

Code No: R164101B

R16

Set No. 1

IV B.Tech I Semester Supplementary Examinations, July/Aug - 2021

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 FOUR questions from Part-B

PART-A(14 Marks)

1. a) How do you achieve in-situ densification of granular soils? [3]
- b) What is electro osmosis? [2]
- c) Write briefly about cement used for soil stabilization. [3]
- d) What is soil nailing? [2]
- e) Suggest the use of geosynthesis for ground improvement. [2]
- f) What is meant by stage of grouting? [2]

PART-B(4x14 = 56 Marks)

2. a) Compare the working of sand drains and geo drains. [7]
- b) Differentiate between consolidation and compaction. Give examples. [7]
3. a) Discuss about single and multi stage well points. [7]
- b) Describe with neat sketches, about the dewatering by sumps. [7]
4. a) Discuss about factors affecting the mechanical stabilization. [7]
- b) Write a note on stabilization process of expansive soil by calcium chloride. [7]
5. a) Discuss the advantages and disadvantages of reinforced earth walls over the traditional retaining walls. [7]
- b) Explain the stability checks and factors of safety of reinforced earth walls. [7]
6. a) Describe the different forms of Geogrids and state their functions in the stabilization of soils. [7]
- b) Discuss about the tests conducted on Geotextiles to assess their properties. [7]
7. a) Discuss about the objectives of grouting. Explain in detail. [7]
- b) Explain about hydraulic fracturing in soils and rocks. [7]