

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
IV B. Tech I Semester Regular/Supplementary Examinations OCT/NOV 2025
GROUND IMPROVEMENT TECHNIQUES

(CE)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks

UNIT-I

1. a) Explain the types of rollers used for ground improvement with neat diagrams. [7M]
b) Differentiate Sand Drains with Geo Drains. [7M]
(OR)
2. a) Explain different methods used for in-situ densification of the Cohesive Soil with neat sketches. [7M]
b) Discuss the benefits and limitations of blasting method of soil densification. [7M]

UNIT-II

3. a) Explain different objectives of dewatering. [7M]
b) Explain the criteria for choice of filler material used around the drains. [7M]
(OR)
4. a) Explain the single and multi-stage well points with neat diagrams. [7M]
b) Discuss the principle of Electro Osmosis Method of dewatering with neat sketch. [7M]

UNIT-III

5. a) Explain the factors effecting the cement stabilization. [7M]
b) Describe the objectives of Grouting and its importance in soil engineering. [7M]
(OR)
6. a) Explain the stabilization of clay soil using industrial wastes like fly ash and granulated blast furnace slag. [7M]
b) Analyze various type of grouts used in ground improvements. [7M]

UNIT-IV

7. a) Discuss the load transfer mechanism of reinforced earth walls with neat diagram. [7M]
b) Enumerate various applications of reinforced earth with neat sketches. [7M]
(OR)
8. a) Describe the external and internal stability aspects of a reinforced earth wall. [7M]
b) Explain different methods of soil nailing with neat diagrams. [7M]

UNIT-V

9. a) Explain the functions of geotextile as reinforcement and separator with neat sketch. [7M]
b) Write a note on geomembranes and gabions in detail? [7M]
(OR)
10. a) Describe the different forms of Geogrids and their functions in the stabilization of soils. [7M]
b) Write the differences between geotextiles and geomembranes? [7M]
