

Total No. of Questions : 4]

SEAT No. :

[Total No. of Pages :2

PC170

[6361]-27

B.E. (Civil) (Insem)

FOUNDATION ENGINEERING

(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 indicates full marks.
- 4) Assume suitable data, if necessary and mention it clearly.

- Q1)** a) What is significant depth? How would you decide the depth of exploration? [5]
- b) Explain with sketches Electrical Resistivity Method. [5]
- c) Explain N value correction and significance. [5]

OR

- Q2)** a) Explain with sketch a typical 'Core Log'. Indicate core recovery and RQD values for various rock types/layers. [5]
- b) Explain percussion drilling with its advantages and disadvantages. [5]
- c) A sampling tube of 72 mm diameter and 1mm thick. It is fitted with cutting edge. The inside diameter of cutting edge is flushed with sampling tube. The cutting edge is 1.5 mm thick. Compute inside clearance, outside clearance and area ratio. Comment on sample collected by tube. [5]
- Q3)** a) Enlist the assumptions in Terzaghi's bearing capacity theory. State Terzaghi's bearing capacity equation with meaning of each term. [5]
- b) Write a note on plate load test. Also explain limitations of plate load test. [5]
- c) Write a note on effect of water table on bearing capacity. [5]

OR

P.T.O.

- Q4)** a) Discuss the modes of bearing capacity failure. [5]
- b) Describe Meyerhof's bearing capacity theory. [5]
- c) Compute safe bearing capacity of a continuous footing 1.8m wide and located at a depth of 1.2 m below ground level in a soil having unit weight $\gamma = 20 \text{ KN/m}^3$, $C = 20 \text{ KN/m}^2$ and $\phi = 20^\circ$. Assume factor of safety 3. Terzaghi's bearing capacity factors for $\phi = 20^\circ$ are $N_c = 17.7$, $N_q = 7.4$ and $N_\gamma = 5.0$. [5]

