(Pages : 3) **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, 15:806-1968 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^2 normal to roof
Weight of galvanized sheets	=	1.3 kM/m^2
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 arid 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 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 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)
