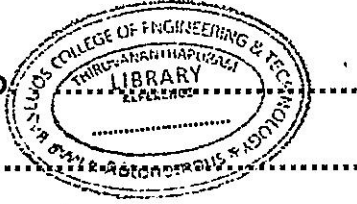


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N – 6517

Reg. No

Name :



**Eighth Semester B.Tech. Degree Examination, May 2022**

**(2008 Scheme)**

**08.802 : DESIGN AND DRAWING OF STEEL STRUCTURES (C)**

Time : 4 Hours

Max. Marks : 100

Instructions : (Use of IS : 800-1984, IS : 800-2007, IS : 875 (2 and 3)-1987,  
IS : 6533-1989, IS : 1161-1979, IS : 804-1958, IS : 806-1968,  
Railway loading standards and Steel table permitted)

Answer all questions from Part A and any one question from each module in Part B.

(Assume suitable data if not given)

**PART – A**

Answer all questions.

1. How are stays in rectangular overhead tank designed? Explain.
2. Explain the various bearing used in steel bridges.

**(2 × 10 = 20 Marks)**

**PART – B**

Answer any one full question from each module.

**Module – 1**

3. (a) Design a pressed a rectangular water tank for a capacity of  $150 \text{ m}^3$ . Height of column may be assumed as 9m from Ground. Design of Staging NOT required. Assume Wind pressure of  $1.2 \text{ kN/m}^2$ . **20**
- (b) Draw to suitable scale with all necessary dimensions:
  - (i) Sectional elevation of tank with staging and foundation assumed.
  - (ii) Details of staging provided in tank: **20**

OR

P.T.O.



4. (a) Design a suitable truss for an industrial building to support a GI sheet. **20**

The details of the structure as follows:

Span of truss = 9 m; Spacing of truss = 2.5 m; Pitch = 1/3; Weight of roof sheeting = 100 N/mm<sup>2</sup>; Imposed live load = 0.75 kN/m<sup>2</sup>; Wind load = 1.5 kN/m<sup>2</sup>; Yield stress of steel = 250 MPa.

Use tubular (CHS) sections for design.

- (b) Draw to suitable scale with all necessary dimensions : **20**
- (i) Truss alignment with member details.
  - (ii) Joinery details at support and ridge.

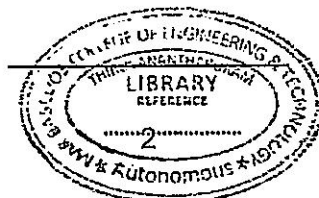
### Module – 2

5. (a) Design a self-supporting chimney for a height of 75 m. Assume wind load of 1.2 kN/m<sup>2</sup>, 1.4 kN/m<sup>2</sup>, 1.6 kN/m<sup>2</sup> for height of 0-25 m, 25-50 m, and 50-75 m heights respectively. Assume SBC of soil as 180 kN/m<sup>2</sup>. **20**
- (b) Draw to suitable scale with all necessary dimensions: **20**
- (i) Sectional elevation
  - (ii) Connection of plates at 25m and 50m locations

OR

6. (a) Design welded plate Girder Bridge for a span of 20 m for broad gauge track. Assume wind load acting on structure as 1.0 kN/m<sup>2</sup>. Design of central section of plate girder, end and intermediate stiffeners and connections is expected. **20**
- (b) Draw to suitable scale with all necessary dimensions : **20**
- (i) Elevation of Bridge.
  - (ii) Section of plate girder with necessary connections.

**(2 × 40 = 80 Marks)**



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