THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

DIPLOMA IN CIVIL ENGINEERING & COMPUTER AIDED (DCC 09A)
DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBC 09A)

EBC 2301: THEORY OF STRUCTURE III

END OF SEMESTER EXAMINATION

SERIES: AUGUST/SEPTEMBER 2011

TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination

- *Answer booklet*
- *Calculator*

This paper consists of **FIVE** questions
Answer question **ONE** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question 1

Using the three moment theorem, analyze the beam shown in fig 1.0 and hence sketch the sheaving force and bending moments diagrams indicating the values at all critical points (30 marks)

5KN

SECTION B (Answer *any TWO questions from this section*)

Question 2

a) Using the method of moment distribution analyze the portal frame shown in figure 2 and hence sketch the bending moment diagram indicating the values at tall critical points. Make only four distributions

b) Determine the reactions at A and D and sketch the deflected shape (20 marks)
Fig 2.0

2I

Question 3

Using the three moments theorem, analyze the beam in fig 3.0 and plot the BMD showing the values at critical points (20 marks)

120KN

Question 4

Using the method of moment distribution analyze the frame shown in fig 4.0 and plot the bending moment diagram indicating the critical values. (20 marks)

Fig 4.0

20KN/m

Question 5

Using the three moment theorem analyze the beam shown in fig 5.0 and hence draw the shear force and bending moment diagrams indicating all critical values. (20 marks)

Fig 5.0

E