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Question Paper Code 11791

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023

Sixth Semester

Civil Engineering

CE8001 - GROUND IMPROVEMENT TECHNIQUES

(Regulations 2017)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks) Answer ALL Questions

1. 2.	State the geotechnical problem associated with laterite soil.	Marks, K-Level,CO 2,K1,CO1
3.	List different methods of ground improvement.	2,K2,CO1
4.	State the principle behind electro-osmotic method of dewatering. What are the various types of drains?	2,K1,CO2
5.	What is meant by vibroflotation?	2,K1,CO2
6.	What is dynamic compaction of soil?	2,K1,CO3
7.	List the different type of materials used for soil reinforcement.	2,K1,CO3
8.	Define soil nailing.	 2,K2,CO4
9.	State the basic mechanisms involved in compaction grouting.	2,K1,CO4 2,K2,CO5
10.	What are the two methods of mechanical stabilization?	2,K1,CO5

PART - B $(5 \times 13 = 65 \text{ Marks})$

Answer ALL Questions

11. a) Discuss in detail the suitability of different ground improvement ^{13,K2,C01} methods based on type of soil.

OR

- b) Discuss in detail of various geotechnical problems involved in the use *13,K2,C01* of black cotton soil ground for construction work.
- 12. a) Explain in detail the well point system of dewatering.

13,K2,CO2

OR

- b) What are dewatering method available for the fine grained soils? 13,K2,CO2 Explain any two.
- 13. a) Compare and contrast the various methods of in-situ densification 13,K2,CO3 techniques.

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create 11791

- b) Explain in detail about the method of pre-loading. How do vertical 13,K2,CO3 drains improve the functioning of pre-loading technique?
- 14. a) What is the role of geotextile in protecting soil from contamination? ^{13,K2,CO4} Descibe in detail.

OR

- b) Explain in detail the various application of reinforced earth for ground ^{13,K2,CO4} improvement with neat sketch.
- 15. a) Describe in detail the various applications of grouting. 13,K2,C05

OR

b) Describe in detail about the various methods of grouting with neat ^{13,K2,C05} sketches.

PART - C (1 × 15 = 15 Marks)

- 16. a) Explain in detail about stabilization of soil using lime and cement. **OR** 15,K2,C06 15,K2,C06 15,K2,C06
 - b) Explain in detail how an expansive soil is stabilized.

OR