

Total No. of Questions : 8]

SEAT No. :

PA-1440

[Total No. of Pages : 2

[5926]-56

T.E. (Civil Engg.)

SOLID WASTE MANAGEMENT

(2019 Pattern) (Semester-II) (Elective-II) (301015f)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Figures to the right indicate full marks.
- 3) Draw neat figures wherever necessary.
- 4) Assume necessary data.
- 5) Use of scientific calculator is allowed.

- Q1)** a) State the factors considered during evaluation of on-site processing equipments of solid waste. [6]
- b) Explain thermal volume reduction method of processing technique. [6]
- c) State the terms related to solid waste management [6]
- i) Segregation
 - ii) Recovery
 - iii) Recycling
 - iv) Reuse

OR

- Q2)** a) List the factors affecting composing process of solid waste. [6]
- b) Specify the role of transfer station in municipal solid waste management. [6]
- c) Explain Integrated Solid Waste Management by citing out the political, environmental and economic aspects along with its advantages. [6]

- Q3)** a) How does incineration help in the management of solid waste? [6]
- b) Describe the incineration technologies and air emissions and its control in detail. Explain the following : [6]
- i) Pyrolysis
 - ii) Refuse derived fuel
 - iii) Bio gasification
- c) How to estimate of low and high heating value of any material. [5]

OR

- Q4)** a) Write environmental impacts of waste to energy system. [6]
- b) What are the different types of incinerators? Explain any one. [6]
- c) Write working principle, advantages and disadvantages of anaerobic digestion process. [5]

P.T.O.

- Q5)** a) Draw a neat labeled sketch of single liner system of leachate control. [6]
b) State any two advantages and disadvantages of Landfill method of solid waste disposal. [6]
c) Describe the factors which affect production of leachate and landfill gas in the landfill? [6]

OR

- Q6)** a) What is Leachate? How it is formed? How its movement is controlled? [6]
b) Enlist methods of Biomining and explain any one method of it. [6]
c) What is bioreactor landfill? What are the different types of bioreactor landfill? [6]

- Q7)** a) Explain Domestic waste and Hazardous solid waste. [6]
b) Explain the control measures for minimizing the industrial solid waste. [6]
c) Suggest various management technologies for biomedical waste. [5]

OR

- Q8)** a) Discuss the present scenario of recycling of E- waste in India. [6]
b) Explain EPA - identification of hazardous and toxic waste. Write down the characteristics of hazardous waste. [6]
c) Write objectives and major provision in plastic waste management rules - 2016. [5]

