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10CT752

**Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019**  
**Ground Improvement Technique**

Time: 3 hrs.

Max. Marks:100

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

**PART - A**

- 1
  - a. Briefly discuss the classification of Ground Improvement Techniques. (08 Marks)
  - b. List and explain the factors to be considered in the selection of the best soil improvement technique. (08 Marks)
  - c. List the objectives of Ground Improvement. (04 Marks)
- 2
  - a. Explain how the engineering behaviour of soil is enhanced by field compaction. (08 Marks)
  - b. Discuss the effect of compaction on the grain size distribution of soil. (06 Marks)
  - c. Explain the procedure followed in deep compaction and also state the principle involved. (06 Marks)
- 3
  - a. With a neat sketch, comment on multistage well point and vacuum dewatering. (08 Marks)
  - b. Enumerate the steps involved in the design of dewatering system. (12 Marks)
- 4
  - a. List the advantages of dewatering by the method of Pre – loading. (05 Marks)
  - b. Illustrate vertical drains by considering the example of sand drains for dewatering. (08 Marks)
  - c. Explain the principle of Electro kinetic dewatering, with a neat sketch. (07 Marks)

**PART - B**

- 5
  - a. Discuss the advantages of Fly ash stabilization as a method of ground improvement. (07 Marks)
  - b. Explain how the following properties enhance by cement stabilization : (08 Marks)
    - i) Swelling and Shrinkage
    - ii) Strength and deformation characteristics.
  - c. Briefly explain the sandwich technique of cement stabilization. (05 Marks)
- 6
  - a. Explain the various reactions and stages involved in Lime stabilization. (08 Marks)
  - b. Write a note on Bitumen stabilization. (07 Marks)
  - c. Write a note on Chloride stabilization. (05 Marks)
- 7
  - a. Discuss the procedure for grouting. (04 Marks)
  - b. List the applications of grouting. (04 Marks)
  - c. With a neat sketch, explain soil nailing technique. (08 Marks)
  - d. List the application of soil nailing technique. (04 Marks)
- 8 Write short notes on :
  - a. Gabions. (05 Marks)
  - b. Micropiles. (05 Marks)
  - c. Reinforced soil. (05 Marks)
  - d. Soil Anchors. (05 Marks)

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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.