

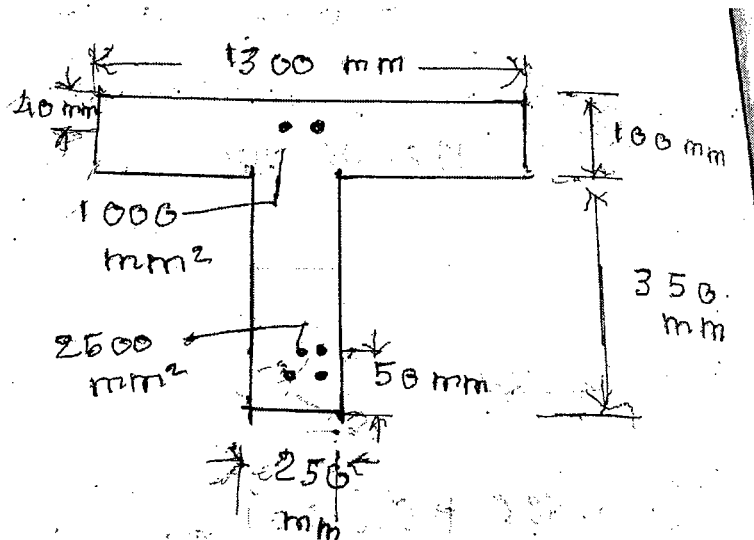
Design and Drawing of Reinforced Concrete Structures

Date - 18-07-2019

Tutorial-2

Ay-19-20

1. Design a rectangular beam for flexure which is simply supported on 250 mm thick masonry walls which are 5 m apart. The beam carries a super imposed load of 30 kN/m at service state. Use M20 concrete mix and Fe415 grade HYSD bars ?
2. A rectangular reinforced concrete beam 280 mm wide and 450 mm deep and reinforced with 3-16 mm diameter bars on compression side and 4-20 mm diameter bars on tension side. Calculate the moment of resistance of the section ? Use M20 concrete and Fe500 steel ?
3. A R.C rectangular beam 300 mm wide and 450 mm deep overall is simply supported on two walls of 300 mm wide and at 6.5 m clear distance. The beam carries an imposed working load of 20 kN/m. Design the beam for flexure. Adopt M25 grade concrete and Fe415 steel ?
4. Calculate the ultimate moment of resistance of the flanged beam of 6 m effective span whose section is as shown ?



5. The clear dimensions of roof slab 150 mm thick are 6 m x 12 m and continuous on 250 mm wide beams which are spaced at 3 m centre to centre. The slab carries a imposed load of 5 kN/sq-m. Design an intermediate beam using M20 grade concrete and Fe415 steel ?
6. An isolated T-beam has flange 1500 mm x 150 mm and web 250 mm x 400 mm and has 7 m effective span. The beam is reinforced with 3-16 mm dia bars on compression side and 5-20 mm dia bars on tension side. Determine the ultimate moment of resistance of the section and the safe UDL carried by the beam. Adopt M20 grade concrete and Fe415 steel ?

