

Total No. of Questions : 8]

SEAT No. :

**P734**

[Total No. of Pages : 2

**[5870]-1019**

**T.E. (Civil)**

**Solid Waste Management**

**(2019 Pattern) (Elective - II) (Semester - II) (301015F)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Answer Q.No. 1 or Q.No. 2, Q.No. 3 or Q.No. 4, Q.No. 5 or Q.No. 6, Q.No. 7 or Q.No. 8.*
- 2) *Figures to the right indicate full marks.*
- 3) *Draw neat figures wherever necessary.*
- 4) *Assume suitable data if necessary.*
- 5) *Use of scientific calculator is allowed.*

- Q1)** a) Suggest and justify the criteria adopted for the execution of vermicomposting. **[6]**
- b) Explain with sketch the Bangalore Method of composting. **[6]**
- c) State the terms related to Solid waste management **[6]**
- i) Segregation
  - ii) Recovery
  - iii) Recycling

OR

- Q2)** a) Write a note on material recovery facility. **[6]**
- b) Specify the role of transfer station in municipal solid waste management. **[6]**
- c) Explain integrated waste management. **[6]**
- Q3)** a) What are the factors affecting anaerobic digestion? **[6]**
- b) Write environmental impacts of waste to energy system. **[6]**
- c) What are the different types of incinerators? Explain any one. **[5]**

OR

- Q4)** a) Describe the incineration technologies and air emissions and its control in detail. Explain the following: **[6]**
- i) Pyrolysis

**P.T.O.**

- ii) Refuse derived fuel
  - iii) Bio gasification
  - b) How to estimate of low and high heating value of any material. [6]
  - c) Write working principle, advantages and disadvantages of anaerobic digestion process. [5]
- Q5)** a) Write short note on legacy waste management. [6]
- b) Write methods of slope stability analysis. [6]
- c) Describe the factors which affect production of leachate and landfill gas in the landfill? [6]
- OR
- Q6)** a) What is engineered landfill? Why it is essential? Explain in brief different methods of landfilling. [6]
- b) Enlist methods of Biomining and explain any one method of it. [6]
- c) Identify the adverse effects of a landfill leachate and list appropriate control measures? [6]
- Q7)** a) Suggest the appropriate method for disposal of industrial solid waste and need of its recycling. [6]
- b) Write objectives and major provision in construction and demolition (C&D) waste management rules - 2016. [6]
- c) Suggest various management technologies for biomedical waste. [5]
- OR
- Q8)** a) Explain any one case study of material recovered from e-waste. [6]
- b) Explain any one case study of processing and reuse of construction & demolition waste. [6]
- c) Write objectives and major provision in plastic waste management rules -2016. [5]

