



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)  
*Faculty of Engineering and Technology*

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING  
**CERTIFICATE IN CONSTRUCTION TECHNICIAN PART I**  
EBC 3322: MEASUREMENT OF CIVIL ENGINEERING WORKS

**END OF SEMESTER EXAMINATION**

SERIES: DECEMBER 2011

**TIME: 2 HOURS**

## **Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*
- *Dimension papers*
- *Pocket calculator*
- *A copy of the Civil Engineering Standard Method of Measurement*

This paper consists of **FIVE** questions

Answer question **ONE (COMPULSORY)** from **SECTION A** and any other **TWO** questions from **SECTION B**

Maximum marks for each part of a question are clearly shown

This paper consists of **TWO** printed pages

## SECTION A (COMPULSORY)

### Question 1(30 marks)

Drawing No 01 shows a section and plan of a Mass Concrete Retaining wall 120M long. Take off all quantities for Concrete and associated works but excluding Earthworks (30 marks)

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

### Question 2 (20 marks)

Take off all quantities for the site clearance and demolition works shown in drawing no. 02  
(Use CESMM) (20 marks)

### Question 3 (20 marks)

- Sate **FOUR** classes of Method Related Charges and list **TWO** items in each class differentiating between fixed and time related charges (10 marks)
- List and give brief explanation of **FIVE** merits of Piling Ancillaries (10 marks)

### Question 4 (20 marks)

A cutting is to be excavated for a road 240 M in length and 12 M in wiedzth, to an even gradient with mean depths calculated at 60 M intervals as indicated below and side slopes 2 to 1. General material for disposal

- Prepare a detailed table for the cutting including the calculations for the mean width (10 marks)
- Take off quantities for the excavations (Use CESMM) (10 marks)

CROSS SECTION	1	2	3	4	5
MEAN DEPTH (M)	11	10	16	18	17

### Question 5 (20 marks)

Drawing no.03 shows a section through a Quay 108m long. Take off quantities for the Piling Works only up to and including piling ancillaries (Use CESMM) (20 marks)