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H – 2818

Reg. No. : .....

Name : .....

**Eighth Semester B.Tech. Degree Examination, November 2019**

**(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

1. Design the T cover joint alone of a rectangular water tank for a capacity of  $100\text{m}^3$
2. Sketch the component details of a Deck type and Through type plate girder railway bridge and differentiate between Deck type and Through type bridges

**(2 × 20 = 40 Marks)**

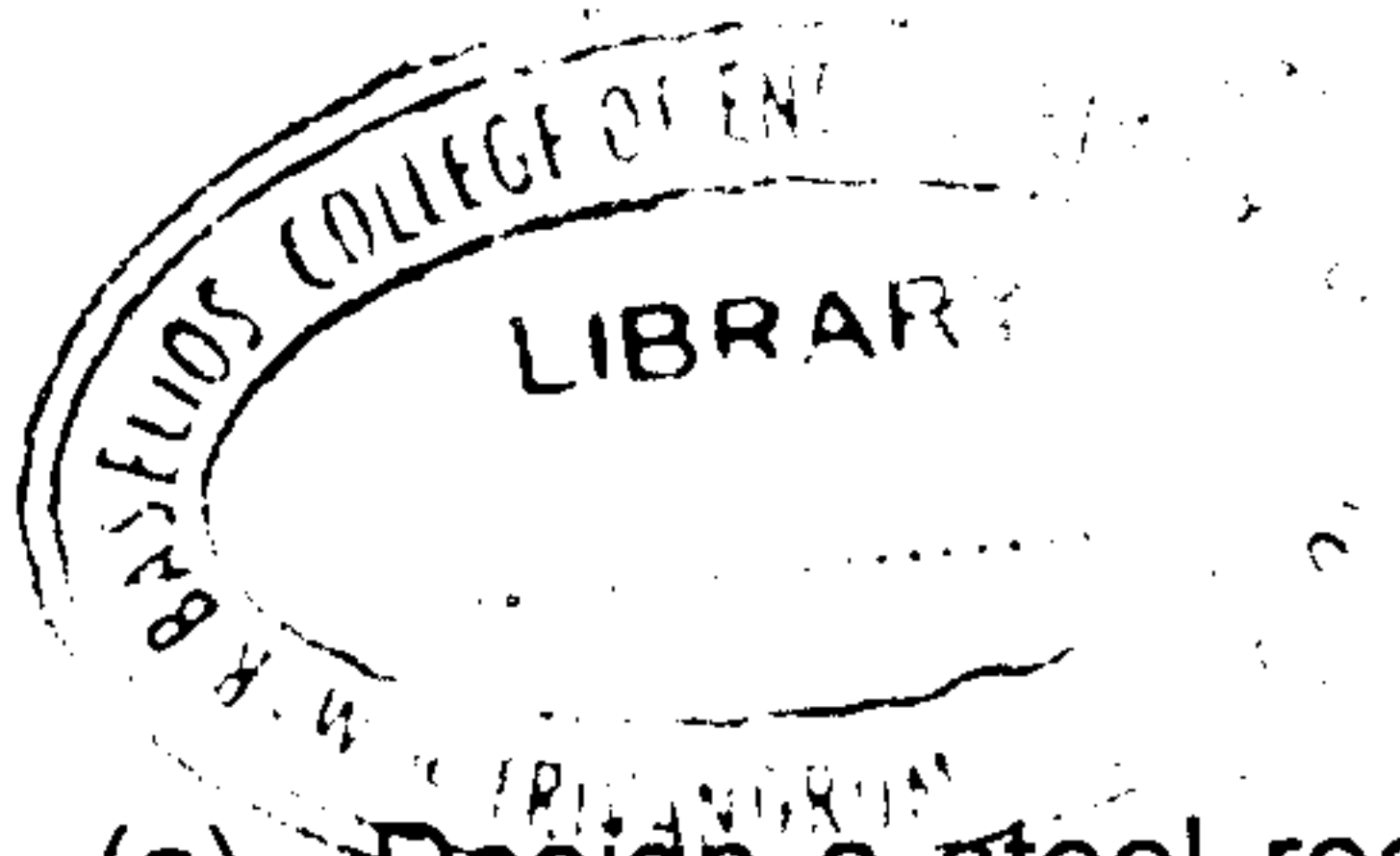
PART – B

3. (a) Design a circular steel water tank with hemispherical bottom of capacity 1,10,000 litres. The height of the staging is 12 m. **30**
- (b) Draw to suitable scale **25**
  - (i) General elevation of tank showing dimensions
  - (ii) Details of connection of column to the tank.

OR

P.T.O.





4. (a) Design a steel roof truss for the following data. Span = 9 m, spacing 4 m, roofing GI sheets, wind pressure as per IS 875. Assume design wind speed as 41 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 75m and diameter 3.5m. Wind data
- |                   |       |         |        |
|-------------------|-------|---------|--------|
| Height            | 0–30m | 30–50 m | 50–75m |
| Design wind speed | 40m/s | 41m/s   | 42m/s  |
- 30
- (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 20 m for a modified broad gauge loading. 30
- (b) Draw to suitable scale 25
- (i) Elevation
- (ii) Details of stiffeners and connections.

**(2 × 55 = 110 Marks)**

