

Roll No.

Total No. of Pages : 03

Total No. of Questions : 09

B.Tech.(CE) (Sem.-5)

DESIGN OF STEEL STRUCTURES-I

Subject Code : CE-303

Paper ID : [A0613]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A**1. Write briefly :**

- a. What are the possible ways of increasing strength of iron?
- b. What is meant by bolt value? Calculate the value of M20 bolt.
- c. What are column bases? Why are they provided?
- d. What are plate girders? Where are they used?
- e. What is efficiency of a joint? What is the efficiency of the welded connection?
- f. List the different modes of failure of a tension member.
- g. What are the reasons for specifying deflection limitation in the design of beams?
- h. How does the behavior of a compression member differ based on its length?
- i. What is built up column? Name its two major categories.
- j. What is web buckling? How is it assumed to be dispersed?

[N-2- 1089]

SECTION-B

2. Design a single angle to carry the un...
the length of member to be 3 m and f_y
3. Explain the various limit states that r...
state method.
4. A column consisting of ISHB 400 has...
is effectively held in position at both e...
one end. Calculate the axial load this c...
5. Determine whether the joint shown in...
diameter bolts of grade 4.6 have been...
section 1-1. Neglect the effect of prying...
6. Design the bearing plate at the supp...
resting on M20 concrete pedestal mas...
reaction of 200 kN.

SECTION-C

7. A proposed cantilever beam is built in...
other end. It supports dead load of...
10 kN/m. The length of the beam is 5 m...
necessary checks. Assume bearing lengt...
8. Design a battened column 6.5 m long...
1000 kN. The column is restrained in po...
ends. Provide single lacing system with...
consists of two channels placed back to...
9. Determine the design loads on a purli...
Vishakhapatnam, given :
Class of building: General with life of 50...
Terrain: Category 2
Maximum dimension: 40 m
Width of building: 15 m
Height at eve level: 8 m

[N-2- 1089]

Topography: less than 3°

Permeability: Medium

Span of truss: 15 m

Pitch: 1/5

Sheeting: A.C. Sheet

Spacing of purlins: 1.35 m

Spacing of trusses: 4 m

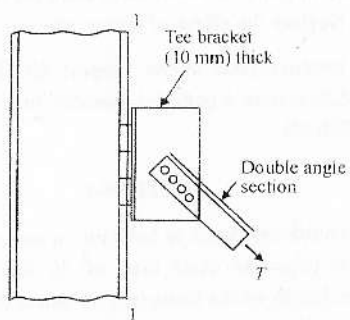


Fig. 1