L. D. COLLEGE OF ENGINEERING, AHMEDABAD (GTU)

6th Semester Civil Engineering - PDDC 2013 Batch

Subject Code & Name: X60604 - Structural Design - I

Assignment

Date: 09-04-2016

Theory:

1. Differentiate Limit State Method and Working Stress Method.
2. Differentiate Steel Structure and RCC Structure.
3. Write Advantages and Disadvantages of various type of Connections (Bolted, Riveted & Welded).

Example (Taking Suitable Assumption as per IS):

1. Design a Gantry Girder of span 6.5 M for following details: -
   - → Span of Crane Girder: 16 M
   - → Crane Capacity: 200 KN (Lifted Load)
   - → Self-weight of Crane: 200 KN
   - → Self-Weight of Trolley (Crab): 40 KN
   - → Minimum Hook Approach (Minimum End Distance): 1.5 M
   - → Wheel Base (B): 3 M
   - → Type of Trolley: EOT
2. Calculate nodal forces due to dead load, live load & wind load for an industries of span 12 x 60 M located in Bhuj with following details: -
   - → Height of eaves point 12 M above GL
   - → Type of sheet: GI sheet of class two, gauge 0.8
   - → Height of crest point 600m above average GL
   - → Upward slope (θ): 8^{o}
   - → Location of building in horizontal direction from crest point, 300 M along wind ward side
   - → Opening in wall area: 15%
   - → Life of Structure: 100 Years
   - → Spacing of Truss: 5 M c/c
3. Design of foot over bridge of span 24 M and walk way 4 M for the following details: -
   - → Line load: 4 KN/M2
   - → Floor Finish: 1 KN/M2
   - → Type of Flooring: 120 mm Thick RCC Slab
   - → Type of Supporting System: N-Type Truss

   Also design cross girder