JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech-VI Semester (~~CSE/IT/BT/ECE~~/CE)

COURSE CODE (CREDITS): 23B11CE612 (3) MAX. MARKS: 15

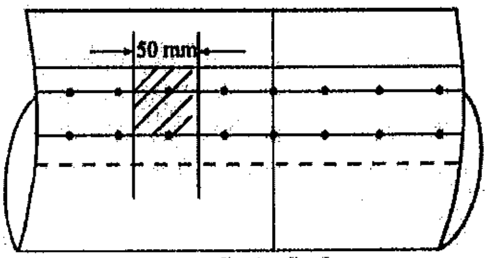
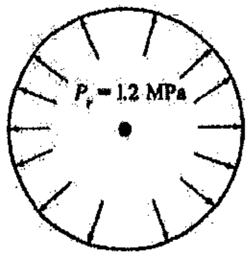
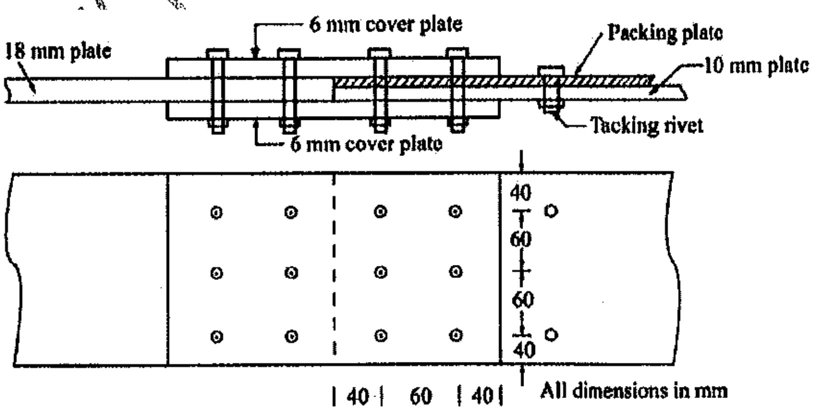
COURSE NAME: DESIGN OF STEEL STRUCTURES

COURSE INSTRUCTOR: Dr. KAUSHAL KUMAR MAX. TIME: 1 Hour

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

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

(c) Use of calculators is allowed. IS 800:2007 and IS 808/Steel Table is also allowed.

Q.No	Question	CO	Marks
Q1	A boiler shell is made up of 14 mm thick Fe:415 plates. If the joint is double bolted lap joint with M16 bolts of grade 4.6 at distances of 50 mm, determine the design strength of the joint per pitch width. Is it a safe design if the internal diameter of bolt is 1 m and steam pressure is 1.2 MPa?   	1	5
Q2	Two plates, 10 mm and 18 mm thick are connected by a double cover butt joint using 6 mm cover plates as shown in Fig. 3.20. Find the strength of the joint. Given M20 bolts of grade 4.6 and Fe 410 plates are used.  	1	5

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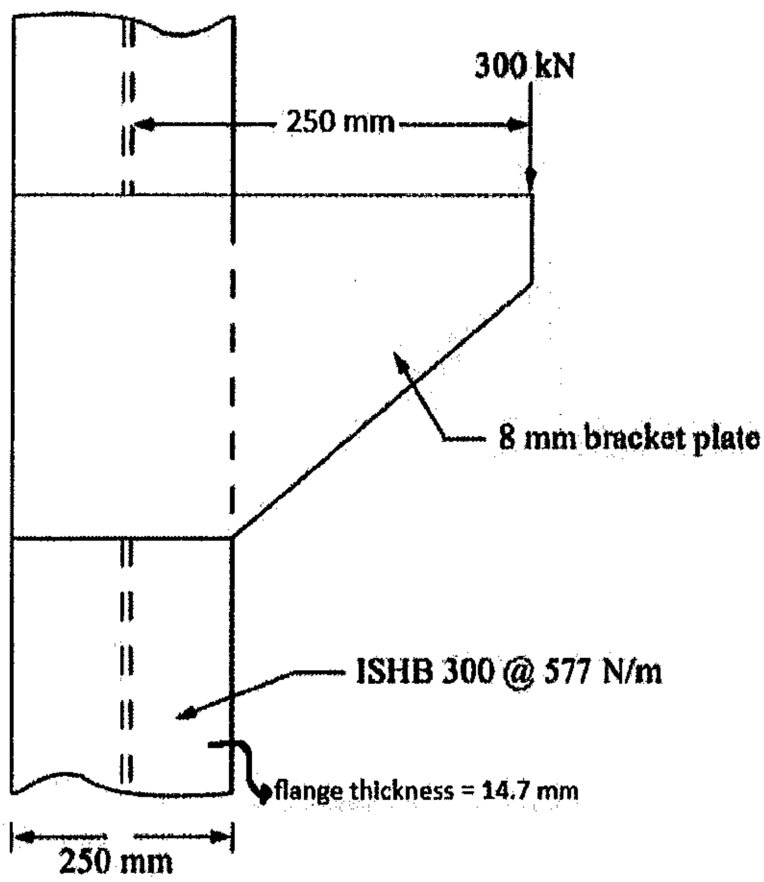
Q3	A bracket is bolted to the flange of a column as shown in Figure below, using 8 mm thick bracket plate. Using M20 bolts of grade 4.6 design the connection. Also check the safety of the connection.  	1, 2	5