



Reg. No. :

Name :

Eighth Semester B.Tech. Degree Examination, May 2018
(2013 Scheme)
13.802 : DESIGN AND DRAWING OF STEEL STRUCTURES (C)

Time : 4 Hours

Max. Marks : 150

Instructions : Answer *all* questions from Part **A** and *two* questions from Part **B**. Assume suitable data *wherever* necessary. Use of steel section tables, **IS Codes IS 800-1984, IS 800-2007, IS 875 (2&3)-1987, IS 6533-1989, IS 1161, IS 804, IS 806** and Railway loading standards are permitted in the examination hall.

PART – A

(2×20=40 Marks)

1. Design the stays for a pressed steel water tank of dimensions 7.5 × 6.25 × 2.5 m.
2. Explain the different types of bearings with neat sketch.

PART – B

(2×55=110 Marks)

3. a) Design a rectangular steel water tank with of capacity 1,10,000 litres. Design :
 - i) tank plates
 - ii) stays
 - iii) T-cover joint
 - iv) longitudinal and cross beams. **30**
- b) Draw to suitable scale : **25**
 - i) General elevation and plan of tank showing dimensions.
 - ii) Details of T-cover joint.

OR



4. a) Design a steel roof truss for the following data. Span = 14 m, spacing 4 m, roofing AC sheets, wind pressure as per IS 875. Assume design wind speed as 42 m/s. 30
- b) Prepare drawing of the truss designed with details of joint at ridge and at the base. 25
5. a) Design a lined self supporting chimney of height 75 m and diameter 3.5 m. Wind data. 30

Height	0 – 30 m	30 – 50 m	50 – 75 m
Wind Pressure	1.4 kN/m ²	1.5 kN/m ²	1.6 kN/m ²

- b) Draw to suitable scale. 25
- i) The elevation
- ii) Section showing the details of plate connections of the above designed stack.
- OR
6. a) Design a plate girder for a deck type railway bridge of span 18 m for a modified broad gauge loading. 30
- b) Draw to suitable scale : 25
- i) Longitudinal and cross section
- ii) Details of stiffeners and connections.