

Total No. of Questions : 12]

SEAT No. :

P2387

[5153]- 10

[Total No. of Pages : 3

T.E. (Civil)

**FOUNDATION ENGINEERING
(2008 Pattern) (Semester - II) (301010)**

Time :3 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) Answer three questions from Section I and three questions from Section II.*
- 2) Answer 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) What is Sub surface exploration? What is the purpose of soil exploration? [6]
- b) Define Borings. Explain in details about wash borings. [6]
- c) Distinguish between disturbed and undisturbed samples. [6]

OR

- Q2)** a) Explain in detail standard penetration test. [6]
- b) Differentiate between SPT and DCPT. [6]
- c) Describe various types of soil samples. What is Area ratio? [6]

- Q3)** a) Explain with neat sketches different types of failure in soil. [6]
- b) Explain in detail Terzaghi's bearing capacity theory. [6]
- c) What is the effect of eccentricity on bearing capacity of the soil. [4]

OR

- Q4)** a) Explain in detail effect of water content on bearing capacity of soils. [6]
- b) What are the limitations of plate load test? [6]
- c) What is the concept of floating foundation? [4]

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- Q5)** a) What are the different causes of settlement. [6]
b) What are the different methods of finding coefficient of consolidation? Explain any one. [6]
c) What is the use of Plate load test in settlement analysis. [4]

OR

- Q6)** a) What is elastic settlement and list out the methods of determining elastic settlement. [6]
b) What is the concept of normally consolidation and over consolidation? Explain with examples. [6]
c) What is spring analogy method explain in detail. [4]

SECTION - II

- Q7)** a) What are the classifications of pile foundation. [6]
b) What are different dynamic pile formulae to determine pile load capacity. [5]
c) Write a short note on negative skin friction. [6]

OR

- Q8)** a) What are the advantages and disadvantages of piers in comparison of pile foundation. [6]
b) What is caisson? Explain different types of caisson with sketches. [6]
c) Write a short note on group capacity pile. [5]

- Q9)** a) What is sheet pile? Draw pressure distribution diagram for cantilever sheet pile and anchored sheet pile wall. [6]
b) With neat sketches Explain different types of coffer dams. [6]
c) Derive an expression for depth of embedment of cantilever sheet pile by making simplified assumption. [5]

OR

- Q10)**a) What is under reamed pile and limitation of under reamed pile. [6]
b) What is stone column technique? Discuss the stages of construction of stone column. [6]
c) What are the engineering problems of black cotton soil. [5]

- Q11)**a) Write a short note on Geosynthetics application in civil engineering. [6]
b) What are geosynthetics and state their function. [5]
c) Explain use of geotextile in the construction of Railway Track and Earthen Dams. [5]

OR

- Q12)**a) Enlist and explain different types of seismic waves. [5]
b) Explain phenomenon of liquefaction for sandy soil. [5]
c) What are the different types of earthquake explain in detail. [6]

