

B.Tech. SEM -VII (Civil) 2014 Course (CBCS) : WINTER - 2018

SUBJECT : FOUNDATION ENGINEERING

Day : Wednesday
Date : 28/11/2018

W-2018-2527

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 Enlist different methods of soil investigation and explain standard penetration test with correction factor and diagram. **(10)**

OR

Q. 1 a) Prepare a core log data sheet for soil exploration. **(07)**

b) Define Area ratio, inside clearance and outside clearance. **(03)**

Q. 2 a) Discuss the assumptions and limitations of the Terzaghis analysis. **(04)**

b) A strip footing one meter wide at its base is located at a depth of 0.9 m below the ground level the properties of foundation soil are $\gamma = 19 \text{ kN} / \text{m}^3$ and $\phi = 20^\circ$. Determine safe bearing capacity using factor of safety 2.5. Assume that soil fail by local shear

$$N'_c = 11.8 \quad N'_q = 3.9 \quad N'_r = 1.7$$

OR

Q. 2 a) Discuss the effect of water table on bearing capacity. **(03)**

b) Explain plate load test with its limitations. **(07)**

Q. 3 a) Discuss logarithm of time fitting method. **(05)**

b) What is consolidation? How it is determined? **(05)**

OR

Q. 3 a) Discuss square root of time fitting method. **(05)**

b) Explain consolidation test. **(05)**

Q. 4 a) Discuss settlement analysis of pile group in clay. **(06)**

b) Explain the concept of negative skin friction. **(04)**

OR

Q. 4 a) Discuss the classification of piles. **(05)**

b) Explain group analysis of piles. **(05)**

Q. 5 a) Explain the techniques to be used for construction on black cotton soil. **(05)**

b) What is sheet pile? Give the application of sheet pile **(05)**

OR

Q. 5 a) Differentiate between anchored sheet pile and non-anchored sheet pile show neat diagram. **(06)**

b) Draw a neat sketch of double under reamed pile and show all details. **(04)**

Q. 6 a) Differentiate between woven and nonwoven geotextiles. **(05)**

b) Explain concept of geo synthesis as reinforcement material in retaining wall. **(05)**

OR

Q. 6 a) What are the functions and applications of geosynthesis? **(06)**

b) Discuss applications of stone columns and compaction piles. **(04)**

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