P5175

[6188]-127

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 indicate full marks.*
4) *Assume suitable data, if necessary and mention it clearly.*

Q1) a) Write a note on purpose and planning of subsurface exploration.   **[5]**

b) Discuss SPT and what are the various corrections? What is the importance of the test?   **[5]**

c) Explain percussion drilling with its advantages and disadvantages.   **[5]**

OR

Q2) a) Explain with sketches electrical Resistivity method.   **[5]**

b) What is R.Q.D., How rating of rock quality is decided based on R.Q.D.**[5]**

c) A sampling tube of 100 mm diameter and 2 mm thick. It is fitted with cutting edge. The inside diameter of cutting edge is flushed with sampling tube. The cutting edge is 3 mm thick. Compute inside clearance, outside clearance, and area ratio. Comment on sample collected by tube.   **[5]**

Q3) a) Write a note on plate load test. Also explain limitations of plate load test.   **[5]**

b) Write a note on effect of water table on bearing capacity.   **[5]**

c) Discuss with neat sketches the modes of shear failure in soil.   **[5]**

OR

Q4) a) Enlist the assumptions in Terzaghi's bearing capacity theory. State Terzaghi's bearing capacity equation with meaning of each term.   **[5]**

b) Describe Meyerhof's bearing capacity theory.   **[5]**

c) A 30 cm square bearing plate settles by 8 mm in the plate load test on cohesionless soil, when the intensity of loading is 180 kN/m^2. Estimate the settlement of shallow foundation of 1.6 m square under the same intensity of loading.   **[5]**

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