

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

B.Tech-I Semester (CE)

COURSE CODE(CREDITS): 18B11CE612 (3)

MAX. MARKS: 15

COURSE NAME: Design of Steel Structures

COURSE INSTRUCTORS: Mr. Kaushal Kumar

MAX. TIME: 1 Hour

*Note: (a) All questions are compulsory.*

*(b) Marks are indicated against each question in square brackets.*

*(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems*

*(d) IS800:2007 and Steel Table is Allowed.*

- Q1. Explain in detail about the design philosophies associated with design of steel Structures.  
CO-1 [3 Marks]
- Q2. What do you mean by prying forces? Explain it with the help of neat diagram.  
CO-1 [2 Marks]
- Q3. Two plates, 10 mm and 20 mm thick are to be connected by double cover butt joint using 8 mm cover plates. Find the strength of the joint, if M16 bolts of grade 4.6 and Fe 410 plates are used.  
CO-2 [4 Marks]
- Q4. Design a tension member to carry an axial factored load of 500kN. Use a double angle rolled steel section connected (at site) to each side of a gusset plate of 10mm thick using 20mm diameter bolts of grade 4.6.  
CO-2 [3 Marks]
- Q5. Design a lap joint between the two plates of width 150 mm, if the thickness of one plate is 12 mm and the other is 10 mm. The joint has to transfer a working load of 100 kN. The plates are of Fe 410 grade. Use bearing type bolts.  
CO-2 [3 Marks]

*End of the Paper*