Seat No.

Total No. of Pages : 3

MAR_APR 2026 SUMMER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Theory of Structures

Sub. Code: 66873/81515/81792

Day and Date: Friday ,22-05-2026 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions:
1. **Assume suitable data wherever necessary and mention it boldly**
2. **Draw neat labelled diagrams wherever necessary**
3. **Figures to the right indicate full marks**
4. **Use of Scientific calculator is allowed**

Special Inst.:
1) **Q.no 1 & Q.no 5 are compulsory**
2) **Solve any two questions from Q.No- 2 to Q.No -4 & any two questions from Q.No 6 to Q.No -8**

Q1) Write a short note on **[7]**

a. Explain in detail kinematic indeterminancy of a structure **[2]**

b. Explain in detail Clayperons theorem of Three Moments **[3]**

c. What are the advantages of indeterminate structures over determinate structures? **[2]**

Q2) Analyse the given propped Cantilever beam using Consistent Deformation method.Draw SFD & BMD **[14]**

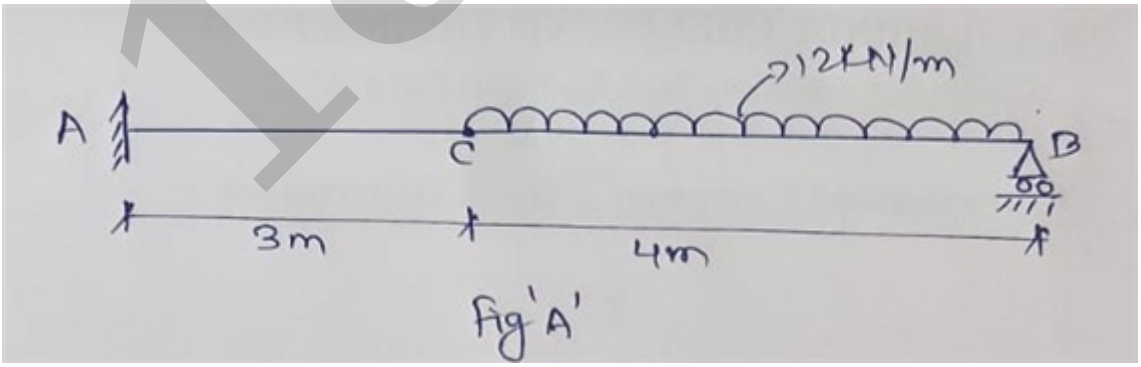

Fig 'A'

Q3) Analyse the continous beam by Clayperons theorem of Three moments & draw SFD & BMD **[14]**

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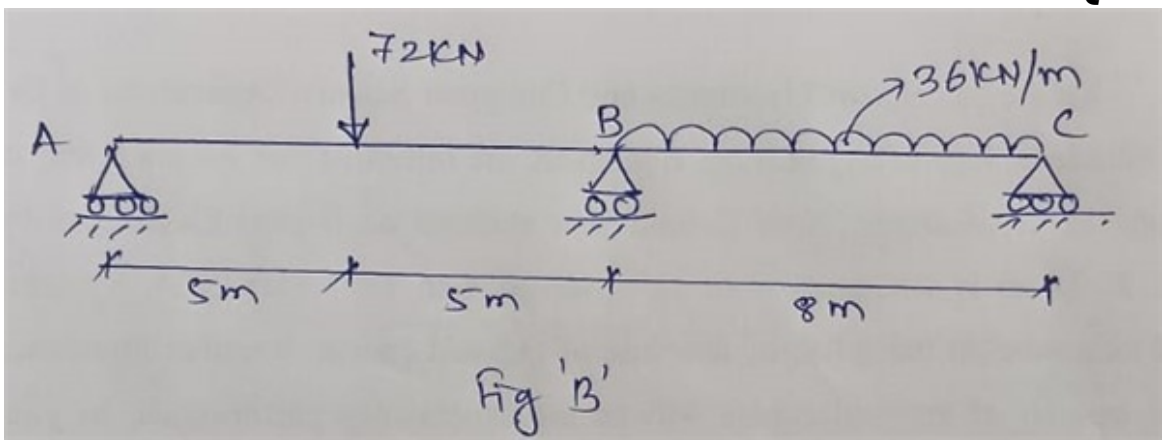

Fig 'B'

Q4) Find the horizontal deflection at support A using Unit Load Method. Youngs Modulus for all members is E=2.05 X 108 kN/m2 **[14]**

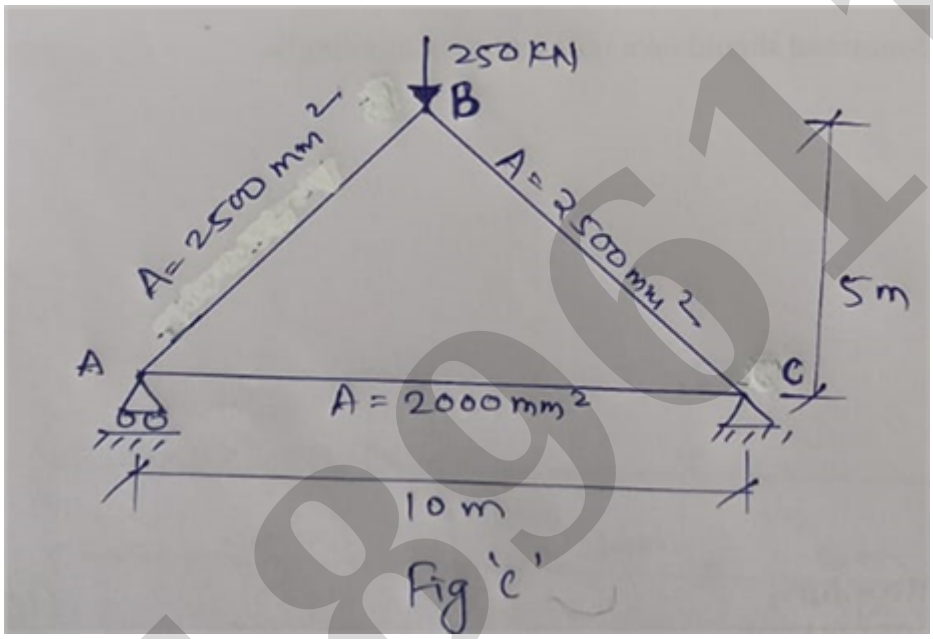

Fig 'C'

Q5) Write a short note on following **[7]**

a. Explain Slope Deflection method in detail **[2]**

b. Explain stiffness distribution factor used in moment distribution method **[2]**

c. Write down the properties of the matrix method of analysis **[3]**

Q6) Analyse the following beam using slope deflection method. EI is constant **[14]**

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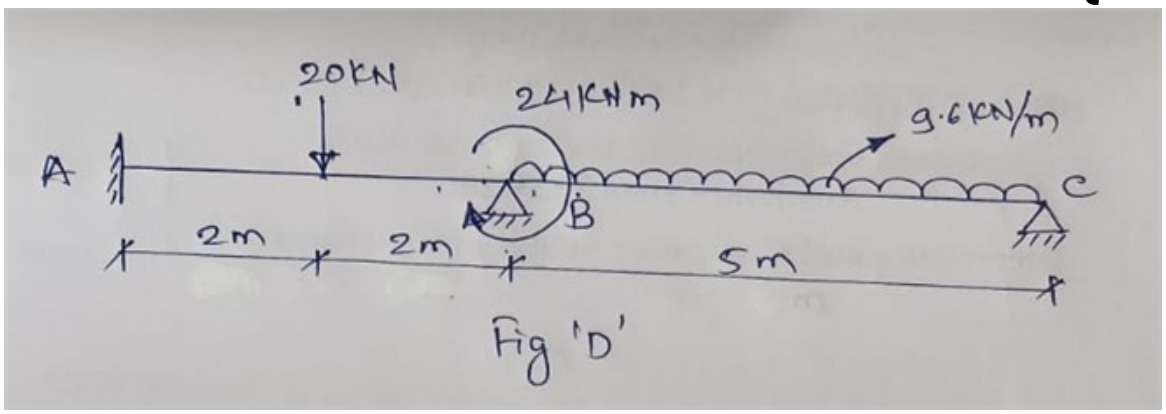

Fig 'D'

Q7) Analyse the following beam using Moment Distribution Method . The support at B sinks by 10 mm. The support at C sinks by 6 mm. take E= 12 kN/mm2 and I = 125 x 107 mm4 **[14]**

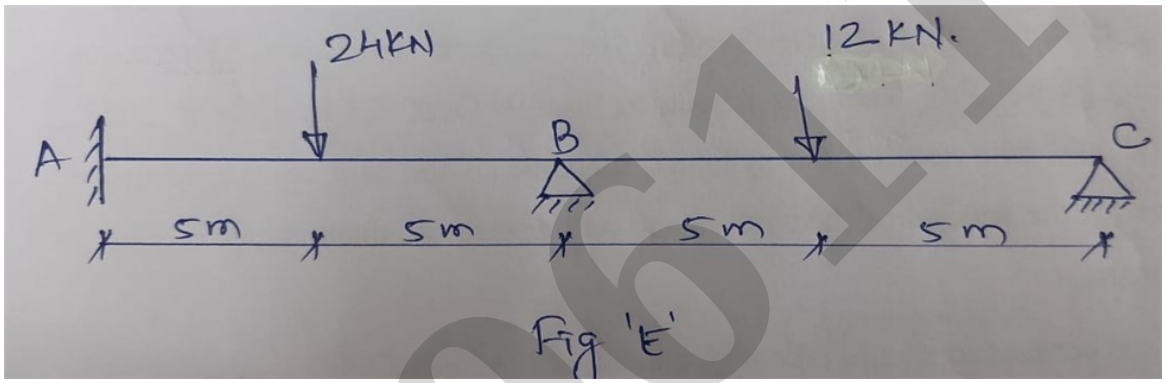

Fig 'E'

Q8) Analyse this beam using Fexibility matrix method **[14]**

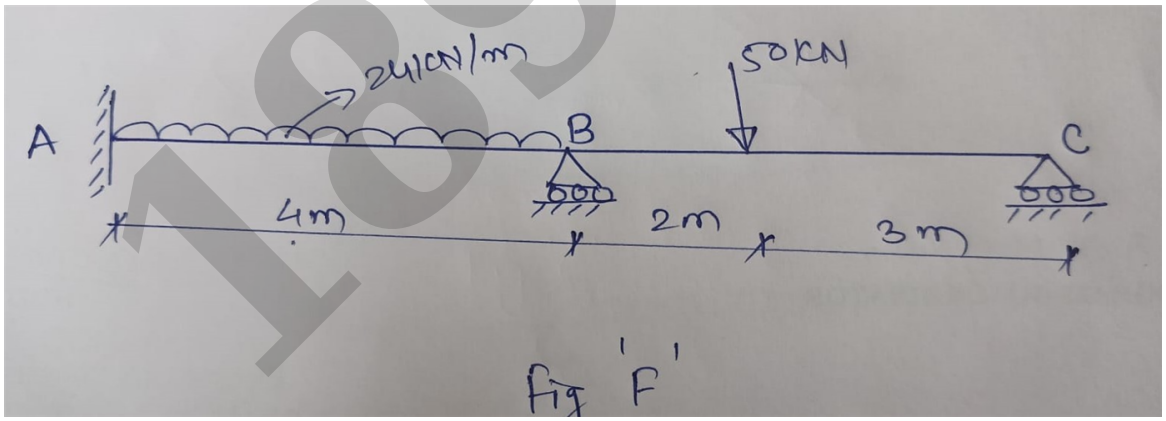

Fig 'F'

18961

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (1154) B.Tech. CBCS (81515) Theory of Structures Part 3 SEM 6
2] (101) Bachelor of Engineering (81792) Theory of Structures Part 3 SEM 6
3] (101) Bachelor of Engineering (66873) Theory of Structures Part 3 SEM 6