

**IV B.Tech I Semester Supplementary Examinations, April/May 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 compaction purpose.  
 (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.
3. (a) Describe different grouting technique depending upon the stabiliser used?  
 (b) Write a note on suspension and solution grouting.
4. (a) Explain any four engineering application of reinforced earth with sketches?  
 (b) Describe the procedure of designing a reinforced earth wall?
5. (a) Out line a general procedure for placing the Geotextile fabrics for reinforcing the Road sub grades.  
 (b) How does the geotextile increase the bearing capacity of foundation soil?
6. (a) Discuss the consequences of swelling in soils.  
 (b) Discuss and state how these two parameters
  - i. swelling potential and
  - ii. plasticity index are related.
7. (a) Explain the different applications of Mechanical stabilization.  
 (b) Write in detail about surface compaction with the vibratory rollers.
8. Find the proportions of the materials A, B, and C by the Rothfuchs method so that the mixtures may approximate to the desired grading using the data given below.

I.S.Sieve	% Passing			
	Desired Grading	Materials A	Materials B	Materials C
40mm	100	95	—	—
20mm	85-100	70	—	—
10mm	65-100	21	—	—
4.75mm	55-85	11	100	—
2.36mm	40-70	7	85	—
425micron	25-45	2	55	—
75micron	10-25	Trace	Nil	100

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