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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Fifth Semester, B.E. - Civil Engineering

Semester End Examination; Dec. - 2014

Analysis of Structures - II

Time: 3 hrs *Max. Marks: 100*

Note: *i) Answer any **FIVE** full questions, selecting at least **TWO** full questions from each part.*
ii) Assume suitable missing data if any.

PART - A

1. Find the forces in the members of the pin jointed plane truss shown in Fig. Q (1).Assume 'AE' to be constant for all members. 20

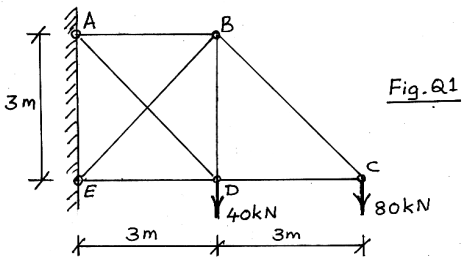

Fig.Q1

2. Analyse the continuous beam shown in Fig. Q (2) by slope –deflection method. Sketch BMD, SFD and elastic curve. 20

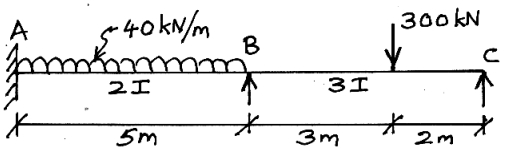

Fig.Q2

3. Analyse the continuous beam shown in Fig. Q (3) by moment- distribution method. Support 'A' settles by 10 mm, 'B' by 30 mm and 'C' by 20 mm. Sketch BMD and elastic curve. Take EI = 480 kN-m^2 20

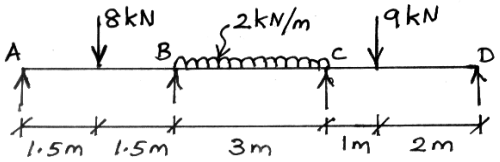

Fig.Q3

4. Analyse the frame shown in Fig. Q (4) by moment distribution method. Draw BMD and elastic curve. 20

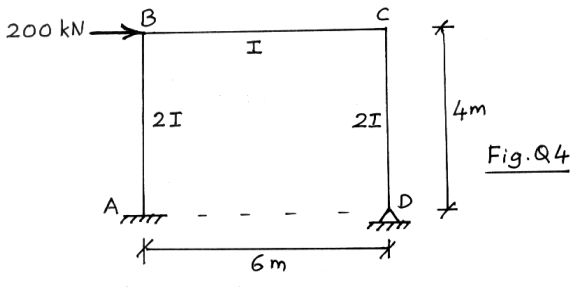

Fig.Q4

Contd…2

PART - B

5. Analyse the frame shown in Fig. Q (5) by Kani's method. Assume 'EI' to be constant for all members. Sketch BMD. 20

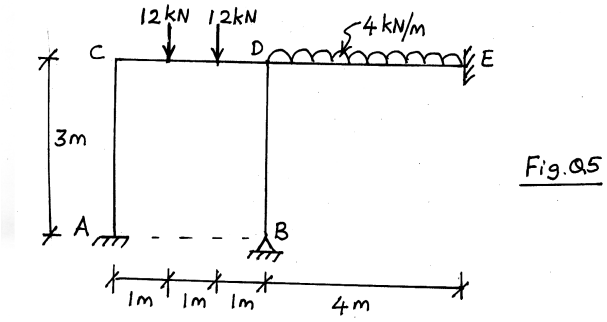

Fig.Q5

6. Analyse the continuous beam shown in Fig. Q (6) by flexibility matrix method. Sketch BMD, SFD and elastic curve. 20

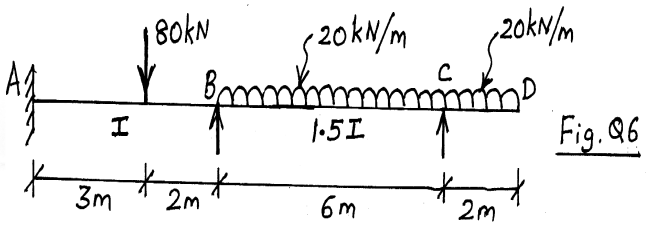

Fig. Q6

7 Analyse the continuous beam shown in Fig. Q (7) by stiffness matrix method. Sketch BMD and elastic curve. 20

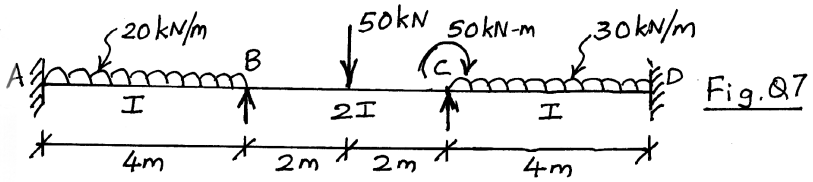

Fig. Q7

8 a. Derive the differential equation of motion for undamped free vibration of single degree of freedom system. 10

b. Obtain the cyclic frequency and period of the system shown in Fig 8(b).Assume E = 200 GPa and I = 86×10^6 mm^4 10

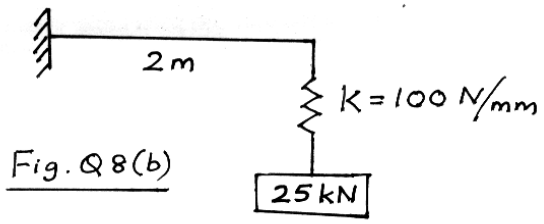

Fig. Q8(b)

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