Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 08

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/m^3 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 × 100 × 2mm 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/mm^2. 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.