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Seventh Semester B.E. Degree Examination, May 2017
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 suitable data if needed.*

PART – A

1 a. Define Land Pollution. Explain in brief the sources and their effects on soil.   **(10 Marks)**
   b. With a neat flow diagram, explain in brief the functional units of solid waste management.
                                                                                          (10 Marks)

2 a. Write explanatory note on :
      i) Curb collection service   ii) Garbage chute   iii) Transfer station   iv) Route
      optimization.   **(12 Marks)**
   b. Estimate the energy content of a solid waste sample on unit energy content on dry basis and
      on ash free dry basis. Assume 5% as ash content.   **(08 Marks)**

Component	% by mass	% moisture content	Energy kJ/kg
Food waste	15	70	4650
Paper	45	6	16750
Cardboard	10	5	16300
Plastic	10	2	32600
Garden trimmings	10	60	6500
Wood	5	20	18600
Tin cans	5	3	700

3 a. With a neat sketch, explain hauled container and stationary container system.   **(12 Marks)**
   b. With a neat sketch, explain the working of :
      i) Magnetic separator   ii) Rotating screen.   **(08 Marks)**

4 a. Describe briefly a conventional incinerator, with the help of a neat sketch.   **(10 Marks)**
   b. Write the factors that affect the incineration process.   **(10 Marks)**

PART – B

5 a. With a neat sketches, explain the
      i) Windrow method of composting   ii) Static pile method of composting.   **(10 Marks)**
   b. Explain in brief, the factors that affect aerobic composting process.   **(10 Marks)**

6 a. Write in brief the factors that must be considered in evaluating potential landfill sites.
                                                                                       (10 Marks)
   b. Differentiate between :
      i) Area method and trench method   ii) Open dumping and sanitary landfills.   **(10 Marks)**

10CV757

7 a. Write explanatory notes on :
   i) Hog feeding   ii) Ocean disposal of solid wastes.   **(10 Marks)**
   b. Explain the characteristics of biomedical waste and disposal methods.   **(10 Marks)**

8 Write explanatory notes on any four of the following :
   a. Plastic wastes.
   b. Landfill liners.
   c. Energy recovery from solid wastes.
   d. Hazardous waste management.
   e. Air classifier.   **(20 Marks)**

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