**I**      **Fill in the Blanks**          (10x1=10)

1   Effective throat thickness in weld joints is ------------------------------
2   Rainkine's Formula holds good for footing depth "D" = ----------------
3   Cover plates are placed in riveted ------------------------ joints.
4   Square footing should have Min depth "D" = --------------------------
5   Neutral axis is an imaginary line drawn where stresses ------------------
6   The rivet is driven in the members as --------------------------------------
7   The Anchorage value of U-type hook is --------------------------------------
8   Euler's load for both end hinged is 'P$_e$'  =  ----------------------------
9   Transverse reinforcement is provided at right angle to --------- reinforcement.
10  Rivet diameter according to Unwin's formula is------------------------

**II**     **Write Short notes on any FIVE of the following**          (5x2=10)

1   Reinforcement
2   R.C.C.
3   Fillet weld
4   Neutral axis
5   Doubly reinforced beams
6   One way slabs
7   Grades of concrete

**III**    **Answer any FIVE of the following.**          (5x4=20)

1   Write the steps for Analysis of singly reinforced beams.
2   Balanced and unbalanced sections
3   Critical section
4   Detailed and abstract estimates
5   Characteristics of concrete and steel
6   Assumptions for the design of RCC structural elements
7   What is the difference in restrained slabs and simply supported slabs?

**IV**     **Write an essay on any ONE of the following**          (1x10=10)

1   State the assumptions of the analysis and design of doubly reinforced beams.
2   Find the safe load transmitted by the 'Fillet weld' joint as shown fig. 1. If the size of weld is 8.0 mm & safe stress Given for the weld is equal to 110.0 N/mm$^2$
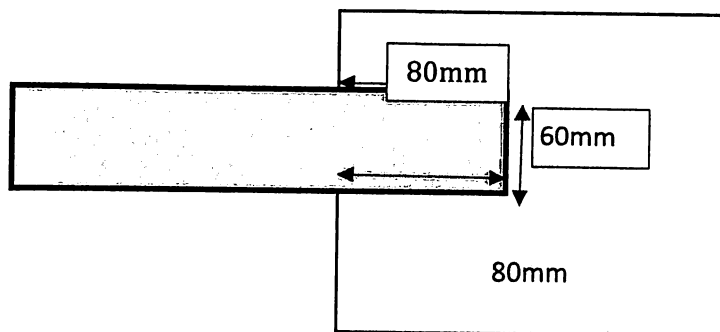


fig. 1

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