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

Total No. of Questions : 08

M.Tech.(Civil) (Sem.–5)

INDUSTRIAL STRUCTURES
Subject Code : CE-508
M.Code : 39219

Time : 3 Hrs.   Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

l.   What are various elements of an Industrial building? Explain any five with sketches. Design

2.   a circular steel silo of 12m height and 4m internal diameter to store cement
     having bulk density = 16 kN/m3 and angle of internal friction = 25°. Pressure ratio during
     filling = 0.5 and during emptying = 1.0. Use data suitably, not given.

3.   Design an overhead steel tank rectangular in cross-section of capacity 75000 litres. The
     available width of plate is 1 m and staging consists of four columns, spaced 4m × 3m.
     The bottom of tank is 9m above GL. Design also the supporting beams. Show staging and
     braces. Assume data suitably, not given.

4.   Discuss applications of pressure vessels. Discuss the steps for design and input data
     required for designing pressure vessels.

5.   Design a chimney of height 65m and check stresses for the following data :

     External diameter = 4m (at top)

     External diameter = 5 m (at bottom)

     Wind Intensity = 1.8 kN/m2 throughout

     Thickness of fire brick lining = 100 mm

     Air gap = 100 mm

     Temperature difference = 80ºC

     ⌷ = 11 × 10–6°C, Use M 25 & Fe 415.

6. What are cooling towers? What are the codal provisions for cooling towers? Discuss.

7. Explain with the help of neat sketches the structural and construction guidelines of Machine Foundation.

8. Write short note on

   (a) Airy's Theory

   (b) Design of Multibay Industrial Structure.

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