VALLIAMMAI ENGINEERING COLLEGE

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF CIVIL ENGINEERING

QUESTION BANK

V SEMESTER

CE 6501 - STRUCTURAL ANALYSIS 1

Regulation – 2013

Academic Year 2018 – 19

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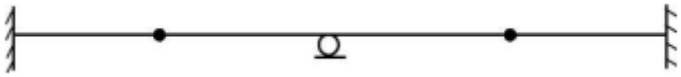
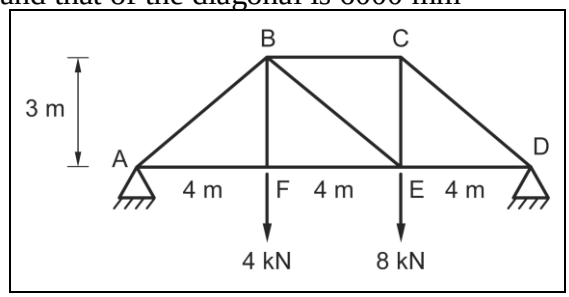
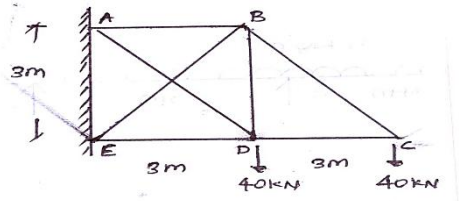
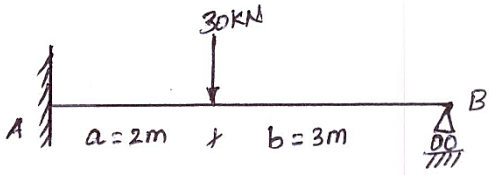
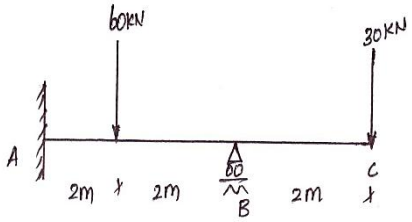
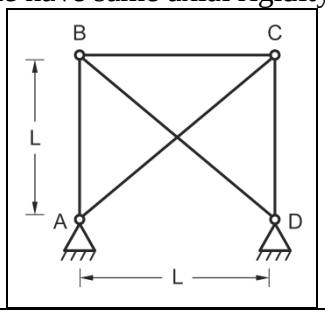
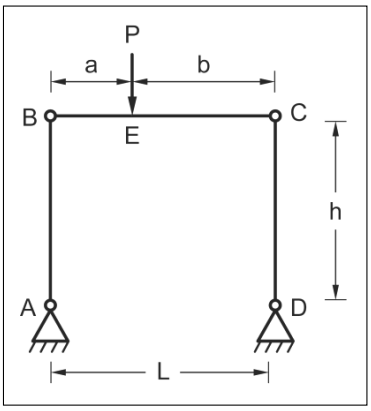
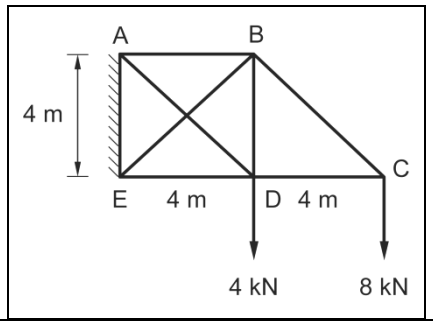
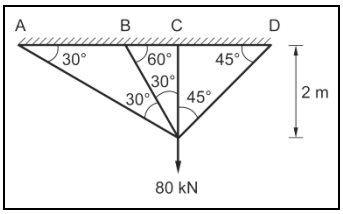
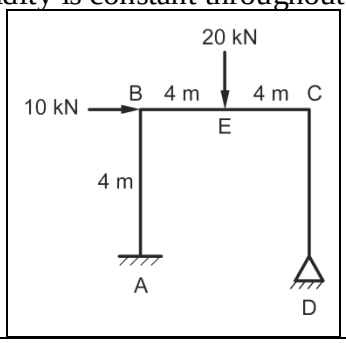
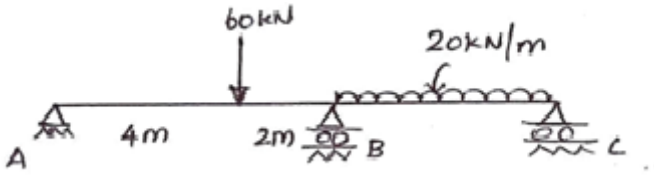
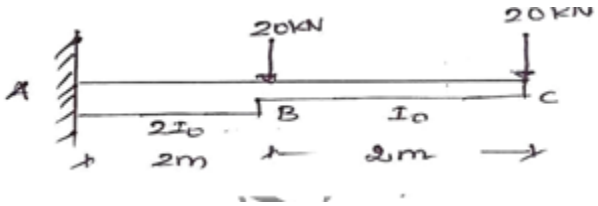
SUBJECT : STRUCTURAL ANALYSIS -1

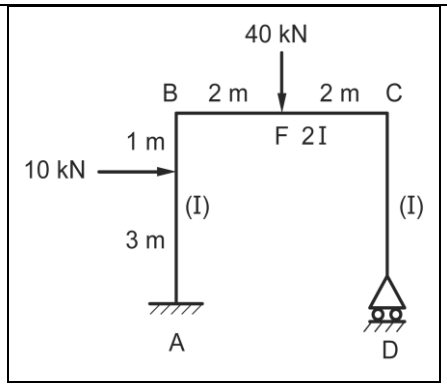
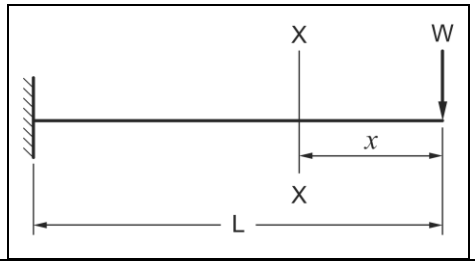
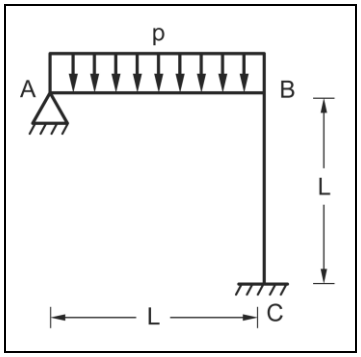
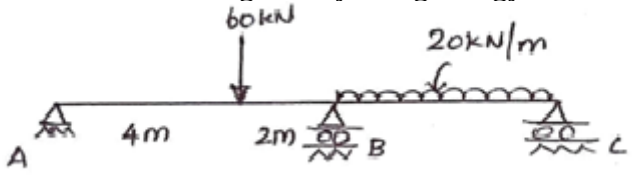
SEM / YEAR : V/ III

UNIT I -INDETERMINATE FRAMES			
Degree of static and kinematic indeterminacies for plane frames- Analysis of indeterminate pin-jointed frames- Rigid frames (Degree of statical indeterminacy up to two) - Rigid frames (Degree of static indeterminacy up to two) - Energy and consistent deformation methods.			
PART A			
Q.No.	**Questions**	**BT Level**	**Competence**
1.	What is equilibrium condition	BT-1	Remembering
2.	Name any four methods used for computation of deflections in structures	BT-1	Remembering
3.	What are all type of frames	BT-1	Remembering
4.	What are the assumptions made in the unit load method?	BT-1	Remembering
5.	Write down the two methods of determining displacements in pin jointed plane frames by the unit load concept.	BT-1	Remembering
6.	What is meant by perfect frame?	BT-2	Understanding
7.	Define Compatibility Condition	BT-2	Understanding
8.	Define redundant force	BT-2	Understanding
9.	Differentiate external and internal indeterminacy of structures	BT-2	Understanding
10.	Define static indeterminacy of a structure.	BT-2	Understanding
11.	To find degree of indeterminacy of structures as given below 	BT-3	Applying
12.	To find degree of indeterminacy of structures as given below 	BT-3	Applying
13.	Define strain energy	BT-3	Applying
14.	Give the procedure for unit load method.	BT-4	Analyzing
15.	Calculate degree of indeterminacy of propped cantilever beam.	BT-4	Analyzing
16.	Determine the free end slope of a cantilever due to applied moment M at free end using energy principle.	BT-4	Analyzing

17.	Explain a pin-jointed frame with a sketch	BT-5	Evaluating
18.	Briefly explain about consistent deformation method	BT-5	Evaluating
19.	Differentiate determinate and indeterminate of structure	BT-6	Creating
20.	Differentiate static and kinematic indeterminacy of structure	BT-6	Creating
	PART B		
1.	Determine the force in the members of the truss shown in figure. The cross sectional area of vertical and horizontal members is 4000mm2 and that of the diagonal is 6000 mm^2 	BT-1	Remembering
2.	Tabulate the forces in the members of the truss shown in figure. The cross sectional area and young's modulus of all the members are the same. 	BT-1	Remembering
3.	Estimate the reaction components as is shown in figure. i) Propped cantilever beam ii) Overhanging beam  	BT-2	Understanding

4.	Determine the force in various members of the pin-jointed frame as shown in Fig. If the member BC is short by an amount of δ. All members of the frame have same axial rigidity as AE. 	BT-1	Remembering
5.	Determine the horizontal reaction of the portal frame shown in Fig, by the energy method. Also, calculate the horizontal reaction when the member BC is subjected to the uniformly distributed load, w over entire length 	BT-1	Remembering
6.	Find the forces in the members of the truss shown in Fig.. The axial rigidities are same for all the members. 	BT-3	Applying
7.	Analyse the pin-connected plane frame shown in Fig. The cross-sectional area of each member is 3000 mm^2. Take E equal to 210 kN/ mm^2 .	BT-4	Analyzing

			
8.	Evaluate the frame shown in Fig., by consistent deformation method. Flexural rigidity is constant throughout the section. 	BT-5	Evaluating
9.	Determine the reaction components in the continuous beam in figure. EI is constant throughout by using consistent deformation method. 	BT-1	Remembering
10.	Determine the deflection and rotation at the free end of the cantilever beam shown in figure. Use unit load method. Given $E=2x10^5$ and $I=12x10^6$ mm^4. 	BT-2	Understanding
11.	Analyse the frame ABCD shown in Fig, by consistent deformation method.	BT-4	Analyzing

			
12.	Determine the deflection of the free end of cantilever of length L subjected to a point load 'W' at the free end. 	BT-2	Understanding
13.	Analyse the portal frame shown in Fig. by strain energy method. 	BT-4	Analyzing
14.	Determine the reaction components in the continuous beam in figure. EI is constant throughout by using energy method. 	BT-1	Remembering
PART C			
1.	List the force methods and explain in detail about any methods with an example.	BT-1	Remembering
2.	Write in detail about the Equilibrium, Compatibility and Force	BT-1	Remembering

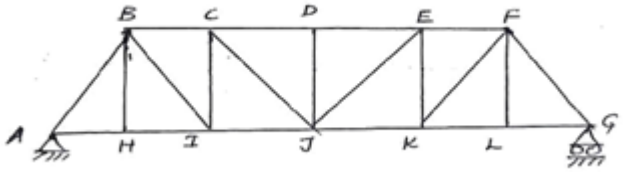
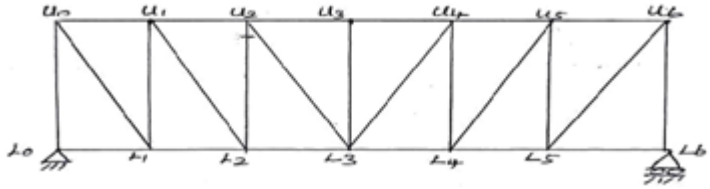
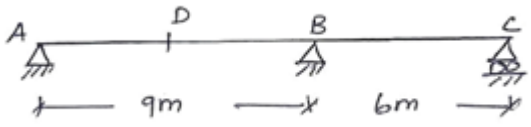
	displacement Relationships		
3.	Explain in detail about the (i) Plane frame(ii) Pin jointed Frame (iii) Rigid jointed Frame	BT-3	Applying
4.	Find the slope and deflections of a cantilever beam with point load at free end using energy methods	BT-6	Creating

UNIT II- MOVING LOADS AND INFLUENCE LINES

Influence lines for reactions in statically determinate structures- influence lines for members forces in pin-jointed frames- Influence lines for shear force and bending moment in beam sections- Calculation of critical stress resultants due to concentrated and distributed moving loads- Muller Breslau‟s principle – Influence lines for continuous beams and single storey rigid frames- Indirect model analysis for influence lines of indeterminate structures – Beggs deformeter.

PART A			
Q.No.	**Questions**	**BT Level**	**Competence**
1.	Write the importance of ILD?	BT-1	Remembering
2.	Muller Breslau's principle Define.	BT-1	Remembering
3.	What the types of connections possible in the model are of begs deformeter?	BT-1	Remembering
4.	Specify the influence line diagram?	BT-1	Remembering
5.	When a series of wheel loads move along a girder, what is the condition for getting maximum bending moment under any one point load?	BT-1	Remembering
6.	What is begg"s deforester?	BT-2	Understanding
7.	Explain similitude.	BT-2	Understanding
8.	Illustrate the principle of dimensional similarity.	BT-2	Understanding
9.	Where do you have the absolute maximum bending moment in a simply supported beam when a series of wheel loads cross it?	BT-2	Understanding
10.	Name the type of rolling load for which the absolute maximum bending moment occurs at the mid span of the beam.	BT-2	Understanding
11.	Differentiate rolling load and static load.	BT-3	Applying
12.	Write the absolute maximum bending moment due to a moving UDL longer than the span of simply supported beam.	BT-3	Applying
13.	Write the three types of connections possible with the model used with begs deformeter.	BT-3	Applying
14.	What do you understand by an influence line for bending moment?	BT-4	Analyzing
15.	Explain Maxwell-betti"s theorem.	BT-4	Analyzing
16.	What is meant by maximum shear force diagram?	BT-4	Analyzing
17.	Select the location of maximum shear force in a simple beam with any kind of loading.	BT-5	Evaluating
18.	Sketch a qualitative influence line diagrams for the support reactions of simply supported beam of span l.	BT-5	Evaluating
19.	Draw the influence line diagram.	BT-6	Creating

20.	Draw influence lines for support reactions in a simply supported beam.	BT-6	Creating
	PART B		
1.	A system of four loads 80, 160, 160 and 120 kN crosses a simply supported beam of span 25m with the 120 kN load leading. The loads are equally spaced at 1m. Determine the values of the following using influence lines. I. Absolute Maximum bending moment and shear force II. Maximum bending moment at 10m from the left support.	BT-1	Remembering
2.	A beam has a span of 24m, draw the influence line diagram for the bending moment and shear force at a section 8m from the left and section due to two point loads of 10kN and 6kN at a fixed distance of 2m apart rolling from left to right with 6kN load leading.	BT-1	Remembering
3.	Two point loads of 100kN and 200kN spaced 3m apart cross a girder of span 12 meters from left to right with the 100kN leading. I. Draw the ILD for shear force and bending moment and find the values of maximum bending moment II. Find the maximum shear force and bending moment at a section 4m from the left support. III. Find the absolute maximum bending moment and shear force	BT-1	Remembering
4.	A simply supported beam has a span of 16m, is subjected to a UDL (dead load) of 5kN/m and a UDL (live load) of 8kN/m (longer than the span) travelling from left to right. 1. Draw the ILD for shear force and bending moment at a section 4m from left end. 2. Use these diagrams to determine the maximum shear force and bending moment at this section.	BT-2	Understanding
5.	The following system of wheel load crosses a span 30m. Wheel load:16kN, 16kN,20kN, 30kN, Distance between centers: 3,3,5,5. I. To find the maximum value of BM II. Shear force in the span.	BT-3	Applying
6.	Determine the influence line diagram for bending moment at a point D, the middle point of span AB of a continuous beam ABC of span AB=6m and BC=4m simply supported at supports A,B and C. Compute the ordinates at every 1m interval.	BT-4	Analyzing
7.	The warren girder of 25m span is made of 5 panels of 5m each. The diagonals are inclined at 60° to the horizontal. Draw the influence line diagram for force in upper chord member in the second panel from left. Hence evaluate the forces in it when there is load of 60 kN at each lower joint.	BT-5	Evaluating
8.	Analysis the IL for force in member BC and CI for the truss shown in figure. The height of the truss is 9m and each segment is 9m	BT-6	Creating

	long.  		
9.	Draw the influence line diagram for the propped reaction of a propped cantilever beam having span 6m. EI=Constant.	BT-6	Creating
10.	Draw the influence line for $M_{B\ for}$ the continuous beam ABC simply supported at A and C using Muller Breslau`s principle. AB=3m, BC=4m.EI is constant.	BT-5	Evaluating
11.	Draw the influence line for R_A for the continuous beam ABC of span AB = BC = 4m Simply supported at A, B &C. Compute the ordinates at every 1m interval, EI= constant.	BT-5	Evaluating
12.	Evaluate and draw the ILD for the forces in members U_1 U_2 and L_1 L_2 of the trusses as shown in fig. 	BT-4	Analyzing
13.	In the simply supported girder of span 16m, carries a uniformly distributed load of 2 KN/m, 6m long crosses a girder. Determine the maximum Shear force and Bending Moment Diagram also calculate value at 5m and 8m from the left support.	BT-6	Creating
14.	Using Muller Breslau principle, draw the ILD for the bending moment at D. the middle ponit of span AB of a continuous beam shown in fig. compute the ordinates at 1m interval. Determine the maximum hagging bending moment in the beam when two concentrated loads of 8KN each and seperately by a distance 1m passes through the beam from left to right.  	BT-6	Creating
PART C			
1.	Find the ILD for the propped reaction of a propped cantilever beam having span 10m length. EI=Constant.	BT-1	Remembering
2.	Explain the following I. Importance of muller Breslau"s principle and Maxwell-	BT-1	Remembering

	betti"s theorem II. Beggs Deformeter and Indirect model analysis.		
3.	Explain Rolling load and static load with an example.	BT-4	Analyzing
4.	Write the applications of Muller Breslau Principle.	BT-6	Creating
	UNIT 3-ARCHES Arches as structural forms – Examples of arch structures – Types of arches- Analysis of three hinged parabolic and circular arches- Analysis of two hinged parabolic and circular arches- Analysis of fixed arches- Settlement and temperature effects		
1.	What is an arch? Explain.	BT-1	Remembering
2.	List the methods used for the analysis of fixed arches?	BT-1	Remembering
3.	Distinguish between two hinged and three hinged arches	BT-2	Understanding
4.	Rewrite the equation for a parabolic arch whose springing is at different levels.	BT-5	Evaluating
5.	State Eddy"s theorem as applicable to arches	BT-1	Remembering
6.	Explain the effect of temperature on the horizontal thrust of a two hinged arch subjected to a system of vertical loads?	BT-4	Analyzing
7.	Show the positions of a moving point load for maximum negative and positive Bending moments in a three hinged arch.	BT-3	Applying
8.	Rewrite the expressions for radial shear and normal thrust in a three hinged parabolic arch?	BT-5	Evaluating
9.	Define radial shear and normal thrust.	BT-1	Understanding
10.	Mention the examples where arch action is usually encountered	BT-1	Understanding
11.	Define a linear arch	BT-1	Remembering
12.	Discuss the degree of static indeterminacy of a three hinged parabolic arch	BT-2	Understanding
13.	Illustrate under what conditions will the bending moment in an arch be zero throughout	BT-3	Applying
14.	Compare the two hinged and three hinged arches	BT-6	Creating
15.	Explain how will you calculate the slope of the arch at any point in a parabolic arch with two hinges?	BT-4	Analyzing
16.	Explain how you will calculate the horizontal thrust in a two hinged parabolic arch if there is a rise in temperature.	BT-4	Analyzing
17.	Classify the arches according to their shapes	BT-2	Understanding
18.	Discuss the types of arches according to their support conditions	BT-2	Understanding
19.	Draw the influence line for radial shear at a section of a three hinged arch	BT-3	Applying
20.	Write the formula to calculate the change in rise in three hinged arch if there is a rise in temperature.	BT-6	Creating
	PART B		
1.	A circular three hinged arch of span 25m with a central rise of 5m is hinged at the crown and the end supports. It carries a point load of 100kN at 6m from the left support. Examine and Calculate	BT-1	Remembering

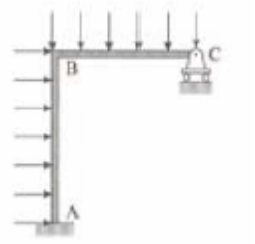
	i. The reaction at the supports (8 Marks) ii. Moment at 5m from the left support (8 Marks)		
2.	A three hinged circular arch of span 16m and rise 4m is subjected to two point loads of 100 kN and 80 kN at the left and right quarter span points respectively. Examine and find the reaction at the supports. Find also the bending moment, radial shear and normal thrust at 6m from left support.	BT-1	Remembering
3.	A symmetrical three hinged arch has a span of 50 & rise 5m. Find and examine the maximum bending moment at a quarter point of the arch caused by a uniformly distributed load of 10kN/m which occupies any portion of the span. Indicate the position of the load for this condition.	BT-1	Remembering
4.	A three hinged parabolic arch of span 30m and rise 5m carries a uniformly distributed load of 40kN per meter on the whole span and a point load of 200kN at a distance of 5m from the right end. Find and examine the horizontal thrust, resultant reaction, bending moment and normal thrust at a section 5m from the left end.	BT-2	Understanding
5.	A three hinged parabolic arch has supports at different levels having span 20m and carries a UDL of 30kN/m over the left half of the span. The left support is 5m below the crown and the right support is 4m below the crown. Draw the BMD. Also analyze and find the normal thrust and radial shear at a section 4m from the left support.	BT-4	Analyzing
6.	A parabolic two hinged arch has a span of 40m and a rise of 5m. A concentrated load 10kN acts at 15m from the left support. The second moment of area varies as the secant of the inclination of the arch axis. Calculate the horizontal thrust and reactions at the hinge. Also calculate maximum bending moment at the section.	BT-3	Applying
7.	Evaluate the horizontal thrust in a two hinged parabolic arch of span 10m and rise 25m carrying an UDL of 24 kN/m over the left half span, assuming secant variation of its sectional moment of area. Also calculate the Bending Moment at the crown and draw the BMD.	BT-5	Evaluating
8.	Analyse and derive the expression for horizontal thrust in a two hinged parabolic arch carrying a point load P at a distance one fourth span from left support .Assume $I=I_o \sec\theta$.	BT-4	Analyzing
9.	A two hinged parabolic arch of span L and rise h carries a riangular load covering a distance a from the left end,the intensity varying uniformly from zero to W. Discuss and obtain an expression for the horizontal thrust.	BT-2	Understanding
10.	Formulate the expression for horizontal thrust in a two hinged semi- circular arch of radius R, carrying a point load W at the crown.	BT-6	Creating
11.	A symmetrical three-hinged circular arch has a span of 13m and a rise to the central hinge of 3m. It carries a vertical load of 15kN at 3m from the left hand end. Analyze and find i) The reactions at the support (4 marks)	BT-4	Analyzing

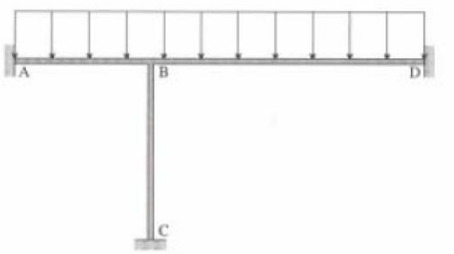
	ii) Magnitude of the thrust at the springings (4 marks) iii) Bending moment at 5m from the left hand hinge (5marks)		
12.	A two hinged parabolic arch of span 25m and rise 5m carries an udl of 38kN/m covering a distance of 10m from the left end. Calculate the i. Horizontal thrust (5 marks) ii. The reactions at the hinges (5 marks) iii. Maximum negative moment (6 marks)	BT-3	Applying
13.	A three hinged parabolic arch of 30m span and 6m central rise carries a point load of 8kN at a distance of 10m horizontally from the left hinge. Calculate the normal thrust, shear force at the section. Also calculate and discuss the maximum positive and negative bending moment.	BT-2	Understanding
14.	A three hinged parabolic arch is of span 48m and central rise 10m. It carries a udl of 0.75 t/m over the left hand half of span. Calculate the reactions at the end. Also estimate and find the values of the normal thrust, shear force and bending moment at 6m, 12m and 30m from left hinge.	BT-1	Remembering
	PART C		
1.	Explain the different types of arches with neat sketch	BT-1	Remembering
2.	(i) Is three hinged arch is statically determinate or not? Why? (ii) Settlement and temperature effect on arches (iii) Difference between three hinged and two hinged parabolic arch	BT-1	Remembering
3.	Calculate and discuss the maximum positive and negative bending moment for a three hinged parabolic arch of 3m span and 6m central rise carries a point load of 17kN at a distance of 20m horizontally from the left hinge. Calculate the normal thrust, shear force at the section.	BT-2	Understanding
4.	Derive the expression for horizontal thrust in a two hinged arabolic arch carrying point load W. Assume I=Io Secθ.	BT-2	Understanding

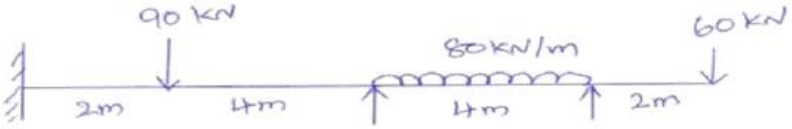
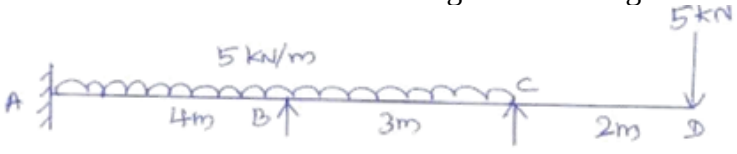
UNIT 4- SLOPE DEFLECTION METHOD

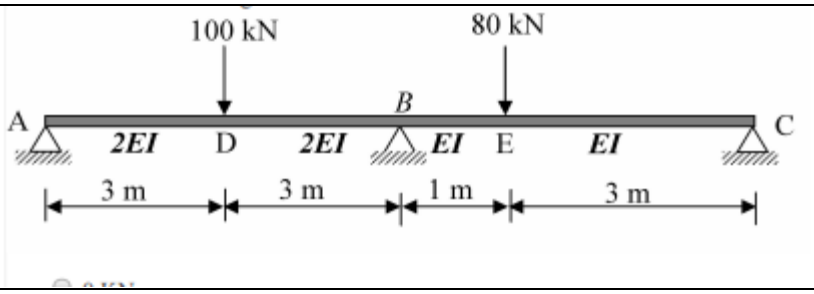
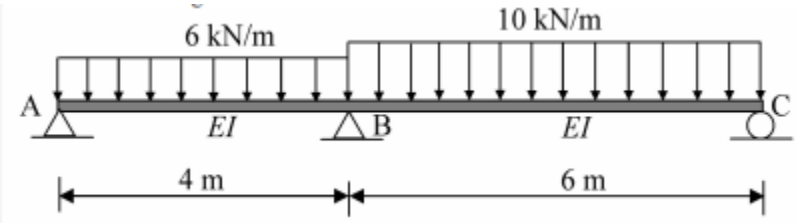
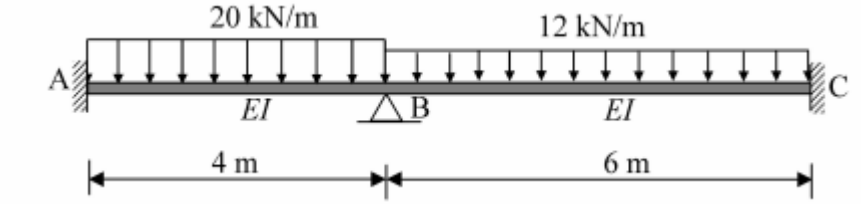
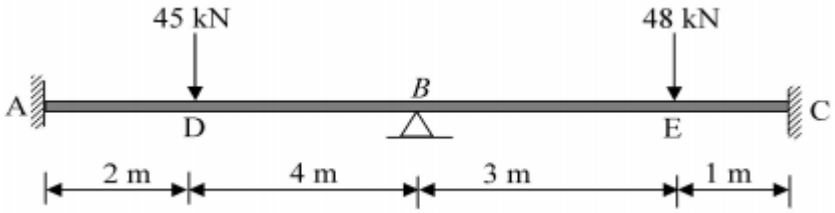
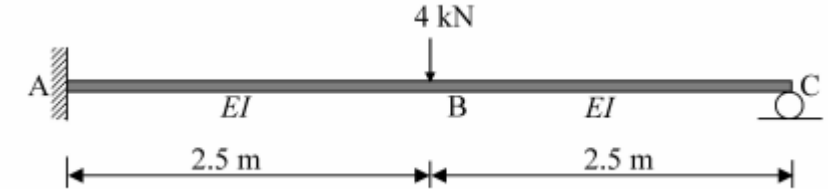
Continuous beams- Rigid frames (with sway)- Rigid frames (without sway)- Symmetry and anti-symmetry- Simplification for hinged end- Support displacements.

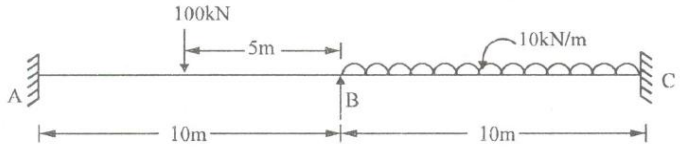
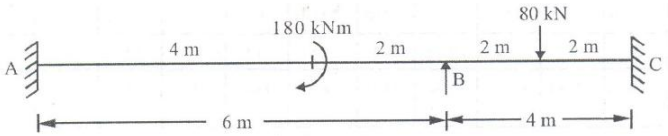
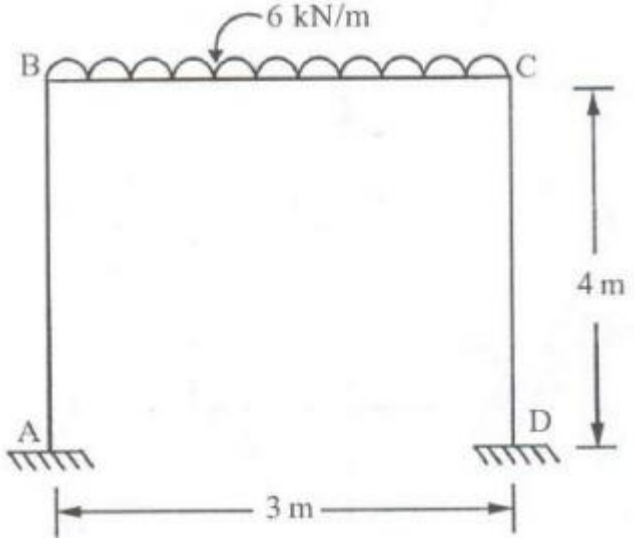
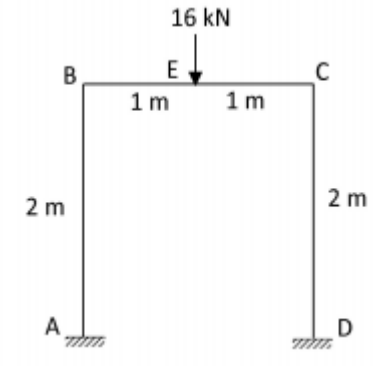
Part - A

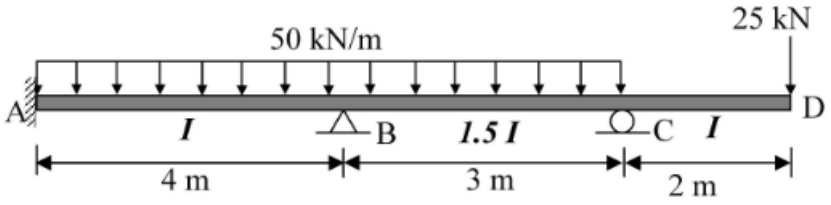
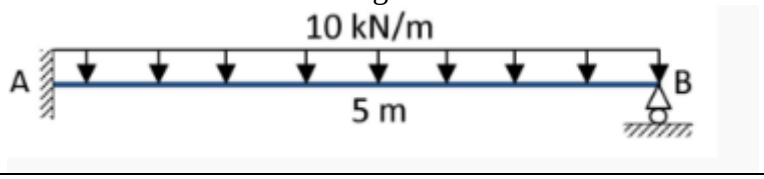
Q. No.	Questions	BT Level	Competence
1	What are the different support conditions?	BT-1	Remembering
2	What is static indeterminancy	BT-2	Understanding
3	What is kinematic indeterminancy	BT-2	Understanding
4	What is the relation between static indeterminancy and kinematic indeterminancy	BT-4	Analyzing
5	List the static and kinematic indeterminancy of different support conditions	BT-1	Remembering
6	Write the fixed end moment for a udl distributed for the full span.	BT-2	Understanding
7	Write the fixed end moment for a point load located at mid span.	BT-2	Understanding
8	What are the assumptions made in slope-deflection method?	BT-6	Creating
9	What is the limitation of slope-deflection equations applied in structural analysis?	BT-1	Remembering
10	Explain the use of slope deflection method.	BT-5	Evaluating
11	Write down the general slope deflection equations and state what each term represents.	BT-5	Evaluating
12	How many slope deflection equations are available for a two span continuous beam?	BT-2	Understanding
13	Write down the slope deflection equation for a beam AB fixed at A and B subjected to a settlement δ at B.	BT-2	Understanding
14	What are the quantities in terms of which the unknown moments are expressed in slope deflection method?	BT-1	Remembering
15	Mention the reasons due to which sway may occur in portal frames.	BT-6	Creating
16	What are the conditions at which side sway don't occour?	BT-2	Understanding
17	What are the sign conventions used in slope deflection method?	BT-4	Analyzing
18	Find the staticand kinematic indeterminancy for the figure shown below. 	BT-3	Applying
19	Find the staticand kinematic indeterminancy for the figure shown	BT-3	Applying

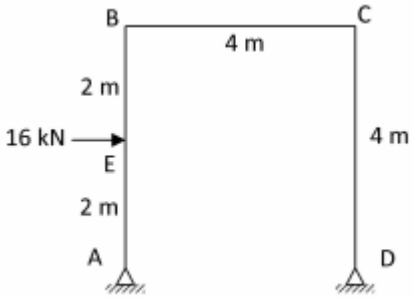
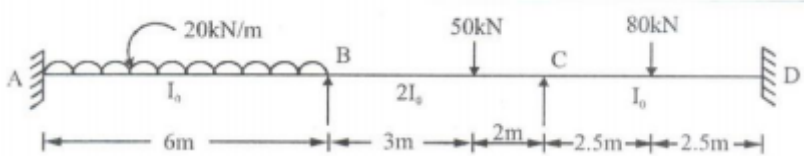
	below.  		
20	Find the staticand kinematic indeterminancy for the figure shown below.  	BT-3	Applying

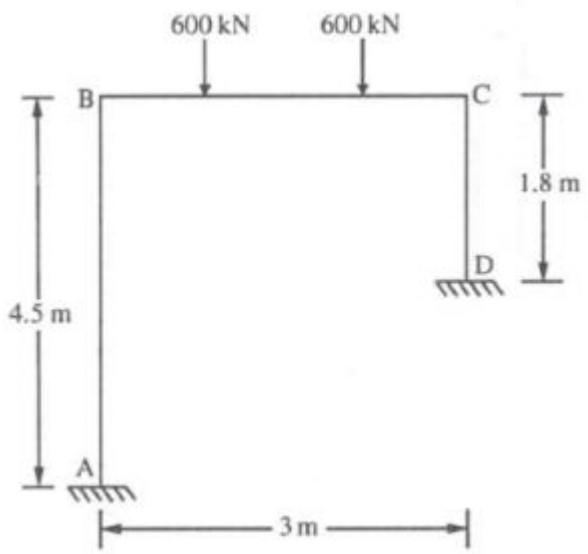
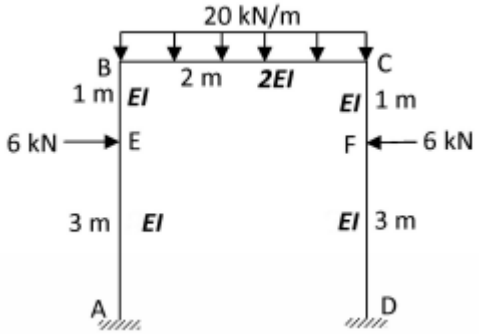
Part – B			
Q. No.	**Questions**	**BT Level**	**Competence**
1	A continuous beam ABC consist of span AB=3m and BC=4m, the ends A and C being fixed. AB and BC carry uniformly distributed loads of intensity 4kN/m and 5kN/m respectively. The beam is of uniform section throughout. What are its support moments? Draw the bending moment diagram for the beam	BT - 1	Remembering
2	Examine the given continuous beam and draw its BMD and SFD using slope deflection method. EI=Constant.  	BT-6	Creating
3	Analyse the continuous beam ABCD shown in fig. by slope deflection method and summarize its results .Take EI=Constant. Also sketch the shear force and Bending Moment diagram.  	BT-2	Understanding
4	Analyse the continious beam and draw the bending moment diagram.	BT-1	Remembering

			
5	Analyse the continious beam and draw the bending moment diagram. 	BT-1	Remembering
6	Calculate the bending moments at A, B, and C for the two-span continuous beam ABC. EI is constant. 	BT-2	Understanding
7	Calculate the bending moments at A, and C for the two-span continuous beam ABC. EI is constant. 	BT-3	Applying
8	Calculate the bending moment at B of the beam shown. The vertical settlement at support C is 10 mm. EI = 300 kN-m2 is constant throughout the section. 	BT-3	Applying
9	Calculate the bending moments at A, and C for the two-span continuous beam ABC. EI is constant.	BT-4	Analyzing

			
10	Calculate the bending moments at A, and C for the two-span continuous beam ABC. EI is constant. 	BT-2	Understanding
11	Analyse the frame by moment distribution method and draw bending moment diagram 	BT-4	Analyzing
12	Calculate the bending moment at E for the frame shown in figure. EI is same for all the members 	BT-5	Evaluating
13	Calculate the bending moment at B for the continuous beam ABCD. Young's modulus E is constant for all the sections.	BT-5	Evaluating

			
14	Calculate the bending moment of the beam shown. EI = 300 kN-m2 is constant throughout the section. 	BT-6	Creating

Part - C			
Q. No.	**Questions**	**BT Level**	**Competence**
1	Calculate the bending moment at C for the frame shown in the figure. EI is same for all the members. 	BT - 1	Remembering
2	Draw the bending moment diagram for the given beam by slope deflection method 	BT-2	Understanding
3	Analyse the frame by slope deflection method and draw bending moment diagram	BT-4	Analyzing

			
4	Analyse the frame by moment distribution method and draw bending moment diagram 	BT-4	Analyzing

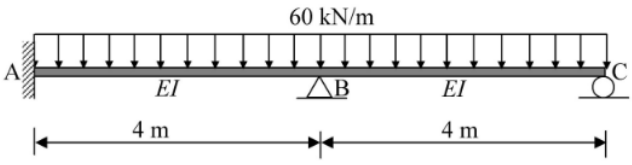
UNIT V MOMENT DISTRIBUTION METHOD

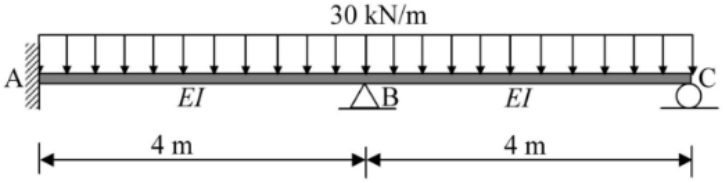
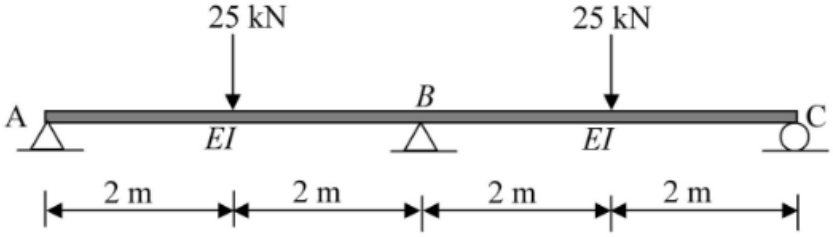
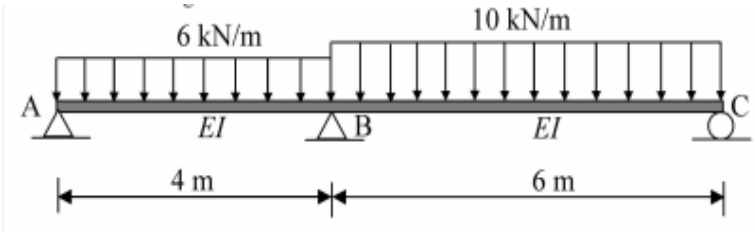
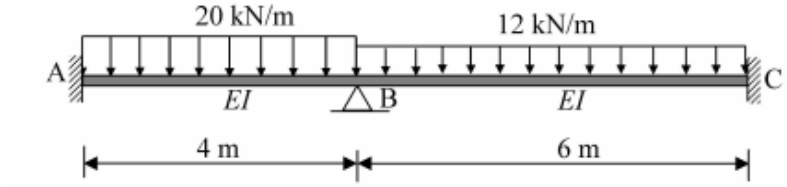
Distribution and carryover of moments- Stiffness and carry over factors- Analysis of continuous beams- Plane rigid frames without sway- Plane rigid frames with sway Naylor‟s simplification.

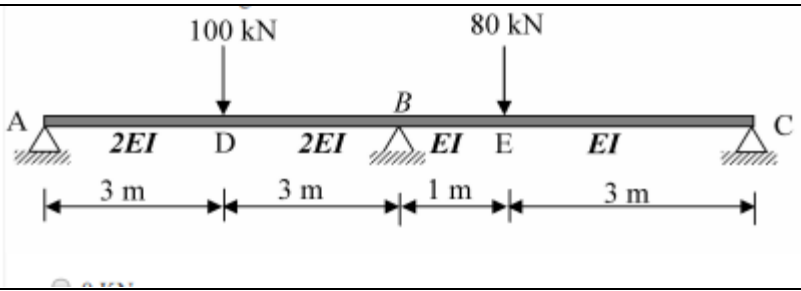
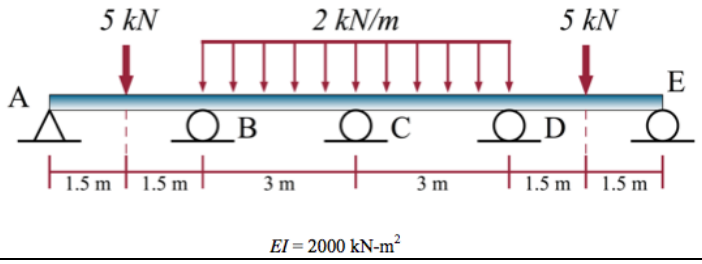
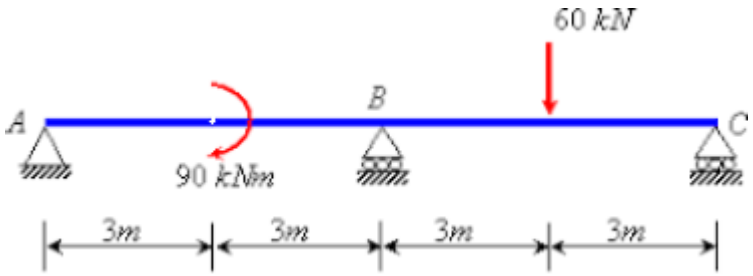
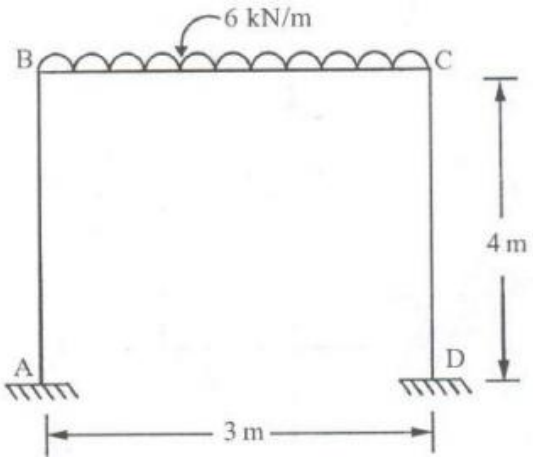
Part - A

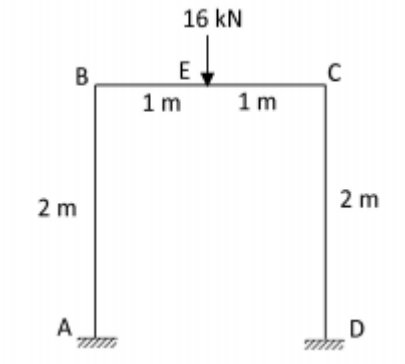
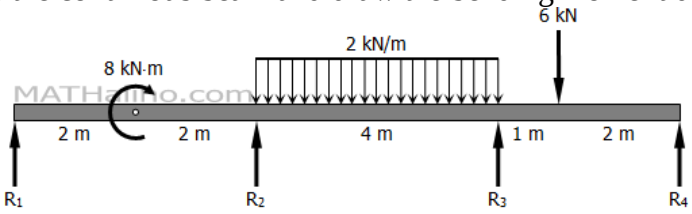
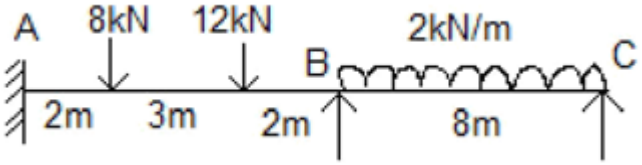
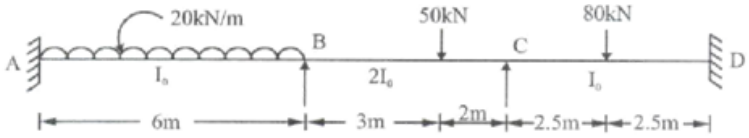
Q. No.	Questions	BT Level	Competence
1	Define Stiffness	BT-1	Remembering
2	Explain carry over factor	BT-6	Creating
3	What is carry over moment?	BT-1	Remembering
4	What are the advantages of Continuous beam over simply supported beam?	BT-3	Applying
5	Define: Moment distribution method (Hardy Cross method)	BT-1	Remembering
6	Explain the concepts involved in the Moment distribution method (Hardy Cross method).	BT-3	Applying
7	Define: Distribution factor	BT-1	Remembering
8	Define: Stiffness factor	BT-1	Remembering
9	Define sway.	BT-1	Remembering
10	What is sway correction?	BT-3	Applying
11	What do you understand by constant strength beam?	BT-2	Understanding
12	Mention any three reasons due to which sway may occur in portal frames.	BT-5	Evaluating
13	In a member AB, if moment of -10kNm is applied at A, What is the moment carried over to B?	BT-3	Applying
14	What is the sum of distribution factors at a joint?	BT-2	Understanding
15	Write the distribution factor for a given beam?	BT-4	Analyzing
16	A rigid frame is having totally 10 joints including support joints. Out of slope-deflection and moment distribution methods, which method would you prefer for analysis? Why?	BT-2	Understanding
17	State how the redundancy of a rigid frame is calculated	BT-4	Analyzing
18	Give the relative stiffness when the far end is (a) Simply supported and (b) Fixed.	BT-2	Understanding
19	What is the difference between absolute and relative stiffness?	BT-5	Evaluating
20	Explain Naylor simplification	BT-5	Evaluating

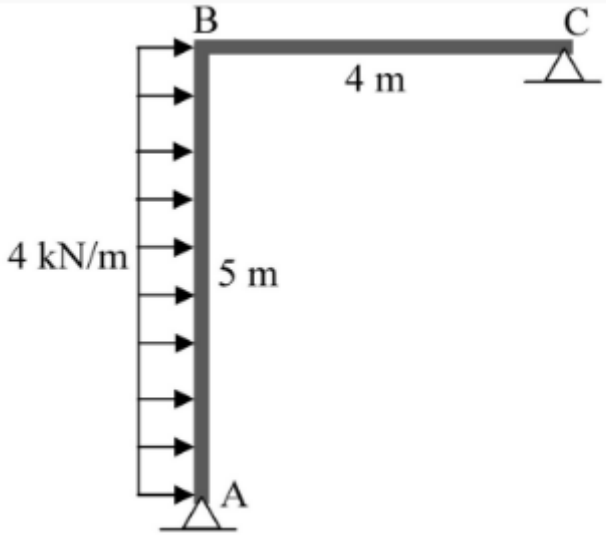
Part - B

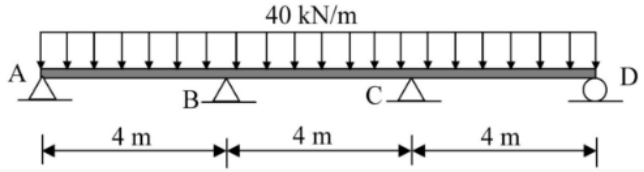
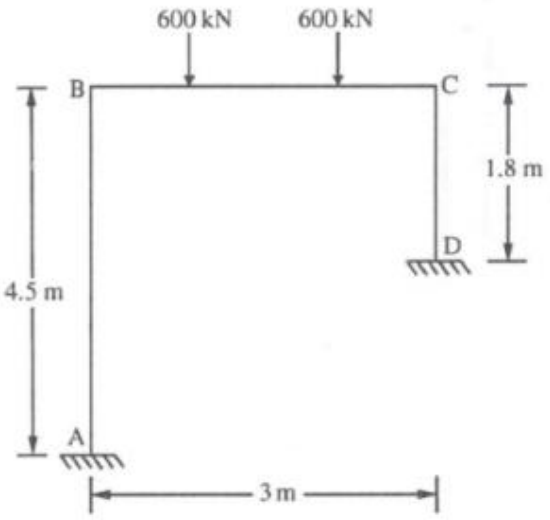
Q. No.	Questions	BT Level	Competence
1	Calculate the moment at B for the two-span continuous beam ABC. EI is constant. 	BT-1	Remembering

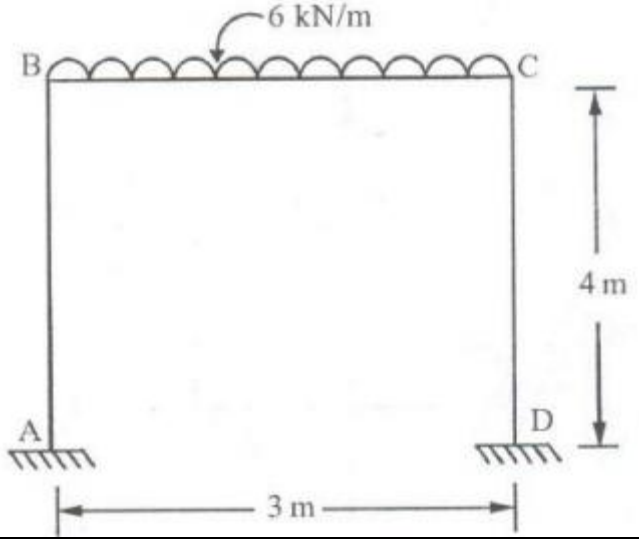
2	Calculate the mid-span moment for span AB and BC of the continuous beam ABC given below. EI is constant. 	BT-1	Remembering
3	Calculate the moment at B for the two-span continuous beam ABC. EI is constant. (Moment distribution method) 	BT-1	Remembering
4	Analyse the continious beam and draw the bending moment diagram. (Moment distribution method) 	BT-6	Creating
5	Calculate the bending moments at A, B, and C for the two-span continuous beam ABC. EI is constant.(Moment distribution method) 	BT-5	Evaluating
6	Analyse the continious beam and draw the bending moment diagram.	BT-3	Applying

			
7	Analyse the continious beam and draw the bending moment diagram.  $EI = 2000$ kN-m^2	BT-2	Understanding
8	Analyse the continious beam and draw the bending moment diagram. 	BT-2	Understanding
9	Analyse the frame by moment distribution method and draw bending moment diagram 	BT-3	Applying
10	Calculate the bending moment at E for the frame shown in figure. EI is same for all the members	BT-3	Applying

			
11	Analyse the continious beam and draw the bending moment diagram. 	BT-4	Analyzing
12	Analyse the continious beam and draw the bending moment diagram. 	BT-4	Analyzing
13	Draw the bending moment diagram for the given beam by moment distribution method 	BT-5	Evaluating
14	Calculate the bending moment for the segment given below. take EI = constant	BT-1	Remembering

Part - C			
Q. No.	**Questions**	**BT Level**	**Competence**
1	Draw the bending moment diagram for the given beam by moment distribution method 	BT-1	Remembering
2	Analyse the frame by moment distribution method and draw bending moment diagram 	BT-6	Creating
3	Analyse the frame by moment distribution method and draw bending moment diagram	BT-6	Creating

			
4	A Continuous beam ABCD fixed at A and D and continuous over supports B and C. The span AB=5m carries a central concentrated load of 10kN. The span BC=4m carries a uniformly distributed load of 4 kN/m over the entire span of BC. The span CD=6m carries a non-central concentrated load of 8 kN acting at a distance of 2m from the end D. Analyse the beam and draw bending moment diagram using moment distribution method and tabulate the results	BT-3	Applying