Model Question Paper (CBCS Scheme)

Fifth Semester B.E. Degree Examination (CIVIL)
Analysis of Indeterminate Structures (15CV52)

Time: 3 Hours   **Max. Marks: 80**

Note: Answer FIVE full questions, choosing one full question from each Module.

Module -1

1. A horizontal beam ABCD is loaded as shown in Fig. Q1. Plot SFD and BMD. Use slope deflection method. Support B settles by 10mm. $E = 2 \times 10^5$ N/mm^2 $I = 2.4 \times 10^6$ mm^4.
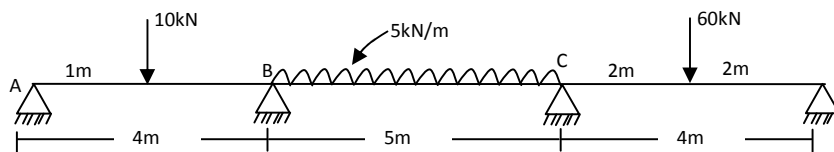
    (16 marks)

Fig. Q.1

OR

2. Analyze the frame shown in Fig. Q2 using slope deflection method. Draw BMD.   (16 marks)
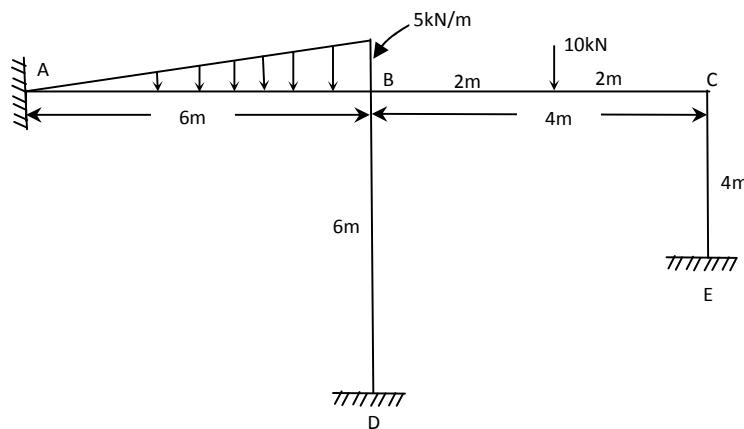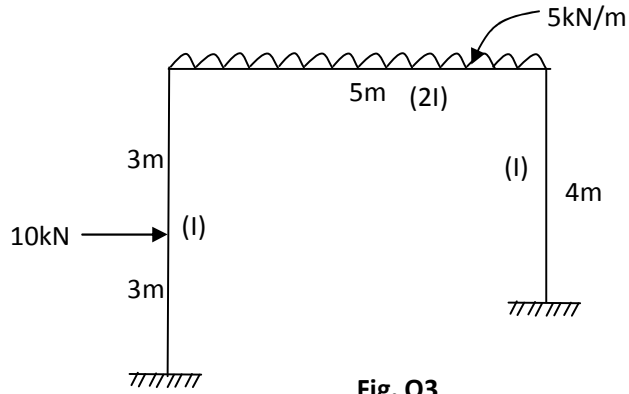

Fig. Q.2

Module -2

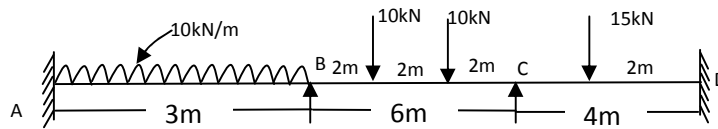3. Analyze the portal frame shown in Fig. Q3 using moment distribution method. Draw BMD (16 marks)

Fig. Q3

OR

4. Analyze the continuous beam shown in Fig.Q4 using moment distribution method. Draw SFD and BMD. (16 marks)
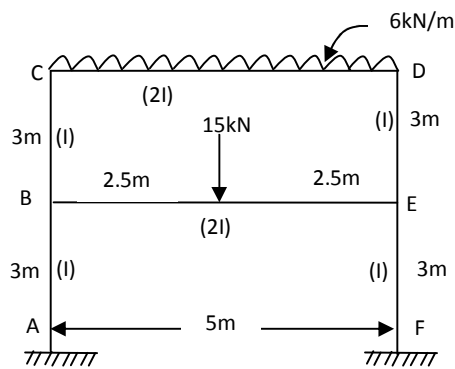

Fig.Q4

Module -3

5. Analyze the frame shown in Fig. Q5 using Kani's method taking advantage of symmetry. (16 marks)
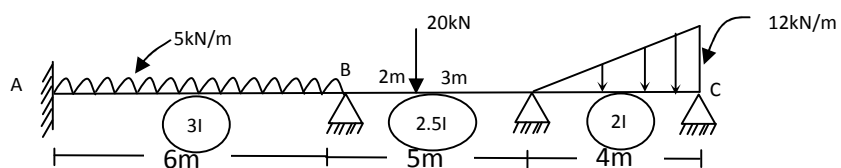   Draw BMD

Fig.Q5

OR

6. Analyze the beam shown in Fig.Q6 using Kani's method. Draw BMD and elastic curve. (16 marks)

Fig.Q6

Module -4

7. Using flexibility matrix method, analyze the beam shown in Fig. Q7. Sketch SFD and BMD   (16 marks)
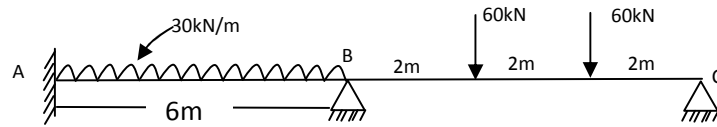

Fig.Q7

OR

8. Analyze the frame shown in Fig. Q8 using matrix flexibility method. Draw BMD   (16 marks)
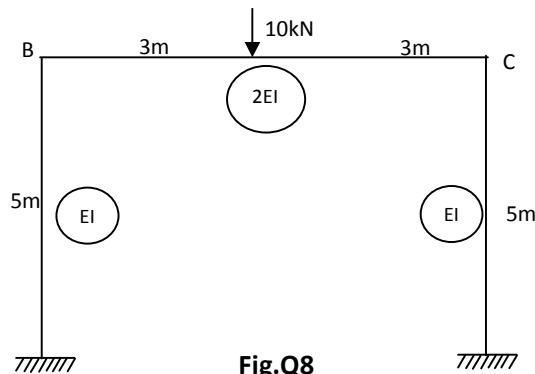

Fig.Q8

Module -5

9. Using stiffness method, determine forces in the members AB and BC of a pin jointed frame given in Fig. Q9. The cross sections are indicated in the brackets against each member. $E = 2 \times 10^5 \, N/mm^2$ (16 marks)
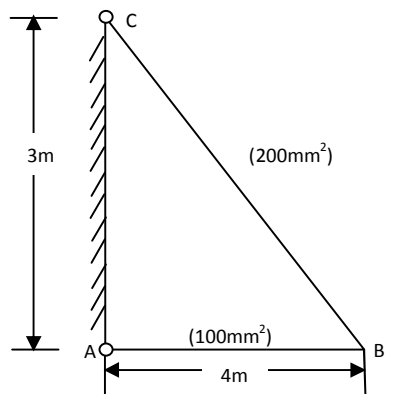

Fig.Q9

OR

10. Analyze the frame shown in Fig. Q10 using stiffness method. Draw BMD   (16 marks)
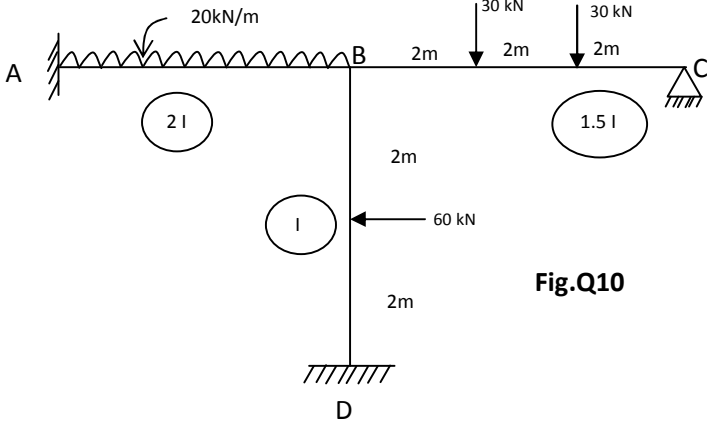

Fig.Q10