Reg No.:_____ Name:_____

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree Regular and Supplementary Examination July 2021

Course Code: CE362

Course Name: GROUND IMPROVEMENT TECHNIQUES

Max. Marks: 100 Duration: 3 Hours

Instruction: ***Draw neat sketches where necessary***

PART A

Answer any two full questions, each carries 15 marks. Marks

1	a)	Illustrate typical applications of grouting.	(9)
	b)	Discuss the main points involved in ground improvement potential.	(6)
2	a)	Assume that you are a geotechnical engineer and you are asked to suggest suitability of materials for reclamation of a construction site. Discuss the suitability of any two materials you would choose for the reclamation of the site.	(9)
	b)	Classify the materials used for grouting.	(6)
3	a)	Discuss the suitability of ground modification techniques according to different site conditions.	(8)
	b)	Illustrate the method of permeation grouting to be done in a construction site.	(7)

PART B

Answer any two full questions, each carries 15 marks.

4	a)	Briefly explain the applications of ground anchors.	(5)
	b)	Illustrate the construction method of lime stabilization in a typical pavement site.	(10)
5	a)	Discuss how calcium chloride affects properties of soil.	(5)
	b)	Illustrate the mechanism of rock bolt action around an excavation.	(10)
6	a)	Discuss the effects of cement, on soil properties, used in chemical stabilization.	(8)
	b)	Illustrate the sequence of soil nailed wall construction.	(7)

PART C

Answer any two full questions, each carries 20 marks.

7	a)	Briefly discuss the situations where the hydraulic modification techniques are being used	(10)
	b)	Assume that you are a geotechnical engineer in a construction site which consists of fine sand and silt. Explain briefly, any one deep dynamic compaction technique for ground improvement with justification.	(10)
8	a)	Illustrate the deep well drainage system and its practical applications.	(10)
	b)	Explain the significance of moisture-density relationships in the compaction of soils.	(10)
9	a)	Assume that you are a practicing geotechnical engineer. Illustrate with neat sketch how you will protect a finished structure from seeping ground water.	(12)
	b)	Write a short note on any one compaction control test	(8)

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