



TECHNICAL UNIVERSITY OF MOMBASA
**Faculty of Engineering &
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING
CERTIFICATE IN BUILDING & CIVIL ENGINEERING (CBCE 13S)

EBC 1104: DEFORMATION & BENDING MOMENTS

END OF SEMESTER EXAMINATION

SERIES: APRIL 2014

TIME ALLOWED: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer booklet*

This paper consists of **FIVE** questions. Answer any **THREE** questions of the **FIVE** questions

All questions carry equal marks

Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One

Determine support reactions for the beams loaded as shown in figure 1. **(20 marks)**

2.0m

Question Two

- a) Define the following as applied to loaded beams:
- (i) Shear force at a point
 - (ii) Bending moment at a point **(6 marks)**
- b) Sketch shear force and bending moment diagrams for the beam loaded beam as shown in figure 2 indicating values at all the critical points. **(14 marks)**

Figure 2

Question Three

Determine the position of the N.A and I_{xx} of the section in figure 3. **(20 marks)**

25mm

Question Four

Determine the extreme fibre bending stresses for the section of beam in figure 3 under the given loading condition in figure 4. **(20 marks)**

B

Question Five

Sketch shear force and bending moment diagram for the loaded beam in figure 5. **(20 marks)**

A

