Code No: NR410108 **NR**

IV B.Tech I Semester Supplementary Examinations, November 2005
GROUND IMPROVEMENT TECHNOLOGY
(Civil Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) List the objectives of compacting soil and explain the purpose compaction. [8+8]
   (b) What are the strategies developed for optimizing the densification process?
2. What other design or construction alternatives would be considered besides soil improvement such as compaction in order to overcome a difficult foundation problem? Explain in detail. [16]
3. (a) Describe different grouting techniques depending upon the stabiliser used? [8+8]
   (b) Write a note on suspension and solution grouting.
4. (a) Design a reinforced earth wall for retaining a 6metre high cohesionless soil. The soil in the wall and backfill has density of 18KN/m^3 with angle of internal friction of 35 degrees. The allowable soil pressure is 150KN/m^2. Use galvanized strips as reinforcement? [12+4]
   (b) Explain the principle involved in the reinforced earth.
5. (a) What are Geotextiles? List out the important physical and mechanical properties of Geotextiles. [8+8]
   (b) State the various applications of Geotextiles that can be used in place of filter soils. Suggest a procedure of using Geotextiles to prevent cracks in existing Asphalt pavements.
6. (a) Discuss the field conditions that generally favour swelling in expansive soil. [8+8]
   (b) Define the terms, 'Free Sweell', 'Differential Free Swell', 'Swelling Pressure' and 'Field moisture content'
7. What is meant by dynamic compaction? Explain in detail the procedure of conducting laboratory test of compaction. [16]
8. (a) Discuss the effectiveness of lime stabilization with respect to different type of soils. [8+8]
   (b) Explain the design procedure adopted for soil lime mix.

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