Total No. of Questions : 8]

SEAT No. : [ ]

P9079

[Total No. of Pages : 4

[6179]-204
S.E. (Civil)
STRUCTURAL ANALYSIS
(2019 Pattern) (Semester - IV) (201011)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data, if necessary.***
5) ***Use of electronic pocket calculator is allowed.***

Q1) a) Analyze the following beam shown in figure 1 by Slope Deflection Method. Draw BMD. **[12]**

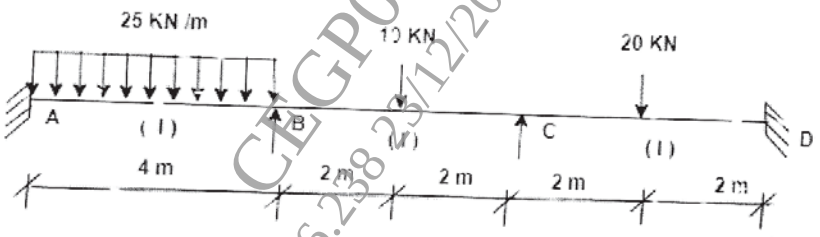

Figure 1

b) Analyze the bent shown in figure 2 by Slope Deflection Model. **[5]**

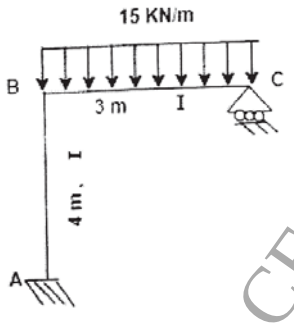

Figure 2

OR

P.T.O.

Q2) Analyze the frame shown in figure 3 by Slope Deflection Method. Draw BMD.**[17]**

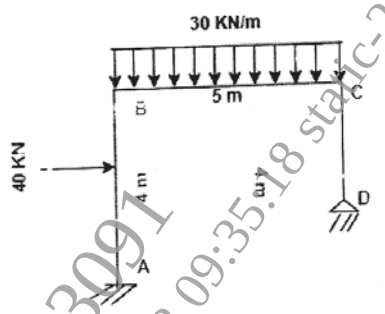

Figure 3

Q3) a) Analyze the beam shown in figure 4 by Moment Distribution Method. Draw BMD. **[10]**

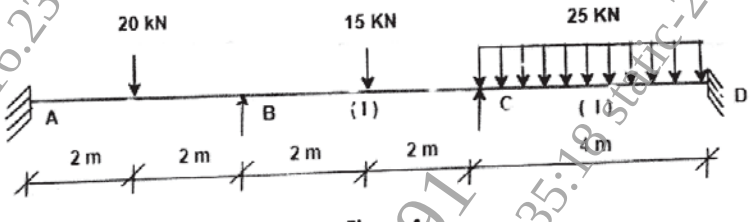

Figure 4

b) Analyze the bent shown in figure 5 by Moment Distribution Method.**[8]**

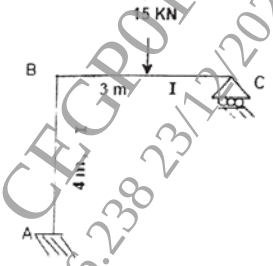

Figure 5

OR

Q4) Analyze the frame shown in figure 6 by Moment Distribution Method. Draw BMD. **[18]**

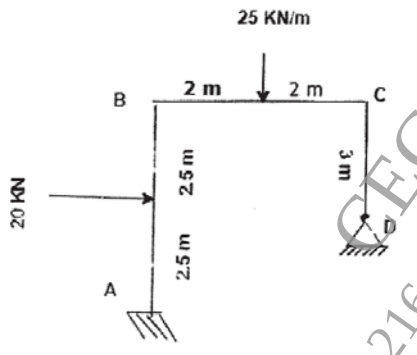

Figure 6

Q5) a) Analyze the beam shown in figure 7 by Stiffness Matrix Method. **[12]**

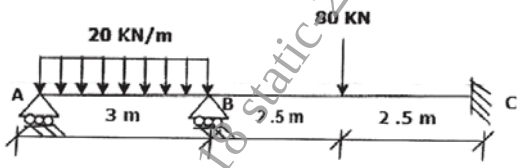

Figure 7

b) Explain stiffness and flexibility. **[5]**

OR

Q6) Analyze the frame shown in figure 8 by Stiffness Matrix Method. **[17]**

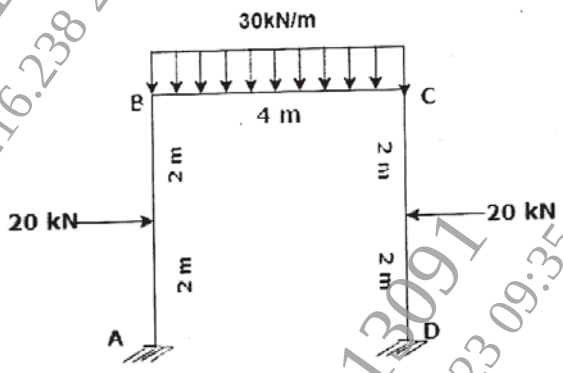

Figure 8

Q7) a) Write assumptions in plastic theory. **[5]**

b) Determine collapse load for the frame as shown in figure 9. **[13]**

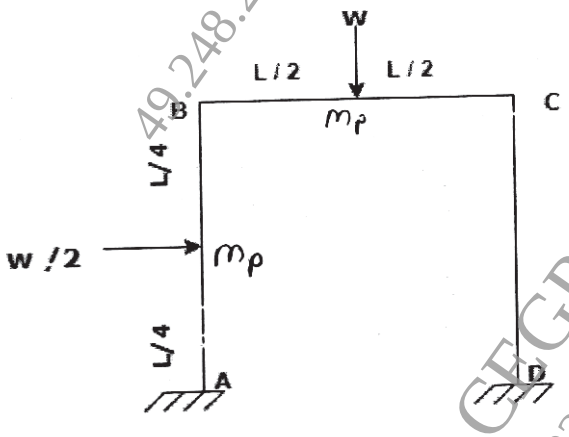

Figure 9

OR

Q8) a) Determine collapse load for the beam as shown in figure 10. **[6]**

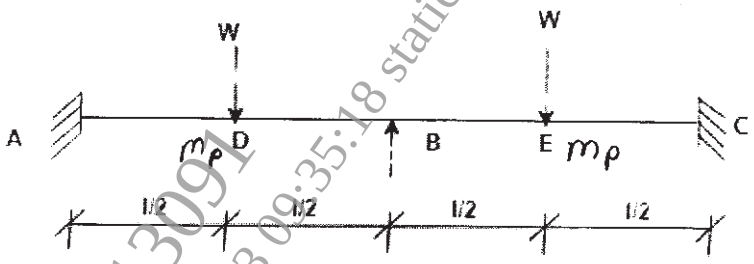

Figure 10

b) Determine shape factor of I-Section Shown in figure 11. **[12]**

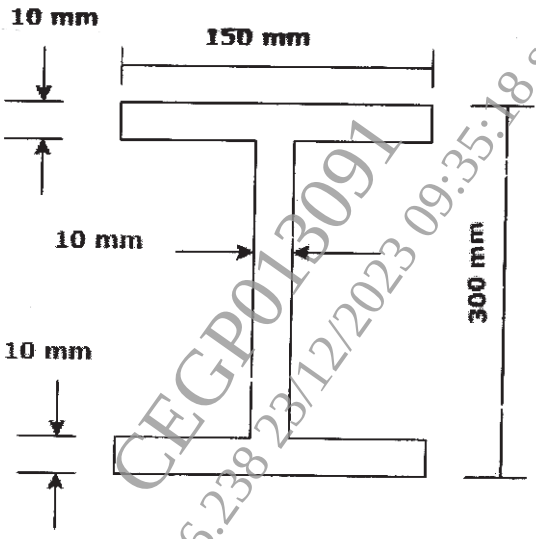

Figure 11