

Total No. of Questions : 6]

SEAT No. :

P5010

[Total No. of Pages : 2

T.E./Insem.-104
T.E. (Civil)
STRUCTURAL ANALYSIS - II
(2012 Pattern) (Semester - I)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.
- 2) Figures to the right indicate full marks.
- 3) Use of non-programmable electronic scientific calculator is allowed.
- 4) Assume suitable data, if necessary.

Q1) Analyse the beam shown in the figure 1 by Slope Deflection Method and draw SFD and BMD. Support B sinks by 4mm, $EI = 18 \times 10^{12} \text{ N/mm}^2$. [10]

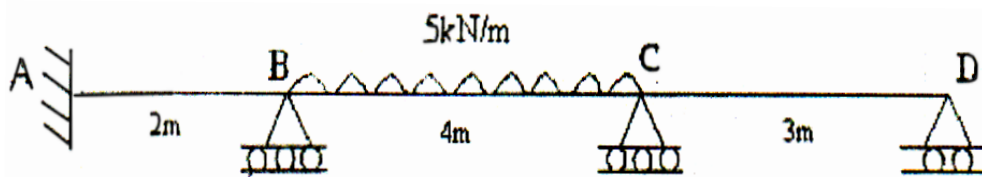


Figure 1

OR

Q2) Find the reactions and end moments of the frame shown in figure 2 by Slope Deflection method and draw SFD and BMD. Take constant EI [10]

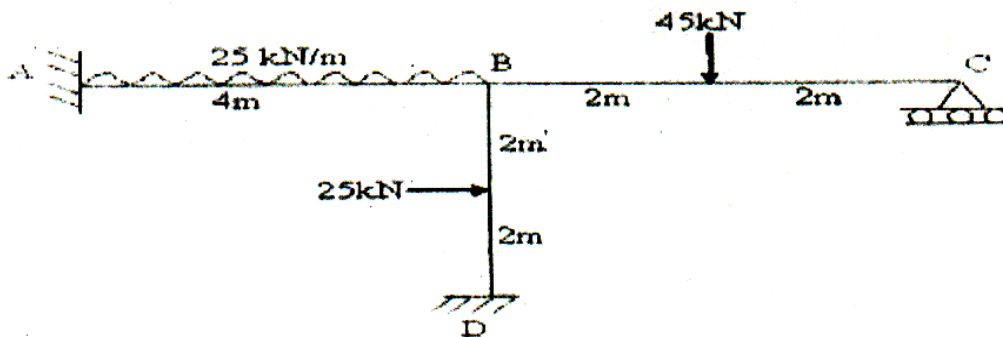


Figure 2

P.T.O.

- Q3)** A continuous beam ABC is fixed at A and supported on rollers at B and C such that $AB = BC = 6\text{m}$, $I_{AB} = 31$ and $I_{BC} = 21$. The loading on the beam consist of uniformly distributed load of 40kN/m over the span AB and a Concentrated load of 100 kN at the centre of the span BC. Using Moment Distribution, calculate the support moments and draw SFD and BMD. [10]

OR

- Q4)** Analyse the frame as shown in the figure 3 using Moment Distribution Method and draw SFD and BMD. [10]

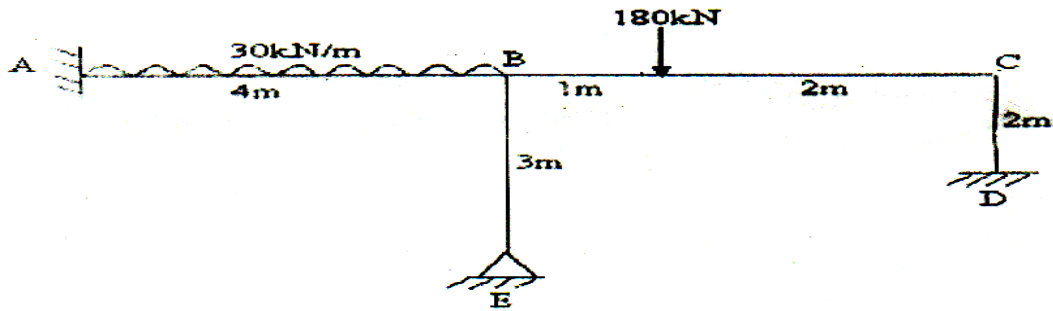


Figure 3

- Q5)** Analyse the beam shown in the figure 4 by flexibility method if support B sinks by 2.2mm . Take $EI = 40 \times 10^{11}\text{ N/mm}^2$. [10]

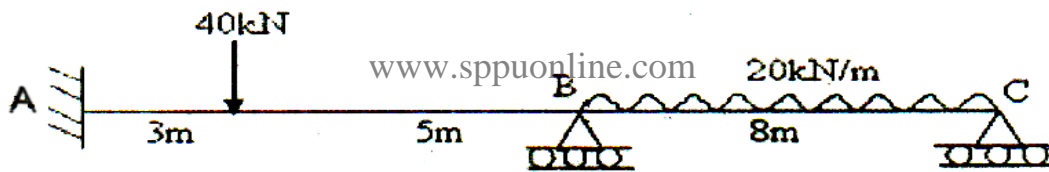


Figure 4

OR

- Q6)** Analyse the frame shown in the figure by flexibility method. Take constant EI. [10]

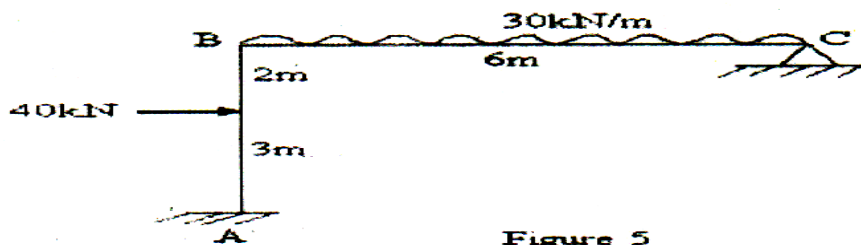


Figure 5

