

**BACHELOR OF ARCHITECTURE (B.Arch.)**

00436

**Term-End Examination**

**June, 2015**

**BARE-073 : EARTHQUAKE RESISTANT  
STRUCTURES (ELECTIVE 1)**

*Time : 3 hours*

*Maximum Marks : 70*

**Note : Answer any five questions.**

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1. Draw a neat sketch of the internal structure of the earth. Describe the characteristics of each layer. 14
  
2. Explain the phenomena of 'Ground shaking' and 'Liquefaction' associated with earthquakes. Describe the possible effects of these two phenomena on structures. 14
  
3. Differentiate between the following :  $4 \times 3 \frac{1}{2} = 14$ 
  - (a) Earthquake intensity and Earthquake magnitude
  - (b) p-waves and s-waves
  - (c) Interplate earthquakes and Intraplate earthquakes
  - (d) Focus and Epicentre

4. What do you understand by seismic control of structures ? Explain the mechanism of passive structural control. Discuss the features and working of any one passive control device. 14
5. (a) Describe the procedure of locating epicentre of an earthquake. 8
- (b) Discuss the relationship between earthquake magnitude and the energy released in an earthquake. 6
6. Write the differential equation of motion for free vibrations of a viscously damped SDOF system. Discuss its solution for three different cases based on the magnitude of the damping factor. 14
7. Write short notes on any *four* of the following :  $4 \times 3 \frac{1}{2} = 14$
- (a) Elastic Rebound Theory
- (b) Seismic Zonation of India
- (c) MDOF Model
- (d) Tsunami
- (e) Indian Seismic Codes
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