

20 DEC 2022

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Question Paper Code	11488
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B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022
 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

- | | <i>Marks,</i>
<i>K-Level, CO</i> |
|--|-------------------------------------|
| 1. Define ground improvement. | 2,K1,CO1 |
| 2. Name any four ground improvement techniques. | 2,K1,CO1 |
| 3. What is the need for drainage and dewatering? | 2,K1,CO2 |
| 4. Name the best suited soil for dewatering technique. | 2,K1,CO2 |
| 5. List the various methods of in-situ densification. | 2,K1,CO3 |
| 6. How is dynamic compaction different from static compaction? | 2,K2,CO3 |
| 7. What are the different types of soil reinforcement materials? | 2,K1,CO4 |
| 8. Write a brief note on geosynthetics as reinforcement. | 2,K1,CO4 |
| 9. Define grouting. | 2,K1,CO5 |
| 10. Write the applications of grouting. | 2,K1,CO5 |

PART - B (5 × 13 = 65 Marks)
 Answer ALL Questions

11. a) Explain in brief the various methods available for ground improvement. 13,K2,CO1
- OR**
- b) Describe the factors influencing the selection of ground improvement Techniques. 13,K2,CO1
12. a) Compare the various dewatering systems suitability, uses, merits and demerits. 13,K2,CO2
- OR**
- b) Explain in brief the principle, equipment used, installation and operation and precaution adopted in electro-osmotic dewatering. 13,K2,CO2
13. a) Explain in detail the method of dynamic compaction of cohesion less and dynamic consolidation of cohesive soil. 13,K2,CO3

OR

b) Explain in brief about the installation and working of a vibro- *13,K2,CO3*
replacement stone column.

14. a) With neat sketches explain in detail the various applications of *13,K2,CO4*
reinforced earth for ground improvement.

OR

b) With the help of neat sketches, explain in detail the application of *13,K2,CO4*
geosynthetics as a separator.

15. a) Describe in detail about the various methods of grouting with neat *13,K2,CO5*
sketches.

OR

b) (i) Briefly discuss in detail of grouting is to be adopted for both in *6,K2,CO5*
temporary and permanent works.

(ii) What is compaction grouting and explain in details of it? And write *7,K2,CO5*
various advantages and disadvantages of this type grout method.

PART - C (1 × 15 = 15 Marks)

16. a) Enumerate in detail the different methods of mechanical stabilization. *15,K2,CO6*

OR

b) Describe in detail how chemicals are used in stabilizing the soil with *15,K2,CO6*
the help of an example.