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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CE) (2012 to 2017) (Sem.-7,8)
GROUND IMPROVEMENT TECHNIQUES
Subject Code : BTCE-810
M.Code : 71869

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) How is the bearing capacity of soil affected by geotextiles?
- b) What is the function of sand used in compaction grout?
- c) Describe briefly soil nailing technique.
- d) What are the merits of dynamic compaction technique?
- e) How is the depth of penetration of compaction calculated?
- f) What is bio technical stabilization?
- g) Name various grouting materials.
- h) Define grouting.
- i) What are displacement piles?
- j) What are grid rollers?

SCCTION-B

- Q2. List four physical characteristics of a grouting liquid relevant to engineering applications.
- Q3. Enumerate the effect of soil stabilization by cooling.
- Q4. How could stress history of a soil deposit affects its suitability for preloading with vertical drains?
- Q5. In geotextile testing , what is an :
- a) Index test
 - b) Performance test
 - c) How can test values be made into allowable values for design by functions methods?
- Q6. What are the mechanical properties of treated soils?

SCCTION-C

- Q7. What are the various vibro compaction methods used for densification? Explain in detail.
- Q8. What are the three basic material components required in the construction of any reinforced soil structure? Explain.
- Q9. A 3.5 m high and 7m wide embankment is to be built on soft ground with a basal geotextile layer. Calculate the geotextile strength and modulus required in order to prevent block sliding on the geotextile. Assume that the embankment material has a unit weight of 17 KN/m^3 . The angle of shearing resistance is 32° and the geotextile soil interface angle of shearing resistance is one third of that value.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.