

**BE-Elective-I : Ground Improvement Techniques**

P. Pages : 1

Time : Three Hours



**GUG/W/16/6526**

Max. Marks : 80

- Notes :
1. All questions carry equal marks.
  2. Answer all questions.
  3. Due credit will be given to neatness and adequate dimensions.
  4. Assume suitable data wherever necessary.

1. a) Explain expansive soil and the problems associated with it. 8  
b) Explain with neat sketch deep well drainage and its advantages. 8

**OR**

2. a) Explain electro-osmosis method with neat sketch. 8  
b) Write short notes on problematic soils. 8
3. a) Explain vibroflotation and its advantages. 8  
b) Explain cement stabilization and its need. 8

**OR**

4. a) Explain with neat sketch construction of sand drains. 8  
b) Explain preloading & surcharge. 8
5. a) What are the various factors to be considered while choosing grouting method. 8  
b) Explain Jet grouting. 8

**OR**

6. a) What are the factors that affect the selection of cement grant. 8  
b) Explain in brief effect of cement stabilization on soil. 8
7. a) Explain in brief the advantages of soil reinforcement with its applications. 8  
b) Explain in brief Geosynthesis with the help of neat sketches. 8

**OR**

8. a) Explain in brief types of geotextiles. 8  
b) Explain the functions of geosynthesis in brief. 8
9. a) Explain with neat sketch soil nailing. 8  
b) Write down step wise design procedure for rock bolt system for underground tunnel. 8

**OR**

10. Write short notes on **any three**. 16
  - a) Micropiles.
  - b) Base Isolation.
  - c) Dynamic consolidation.
  - d) Stone column
  - e) Rock bolt system for slopes.

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