

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SECOND SEMESTER M.TECH DEGREE EXAMINATION (R,S), MAY 2024**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 the various solid waste disposal methods
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. Draw a schematic of final cover for a solid waste disposal landfill.
5. Describe the possible geotechnical reuses of fly-ash
6. Describe the possible geotechnical reuses of construction & demolition waste
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 the principal landfill gases and explain their properties. (6)

OR

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

MODULE III

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

OR

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

MODULE IV

15. Explain design and construction aspects of a compacted clay liner (6)

OR

16. Explain properties of a Geosynthetic Clay Liner and its performance factors. (6)

MODULE V

17. Explain possible reuse scenarios of following wastes, (3)
a. Fly-ash (3)
b. Paper mill sludge

OR

18. Explain the transportation considerations of sewage sludge from a waste water treatment facility (6)

MODULE VI

19. Describe soil-bentonite barriers and its construction (6)

OR

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