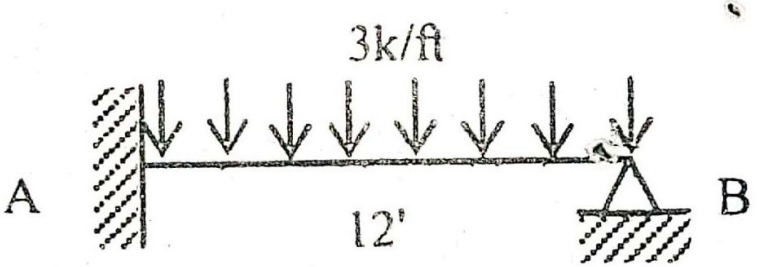
CE 4111-CT1 [13 Series]

Full Marks: 20

Time: 20 min

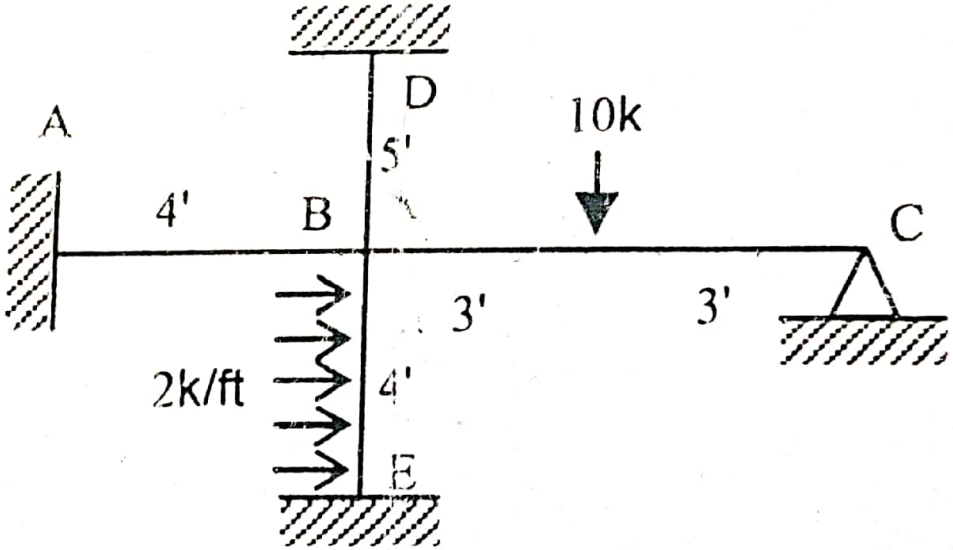


Find out the moments for the member by stiffness matrix method. EI is constant.

CE 4111-CT2 [13 Series]

Full Marks: 20

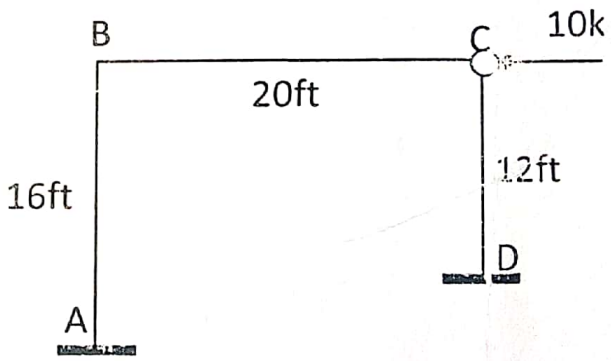
Time: 20 min



Find out the moments for the members by stiffness matrix method. EI is constant.

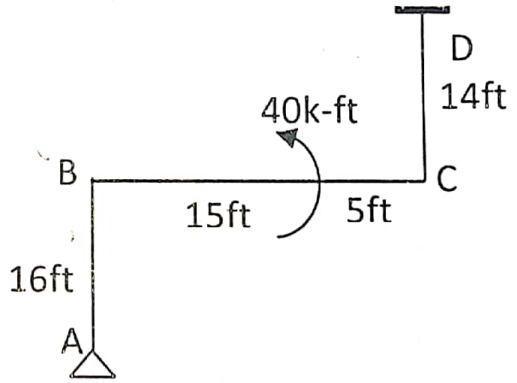
Class Test on CE 4111 Time 20 mins

A frame ABCD is loaded as shown in figure. Find out the ends moment using slope deflection method. Draw BMD and deflected shape for the frame. EI is constant.



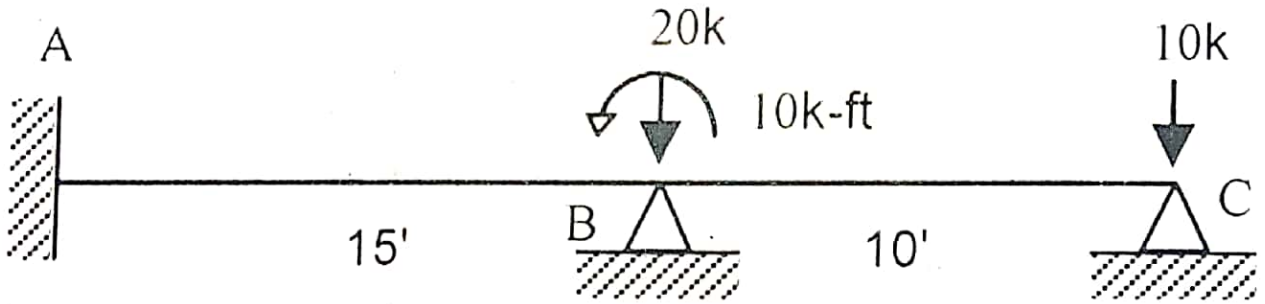
Class Test on CE 4111 Time 20 mins

A rigid frame is loaded as shown in figure. Find out the ends moment using moment distribution method. Draw BMD for the frame. EI is constant.



CE 4111-CT2 [14 Series]

Full Marks: 20 Time: 20 min

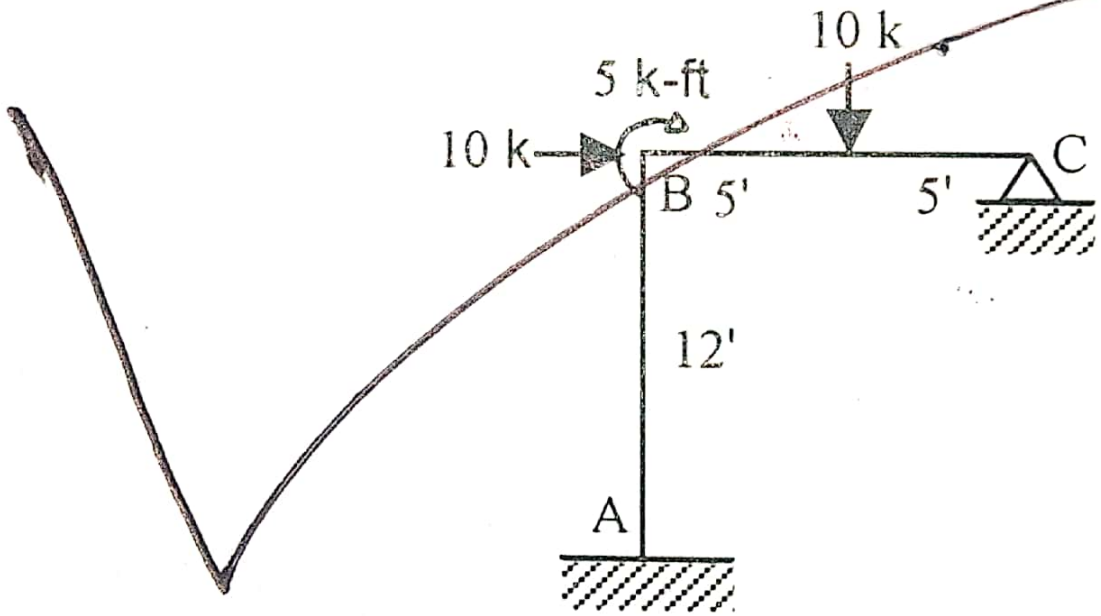


Analyze the beam by flexibility matrix method. EI is constant.

CE 4111-CT1 [14 Series]

Full Marks: 20

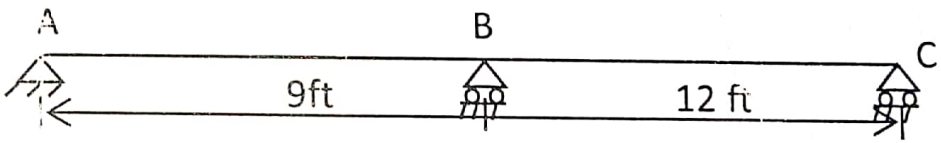
Time: 20 min



Find out the moments for the members by stiffness matrix method. EI is constant.

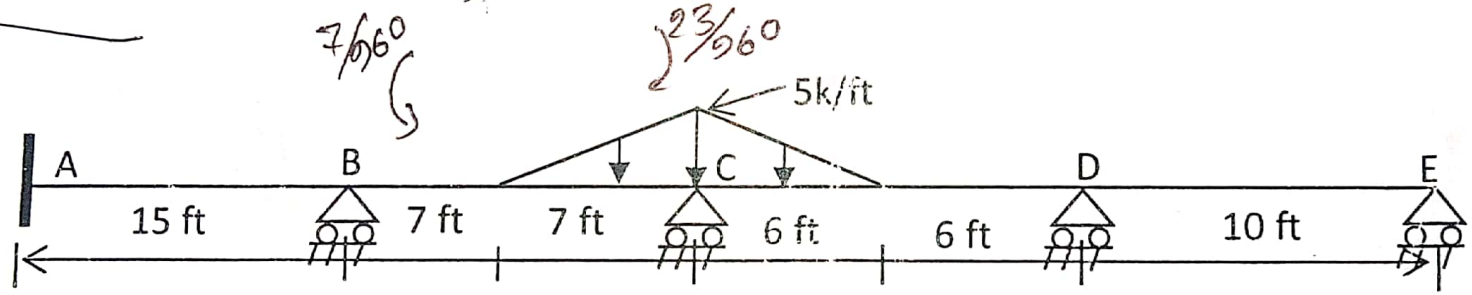
Class Test on CE 4111 Time: 20 min.

Compute the ordinates, at intervals of 3 ft, of the influence line for moment at B for the beam shown in figure. EI is constant.



Class Test on CE 4111 Time 20 mins

A continuous beam ABCDE is loaded as shown in figure below. Find out the joints moment using slope deflection method. Draw BMD and deflected shape for the frame. EI is constant.



Heaven's Light is Our Guide

DEPARTMENT OF CIVIL ENGINEERING

RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

B.Sc. Engineering **FOURTH** year **ODD Semester** Examination, 2018

CE 4111

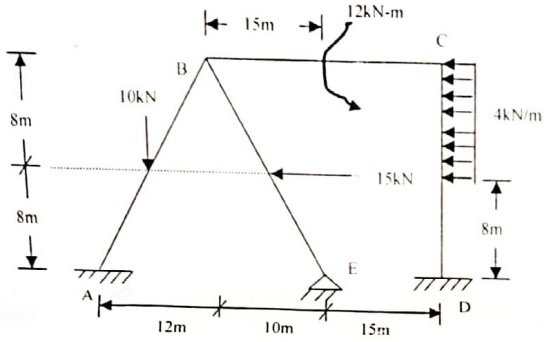
Structural Analysis & Design - III

Full Marks: 72 **Time: 3 Hours**

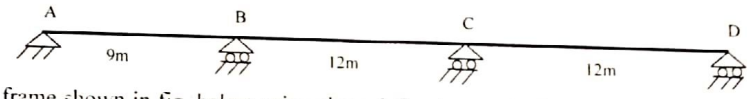
N.B.:-
(i) Answer SIX questions, taking THREE from each section.
(ii) Figure in the margin indicates full marks.
(iii) Use separate answer script for each section.
(iv) Assume reasonable value for any data not given.

SECTION-A

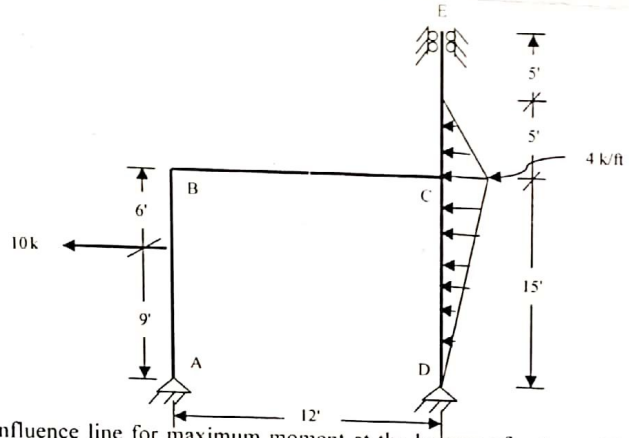
Q.1 Using moment distribution method, analyze the frame shown in figure below. Draw BMD and sketch the deflected shape of the frame. EI is constant. 12.00



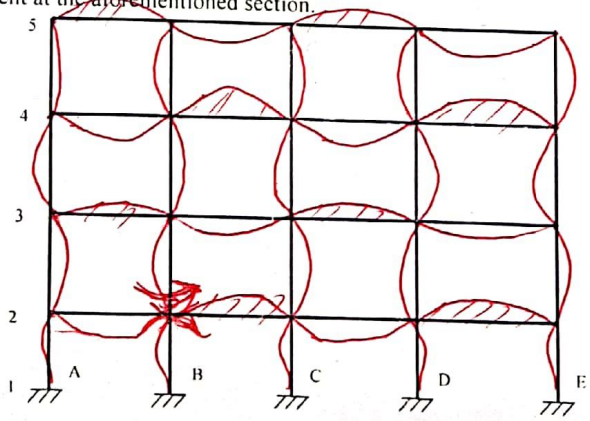
Q.2 Compute the influence line ordinates at 3m intervals for moment at B of the continuous beam shown in figure below. 12.00



Q.3 Analyze the frame shown in fig. below using slope deflection method. Draw BMD of the frame. EI is constant. 12.00



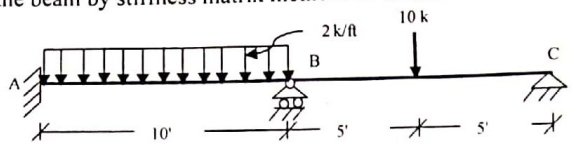
Q.4(a) Draw qualitative influence line for maximum moment at the bottom of column B2-B3 (left side tension) for the frame shown in fig. below. Locate the position of live load to produce the maximum moment at the aforementioned section. 7.00



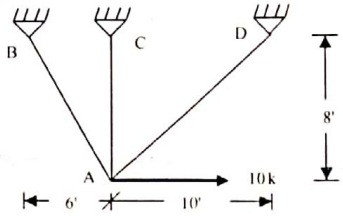
Q.4(b) Derive the formulae for fixed-end moments induced by displaced supports of prismatic members. 5.00

SECTION-B

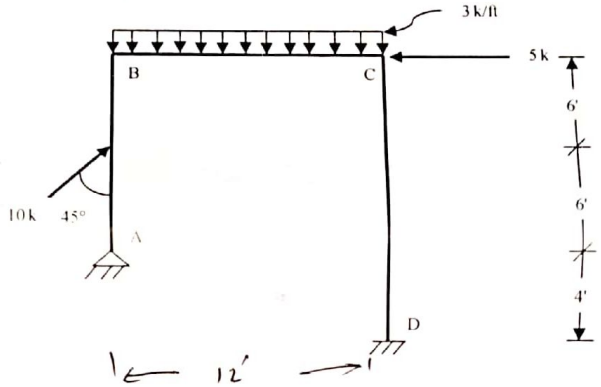
Q.5 Analyze the beam by stiffness matrix method. EI is constant. 12.00



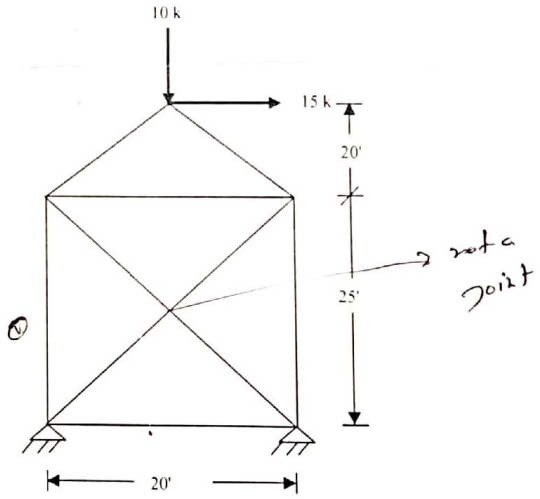
Q.6 Calculate load stiffness matrix for equal member and find member forces for the truss below. EA is constant. 12.00



Q.7 Analyze the frame by flexibility matrix method. EI is constant. 12.00



Q.8 Analyze the truss by flexibility method. EA is constant. 12.00



Heaven's Light is Our Guide

DEPARTMET OF CIVIL ENGINEERING

RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

B.Sc. Engineering **FOURTH** Year **ODD SEMESTER** Examination, **2017**

CE 4111

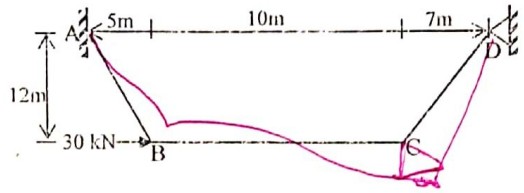
Structural Analysis & Design - III

Full Marks: 72 **Time: 3 Hours**

N.B.:-
(i) Answer any **SIX** questions, taking **THREE** from each section.
(ii) Figure in the margin indicate full marks.
(iii) Use separate answer script for each section.
(iv) Assume reasonable value for any data missing.

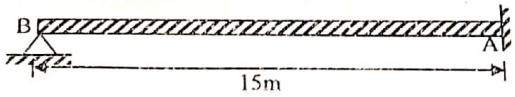
SECTION-A

Q.1 Using moment distribution method, analyze the frame shown in figure below. Draw BMD and sketch the defected shape of the frame. EI constant. 12.00

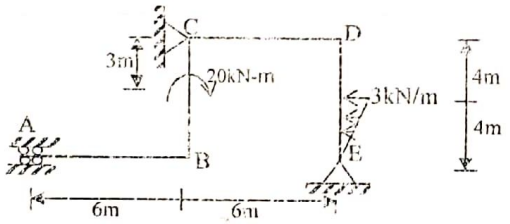


Q.2(a) State and prove Muller-Breslau principle. 5.00

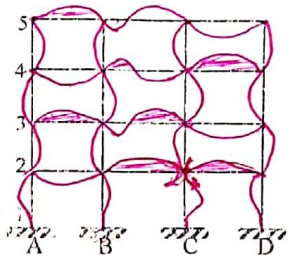
(b) Compute the influence line ordinates at 3m interval for shear at A of the propped cantilever beam shown in figure below. 7.00



Q.3 Analyze the frame shown in figure below using slope deflection method. Draw BMD of the frame. EI is constant. 12.00



Q.4 (a) Draw qualitative influence line for maximum –ve moment at right end of beamB2-C2 for the frame as shown in figure below. Locate the position of live load to produce the maximum –ve moment at the aforementioned section. 6.00

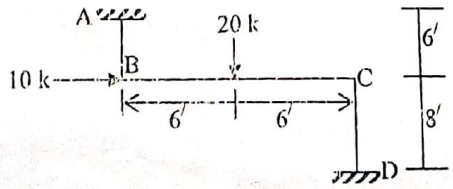


(b) Derive the governing equations for slope deflection method. 6.00

SECTION-B

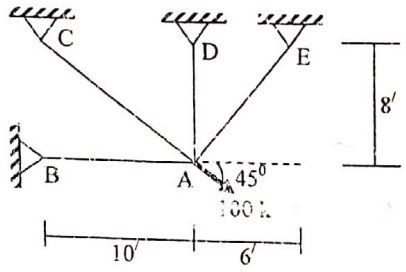
Q.5(a) Define Stiffness. 1.00

(b) Analyze the frame by stiffness matrix method. EI constant. 11.00

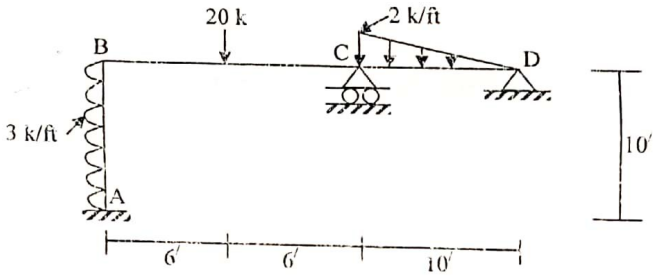


Q.6 (a) Derive D = FA, where symbols have their usual meaning. 2.00

(b) Determine the member forces using stiffness matrix method. EI is constant. 10.00

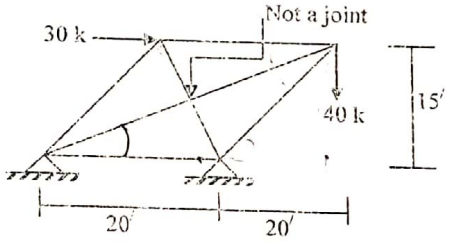


Q.7 Analyze the frame shown below by flexibility matrix method. E = 30x10^3 ksi, I= 1000 in^4. 12.00



Q.8 (a) Describe the advantages of folded plate. Define canopies. 4.00

(b) Analyze the truss by flexibility matrix method. Find all member forces, where EA is constant. 8.00



Heaven's Light is Our Guide

DEPARTMET OF CIVIL ENGINEERING

RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

B.Sc. Engineering **FOURTH** Year **SEVENTH SEMESTER** Examination, 2016

CE 411

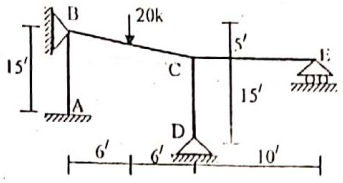
Structural Analysis & Design-III

Full Marks: 70 **Time: 3 Hours**

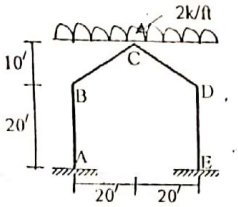
N.B.:-
(i) Answer any **SIX** questions, taking **THREE** from each section.
(ii) Figure in the margin indicate full marks.
(iii) Use separate answer script for each section.
(iv) Assume reasonable value for any data missing.

SECTION-A

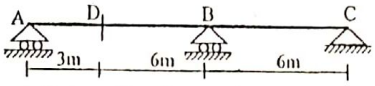
Q.1 Using moment distribution method, analyze the frame shown in figure below. Draw BMD and sketch the deflected shape. EI is constant. 11.67



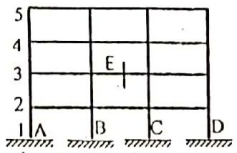
Q.2 Analyze the frame shown in figure below using slope deflection method. Draw BMD of the frame. EI is constant, 11.67



Q.3 Compute the ordinates of the influence line for moment at D of the continuous beam shown in figure below. Use interval of 3m. EI is constant. 6.67

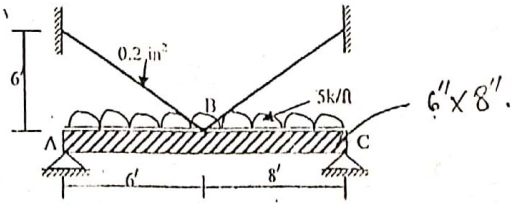


(b) Draw the qualitative influence line for maximum moment at E for the frame shown in figure below. Locate the position of live to produce the maximum +ve moment of the aforementioned section. 5.00



Q.4 (a) What do you mean by composite structure? 1.67

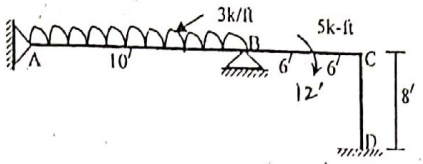
(b) A timber beam ABC carries a distributed load as shown in figure below. The beam is supported by two steel wire. Draw BMD of the beam. E_t = 1500 ksi, E_s = 30,000 ksi. 10.00



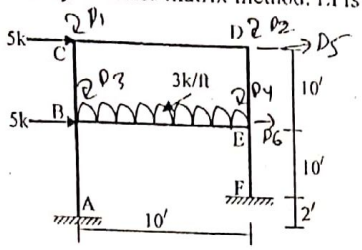
6″ × 8″.

SECTION B

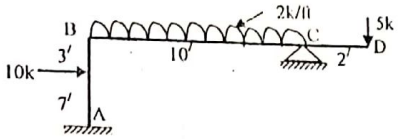
Q.5 Analyze the structure shown below by stiffness matrix method. EI is constant. 11.67



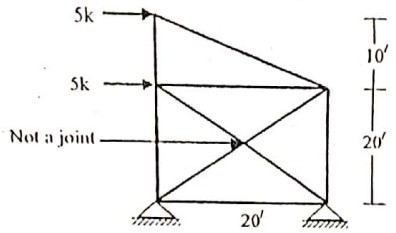
Q.6 Analyze the frame by stiffness matrix method. EI is constant. 11.67



Q.7 Analyze the frame shown below by flexibility matrix method. Draw BMD for the frame. EI is constant. 11.67



Q.8 Analyze the truss shown below by flexibility matrix method. EA is constant. 11.67



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DEPARTMENT OF CIVIL ENGINEERING

RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

B.Sc. Engineering **Fourth** year **Seventh Semester** Examination, 2015

CE 411

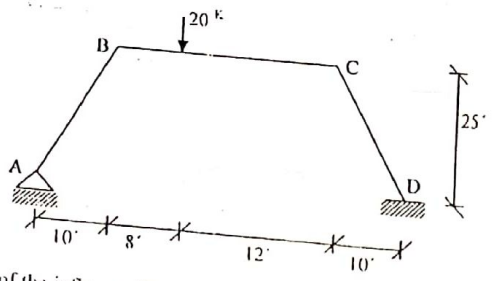
Structural Analysis and Design III

Full marks: 70 **Time: 3 Hours**

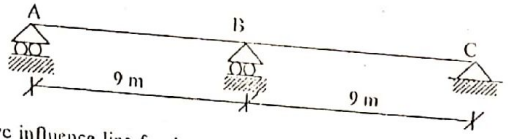
N.B:-
(i) Answer any **SIX** questions, taking **THREE** from each section.
(ii) Figure in the margin indicate full marks.
(iii) Use separate answer script for each section.
(iv) Assume reasonable value for any data missing.

SECTION-A

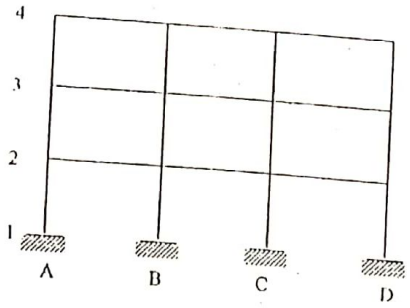
Q.1 Using moment distribution method, analyze the frame shown in fig. below. Draw BMD and sketch the deflected shape of the frame. EI is constant. 11.67



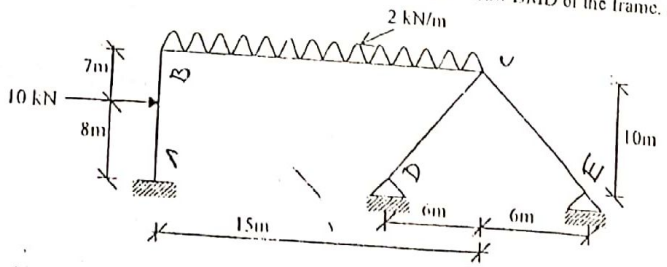
Q.2 (a) Compute the ordinates of the influence line for reaction at C of the continuous beam shown in fig. below. Use intervals of 3 m. EI is constant. 6.67



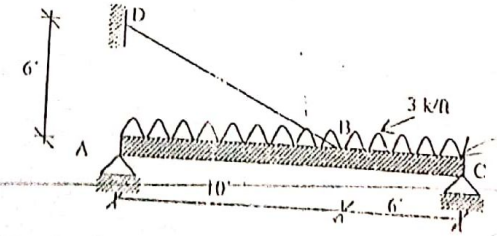
(b) Draw the qualitative influence line for maximum moment (right side tension) at the mid height of the column B2-B3 for the frame as shown in fig. below. Locate the positions of live load to produce the maximum moment of the aforementioned section. 5.00



Q.3 Analyze the frame shown in fig. below using slope deflection method. Draw BMD of the frame. EI is constant. 11.67



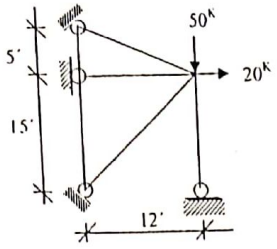
Q.4 A timber beam ABC carries a distributed load of 3 k/ft and is supported by a steel rod BD of diameter 0.35 inch. Draw BMD for the timber beam. E_t=1500 ksi, E_s=30000 ksi. 11.67



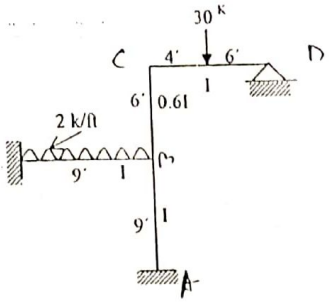
SECTION-B

Q.5 (a) Derive stiffness matrix for a truss element having inclination θ with x-axis. 3.00

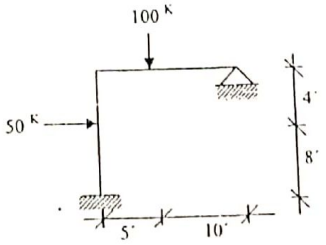
(b) Calculate the forces in all the members of the truss shown in the figure by stiffness matrix method. EA is constant. 8.67



Q.6 Analyze the frame shown in the figure by stiffness matrix method. Draw BM diagrams and deflected shape. 11.67

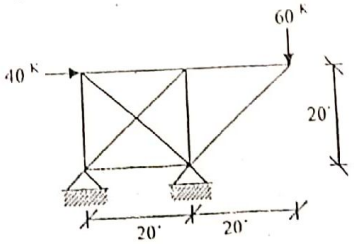


Q.7 Analyze the frame shown in the figure by flexibility matrix method. Draw BM diagrams. EI is constant. 11.67



Q.8 (a) Derive the relation D=FA. 2.00

(b) Analyze the truss shown in the figure by flexibility matrix method. Find forces in all the members. EA is constant. 9.67



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DEPARTMENT OF CIVIL ENGINEERING

RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

B.Sc. Engineering **Fourth year Seventh Semester** Examination, 2014

CE 411

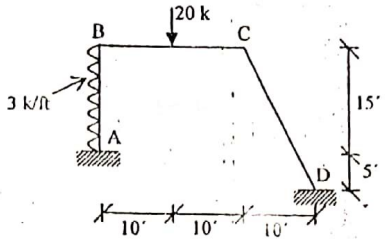
Structural Analysis and Design-III

Full marks: 70 **Time: 3 Hours**

N.B:- (i) Answer any **SIX** questions, taking **THREE** from each section.
(ii) Figure in the margin indicate full marks.
(iii) Use separate answer script for each section.
(iv) Assume reasonable value for any data missing.

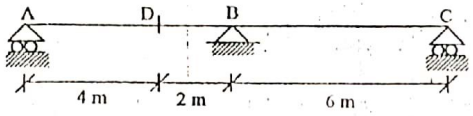
SECTION-A

Q.1 Using moment distribution method, analyze the frame shown in fig. below. Draw BMD and sketch the deflected shape of the frame. EI is constant. 11.67

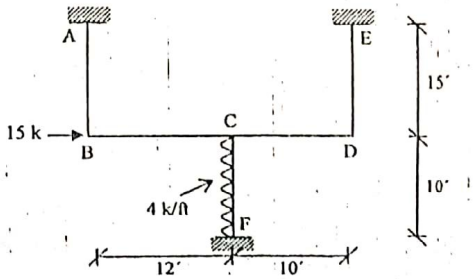


Q.2 (a) State and prove Müller-Breslau principle. 5.00

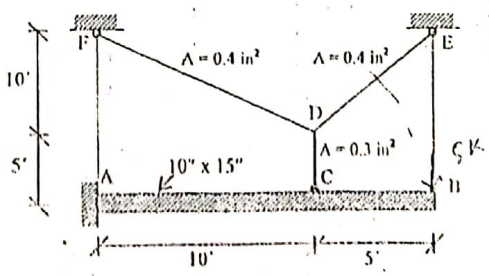
(b) Compute the ordinates of the influence line for shear at D of the continuous beam shown in fig. below. Use intervals of 2 m. EI is constant. 6.67



Q.3 Analyze the frame shown in fig. below using slope deflection method. Draw BMD of the frame. EI is constant. 11.67



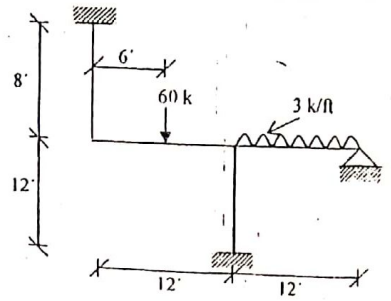
Q.4 A concrete beam AB is supported by a simple steel truss as shown in fig. below. Draw SFD & BMD of the beam. $E_s = 30 \times 10^3$ ksi & $E_c = 3200$ ksi. 11.67



SECTION-B

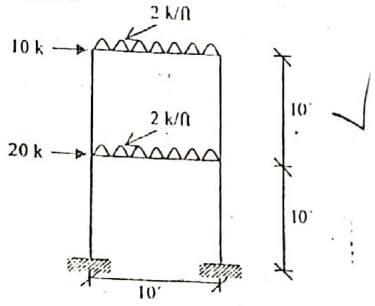
Q.5 (a) Derive stiffness matrix for a beam element. 3.00

(b) Analyze the structure shown below by stiffness method. Draw BM diagram. EI is constant.



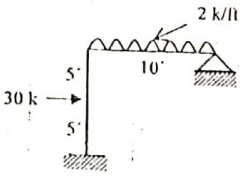
Q.6 Analyze the structure shown below in the figure by stiffness matrix method and 11.67

(a) Compute the stiffness matrix, (b) Write the load matrix (c) Write the equilibrium equations in matrix form. EI is constant.

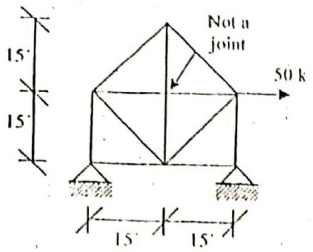


Q.7 (a) Derive the relation D = FA, where the symbols have their usual meanings. 2.67

(b) Analyze the structure shown in the figure by flexibility matrix method. Draw SF and BM diagrams. 9.00 EI is constant.



Q.8 Analyze the truss structure shown in the figure by flexibility matrix method. Compute the bar forces. 11.67 EA is constant.



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Heaven's Light is Our Guide

DEPARTMENT OF CIVIL ENGINEERING

RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

B.Sc. Engineering **FOURTH** year **SEVENTH** Semester Examination, 2013

CE 411

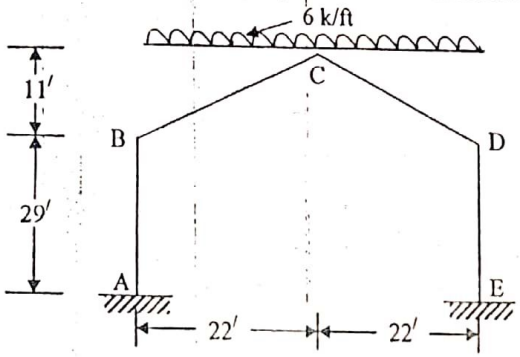
Structural Analysis & Design - III

Full Marks: 70 **Time: 3 Hours**

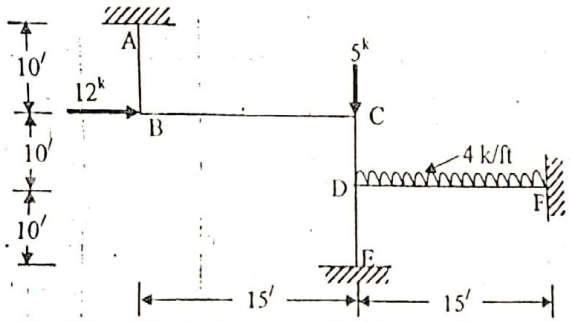
N.B.:- (i) Answer SIX questions, taking THREE from each section.
(ii) Figure in the margin indicates full marks.
(iii) Use separate answer script for each section.
(iv) Assume reasonable value for any data missing.

SECTION-A

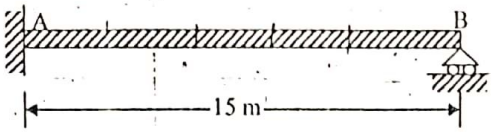
Q.1 Analyze the gable frame shown in figure below using slope deflection method. EI is constant. 11.67



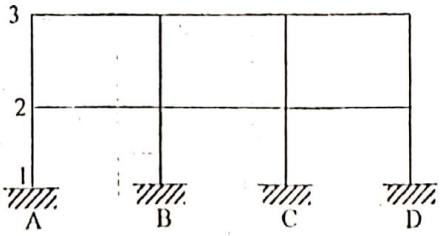
Q.2 Using moment distribution method, analyze the frame shown in figure below. Draw BMD and sketch the deflected shape of the frame. EI is constant. 11.67



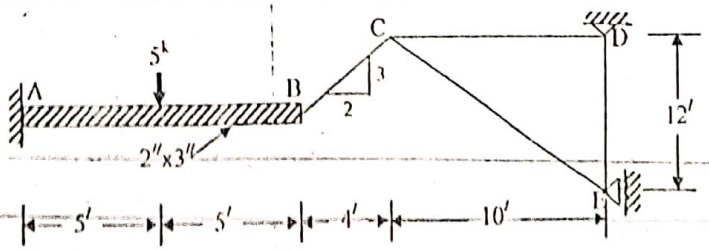
Q.3(a) Compute the ordinates of the influence line for the reaction at B of the propped cantilever beam shown in figure below. Use intervals of 3 m. EI is constant. 6.67



(b) Draw qualitative influence line for maximum –ve moment at the left end of span B2-C2 for the frame as shown in figure below. Locate the position of live load to produce the maximum –ve moment of the aforementioned section. 5.00



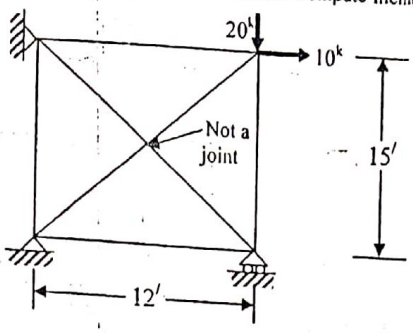
Q.4 A steel beam AB is supported by a simple steel truss BCDE as shown in figure below. The cross-sectional area of the truss member is 0.5 in^2. Draw SFD and BMD of the beam. 11.67



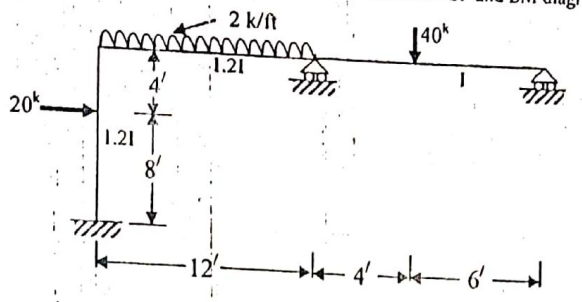
SECTION-B

Q.5(a) Derive the relation A = SD, where the symbols have their usual meaning. 2.00

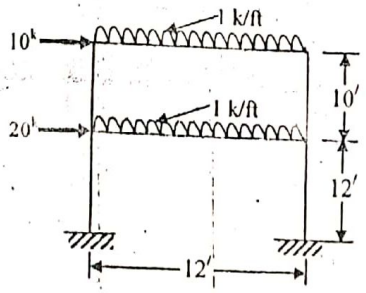
(b) Analyse the truss shown in the figure by stiffness matrix method. Compute member stresses. Assume EA to be constant. 9.67



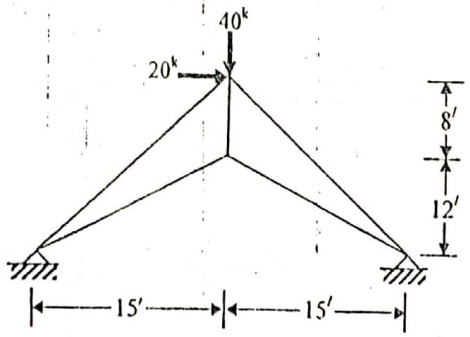
Q.6 Analyse the frame shown in the figure by flexibility matrix method. Draw SF and BM diagrams. 11.67



Q.7 Analyse the frame shown in the figure by stiffness matrix method. (i) Compute elements of stiffness matrix, (ii) Write the load matrix. EI is constant. 11.67



Q.8 Find member stresses for the truss shown in the figure by flexibility matrix method. Assume EA to be constant. 11.67



THE END

Heaven's Light is Our Guide

DEPARTMENT OF CIVIL ENGINEERING

RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

B.Sc. Engineering **FOURTH** Year **SEVENTH SEMESTER** Examination, 2012

CE 411

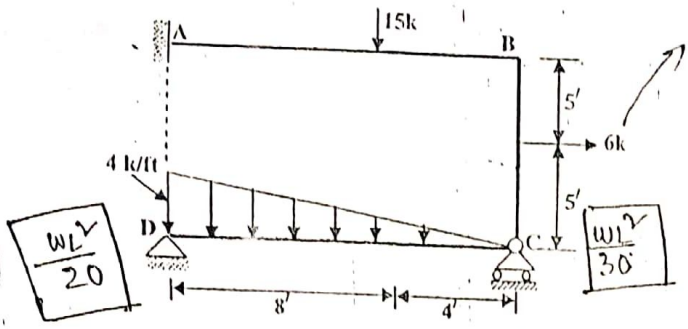
Structural Analysis & Design-III

Full Marks: 70 **Time: 3 Hours**

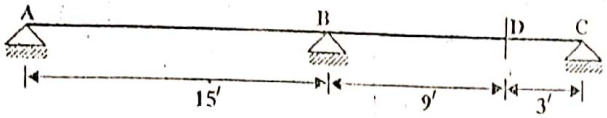
N.B.:-
(i) Answer SIX questions, taking THREE from each section.
(ii) Figure in the margin indicates full marks.
(iii) Use separate answer script for each section.
(iv) Assume reasonable value for any data not given.

SECTION-A

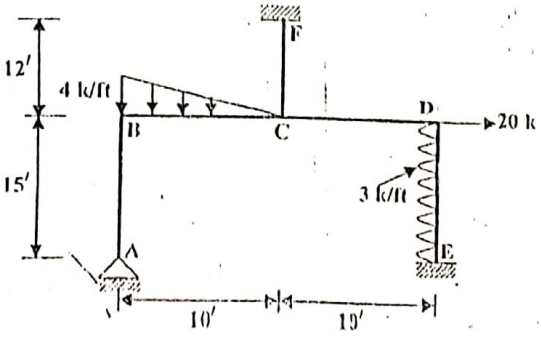
Q.1 Using slope deflection method, analyze the frame shown in figure below. Draw BMD and deflected shape for the frame. EI is constant. 11.67



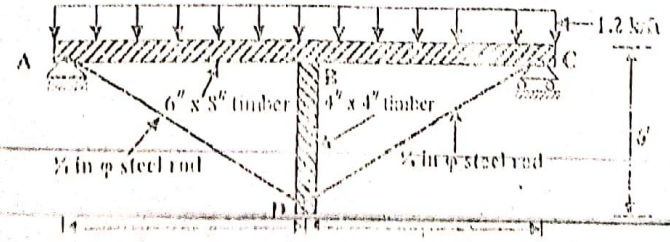
Q.2 Compute the ordinates of the influence lines for moment and shear at section D of the continuous beam shown in figure below. EI is constant. 11.67



Q.3 Using moment distribution method analyze the frame shown in figure below. Draw BMD and sketch the deflected shape for the frame. EI is constant. 11.67



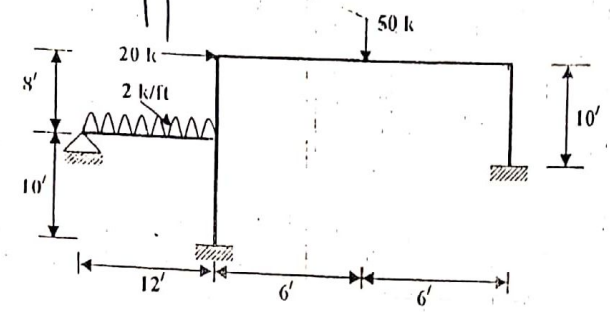
Q.4 Analyze the kingpost truss shown in figure below. Draw SFD and BMD for the cam ABC. E of timber = 1500 ksi. 11.67



SECTION-B

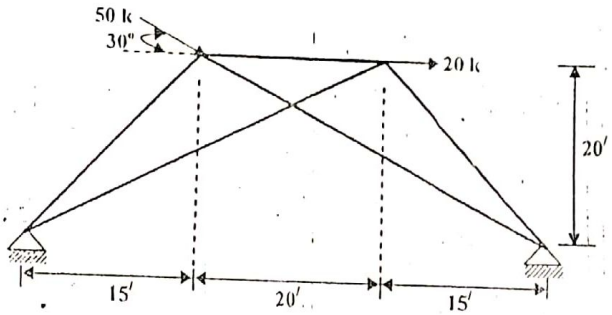
Q.5(a) Derive the relation $\Delta = SD$, where the symbols have their usual meaning. 2.00

(b) Find stiffness matrix and load matrix for the structure shown in the figure. EI to be constant. 9.67

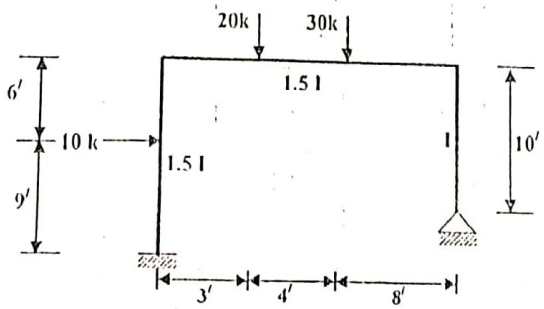


Q.6(a) Derive stiffness matrix for a beam element. 2.67

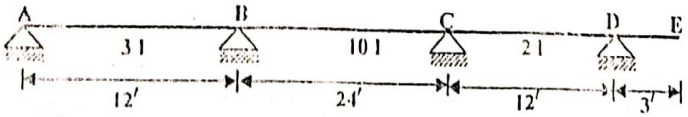
(b) Generate stiffness matrix for the trussed structure shown in the figure. Compute the load matrix and write the equilibrium equation. EA is constant. 9.00



Q.7 Analyze the frame shown in the figure by flexibility matrix method. Draw shear force and bending moment diagrams. 11.67



Q.8 Analyze the continuous beam shown in figure below owing to the effect of a 0.5 inch settlement at support B by the slope deflection method. Draw SFD and BMD for the beam, Sketch the elastic curve. $E = 30 \times 10^3$ ksi; $I = 1000$ in^4. 11.67



Heaven's Light is Our Guide

DEPARTMENT OF CIVIL ENGINEERING

RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

B.Sc. Engineering FORTH Year SEVENTH SEMESTER Examination, 2011

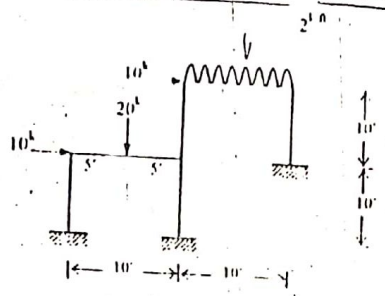
CE 411
Structural Analysis & Design – III

Full Marks: 70 **Time: 3 Hours**

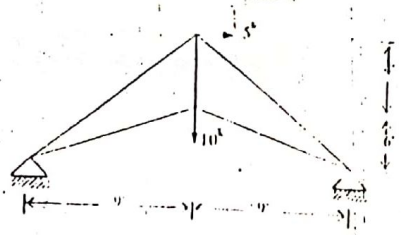
N.B.:
(i) Answer SIX questions, taking THREE from each section.
(ii) Figure in the margin indicates full marks.
(iii) Use separate answer script for each section.
(iv) Assume reasonable value for any missing data.

SECTION – A

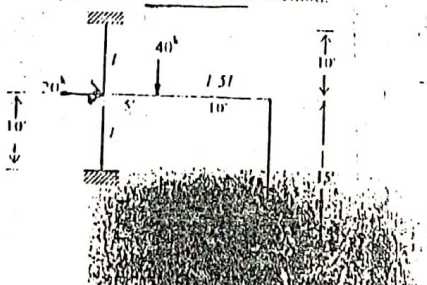
Q.1 Apply stiffness matrix method for the following structure and *(a)* Compute elements of stiffness matrix; *(b)* Write load matrix *(c)* Write equilibrium equations in matrix form. EI is constant. 11.67



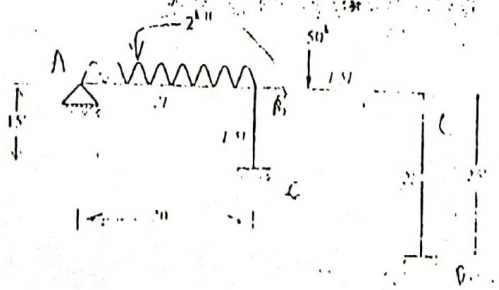
Q.2(a) Describe the flexibility relation D = FA where the symbols have their usual meanings.
(b) Analyze the truss shown in the figure by flexibility matrix method and calculate the bar forces EA is constant.



Q.3 Analyze the frame shown in the figure by stiffness matrix method.

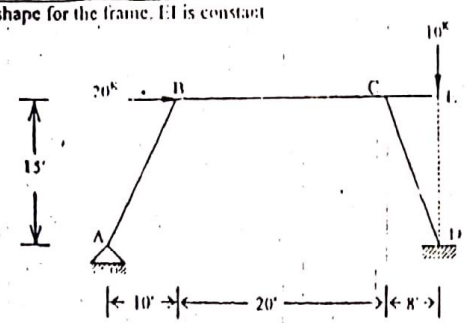


Q.4 Analyze the frame shown in the figure by slope deflection method. Draw SF and BM diagram. 11.67

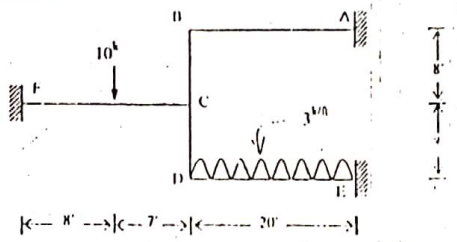


SECTION – B

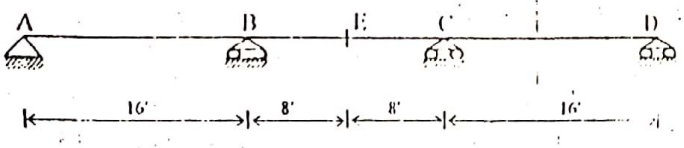
Q.5 Using moment distribution method, analyze the frame shown figure below. Draw BMD and sketch the deflected shape for the frame. EI is constant. 11.67



Q.6 Using slope deflection method, analyze the frame shown in figure below. Draw BMD and deflected shape for the frame. EI is constant. 11.67

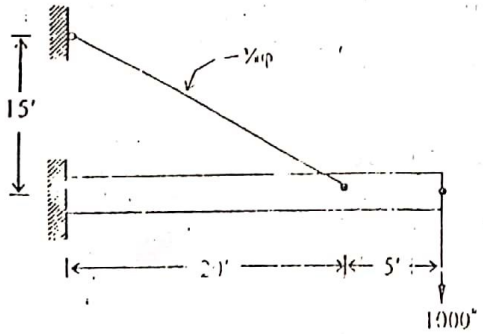


Q.7 Compute the ordinates of the influence lines for the moment at E and the reaction at D of the continuous beam shown in figure below. Use intervals of 4 ft for moment and 8 ft for reaction. EI is constant. 11.67



Q.8 (a) What is composite structure? Give some example 2.67

(b) The timber beam shown in the figure is 15 inch deep and 8 inch wide with E_T = 1500 ksi. Find the stress in the steel rod if its diameter is ⅛ inch. E_s = 29 x 10^3 ksi. 9.00



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