

Code: R7410110

R7

IV B.Tech I Semester (R07) Supplementary Examinations, May 2012  
GROUND IMPROVEMENT TECHNIQUES  
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions  
All questions carry equal marks

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1. (a) Describe the dewatering methods of excavations?  
(b) Explain how the well diameter, depth and spacing of wells is designed in dewatering systems.
2. (a) State the principle underlying suspension grouting. Discuss the limitations of suspension grouts with respect to varying soil conditions.  
(b) Describe the equipment used in grouting technique.
3. (a) Explain in detail the principles of densification of cohesion less soils.  
(b) Explain briefly with a neat sketch the vibrocompaction method of densifying deep granular deposits.
4. (a) Explain in detail the in-situ densification of cohesive soils by using pre-loading with vertical drains.  
(b) What are geodrains? Explain their installation and use.
5. (a) Describe the various steps involved in the process of soil stabilization using lime as additive.  
(b) Discuss the principles and scope of soil-bitumen stabilization.
6. What are the assumptions made in the design of reinforced earth wall and how are they designed?
7. (a) Discuss the merits and demerits of woven and non-woven geotextiles.  
(b) What are geogrids? What are the advantages of Geogrids over Geotextiles?
8. (a) What are the factors influencing the swelling and shrinkage characteristics of expansive soils?  
(b) Briefly explain the different types of foundations in BC soils.

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