



10CT752

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021
Ground Improvement Techniques

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART – A

- 1 a. Discuss the objectives of Ground Improvement Techniques. (10 Marks)
b. Mention and briefly explain the measures adopted for Black cotton soil. (10 Marks)
- 2 a. Describe the effect of compaction on engineering properties of the soil. (10 Marks)
b. Explain Dynamic compaction and Vibrofloatation. (10 Marks)
- 3 a. Explain the principle and techniques of dewatering systems. (10 Marks)
b. Briefly explain Electro kinetic dewatering system. (10 Marks)
- 4 a. Explain the following : i) Prefabricated vertical drains ii) Electrokinetic dewatering. (15 Marks)
iii) Preloading. (05 Marks)
b. List advantages and disadvantages of preloading technique. (05 Marks)

PART – B

- 5 a. What do you mean by chemical modification of soils? Discuss benefits. (06 Marks)
b. Describe effect of cement stabilization on various properties of soils. (08 Marks)
c. Explain fly ash stabilization. (06 Marks)
- 6 a. Explain soil cement reactions. (10 Marks)
b. Explain the construction of soil – asphalt. (05 Marks)
c. How the soil stabilization using calcium and sodium chloride is done? (05 Marks)
- 7 a. Classify the methods of grouting and explain any two. (10 Marks)
b. Explain with sketches 5 applications of grouting. (10 Marks)
- 8 Write short notes on the four of the following with sketches :
a. Soil nailing.
b. Gabions and mattresses.
c. Micropiles.
d. Ground anchors.
e. Stone columns. (20 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.