7. a) Give a comparison of flexibility and stiffness matrix method of analysis. 7
   b) For a cantilever beam with a single coordinate for force displacement measurement show that flexibility coefficient is inverse of stiffness coefficient. 7

Or

8. Analyse the frame shown in figure 7 and draw the BMD. Consider only the flexural deformations and take EI as constant throughout. 14

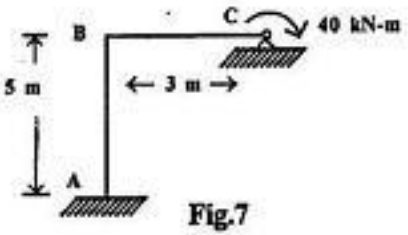
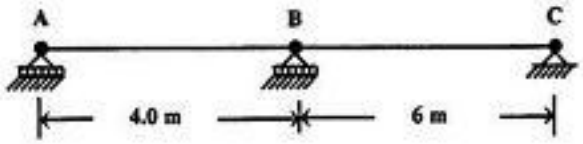


Fig.7

9. Calculate the ordinates of influence line diagram for support moment M_B for continuous beam shown in figure 8. Compute the ordinates at every 1m interval. 14



Draw ILD for M_B Fig.8 EI = Constant

Or

10. Draw influence line diagram for R_B for continuous beam shown in figure 8. Compute the ordinate at every 1m interval. 14

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Total No. of Questions : 10] *[Total No. of Printed Pages :4*

Roll No .....

CE - 601

B.E. VI Semester

Examination, June 2014

Theory of Structures - II

Time : Three Hours

Maximum Marks : 70

Note : Attempt five questions. All questions carry equal marks. Assume any data suitably, if missing and mention it clearly.

1. Analyse the portal frame shown in figure 1 by moment distribution method. Draw BMD and sketch the deflected shape of the frame. 14

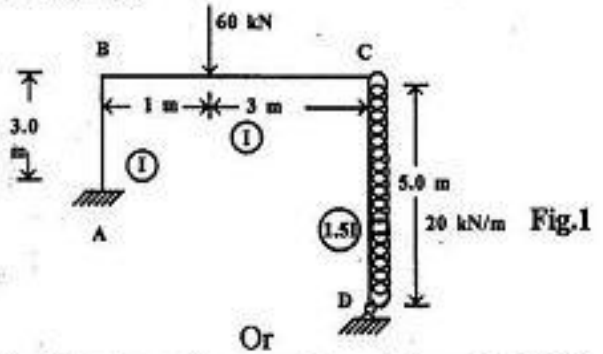

Fig.1

Or

2. Determine the support moments and draw BMD for the continuous beam shown in figure 2 by Kani's method. 14

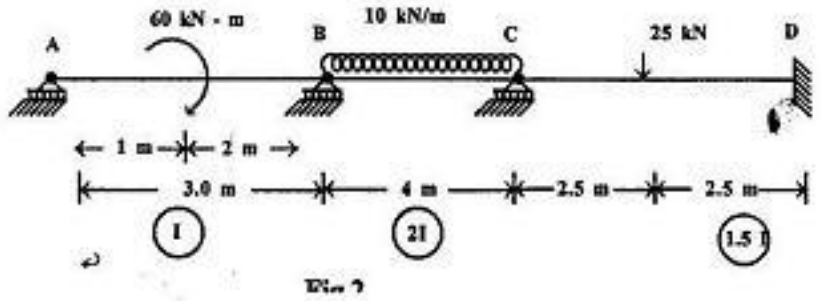

Fig. 2

3. a) Find the shape factor for Triangular section. 7
   b) Determine collapse load in the fixed beam shown in figure-3. 7

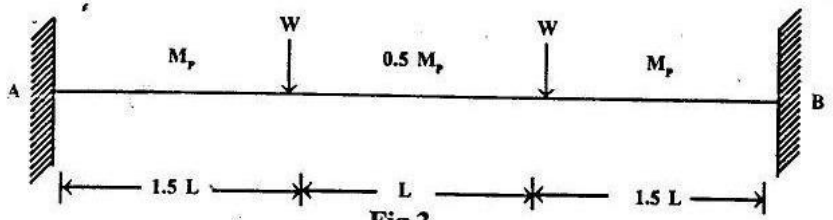

Fig.3

Or

4. a) Explain the following terms: 6
   i) Load factor
   ii) Shape factor
   iii) Plastic hinge
   b) Collapse loads acting on the frame ABCD are shown in figure-4. Determine the plastic moment capacity of the section required. Assume the same section throughout. 8

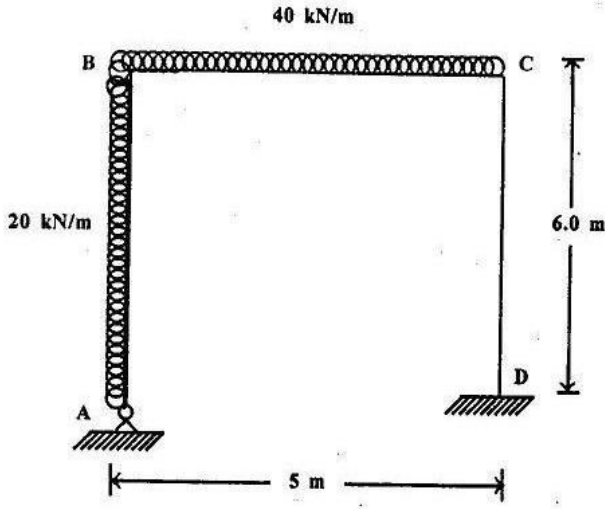

Fig.4

5. Analyse the substitute frame section shown in figure 5 for the maximum positive and negative bending moments in the beam AB, BC and CD. The frames are spaced at 3.5 m intervals. Use the following data to estimate the moments in beams and columns. Live load = 2.5 kN/m², Dead load = 3.0 kN/m². Self weight of beam = 2.0 kN/m², Beam and columns are of the same section. 14

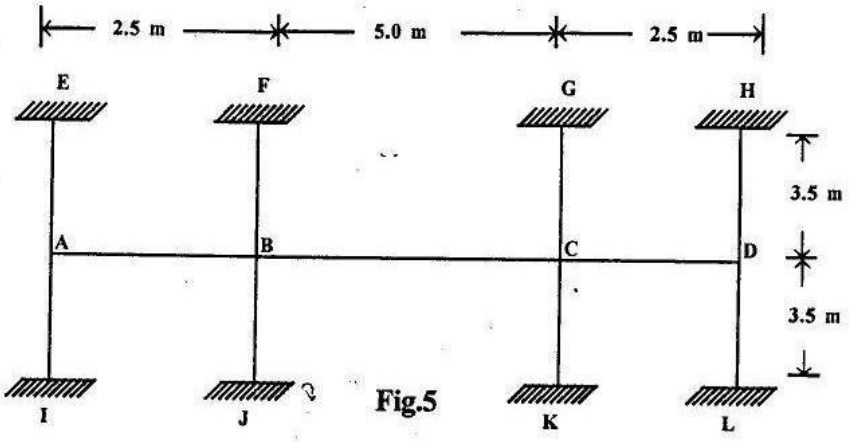

Fig.5

Or

6. a) Explain the method of calculation of wind load for a multistoreyed building as per IS;875. 6
   b) Analyse the frame shown in figure 6 by portal method. 8

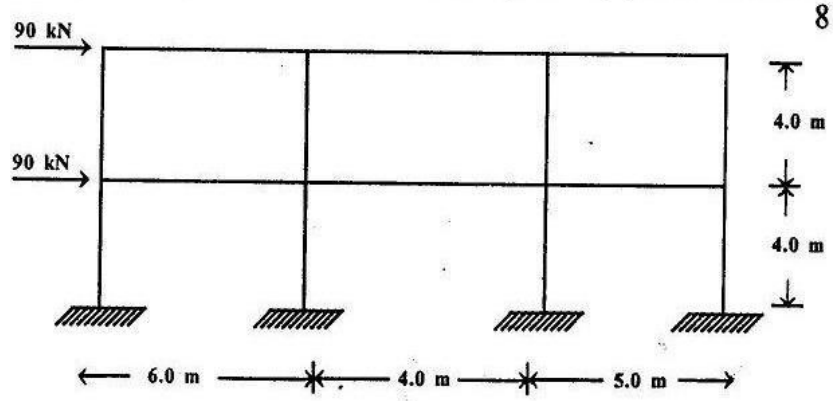

Fig.6