PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech. Winter 2019 - 20 Examination

Semester: 2   Date: 18/12/2019
Subject Code: 203209180   Time: 2:00 pm to 4:30 pm
Subject Name: Advanced Steel Design   Total Marks: 60

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1	A) Enlist the loads acting on Transmission line tower.	**(05)**
	B) Explain the basic design assumptions of a plate girder.	**(05)**
	C) Give the classification of various types of structures which support the electric power transmission line.	**(05)**
Q.2	**Answer the following questions**. (Attempt any three) (Each five mark)	**(15)**
	A) Differentiate between behavior of rigid, semi rigid and pin connection with neat sketch and give suitable examples.	
	B) Explain stiffened and unstiffened seat connections.	
	C) Mention the advantages and disadvantages of steel structures?	
	D) Explain Compression Flange Local Buckling Limit State in the beam.	
Q.3	A) Explain portal frame configuration and its analysis in brief.	**(07)**
	B) An Industrial building of plan 15m×30m is to be constructed. Using plastic analysis, analyse the single span portal frame with gabled roof. The frame has a span of 15 m, the column height is 6m and the rafter rise is 3 m and the frames are spaced at 5 m centre-to-centre. Purlins are provided over the frames at 2.7 m c/c and support AC sheets. The dead load of the roof system including sheets, purlins and fixtures is 0.4 kN/m^2 and the live load is 0.52 kN/m^2	**(08)**

OR

	B) A single bay single storey portal frame carries UDL of 40 kN/m over its beam of 6 m long. The rigidity of semi-rigid connection at either end of beam with the column is 80%. Determine the design moments. The columns and beams have uniform cross sections.	**(08)**
Q.4	A) Discuss a general design procedure in plastic design of portals.	**(07)**

OR

	A) Mention some of the requirements of a good joint.	**(07)**
	B) Write the design procedure for Gantry girder	**(08)**