KATHMANDU UNIVERSITY
End semester Examination
May/June 2022

Level : B.Arch.
Year : III
Time : 2 hrs. 30 mins.

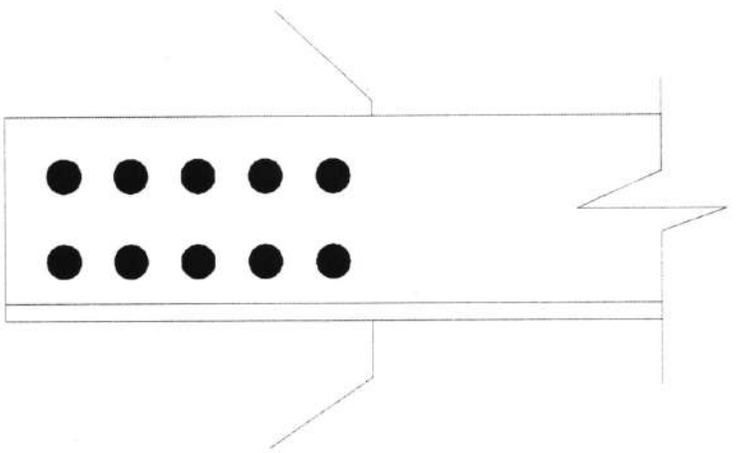
Course : CIEG 341
Semester: II
F.M. : 40

SECTION "B"

Assume the suitable data wherever necessary.
Attempt *ALL* questions.
Use of code IS 800:2007, IS 808 and IS 883is allowed.

1. A built-up Column section of length 8m laced with two channels ISMC 300 @46.2kg/m is placed Front-to-Front with spacing 125mm. The column is effectively held in position and restrained against rotation at both ends. Determine the design load the column carry and also by using Fe410 steel, design a single lacing system. [10]

2. Determine the design tensile force of ISA 120 × 80 × 10 @15kg/m, connected by M20 Bolts of grade 4.6, which is shown in figure. Take edge distance 35mm and pitch 50mm. [10]



3. A floor of a hall has a beam measuring 3m which is laterally supported throughout. The dead load and live load of beam is 15KN/m and 20KN/m. Design a suitable beam using hot rolled section of grade Fe410. Perform necessary checks. [10]

4. If the client suggests you to place timber beam of Sal instead of, I section of the same hall above with the similar loading condition, then what would be the section of the beam. Design and perform necessary checks. [4]

5. a. Design a slab base for a column section 300@ 576.8 N/m subjected to a service compressive load of 855KN. Grade of concrete is M20. Take Fe410 steel. [4]

   b. Explain about in-plane and out of plane motion of masonry wall. [2]