

M.Tech. Structural Engineering & Construction (CBCS Pattern) Semester-II  
**PSES252 / PSES25B - Advanced Design of Steel Structures**

P. Pages : 1

Time : Three Hours



**GUG/S/25/11019**

Max. Marks : 70

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- Notes :
1. All questions carry equal marks.
  2. Due credit will be given to neatness and adequate dimensions.
  3. Assume suitable data wherever necessary.
  4. Diagrams and Chemical equation should be given wherever necessary.
  5. I.S.I. Hand Book for structural steel section, I.S. Code 8000/1962 or 1964, I.S. 456 (Revised), I.S. 875 may be consulted.

1. Design a gable frame having effective span of 12m and central rise of 3m. Ht. of columns is 5m. Udl on the frame is 40 kN/m. SBC of soil is 250 kN/m<sup>2</sup>  $f_y = 250$  mPa. Use 22mm  $\Phi$  bolts of 4.6 grade. **35**

**OR**

2. Design a steel chimney 45 m in height located at Nagpur area. SBC of Soil is 220kN/m<sup>2</sup>. Diameter of cylindrical part is 5 m. Steel grade = Fe 410 ( $f_y = 250$ MPa) Sketch structural details. **35**
3. Design a overhead square pressed steel tank for 2 lac litres of water capacity. Staging height = 12m, free board = 0.3 m.  $f_y = 250$  mPa. Sketch structural details. **35**

**OR**

4. Design a plate girder having 30m simply supported span to carry class AA wheeled vehicle loading steel grade = Fe410 [ $F_y = 250$  MPa] Draw structural details. **35**

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