

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (CE) / (Civil) (PIT) (Sem.-6)
GROUND IMPROVEMENT TECHNIQUES

Subject Code : PECE-602B-18

M.Code : 79395

Date of Examination : 05-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) How is the depth of penetration of compaction calculated?
- b) What precautions should be taken while using Black cotton soil for buildings?
- c) What are displacement piles?
- d) List disadvantages of dynamic consolidation.
- e) Define grouting.
- f) Give applications of soil-lime columns.
- g) What precautions should be taken while mixing a grout?
- h) What are the advantages of preloading methods?
- i) Name various grouting materials.
- j) How is the permeability of soil affected by geotextiles?

SECTION-B

2. Explain basic mechanism of soil improvement.
3. Explain soil nailing technology.
4. Write a note on preloading. Also, discuss its advantages and disadvantages.
5. Which lime is used for soil stabilization? What reactions take place on addition of lime to wet soil? How lime is helpful in soil stabilization?
6. Explain Dynamic compaction technique for soil stabilization? What are the merits of this technique?

SECTION-C

7. Explain compaction consolidation and difference between them. Discuss how they are related to ground improvement.
8. Explain grouting technology of ground improvement. Discuss Chemical grouting and Jet grouting in detail.
9. What is geosynthetics (geotextile and geogrid)? Write a note on its application as separator, barrier, reinforcement and filter.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.