http://www.kuonline.in

Roll No. .....
Printed Pages : 4

34109

BT-4 / M-18
STRUCTURAL ANALYSIS-II
Paper–CE–202N

Time allowed : 3 hours] *[Maximum marks : 75*

Note :- *(i) Attempt total five questions, selecting at least one from each unit.*

(ii) All questions carry equal marks.

(iii) Assume any data suitably, if missing and state clearly.

Unit–I

1. (a) State the Prove the 2nd Castigliano's theorem. 8

   (b) Explain the Kinematics indeterminancy of the structures with suitable examples. 7

2. Analyse the redundant frame as shown in Fig. 1. All the members have same X – sectional area. 15

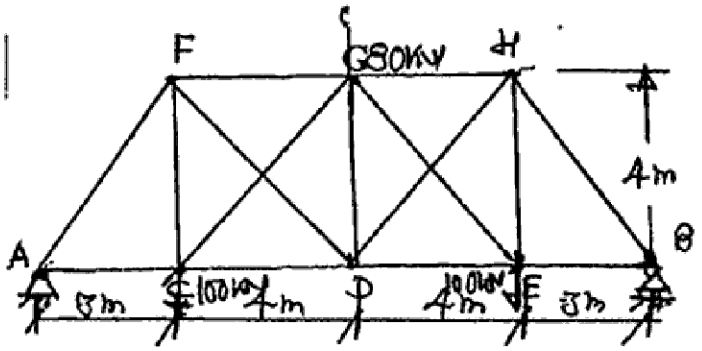

Fig. 1

http://www.kuonline.in

Unit–II

3. Analyse the continuous beam as shown in Fig 2 by 'Moment Distribution Method'. 15

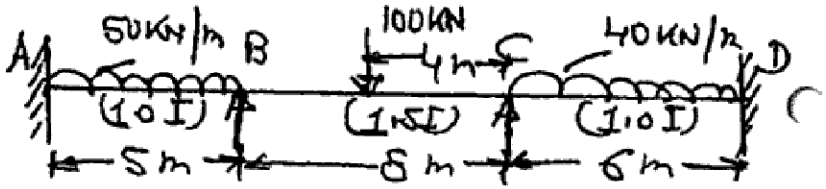

Fig. 2

4. Analyse the Portal frame as shown in Fig. 3 by 'Slope Deflection Method':

15

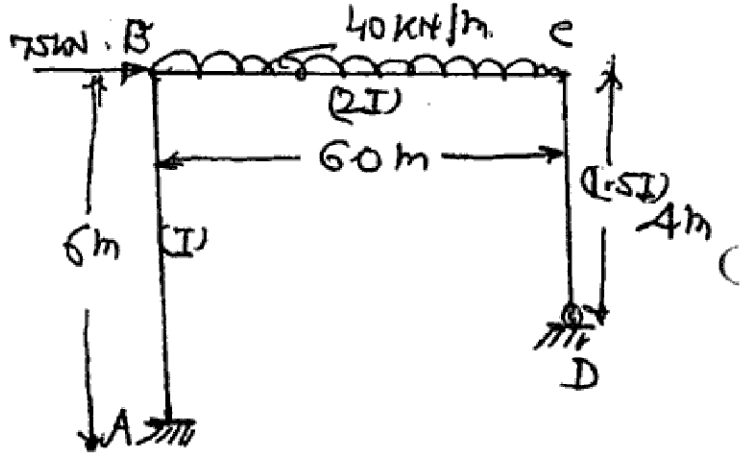

Fig. 3

http://www.kuonline.in

http://www.kuonline.in

Unit–III

5. Calculate the fixed end moments for the Portat frame loaded is shown in Fig. 4 using 'Column Analogy Method' 15

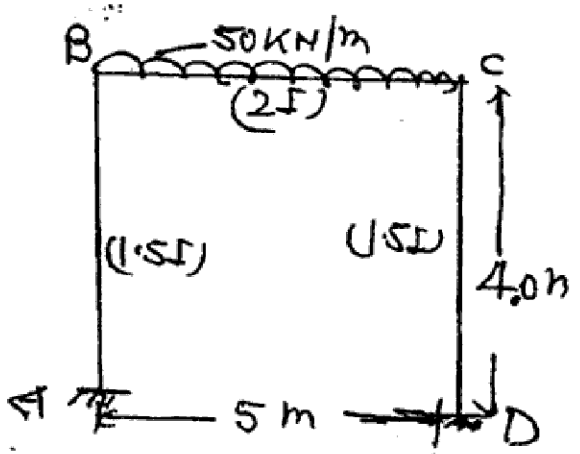

Fig. 4

6. A two hinged parabolic arch of span 36 m. and central rise of 9.0.m is subjected to U.d.l of 50 KN / m covering left half of span and two points load of 500 KN each acting at 9.0.m from each support. Calculate the sections at the supports. Also find the B.M., S.F. and N.T. order the points loads. 15

Unit–IV

7. (a) Define shear centre. Locate the shear center for a channel section. 6

   (b) Explain with sketches the concept of the Unsymmetrical bendings. Also calculate the magnitude of stresses induced due to the unsymmetrical bending. 9

http://www.kuonline.in

8. A suspension bridge of 80 m span has two three hinged stiffening girders supported by two cables having central Dep. of 6 m. The carriageway width is 6.0m. The bridges carries D.L. of 5 KN/m^2 and L - L- of 15 KN/m^2 covering the right half of the span. Calculate the B. M. and SF in the girder at 20m. from each side. Also calculate the maximum tension in the cable. 15

http://www.kuonline.in