BICEE-011

B.Tech. CIVIL ENGINEERING (BTCLEVI)
Term-End Examination
June, 2018

00333

BICEE-011 : EARTHQUAKE RESISTANT DESIGN OF STRUCTURES

Time : 3 hours   *Maximum Marks : 70*

Note : *Answer any **five** questions. All questions carry equal marks. Use of IS : 1893 – 2002 is allowed. Assume any missing data suitably.*

1. Explain the body waves, fault, dip, slip and their roles in formation of earthquakes. Also discuss the damages of an earthquake related to the intensity of earthquake. *14*

2. (a) Explain the earthquake resistant design philosophy. *4*

    (b) Explain vertical and horizontal irregularities in multistoried buildings and their effect on seismic behaviour of such buildings. *10*

3. Derive a solution for the equation of motion for an undamped forced vibration. Also plot the displacement response for different conditions. *14*

4. Explain in detail the basic concept in design of earthquake resistant bridges and design of bearings, with neat sketches. *14*

5. Discuss the general design principles, design criteria and design requirements of elevated water tank as per Indian codal provisions (B.I.S). *14*

6. (a) What is ductility ? How can you find the ductility factor for a reinforced concrete beam ? *7*

   (b) Give sketches of ductile detailing at the junction of column and beam. *7*

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