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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CE) (2011 Onwards E-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**Q1. Answer briefly :**

- a) What are the merits of dynamic compaction technique?
- b) How is the depth of penetration of compaction calculated?
- c) Give advantages of compaction grouting.
- d) What are suspension grouts?
- e) How is the permeability of soil affected by geotextiles?
- f) What is the difference between vibro compaction and vibro displacement compaction?
- g) Give applications of soil-lime columns.
- h) What are the disadvantages of thermal methods for soil improvement?
- i) What do you mean by liquefaction?
- j) What is bio technical stabilization?

SECTION-B

- Q2. Explain various types of vibratory compactors used for compaction.
- Q3. What are the various preloading methods used to accelerate compaction process?
- Q4. Which lime is used for soil stabilization? What reactions take place on addition of lime to wet soil? How lime is helpful in soil stabilization?
- Q5. Draw a typical layout of a grouting plant. Also mention the basic items required for a grouting plant along with their functions.
- Q6. Explain the jet grouting process.

SECTION-C

- Q7. Explain the blasting method of vibro compaction in detail along with sketches of installation and spacing of explosives.
- Q8. What are the various techniques used for constructing stone columns. Explain in detail along with figures.
- Q9. What are geotextiles? What design considerations should be kept in mind while using geotextiles in
 - a) Retaining walls
 - b) Slopes.