

11. a) Compute the forces in the members of a pin jointed plane frame shown Fig. Q 11(a) by flexibility matrix method. AE is constant for all the members.

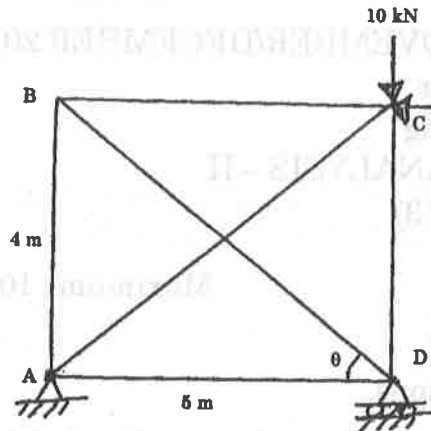


Fig. Q. 11 (a)

(OR)

- b) Analyze the continuous beam ABC shown in Fig Q. 11 (b) by flexibility matrix method and sketch the bending moment diagram.

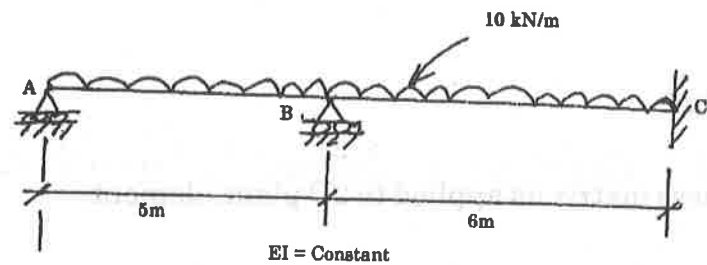


Fig. Q. 11 (b)

12. a) Analyze the continuous beam ABC shown in Fig. Q 12(a) by stiffness matrix method and also draw the shear force diagram.

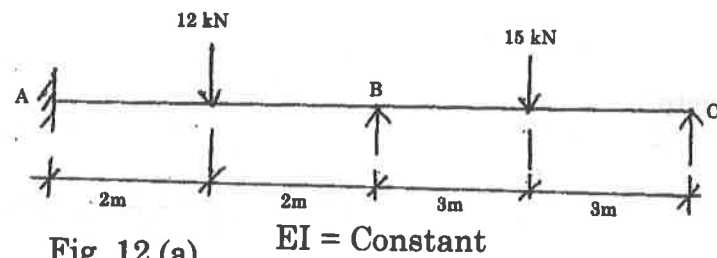


Fig. 12 (a)

(OR)

- b) Analyze the portal frame ABCD shown in Fig. Q 12 (b) by stiffness matrix method.

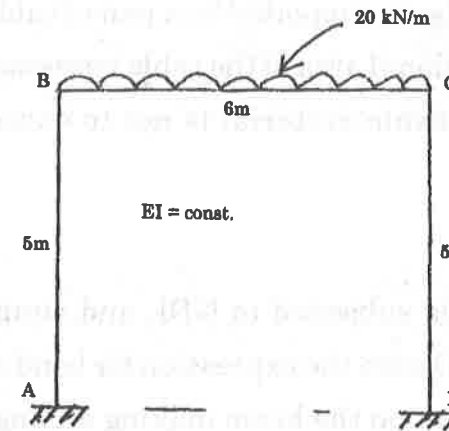


Fig. Q. 12 (b)

13. a) Draw the typical finite elements. Explain with a triangular model for displacement formulation.

(OR)

- b) Explain in detail about the 4 noded rectangular element to arrive the stiffness matrix.

14. a) Analyze a propped cantilever of length 'L' and subjected to a uniformly distributed load of w/m length for the entire span and also find the collapse load.

(OR)

- b) A portal frame ABCD shown in Fig. Q. 14(b) has uniform section throughout. Determine the value of the plastic moment of the resistance in terms of the load. W_c at collapse.

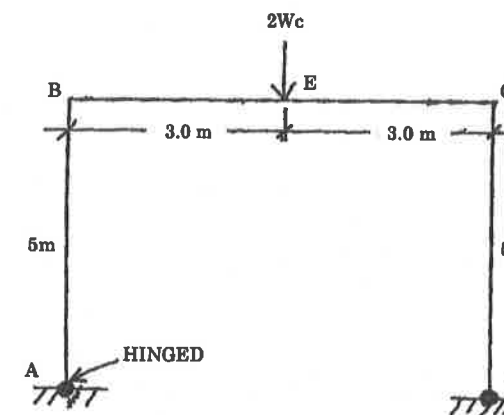


Fig. Q14 (b)