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09ENG4.5

Fourth Semester B. Arch Degree Examination, June/July 2016

Structures - IV

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions,

- 1 a. Distinguish between statically determinate and indeterminate structures with examples. (05 Marks)
- b. Analyse the propped cantilever beam as shown in Fig Q1 (b). Draw SFD and BMD (15 Marks)

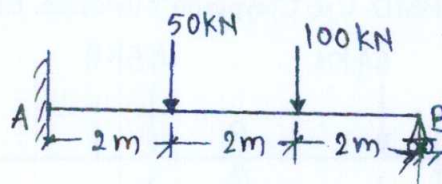


Fig. Q1(b)

- 2 Analyse the propped cantilever beam shown in Fig Q2 and Draw SFD and BMD. Mark salient points on the diagrams. (20 Marks)

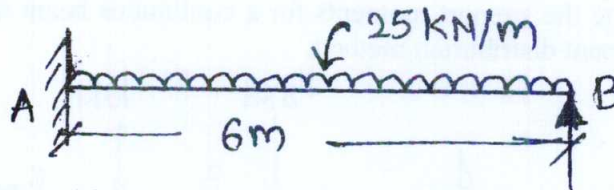


Fig. Q2

- 3 a. State the advantages and disadvantages of fixed beams. (05 Marks)
- b. Determine the fixed end moments developed for the beam shown in Fig. Q3(b) (15 Marks)

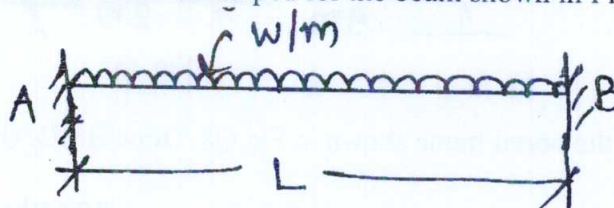


Fig. Q3 (b)

- 4 Find the fixed end moments and reactions at the supports for the beam shown in Fig. Q4. Draw SFD and BMD. (20 Marks)

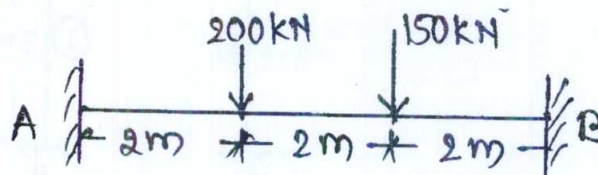


Fig. Q4

Important Note : 1. On completing your answers, carefully 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.

- 5 a. State and explain Clayperon's theorem. (05 Marks)
 b. For the continuous beam shown in Fig Q5(b), analyse the beam and draw SFD and BMD. Use theorem of three moments. (15 Marks)

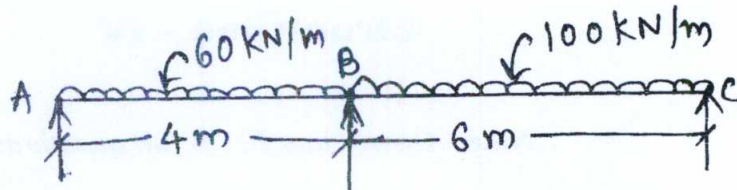


Fig Q5(b)

- 6 For a continuous beam ABCD shown in Fig. Q6, find the support moments and reactions. Draw SFD and BMD. Use Clayperon's theorem. EI is constant. (20 Marks)

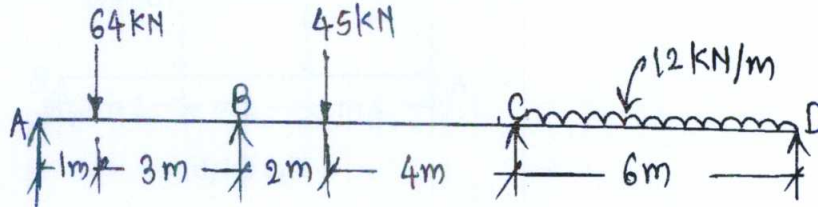


Fig. Q6

- 7 Determine the support moments for a continuous beam shown in Fig Q7 and Draw BMD. Use moment distribution method. (20 Marks)

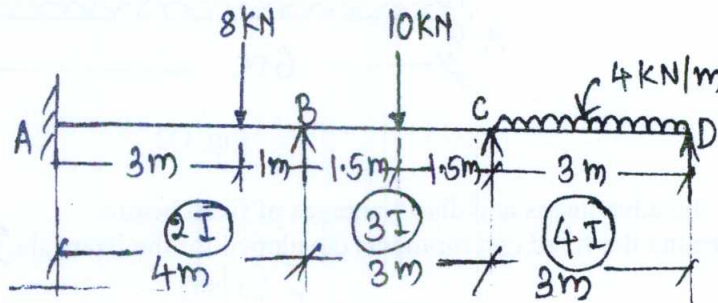


Fig. Q7

- 8 Analyse the portal frame shown in Fig Q8. Draw BMD. Use moment distribution method. (20 Marks)

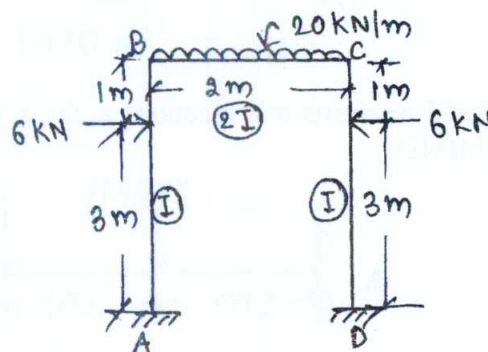


Fig. Q8