

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code:U2604

M.E. DEGREE EXAMINATION, NOV 2025

Structural Engineering

21PSE204–STABILITY OF STRUCTURES

(Regulations 2021)

Duration: Three hours

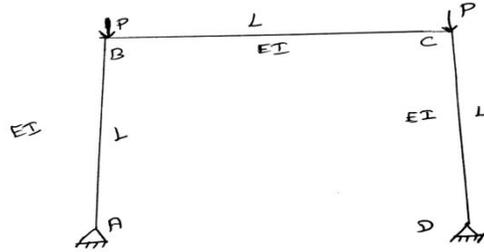
Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Derive the expression for critical load of a fixed-fixed column using Equilibrium Approach CO1-U (20)
Or
(b) With a load deflection curve diagram, obtain the formula for deflection in Eccentrically loaded column CO1-U (20)
2. (a) Examine the critical load of a F-H column having uniform varying moment of inertia. CO2-App (20)
Or
(b) Examine the critical load (using energy method) of a H-H column having uniform varying moment of inertia. CO2-App (20)
3. (a) Illustrate in detail how failure is analysis of beam column with an example CO2-App (20)
Or
(b) Develop the differential equation for maximum deflection in case of beam column with central concentrated load. CO2-App (20)

4. (a) Demonstrate the modes of Buckling in frames. CO3-Ana (20)
 Or
 (b) Find the antisymmetric non sway mode of buckling. Compute the critical load of frame shown in fig. Take E, I, L same for all members. CO3-Ana (20)



5. (a) Explain the Concept of Buckling of Thin plates CO1-U (20)
 Or
 (b) Explain the classification of plates along with assumptions in buckling of plates CO1-U (20)