ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL
School of Architecture

Approved & Recognised by: All India Council for Technical Education and Council of Architecture, New Delhi
Directorate of Technical Education, Govt. of Maharashtra Affiliated to: University of Mumbai

SEM-IV S.Y.B.ARCH (REV) EXAMINATION

Theory & Design of Structures-IV   Max. Marks: 50
Date:13 / 05 /2015   Duration: 2 Hrs.

INSTRUCTIONS:
   Q. NO. 1 is compulsory.
   Attempt any TWO questions out of remaining THREE questions.
   Use suitable data if necessary.
   Numbers in parenthesis are right to indicate full marks.

Q.1

 a) What are the advantages fixed beams?   (04)

 b) Define the following terms.

   i) Density of soil   ii) Porosity   (04)

 c) Enlist and define Atterberg's limits with the help of graph   (05)

 d) Enlist various causes of settlement of foundations.   (05)

Q.2

 a) Explain in detail plate load test with neat sketch.   (06)

 b) Enlist methods of improving soil bearing capacity   (04)

 c) What are the assumptions made in Euler's theory   (03)

 d) Define and give difference between total and differential settlement   (03)

Q.3

 a) Write Short note on compaction and consolidation.   (04)

 b) Draw various rolled steel sections used in steel constructions.   (02)

 c) A continuous beam consisting of two span AB=2.5m and BC=3m, End A being fixed. The span AB carries a point load of 70kN at 1.25 m from end A, while the span BC carries a point load of 50kN at 1.0 m from end C, find the support moments and draw BM diagram. (I_{ab} : I_{bc} = 3:2)   (10)

Q.4

 e) A fixed beam 5m long supports two point load of 250kN each 1.5m from each end. Find fixed end moments and also Draw SFD and BMD for the same.   (05)

 a) Write note on

            i. Short and long column

            ii. Slenderness ratio   (04)

 b) Determine the minimum thickness required for a steel pipe Column of outer diameter 150mm length and 3.5m long to carry an axial compressive load of 150kN. Take E= 2.1×10^5 N/mm^2 (07)