JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

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

COURSE CODE (CREDITS): 18B11CE612 (3) MAX. MARKS: 15

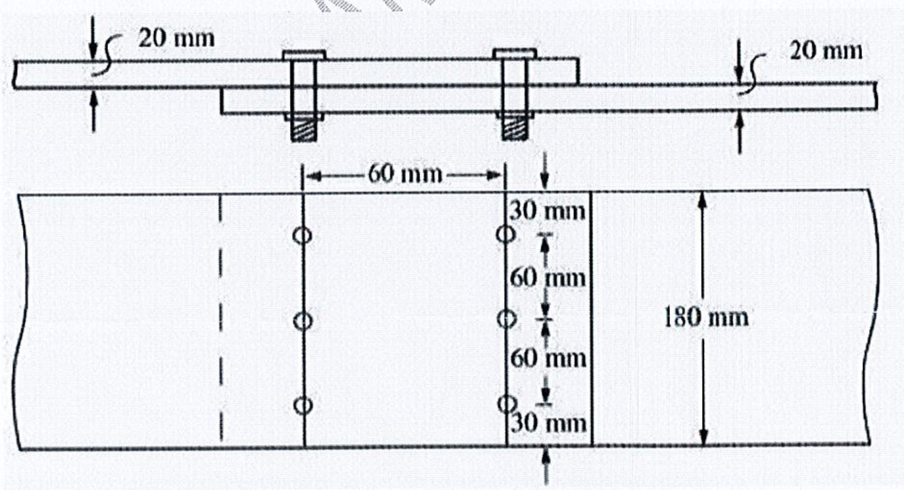
COURSE NAME: DESIGN OF STEEL STRUCTURES

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

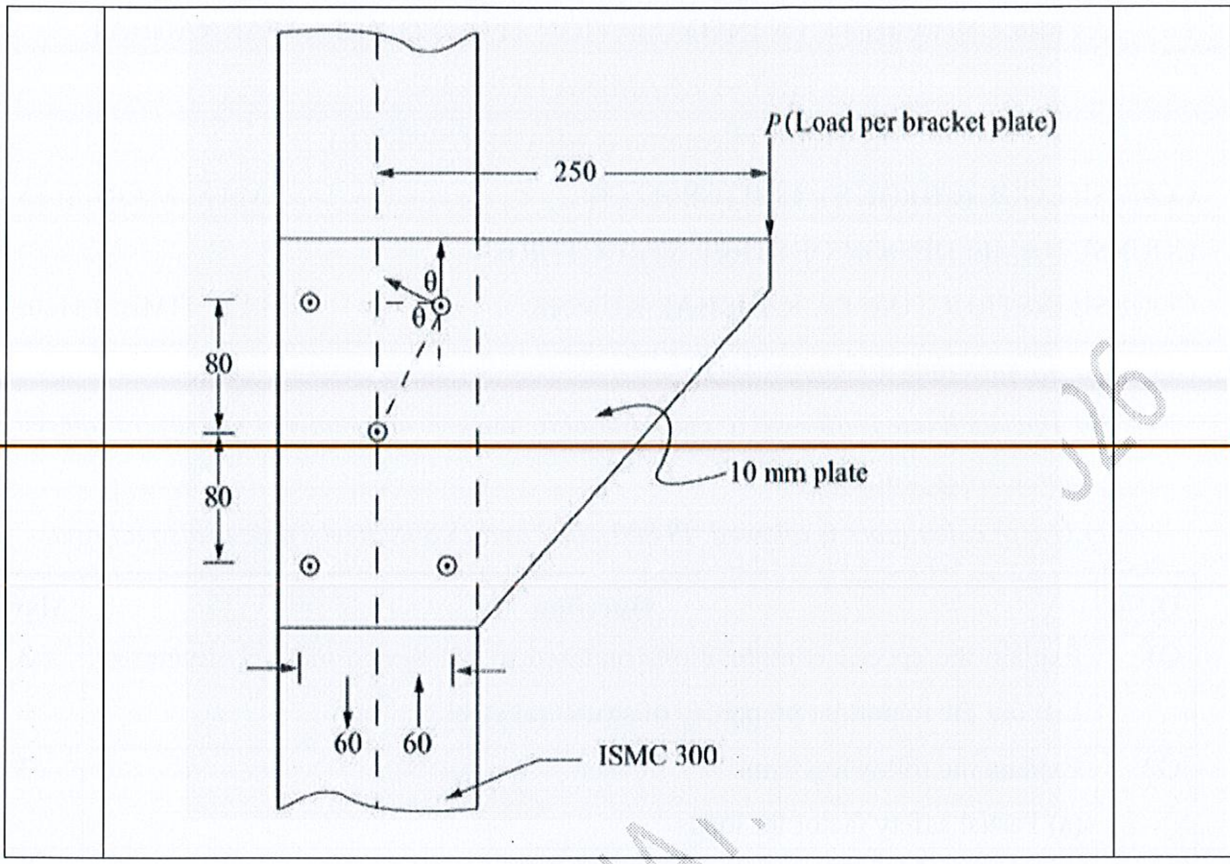
Note: *(a) All questions are compulsory.*

(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	Marks
Q1	Explain the special considerations required in the design of steel structures. List out the important properties of structural steel.	3
Q2	Explain the following terms (a) Partial safety factor for loads (b) Partial safety factor for material strength.	3
Q3	Find the efficiency of the lap joint shown in figure below. Given: M20 bolts of grade 4.6 and Fe 410 (E 250) plates are used.  	4
Q4	A bracket plate bolted to a vertical column is loaded as shown in figure below. If M20 bolts of grade 4.6 are used, determine the maximum value of factored load P which can be carried safely. (figure on next page)	5

(124)


P (Load per bracket plate)
250
θ
θ
80
80
10 mm plate
60
60
ISMC 300