Code No: **R41016**

R10

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) b) | Explain the need and objectives of ground improvement. Discuss the criteria for selection of fill material around drains. | [8] [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 | F01 |
| | b) | sand drains? Write a note on improvement of clayey soil by lime columns and explain the | [8] |
| | | 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 | [6] |
| | b) | reinforced earth. Discuss the internal and external stability aspects of reinforced earth wall. | [6] [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] |

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