

CBCS SCHEME

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Sixth Semester B.E. Degree Examination, June/July 2023 Solid Waste Management

Time: 3 hrs.

Max. Marks: 100

- Note:** 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Assume any missing data.

Module-1

- 1 a. Explain the different sources and types of solid waste. (10 Marks)
b. Estimate the density of the solid waste sample on a discarded basis. Take 1000Kg of solid waste.

Component	% by mass	Density (Kg/m ³)
Food waste	15	290
Paper	45	85
Card board	10	50
Plastics	10	65
Garden trimmings	10	105
Wood	5	240
Tin Cans	5	90

(10 Marks)

OR

- 2 a. With a neat sketch, explain Hauled container system and stationary container system. (10 Marks)
b. Explain Route optimization with respect to solid waste management. (10 Marks)

Module-2

- 3 a. Explain the need of processing of solid waste. (04 Marks)
b. Explain Mechanical volume reduction of solid waste. (06 Marks)
c. Explain the process of incineration with respect to volume reduction with a neat sketch. (10 Marks)

OR

- 4 a. Give a list of size reduction equipments. Explain any one. (10 Marks)
b. Explain the following : i) Air separation ii) Magnetic separation. (10 Marks)

Module-3

- 5 a. Explain the design considerations for anaerobic composting. (10 Marks)
b. Explain Vermi composting in detail. (10 Marks)

OR

- 6 a. Explain the factors that governs the selection of site for sanitary land filling. (10 Marks)
b. Determine the landfill area required for a municipality with a population of 50000, given that :
i) Solid waste Generation – 350gm/person/day
ii) Compacted density of landfill – 504Kg/m³
iii) Average depth of compacted solid work = 3m (10 Marks)

Module-4

- 7 a. Explain the Bio-medical waste disposal methods. (10 Marks)
b. List out the various sources of E-waste and also give a note on its environmental impacts. (10 Marks)

OR

- 8 a. Write a note on collection of E-waste and its recycling. (10 Marks)
b. Explain construction and demolition waste and also give a note on its reuse potential. (10 Marks)

Module-5

- 9 a. What are 3T's of incineration? Explain briefly. (10 Marks)
b. Explain energy recovery technique for solid waste management. (10 Marks)

OR

- 10 a. Define Pyrolysis. Briefly explain the process of pyrolysis. (10 Marks)
b. Define Hazardous waste. Explain briefly about collection and disposal of hazardous waste. (10 Marks)
