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.

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 criterian 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**

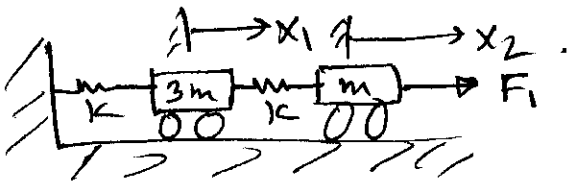
(a) Discuss properties of material and media used for vibration isolation.

(b) Explain vibration control of existing machine.

(c) How vibration are transmitted through soil media ? Discuss active and passive isolation.

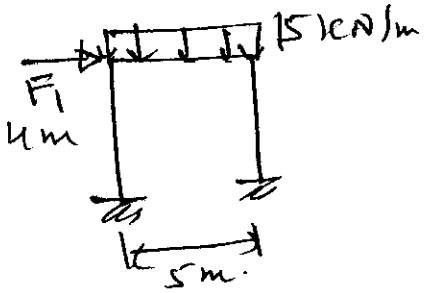
5 Attempt any two of the following : **10×2=20**

(a)



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

(b)



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

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