

Code: 9A01804

**R09**

B.Tech IV Year II Semester (R09) Regular &amp; Supplementary Examinations April 2016

**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) Discuss briefly the important points to be considered in design of dewatering system.  
(b) Discuss in detail with suitable examples the field conditions which necessitate dewatering in soil.
- 2 (a) What do you understand about soil stabilization by grouting? Explain in detail various fields of applications of grouting.  
(b) Describe the equipment used in the grouting technique.
- 3 (a) Discuss the need of ground improvement and write the principles of ground improvement in cohesionless soils.  
(b) Briefly explain about methods of impact at ground surface and at depth used in densification of granular soil deposits.
- 4 (a) Write short notes on densification of cohesive soils by Lime columns.  
(b) Discuss the important formulae used in the improvement of soft clay deposits using stone columns.
- 5 Discuss the gradation limits for soil-cement stabilization and explain its construction procedure.
- 6 Explain the basic mechanism of reinforced earth. Discuss the various design formulae in reinforced earth wall.
- 7 (a) What are geotextiles? Write a note on common nomenclature of geosynthetics.  
(b) Explain with suitable examples the principles involved in geo-textile material as reinforcement for improving the bearing capacity of soil.
- 8 (a) What are the different design considerations of foundations on expansive soils?  
(b) What are the field conditions that generally favour swelling in an expansive soil? Discuss.

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