

Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020  
**Structural Analysis - II**

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

**PART - A**

- 1 a. What is influence line? Explain its importance in structural analysis. (05 Marks)
- b. The loading system shown in Fig.Q1(b) crosses a girder 25 m span with 100 kN load leading. Determine:
  - i) Maximum BM at section X 8m from the left end of the girder and (07 Marks)
  - ii) Absolute maximum Bending Moment (BM) on the girder (ILD or otherwise) (08 Marks)

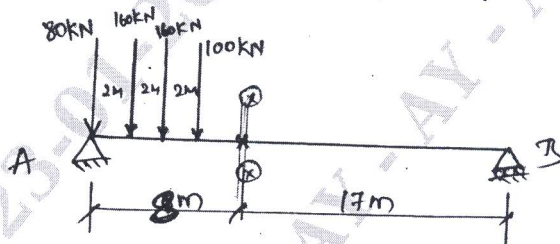


Fig.Q1(b)

- 2 Analyze the continuous beam shown in Fig.Q2 by slope deflection method. Draw BMD. (20 Marks)

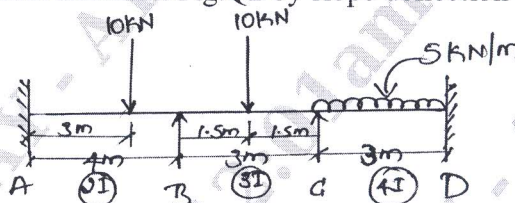


Fig.Q2

- 3 a. Define: (i) Stiffness factor (ii) Distribution factor (04 Marks)
- b. Analyze the Portal frame by Moment Distribution Method and draw BMD for Fig.Q3(b). (16 Marks)

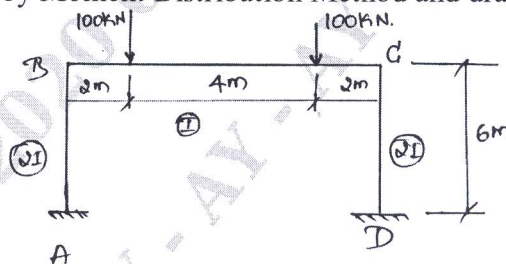


Fig.Q3(b)

- 4 Frame ABCD is subjected to a horizontal force of 20 kN at joint C as shown in Fig.Q4. Analyze and draw BMD. Using Slope Deflection Method. (20 Marks)

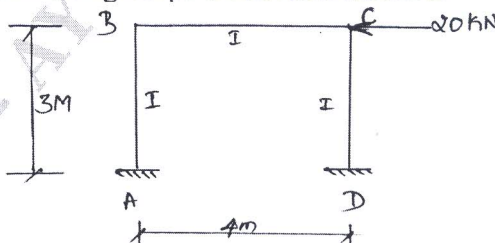


Fig.Q4

(20 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
 2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.