

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE- SEMESTER-VI EXAMINATION – WINTER 2025**

**Subject Code: 3160515**

**Date: 19-11-2025**

**Subject Name: 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.

	<b>MARKS</b>
<b>Q.1</b> (a) Explain the need for Solid waste management.	<b>03</b>
(b) Draw the pie chart of composition of solid waste management in India.	<b>04</b>
(c) Describe problems and issues of solid waste management	<b>07</b>
<b>Q.2</b> (a) Enlist the various solid waste types.	<b>03</b>
(b) Describe operations of pollution control facilities	<b>04</b>
(c) Explain in brief about the Biomedical waste-generation and its management.	<b>07</b>
<b>OR</b>	
(c) Explain in brief about the E-waste-generation and its management.	<b>07</b>
<b>Q.3</b> (a) Draw Integrated Solid Waste Management Hierarchy	<b>03</b>
(b) Enlist the advantages of EPR systems.	<b>04</b>
(c) Give an overview of developing a municipal solid waste management Plan in an Urban Local Body (ULB).	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Explain segregation and storage in solid waste management.	<b>03</b>
(b) What are the elements of Overall Cost Assessment (Full Cost Accounting) in solid waste management?	<b>04</b>
(c) Enlist all seven step approach for municipal solid waste Management Planning.	<b>07</b>
<b>Q.4</b> (a) Explain collection and transportation in solid waste management.	<b>03</b>
(b) Explain decentralized solid waste management systems.	<b>04</b>
(c) Enlist criteria for identifying suitable land for sanitary landfill sites	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) What are advantages of recycling?	<b>03</b>
(b) State various methods of composting.	<b>04</b>
(c) Explain Leachate Management in detail	<b>07</b>
<b>Q.5</b> (a) Explain RDF.	<b>03</b>
(b) What are various treatment methods of solid waste?	<b>04</b>
(c) Illustrate the sequence of steps for conducting an Environment Impact Assessment (EIA)	<b>07</b>

**OR**

- Q.5** (a) What are the options for plastic waste management? **03**  
(b) Give classification of plastics as per BIS **04**  
(c) List all the important Policy Landmarks and Initiatives by Government of India on Solid Waste Management. **07**

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**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2024**

**Subject Code:3160515**

**Date:28-11-2024**

**Subject Name: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.

	<b>MARKS</b>
<b>Q.1</b> (a) Classify solid waste.	<b>03</b>
(b) Discuss in brief sampling and characteristics of waste.	<b>04</b>
(c) Discuss the need for solid waste management and its Functional elements.	<b>07</b>
<b>Q.2</b> (a) List composition of Municipal solid waste.	<b>03</b>
(b) Differentiate Reuse and Recycle. Give Examples of each.	<b>04</b>
(c) Discuss Biomedical waste-generation and its management.	<b>07</b>
<b>OR</b>	
(c) Explain in brief about the E-waste-generation and its management.	<b>07</b>
<b>Q.3</b> (a) Define (i) Rubbish (ii) Garbage (iii) Ash.	<b>03</b>
(b) Discuss the wastes related to manufacturing and packaging industry.	<b>04</b>
(c) Describe with sketch the well system for recovery of gases in landfills.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Enlist different types of waste treatment.	<b>03</b>
(b) Describe incineration and pyrolysis.	<b>04</b>
(c) Discuss legal aspects of solid waste disposal.	<b>07</b>
<b>Q.4</b> (a) Enlist the criteria for landfills-site selection.	<b>03</b>
(b) Describe factors affecting the collection system of solid waste.	<b>04</b>
(c) Explain Haul container system with sketch.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) Enlist properties of Hazardous waste.	<b>03</b>
(b) Explain the transfer and transport of Hazardous waste.	<b>04</b>
(c) Describe Health impacts of Solid waste Management.	<b>07</b>
<b>Q.5</b> (a) Explain Segregation.	<b>03</b>
(b) Discuss the waste minimization techniques at source.	<b>04</b>
(c) Discuss the risk assessment with solid waste management.	<b>07</b>
<b>OR</b>	
<b>Q.5</b> (a) Explain EPR in brief.	<b>03</b>
(b) Explain Area and Trench methods of land filling.	<b>04</b>
(c) Discuss Laws for solid waste management.	<b>07</b>

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Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2023

Subject Code:3160515

Date:07-12-2023

Subject Name: 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.

	<b>MARKS</b>
<b>Q.1</b> (a) Enlist the criteria for landfills-site selection.	<b>03</b>
(b) Write a note on incineration.	<b>04</b>
(c) Describe in brief municipal solid waste in Indian conditions.	<b>07</b>
<b>Q.2</b> (a) Enlist the types of Landfills.	<b>03</b>
(b) State various leachate treatment methods.	<b>04</b>
(c) Discuss plastic waste disposal and its necessary equipment.	<b>07</b>
<b>OR</b>	
(c) Discuss the need for solid waste management and its Functional elements.	<b>07</b>
<b>Q.3</b> (a) List different types of solid waste.	<b>03</b>
(b) Explain hierarchy of Solid waste management.	<b>04</b>
(c) Explain in brief about Biomedical waste-generation and its management.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) List different sources of Solid Waste.	<b>03</b>
(b) Discuss in brief sampling and characteristics of waste.	<b>04</b>
(c) Explain in brief about the E-waste-generation and its management.	<b>07</b>
<b>Q.4</b> (a) Explain Segregation.	<b>03</b>
(b) Write note on solid waste volume reduction at source.	<b>04</b>
(c) Discuss legal aspects of solid waste disposal.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) Enlist EIA methods.	<b>03</b>
(b) Discuss the waste minimization techniques at source.	<b>04</b>
(c) Discuss the risk assessment associated with solid waste management system.	<b>07</b>
<b>Q.5</b> (a) List the factors to be considered for efficient collection system.	<b>03</b>
(b) Summarize the factors affecting the collection system of solid waste.	<b>04</b>
(c) Discuss various collection methods of solid waste management system.	<b>07</b>
<b>OR</b>	
<b>Q.5</b> (a) List 3 basic types of transfer operations.	<b>03</b>
(b) Enlist the factors to be considered in determining the size of collection and transportation vehicles.	<b>04</b>
(c) Discuss the transportation systems in solid waste management system.	<b>07</b>

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**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:3160515****Date:15-12-2022****Subject Name: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.

	<b>MARKS</b>
<b>Q.1 (a)</b> Classify the different sources of municipal solid waste	<b>03</b>
<b>(b)</b> Explain the functional elements of municipal solid	<b>04</b>
<b>(c)</b> Explain issues of solid waste management.	<b>07</b>
<b>Q.2 (a)</b> Enlist types of Solid Waste.	<b>03</b>
<b>(b)</b> Discuss the wastes related to manufacturing and packaging industry.	<b>04</b>
<b>(c)</b> Discuss E-waste-generation and its management.	<b>07</b>
<b>OR</b>	
<b>(c)</b> Discuss Biomedical waste-generation and its management.	<b>07</b>
<b>Q.3 (a)</b> Explain the necessity of landfill gas management	<b>03</b>
<b>(b)</b> Write note on solid waste volume reduction at source	<b>04</b>
<b>(c)</b> Discuss are legal aspects of solid waste disposal	<b>07</b>
<b>OR</b>	
<b>Q.3 (a)</b> Explain Segregation	<b>03</b>
<b>(b)</b> Write a note on vermicomposting.	<b>04</b>
<b>(c)</b> Discuss the design and operation of sanitary landfill	<b>07</b>
<b>Q.4 (a)</b> List the factors affecting collection system	<b>03</b>
<b>(b)</b> Write different methods of landfill disposal.	<b>04</b>
<b>(c)</b> Explain all the collection operations of solid waste in detail.	<b>07</b>
<b>OR</b>	
<b>Q.4 (a)</b> Enlist different types of waste treatment	<b>03</b>
<b>(b)</b> Write note on municipal solid waste in Indian conditions.	<b>04</b>
<b>(c)</b> Explain all the transfer operations of solid waste in detail.	<b>07</b>
<b>Q.5 (a)</b> Write note resource recovery in solid waste.	<b>03</b>
<b>(b)</b> Explain the need for environmental monitoring in landfill disposal technique.	<b>04</b>
<b>(c)</b> Discuss Laws for solid waste management.	<b>07</b>
<b>OR</b>	
<b>Q.5 (a)</b> Describe the risks associated with solid waste managements	<b>03</b>
<b>(b)</b> Explain in brief landfill closure and remediation	<b>04</b>
<b>(c)</b> Explain Characterization and site assessment for solid waste management operations	<b>07</b>

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