

JAIPUR ENGINEERING COLLEGE & RESEARCH CENTRE
DEPARTMENT OF CIVIL ENGINEERING
Assignment to weak Students for MTT 2

Q.1

(1) What is the difference between singly reinforced beam and doubly reinforced beam .explain with neat sketch.

(2) Write down the basic values of span to effective depth ratio for the different types of beam.

(3) Define effective cover with neat sketch

(4) Define anchorage bond and development length.

(5) Write down the effect of torsion in RC beams.

Q.2 Find the moment of resistance of a T beam having a web width of 240 mm effective depth 400 mm Flange width 740 mm and flange thickness equal 200 mm the beam is reinforced with 5 bars of 16mm dia use fe415 and M20

Q.3 Rectangular RCC beam is simply supported on 2 masonry walls 230 mm thick and 6 meter apart centre to centre the beam is carrying and imposed load of 15 KN/m Design the beam with all necessary check for flexure shear and bond use M25 and fe415.

Q.4 Determine the limiting moment of resistance and limiting area of Steel for reinforced concrete T beam having flange width of 1600 mm effective depth of 350 mm and thickness of is 100 mm the width of web is 250 mm use M20 and every 500

Q 5. A reinforced concrete beam is supported on two walls 750 mm thick spaced at clear distance of 6m. The beam carries a superimposed load of 9.8 KN/M. use M20 concrete and fe415 steel and design the beam apply all necessary checks for shear and development length give neat sketch also

Q.6 An isolated simply supported T beam has a flange width of 2400 mm thickness of 120 mm effective span of beam is 3.6 the effective depth of beam is 580 mm and its width 300 mm it is reinforced with 8 bars of 20 mm diameter use fe415 and M20 determine the moment of resistance

Q7 Determine the reinforcement required for a rectangular beam section width of section 300 mm factored bending moment 80 KNm depth 500mm factor torsional moment 40KNM factor shear force 70 KN Use M15 and fe415

Q.8 An RCC beam 300 X 600mm effective is reinforced with 5 bars of 25mm if it is subjected to a design shear force of 200KN . design shear reinforcement use M 20 concrete and fe415 steel

Q.9 A reinforced cement concrete beam 300mm wide and 500mm effective depth is subjected to a shear force of 40KN at the ends. The beam is provided with 6 bars of 20mm diameter of which 3 bars are cranked at 45 degrees. Design the shear reinforcement for M20 grade concrete.

Q.10 Explain various methods used for the design of R.C.C structure including their merits and demerits.

What is development length? Derive the formula for the development length of bars of diameter ϕ as per IS 456:2000