

COURSE CODE (CREDITS):18B11CE612 (3)

MAX. MARKS: 35

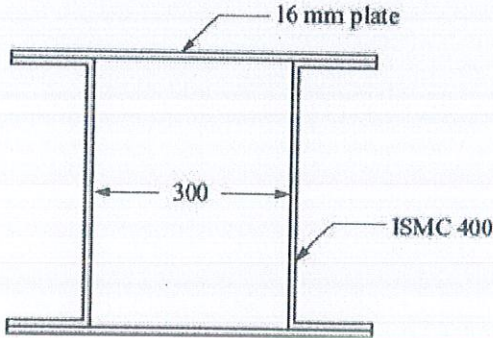
COURSE NAME: DESIGN OF STEEL STRUCTURES

COURSE INSTRUCTORS: Dr. KAUSHAL KUMAR

MAX. TIME: 2 Hours

Note: (a) All questions are compulsory.

(b) IS800:2007 and Steel table or IS 808 is allowed.

Q.No	Question	CO	Marks
Q1	A tie member of a roof truss consists of 2 ISA 100x75x8mm. The angles are connected to either side of a 10mm gusset plates and the member is subjected to a working pull of 300 KN. Design the weld connection. Assume connections are made in the workshop.	CO1, CO2	7
Q2	Design a double angle section (both sides of the gusset) to carry a tension of 400 KN. The end connection is done using high strength M24 bolts of the property class 8.8. Assume the connection as bearing type, $f_y = 250$ MPa and $f_u = 410$ MPa.	CO3	7
Q3	Determine the load carrying capacity of a strut made with 2 ISA 75x75x6 mm, back to back if the length of member is 3.0 m and welded to a 12 mm gusset plate.	CO4	6
Q4	Determine the allowable compressive load which the member shown in the figure below, can support if the member is having 5.5 m effective length. Assume E 250 (Fe 410) grade steel. 	CO4	7
Q5	A cantilever beam of length 4.5 m supports a dead load (including self weight) of 18 kN/m and a live load of 12 kN/m. Assume a bearing length of 100 mm. Design the beam.	CO5	8