

BACHELOR OF ARCHITECTURE (B.Arch.)

Term-End Examination

December, 2016

00222

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

Time : 3 hours

Maximum Marks : 70

Note : Question no. 1 is compulsory. Attempt any four questions from the remaining ones. Illustrate your answers with neat sketches.

1. Write short notes on any **four** of the following : $4 \times 3 \frac{1}{2} = 14$
 - (a) Need of Ductility in Buildings
 - (b) SDOF System
 - (c) Characteristics of Earthquakes
 - (d) Losses due to Earthquakes
 - (e) Liquefaction

2. What are basic features of an earthquake resistant building ? Support your answer with neat sketches. 14

3. Discuss the need of the concept of seismic zones in a country like India. How does the design of a building change based on the change in its location from one seismic zone to another one ? Explain the change of seismic base shear in such a case. 14

4. Why are steel structures good at resisting earthquakes ? What precautions should be taken in the making of connections in such structures ? 14
5. What types of rescue and mitigation measures should be planned for a likely seismic event in a thickly populated urban area ? Discuss briefly. 14
6. Briefly discuss any two strengthening measures which may be adopted for a stone masonry building. Provide neat sketches to elaborate. 14
7. Define the following and differentiate between any *two* : $2 \times 7 = 14$
- (a) Weak storey and Soft storey
 - (b) Free vibration and Forced vibration
 - (c) Intensity of earthquake and Magnitude of earthquake
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