

CBCS SCHEME



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15CV651

Sixth Semester B.E. Degree Examination, June/July 2019

Solid Waste Management

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Explain the different sources and types of solid wastes. (06 Marks)
b. Estimate the density of a solid waste sample, on as discarded basis. Take 1000kg sample. (10 Marks)

Component	% by mass	Density (kg/m ³)
Food waste	20	300
Paper	40	100
Plastics	5	90
Garden trimmings	15	150
Wood	5	250
Tin cans	5	100
Cardboard	10	80

OR

- 2 a. With a neat sketch, explain hauled container system and stationary container system. (10 Marks)
b. With a neat sketch, explain the different types of Transfer stations. (06 Marks)

Module-2

- 3 a. Explain the process of incineration with the aid of neat sketch. (08 Marks)
b. Explain the following :
i) Mechanical volume reduction ii) Component separation. (08 Marks)

OR

- 4 a. Describe the effect of 3T's in incineration process of solid waste. (08 Marks)
b. Write a note on Air pollution and its control. (08 Marks)

Module-3

- 5 a. What are the important factors for the design consideration in Anaerobic composting? (06 Marks)
b. Write a note on Vermi composting. (04 Marks)
c. Determine the amounts of oxygen required to oxidize 1 tonne of waste and also to stabilize Ammonia in having the chemical equation C₅₀ H₁₀₀ O₄₀ N. (06 Marks)

OR

- 6 a. Determine the landfill area required for municipality with a population of 50,000 given that Solid waste generation = 350gm/person/day ; Compacted density of landfill = 504 kg/m³ ; Average depth of compacted solid waste = 3m. (04 Marks)
b. What is Leachate? What are its effects on ground water? (04 Marks)
c. List and explain briefly the various factors that must be considered in evaluating a potential landfill site. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.



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Module-4

- 7 a. Explain the Bio – medical waste disposal methods. (08 Marks)
b. List the various sources of e – waste, hazardous and construction waste. (08 Marks)

OR

- 8 a. Explain the categories of hazardous waste and its method of disposal. (08 Marks)
b. Discuss about collection , treatment and disposal of construction waste. (08 Marks)

Module-5

- 9 a. Describe about the various types of incinerations. (08 Marks)
b. Write short notes on : (08 Marks)
i) Energy recovery operation ii) Significance of Reuse in solid waste.

OR

- 10 a. Define Pyrolysis. Briefly explain the process of pyrolysis. (08 Marks)
b. Explain the design criteria for incineration. (08 Marks)
