

Reg No.: _____

03000CE362052002 Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Sixth semester B.Tech degree examinations (S), September 2020



Course Code: CE362

Course Name: Ground improvement techniques

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

Marks

- 1 a) What are the factors affecting selection of an appropriate ground improvement technique? (5)
b) What are the characteristics of Grout material? (5)
c) Explain Compaction grouting with a neat sketch. (5)
- 2 a) What are Suspension grouts? Explain with an example. (5)
b) Explain the different circumstances under which ground improvement techniques need to be adopted. (5)
c) Explain Ascending and Descending type of grouting. (5)
- 3 a) What are Reclaimed soils? List two reclaimed materials and its application. (5)
b) Explain any two applications of grouting. (5)
c) Classify the Ground Modification techniques. Name the ground improvement techniques can be used to stabilise clayey soils. (5)

PART B

Answer any two full questions, each carries 15 marks.

- 4 a) Write short note on stabilisation of soil with flyash. (4)
b) Explain the application of ground anchors. (5)
c) What are the construction methods adopted for chemical stabilisation? (6)
- 5 a) What are the reactions that occur when lime is added to soil? (4)
b) Explain the types of Rock bolts. (5)
c) Explain the construction sequence in Soil nailing. (6)
- 6 a) Explain the stabilisation of soil with Bitumen. (4)

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- b) What are the factors affecting stabilisation of soil with cement? (5)
- c) With a neat sketch, explain the functions of the components of a ground anchor. (6)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) Explain any two types of rollers used for field compaction. (5)
- b) Write short notes on , i) Open sumps and ditches method of dewatering (7)
ii) Vacuum dewatering system
- c) Explain any two shallow surface compaction control tests. (8)
- 8 a) Explain Electro osmosis method of dewatering with a neat sketch. (5)
- b) Differentiate Vibro compaction and Vibro replacement method. (7)
- c) Explain the properties of compacted soil. (8)
- 9 a) Explain Single stage and multistage well point system with neat sketches. (5)
- b) List the Deep compaction techniques. Explain any two in detail. (7)
- c) Explain how compaction control is achieved in the field. (8)
