D 70043 (Pages : 2) Name.....

Reg. No.....

EIGHTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE [SUPPLEMENTARY] EXAMINATION, NOVEMBER 2014

CE/PTCE 09 804 L21 – GROUND IMPROVEMENT TECHNIQUES

Time : Three Hours Maximum : 70 Marks

Part A

Answer **all** *questions.*

I. (a) Explain on stone columns.

(b) What is meant by sand drains?

(c) Define the term grouting.

(d) List out the various reinforcing materials used for soil improvement.

(e) What is meant by geogrids?

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

II. (a) Write a short note on compaction piles in sand.

(b) What is meant by biotechnical stabilisation?

(c) Explain on the mechanism of lime stabilisation.

(d) Write a short note on soil fracture grouting.

(e) Explain on reinforced earth retaining walls.

(f) Explain on applications of geosynthetics.

(4 × 5 = 20 marks)

Part C

Answer **all** *questions.*

III. (a) Discuss in detail Terraprobe method. Also add a short note on dynamic compaction of sands.

Or

(b) List out and explain the objectives of ground improvement. Also discuss on vibroflotation in clays.

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Turn over

IV. (a) Discuss in detail the following :

(i) Stabilization of soft clay or silt with lime.

(ii) Grouting methods and pressure.

Or

(b) Write short notes on :

(i) Effect of lime on physical and engineering properties of soil.

(ii) Desirable characteristics of grouts.

V. (a) Write short notes on reinforced embankments and soil nailing.

Or

(b) Discuss in detail on the load transfer mechanism and strength development due to reinforced earth in soil improvement.

VI. (a) Write short notes on :

(i) Types of geotextiles and geogrids.

(ii) Behaviour of soils on reinforcing with geotextiles.

Or

(b) Write short notes on :

(i) Design aspects with geotextiles and geogrid for unpaved roads

(ii) Physical and strength properties of geogrids.

(4 × 10 = 40 marks)

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