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H – 3261

Reg. No. ....

Name : .....

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

**(2008 Scheme)**

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

Time : 4 Hours

Max. Marks : 100

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

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)

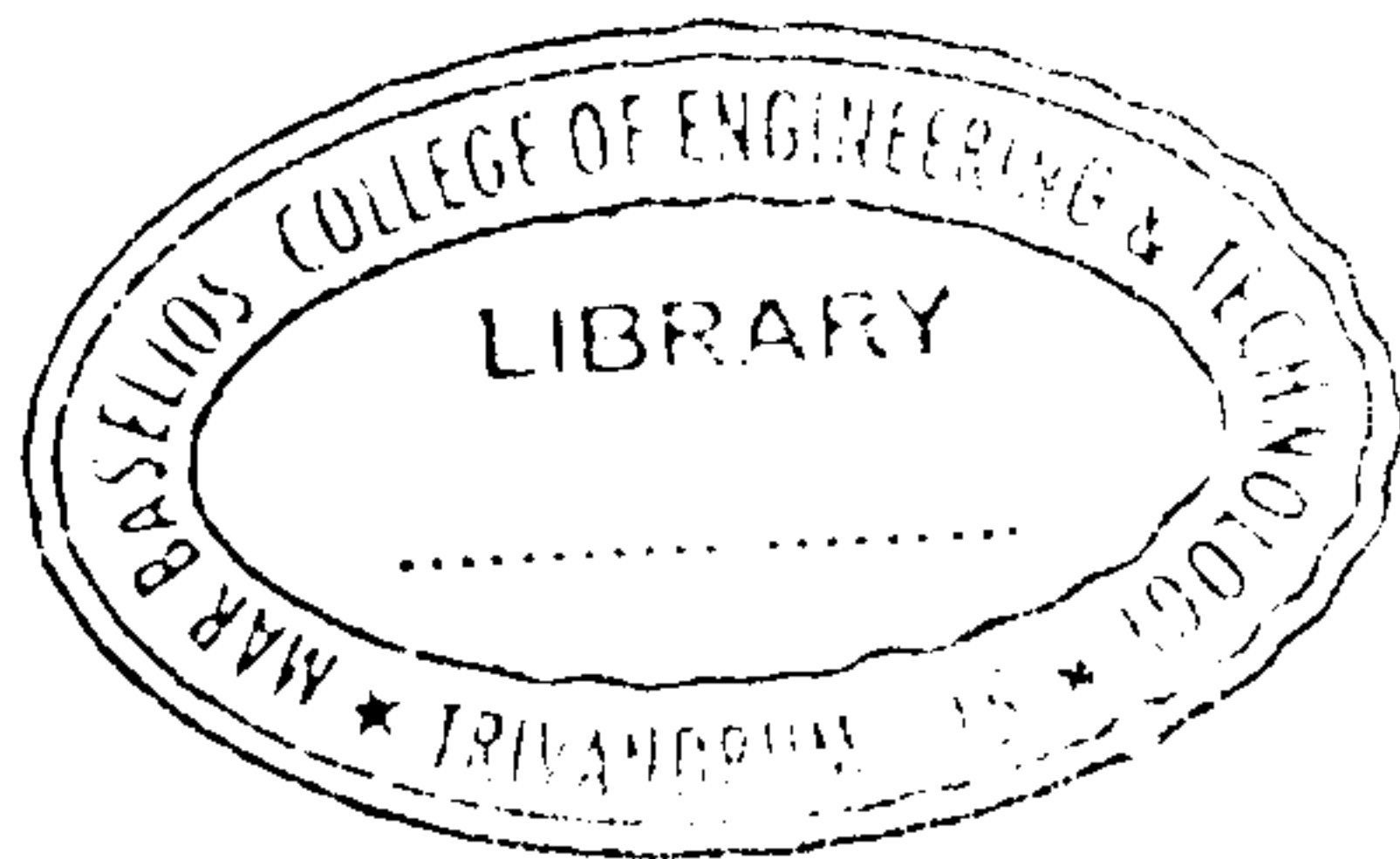
**PART – A**

1. Design an channel section purlin of the trussed roof for the following data :

Spacing of the truss c/c	=	4.0 m
Span of trusses	=	10 m
Spacing of purlins c/c	=	1.4 m
Wind load	=	1.5 kN/m <sup>2</sup> normal to roof
Weight of galvanized sheets	=	1.3 kM/m <sup>2</sup>
Slope of roof	=	30°
Grade of steel	=	Fe 410.

P.T.O.





2. Establish wind stress distribution diagram for the self supported steel stack for the following data :

Height of stack = 70 m

Diameter of stack = 3 m

Assume the life span of chimney as 100 years. The chimney is located at Chennai. The topography of the site is practically plain and the terrain category type II.

**(2 × 10 = 20 Marks)**

**PART – B**

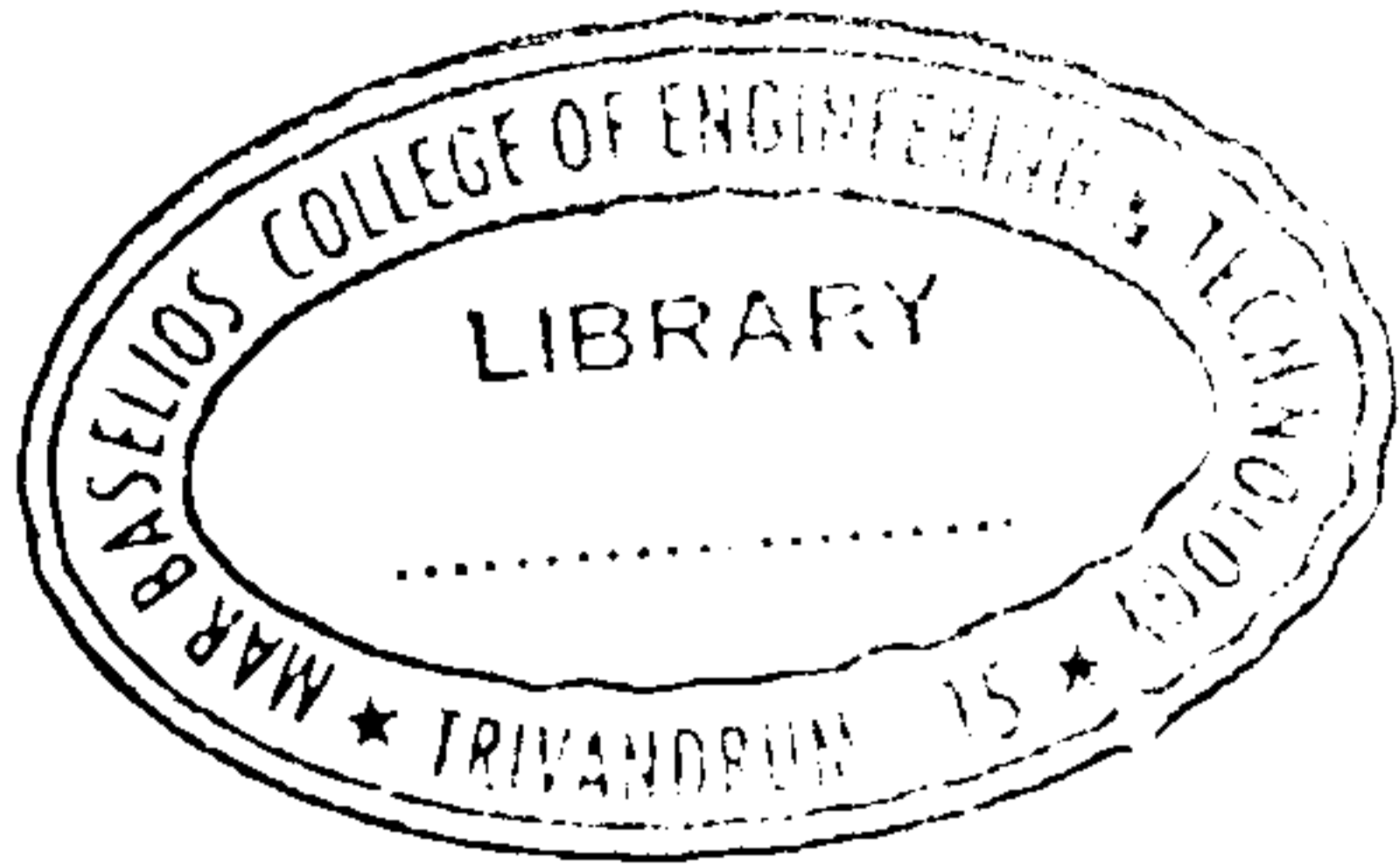
**Module – I**

3. (a) Design a circular water tank with hemispherical bottom for a capacity of 2,50,000 litres. The tank is supported over 8 columns. Staging design is NOT required. **20**
- (b) Draw to a suitable scale the elevation and plan of the above tank. **20**

**OR**

4. (a) Design a Pratt type roof truss for a span of 30 m and rise 5 m. The design wind pressure is  $1.25 \text{ kN/m}^2$ . The trusses are covered with A.C sheets and the centre-to-centre spacing of the trusses is 6 m. **20**
- (b) Draw to a suitable scale the elevation and support joint details of the above truss. **20**





### Module – II

5. (a) Design the self supporting steel stack for the details provided in Part A Question no. II. Take the bearing capacity of soil as  $200 \text{ kN/m}^2$  for foundation design. **20**
- (b) Draw to a suitable scale elevation, plan and foundation details of the steel stack. **20**

OR

6. (a) Design a deck type welded plate girder railway bridge of span 25 m c/c of bearings for broad gauge single track line for MBG loading. **20**
- (b) Draw to a suitable scale the elevation and plan of the above bridge with joint details. **20**

**(2 × 40 = 80 Marks)**

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