QP Code: SN22BTECH583 | Reg. No | | | | | | | | | | | AR 21

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (Seventh Semester - Regular) Examinations, November – 2025

22BCHPE47021 - Integrated Solid Waste Management

(Chemical Engineering)

Time: 3 hrs | Maximum: 70 Marks

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions

		CO #	Blooms Level
a.	Why is segregation at source important in ISWM?	CO1	K1
b.	What are the benefits of door-to-door waste collection?	CO1	K1
c.	What are the major sources of hazardous waste generation?	CO4	K2
d.	What types of waste are suitable for composting?	CO2	K1
e.	What is waste minimization?	CO3	K2

PART – B **(15 x 4 = 60 Marks)**

Answer ***all*** the questions

		Marks	CO #	Blooms Level
2. a.	Explain the concept and design of transfer stations in municipal solid waste management systems.	8	CO1	K2
b.	Explain how population growth, urbanization, and industrialization impact the characteristics and volume of solid waste.	7	CO1	K2
	(OR)			
c.	Explain the methods and mechanisms of solid waste collection using appropriate diagrams.	8	CO1	K2
d.	Explain the design, operation, and optimization of waste collection routes.	7	CO1	K2
3.a.	Explain the role of composting in solid waste treatment.	8	CO2	K1
b.	Explain the principle of incineration in solid waste treatment.	7	CO2	K1
	(OR)			
c.	Describe the design components of a modern sanitary landfill, including liners, leachate collection, gas management, and cover systems.	8	CO2	K2
d.	Explain the basic concept of a sanitary landfill and how it differs from an open dump.	7	CO2	K3
4.a.	Describe the procedures and safety precautions for collection and transportation of biomedical waste to treatment facilities.	8	CO3	K2
b.	Explain the principles of segregation of biomedical waste at the point of generation and its significance.	7	CO4	K2
	(OR)			
c.	Discuss the environmental and health impacts of improper e-waste handling and disposal.	8	CO2	K2
d.	Describe the steps involved in the e-waste management process from collection to final disposal.	7	CO3	K3
5.a.	Explain the four characteristics of hazardous waste.	8	CO4	K2
b.	Describe the health and environmental impacts of improper hazardous waste management.	7	CO4	K2
	(OR)			
c.	Describe the environmental impacts of improper storage and transportation of hazardous waste.	8	CO4	K2
d.	Describe the challenges in implementing hazardous waste management regulations in developing countries.	7	CO4	K3

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