

Set No. 1

IV B.Tech I Semester Supplementary Examinations, Oct/Nov- 2018

GROUND IMPROVEMENT TECHNIQUES

(Civil Engineering)

Time: 3 hours**Max. Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

- 1 a) Explain the need and objectives of ground improvement. [8]
b) Discuss the criteria for selection of fill material around drains. [7]
- 2 a) By listing types of grouts, discuss the objectives of grouting in soils and also properties of grouts. [8]
b) Explain the tests that are used for quality control of post grouting process. [7]
- 3 a) What are the granular soil densification methods at depth? Discuss how you decide a granular soil is required to be densified. [7]
b) With neat sketch explain densification of granular soil by dynamic compaction technique. Also write its drawbacks. [8]
- 4 a) Discuss with neat sketches how do you dewater from soil by preloading with sand drains? [8]
b) Write a note on improvement of clayey soil by lime columns and explain the associated mechanisms. [7]
- 5 a) Write a detailed note on the various types of admixtures to be used to make lime and bitumen stabilization effective in case of different types of soils [6]
b) What are the various forms in which bitumen can be added to soil for effective stabilization? [9]
- 6 a) What are the components of reinforced earth? Discuss the principles of reinforced earth. [6]
b) Discuss the internal and external stability aspects of reinforced earth wall. [9]
- 7 a) What are the different tests conducted on Geotextile materials and what properties are evaluated from these tests. [7]
b) Describe cross plane and inplane permeability tests conducted on geotextiles. [8]
- 8 a) Based on the swelling pressure of different clays, how do you judge the expansive nature of these clay soils. [8]
b) Describe the procedures for determining the swelling pressure of clays as per I.S procedure. [7]