

Fourth Semester B.Arch. Degree Examination, May/June 2010
Structures - IV

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Distinguish between determinate and indeterminate structures, with examples. (05 Marks)
b. A propped cantilever supports loads as shown in Fig.1(b). Determine the reaction of the prop and also draw BMD and SFD. (15 Marks)

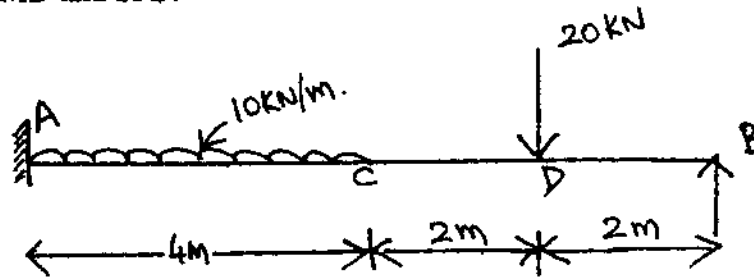


Fig.1(b).

- 2 a. Analyze a fixed beam AB of span L subjected to an UDL of W kN/m acting on the entire span. Also draw the bending moment and shear force diagrams. (10 Marks)
b. A fixed beam has a span of 5m. It carries a point load of magnitude 25 kN at 2m from the left support. Calculate the fixed end moments and draw BMD and SFD. (10 Marks)
- 3 Analyze the fixed beam shown in Fig.3 and draw shear force and bending moment diagrams. Also indicate the salient values at important points. (20 Marks)

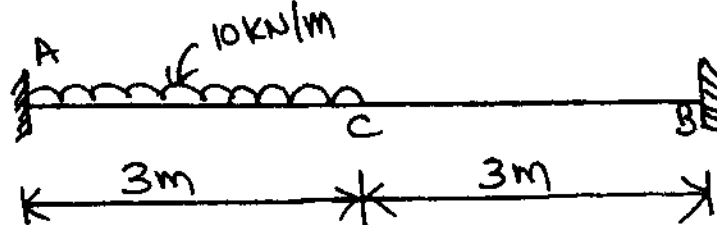


Fig.3.

- 4 a. State and explain Clayperon's theorem. (05 Marks)
b. For the continuous beam shown in Fig.4(b), analyze the beam and draw SFD and BMD. Use theorem of three moments. (15 Marks)

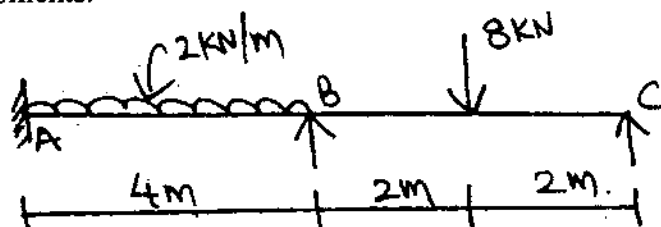


Fig.4(b).

- 5 Analyze the continuous beam shown in Fig.5. Draw the SFD and BMD. Use Clayperon's theorem. EI is constant. (20 Marks)

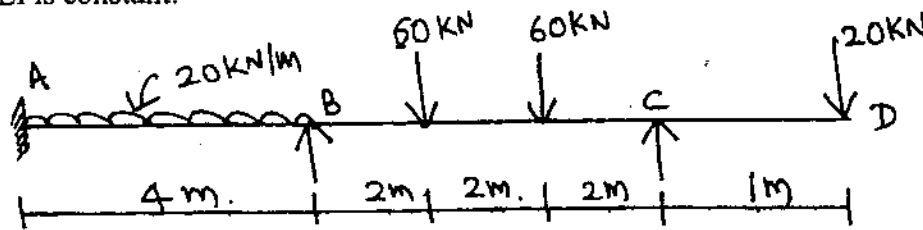


Fig.5.

- 6 Analyze the continuous beam shown in Fig.6 by moment distribution method and draw BMD and SFD. (20 Marks)

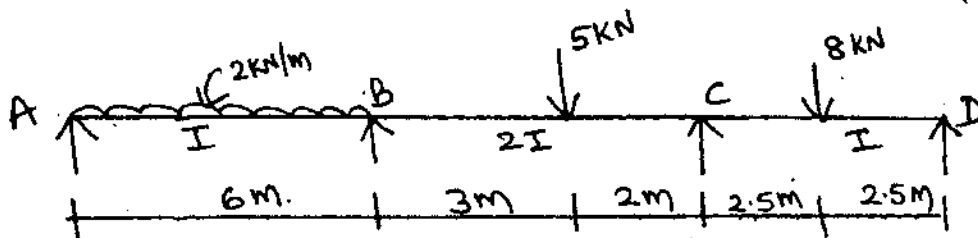


Fig.6.

- 7 a. Define the terms distribution factor and relative stiffness. (05 Marks)
 b. Analyze the continuous beam shown in Fig.7(b) and draw BMD. Use moment distribution method. (15 Marks)

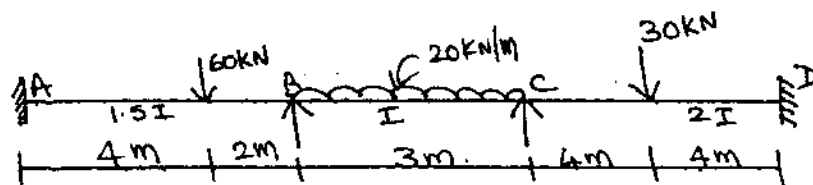


Fig.7(b).

- 8 Analyze the portal frame shown in Fig.8 below by moment distribution method and draw BMD. (20 Marks)

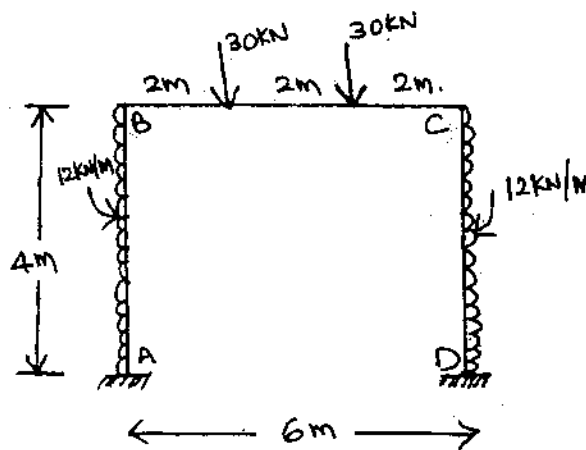


Fig.8.
