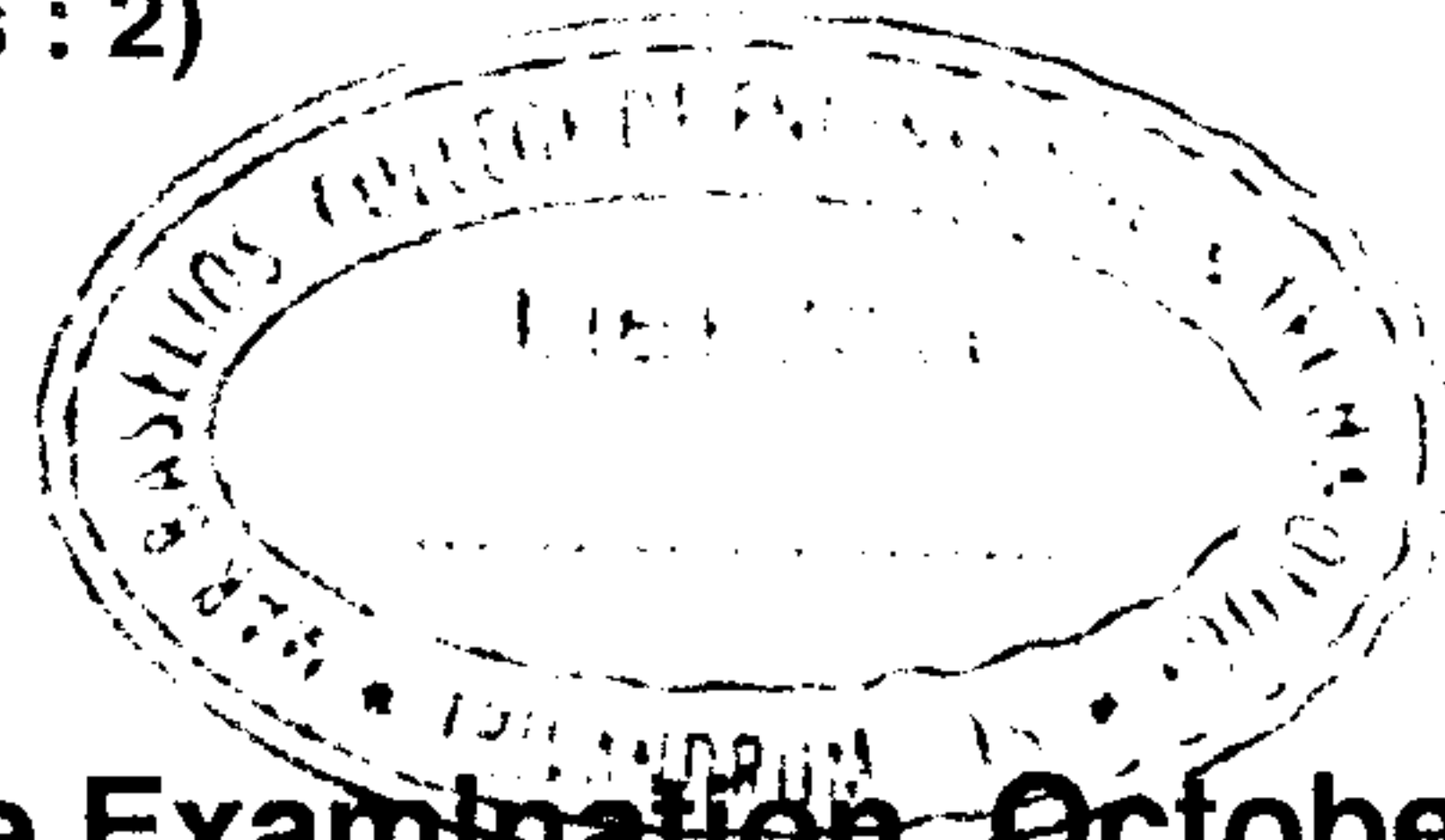




Reg. No. :

Name :



**Eighth Semester B.Tech. Degree Examination, October 2018
(2008 Scheme)**

08.802 : DESIGN AND DRAWING OF STEEL STRUCTURES (C)

Time : 4 Hours

Max. Marks : 100

Instructions : 1) Answer *all* questions from Part – A and *two* questions from Part – B.

2) Assume *any* missing data *suitably*. (Use of IS 800-2007, IS : 875-1987 (Part 1, 2 and 3), IS 6533-1989, IS : 1161-1979, IS : 804-1958, IS : 806-1968 and structural steel tables are permitted).

PART – A

(2×10=20 Marks)

I. Design the member of top chord of a roof truss subjected to the forces as shown below :

Member	Dead Load (kN)	Imposed Load (kN)	Wind Load (kN)	Effective length (m)
Top chord	-28.2	-36.66	124.6	2.5 m

(–) sign indicates compression.

II. Explain the design concept of the truss girder bridge of through type.

PART – B

(2×40=80 Marks)

Module – I

III. a) Design the elevated rectangular steel water tank to store 1×10^5 litres of water. Staging design is not required. **20**

b) Draw to a suitable scale the elevation and plan of the above tank. **20**

OR





- IV. a) Design a Fink roof truss for a span of 12 m and rise 3 m. Design wind pressure is 1 kN/m^2 . Truss spacing 5 m and roofing sheet are GI. **20**
- b) Draw to a suitable scale the elevation and support joint details of the above truss. **20**

Module – II

- V. a) Design for self supporting steel chimney of height 60 m above the foundation and diameter of cylindrical portion is 3 m. Foundation is resting on medium soil of 175 kN/m^2 . Assume that 100 mm thick lining is supported by the stack throughout the height and subjected to uniform wind pressure of 1.5 kN/m^2 . Use M20 bolts for connections. Also design one flue opening. **20**
- b) Draw to a suitable scale elevation, plan and foundation details of the steel chimney with flue opening details. **20**

OR

- VI. a) A deck type plate girder bridge is required for broad gauge single line track on the main line for the following data.
- | | |
|--|--------|
| Effective span | 16 m |
| Distance between c/c of plate girders | 2 m |
| Dead load of each girder | 4 kN/m |
| Dead load of track and timber sleepers | 7 kN/m |
| Lateral load | 9 kN/m |
- Design the components of the bridge. **20**
- b) Draw to a suitable scale the elevation and plan of the above bridge with joint details. **20**
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