

Code No: 126ZD

R15**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, April - 2018****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) Write about identification of type of soil. [2]
- b) What are problematic soils? [3]
- c) Write short notes on mechanical modification of ground. [2]
- d) Write about blasting technique for densification of granular soils. [3]
- e) Write about objectives of hydraulic modification. [2]
- f) Write short notes on preloading technique. [3]
- g) What is the mechanism in chemical modification in ground improvement? [2]
- h) Write about thermal modification in soils. [3]
- i) What is soil reinforcement? [2]
- j) Discuss applications of rock bolting. [3]

PART - B**(50 Marks)**

2. Explain about in-situ tests for the identification and to characterize problematic soils. [10]

OR

3. Explain about need and objectives of ground improvement by electrical methods and discuss its applications. [10]

4. Explain step by step procedure for the installation of compaction piles in cohesionless soils with the help of a neat sketch. [10]

OR

5. Explain mechanism of dynamic tamping technique with the help of a neat sketch. [10]

6. Explain the objective and mechanism of dewatering using Electro-osmosis method with a neat sketch. [10]

OR

7. Explain in detail about applications of filtration and drainage using geotextiles. [10]

8. Explain about jet grouting and compaction grouting methods with a neat sketch. [10]

OR

9. Explain about ascending and descending grouting and their limitations with a neat sketch. [10]

10. Explain about internal and external stability of soil reinforcement. [10]

OR

11. Explain about impact of soil reinforcement using strip and grid reinforcement. [10]

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