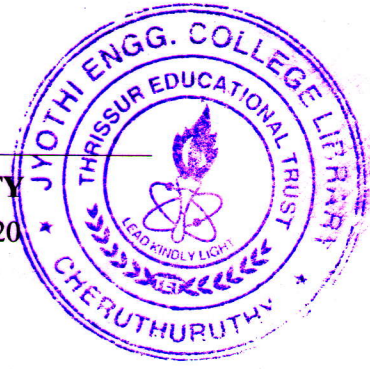


Reg No.: _____

Name: **03000CE362052001**

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree (Hons.) Examination June 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 the choice of ground improvement methods? (7)
- b) With a neat sketch, explain the circulation grouting method. (4)
- c) Write a note on the characteristics of grout materials. (4)
- 2 a) Explain the stages and purpose of grouting in a construction project. (9)
- b) What are the benefits of ground improvement? (6)
- 3 a) What are the ground conditions which will enable the engineer to decide a proper treatment or design approach? (7)
- b) Explain ascending and descending type of grouting. (5)
- c) Write note on grout hole pattern. (3)

PART B

Answer any two full questions, each carries 15 marks.

- 4 a) Explain soil-cement stabilization and the factors that influence the strength and stiffness improvement of cement treated soils? (7)
- b) With the help of a neat sketch, explain the components of a ground anchor. What are the different types of ground anchor used? (8)
- 5 a) Which are the basic types of lime used for stabilization? How soil-lime base is constructed? (7)
- b) Explain the types of rock bolts. (8)
- 6 a) What are the favourable and unfavourable conditions for soil nailing? (8)
- b) What is meant by proportioning of soil? How it helps mechanical stabilization? (7)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) What are the factors that affect the selection of shallow surface compaction method? (8)

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- b) Write the measures for the control of compaction in field. (6)
- c) Explain electro-osmosis method of dewatering and the factors influencing electro-osmosis? (6)
- 8 a) How compaction helps to improve the shear strength of soil? (5)
- b) What are the well point systems? Explain with the help of neat sketches. (10)
- c) How moisture content influence the soil stability? (5)
- 9 a) Explain how open sumps and ditches are used for ground modification? (9)
- b) What are the merits of Dynamic compaction? (5)
- c) Describe any two surface compaction equipment (6)
