No. of Printed Pages : 2

BICEE-006

DIPLOMA IN CIVIL ENGINEERING
(DCLEVI / DELVI)

00453 **Term-End Examination**

December, 2016

BICEE-006 : EARTHQUAKE ENGINEERING

Time : 2 hours *Maximum Marks : 70*

Note : *Answer any **five** questions. Assume missing data, if any. Use of scientific calculator is permitted.*

1. (a) Explain the plate tectonic theory in brief. *7*

(b) What is meant by the focus and epicentre of an earthquake ? Briefly discuss with the help of a neat sketch. *7*

2. (a) What are the various types of dynamic loads ? State any two characteristics of a dynamic load. *7*

(b) What are the non-structural members of a building ? How do they affect the overall behaviour of the building during earthquakes ? *7*

3. Describe the various earthquake-resisting features that can be introduced in a masonry building to make it earthquake-resistant. Draw neat sketches to supplement your answer. *14*

4. Derive the equation of motion for a SDOF system for an undamped free vibration case. *14*

5. Describe the characteristics of various types of seismic waves. Draw neat sketches to indicate their movement in a medium. *14*

6. Explain the various types of losses which may happen due to an earthquake in an area. What precautions may be taken so that the losses are restricted to a minimum extent ? *14*

7. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

   (a) Critical Damping

   (b) Yielding

   (c) Response Spectrum

   (d) Box Action of Walls

   (e) Energy Dissipation Devices

   (f) Jacketing of RC Columns