in environmental impact analysis? (1.5)
- (d) What are the core components of a green building certification system? (1.5)
- (e) Explain the concept of wind energy and its importance in renewable energy sources. (1.5)
- (f) Name one energy-efficient building system or technique. (1.5)

- (g) How does biomass energy contribute to sustainability? (1.5)
- (h) What are sustainable building materials, and why are they important? (1.5)
- (i) Name a well-known Green Building Certification System and describe its key features. (1.5)
- (j) Define E-Waste Management and its significance. (1.5)

PART-B

2. (a) Discuss the scope and significance of Green Technology in addressing contemporary environmental challenges. (10)
- (b) Provide examples of two innovative Green Technology applications in different sectors. (5)
3. (a) Describe the key components of a sustainable building and its impact on energy efficiency. (5)
- (b) Explain the importance of renewable energy technologies, with a focus on solar energy systems. (10)
4. Compare and contrast the advantages and disadvantages of hydroelectric power systems and geothermal energy systems. (15)

5. (a) Discuss the key strategies and techniques for waste management with a focus on solid waste. (5)
- (b) Explain the significance of using sustainable building materials and provide examples. (10)
6. (a) Describe the challenges associated with E-Waste management and the strategies to address them. (10)
- (b) How can adopting a circular economy approach transform waste management practices into sustainable solutions? (5)
7. (a) Provide an example of a successful industrial waste management program and its environmental benefits. (5)
- (b) Explain the principles and techniques of industrial waste management and pollution prevention. (10)
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