

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-IV EXAMINATION – WINTER 2025

Subject Code:3141311

Date:20-11-2025

Subject Name:Municipal & Industrial Solid Waste Management

Time:02:30 PM TO 05:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Define the terms: 1) moisture content 2) field capacity 3) rubbish	03
(b) Draw the flowchart of material flow and solid waste generation.	04
(c) Explain in detail various functional elements of a solid waste management system.	07
Q.2 (a) Explain about the proximate and ultimate analysis of solid waste.	03
(b) Discuss the effect of storage on waste component.	04
(c) Write a short note on stationary container system for solid waste collection.	07
OR	
(c) Enlist and Explain various factors affecting generation rate of MSW.	07
Q.3 (a) Describe the need and purpose of processing of solid waste.	03
(b) What is drying and dewatering of solid waste?	04
(c) Write a short note on size reduction of Municipal Solid Waste.	07
OR	
Q.3 (a) What is the need of transfer station for MSW?	03
(b) Calculate waste per annum generated from a city having population of 3 Lac at a rate of 0.6 kg/cap/day.	04
(c) Enlist thermal techniques of solid waste processing and explain any one in detail.	07
Q.4 (a) Define the terms : 1) Incineration 2) sanitary landfill 3) Leachate	03
(b) Discuss in detail landfill gas management.	04
(c) Enlist and explain landfilling methods with neat sketch.	07
OR	
Q.4 (a) Explain the terms: 1) Composting 2) Air classifier.	03
(b) Which are the important criteria for landfill siting.	04
(c) Describe process of methane generation by Anaerobic digester.	07
Q.5 (a) Enlist the sources of E-waste.	03
(b) How to minimize biomedical waste.	04
(c) Explain different methods used for the treatment of bio medical waste.	07
OR	
Q.5 (a) Define: 1) Incinerable waste 2) Hazardous waste.	03
(b) Explain important characteristics of Hazardous waste.	04
(c) Explain the transfer and transport of Hazardous waste with manifest system.	07
