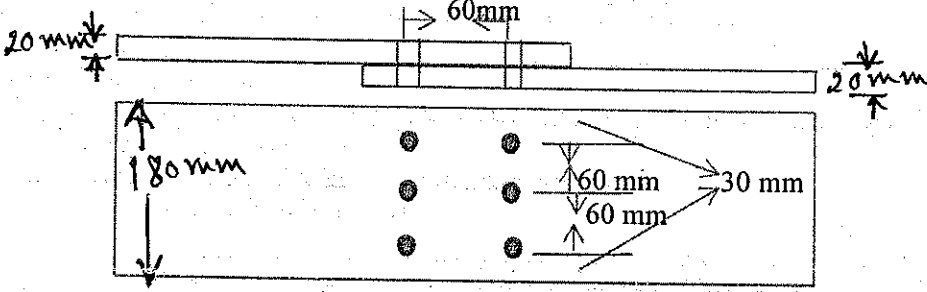
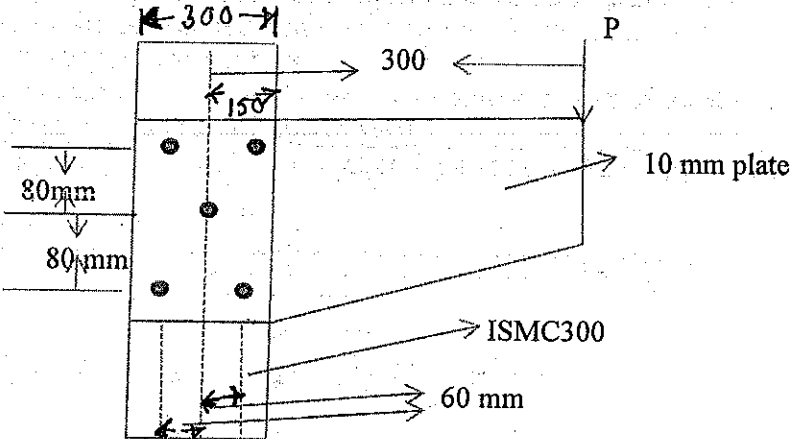


B. Construction Engineering 3rd year 1st Semester Examination – 2019
 Subject: Design of Structure-I (CON/T/315/2019)

Total Time: 3 hour

Full Marks: 100

(Full Marks-100)

CO1 [10]	[1] Write the Advantages, Disadvantages & limitation of steel structures. Classify the section <u>ISLB400@77.4</u> kg/m.
CO2 [20]	[2] Answer all the questions (a) Determine the design axial load capacity of the column ISMB 500, if the length of column is 7m and its one ends fixed and other end pinned. [10] (b) Explain the different modes of failure of tension member. [5] (c) Draw the different type of Roof truss. [5]
CO3 [10]	[3] Write the name of different type of joint along with sketch. What do you mean by efficiency of joint? How we can determine the efficiency of joint.
CO4 [20]	[4] Answer a or b (a) Design a steel beam section for supporting roof of a big hall for the clear span of 8.0m, with end bearing 150 mm. if C/C Spacing of beams 4m & imposed load on the beam 15 KN/m^2 , $DL = 8 \text{ KN/m}^2$, the compression flange of the beam is laterally supported throughout. (b) Design a Welded Plate Girder of Span 24m to carry superimposed load of 35 KN/m . Avoid use of End bearing and intermediate stiffeners. Use Fe-415 (E250) Steel.
CO5 [20]	[5] Find the efficiency of lap joint. Given M20 Bolt of grade 4.6 and Fe-410(250) plate are used. 
CO6 [20]	[3] A bracket Plate Bolted to a vertical Column is Loaded as shown in Figure. If M20 Bolts of Grade 4.6 are used Determine the Maximum Value of P. 

The students of the course should be able to

CO1: Understand the design philosophy, advantages & limitations of Steel Structures (K2).

CO2: Analyse & Design of Tension, Compression & Truss Members (K4)

CO3: Application of analytical skill for illustration of different Joints (K3)

CO4: Analyse & Design of Flexural Members, Beams, Plate-Girder & Rolled sections (K4)

CO5: Analysing and design of welded, Riveted & Bolted Connections (K4)

CO6: Calculate reaction forces for connections with Eccentricity (Moment & Torsion)(K3)