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Question Paper Code : 70261

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Seventh Semester

Civil Engineering

CE 6012 — GROUND IMPROVEMENT TECHNIQUES

(Regulations 2013)

(Common to : PTCE 6012 — Ground Improvement Techniques for B.E. (Part - Time)
— Civil Engineering — Sixth Semester — (Regulations — 2014)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the major problematic soils?
2. List some ground improvement techniques.
3. Define dewatering.
4. What are the problems occurred to seepage of water?
5. What are the merits and demerits of dynamic compaction?
6. Differentiate lime pile from sand compaction pile.
7. What is meant by reinforced soil?
8. Define Geotextiles.
9. List the applications of grouting.
10. What the various classes of chemicals used in stabilization of soil?

PART B — (5 × 13 = 65 marks)

11. (a) Explain in detail the role of ground improvement in foundation engineering.

Or

- (b) Describe the factors influencing the selection of ground improvement techniques.

12. (a) How the dewatering is carried out during the construction in detail?

Or

(b) Explain the properties and application of flow net in detail.

13. (a) Compare and contrast the various methods of in-Situ densification techniques.

Or

(b) Explain the installation procedure of a stone column by vibro-displacement method.

14. (a) Describe in detail about soil nailing and when is it adopted.

Or

(b) With the help of neat sketches, explain in detail the application of geosynthetics as separation.

15. (a) Describe in detail about the various grout injection methods.

Or

(b) Enumerate in detail the procedure adopted in cement stabilization.

PART C — (1 × 15 = 15 marks)

16. (a) Explain the vacuum dewatering systems in neat sketch.

Or

(b) What are the components of reinforced earth wall? Discuss the load transfer mechanisms of reinforced earth wall and the requirements of soil which can be used in reinforced earth wall construction.
