

B.Tech. SEM -VII (Civil) 2014 Course (CBCS) : SUMMER - 2019
SUBJECT : FOUNDATION ENGINEERING

Day : Monday
Date : 13/05/2019

S-2019-2792

Time : 02.30 PM TO 05.30 PM
Max. Marks : 60

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 4) Assume suitable data, if necessary.

- Q. 1** a) What are the different types of soil samplers? Explain with neat diagram. (08)
b) Describe Auger boring method. (02)

OR

- Q. 1** a) Explain pressure meter test with neat diagram. (05)
b) Discuss electrical resistivity method. (05)

- Q. 2** a) A square footing $1.2\text{m} \times 1.2\text{m}$ is located at a depth of 1.0 m. The soil properties are $r = 18\text{kN/m}^3$ and $c = 20\text{kN/m}^2$ and $\phi = 20^\circ$.
 $N_c = 14.83$ $N_q = 6.4$ $N_r = 2.9$ Determine ultimate bearing capacity, if soil fail by general shear failure. (05)

- b) Discuss concept of floating foundation (05)

OR

- Q. 2** a) Explain Skempton's analysis of bearing capacity. (04)
b) Discuss effect of eccentricity of loading on bearing capacity. (06)

- Q. 3** a) Explain concept of spring analogy in consolidation. (05)
b) Define coefficient of compressibility & degree of consolidation. (05)

OR

- Q. 3** a) Discuss validity of assumptions made in theory of consolidations. (05)
b) Define normal consolidation, pre consolidation and over consolidation. (05)

- Q. 4** a) Explain cyclic load test. (06)
b) Enlist circumstances under which pile foundations are used. (04)

OR

- Q. 4** a) Enlist the method of determining pile capacity. Explain any two methods in short. (05)
b) Explain Feld's rule. (05)

- Q. 5** a) Draw a neat diagram of cantilever sheet pile and give their applications. (05)
b) What is swelling? How it is determined? (05)

OR

- Q. 5** Draw neat diagrams of anchored sheet piles and give their application. (10)

- Q. 6** a) Enlist different methods of soil stabilization. Discuss soil stabilization by geo synthesis. (05)
b) What are the different types of geo textiles? (05)

OR

- Q. 6** a) How geo synthesis is acts as a drain to carry fluid flow through soils? (06)
b) What is HDPE? Give its applications. (04)

* * * * *