

Total No. of Questions : 5

Total No. of Printed Pages : 4

EIS-194

B.E. (Vth Sem.) (CGPA) (Civil Engg.) Exam.-2015

THEORY OF STRUCTURE-I

Paper : CE-502

Time Allowed : Three Hours

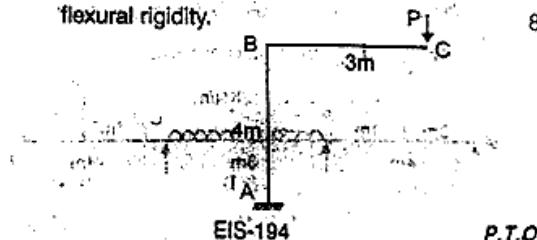
Maximum Marks : 60

Note : Attempt all questions.

All questions carry equal marks.

Unit-I

- Q.I (a) Derive expression of Strain energy in bending. 4
 (b) Find the vertical deflection of point C by strain energy method shown in fig. 1. Assume uniform flexural rigidity.

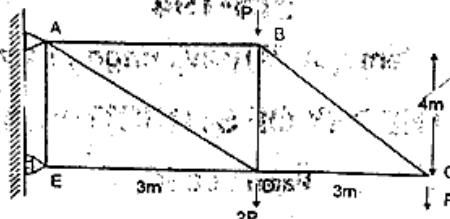


(2)

or

- Find the vertical deflection of the joint C of the loaded truss shown in Fig. 2. All members have same area A and uniform flexural rigidity.

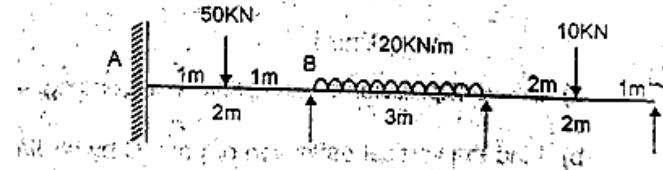
12



Unit-II

- Q.II Analyse the beam by theorem of three moments shown in fig. 3.

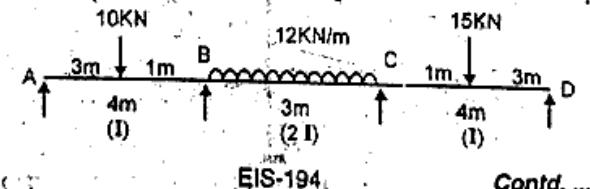
12



or

- Analyse the beam ABCD by moment distribution method and draw B.M. diagram.

12



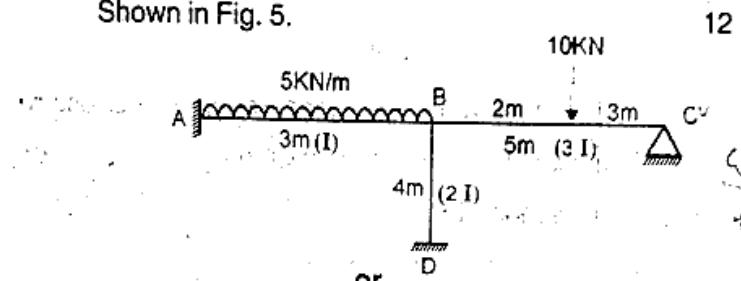
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(3)

Unit-III

Q.III Analyse the structure by slope deflection method.

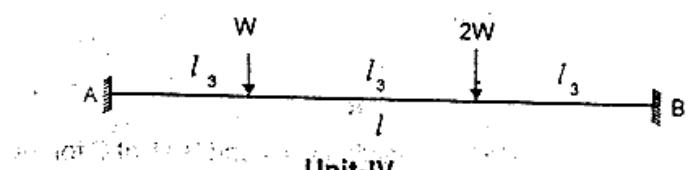
Shown in Fig. 5.



or

Analyse the structure by using column analogy method shown in fig. 6.

12



Unit-IV

Q.IV A three hinged parabolic arch of span 20 meter and size 5 m carries a udl of 20 KN/m run on the left half of the span. Find the maximum bending moment for the arch. Draw B.M. diagram.

12

or

A two hinged parabolic arch of span 40 m and size 8 m carries a point load of 80 KN at a distance of 10 m

(4)

from the left support. Find the horizontal thrust at each support. Find also the maximum bending moment. 12

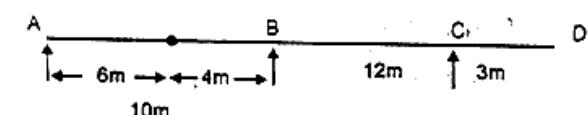
Unit-V

Q.V Draw the influence line diagram for the structure shown in figure 7 for the following—

12

(a) Reaction at B

(b) BM at mid of span BC



or

Draw ILD for the reactions at A and B.M. at C for the beam AB shown in figure 8.

