

# R07

Code No: M0130

Set No. 1

**IV B.Tech. I Semester Supplementary Examinations, Feb/Mar-2011**  
**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) Write a note on vacuum dewatering.  
(b) Explain the criterion for selection of fill material around drains.
2. (a) Explain how pre-wetting technique is useful in improving the properties of the soil.  
(b) Write a note on grouting methods.
3. (a) Discuss the components of the reinforced earth wall with the help of neat sketch.  
(b) Write a note on various functions of Geosynthetics.
4. (a) Discuss in brief about the various testing methods for Geotextile materials.  
(b) Explain the installations techniques of stone column with the help of neat sketch.
5. (a) Write a note on IS method of determination of swelling pressure of soils.  
(b) Explain the factors affecting the cement stabilized soils.
6. (a) Explain how Rothfutch's graphical method is used for proportioning the materials.  
(b) Explain the design procedure of soil-lime stabilization.
7. (a) Briefly discuss the factors affecting the mechanical stabilization.  
(b) Write a note on soils amenable to lime stabilization.
8. Write short notes on the following
  - (a) Construction methods of soil stabilization
  - (b) Gypsum Stabilization
  - (c) Blanket Drains

# R07

**Set No. 2**

**Code No: M0130**

**IV B.Tech. I Semester Supplementary Examinations, Feb/Mar-2011**

**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) Write a note on multistage well point system of dewatering technique.  
(b) Explain how electro-osmosis technique is effective for dewatering in cohesive soils.
2. (a) Write a note on post grout test.  
(b) Write a note on types of grouting.
3. (a) Explain how the stone columns are useful for improving the properties of soil.  
(b) Describe the theory related to lime columns.
4. (a) Write a note on sand wicks.  
(b) Explain the concept of geo drains with the help of sketch
5. (a) Write a note on factors affecting bitumen stabilization.  
(b) Explain how soil-cement mix is designed using British method.
6. (a) Write a note on under reamed pile foundation.  
(b) Explain the salient features of calcium chloride stabilisation.
7. (a) Briefly discuss the properties of geosynthetics.  
(b) Write a note on problems of expansive soils.
8. Write short notes on the following
  - a) Functions of Geosynthetics
  - b) Components of Reinforced Earth
  - c) Sodium Silicate Stabilization

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**Set No. 3**

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**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) Write a note on deep well system of dewatering method.  
(b) Write a note on field compaction control.
2. (a) Explain how pre-loading technique is useful in improving the properties of the soil.  
(b) Write a note on objects of grouting.
3. (a) Write a note on various applications of Geosynthetics.  
(b) Discuss the design steps of the reinforced earth wall.
4. (a) Explain how the stone columns are installed using ramming technique.  
(b) Describe the theory related to calcium chloride stabilisation.
5. (a) Write a note on IS method of determination of swelling pressure of soils.  
(b) Explain the factors affecting the lime stabilized soils.
6. (a) Explain how Rothfutch's graphical method is used for proportioning the materials.  
(b) Write a note on types of soil bitumen.
7. (a) Briefly discuss the factors affecting the lime-cement stabilization.  
(b) Write a note on lime-soil reactions.
8. Write short notes on the following
  - a) Foundation techniques in expansive soils
  - b) Post grout test
  - c) Components of Reinforced Earth walls.

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**Set No.4**

**IV B.Tech. I Semester Supplementary Examinations, Feb/Mar-2011**  
**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) Explain how electro-osmosis technique is effective in improving the behavior of expansive soils.  
(b) Explain the criterion for selection of fill material.
2. (a) Explain how sand drains are effective in improving the properties of the soil.  
(b) Write a note on thermal stabilization.
3. (a) Write a note on various properties of Geosynthetics with the help of neat sketches.  
(b) Discuss the principles of the reinforced earth wall.
4. (a) Discuss the differences between sand drains and stone columns.  
(b) Explain the vibration at the ground surface.
5. (a) Write a note on identification tests of expansive of soils.  
(b) Explain the types of soil cements.
6. (a) Write a note on sodium silicate and gypsum stabilisation.  
(b) Explain the design procedure of soil- lime stabilization.
7. (a) Briefly discuss the Foundation Techniques in expansive soils.  
(b) Write a note on geodrains.
8. Write short notes on the following
  - a) Problems of expansive soils
  - b) Vacuum dewatering
  - c) Impact at depth