

Total No. of Questions : 4]

PE-174

SEAT No. :

[Total No. of Pages : 2

[6580]-531

B.E. (Civil) (Insem)

FOUNDATIONENGINEERING

(2019 Pattern) (Semester - VII) (401001)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, and Q.3 or Q.4.
- 2) Neat diagrams must be drawn whenever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary and mention it clearly.

Q1) a) Explain in detail "Soil exploration for an important building project". [5]

b) Explain N value correction and significance. [5]

c) Write a note on 'Dynamic Cone Penetration Test' (DCPT). [5]

OR

Q2) a) Explain in detail 'Seismic refraction method'. [5]

b) Draw a neat sketch of Static Cone Penetration Test and explain how this test is performed in the field. [5]

c) Explain with sketch a typical 'Core Log'. Indicate core recovery and RQD values for various rock types/ layers. [5]

P.T.O.

Q3) a) Define the terms: [5]

- i) Ultimate bearing capacity
 - ii) Net ultimate bearing capacity
 - iii) Net safe bearing capacity
 - iv) Gross safe bearing capacity
 - v) Allowable soil pressure
- b) Explain Terzaghi's bearing capacity equation for strip, rectangular and circular footing with meaning of all terms. [5]
- c) Write a note on effect of eccentricity of loading. [5]

OR

Q4) a) Differentiate between Terzaghi's and Meyerhofs analysis of bearing capacity. [5]

- b) Explain in detail with neat sketch bearing capacity evaluation by plate load test. [5]
- c) For a general $c - \phi$, cohesion $c = 50$ kPa, the total unit weight $\gamma = 20$ KN/m³ and the bearing capacity factors are $N_c = 8$, $N_q = 3$, and $N_\gamma = 2$. Using Terzaghi's formula only, estimate the safe total load on a footing 10 m long by 2 m wide strip footing, using a factor of safety of 3. [5]

