Roll No. .....

22242

M. Tech. 3rd Semester Mechanical Engg. (Machine Design) Examination– December, 2016

MECHANICAL VIBRATIONS

Paper : M-823-A

Time : 3 hours ***Max. Marks : 100***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note: All questions carry equal marks. Attempt any **five** questions.

1. Explain single degree freedom system with suitable example. (20)

2. What is system ider tion from frequency response. Explain h it important for the system analysis (20)

3. Using Matrix Inve Method, find the natural frequency o ple multi degree or freedom system mass (M) and stiffness (K). (20)

4. Discuss the vibratio strings and rods in the continuous syste (20)

5. Explain the various on free and forced vibration with examp (20)

6. Determine the e on for natural frequencies of a in longitudinal vibration. (20)

7. Split the harmonic motion $x = 10\sin(\omega t + \pi/6)$ into two harmonic motions one having a phase angle of zero and other of 45°. (20)

8. Write short notes on : (20)

(a) Free Vibration

(b) Whirling of Rotating Shafts

(c) Undamped vibration.
