

COURSE CODE(CREDITS): 18B11CE612

MAX. MARKS: 15

COURSE NAME: Design of Steel Structures

COURSE INSTRUCTORS: Mr. Kaushal Kumar

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q1. Discuss Mechanical properties of Structural Steel. [2 Marks]

Q2. Differentiate between Limit State of Strength and Limit state of Serviceability. [3 Marks]

Q3. Design the following joints between two plates of width 200 mm and thicknesses 10 mm and 18 mm respectively to transmit a factored load of 150 kN in Lap Joint.

Use plates made of Fe 410 grade steel and 16 mm diameter bolt of grade 4.6. [5 Marks]

Q4. A tie member of a roof truss consists of ISA 100×75×8 of Fe410 grade, is welded to a 10 mm gusset plate. Design the welded connection to transmit a tensile load, T (Design tensile strength in gross yielding). Assume connection is made in the workshop. [5 Marks]

