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MVCP/MVCT-301(B)
M.E./M.Tech., III Semester

Examination, June 2017

Multi Storey Buildings

(Elective-I)

Time : Three Hours

Maximum Marks : 70

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

- a) Discuss structural systems and their suitability.
 b) Discuss structural design criteria in planning.
- A portal frame with ends hinged is to be analysed for the following data:
 Spacing of portal frames=4 m
 Height of columns=4.5m
 Distance between column centres = 9m
 Live load on the roof = 1.5 kN/m²
 RCC slab is provided over the portal frames. Analyse the portal frame and find design moments and shear forces at critical sections.
- Discuss in detail matrix methods for the analysis of building frames.
- Discuss various approximate method of analysis of multistoried building frames for lateral loads.

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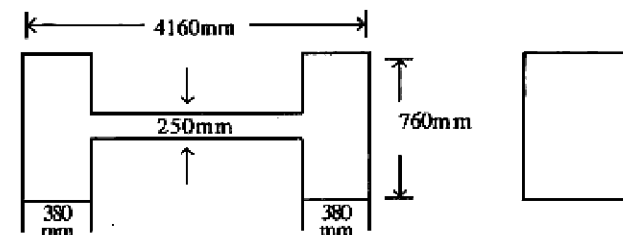
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5. Discuss in detail earthquake effects and design for ductility.

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6. Design a shear wall of length 4.16m and thickness 250mm subject to the following forces. Assume $f_{ck}=25\text{MPa}$, $f_y=415\text{MPa}$ and the wall is a high wall with the following loadings:

S.No.	Loading	Axial force (kN)	Moment kN-m	Shear kN
1	DL + LL	1950	600	20
2	Seismic load	250	4800	700



- A continuous two way 6m square slab has yield moments of 16 kNm/m for positive moment, and 20 kNm/m for negative moment, equal in both the directions. Find the ultimate load for the slab
 - Neglecting Corner effects
 - Considering Corner effects
- Write notes on any two of the following:
 - Analysis of Shear Walled Buildings
 - Concepts of moment redistribution
 - Foundation super structure interaction.

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