Total No. of Questions : 12]

SEAT No. :

P2807

[Total No. of Pages : 3

[4958]-107
T.E.(Civil)
FOUNDATION ENGINEERING
(2008 Course)(Semester-II)

Time :3Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer three questions from section I and three questions from section II.***
2) ***Answers to the two sections should be written in separate answer - books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Use of logarithmic tables, slide rule, electronic calculator is allowed.***
5) ***Assume suitable data, if necessary.***

SECTION-I

Q1) a) How is the number and depth of exploratory holes determined? **[6]**

b) What is meant by geophysical methods of soil exploration? Explain anyone of them with neat sketch. **[6]**

c) Write a note on Standard Penetration Test. **[6]**

OR

Q2) a) What are the objectives of soil investigation? **[6]**

b) State various types of soil samplers. What is area ratio? State its significance. **[6]**

c) Discuss Pressure meter test. **[6]**

Q3) a) Explain effect of water table on bearing capacity of soil. **[6]**

b) Write a note on effect of eccentricity of loading on bearing capacity. **[6]**

c) Explain the concept of floating foundation with a neat sketch. **[4]**

OR

Q4) a) Write Terzaghi's Bearing capacity equation & explain all the terms in it. **[6]**

b) Explain Housel's perimeter shear concept. **[4]**

c) Explain with neat sketches, modes of shear failure in soil. **[6]**

P.T.O.

Q5) a) Define the following terms: **[6]**

Normal consolidation, Over consolidation & Pre consolidation pressure

b) What are the different types of foundation settlement? Explain in detail. **[6]**

c) Explain with sketches spring analogy method of consolidation process. **[4]**

OR

Q6) a) Distinguish between consolidation and elastic settlement. Explain how they are determined? **[6]**

b) Explain Terzaghi's theory of one dimensional consolidation. **[6]**

c) Draw contact pressure distribution diagram for sandy and clayey soil. **[4]**

SECTION-II

Q7) a) Enlist the methods of determining pile capacity. Explain any one method in short. **[6]**

b) Explain in detail with sketches five fold classification of piles foundation. **[6]**

c) Enlist the circumstances under which pile foundation are used. **[6]**

OR

Q8) a) Write a short note on Group capacity of pile. **[6]**

b) Explain with a sketch the concept of negative skin friction & state how you would determine the same in non-cohesive soil. **[6]**

c) State the advantages and disadvantages of piers in comparison of pile foundation. **[6]**

Q9) a) Explain Differential free swell test. **[6]**

b) What do you understand by 'Tilt' and 'Shift' of well? What are remedial measures to rectify tilt and shift? **[6]**

c) What is pier? Explain methods of installation of pier. **[4]**

OR

Q10 a) Sketch and describes the various components of well foundation, indicating functions of each component. **[6]**

b) State the characteristics of BC soil and explain the role of 'Montmorillonite'. **[6]**

c) What is Caisson? How Caissons are classified based on methods of construction? **[4]**

Q11) a) Explain with neat sketches various functions of Geotextiles. **[8]**

b) Write a detail note with sketches on Geosynthetics application in civil engineering. **[8]**

OR

Q12) Write a short note on: **[16]**

Types of earthquake, Surface rupture, Liquefaction & Reinforced earth wall