

M.Tech. Structural Engineering & Construction (CBCS Pattern) Semester-II
PSES22 - Structural Dynamics

P. Pages : 1

Time : Three Hours



GUG/W/24/11014

Max. Marks : 70

- Notes :
1. All questions carry equal marks.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Illustrate your answers wherever necessary with the help of neat sketches.
 4. Solve **any five** questions.

1. a) Explain about lumped mass and continuous mass system. 7
b) Derive the equation of motion for Undamped single degree of freedom system with forced vibration. 7
2. Derive expression for Duhamel integral. 14
3. Find and draw the mode shapes for given problem shown in figure 1. 14

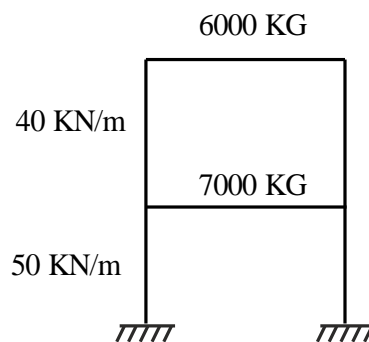


Figure 1

4. Derive the differential equation of motion for free flexural vibrations of the simply supported beam sketch the first three mode shapes. 14
5. Derive the solution of equation of motion for the beam subjected to uniformly distributed load. 14
6. Write and explain provisions for elevated tanks as per IS 1893-2016. 14
