No. of Printed Pages : 2 + Drawing Sheet | BICEE-011

B.TECH. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2013

BICEE-011 : EARTHQUAKE RESISTANT DESIGN OF STRUCTURE

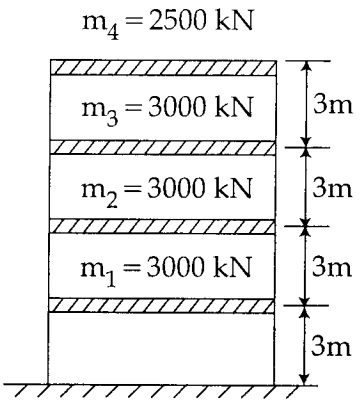
Time : 3 hours *Maximum Marks : 70*

Note : *Answer any five questions. Use IS - 1893 : 2002 and IS 13920 - 1993.*

1. Explain the term magnitude and intensity with respect to earthquake. What are different earthquake magnitude values analysed by seismologist ? 14

2. Write the general design principles, and design criteria of earthquake resistant structure. 14

3. A four - storeyed reinforced concrete frame building as shown in the figure. The height of the each floors is 3m and total height of the building is 12 m. The dead load and normal live load lumped at respective floors. The soil below the foundation is assumed to be hard rock. Assume building is intended to be used as hospital. Determine the total base shear along the height of the building. 14



Figure

4. Write the earthquake resistant design principle of designing bridges and its bearing and explain with suitable examples. **14**

5. Explain design principle, design requirements and design criteria of elevated water tank. **14**

6. What are the different methods of ductile detailing of flexural member according to IS 13920 - 1993 and discuss in detail. **14**

7. Write short notes on ***any two*** : **2x7=14**
   (a) Primary and secondary waves
   (b) Design spectrums
   (c) Forces in elevated water tank.