

www.rgpvonline.in

Roll No.....

CE - 801**B.E. VIII Semester**

Examination, June 2015

Geo. Technical Engineering - II**Time : Three Hours****Maximum Marks : 70**

www.rgpvonline.in

Note : Attempt any five questions. Internal choice is given with each question. Assume suitable data if found misprint and missing.

1. a) Draw sketches and mention suitability of different types of shallow foundations. 7
- b) Explain the plate load test in detail. 7

OR

2. a) Define various types of shear failures and mention their characteristics . 7
- b) A strip footing, 1m wide at its base is located at a depth of 0.8m below the ground surface. The properties of the foundation soil are: $\gamma = 18 \text{ kN/m}^3$, $c = 30 \text{ kN/m}^2$ and $\phi = 20^\circ$. Determine the safe bearing capacity using a factor of safety of 3. Use Terzaghi's analysis. Assume that the soil fails by local shear. Given $N_c' = 11.8$, $N_q' = 3.9$, $N_\gamma' = 1.7$. 7

[2]

3. a) Draw the sketch of double under reamed pile with specifications. 7

- b) A pile load test gave the following data. 7

Load in kN	100	200	300	400	500	600
Settlement in (mm)	3	6	9	13	19	27

Plot the load settlement curve and determine the allowable load with a F.D.S.3.

OR

4. a) Describe various parts of well foundation. 7

- b) In a 16 pile group, the pile diameter is 0.4m, and c/c spacing of piles in the square group is 1.5m. If $C_u = 50 \text{ kN/m}^2$, determine whether the failure would occur as a block failure or when the piles act individually. Neglect bearing at the tip of the pile. All piles are 12 m long. Take $m = 0.7$ for shear mobilisation around each pile. Also determine the safe load on this group. 7

5. a) Discuss various factors which affect the compaction. 7

- b) Discuss the need of soil stabilization and explain the cement stabilization in detail. 7

OR

6. a) What are the various types of Geo-synthetics? Explain the various functions of Geo-synthetics. 7

- b) Describe various types of equipments used for compaction and also mention their suitability. 7

[3]

7. Write short notes on the following. 14

- CNS layer
- Depth and spacing of bores for soil exploration.
- Types of samplers
- Boring methods of sampling.

OR

8. a) Explain how expansive and collapsible soils are recognized in the field. 7

- b) Explain in detail the CNS layer with the help of neat sketch. 7

9. a) What are the different types of coffer dams? Draw their neat sketches and give suitability of each type. 7

- b) What are various general criteria for design of machine foundation. 7

OR

10. Write short notes on any four of the followings: 14

- Coffer dams
- Mass spring analogy
- Types of machine foundation.
- Types of sheet piles
- Vibration isolation.
