



10CV72

PART – B

- 5 a. What are lug angles? Explain design principle of lug angle. (06 Marks)
b. Design a single angle section to carry a service tensile load of 120kN. Use M₂₀ 4.6 grade bolt (Fully threaded). (14 Marks)
- 6 Design a built up column consisting of two channel section placed back to back carrying an axial factored load of 1400kN. Effective length of column is 5m and also design lacing, sketch the details. (20 Marks)
- 7 a. Design a slab base of a column ISHB 300@ 58.8 kg/m, subjected to carry a working load of 1500kN. The grade of concrete for pedestal is M₂₀ and SBC of soil is 180kN/m². Design also length of weld required. (08 Marks)
b. Design a gusseted base for a column to carry an axial factored load of 3000kN. The column is ISHB 400@77.4kg/m, with two cover plates of 250×20mm on either side. Use M₂₂ property class 5.6 bolts. Sketch the base showing the detail of bolts. (12 Marks)
- 8 a. Explain web crippling and web buckling in flexural member. (06 Marks)
b. A roof of a hall measuring 6m×15m consists of 120mm thick R.C slab supporting on steel I section spaced at 3mc/c. The hall is having wall of 300mm thickness all round. The finishing load on the roof is 1.5kN/m² and super imposed load is 2kN/m². Design the steel beam with all necessary checks (Web crippling and buckling need not be done). (14 Marks)
