

23CE503: STRUCTURAL ENGINEERING -I

UNIT-IV

S.No	Questions	BTL	CO	PO
Part-A(Short Answer Questions)				
1	Define column.	L1	CO4	PO1
2	What is axial load?	L1	CO4	PO1
3	Define short column.	L2	CO4	PO1
4	Define long column.	L2	CO4	PO1
5	What is slenderness ratio?	L2	CO4	PO1
6	Define uniaxial bending.	L2	CO4	PO1
7	Define biaxial bending.	L2	CO4	PO1
8	What are column design charts?	L1	CO4	PO1
9	What is effective length?	L2	CO4	PO1
10	What is minimum eccentricity?	L2	CO4	PO1
Part-B(Long Answer Questions)				
1	Determine the reinforcement for a column of a braced frame (400mm × 600mm, $P_u = 2000\text{kN}$, $M_{ux} = 160\text{kNm}$, $M_{uy} = 120\text{kNm}$, unsupported length = 4m, effective cover = 60mm) using M20 and Fe415.	L5	CO3	PO3
2	Design a short square column to carry an axial load of 2000kN using M20 concrete and Fe415 steel (load factor = 1.5).	L5	CO3	PO3
3	Determine the reinforcement for a column of a braced frame (400mm × 600mm, $P_u = 2000\text{kN}$, $M_{ux} = 160\text{kNm}$, $M_{uy} = 120\text{kNm}$, unsupported length = 4m, effective cover = 60mm) using M20 and Fe415.	L5	CO3	PO3
4	Design a short square column to carry an axial load of 2000kN using M20 concrete and Fe415 steel (load factor = 1.5).	L5	CO3	PO3
5	A short column (300mm × 300mm) reinforced with 5 bars of 20mm diameter. Find the axial factored load capacity using M25 and Fe250.	L3	CO3	PO2