08.802: DESIGN AND DRAWING OF STEEL STRUCTURES (C)

Time: 4hrs
Max: 100 marks

Answer all questions in part A and two questions from part B
Assume suitable data wherever necessary. Use of steel tables, IS 800, IS 875,(1,2 & 3), IS 801, IS 804, IS 806, IS 1161, IS 6533 (2) are permitted

PART A (2x10)

1. Design the inclined stag for a pressed steel tank of capacity 120 m³
2. Draw the cross section of a truss bridge and mark all the parts

PART B (2x40)

3. a) Design a rectangular steel water tank for a capacity of 150,000 litres. The height of columns above ground level is 10 m. SBC of soil is 150 kN/m²
b) prepare detailed drawings showing front elevation and plan of the tank and also the connection details of the tank plates.

OR

4. a) Design a tubular truss for a span of 9 m using AC sheets. Trusses are provided at 3 m spacing. Wind pressure as per IS 875. Place – Kerala
b) prepare a drawing of the truss designed with details of joint at ridge and at the base

5. a) Design a welded plate girder for a Bg main railway track for a span of 18 m.

Design the curtailment of the flange plate and also stiffeners.

b) Draw to a suitable scale the longitudinal section, cross section and plan of the above designed bridge
6  a) Design a self supporting steel stack for the following data. Height of the stack – 80m, diameter- 4m, thickness of brick lining 100 mm and wind data.

<table>
<thead>
<tr>
<th>Height</th>
<th>0-30 m</th>
<th>30-60 m</th>
<th>60-80 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind pressure</td>
<td>1.4kN/m²</td>
<td>1.5kN/m²</td>
<td>1.6kN/m²</td>
</tr>
</tbody>
</table>

b) Draw to a suitable scale:
   i) The sectional elevation
   ii) Two sections of the above designed stack.