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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