

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Supplementary Examination June 2022 (2015 Scheme)

**Course Code: CE465****Course Name: GEO-ENVIRONMENTAL ENGINEERING**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer any two full questions, each carries 15 marks.*

Marks

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| 1 | a) Explain the importance of geotechnical characterization of Municipal Solid waste. | (8) |
| | b) What are the changes that occur in a waste dump? | (7) |
| 2 | a) List out the important mechanisms of soil-water interaction. | (8) |
| | b) Discuss the locational criteria for sanitary landfills as per MoEF guidelines? | (7) |
| 3 | a) What are the various geotechnical reuse of waste? | (8) |
| | b) List the data to be collected for the site selection of landfills. | (7) |

PART B*Answer any two full questions, each carries 15 marks.*

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| 4 | a) What are the different components of a cover system? Explain them with a neat sketch. | (10) |
| | b) What are the functional requirements of liner system in landfill? | (5) |
| 5 | a) What are the components of a landfill gas collector? Explain with a neat sketch | (8) |
| | b) Elaborate the different properties of geosynthetics? | (7) |
| 6 | a) What are the factors affecting leachate quality and quantity? | (8) |
| | b) Differentiate between active and passive gas venting systems in a landfill. | (4) |
| | c) Write any two tests on geosynthetic to be used as a clay liner? | (3) |

PART C*Answer any two full questions, each carries 20 marks.*

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| 7 | a) Explain any 5 techniques that can be adopted for remediation of contaminated sites. | (15) |
| | b) What are the important data required for planning contaminated site remediation? | (5) |
| 8 | a) List and explain the contaminant transport mechanisms in saturated soil. | (10) |
| | b) Explain the different steps adopted in site contamination assessment. | (10) |

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Describe the effects of pollutants in soil on

(20)

- (i) Index properties
- (ii) Volume change behaviour
- (iii) Shear strength
- (iv) Permeability
