

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.

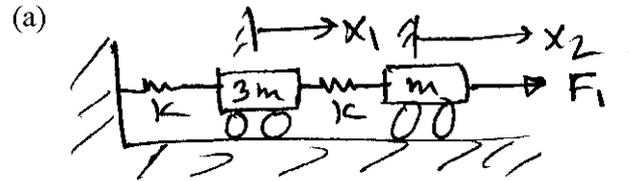
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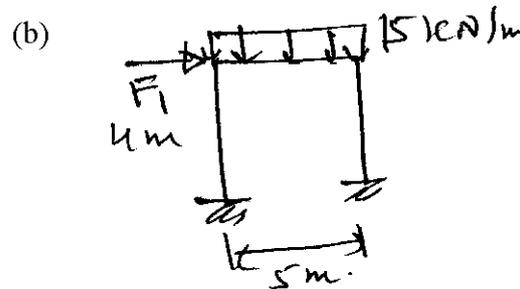
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- 2 Attempt any two parts of the following : **10×2=20**
- (a) Explain in brief general rules for the design of foundation for reciprocating engines.
 - (b) Explain in brief the design criterion for foundation for impact type machines.
 - (c) What 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 : $10 \times 2 = 20$



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.