

IV B. TECH I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2023
GROUND IMPROVEMENT TECHNIQUES
(CIVIL ENGINEERING)

Time: 3 hours

Max. Marks: 70

Note : Answer ONE question from each unit (5 × 14 = 70 Marks)

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UNIT-I

1. a) What is stone column? What are the methods of installing a stone column? Explain any one method. [7M]
- b) Explain sand drains with a neat sketch. [7M]
- (OR)
2. a) Explain various factors that affect field compaction of soils? [7M]
- b) Explain various types of rollers used in field compaction of soils. [7M]

UNIT-II

3. a) Explain in detail about interceptor ditches. [7M]
- b) Differentiate between single and multi-stage well points. [7M]
- (OR)
4. a) Explain in detail the vacuum well point system of dewatering. [7M]
- b) Write a short on electro-osmosis. [7M]

UNIT-III

5. a) Discuss the applicability of industrial wastes in soil stabilization. [7M]
- b) Write advantages and disadvantages of cement stabilization? [7M]
- (OR)
6. a) Explain soil-cement reactions and factors that effect cement stabilization of soil. [7M]
- b) Write a short note on polymer stabilization. [7M]

UNIT-IV

7. a) Discuss functions and applications of geomembranes. [7M]
- b) Explain different functions of geo-textiles with a neat sketch. [7M]
- (OR)
8. a) Explain in detail the use of geo-synthetics as a reinforcement. [7M]
- b) How do you use the geo-synthetic as a filler differ from that of drainage? [7M]

UNIT-V

9. a) Explain ascending and descending stages of grouting. [7M]
- b) Discuss in detail the different methods of grouting. [7M]
- (OR)
10. a) Discuss hydraulic fracturing in soils and rocks. [7M]
- b) Explain different types of grouting with one example to each. [7M]

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