

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (OLD) - EXAMINATION – SUMMER 2017****Subject Code: 160103****Date: 27/04/2017****Subject Name: Vibration and Noise Control****Time: 10:30 AM to 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain Beats Phenomenon with neat sketch. **07**
 (b) Explain in detail series and parallel connections of Springs. **07**
- Q.2** (a) Explain about viscous damping and structural damping. **07**
 (b) What do you mean by Vibration? Which are the causes of vibration? Discuss methods by which undesirable vibrations can be controlled? **07**
- OR
- (b) Derive equation to calculate frequency of Simple Pendulum. **07**
- Q.3** (a) Define Damping. Explain Coloumb damping. **07**
 (b) Explain:
 1. Damped and Undamped Vibration **03**
 2. Steady state and Transient Vibration **04**
- OR
- Q.3** (a) Describe in detail vibration isolation. **07**
 (b) Describe in detail support motion. **07**
- Q.4** (a) Write a short note on Logarithmic decrement. **07**
 (b) Derive the differential equations of a damped free vibration system **07**
- OR
- Q.4** (a) Write a short note on Vibration measuring instruments. **07**
 (b) Write a short note on Frequency measuring instruments. **07**
- Q.5** (a) A body of 0.10 kg is supported on a spring of stiffness 300 N/m and has dashpot connected to it which produces a resistance of 0.004 N at a velocity of 0.2 cm/s. In what ratio will the amplitude of vibration be reduced after 5 cycles? **07**
 (b) Explain response of a rotating unbalanced system with neat sketch. **07**
- OR
- Q.5** (a) With neat sketch explain the working of Vibration absorber. What is the difference between absorber and isolator? **07**
 (b) Explain response of a rotating unbalanced system with neat sketch. **07**
