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Question Paper Code : 50227

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017

Seventh Semester

Civil Engineering

CE 6012 – GROUND IMPROVEMENT TECHNIQUES

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. What are the difficulties faced with soft clay ?
2. Name any four ground improvement techniques.
3. What is a well point system ?
4. Define permeability.
5. What are the various methods of in-situ densification ?
6. How is a rammed stone column installed ?
7. List down the different types of soil reinforcement materials.
8. Define geosynthetics.
9. What is grouting ?
10. What are the two methods of mechanical stabilization ?

PART – B

(5×16=80 Marks)

11. a) Explain in detail the role of Ground Improvement in Foundation Engineering.

(OR)

- b) Write in brief about (a) Compaction (b) Vibro-Compaction (c) Pre-loading (d) Pre-loading with vertical drains.

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12. a) Explain in detail the well point system of dewatering.

(OR)

b) What are the various components, stages and methods of drainage ? Explain in detail.

13. a) Explain in detail the method of dynamic compaction of cohesion less and dynamic consolidation of cohesive soil.

(OR)

b) How is a stone column installed by vibro-displacement method ? Explain in detail.

14. a) With neat sketches, explain the various applications of reinforced earth for ground improvement.

(OR)

b) What is called Soil nailing ? When is it adopted ? Explain the principle behind this ground improvement technique.

15. a) Explain the various methods of grouting with neat sketches.

(OR)

b) How chemicals are used in stabilizing the soil ? Explain it with an example.