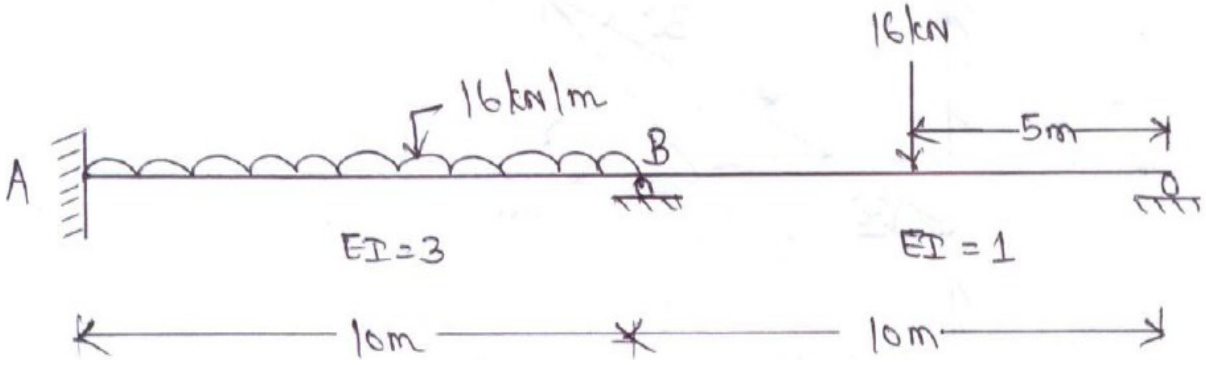
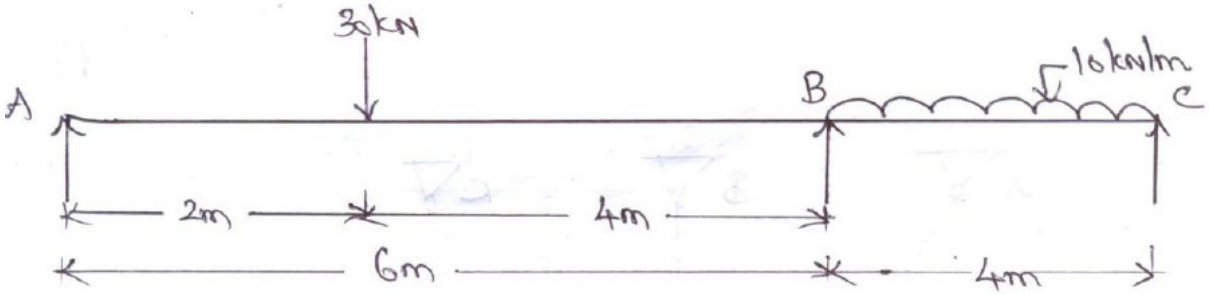
1) What are the basic unknowns in stiffness matrix method?
2) Define stiffness coefficient.
3) What is the basic aim of the stiffness method?
4) What is the displacement transformation matrix?
5) How are the basic equations of stiffness matrix obtained?
6) What is the equilibrium condition used in the stiffness method?
7) What is meant by generalized coordinates?
8) Write about the force displacement relationship.
9) Write the element stiffness matrix for a truss element.
10) Write the element stiffness matrix for a beam element.
11) Compare flexibility method and stiffness method.
12) Is it possible to develop the flexibility matrix for an unstable structure?
13) What is the relation between flexibility and stiffness matrix?
14) What are the types of structures that can be solved using stiffness matrix method?
15) Give the formula for the size of the Global stiffness matrix.
16) List the properties of the rotation matrix.
17) Why the stiffness matrix method also called equilibrium method or displacement.
18) Write then stiffness matrix for a 2 D beam element.
19) Define displacement vector.
20) Write a note on global stiffness matrix.
21) Define load vector.
22) Briefly mention the two types of matrix methods of analysis of indeterminate structures.
23) Define compatibility in force method of analysis.
24) Define the Force Transformation Matrix.
25) Define flexibility influence coefficient (fij).
26) Write the element flexibility matrix (f) for a truss member & for a beam element
27) Analyze the continuous beam shown in figure by the flexibility method and draw the bending moment diagram.

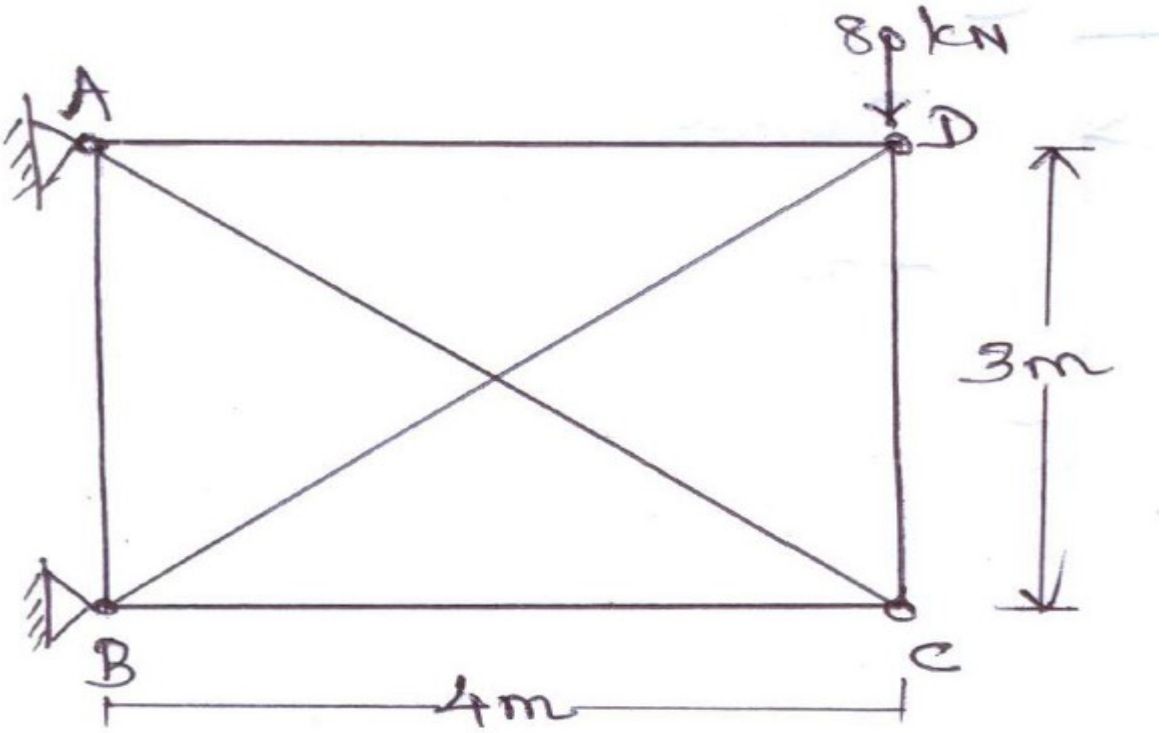
28)



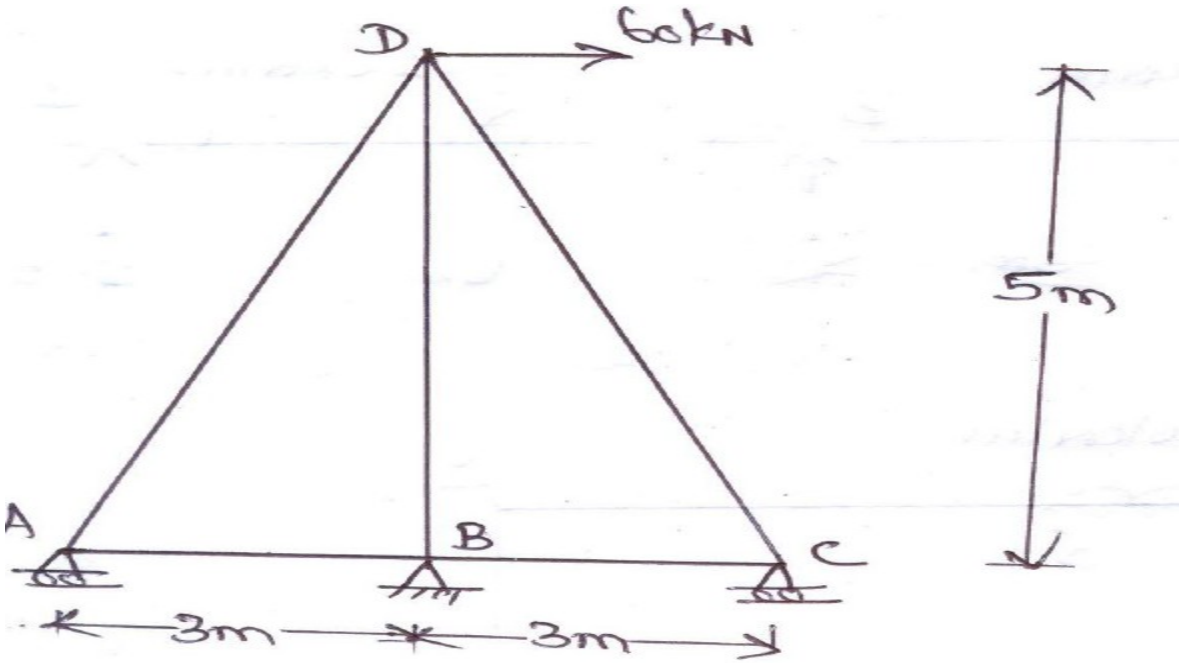
29) Analyze the continuous beam shown in figure by the flexibility method and draw the bending moment diagram.



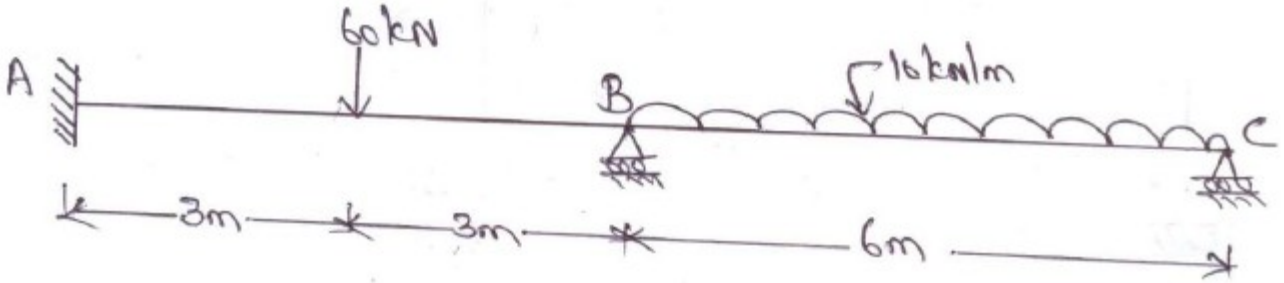
30) Analyze the frame shown in the figure by the matrix flexibility method.



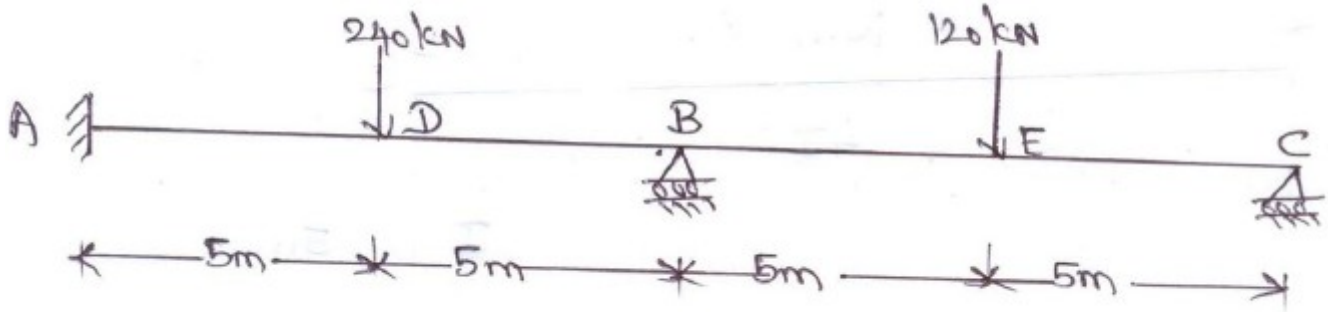
31) Analyze the truss loaded as shown in the figure using matrix flexibility method and find the member forces. A and E are the same for all members.



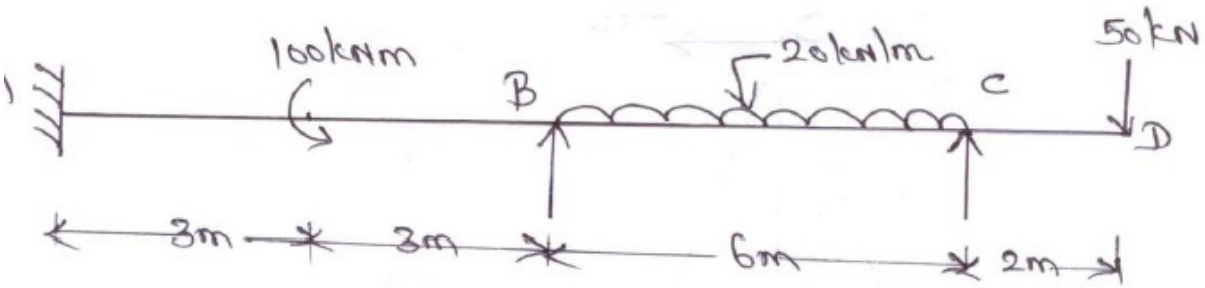
32) Analyze the continuous beam shown in figure using the matrix flexibility method.



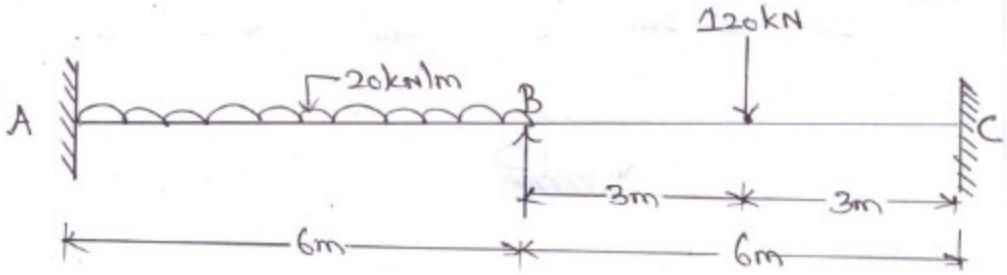
33) Analyze the continuous beam shown in figure .Assume EI as uniform. Use Matrix flexibility method.



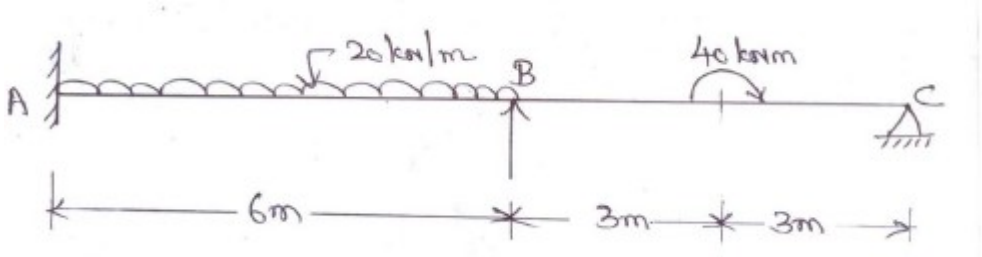
34) Analyze the continuous beam shown in figure .Assume EI as uniform. Use Matrix flexibility method.



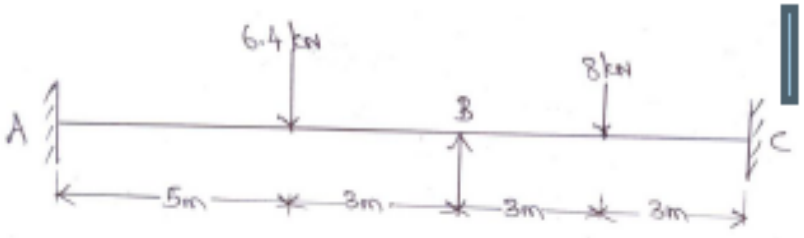
35) Analyze the continuous beam shown in figure by stiffness method. Draw the bending moment diagram.



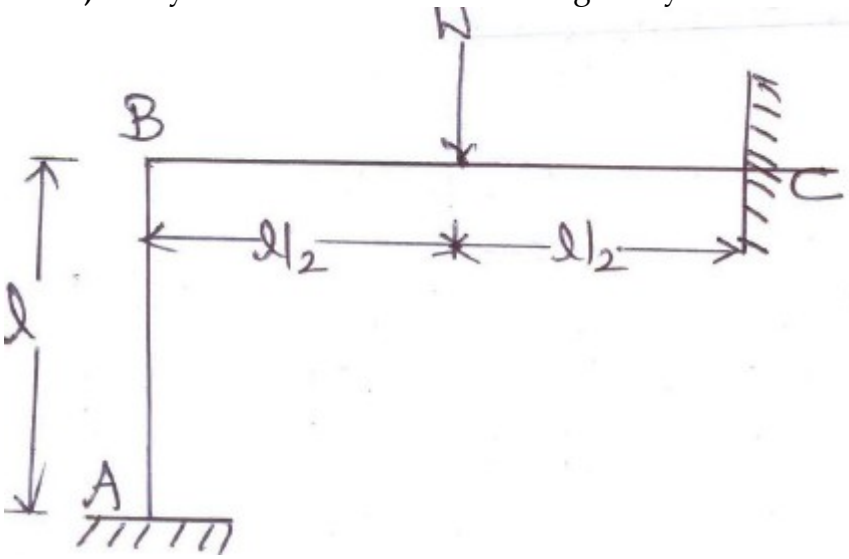
36) A two span continuous beam ABC is fixed at A and simply supported over the supports Band C. AB=6m and BC=6m.The moments of inertia is constant throughout. It is loaded as shown in the diagram.Analyse the beam by matrix stiffness method.



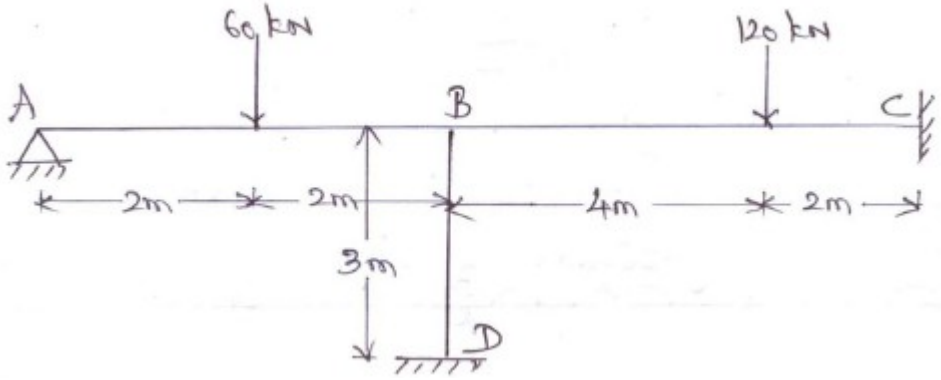
37) Analyze the continuous beam by matrix stiffness method



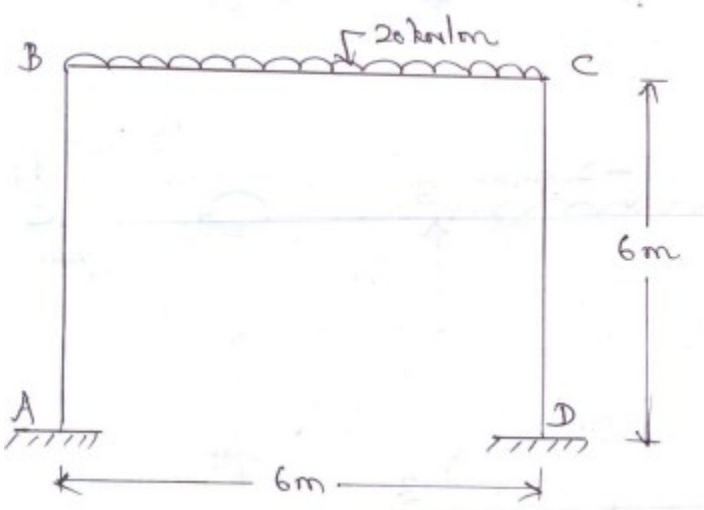
38) Analyze the structure shown in figure by stiffness method.



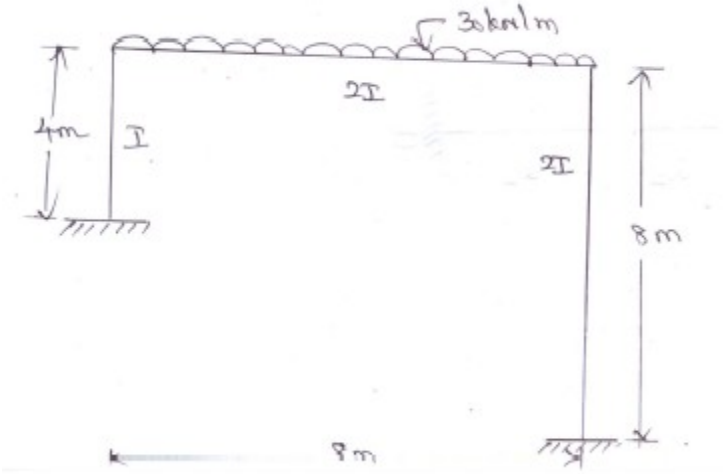
39) Analyze the frame shown in figure by the matrix stiffness method.



40) Analyze the frame shown in figure by the matrix stiffness method.

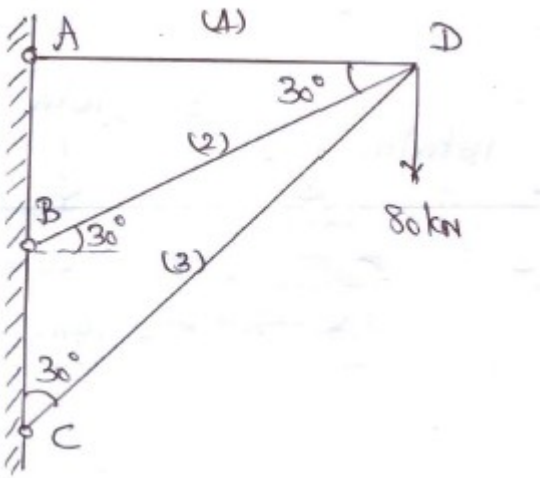


40) Analyze the frame shown in figure by the matrix stiffness method.

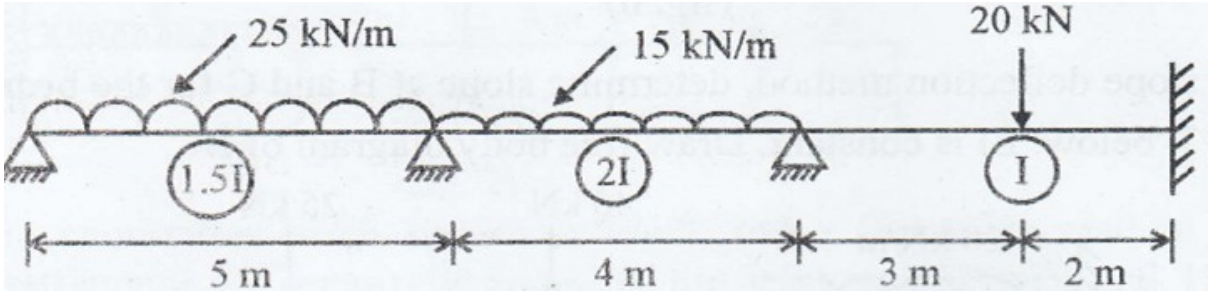


41) Using matrix stiffness method, analyze the truss for the member forces in the truss loaded as shown. AE and Lare tabulated below for all the three members.

Member	AE(MN)	L(cm)
AD	400	400
BD	461.9	461.9
CD	800	800



42) Analyze the continuous beam shown in Fig. 9 by stiffness method. Draw bending Moment diagram and elastic curve.



43) Analyze the Continuous beam shown in Fig. 10 using flexibility method and draw
Bending diagram