

Code No: **R41016****R10****Set No. 1****IV B.Tech I Semester Supplementary Examinations, February/March - 2017****GROUND IMPROVEMENT TECHNIQUES****(Civil Engineering)****Time: 3 hours****Max. Marks: 75****Answer any FIVE Questions  
All Questions carry equal marks**

- 1 a) What is criteria for selection of fill material around the drains? [8]  
b) Describe with neat sketches about the dewatering by vaccum well points. What are the advantages and disadvantages of this system [7]
- 2 a) Explain the situations where grouting technique is adopted [10]  
b) What is hydraulic fracturing? What is it uses? Where it can be used? [5]
- 3 a) Explain the methods of vibriflotation stage wise as applied to granular soils for compaction at depth with neat sketches. [8]  
b) Explain the objectives of densification in cohesion less soils. [7]
- 4 a) Explain the construction procedure of stone columns? [8]  
b) Explain in detail the soil lime reactions. What is its effect on soil properties? [7]
- 5 a) Describe the different steps involved in the process of soil stabilization using lime as additive. [8]  
b) Explain what are factors affecting strength of soil-cement mixes? [7]
- 6 a) Explain various modes of failure of a reinforced earth walls and the methods of calculating the factor of safety against them. [8]  
b) How is soil selected in reinforced earth application? What are popular reinforcing materials? Explain [7]
- 7 a) What are the ideal situations where geosynthetics are adopted? [8]  
b) Describe the different forms of geomembranes and state their functions in the stabilization of soils. [7]
- 8 a) State the identification criteria for expansive clays based on plasticity index, shrinkage limit and colloidal content. [8]  
b) What are the field conditions that favour swelling? [7]