

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2018****Subject Code:2163505****Date:08/05/2018****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 (a)** Define following terms: **07**
- Garbage
 - Occupier
 - Leachate
 - EPR
 - Used oil
 - Hazardous waste
 - Illegal traffic
- (b)** Describe MSW; Discuss “physical and chemical properties of MSW” in detail. **07**
- Q.2 (a)** Discuss guidelines for management of Municipal Solid Wastes under schedule II of “Municipal Solid Wastes (Management and Handling) Rules, 2000”? **07**
- (b)** Describe Hazardous waste? Discuss the Responsibilities of occupier under “The Hazardous Wastes (Management, Handling & Transboundary movement) Rules, 2008”? **07**
- OR**
- (b)** Write a detailed note on “Plastic waste management”. **07**
- Q.3 (a)** What is e waste? Discuss the Responsibilities of the Producer under e-waste (Management) Rules, 2015? **07**
- (b)** Write Short Notes on: **07**
- Composition of MSW
 - Manifest system
- OR**
- Q.3 (a)** Discuss Site selection criteria for hazardous waste landfill. **07**
- (b)** Write Short Notes on: **07**
- Influencing factors of quantity of MSW produced
 - Vermi-composting
- Q.4 (a)** Explain process of liquid fuel production from solid waste with the help of a suitable diagram. **07**
- (b)** Write Short Notes on: **07**
- Manifest system
 - Dioxin and Furan Emission from incinerator
- OR**
- Q.4 (a)** What do you mean by biomethanation. Explain process of anaerobic digestion and bio gas production from solid waste with the help of a suitable diagram. **07**
- (b)** Write Short Notes on: **07**
- Dairy waste management
 - Agricultural waste management

- Q.5 (a) Discuss the working of Incinerator with the help of typical process flow diagram. 07
(b) What are the location criteria for hazardous waste landfill? 07

OR

- Q.5 (a) Discuss Physicochemical conversion of solid waste with the help of suitable diagram. 07
(b) Discuss the criteria for site investigation for hazardous waste landfill. 07

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