

Subject: Design of Steel Structures

Year: 2024-25 (I)

Assignment 1: Introduction and Structural Connections

CO1: Analysis and Design of structural connections

CO5: Apply Codal Provision in design of Structural members

Marks: 12

Question NO.	Details	M	BL	CO
Q1	Find the rivet value for 16mm dia rivets used to connect two plates 8mm and 10mm thick in lap joint using power driven rivets.	2	3	CO1
Q2	Determine the rivet value of rivet in butt joint connected by 2plates 12mm thick by using 8mm thick cover plates with hand driven rivets. Case1: Single cover butt joint Case2: Double cover butt joint....	2	3	CO1
Q3	Design a bolted lap joint to connect 2 plates 150*10mm and 120*10mm subjected to an axial load of 400kn. Use M20 bolts. (power driven)	2	3	CO1
Q4	Determine the bolt value of M20 black bolts used to connect 200*10mm and 200*12mm plates in a lap joint by using 12 bolts. Use power driven bolts.	2	3	CO1
Roll No	Question 5			
1,11,21, 31,41,51,61	Write a detail report on Different steel sections available in Nanded city. Compare their market prize and finally draw conclusions based on your study.	4	4	CO1
2,12,22,32 42,52,62	Write a detail report on different grades of steels. Compare their mechanical properties. Draw conclusions based on your study.	4	4	CO1
3,13,23,33, 43,53,63	Write a detail report on modulus of elasticity of material, modulus of rigidity passions ratio and density of a material. Find and Compare these properties of different material such as Steel, concrete and wood. Draw conclusions based on your study.	4	4	CO1
4,14,24,34, 44,54,64	Write a detail report on advantages and disadvantages of steel structures in comparison with other available alternatives. Draw conclusions based on your study.	4	4	CO1
5,15,25,35, 45,55,65	Write a detail report on different types of rivets. Compare their effectiveness and finally draw conclusions based on your study.	4	4	CO1
6,16,26,36, 46,56,66	Write a detail report shearing strength of rivets, bearing strength of rivets and rivet value. Explain with illustrative example. What are the different ways to increase the rivet value of any connections?	4	4	CO1
7,17,27,37, 47,57,67	Write a detail report on butt joint and lap joint. Compare their effectiveness and finally draw conclusions based on your study.	4	4	CO1
8,18,28,38, 48,58,68	Write a detail report on different ways of failure of Rivet joint. Compare their effectiveness and finally draw conclusions based on your study.	4	4	CO1
9,19,29,39, 49,59,69	Write a detail report on different types of weld connection. Compare their effectiveness and finally draw conclusions based on your study.	4	4	CO1
10,20,30,40, 50,60,70	Write a detail report on different types of bolts. Compare their effectiveness and finally draw conclusions based on your study.	4	4	CO1

