

Roll No

MVSE-301(D)**M.E./M.Tech. III Semester**

Examination, June 2017

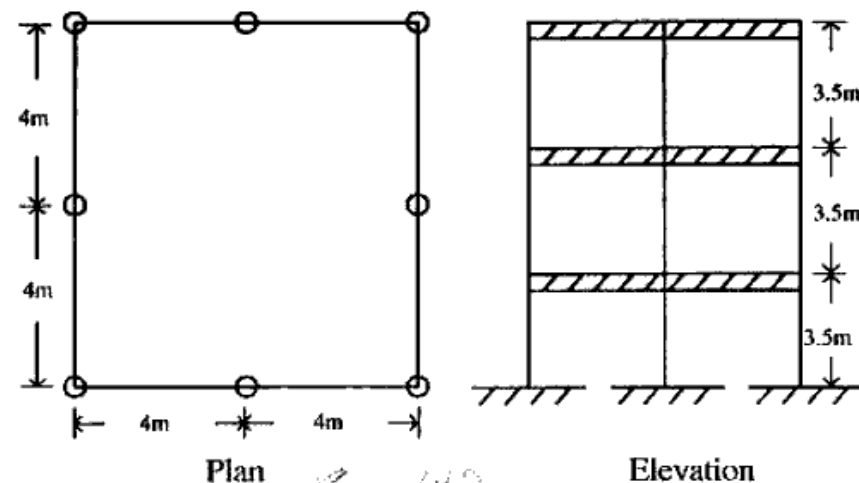
Design of Earthquake Resistant Structures**(Elective-I)****Time : Three Hours****Maximum Marks : 70**

- Note :** i) Attempt any five questions.
 ii) All questions carry equal marks.
 iii) Assume missing data suitably.

- Discuss the various measures required for Seismic strengthening of existing masonry buildings.
 - Discuss the various types of failures in R.C.C. framed buildings in Bhug 2001 Earthquake and their causes.
- Discuss the lateral load distribution with rigid floor diaphragms in moment resisting frames.
 - Differentiate between
 - Centre of mass and centre of rigidity
 - Moment resistant frame and ordinary RCC frame.
- Explain the general requirements of shear walls which are the part of the lateral force resisting system of the structure.
 - Discuss the various objectives of Seismic design.

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- Discuss the IS 4326 provisions for Earthquake resistant structures.
 - According to IS 1893 (part - I):2002 discuss the concept of Earthquake resistant design.
- How hydrodynamic pressure in tanks is considered in Seismic design.
 - What are the various factors which affect the ductility? Discuss.
- The planned elevation of a three-story RCC school building is shown in Fig. The building is located in Seismic zone III. The type of soil is medium stiff and it is proposed to design the building with special moment resisting frame. The intensity of D.L. is 10 kN/m^2 and the floors are to cater to an imposed load of 3 kN/m^2 . Determine the Seismic forces (Horizontal) acting on the structure according to IS1893 (part I) : 2002.



7. Differentiate between

- a) Earthquake magnitude and Intensity
- b) Seismograph and Seismogram
- c) Active and Passive Isolation
- d) Surface wave magnitude and moment magnitude.

8. Write notes on any four of the following:

- a) P – A effect
- b) Design Spectrum
- c) Ductile detailing of beam column joints
- d) Hydrodynamic effect due to reservoir on concrete gravity dam
- e) Regular and Irregular configuration.
