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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