



# 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 WITH CAD (DC 10A)**  
**DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBC 10A)**  
EBC 2322: MEASUREMENT OF CIVIL ENGINEERING WORKS  
**SPECIAL/SUPPLEMENTARY EXAMINATION**

SERIES: MAY/JUNE 2012

**TIME: 2 HOURS**

## **Instructions to Candidates:**

You should have the following for this examination

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

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

Maximum marks for each part of a question are clearly shown

This paper consists of **TWO** printed pages

**Question 1 (20 marks)**

Draw no. H 02 shows a section and plan a Quay

Take off **all** quantities for the preformed concrete piles, instate concrete pile caps and including the associated ancillaries, but excluding the reinforcement (20 marks)

(Use CESMM)

**Question 2 (20 marks)**

An area 30 x 30 mm in plan is to be excavated to reduced level of 124.00m, at a slope of 45 degrees all round to allow for the construction of an underground pump house. The plot has been surveyed and reduced levels obtained on a 10m grid, as shown below.

	A	B	C	D
1	129.10	129.80	128.95	129.74
2	129.30	129.60	128.88	129.50
3	128.84	129.30	128.74	128.99
4	129.20	129.54	129.00	129.40

a) Tabulate the reduced levels to obtain the average depth of excavation using the weighing method (10 marks)

b) Take off quantities for the excavation including the relevant ancillaries (10 marks)

(Use CESMM)

**Question 3 (20 marks)**

Explain and distinguish the following terms as used in Measurement of Civil Engineering works:-

- a) Original surface
- b) Commencing surface
- c) Concrete Ancillaries
- d) Fixed method related charges
- e) Time related method charges

(20 marks)

**Question 4 (20 marks)**

In further reference to drawing no. H02 in Question no. 1 above showing a section and plan of a Quay

Take of all quantities for the timber including sleeper and piles, all associated ancillaries and earthworks. (20 marks)

(Use CESMM)

**Question 5 (20 marks)**

Explain **FIVE** major differences between Building and Civil Engineering Works (20 marks)