JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATION-2016
M.Tech 2nd Semester

COURSE CODE: 12M1WCE212
COURSE NAME: Design of Steel Structures

MAX. MARKS: 15

COURSE CREDITS: 3

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 Derive the expression for maximum allowable shear stress for structural steel, i.e. $\dfrac{f_u}{\sqrt{3}}$.

[2]

Q.2 Design a bolted cover plate splice for an ISHB 225 column connected to an ISHB 225, to transfer a factored axial load of 450 kN, both columns are of grade Fe 410 steel. The ends are not machined for full contact in bearing .

[6]

Q.3 Design the bolted connection along AA' and BB' for a bracket connection to transfer a factored load of 120 kN as shown in the Fig.1.
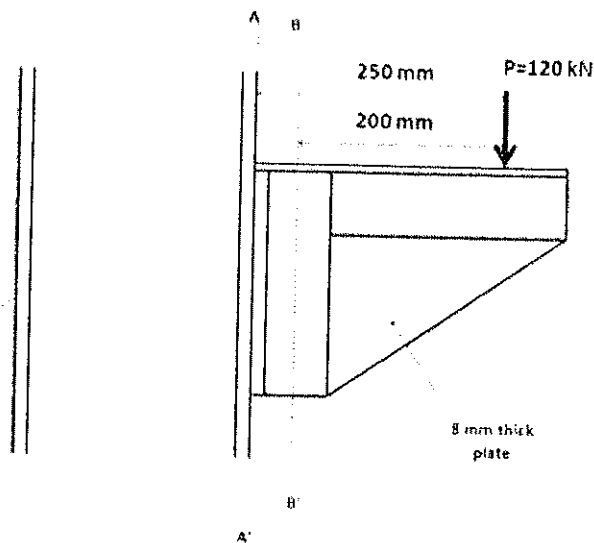
[7]

A   B

250 mm   P=120 kN

200 mm

8 mm thick
plate

B'

A'

Fig.1