



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Sixth Semester, B.E. - Civil Engineering

Semester End Examination; May/June - 2018

Municipal Solid Waste Management

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

- 1 a. Define land pollution. Mention the causes for land pollution. 10
- b. What are the functional elements of the solid waste management? Explain with a neat sketch. 10
- 2 a. Define solid waste. What are the different sources and types of solid waste? 10
- b. Briefly explain the physical and chemical characteristics of solid waste. 10

UNIT - II

- 3 a. Explain the different collection system based on the mode of operation with neat sketch. 10
- b. List out the factors that should be taken into consideration, when laying out routes for collection of solid waste? 10
- 4 a. What are the different residential collection services commonly used? Mention their merits and demerits. 10
- b. Explain the following with respect to solid waste : 10
 - i) Mechanical volume reduction
 - ii) Size reduction
 - iii) Component separation

UNIT - III

- 5 a. Briefly explain three types of incineration process. 10
- b. What are the factors to be considered for the design of aerobic composting process? 10
- 6 a. Briefly explain the Vermi composting. 10
- b. With the help of neat sketch, explain Indore and Bangalore method of composting. 10

UNIT - IV

- 7 a. Explain the various factors considered in the selection of a site for a sanitary land fill. 10
- b. With the help of neat sketches, explain the different methods of land filling. 10
- 8 a. What is Leachate? Discuss briefly the control of Leachate movement in a sanitary land fill. 10
- b. Write a note on gases in land fill and control of gas movement. 10

UNIT - V

9. Write short notes on any four of the following : 20
 - i) Ocean disposal
 - ii) Volume and Size reduction
 - iii) Materials recovery
 - iv) Environmental significance in reuse
 - v) Pyrolysis
- 10 a. Briefly explain the different disposal methods used in India. 10
- b. Define Biomedical waste and sources and classification of Biomedical waste. 10