

Seventh Semester B.E. Degree Examination, Feb./Mar. 2022

Solid Waste Management

Time: 3 hrs.

Max. Marks:100

- Note:1. Answer any FIVE full questions, selecting atleast TWO questions from each part.**
2. Assume any suitable missing data.

PART – A

- 1 a. Define Land Pollution and explain the sources of land pollution. (06 Marks)
 b. Write the sources of Solid waste in a Community and typical composition of Municipal Solid Waste. (08 Marks)
 c. Estimate the moisture content of a Solid Waste samples with the following composition based on 100 kg sample waste.

Component	% by mass	Moisture content percentage
Food waste	15	70
Paper	45	06
Cardboard	10	05
Plastics	10	02
Garden trimmings	10	60
Wood	05	20
Tin cans	05	03

(06 Marks)

- 2 a. With the help of flow diagram, explain Inter-relationship of functional elements of Solid Waste Management. (06 Marks)
 b. Explain the factors affecting Waste generation rates. (06 Marks)
 c. With a schematic diagram, distinguish between Hauled Container System and Stationary Container System. (08 Marks)
- 3 a. Explain the important factors that must be considered in the design of Transfer stations. (06 Marks)
 b. Explain the different types of Transfer stations. (06 Marks)
 c. Briefly explain the Unit operations used for the separation and processing of Solid Waste. (08 Marks)
- 4 a. Explain the role of 3T's in Incineration process. (06 Marks)
 b. With the help of neat sketch, explain Fluidized Bed Incinerator. (08 Marks)
 c. Briefly explain the Pyrolysis process. (06 Marks)

PART – B

- 5 a. What are the advantages of Composting and explain Bangalore and Indoor method of Composting. (08 Marks)
 b. Briefly explain the important design Considerations for Aerobic Composting. (08 Marks)
 c. Write short notes on Vermi Composting. (04 Marks)

- 6 a. Briefly explain the factors that must be considered in the design and operation of Solid Waste Landfills. (08 Marks)
b. Explain Area method and Trench method of Land filling. (08 Marks)
c. What is Leachate? Discuss the effects of Leachate on ground water. (04 Marks)
- 7 a. List various methods of Solid Waste Disposal and explain any two of them. (08 Marks)
b. Write a note on "Biomedical Waste Management". (06 Marks)
c. List the merits and demerits of Sanitary Land Filling. (06 Marks)
- 8 Write short notes on :
a. Reusing and Recycling of Plastic waste.
b. Energy Recovery Operation.
c. Material Recovery from Solid Waste.
d. Leachate control in Landfills sites. (20 Marks)
