

School of Engineering
Department of Mechanical Engineering
Mid Term Examination

Exam Date: 27 Sep 2023
Time : 90 Minutes
Marks : 50

Sem VII - BME042 - Mechanical Vibrations

Your answer should be specific to the question asked
Draw neat labeled diagrams wherever necessary

- 1) Illustrate the methods available for solving the governing equations of a vibration problem. K2 (2)
- 2) Explain the Duhamel's integral. K1 (3)
- 3) Develop the weak form of general equation of spring- mass- damper system. K2 (4)
- 4) Develop the mathematical model for vibration isolation. K2 (6)
- 5) Find the Orthogonal properties of a mechanical system. K3 (6)
- 6) Compare the Flexibility matrix and Stiffness matrix. K3 (9)
- 7) Compare the Numerical methods for fundamental frequencies. K4 (8)
- 8) Identify the differences between a general transfer function and a frequency transfer function. K4 (12)

OR

Explain the following terms: K4 (12)
Damping ratio, logarithmic decrement, loss coefficient, and specific damping capacity.
Also, present the correlation between them.