

BACHELOR OF ARCHITECTURE (B.Arch.)

Term-End Examination

00463

December, 2018

**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. Illustrate your answers with neat sketches.*

1. Write notes on any **four** of the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Shallow Focus Earthquake
 - (b) Subduction Plate
 - (c) Seismic Wave
 - (d) Seismic Joint
 - (e) Ductility
2. Refer to any four significant earthquake events globally which brought important changes in earthquake engineering study. Discuss the lessons learnt from each of these events. 14

3. (a) Explain earthquake resistant building design principles.
- (b) How many seismic zones are there in India ? $12+2=14$
4. What do you understand by 'single degree of freedom' system ? Explain 'amplification factor' and 'mass ratio effect' for such a system. 14
5. Discuss with neat sketches about 'base isolation' and 'damper' elaborating their working principles, types and application potential. 14
6. Explain the design considerations for earthquake prone zones while constructing
- (a) RC beam-column joint, and
- (b) Masonry wall. 14
7. (a) Explain the importance of building configuration in earthquake safety.
- (b) Explain 'pounding effect' and 'soft-storey' with sketches. $7+7=14$
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