

Printed Pages : 3



ECE054

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 100854**

Roll No.

### **B. Tech.**

(SEM. VIII) THEORY EXAMINATION, 2014-15  
**MACHINE FOUNDATION DESIGN**

Time : 3 Hours]

[Total Marks : 100

- Note :** (1) Attempt all questions.  
(2) Assume missing data.

- 1** Attempt any four of the following : **5×4=20**
- (a) Explain single degree of freedom system.
  - (b) Differentiate free and forced vibrations.
  - (c) Find formula for logarithmic decrement.
  - (d) Explain forced vibrations undamped core.
  - (e) A harmonic motion has a frequency of 15 cps and its maximum velocity is 6 m/s. Determine its amplitude and its period.
  - (f) Explain harmonic motion and its vector representation.

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[ Contd...

**2** Attempt any two parts of the following : **10×2=20**

- (a) Explain in brief general rules for the design of foundation for reciprocating engines.
- (b) Explain in brief the design criterion for foundation for impact type machines.
- (c) What are dynamic loads ? Discuss its codes. Explain hammer foundation.

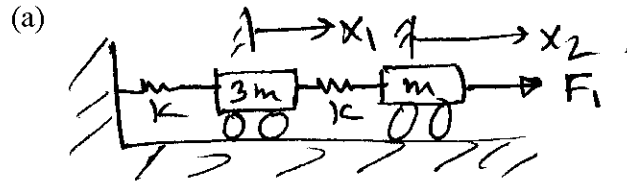
**3** Attempt any two parts of the following : **10×2=20**

- (a) What do you understand by geo-physical methods ? Which method do you generally use for moderately deep foundations ?
- (b) Discuss cyclic plate load test and block vibration test.
- (c) Discuss use of centrifuge and shake table.

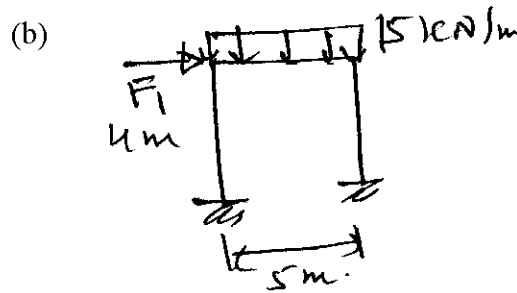
**4** Attempt any two of the following : **10×2=20**

- (a) Discuss properties of material and media used for vibration isolation.
- (b) Explain vibration control of existing machine.
- (c) How vibration are transmitted through soil media ? Discuss active and passive isolation.

5 Attempt any two of the following : 10×2=20



Write equation of motion for the system. How will you solve it ?



Develop equation of motion for a single storey RCC frame and solve problem.

(c) Explain vibration absorbers. Write guidelines for providing it.