

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-V
Theory & Design of Structures-V
Date: 27/04/14

T.Y.B.ARCH

Examination May-June 2014

Max. Marks: 50

Duration: 2 Hrs.

Academic year 2014-15

INSTRUCTIONS:

Q. NO. 1 is compulsory

Attempt any TWO questions out of remaining THREE questions.

Use of IS 800:2007 and steel table is permitted

Use suitable data if necessary and clearly mention.

Numbers in parenthesis are right to indicate full marks.

Q.1

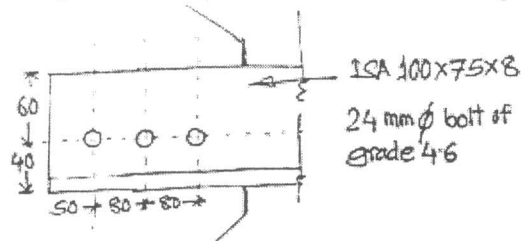
- Differentiate between riveted and welded joints. (04)
- Write note on Block shear strength (06)
- Determine strength of bolt for the following conditions assuming grade of bolt 4.6 and main to be joined are of thickness 16mm for following conditions
 - Lap Joint
 - Double cover Butt Joint, the cover plate of size 12mm thick. (08)

Q.2

- Design a column of 3.5m length subjected to factored load of 1050kN. Both ends of member are effectively restrained in position and not in direction, assuming bolt of grade 4.6 (12)
- What are the disadvantages of steel as structural material? (04)

Q.3

- Determine Block shear strength of tension member as shown in fig. (06)



- Design rectangular bar of standard structural steel as tension member of 1.5m length to resist a service load of 80kN and service live load of 70kN, of grade Fe410 assume member is connected by one line of 24mm diameter of bolts of grade 4.6. (10)

Q.4

- Design slab base for a column ISHB 400@763.21N/m subjected to factored axial compression load of 2100kN, assuming steel of grade ~~Fe410~~ Fe410 (08)
- Determine design bending strength of ISLB 250@274 N/m considering the Beam to be laterally supported. The length of beam is 2.5m and grade Fe410 (08)