JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION-2016

B.Tech 6th Semester

COURSE CODE: 10B11CE611

COURSE NAME: Design of Steel Structures

COURSE CREDITS: 4

MAX. MARKS: 15

MAX. TIME: 1 HR

Note: All questions are compulsory. Carrying mobile phone during examinations will be treated as case of unfair means. Illustrate your answers with neat sketches wherever necessary. Preferably, write the answers in sequential order. IS 800 and IS 808 is allowed.

Q.1   State purpose of using tacking bolts. What's the maximum permissible pitch for the same as per IS 800? [1]

Q.2   Sketch the residual stress in a typical rolled I-beam. How are residual stresses induced in steel sections? [2]

Q.3   What are the advantages of wide-flange section over Indian standard section? [2]

Q.4   Design a seat angle connection between a beam MB 250 and column HB 200 for a reaction of beam 90 kN, using M 16 bolts of property class 4.6. Take Fe 410 grade steel with $f_y = 250$ MPa. [5]

Q.5   Find the maximum load inclined at 45° to the horizontal, which the bracket shown in Fig.1 can transmit if 5-16 mm diameter grade 8.8 bolts are used and plates connected are 10 mm thick. Assume the joint is a non-slip joint. [5]
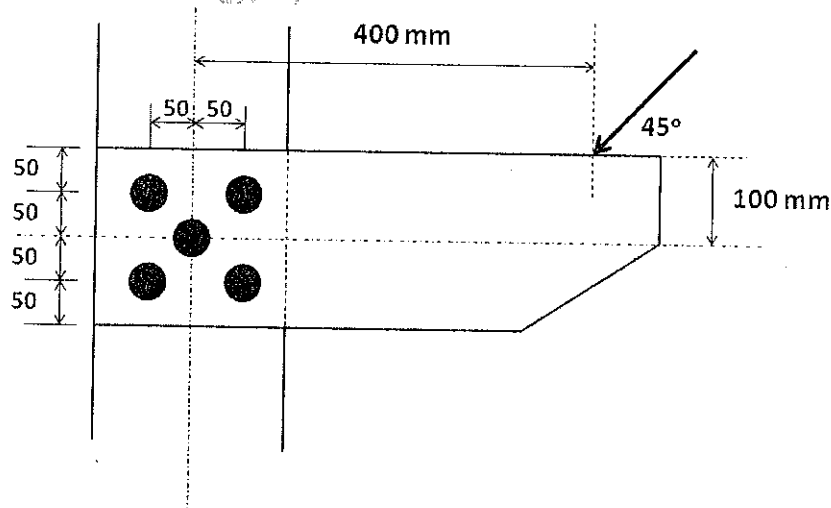

Fig.1