



**VI Semester B.E. (Civil) Degree Examination, December 2016
(2K11 Scheme)**

CE-605 : DESIGN AND DRAWING OF STEEL STRUCTURES

Time : 4 Hours

Max. Marks : 100

Instructions : 1) Answer the given questions.

2) IS-800-2007 and steel tables are **permitted**.

3) **Any missing data may be suitably answered.**

1. a) Design the unstiffened seat angle connection between the beam ISMB 250 and column ISHB200 37.32 kg/m for reaction from beam equal to 85 kN (factored) use M16 bolts of 4.6 grade and steel 410 with $F_g = 250$ MPa. Draw front view and side view of the joint. **30**

OR

- b) Design a suitable bolted bracket connection of a ISHT-75 section attached to the flange of ISHB 300 @ 577 N/m to carry a vertical factored load of 600 kN at an eccentricity of 60 mm. Use M24 bolts of grade 4.6. Draw front view and side view of the joint. **30**

2. a) Design a built up column with two channel sections laced together (single lacing) and placed back to back and spaced apart to support a factored load 1500 KN. The effective length of column 7.5 m. Design the lacing and end tie plate with welded connection. Also design the welded slab base. Draw plan and elevation to show the lacing of column. **70**

OR

- b) Design a welded plate girder of 30 m span. It is subjected to a factored UDL of 32 KN/m. Design the plate girder only with end bearing stiffeners. Also design the connections of the member of plate girder. The steel for flanges and web plates is of grade Fe 410. Draw the longitudinal elevation, cross section @ grid span. Cross section @ support. **70**
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