

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2023****Subject Code:3163514****Date:14-07-2023****Subject Name:Solid Waste Management - I****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.

MARKS

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|------------|--|-----------|
| Q.1 | (a) Write a short note: Solid waste collection systems. | 03 |
| | (b) What do you mean by sustainable waste management practices? | 04 |
| | (c) Discuss physical and chemical characteristics of solid waste in detail. | 07 |
| Q.2 | (a) Discuss the Vermi-composting method in brief. | 03 |
| | (b) List down the various disposal options for plastic waste. | 04 |
| | (c) Describe the salient features of Construction & Demolition waste Management rules, 2016. | 07 |
| OR | | |
| | (c) Give insights about the present scenario of plastic waste management in India. | 07 |
| Q.3 | (a) How container storage location and public health and aesthetics can affect the onsite storage of solid waste? | 03 |
| | (b) Write a note on incineration. | 04 |
| | (c) Explain the landfill closure and post-closure care in detail. | 07 |
| OR | | |
| Q.3 | (a) What are the principles of 4R's? | 03 |
| | (b) Explain the necessity of landfill gas management | 04 |
| | (c) Discuss the waste handling and separation at commercial and industrial facilities. | 07 |
| Q.4 | (a) Define the following terms: Compost, Cell, Sanitary landfill | 03 |
| | (b) State various leachate treatment methods. | 04 |
| | (c) Enlist the three types of shredding devices and explain any one in brief. | 07 |
| OR | | |
| Q.4 | (a) Explain the effects of storage on waste components in brief. | 03 |
| | (b) Explain the principle of magnetic separator in brief. | 04 |
| | (c) Explain the need and design requirements of Transfer station. | 07 |
| Q.5 | (a) Write a note on material recovery and recycling. | 03 |
| | (b) Give brief about RDF. | 04 |
| | (c) Discuss the salient features of Municipal Solid Waste Management Rules, 2016. | 07 |
| OR | | |
| Q.5 | (a) Give brief about Onsite processing. | 03 |
| | (b) Why segregation and collection is important? | 04 |
| | (c) Define the following: 1. Bio-methanation 2. Buffer zone 3. Bye-laws 4. Co-processing 5. EPR 6. Tipping fee 7. Residual solid waste | 07 |
