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Fifth Semester B.E. Degree Examination, June/July 2016
Structural Analysis – II

Time: 3 hrs. Max. Marks:100

Note: 1. ***Answer FIVE full questions, selecting at least TWO questions from each part.***
2. Missing data, if any, may be suitably assumed.

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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PART – A

1 a. Find the shear force at 'x' using influence line diagram, for the beam show in Fig. Q1(a) **(08 Marks)**

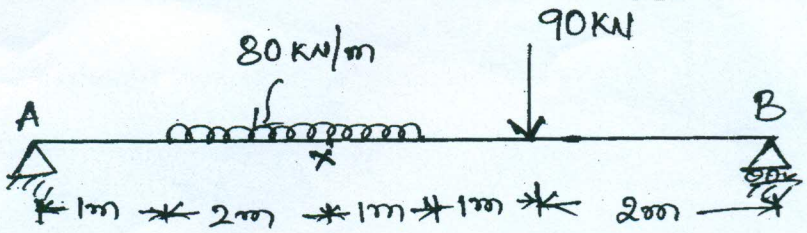

Fig. Q1(a)

b. A train of Five wheel loads crosses a simple span of 30 meters. Calculate the maximum positive and negative shear at midspan and the absolute maximum bending moment anywhere in the span. **(12 Marks)**

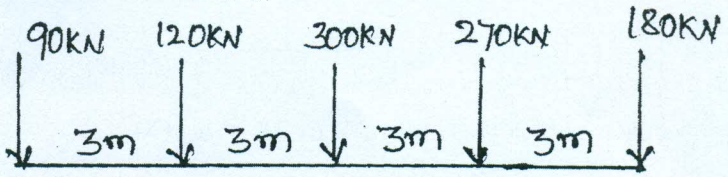

Fig. Q1 (b)

2 Analyse the frame shown in Fig Q2 by using slope deflection method. Draw BMD and SFD. **(20 Marks)**

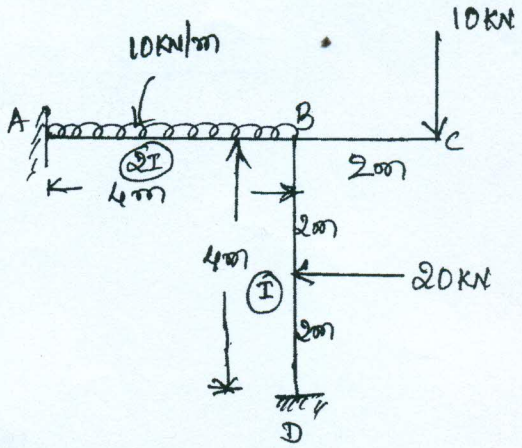

Fig. Q2

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3 Analyse a continuous beam shown in Fig Q3. Using moment distribution method. Sketch SFD and BMD. (EI constant). **(20 Marks)**

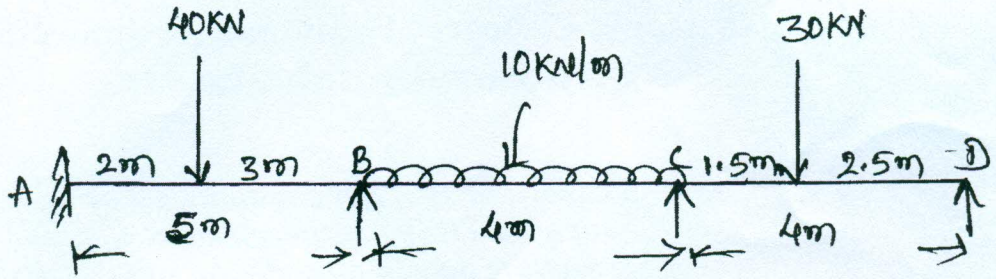

Fig. Q3

4 Analyse the frame shown in Fig Q4 by moment distribution method. Draw the bending moment diagram. (EI constant). **(20 Marks)**

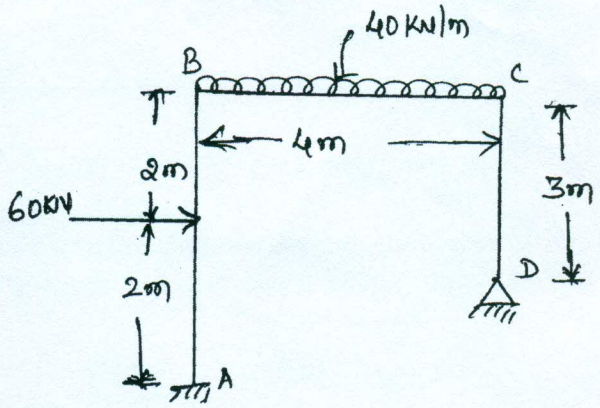

Fig. Q4

PART – B

5 Analyse the frame in Fig Q5 by Kani's method. Draw the bending moment diagram. **(20 Marks)**

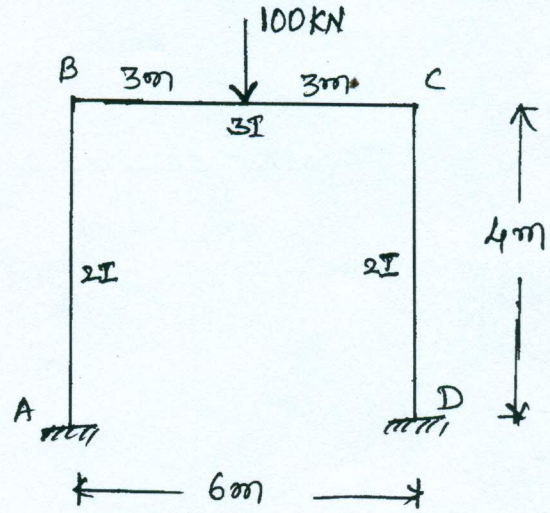

Fig. Q5

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6 Analyse the frame shown in Fig. Q6 by using Flexibility matrix method. Use system approach. Draw BMD. **(20 Marks)**

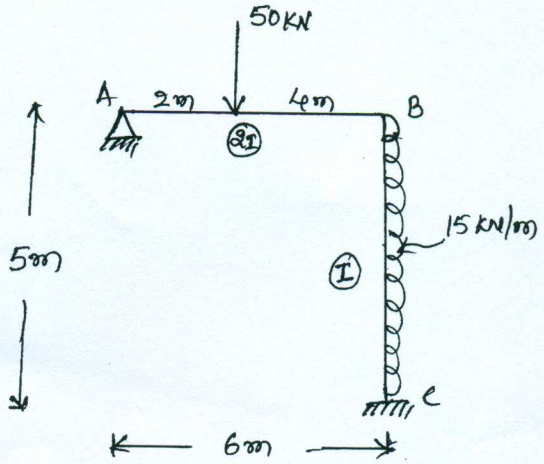

Fig. Q6

7 Analyse the continuous beam shown in Fig.Q7 by using stiffness matrix method. Use system approach Draw BMD. **(20 Marks)**

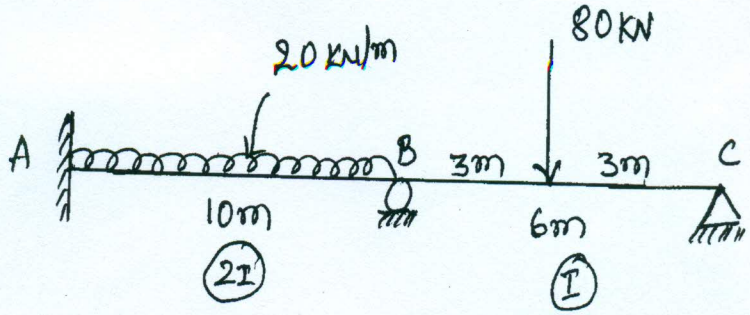

Fig. Q7

8 a. Explain degrees of freedom, free vibration, natural frequency and damping. **(08 Marks)**

b. Determine natural frequency and period of the system as shown in Fig. Q8(b). Take $I = 6.5\times10^7 mm^4$ and $E = 2\times10^5 N/mm^2$. **(12 Marks)**

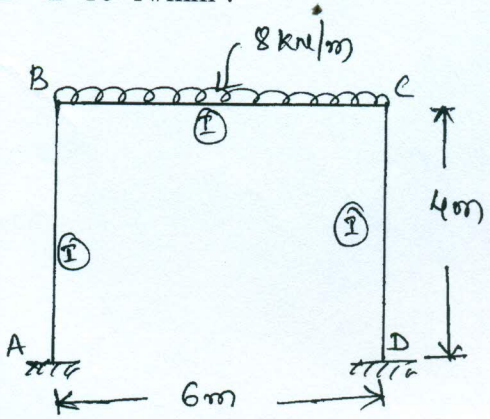

Fig. Q8(b)

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