

Code: 13A01705

R13

B.Tech IV Year I Semester (R13) Regular Examinations November/December 2016

GROUND IMPROVEMENT TECHNIQUES

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) What is dewatering. Write about objectives of dewatering?
 - (b) Write about grout and its characteristics.
 - (c) What are the factors that are influencing ground improvement?
 - (d) Write about preloading method for densification of cohesive soils and its applications.
 - (e) Write short notes on bitumen soil stabilization.
 - (f) Write about classification of the methods of soil stabilization.
 - (g) Write about components of reinforced earth.
 - (h) Discuss about geosynthetics and its applications in Civil Engineering.
 - (i) Discuss about general characteristics of expansive soils.
 - (j) Write about swell potential and swelling pressure.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 Write briefly about vacuum well point method and electro-osmosis method with the help of neat sketch.

OR

- 3 Explain briefly the various methods of permeation grouting.

UNIT – II

- 4 Discuss about in-situ densification method for granular soils by vibro-compaction technique with the help of neat sketch.

OR

- 5 Explain about stone columns and its applications with the help of neat sketch.

UNIT – III

- 6 Explain factors effecting cement stabilization.

OR

- 7 Explain about mechanism and reaction involved in lime stabilization.

UNIT – IV

- 8 Explain about external and internal stability of reinforced earth walls.

OR

- 9 Explain about usage of geotextile for filtration and drainage.

UNIT – V

- 10 Explain about under-reamed pile foundation in expansive soils with a neat sketch.

OR

- 11 Discuss about sand cushion method and CNS technique in expansive soils.
