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Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech.(CE) (2011 Onwards Elective-I & II) (Sem.-7,8)****GROUND IMPROVEMENT TECHNIQUES**

Subject Code : BTCE-810

Paper ID : [A2964]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students has to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students has to attempt any **TWO** questions.

**SECTION-A****1. Write briefly:**

- a) What are the advantages of preloading methods?
- b) Define coefficient of surcharge.
- c) What do you mean by liquifaction?
- d) What are solution grouts?
- e) What precautions should be taken while mixing a grout?
- f) How is the bearing capacity of soil affected by geotextiles?
- g) Give applications of soil-lime columns.
- h) What is bio technical stabilization?
- i) What is the function of sand used in compaction grout?
- j) Describe briefly soil nailing technique.

**SECTION -B**

2. Describe the vibratory probe technique for compaction.
3. What are the various dynamic compaction equipments used?
4. Explain compaction grouting. To which type of soils is it applicable. What are its advantages and disadvantage?
5. What are geotextiles? What design considerations should be kept in mind while using geotextiles in pavements?
6. Explain the jet grouting process.

**SECTION- C**

7. Explain the thermal methods of soil stabilization.
8. What are the various techniques used for constructing stone columns? Explain in detail along with figures.
9. Describe in detail various material composites required in the construction of any reinforced soil structure. Give applications of soil reinforcement for ground improvement.