USN

Fifth Semester B.E. Degree Examination, Aug./Sept.2020
Analysis of Indeterminate Structures

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Assume missing data suitably.

Module-1

1 Analyze the continuous beam shown in Fig.Q.1 by slope deflection method BMD, SFD and elastic curve. **(20 Marks)**
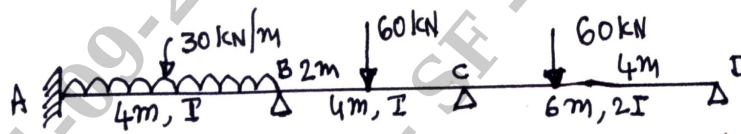

Fig.Q.1

OR

2 Analyze the Frame shown in Fig.Q.2 by slope deflection method. Draw BMD and elastic curve. **(20 Marks)**
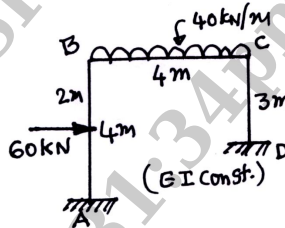

Fig.Q.2

Module-2

3 Analyze the continuous beam shown in Fig.Q.3. Using moment distribution method. Draw BMD, SFD and EC if support A yields by 0.002 radians in clockwise direction, support B sinks by 30mm and support 'C' sink by 20mm. Take $EI = 480kN\text{-}m^2$. **(20 Marks)**

Fig.Q.3

OR

4 Analyze the frame shown in Fig.Q.4 by MD method and draw BMD and EC. **(20 Marks)**
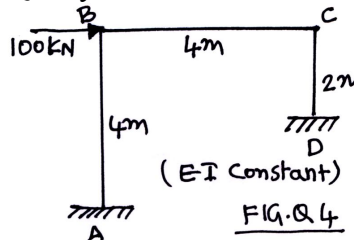

Fig.Q.4

Module-3

5 Analyze the frame shown in Fig.Q.5 using Kani's method. Draw BMD and EC. **(20 Marks)**

Fig.Q.5

OR

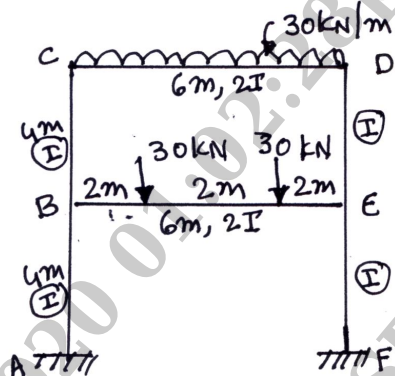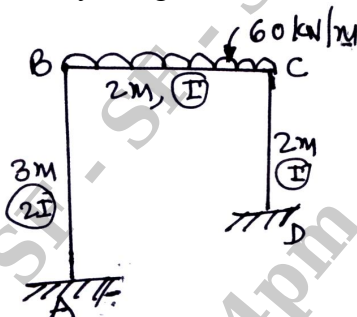**6** Analyze the frame shown in Fig.Q.6 by using Kani's method. Draw BMD. **(20 Marks)**

Fig.Q.6

Module-4

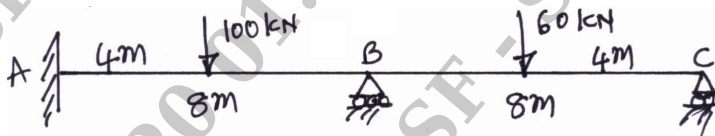**7** Analyze the continuous beam shown in Fig.Q.7 using flexibility matrix method. Draw BMD and SFD. **(20 Marks)**

Fig.Q.7

OR

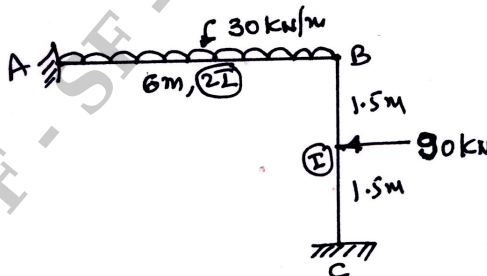**8** Analyze the frame shown in Fig.Q.8 by using flexibility matrix method. Draw BMD. **(20 Marks)**

Fig.Q.8

Module-5

9 Analyze the truss shown in Fig.Q.9 using stiffness matrix method. It cross sectional areas of vertical member 300mm^2 and inclined members area 200mm^2. Take E = 2×10^5N/mm^2.
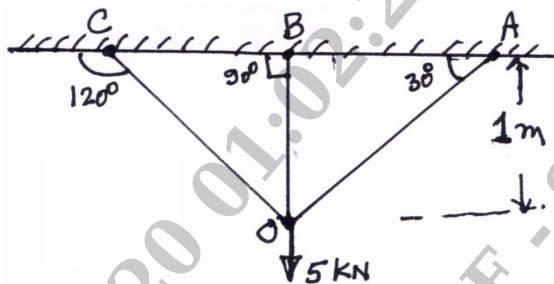
(20 Marks)

Fig.Q.9

OR

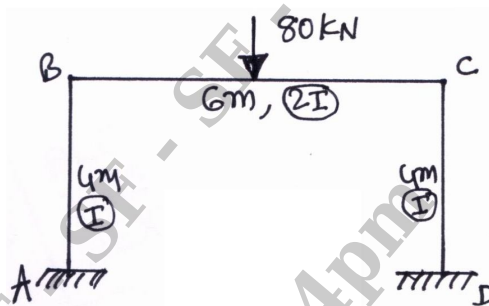**10** Analyze the Portal frame shown in Fig.Q.10 by using stiffness method. Draw BMD and EC.

(20 Marks)

Fig.Q.10

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