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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.

UNIT - I			CO	PO	Marks
1	a)	With a neat diagram, explain the functional elements of solid waste management	<i>CO1</i>	<i>PO</i> 1	10
	b)	Explain the various sources and classification of solid waste	<i>CO1</i>	<i>PO1</i>	10
OR					
2	a)	Discuss on the factors that must be considered in the design of transfer station.	<i>CO1</i>	<i>PO1</i>	10
	b)	Explain the operational sequence and analysis of hauled container system.	<i>CO1</i>	<i>PO1</i>	10
UNIT - II					
3	a)	Explain briefly the following component separation technique (i) magnetic Separation (ii) Air Separation	<i>CO2</i>	<i>PO1</i>	10
	b)	Explain mechanical volume reduction and chemical volume reduction	<i>CO2</i>	<i>PO1</i>	10
OR					
4	a)	Define incineration. Explain with neat sketch, the working principle of an incinerator	<i>CO2</i>	<i>PO1</i>	10
	b)	Explain the effect of 3 T's in incineration process of solid waste and outline the design criteria for incineration	<i>CO2</i>	<i>PO1</i>	10
UNIT - III					
5	a)	Define composting. Explain the factors affecting composting	<i>CO3</i>	<i>PO1</i>	10
	b)	Explain Indore and Bangalore process of composting of municipal solid waste.	<i>CO3</i>	<i>PO1</i>	10

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.

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