

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014****Subject Code: 163505****Date: 28-05-2014****Subject Name: Solid Wastes- characterization and Treatment****Time: 10:30 am - 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** (a) What do you understand by MSW? Discuss in detail “Sanitary Landfilling of MSW”. **07**
- (b) Discuss in detail “physical and chemical properties of MSW”. Why municipal waste should be kept separate from hazardous and untreated biomedical waste? **07**
- Q.2** (a) Discuss Physicochemical conversion of solid waste with the help of suitable diagram. **07**
- (b) Write short notes on: (1) Hierarchy of Sustainable Waste Management AND (2) Co processing of solid waste **07**
- OR**
- (b) Write short notes on: (1) Influencing factors of quantity of MSW produced (2) HAZOP **07**
- Q.3** (a) How movement of leachate in properly managed sanitary landfill sites can be controlled? **07**
- (b) Explain production of ethanol, butanol and mixed alcohol from solid waste with the help of suitable diagram. **07**
- OR**
- Q.3** (a) What do you understand by Hazardous waste? What are the Responsibilities of the occupier under “The Hazardous Wastes (Management, Handling and Transboundary movement) Rules, 2008”? **07**
- (b) Discuss slaughter house waste management in detail. **07**
- Q.4** (a) Discuss the Characteristics of Hazardous waste as per part C of schedule II of “The Hazardous Wastes (Management, Handling and Transboundary movement) Rules, 2008”? **07**
- (b) Describe Liner Criteria for hazardous waste landfill in detail. **07**
- OR**
- Q.4** (a) What do you understand by Thermochemical conversion and Hybrid Thermo-biochemical conversion of solid waste? Explain with the help of suitable diagram. **07**
- (b) Define incineration and what are the various types of incinerators used? **07**
- Q.5** (a) Explain plasma gasification of solid waste with its advantages and disadvantages? **07**
- (b) Write short notes on: (1) Manifest system (2) Quenching in HW incinerators **07**
- OR**
- Q.5** (a) What guidelines have been given for Management of Municipal Solid Wastes under schedule II of “Municipal Solid Wastes (Management and Handling) Rules, 2000”? **07**
- (b) Write short notes on: (1) Environmental Monitoring System for HW landfill (2) Used oil, waste oil and hazardous waste site **07**

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