A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 59112

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Elective

Civil Engineering

15UCE912- MUNICIPAL SOLID WASTE MANAGEMENT

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Perapita generation of solid waste is_____ CO1- R

   (a) 100 -150 g/d (b) 200-600 g/d (c) 50 g/d (d) 100-800 mg/d

2. Refuse consists of_____ CO1- R

   (a) Garbage and street waste (b) Trash and industrial waste

   (c) Ashes and metals (d) Garbage and rubbish

3. Completely decomposed organic matter is called ____ CO2- R

   (a) Mulch (b) Humus (c) Compost (d) Scum

4. The capacity of small transfer station is _____ tonnes CO2- R

   (a) 50 (b) 100 (c) 500 (d) 200

5. Which of the following waste is not compostable? CO3- R

   (a) Food waste (b) Paper (c) Dry leaves (d) Ashes

6. The range of C/N ratio in composting process is _____ CO3- R

   (a) 31 to 35 (b) 21 to 25 (c) 26 to 30 (d) 36 to 45

7. What is the optimum temperature for growth of mesophilic anaerobic bacteria? CO4- R

   (a) 30-38 °C (b) 0-4 °C (c) 55-60 °C (d) None of the above

8. Which of the following is present in landfill gas? CO4- R

   (a) Furans (b) Porassium (c) Methane (d) Argon

9. Which of the following is a biological aerobic treatment of solid waste? CO5- R

(a) Landfilling (b) Composting (c) Incineration (d) None of the above

10. Which of the following is included in 3 Ts of combustion? CO5- R

(a) Temperature (b) Time (c) Turbulence (d) All of the above

PART – B (5 x 2= 10 Marks)

11. What are the various methods of sampling? CO1- R

12. Name the major recoverable materials present in the MSW. CO2- R

13. List any two factors considered in collection of solid waste. CO3- R

14. Differentiate pyrolysis and incineration. CO4- R

15. List the typical constituents present in landfill gases. CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) Explain the sampling methods and characterization of municipal solid waste. CO1- U (16)

Or

(b) Describe the functional elements of an effective solid waste management. CO1-U (16)

17. (a) Explain in detail the Onsite processing / Segregation methods for solid waste. CO2-U (16)

Or

(b) Explain resource recovery and processing of Municipal solid waste management. CO2- U (16)

18. (a) Differentiate hauled and stationary container system used for solid waste collection with neat diagrams. CO3- U (16)

Or

(b) Enumerate the types, size and purposes of storage containers for municipal solid waste. CO3- U (16)

19. (a) Describe the incineration technologies with the emphasis on air emissions and control techniques. CO4- U (16)

Or

(b) Explain the stages /mechanisms of anaerobic digestion process of decomposing soil waste. CO4- U (16)

20. (a) What is a sanitary landfill? Explain with neat sketch of the components of landfill. CO5- U (16)

Or

(b) Explain in detail about the stages of bio methanation process. CO5 U (16)

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