JAIPUR ENGINEERING COLLEGE & RESEARCH CENTRE
DEPARTMENT OF CIVIL ENGINEERING
Assignment to weak Students for MTT 1

Q.1

1. What are the disadvantages of RCC when compared with other building materials?
2.What are the different loads considered in the design of structure. ?
3. Why do we use steel as the reinforcing material in RCC? Write short notes on different types of steels used in construction.
4. Distinguish between flexural bond and development bond.
5. Define effective cover, effective depth and clear cover with neat diagram. Also provide cover for different structural elements as per IS 456.

Q.2 A singly reinforced concrete beam is of width 400 mm and effective depth 615 mm. It is reinforced with 8 Nos. 20 mm mild steel bars. Assuming M-25 concrete, and Fe-250 grade of steel. Determine its moment of, resistance according to the working stress method. Calculate also the stress in steel when the beam is subjected to the above moment

Q.3 Write short note on:

(a) Curtailment of bar (b) Bond (c) Bent up bars (d) Provision for minimum shear reinforcement

Q.4 What is tensile strength of concrete, what are the different test for testing concrete tensile strength explain

Q 5. What do you understand by creep and modulus of elasticity, provide codal formulas for the same.

Q.6 Determine the moment of resistance of a beam of dimension 250 mm x 350 mm the area of Steel consists of 3 -12 mm ϕ placed at a distance of 40 mm from bottom of beam use M20 and Fe 415 steel

Q7 A rectangular beam is 20 cm wide and 40cm deep up to the centre of reinforcement find the area of reinforcement required if it has to resist a moment of 25 KN/M use M 20 and Fe 415 Steel

Q.8 What is 2 legged vertical stirrups, 4 legged vertical stirrups , inclined shear stirrups bent up bars ? Write down the IS 456 codal provisions for the same also

Q.9 Describe the reasons of providing minimum shear reinforcement even if it is not required theoretically in a beam.

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