

Code: 9A01804

**R09**

B.Tech IV Year II Semester (R09) Advanced Supplementary Examinations, July 2013

**GROUND IMPROVEMENT TECHNIQUES**

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) What is dewatering? Explain its importance in civil engineering works.  
(b) List various well point dewatering systems and explain their suitability for different soils.
- 2 (a) What is grouting? Explain in detail various field of applications of grouting.  
(b) Explain compaction grouting, penetration grouting and fracture grouting with neat sketches.
- 3 (a) Discuss the principles of ground improvement in cohesion less soils.  
(b) Discuss the effectiveness of both vibro flotation and compaction piles for compacting the granular soils.
- 4 (a) With neat sketches explain in-situ densification methods in cohesive soils.  
(b) Discuss how the stress history of a soil deposit affects its suitability for preloading with vertical drains.
- 5 (a) Discuss on suitability and applications of lime stabilization.  
(b) Explain the proportioning techniques of mechanical soil stabilization.
- 6 (a) Write the advantages and applications of reinforced earth structures with neat sketches.  
(b) Discuss the external stability aspects in the design of reinforced earth wall.
- 7 (a) What is the main difference between geo-grid and geo-textile? Explain the field applications of geo-grid and geo-textiles.  
(b) Explain separation and filtration functions of geo-textile. Mention applications based on these functions.
- 8 (a) What are the field conditions that generally favour swelling in an expansive soil? Discuss.  
(b) Discuss the under-reamed pile construction and its ultimate load carrying capacity aspects.

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