

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2022

Subject Code:3141311**Date:02-07-2022****Subject Name:Municipal & Industrial Solid Waste Management****Time:10:30 AM TO 01:00 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.

- Q.1** (a) Define the terms: (1) integrated solid waste management (2) bulky waste (3) rubbish **03**
(b) Explain biological processes used for the conversion of solid wastes. **04**
(c) Write down the most important Functional Element of Solid Waste Management System. **07**

- Q.2** (a) Write a note on waste minimization. **03**
(b) Determine the composition of municipal solid waste in the field. **04**
(c) What is transformation? Which process is used for biological transformation? **07**

OR

- (c) Write down the hierarchy of integrated Solid Waste Management. **07**
Q.3 (a) Give characteristic of hazardous solid waste. **03**
(b) Enlist and explain activities involve in collection of solid waste. **04**
(c) What do you mean by the following service terms with reference to collection of solid waste: Curb, alley, setout-setback, setout, backyard carry **07**

OR

- Q.3** (a) Which are the Factors that affecting the Waste generation Rate? **03**
(b) Write short note on: Role of transfer station in municipal solid waste management. **04**
(c) Define Pick up Haul, at site & Off-route with reference to the hauled Container system & stationary Container System. Draw a net diagram of operational sequences of both the system. **07**

- Q.4** (a) How to minimize bio-medical waste? **03**
(b) Explain categories of Bio-medical Waste. **04**
(c) Enlist the Different methods used for the treatment of Bio-Medical Waste. Explain in detail **07**

OR

- Q.4** (a) Write a short note on Manifest. **03**
(b) Write a short note on Leachate & its Management. **04**
(c) Draw Schematic diagram of landfill? Explain each essential Component of it. **07**

- Q.5** (a) What are the principles of 4R's? **03**
(b) Write a short note on On-site Processing of Solid Waste. **04**
(c) Explain disposal of hazardous solid waste in detail. **07**

OR

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| Q.5 | (a) | Draw the flowchart of material flow and solid waste generation. | 03 |
| | (b) | What is proximate analysis and ultimate analysis? | 04 |
| | (c) | Explain physico-chemical treatment of hazardous waste. | 07 |
