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Roll No

CE-8002 (CBGS)

B.E. VIII Semester

Examination, May 2019

Choice Based Grading System (CBGS)

Geo-Technical Engineering - II

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) Make suitable assumptions wherever necessary.

1. a) State different types of shallow and deep foundations. In which circumstances, pile foundation shall be adopted? 7
b) With neat sketches describe different modes of bearing capacity failures. 7
2. a) Explain the theories of bearing capacity of Terzaghi and Skempton. 7
b) In a 16 pile group, the pile diameter is 45 cm and center to center spacing of the square group is 1.5m. If $C = 50 \text{ kN/m}^2$, determine whether the failure would occur with the pile acting individually, or as a group? Neglect bearing at the tip of the pile. All piles are 10 m long. Take $m = 0.7$ for shear mobilization around each pile. 7
3. a) Explain different types of piles. 7
b) How do you estimate the group capacity of piles in sand and clay? 7
4. a) Explain the proctor compaction tests and factors affecting compaction. 7
b) Discuss about the soil stabilisation of mechanical lime, cement and by grouting. 7

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5. a) What are the basic modes of failure of earth slopes? What are the remedial measures to prevent failure of earth slopes. 7
b) State different types of foundations and define the important terms Safe Bearing Capacity (SBC), Safe Bearing Pressure (SBP) and Allowable Bearing Pressure (ABP). 7
6. a) What do you mean by pile group efficiency? Explain any one method to find it. 7
b) A strip footing 1.5 m wide, rests on the surface of a cohesionless soil having $\phi = 20^\circ$ and $\gamma_t = 16 \text{ kN/m}^3$; $\gamma_{sat} = 18 \text{ kN/m}^3$. If the water table rises temporarily to the surface due to flooding, calculate the percentage reduction in the ultimate capacity of the soil. Assume $N_q = 7.4$, $N_y = 5.0$. 7
7. a) What are the advantages and disadvantages of providing traffic signals? http://www.rgpvonline.com 7
b) Explain the Plate Load Test. 7
8. a) What are the criteria for design of block foundation for the impact type of machine. 7
b) Discuss about the planning of exploration programme for buildings. 7
