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Total No. of Pages : 02

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M.Tech. (Civil Engineering) (Sem.–2) INDUSTRIAL STRUCTURES Subject Code : MTCE-211 M.Code : 74304 Date of Examination : 22-12-22

Time: 3 Hrs.

Max. Marks: 100

INSTRUCTIONS TO CANDIDATES :

- 1. Attempt any FIVE questions out of EIGHT questions.
- 2. Each question carry TWENTY marks.
- 1. Write a detail note on minimum weight design method in steel structure and give the comment, why its name is minimum weight design?
- 2. Design a crane girder to be used in the workshop where column is placed at 10 m centres. Given data

•	Crane capacity	100 KN
•	Weight of crab	60 KN
•	Weight of crane excluding crab	150 KN
•	Wheel base	4 m
•	Crane to center of crane girder	25m

Assume any missing data as per design requirement.

- 3. Design a circular steel silo of 12m height and 4-meter internal diameter to store cement of bulk density 15.60KN/m³ Angle of internal friction 25°. Assume any missing data.
- 4. Write the detailed design step of steel lattice transmission tower.
- 5. A light gauge steel rectangular box section having size $200 \times 100 \times 2$ mm is used for a column. The effective length of the column is 4m. determine the safe load carrying capacity of the column. Take basic design stress is 125 N/mm². Assume any missing Data.

- 6. Write a note on buckling, twisting and local buckling of aluminium short compression member.
- 7. Design a self-supporting chimney of 40m height. The diameter of the cylindrical shell is 4m the chimney has 228mm thick lining. Assume any missing data.
- 8. What are the different method and technique used to erection and fabrication of steel industrial building?

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.