c) Draw ILD for reaction at B for the beam shown in figure 7.

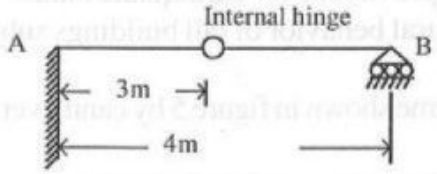

Fig. 7

d) Draw ILD for reaction at A of continuous beam shown in figure 8. Compute ordinates at 1.0m interval.

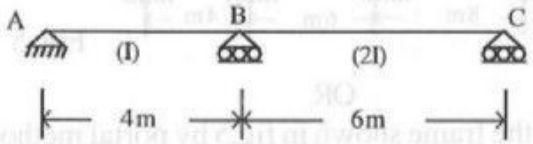

Fig. 8

OR

Draw ILD for BM at B for continuous beam shown in fig.8. Compute ordinates at 1.0m interval.

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Roll No .....

CE - 601

B.E. VI Semester

Examination, December 2015

Theory of Structures-II

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

1. a) Explain rotation factors.

b) Discuss joint restrained moment.

c) Mention the expressions for sway moments at the two column heads.

d) Analyse the frame shown in figure 1. by moment distribution method and draw BMD.

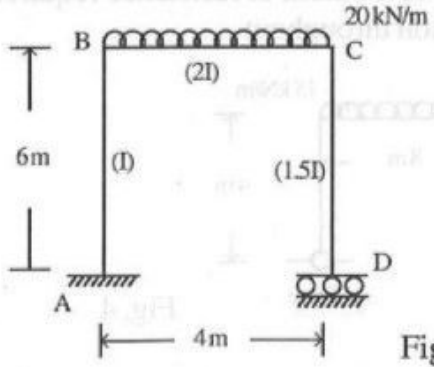

Figure 1

OR

Analyse the continuous beam as shown in figure 2 by Kani's method. Draw SFD and BMD.

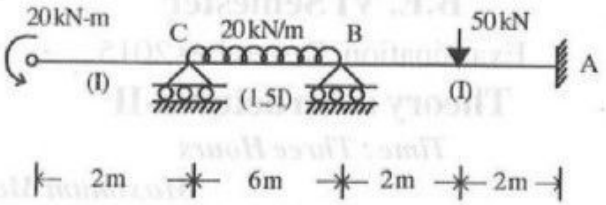

Fig. 2

a) Differentiate between elastic hinge and plastic hinge.
b) Explain beam and sway mechanism.
c) Define load factor and drive expression for it.
d) A two span continuous beam of uniform section loaded with ultimate loads as shown in figure3. Determine the required plastic moment of resistance.

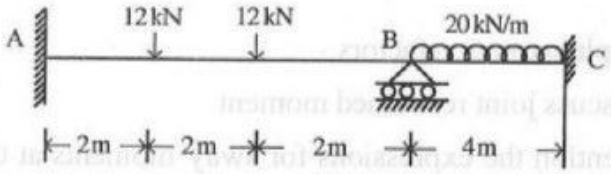

Fig. 3

OR

A portal frame is loaded upto collapse shown in figure 4. Find the plastic moment of resistance required if it is of uniform section throughout.

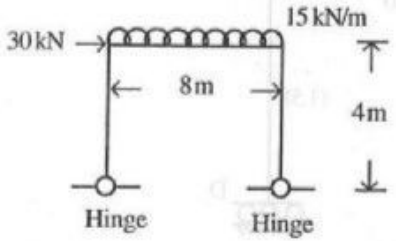

Fig. 4

Contd...

3. a) Define wind and wind load.
   b) Discuss codal provisions for earthquake loads.
   c) Discuss structural behavior of tall buildings subjected to lateral forces.
   d) Analyse the frame shown in figure 5 by cantilever method.

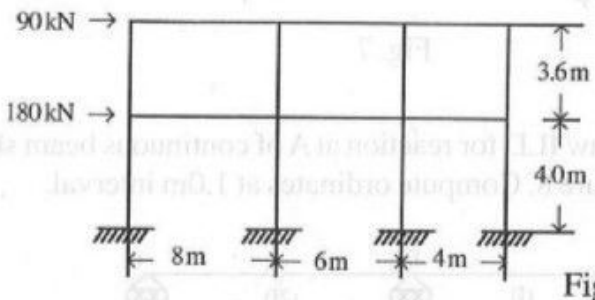

Fig. 5

OR

Analyse the frame shown in fig.5 by portal method.

4. a) Explain co-ordinates related to matrix method.
   b) Explain flexibility matrix.
   c) Derive relation between flexibility and stiffness matrices.
   d) Analyse the continuous beam shown in figure 6 by flexibility matrix method.

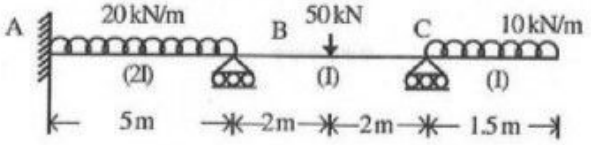

Fig. 6

OR

Analyse the continuous beam shown in fig-6 by stiffness method.

5. a) State Muller Breslau's principle.
   b) Explain Beam-column. How the structural behavior of a beam column does differs from column.

P.T.O.