

Roll No. ....

**24480**

**B. Tech. 7th Sem. (ME)**

**Examination – May, 2015**

**MECHANICAL VIBRATION**

**Paper : ME-409-F**

***Time : Three Hours ]***

***[ Maximum 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 examination.*

**Note :** Attempt *five* questions. Question No. 1 is *compulsory* and attempt at least *one* question from each Section.

**1. Explain the following :** **5 × 4 = 20**

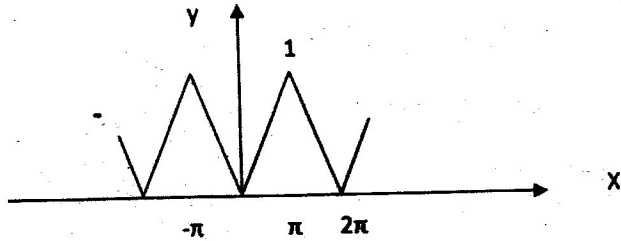
- (a) Transmissibility
- (b) Vibration Isolation
- (c) Continuous System.
- (d) Critical Damping Coefficient

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## SECTION - A

2. For a Classical spring mass system having damping, derive an expression which explains the system response to Overdamping. 20
3. Represent the Periodic motion shown by Harmonic Series. 20



## SECTION - B

4. What is damping ? Derive an expression for energy dissipated by damping in case of forced damped harmonic vibration of a single degree of freedom system. 20
5. What do you understand by Transient Vibrations ? Explain the system response to Pulse Input. 20

## SECTION – C

6. What do you understand by Coordinate Coupling ?  
Explain with a labelled diagram in detail. 20
7. What is a Vibration Absorber and Vibration Isolator ?  
Explain the similarities and differences between them. 20

## SECTION – D

8. Derive an expression explaining Longitudinal Vibration in case of a Bar fixed at one end. 20
9. What is Torsional Vibration ? Derive an expression for Torsional vibration in case of a shaft having torque 'T' acting at both ends. 20
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