Register No.: ..... Name: .....

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SECOND SEMESTER M.TECH. DEGREE EXAMINATION (Regular), MAY 2023

GEOMECHANICS AND STRUCTURES

(2021 Scheme)

Course Code: 21GS204-A

Course Name: Environmental Geotechniques

Max. Marks: 60 **Duration: 3 Hours**

PART A

(Answer all questions. Each question carries 3 marks)

1. Enumerate various forms of waste?
2. Explain how gas monitoring is carried out in a landfill site.
3. Explain the necessity of understanding the transport mechanism of contaminants through porous media.
4. Define “source control”.
5. Enumerate the considerations for solid waste transportation?
6. Justify the statement, “a mixed waste has no value.”
7. Enlist the sources of slurry waste.
8. Explain the necessary precautions while constructing an embankment for a slurry pond.

PART B

(Answer one full question from each module, each question carries 6 marks)

MODULE I

9. Explain the site selection criteria for waste disposal facilities. (6)

OR

10. Explain various engineering properties of solid wastes, its typical values and impacts. (6)

MODULE II

11. Enumerate principal landfill gases and explain their properties. (6)

OR

12. Discuss stability considerations of ash dykes. (6)

MODULE III

13. Explain the mechanism of contaminant transport through porous media. (6)

OR

14. Describe bioreactor landfills? State the advantages. (6)

MODULE IV

15. Explain bioremediation in detail and its disadvantages. (6)

OR

16. Explain soil washing in detail and its advantages. (6)

MODULE V

17. Justify the possibility of using fly-ash as a fill material in low lying areas. (6)

OR

18. Describe the engineering properties of wastes and its influence in reusing the same for geotechnical sites. (6)

MODULE VI

19. Explain construction aspects of a Cement-Bentonite slurry trench wall. (6)

OR

20. Explain the effectiveness of slurry ponds in containing waste. Enlist the disadvantages (6)

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