

Code No: **R41016**

R10

Set No. 1

IV B.Tech I Semester Supplementary Examinations, October/November - 2017

GROUND IMPROVEMENT TECHNIQUES

(Civil Engineering)

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

Answer any FIVE Questions
All Questions carry equal marks

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| 1 | a) | How dewatering methods improve the strength characteristics of a soil? Explain in detail. | [8] |
| | b) | Explain the electro-osmosis method of dewatering soil. | [7] |
| 2 | a) | What are the properties of the grout mixes: (i) Cement mortar. (ii) Suspensions such as ultra-fine cement. | [8] |
| | b) | Explain the following grouting methods: (i) Compaction. (ii) Penetration. | [7] |
| 3 | a) | Describe the method of densification by Blasting? Explain its effectiveness. | [8] |
| | b) | Explain the method of vibro flotation applied for compaction of granular soils at depth. Give neat sketches wherever required. | [7] |
| 4 | a) | What are the advantages of stone columns construction? | [8] |
| | b) | Explain with a neat sketch of sand wick drain to accelerate the drainage of impervious soils. | [7] |
| 5 | a) | What are the principles and guidelines for mechanical stabilization of soil? Explain. | [7] |
| | b) | Discuss about the methods of stabilizing the soils using chemical compounds. | [8] |
| 6 | a) | Give the applications of reinforced earth in civil engineering and the principles governing reinforced earth. | [8] |
| | b) | Explain the design principles of reinforced earth walls and the factors influencing their design. | [7] |
| 7 | a) | Explain the advantages and disadvantages of woven and non-woven geotextiles . | [8] |
| | b) | Explain the various tests conducted on geotextiles to assess their properties. | [7] |
| 8 | a) | What do you understand about the expansive soil and discuss about the swell and shrink behavior of an expansive soil? | [8] |
| | b) | Explain the problems due to the expansive soil in pavement construction. | [7] |