



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN CIVIL ENGINEERING

EBC 2207 : THEORY OF STRUCTURES II

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Sep 2018

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt any **THREE** questions.

Do not write on the question paper.

Question ONE

Using Macaulay's method, determine the deflection of the beam at each load point for the loading shown in figure 1. (20marks)

Take $I = 10.67 \times 10^8 \text{mm}^4$

$E = 14 \text{ KN/mn}^2$

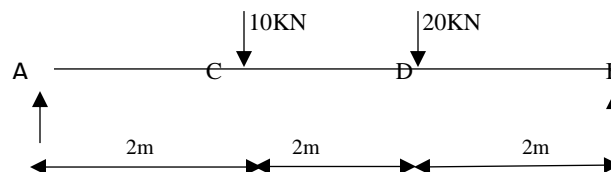
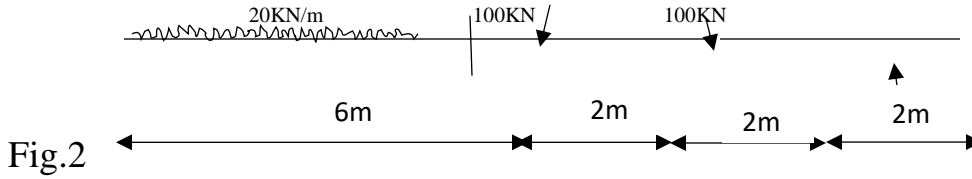


Fig 1

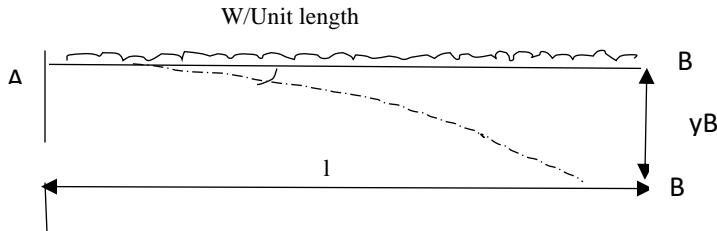
Question Two

Using Macaulay's method, determine in terms of EI, the deflection of points C and D in the beam loaded as shown in fig 2 (20marks)



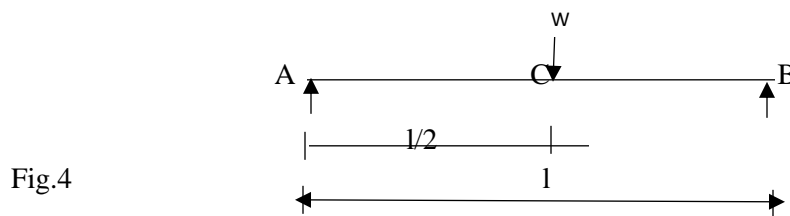
Question Three

- i) State Mohr's theorems for slope and deflection
- ii) Obtain expressions for the slope and deflection at the free end of a cantilever carrying a uniformly distributed load as shown in figure 3. (20marks)



Question Four

Use of Mohr's theorem to obtain max deflection and slope of a simply supported beam below fig 4 (20marks)



Question Five

Fig 5 shows loaded cantilever beam using Mohr's theorems, determine the deflection at point 'B' and the slope at 'C' in terms of EI. (20marks)

