

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Eighth Semester B.Tech Degree Regular Examination June 2023 (2019 Scheme)

Course Code: CET424**Course Name: GEOENVIRONMENTAL ENGINEERING****Max. Marks: 100****Duration: 3 Hours****PART A***Answer all questions, each carries 3 marks.*

Marks

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| 1 | Discuss the multiphase behavior of soil. | (3) |
| 2 | Enumerate the importance of soil physics in geoenvironmental engineering. | (3) |
| 3 | Differentiate between Advection and Diffusion. | (3) |
| 4 | Illustrate the impact of a waste dump on the environment. | (3) |
| 5 | Sketch the liner system installed for the hazardous waste dump. | (3) |
| 6 | Explain a compacted clay liner. | (3) |
| 7 | Discuss the post-closure monitoring system. | (3) |
| 8 | Define soil remediation. | (3) |
| 9 | What are the different types of contaminants encountered in waste dumps? | (3) |
| 10 | Differentiate between in-situ and ex-situ remediation. | (3) |

PART B*Answer any one full question from each module, each carries 14 marks.***Module I**

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| 11 | a) Explain the physical characterization of municipal solid waste. | (10) |
| | b) Discuss about MoEF guidelines in waste management. | (4) |

OR

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| 12 | a) Explain the sequential batch contact testing. | (10) |
| | b) What is the role of soil in geoenvironmental engineering? | (4) |

Module II

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| 13 | a) Explain any two contaminant transport mechanisms in soil. | (10) |
| | b) How does hydrodynamic dispersion take place? | (4) |

OR

- 14 a) List 8 factors controlling the site selection for a landfill. (8)
b) How are the 6 hydrological factors considered for landfill design? (6)

Module III

- 15 a) Explain the procedure of the construction sequence of a valley landfill. (10)
b) List the properties of liner material. (4)

OR

- 16 a) Explain any five different properties needed for geosynthetic clay liner. (10)
b) How does compaction affect the permeability of clayey soil? (4)

Module IV

- 17 a) Discuss about the leachate collection and removal system with the help of figure. (8)
b) Explain the post-closure monitoring system for a landfill. (6)

OR

- 18 a) Explain active and passive systems of gas collection. (10)
b) Discuss any one gas management strategy adopted for a landfill. (4)

Module V

- 19 a) Explain the site investigation procedure adopted for a contaminated site. (10)
b) What are the limitations of pump and treat method? (4)

OR

- 20 a) Discuss the remediation technique adopted for soil and groundwater. (10)
b) What are the limitations of electrokinetic technique? (4)
