

--	--	--	--	--	--	--	--	--	--



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Seventh Semester, B.E. - Civil Engineering

Semester End Examination; Dec - 2016/Jan - 2017

Ground Improvement Techniques

Time: 3 hrs

Max. Marks: 100

Note: i) Answer **FIVE** full questions, selecting **ONE** full question from each unit.
ii) Assume suitably missing data, if any.

UNIT - I

- 1 a. What is ground improvement? Explain the classification of ground improvement techniques. 10
b. Explain in detail the factors to be considered in selection of the best soil improvement techniques. 10
- 2 a. Describe effect of compaction on Engineering behavior of the fine grained soils. 10
b. What are the field compaction methods? Discuss the suitability of field compactions equipments. 10

UNIT - II

- 3 a. Explain the Vacuum dewatering systems with neat figures. 10
b. Describe the essential steps involved in designing a dewatering system. 10
- 4 a. Explain factors to be considered for best performance of pre loading techniques. 10
b. Explain the electro-osmosis method of consolidation. 10

UNIT - III

- 5 a. Explain the engineering benefits of cement stabilizations of ground. 10
b. Discuss the factors affecting the cement stabilization of soils. 10
- 6 a. What is lime stabilizations? Discuss the mechanism of the same with basic reactions. 10
b. Discuss the importance of calcium chloride and lignin in stabilizing soil. 10

UNIT - IV

- 7 a. What is grouting? Explain different types of grouting adopted in the field. 10
b. What are important applications of grouting? 10
8. Write short notes on the following :
- a) Gabious and mattresses 6
b) Crib walls 6
c) Soil Nailing. 8

UNIT - V

- 9 a. Explain different types of Geo synthetics. 10
b. Explain the four important properties of Geo synthetics. 10
- 10 a. Explain the four important basic functions of Geo synthetics. 10
b. Explain the steps involved in design of reinforced earth retaining wall. 10