

**PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)**

IV B.Tech II Semester Supplementary Examinations, May– 2024

**SOLID AND HAZARDOUS WASTE MANAGEMENT
(CE)**

Time: 3 hours

Max. Marks: 60

Question Paper Consists of **Part-A** and **Part-B**
Answer **ALL** questions from **Part-A**,
Answer any **FOUR** Questions from **Part-B**

PART-A					
[6x2=12M]					
Q.No.	Question		BTL	CO	Marks
1.	a)	What are the main goals and objectives of solid waste management?	K1	CO1	[2M]
	b)	What are the principles of solid waste management?	K1	CO2	[2M]
	c)	Why there is a need for transfer operations in solid waste management?	K1	CO3	[2M]
	d)	What is the importance of shredding in solid waste management?	K1	CO4	[2M]
	e)	What is biogas generation and why it is important in waste management?	K1	CO5	[2M]
	f)	What are the key factors to consider in site selection for landfills?	K1	CO6	[2M]
PART-B					
[4x12=48M]					
2.	a)	Explain the classification of solid waste and discuss the factors influencing the generation of solid waste.	K2	CO1	[6M]
	b)	Discuss the future changes in waste composition and the major legislation related to solid waste management.	K2	CO1	[6M]
3.	a)	Describe the different methods of waste collection systems and analyze their effectiveness.	K2	CO2	[6M]
	b)	Explain the process of optimization of collection routes in solid waste management and discuss alternative techniques for collection systems.	K2	CO2	[6M]
4.	a)	Discuss the various means and methods of transporting solid waste and the design requirements for transfer stations.	K2	CO3	[6M]
	b)	Explain the role of compaction in solid waste transfer operations and its benefits.	K2	CO3	[6M]
5.	a)	Describe the unit operations used for material separation and recovery in solid waste management.	K2	CO4	[6M]
	b)	Discuss the methods of source reduction and waste minimization and their impact on solid waste management.	K2	CO4	[6M]
6.	a)	Explain the process of waste transformation through combustion and composting.	K2	CO5	[6M]
	b)	Discuss anaerobic methods for materials recovery and treatment, focusing on energy recovery and biogas cleaning.	K2	CO5	[6M]
7.	a)	Describe the design and operation of landfills, including drainage and leachate collection systems.	K2	CO6	[6M]
	b)	Discuss the methods of landfill remediation and their importance in solid waste management.	K2	CO6	[6M]