Total No. of Questions : 10] [Total No. of Printed Pages : 5

Roll No. ....

CE-601

B. E. (Sixth Semester) EXAMINATION, June, 2009

(Civil Engg. Branch)

THEORY OF STRUCTURES – II

(CE – 601)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt any *five* questions, selecting *one* question from each Unit. Assume any data suitably, if missing and mention it in answer book.

Unit – I

1. (a) Mention the causes of side sway of portal frames. 5

   (b) Analyse the frame shown below fig. 1 by Moment Distribution method. Draw the B. M. diagram and sketch the deflected shape of the frame. 15
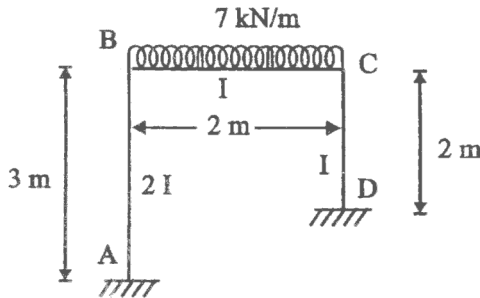

Fig. 1

P. T. O.

Or

2. (a) What are the advantages of Kani's method particularly over Moment Distribution method of analysis of frames ? 5
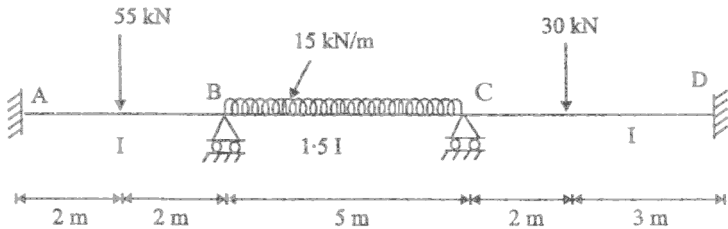
(b) Analyse the continuous beam shown in fig. 2. 15

Fig. 2

Unit – II

3. (a) Differentiate plastic analysis of structures with elastic analysis. 10

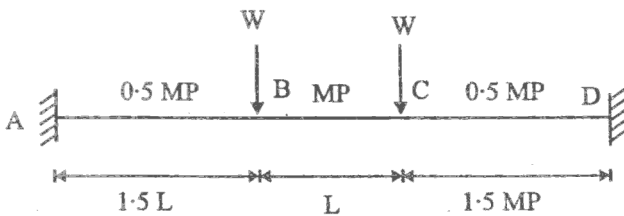(b) A fixed beam is shown in fig. 3. Find the value of the collapse load. 10

Fig. 3

Or

4. Determine the value of W at collapse for the portal frame shown in ahead fig. 4. The plastic moment of resistance is same for all the members. 20
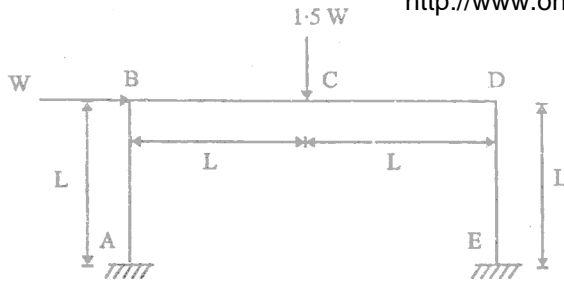
Fig. 4

Unit — III

5. (a) Write a short note on 'Structural behaviour of tall buildings subjected lateral forces'.   5

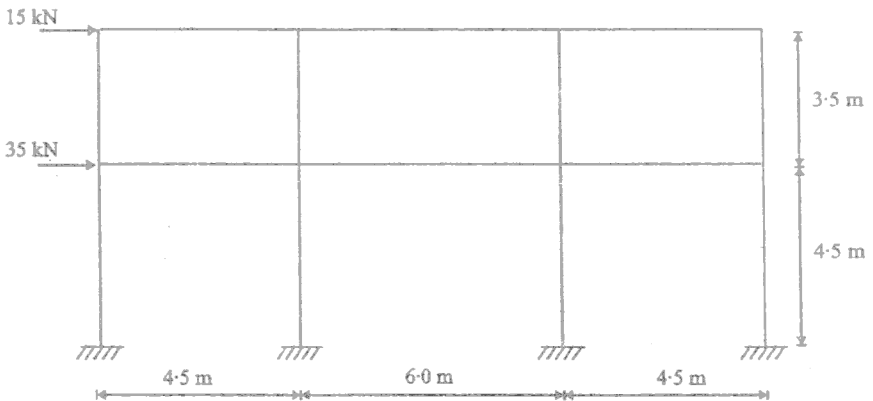   (b) Analyse the frame shown in fig. 5.   15

Fig. 5

Or

6. Analyse the substitute frame shown in fig. 6 for maximum positive and negative bending moments in the beams AB, BC and CD. The frames are spaced at 3 m intervals. Use the following data to estimate the moments is beams and columns :

Line load   = $2 \cdot 5 \, kN/m^2$

Dead load   = $3 \cdot 0 \, kN/m^2$

Self wt. of beams = $2 \cdot 0 \, kN/m$
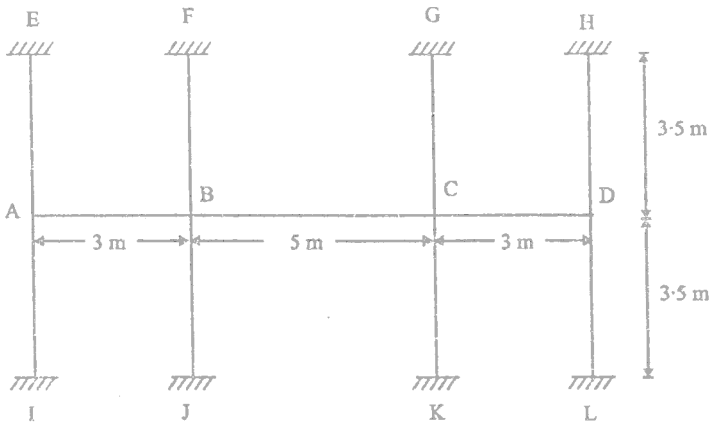
Beam and columns are of the same section.

P. T. O.

Fig. 6

Unit—IV

7. (a) Explain degree of static and kinematic in determinacy, briefly. 5

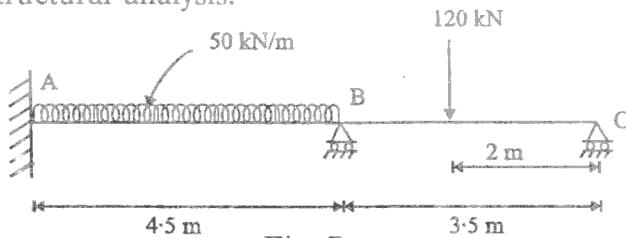(b) Analyse the beam shown in fig. 7 by force method of structural analysis. 15

Fig. 7

Or

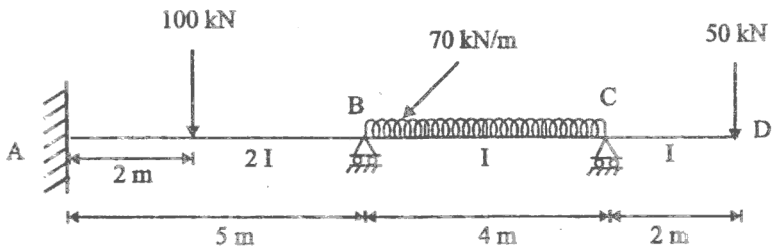8. Analyse the beam shown in fig. 8 by Displacement method of structural analysis. 20

Fig. 8