

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)****M.Tech I Year II Semester Regular & Supplementary Examinations July-2025****ADVANCED STEEL DESIGN****(Structural Engineering)****Time: 3 Hours****Max. Marks: 60****(Answer all Five Units 5 x 12 = 60 Marks)****UNIT-I**

- 1 Explain about beam-column connections and its classification. **CO1 L2 12M**
- OR**
- 2 What are the types of joints and explain with neat sketch. **CO1 L2 12M**

UNIT-II

- 3 Design for wind action **CO2 L2 12M**
a) Wind pressure on walls
b) Wind loads on roof
- OR**
- 4 a Design wind speed and pressure. **CO2 L2 6M**
b Wind pressure on roofs. **CO2 L2 6M**

UNIT-III

- 5 Explain detail design procedure for Gantry Girder. **CO3 L2 12M**
- OR**
- 6 Explain different types of truss bridges. **CO3 L2 12M**

UNIT-IV

- 7 A simply supported beam of span 6m is subjected to UDL of 20 KN/m. **CO4 L2 12M**
Design a steel beam by plastic design using a combined load factor of 1.7.
- OR**
- 8 a Explain about Idealized stress-strain curve for mild steel. **CO4 L2 6M**
b Explain fully plastic moment capacity. **CO4 L2 6M**

UNIT-V

- 9 Design a hat section for a simply supported beam of effective span **CO5 L2 12M**
2.5m. The superimposed load is 2KN/m. Yield strength of steel is $f_y=235\text{MPa}$.
- OR**
- 10 Write about **CO5 L2 12M**
a) Types of sections used in light gauge steel structure.
b) Local buckling of elements and post buckling of elements.

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