C 21415 (Pages : 2) Name.....

Reg. No.....

EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
APRIL 2017

CE/PTCE 09 804 L21—GROUND IMPROVEMENT TECHNIQUES

(2009 Admissions)

Time : Three Hours Maximum : 70 Marks

Part A

Answer **all** *questions.*

I. (a) What is meant by compactive effort ?

(b) Define Suitability number ?

(c) Define groutability ratio ?

(d) Mention the basic materials required in the construction of any reinforced soil structure ?

(e) List the types of geogrid ?

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

II. (a) What are the factors that should be considered in the selection of suitable ground improvement method ?

(b) What are the components that contribute to the estimation of load capacity of a stone column ?

(c) Explain lime fixation point ?

(d) Give a comparision between soil nailing and reinforcement of earth wall ?

(e) List the applications of geosynthetics ?

(f) What is the principle behind biotechnical stabilization ?

(4 × 5 = 20 marks)

Turn over

Part C

Answer **all** *questions.*

III. (a) Explain vibrofloatation technique in sand with neat sketches ?

Or

(b) Write short notes on :

1 Sand drains.

2 Dynamic compaction of sands.

IV. (a) Explain the effect of lime on physical and engineering properties of clay ?

Or

(b) Describe the injection methods adopted for grouting ?

V. (a) Write an explanatory note on different soil reinforcement materials ?

Or

(b) Write a detailed note on reinforced earth retaining walls ?

VI. (a) Explain the material properties of geotextiles in detail ?

Or

(b) Discuss the design aspects involved in the use of geogrids in retaining walls ?

(4 × 10 = 40 mark