

Total No. of Questions : 12]

SEAT No. :

P3916

[Total No. of Pages : 3

[4758] - 507

T.E. (Civil) (Semester - II)

FOUNDATION ENGINEERING

(2012 Pattern)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10, Q11 or Q12.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Non programmable calculator is allowed.*
- 5) *Assume suitable data wherever required and specify it clearly.*

SECTION - I

Q1) Explain with neat sketch “wash boring”. **[6]**

Q2) Define : **[6]**

- a) area ratio
- b) inside clearance
- c) outside clearance

Q3) Explain modes of shear failure. **[7]**

Q4) Explain various types of mat foundations. **[7]**

Q5) Explain the terms : **[7]**

- a) allowable settlement,
- b) differential settlement,
- c) elastic settlement
- d) consolidation settlement.

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Q6) Explain with a neat sketch square root of time fitting method for determination of coefficient of consolidation. [7]

SECTION - II

Q7) a) Differentiate between cast in situ piles and driven piles. [6]

b) Write note on “pile load test and interpretation of test results”. [6]

c) Explain in detail negative skin friction on piles. [4]

Q8) a) Compute the efficiency of pile group consisting of 20 piles arranged in four rows, if the diameter of the pile is 400mm & spacing is 1m center to center by using : [6]

i) Converse Labbare’s formula

ii) Seiler keeney’s formula

iii) Feld’s rule.

b) What is pier? Explain different methods of installation of pier. [5]

c) Explain different parts of well foundation with a neat sketch. [5]

Q9) a) Write detailed note on “earth and rockfill cofferdam”. [6]

b) Explain with sketch “circular type cellular cofferdam”. [4]

c) Explain with sketch construction under reamed piles. [6]

Q10) a) Explain ‘stone column technique’ of soil improvement. [6]

b) What are the engineering problems associated with black cotton soil as a foundation. [5]

c) Explain method to determine depth of embedment in cantilever sheet pile wall with simplified assumptions. [5]

- Q11)** a) What are the various types of geosynthetics used in road pavements. [6]
b) What are different functions of geosynthetics? Explain any four with sketches. [7]
c) Explain different liquefaction hazard mitigation methods. [5]
- Q12)** a) What is liquefaction? Explain any three effects of liquefaction. [7]
b) Enlist & explain different types of seismic waves. [6]
c) Differentiate between reinforcement in soil and reinforcement in concrete. [5]

