Printed Pages:02 **Sub Code: NCE 064**

Paper Id: | 1 | 0 | 0 | 8 | 1 | 8 | **Roll No.** | | | | | | | | | | |

B. TECH.

(SEM VIII) THEORY EXAMINATION 2017-18

EARTHQUAKE RESISTANT OF DESIGN OF STRUCTURES

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

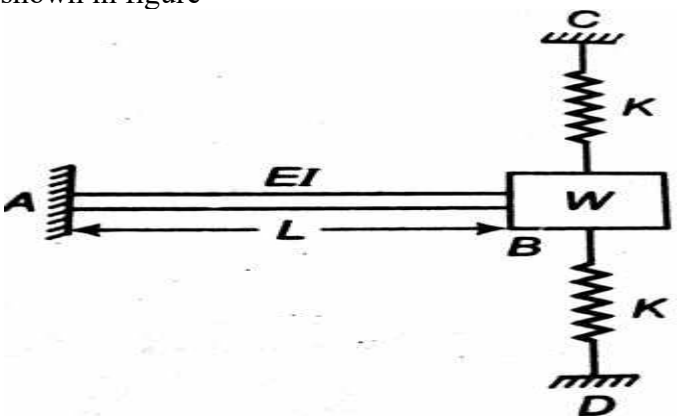
1. Attempt *all* questions in brief. **2 x 10 = 20**

a. Draw the figure of Mantle.
b. What is the body wave magnitude?
c. What is the basic element of Vibrating system?
d. Write types of Damping.
e. How the T-sunami is different from a normal sea wave?
f. Define MM scale.
g. What do you understand Soft Storey Failure?
h. Define Non Structural Elements.
i. What most common modes of masonry failure?
j. What factors affecting the Ductility?

SECTION B

2. Attempt any *three* of the following: **10 x 3 = 30**

a. Differentiate between strike slip fault and dip slip fault.
b. Determine the natural period , assuming that the beam and spring are massless shown in figure



c. What is the effect of Structural Irregularities ? Explain with neat sketches.
d. What is the advantages and disadvantages of Masonry Construction?
e. For a circular column of dia=300 mm, Design the confining spiral ties . Assume M20 and Fe415 steel.

SECTION C

3. Attempt any *one* part of the following: 10 x 1 = 10

(a) Write a short note on types of seismic waves along with neat diagram of each.

(b) Explain Tectonic Plate Theory, Enumerate seven major Tectonic Plate.

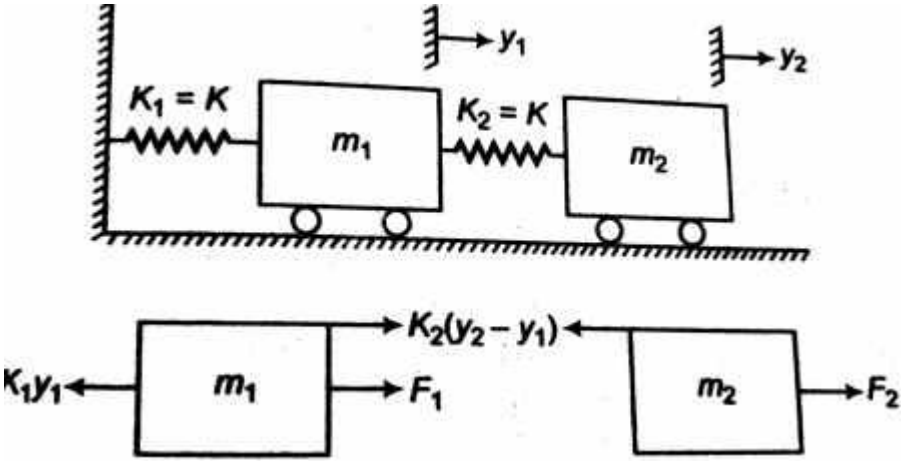
4. Attempt any *one* part of the following: 10 x 1 = 10

(a) In an experiment of free vibration. It is found that the maximum amplitude has reduced to 0.4 times its value in 3 complete cycles. Determine the damping in the system.

(b) Write short note on (i) Causes of Earthquake (ii) Characteristics of Eartquake

5. Attempt any *one* part of the following: 10 x 1 = 10

(a) Determine the natural frequency of vibration if $m_1=m_2=m=8x10^3$ kg and $K_1=K_2=10x10^7$ N/m



(b) What is two Degree of Freedom Explain for two storey Building.

6. Attempt any *one* part of the following: 10 x 1 = 10

(a) How the earthquake Damage and failure of bearing walls? Show with neat diagram.

(b) How you will be improve the seismic behaviour of Masonry Buildings?

7. Attempt any *one* part of the following: 10 x 1 = 10

(a) Differentiate between In-plane and Out-of-plane failure of Masonry walls.

(b) What do you understand Mass Irregularity? Also explain Vertical Geometric Irregularity.