

**R13**

Code No: 126AD

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, May - 2017

**GROUND IMPROVEMENT TECHNIQUES**

(Civil Engineering)

Time: 3 hours

Max. Marks: 75

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A**

(25 Marks)

- 1.a) List out various application of mechanical method. [2]
- b) Explain in-situ tests to characterize problematic soils. [3]
- c) Write the applications of dynamic tamping? [2]
- d) List out the functions of compaction pile. [3]
- e) What do you mean by electro-osmosis [2]
- f) Define on geo-drains. [3]
- g) What do you understand by ground freezing? [2]
- h) Enumerate various objectives of grouting. [3]
- i) What are the objectives of in-situ reinforcement? [2]
- j) Explain step by step process in rock bolting. [3]

**PART - B**

(50 Marks)

2. Explain, briefly the need and objectives of ground modification. [10]
- OR**
3. Explain the various electrical methods of densifying cohesive soils. [10]
4. How can you densify cohesion less soil with the help of vibro compaction technique? [10]
- OR**
5. Describe the method of densification by Blasting? Explain its effectiveness. [10]
6. Explain the properties of a material to be selected as a Geo-synthetics? [10]
- OR**
7. What is vertical drain explain the design of vertical drain? [10]
- 8.a) Differentiate between the compaction grouting and displacement grouting. [5+5]
- b) Write a short notes on shotcreting. [5+5]
- OR**
9. Explain briefly different types of grouting techniques. [10]
10. Explain the steps involved in designing reinforced earth wall. [10]
- OR**
- 11.a) Write a short notes on grid reinforced soil. [5+5]
- b) Discuss about reinforcement with strip. [5+5]

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