

Code No: RT41016

R13

Set No. 1

IV B.Tech I Semester Supplementary Examinations, October/November - 2019

GROUND IMPROVEMENT TECHNIQUES

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Question paper consists of Part-A and Part-B

Answer ALL sub questions from Part-A

Answer any THREE questions from Part-B

PART-A(22 Marks)

1. a) Define stone columns. How it is differ from normal drains. [4]
- b) What is a well point? In which types of soil it is effective? [4]
- c) What is meant by mechanical method of soil stabilization? [4]
- d) Define reinforced earth. [3]
- e) Define woven and non woven geotextiles. [4]
- f) What is hydraulic fracturing? [3]

PART-B(3x16 = 48 Marks)

2. a) Discuss about blasting technique used in in-situ densification. Give an expression for calculating the radius of influence of a blasting technique. [8]
- b) Explain the advantages of geo drains when compared with sand drains. [8]
3. a) Discuss in brief about open sumps and inspector ditches with a neat sketch. [8]
- b) Explain how vacuum well points can be effectively used for dewatering in cohesive soils? [8]
4. a) Differentiate between lime stabilization and cement stabilization techniques. [8]
- b) Explain the various types of bitumen materials used in soil stabilization. [8]
5. a) Explain about the mechanism involved in soil nailing with a neat sketch. [8]
- b) Discuss in brief about the following component of reinforced earthen walls:
(i) Reinforcement (ii) Backfill [8]
6. a) Explain the functions of geotextile as reinforcement and separator. [8]
- b) Explain about the properties of geo-membranes. [8]
7. a) Discuss in brief about various method of grouting by their mode of entry. [8]
- b) Explain about various type of grouts used in ground improvements. [8]