

**B.TECH.**

**THEORY EXAMINATION (SEM-VIII) 2016-17**

**GROUND IMPROVEMENT TECHNIQUES**

**Time : 3 Hours**

**Max. Marks : 100**

**Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.**

**SECTION – A**

**1. Explain the following:**

**10 x 2 = 20**

- (a) What is soil stabilization? What are its uses?
- (b) List the field method of compaction.
- (c) Numerate the application of vibro compaction.
- (d) What do you understand from the term in - situ densification?
- (e) Evaluate the factors affecting densification in cohesive soil.
- (f) Enumerate the advantages and disadvantages of dewatering.
- (g) Define grouting. List any two applications of grouting.
- (h) When is preloading adopted as a ground improvement technique?
- (i) Distinguish between suspension grouts and solution grout.
- (j) List the function of geo-textiles as filter.

**SECTION – B**

**2. Attempt any five parts of the following questions:**

**5 x 10 = 50**

- (a) Explain the principle and application of soil-lime stabilization.
- (b) Discuss about Dynamic compaction.
- (c) Describe the vibro-flotation technique of densifying granular soil.
- (d) Enumerate the advantage of using vertical drains along with preloading?
- (e) Brief on thermal stabilization of soil from heating and its application
  - (i) What are the different types of Grouts available and what are its properties?
  - (ii) What is the role of grouting in ground improvement?
- (f) Discuss the construction and failure mode of granular piles
- (g) What is the role of geosynthetic in protecting soil from contamination? Describe in detail.

**SECTION – C**

**Attempt any two of the following questions:**

**2 x 15 = 30**

- 3
  - (i) Describe soil-cement stabilization. What are the actions involved in soil-cement stabilization? Explain what are the factors affecting strength of soil-cement mixes?
  - (ii) Explain about deep compaction of in-situ foundation soil by Terra probe compaction.
- 4
  - (i) Describe in detail about soil nailing and when is it adopted?
  - (ii) With the help of neat sketches, explain in detail the application of geosynthetics as separation
- 5 Write the dewatering techniques used in cohesive soils with neat sketch in detail.