

B.Tech IV Year I Semester (R13) Supplementary Examinations June 2017

**GROUND IMPROVEMENT TECHNIQUES**

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

**PART – A**

(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) What are the objectives of Grouting?
  - (b) List out different methods of de watering.
  - (c) What are the applications of reinforced earth?
  - (d) What are the stabilization methods used for cohesive soils?
  - (e) Differentiate between stone and lime columns.
  - (f) Give the classification of Geo-synthetics.
  - (g) What is the criteria for selection of fill material around drains?
  - (h) Explain the concept of under reamed pile.
  - (i) What are the problems associated with expansive soil?
  - (j) What do you mean by 'hydraulic fracturing'?

**PART – B**

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

**UNIT – I**

- 2 Describe ascending, descending and stage grouting.

OR

- 3 Explain various methods of dewatering in detail

**UNIT – II**

- 4 Describe 'Vibro flotation' method in detail.

OR

- 5 Explain various insitu densification methods for cohesive soils.

**UNIT – III**

- 6 What are the different chemicals used in stabilization of soil?

OR

- 7 Write short notes on the following:

- (a) Bituminous stabilization.
- (b) Mechanical stabilization.

**UNIT – IV**

- 8 Explain the design principle of reinforced earth wall.

OR

- 9 Explain clearly the functions of Geotextiles.

**UNIT – V**

- 10 Explain different methods for identification of expansive soils.

OR

- 11 What are the remedial solutions that are followed in expansive soils?

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