Q.P. Code: 16CE117 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Regular Examinations Nov 2018

STRUCTURAL ANALYSIS-I

(Civil Engineering)

(Answer all Five Units **5 x 12 = 60** Marks)

Time:3 hours Max Marks:60

UNIT-I

1. Determine the horizontal displacement of point 'C' of the bent shown in figure-1. Moments of inertia of the members are shown in figure. Young's modulus is constant. **12M**

OR

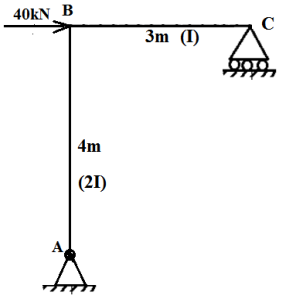


Fig.1

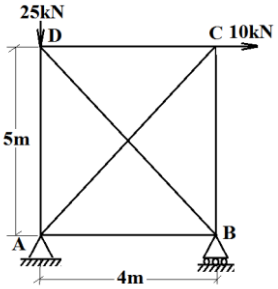


Fig.2

2. Analyse the pin jointed frame shown in figure-2. Assume the cross-sectional areas of all the members are same. **12M**

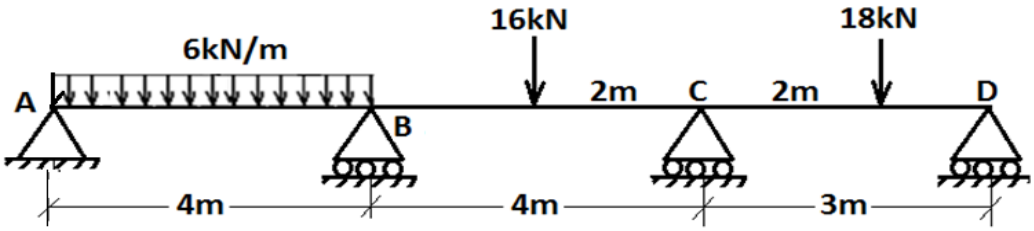
UNIT-II

3. A Fixed beam of span 6 m is subjected a uniformly distributed load of 5 kN/m on the left half of the span and a point load of 15 kN at the middle of the right half of the span. Draw the SFD and BMD **12M**

OR

4. Analyse the continuous beam ABCD shown in the figure-3 using Clapeyron's theorem of three moments. Draw SFD and BMD. **12M**

Fig.3



UNIT-III

5. Analyse the continuous beam shown in figure-4 by slope-deflection method. Draw the bending moment diagram. **12M**

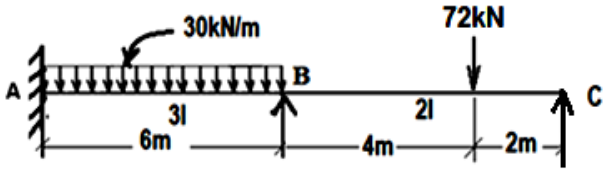


Fig.4

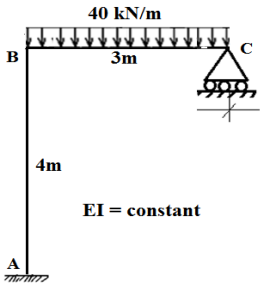


Fig.5

OR

6. Analyse the frame shown in figure-5 using slope-deflection method. Draw the bending moment diagram. **12M**

UNIT-IV

7. Analyse the continuous beam shown in figure-6 by moment distribution method. The support B sinks by 10mm. Take E = $2x10^5$ MPa and I = $16x10^{-5}$ m^4 . Draw the bending moment diagram. **12M**

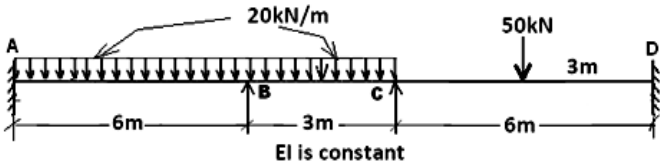


Fig.6

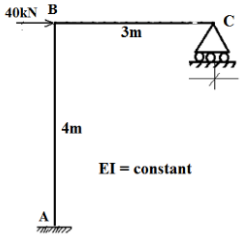


Fig.7

OR

8. Analyse the frame shown in figure-7 using moment distribution method. Draw the bending moment diagram. **12M**

UNIT-V

9. Analyse the continuous beam shown in figure-8 by Kani's method. Draw the bending moment diagram. **12M**

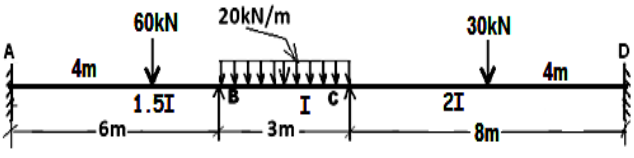


Fig.8

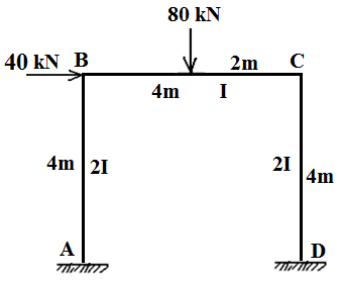


Fig.9

OR

10. Analyse the frame shown in figure-9 using Kani's method. Draw the bending moment diagram. **12M**

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