

**R18**

**Code No: 158CP**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B.Tech IV Year II Semester Examinations, July - 2023**

**SOLID WASTE MANAGEMENT**

**(Civil Engineering)**

**Time: 3 Hours**

**Max. Marks: 75**

**Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A**

**(25 Marks)**

- 1.a) How is moisture content is calculated in solid waste? [2]
- b) Mention the biochemical characteristics of solid waste. [3]
- c) Write brief on slit management. [2]
- d) What is the Typical Classification of Streets and Frequency of Sweeping? [3]
- e) Define Gasification. [2]
- f) What are the advantages of Pyrolysis? [3]
- g) What are the functions of the surface water drainage system used in landfill? [2]
- h) Why Geological barriers and gas collection systems are used in landfill? [3]
- i) Define Hazardous and Biomedical waste. [2]
- j) What are the different types of Bio Medical Waste? [3]

**PART – B**

**(50 Marks)**

2. What are the service level benchmarks for solid waste management? [10]

**OR**

- 3.a) Describe in detail the quantification of waste at each level of solid waste management generation.

- b) Give the formula of Arithmetic increase method in population forecasting. [7+3]

4. Explain in detail the transportation of municipal solid waste management. [10]

**OR**

- 5.a) What are the strategies followed for waste minimization?

- b) Discuss in brief on transfer stations. [5+5]

- 6.a) What are the role of informal sector involvement in recycling?

- b) Write a brief on Recycling of Paper and Board. [5+5]

**OR**

7. Explain in detail the Biomethanation process and its benefits and applications system.

[10]

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8.a) What are the Criteria for specifications for land filling operations and closure on completion of landfill?

b) Explain in detail the Criteria for water quality monitoring in landfill. [5+5]

**OR**

9.a) What are the Criteria for ambient air quality monitoring in landfill?

b) Write about leachate collection system and gas venting system in landfill. [5+5]

10.a) Discuss in detail the Co processing of hazardous waste with suitable example classification.

b) What are the responsibilities of producer and refurbisher as per e-waste (management) rules 2022? [6+4]

**OR**

11.a) Explain in detail the labelling requirements of Hazardous waste.

b) Mention the operational compliance by Common Biomedical Waste Treatment Facilities (CBWTFs). [5+5]

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