Question Paper Code: CE603PC

R22

Model Question Paper
ANURAG Engineering College
(An Autonomous Institution)
III B.Tech. II Semester Regular Examinations, June -2025
STRUCTURAL ENGINEERING-II (STEEL STRUCTURES)
(CIVIL ENGINEERING)

Time: 3 Hours **Max.Marks:60**

Section – A (Short Answer type questions)				**(10 Marks)**
Answer All Questions		**Course Outcome**	**B.T Level**	**Marks**
1.	List out mechanical properties of steel?	CO1	L1	1M
2.	What are the types of connections in steel structures?	CO1	L1	1M
3.	Define Slenderness ratio.	CO2	L1	1M
4.	Differentiate the laced and battened columns.	CO2	L2	1M
5.	What is plastic section and section modulus?	CO3	L1	1M
6.	Explain laterally supported beams?	CO3	L1	1M
7.	Write about economical depth of plate girder?	CO4	L2	1M
8.	What are the advantages of plate girder?	CO4	L1	1M
9.	Classify the types of roofs?	CO5	L1	1M
10.	What are the uses of purlin in truss?	CO5	L1	1M
Section B (Essay Questions)				
Answer all questions, each question carries equal marks.				**(5 X10M = 50M)**
11.	Explain the load combinations for different Limit states?	CO1	L2	10M
	OR			
12.	Design a lap joint between the two plates each of width 120mm, if the thickness of one plate is 16mm and the other is 12mm. The joint has to transfer a design load of 160kN. The plates are of Fe410 grade. Use Bearing type bolts.	CO1	L3	10M
13.	Discuss the design procedure of tension members?	CO2	L2	10M
	OR			
14.	Design a Double angle tension member connected on each side of a 10mm thick gusset plate, to carry an axial factored load of 375kN. Use 20mm black bolts. Assume shop connection.	CO2	L3	10M
15.	Briefly explain the classifications of plastic sections?	CO3	L2	10M
	OR			
16.	Design a simply supported beam of 10m effective span carrying a total factored load of 60kN/M. The depth of beam should not exceed 500mm. The compression flange of the beam is laterally supported by floor construction. Assume stiff end bearing is 175mm.	CO3	L3	10M
17.	Explain the design procedure of plate girder?	CO4	L2	10M
	OR			
18.	Design a Welded plate girder of span 24m to carry a superimposed load of 35Kn/m. Avoid use of bearing and intermediate stiffeners. Use Fe 415 steel.	CO4	L3	10M

19.	Design a I-section purlin for an industrial building to support a galvanized corrugated iron sheet given, Spacing of truss – 6m Inclination of main rafter - 30º Spacing of purlin – 1.5m Height of purlin – 1.5m Weight of corrugated sheeting – 130N/mm^2 Live load – 0.6 N/mm^2 Wind load – 1.8 N/mm^2 Yield stress of steel – 250Mpa	CO5	L3	10M
	OR			
20.	Explain the design procedure of truss?	CO5	L2	10M