Total No. of Questions : 12]

SEAT No. :

P3299

[Total No. of Pages : 3

[4959]-8

B.E. (Civil) (Semester - I)

ADVANCED GEOTECHNICAL ENGG. (Elective - I)

(2008 Pattern)

Time : 3 Hours] *[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 books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Your answers will be valued as a whole.***
5) ***Use of logarithmic tables electronic pocket calculator is allowed & IS codes are not allowed.***

SECTION - I

Q1) Explain the following : **[4×4=16]**

a) PRA classification

b) USCS

c) ISCS

d) A-line chart

Q2) a) Differentiate between Tetrahedral & Octahedral unit. **[8]**

b) Explain the different soil structures. **[8]**

Q3) a) Explain 'Modified Culman's Method. **[10]**

b) Discuss : **[7]**

i) AEP

ii) PEP

iii) ER at rest.

P.T.O.

Q4) a) Explain the steps for 'Anchored sheet pile design'. **[9]**

b) Derive expression for 'Ko'. **[8]**

Q5) a) Explain 'Soil Anchers'. **[9]**

b) Discuss the use of 'Geosynthetics' in Geoenvironment. **[8]**

Q6) a) Explain 'Binguiet & Lec' theory. **[9]**

b) Discuss different functions of geosynthetics. **[8]**

SECTION - II

Q7) Explain the following : **[4×4=16]**

a) Elastic Half space

b) Spring analogy

c) Krishna & Nagraj Method

d) Barken's Method

Q8) a) Discuss the design criteria for impact type machines as per IS-2974 (Pt-II) 1966. **[8]**

b) How will you determine spring constants in the field as well as in laboratory. **[8]**

Q9) Explain the following :

a) Compaction pile. **[4]**

b) Vibrofloatation **[4]**

c) Stone column **[4]**

d) Sand drains **[5]**

Q10) a) Discuss different methods for grouting. **[9]**

b) Explain the stages for construction of Vibro-expanded pile. **[8]**

Q11) a) Explain 'Rheology' & discuss 'basic' & 'composite' models. **[9]**

b) Explain 'Creep' & 'Secondary Consolidation'. **[8]**

Q12) Explain the following :

a) Hookeart Newtonian model **[5]**

b) Kelvin model **[4]**

c) Bingham's model **[4]**

d) Burger's model. **[4]**

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