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17CV651

**Sixth Semester B.E. Degree Examination, July/August 2022**  
**Solid Waste Management**

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

**Module-1**

- 1 a. Define Solid Waste Management. With a neat schematic diagram explain the functional elements of Solid Waste Management. (10 Marks)
- b. Estimate the moisture content of a solid sample with the following composition based on 100 kg of sample.

Component	Percentage by weight	Moisture content
Food waste	12	70
Paper waste	40	6
Cardboard	8	5
Plastic	4	2
Garden Trimming	15	60
Wood	5	20
Inert Miscellaneous	16	8

(10 Marks)

**OR**

- 2 a. Briefly explain Physical and Chemical characteristics of Solid Waste. (10 Marks)
- b. Explain the salient features of Solid Waste Management Rules – 2016. (10 Marks)

**Module-2**

- 3 a. Explain the process of Municipal Incineration with the neat sketch. (10 Marks)
- b. Briefly explain the following processing techniques:
- i) Mechanical Volume Reduction
- ii) Magnetic Separation (10 Marks)

**OR**

- 4 a. Write a note on Air Pollution methods and its control on incineration. (10 Marks)
- b. Write a short note on the following :
- i) 3Ts of Incineration
- ii) Compacting by mechanical volume reduction. (10 Marks)

**Module-3**

- 5 a. Define Composting. Explain the factors affecting aerobic composting. (10 Marks)
- b. Explain the following composting methods:
- i) Bangalore method ii) Indore method. (10 Marks)

**OR**

- 6 a. Define a landfill. Explain the factors that must be considered in evaluating potential solid waste disposal site. (10 Marks)
- b. Discuss the following methods of Land filling :
- i) Excavated / Trench method ii) Areal Ramp method. (10 Marks)

**Module-4**

- 7 a. Explain the different classifications of hazardous waste and its method of disposal. (10 Marks)  
b. Explain briefly the biomedical waste categories and treatment techniques. (10 Marks)

**OR**

- 8 a. Write a short note on:  
i) Construction Waste Management. (10 Marks)  
ii) E Waste Management (10 Marks)  
b. Describe Lechate and its movement. Explain the control of Lechate movement. (10 Marks)

**Module-5**

- 9 Explain any four types of Incinerators. (20 Marks)

**OR**

- 10 a. Define Pyrolysis. Briefly explain the process of Pyrolysis. (10 Marks)  
b. Write a short note on:  
i) Co-generation System in SWM  
ii) Energy recovery from Solid Waste Management. (10 Marks)

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