

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2017****Subject Code: 2163505****Date: 08/05/2017****Subject Name: Solid & Hazardous Wastes - Characterization & Treatment****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.

Q.1	Short Questions	14
	1 Define Solid waste.	
	2 What is E-waste?	
	3 What is Sanitary Landfill?	
	4 What do you mean by the term Sustainable management?	
	5 What do you mean by the term Integrated solid waste management?	
	6 Define Hazardous waste.	
	7 Define Leachate.	
	8 Define Handling.	
	9 What is Refuse?	
	10 What is Heat value?	
	11 What do you mean by the term Recycling?	
	12 What do you mean by the term Reuse?	
	13 What is HDPE?	
	14 What do you mean by the term Biological degradation?	
Q.2	(a) What do you mean by Waste hierarchy?	03
	(b) What are the duties of waste generator?	04
	(c) Discuss the characterization of Solid waste & Hazardous waste.	07
	OR	
	(c) Discuss the 4R principle of Waste management.	07
Q.3	(a) What do you mean by Bio-methanation?	03
	(b) What are the criteria for Solid waste management in hilly areas?	04
	(c) What are the objectives & salient feature of E-waste management & handling rules 2011?	07
	OR	
Q.3	(a) What do you mean by Co-processing?	03
	(b) What are the responsibilities of manufacturer of E-waste?	04
	(c) What are the objectives & salient features of Municipal solid waste management rules 2000?	07
Q.4	(a) Enlist thermo-chemical methods of treating Solid waste.	03
	(b) Explain in brief E-waste processing.	04
	(c) Write a short note on energy recovery from Solid waste?	07
	OR	
Q.4	(a) What do you mean by Combustible waste?	03
	(b) Enlist biological methods of treating Solid waste and explain any one.	04
	(c) Explain the process of Pyrolysis with neat sketch.	07
Q.5	(a) What do you mean by Composting?	03
	(b) What are the Liner & cover criteria for hazardous waste landfill?	04
	(c) What are the criteria for site selection of Sanitary landfill?	07
	OR	

- Q.5** (a) What do you mean by Refused derived fuel? **03**
(b) What are the waste acceptance criteria at hazardous waste landfill? **04**
(c) Discuss the important criteria for design of Hazardous waste Landfill. **07**
