M.Tech 3rd Semester Mechanical Engg.

(Machine Design) Examination,

December–2017

MECHANICAL VIBRATIONS

Paper-M-823-A

Time allowed : 3 hours]   *[Maximum marks : 100*

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

1. Explain single degree freedom forced vibration
    with elastically coupled viscous dampers with neat
    sketch.   20

2. Discuss the Duhamel's integral impulse responses
    function with suitable example.   20

3. Explain Un damped Dynamic Vibration Absorber with
    both cases.   20

4. What is modal damping in forced vibration discuss this
    with the help of suitable example.   20

5. Discuss the effect of rotary inertia and shear deformation
    in the continuous system.   20

6. Explain the various vibration exciters and measuring
    devices.   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) Forced Vibration
    (b) Over damping
    (c) Vibrating String