

U.S.N.

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations**Programme: B.E.****Semester: VI****Branch: Civil Engineering****Duration: 3 hrs.****Course Code: 23CV6PESWM / 22CV6PESWM****Max Marks: 100****Course: Solid Waste Management**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.			UNIT - I	CO	PO	Marks
	1	a)	With a neat diagram, explain the functional elements of solid waste management	CO1	PO1	10
		b)	Explain the various sources and classification of solid waste	CO1	PO1	10
			OR			
	2	a)	Discuss on the factors that must be considered in the design of transfer station.	CO1	PO1	10
		b)	Explain the operational sequence and analysis of hauled container system.	CO1	PO1	10
			UNIT - II			
	3	a)	Explain briefly the following component separation technique (i) magnetic Separation (ii) Air Separation	CO2	PO1	10
		b)	Explain mechanical volume reduction and chemical volume reduction	CO2	PO1	10
			OR			
	4	a)	Define incineration. Explain with neat sketch, the working principle of an incinerator	CO2	PO1	10
		b)	Explain the effect of 3 T's in incineration process of solid waste and outline the design criteria for incineration	CO2	PO1	10
			UNIT - III			
	5	a)	Define composting. Explain the factors affecting composting	CO3	PO1	10
		b)	Explain Indore and Bangalore process of composting of municipal solid waste.	CO3	PO1	10

			OR			
	6	a)	Explain in detail aerobic and anaerobic composting,	CO3	PO1	10
		b)	Discuss semi mechanical composting processes and vermi composting.	CO3	PO1	10
			UNIT - IV			
	7	a)	Explain the area method and trench method of landfilling techniques stating merits and de merits	CO3	PO1	10
		b)	Explain the various factors to be considered in selection of sanitary landfill	CO3	PO1	10
			OR			
	8	a)	Define Leachate and explain the factors that affect the composition of leachate.	CO3	PO1	10
		b)	Explain the control of gases in landfill with neat diagram	CO3	PO1	10
			UNIT - V			
	9	a)	Explain the principles and applications of X-ray Fluorescence (XRF)	CO3	PO1	10
		b)	Explain the principles and applications of SEM	CO3	PO1	10
			OR			
	10	a)	Explain the principles and applications of XRD	CO3	PO1	10
		b)	Explain the principles and applications of TEM	CO3	PO1	10
