DCLEVI/DELVI
DIPLOMA ENGINEERING

00501

Term-End Examination

December, 2013

BICEE-006 : EARTHQUAKE ENGINEERING

Time : 2 hours *Maximum Marks : 70*

Note : *Question No-1 is* **compulsory** *and answer* **any four** *from the remaining.*

1. Write True or False for the followings : 7x2=14

    (a) Rayleigh waves are also known as Transverse waves.

    (b) Magnitude of Earthquake is related to the energy released at the focus and epicentre.

    (c) According to Plate Tectonic theory, all types of Plate boundaries are responsible for earthquake.

    (d) Lintel band is a band provided at Lintel level on all load bearing walls.

    (e) Timber has higher strength per unit weight, and is, therefore, very suitable for earthquake resistant construction.

    (f) Accelerogram is used to record the motion of the ground during earthquake.

    (g) Steel structures are generally considered to be less earthquake resistant.

2. Differentiate between magnitude and intensity of earthquake. Explain the different methods of measurement of earthquake. **14**

3. Explain the general principles to be observed during the construction of earthquake resistant building. **14**

4. Explain the concept of decay of motion in respect to damped free vibration. Also draw the plot showing relation between logarithmic decrement "δ" and Damping ratio"ξ". **14**

5. Explain the application of Duhamel integral in determining the response of an SDF (Single degree of freedom) system. **14**

6. Discuss the construction aspects of masonry structures and explain the strengthening arrangements recommended for rectangular masonry units. **14**

7. Write short note for **any four** of the following :
   (a) Seismic waves $4 \times 3\frac{1}{2} = 14$
   (b) Some prominent earthquakes of India.
   (c) Force-displacement relation.
   (d) Difference between free and forced vibration
   (e) Seismograph.
   (f) Role of civil engineeer in preparedness for disaster management, in case of Earthquake.

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