



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

Faculty of Engineering & Technology

DEPARTMENT OF CIVIL AND BUILDING ENGINEERING

DCC 07

END OF COURSE EXAMINATIONS

APRIL/MAY 2010 SERIES

STRUCTURE

TIME: 2 HOURS

Instructions to Candidates

You should have the following for this examination:

Answer booklet
Scientific calculator

This paper consists of **FIVE** Questions in **TWO** Sections **A & B**.
Answer Question **ONE** in Section **A** and any other **TWO** Questions in Section **B**.
Marks for each part of question is as indicated.

SECTION A

Question ONE

Fig. 1 shows a continuous beam which is encastre at D.

- Using the three moment theorem, analyze the beam and sketch the bending moment diagram, indicating all critical values.
- Determine the values of the reactions.

(30 Marks)

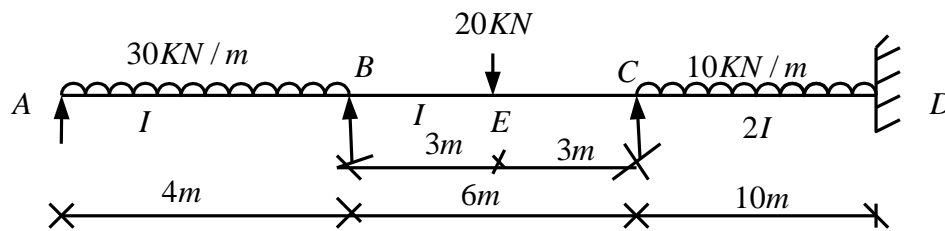


Fig. 1

SECTION B

Question TWO

Using the method of moment distribution, analyse the frame shown in fig. 2, and hence sketch the bending moment diagrams indicating all the critical values.

(20 Marks)

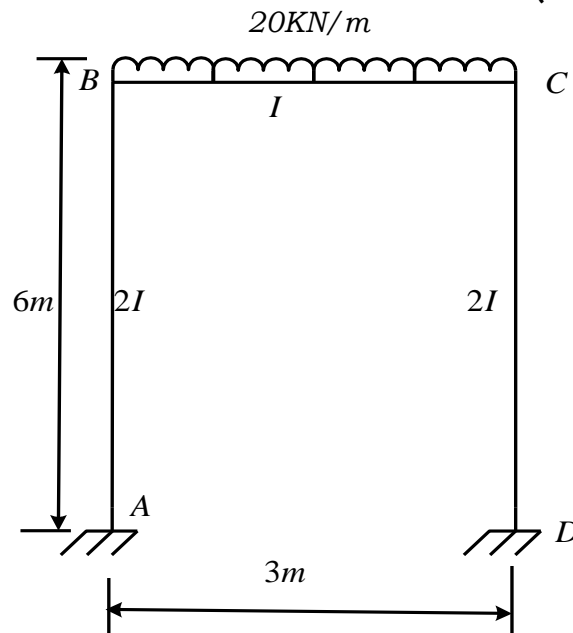


Fig. 2

Question THREE

Using the three moment theorem, analyze the beam shown in fig. 3 and sketch the bending moment diagram indicating the values at the critical points.

(20 Marks)

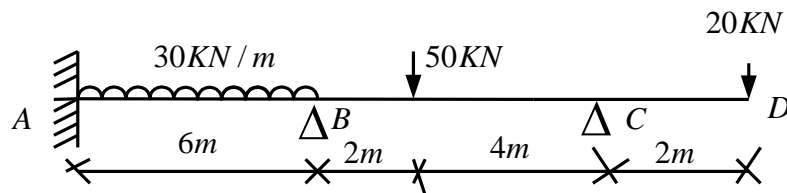


Fig. 3

Questions FOUR

(a) Using the method of moment distribution, analyse the beam shown in fig. 4 and hence sketch the shear force and bending moment diagrams indicating the values at critical points.

(20 Marks)

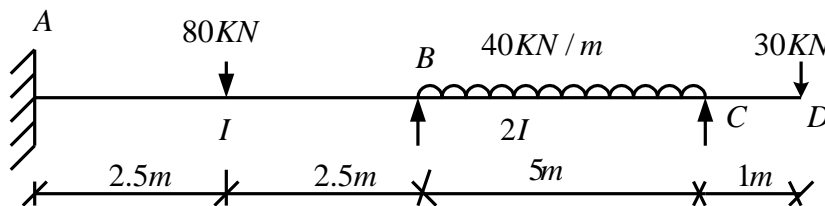


Fig. 4

Question FIVE

Fig. 5 shows a simple beam supported at point A and B and acted by two moving point loads 1.0m apart.

- Sketch the influence lines diagrams for R_A , R_B , shear force and bending moment at point E on the beam.
- Determine the maximum shear force and bending moment at point E on the beam.

(20 Marks)

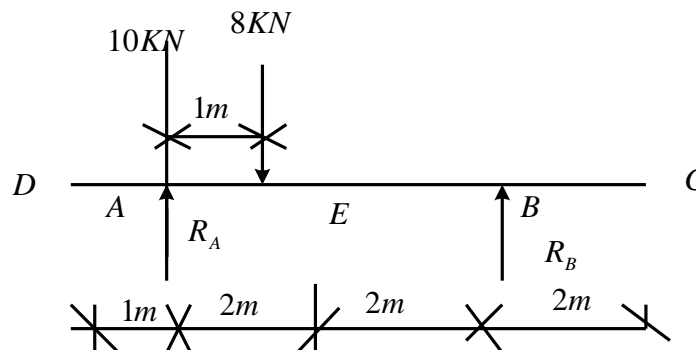


Fig. 5