Roll No. | | | | | | | | | | | | | Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (Structural Design) (2016 & Onwards) (Sem.-1)

DESIGN OF HIGH RISE STRUCTURES

Subject Code : MTSD-104

Paper ID : [74245]

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

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

Q1 What are different types of loads coming on high rise buildings? How are blast loads accounted for design of structures? Discuss.

Q2 Explain the term Shear wall. What is the difference in analysis of an uncracked shear wall and cracked shear wall? What is the significance of coupled shear wall?

Q3 What are the main requirements for structural safety of masonry buildings during ground motion? Discuss in detail.

Q4 Find out the design load for interior column of the ground floor of an eight storey building for the following data :

Height of each storey = 3.5 m

Spacing of column c/c in each direction = 3.8 m

Live load on each floor = 2500 N/m^2

Live load on roof = 1500 N/m^2

Dead load on roof finish, slab and beam = 3000 N/m^2

Q5 Explain general planning considerations for high rise buildings.

Q6 Write in detail about the followings :

a) How tall buildings are structurally different from low rise buildings?

b) Distinguish between the cross bracing systems, framed tube systems and non-tubular system.

Q7 Discuss shear wall-frame interation. How is load shared by two?

Q8 Discuss in detail about elastic and inelastic stability of frames and shear walls.