

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2163505****Date:21/05/2019****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.

		MARKS
Q.1	(a) Define: Hazardous waste, e waste, calorific value.	03
	(b) Discuss the 4R principle of Waste management.	04
	(c) Define responsibilities of “Occupier” under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.	07
Q.2	(a) Write about Essential Components of HW landfill.	03
	(b) What is the procedure of storage of hazardous and other wastes under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016?	04
	(c) Discuss Responsibilities of the producer under “E-Waste (Management) Rules, 2016.	07
OR		
	(c) Describe MSW; Discuss “physical and chemical properties of MSW” in detail.	07
Q.3	(a) Define: EPR, Occupier, Dismantler.	03
	(b) Write Short Notes on Manifest system.	04
	(c) Discuss the working of Incinerator with the help of typical process flow diagram.	07
OR		
Q.3	(a) Define: Illegal traffic, composting, leachate.	03
	(b) Write Short Notes on Vermi-composting.	04
	(c) Explain process of anaerobic digestion and bio gas production from of solid waste with the help of a suitable diagram.	07
Q.4	(a) Explain Bangalore method of composting.	03
	(b) What are the Liner criteria for hazardous waste landfill?	04
	(c) What are the location criteria for hazardous waste landfill?	07
OR		
Q.4	(a) What do you mean by Refused derived fuel?	03
	(b) What are the cover criteria for hazardous waste landfill?	04
	(c) Discuss the criteria for site investigation for hazardous waste landfill.	07
Q.5	(a) Define: Trem Card, TCLP, TSDF	03
	(b) Write a note on “slaughter house waste management”.	04
	(c) How movement of leachate in properly managed sanitary landfill sites can be controlled.	07
OR		
Q.5	(a) Define: PRO, Transboundary movement, Co-processing	03
	(b) Write a note on “Agricultural waste management”.	04
	(c) How movement of gas in properly managed sanitary landfill sites can be controlled.	07
