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**PIMPRI CHINCHWAD COLLEGE OF ENGINEERING &
RESEARCH**

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Department of Civil Engineering

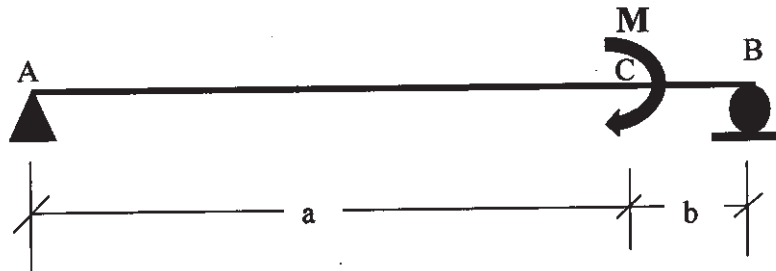
Unit 1
Question Bank

Structural Analysis – I

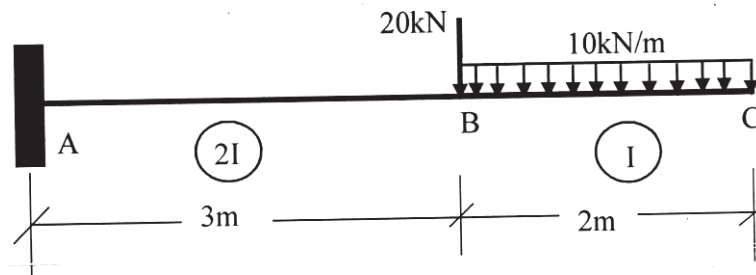
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Q.N. 1 Derive equation to determine slope at 'A' by Macaulay's method. 'EI' is constant. $[L=a+b]$



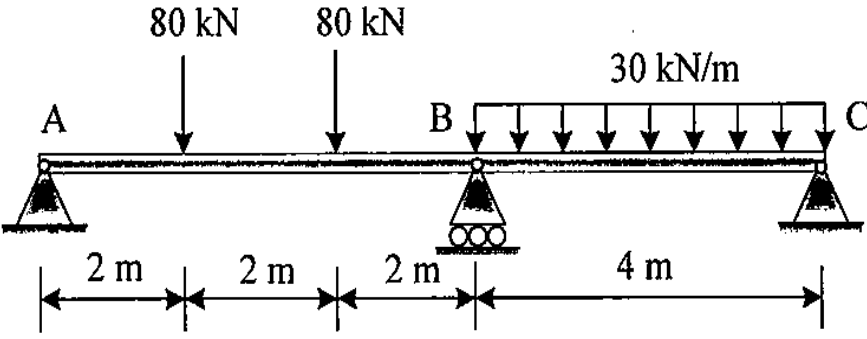
Q.N. 2 Find slope and deflection at point 'B' for cantilever beam by conjugate beam method.



Q.N. 3 A cantilever beam is subjected to uniformly distributed load 10 kN/m on entire span of 2 m; determine maximum slope and deflection in terms of EI.

Q.N. 4 Determine the static and kinematic indeterminacy of simply supported beam, propped cantilever and fixed beams.

Q.N. 5 State and explain static and kinematic indeterminacy. Determine the static and kinematic indeterminacy for the beam shown in Fig.

	 <p>The diagram shows a beam ABC with three supports: a pin support at A, a roller support at B, and a pin support at C. The beam is divided into segments AB and BC. Segment AB has a length of 2 m and is subjected to two point loads of 80 kN each, spaced 2 m apart. Segment BC has a length of 4 m and is subjected to a uniformly distributed load (UDL) of 30 kN/m. The total length of the beam is 6 m. The supports are located at A (0 m), B (2 m), and C (6 m) from the left end.</p>
Q.N. 6	Find Slope and deflection for cantilever beam AB of span 2m loaded with uniformly distributed load 10 kN/m up to 1m from end A by moment area method. Assume uniform flexural rigidity.
Q.N. 7	A 4 m simply supported beam subjected to clockwise moment 20 kNm at mid span, determine maximum slope and deflection in term of EI.
Q.N. 8	Find slope and deflection for cantilever AB of span 4 m loaded with uniformly distributed load 10 kN/m up to 2 m from fixed end A by conjugate beam method. Assume uniform flexural rigidity.
Q.N. 9	Find maximum slope and deflection for cantilever AB loaded with uniformly distributed load 6 kN/m, on entire 2 m span by moment area method. Assume uniform flexural rigidity.