



# MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)  
University Examinations for 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING (PRODUCTION OPTION)

EXAMINATION FOR DIPLOMA IN BUILDING TECHNOLOGY 2705/204  
DIPLOMA IN CIVIL ENGINEERING 2707/204

MEASURING OF BUILDING AND CIVIL ENGINEERING WORKS, ESTIMATING  
AND COSTING I

DATE: 20/3/2015

TIME: 3 HRS

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## *Instructions*

- *You should have the following for this examinations*
- *Answer booklet*
- *Scientific calculator*
- *A copy of the standard method of measurement for building and civil engineering works (SMM & CESMM)*
- *This paper consists of six questions in two sections A and B; Answer any four question choosing two questions from each section. Questions in section A carry 30 marks each while questions in section B carry 20 marks each.*
- *Maximum marks for each part of a question are as show.*

## SECTION A (ANSWER ANY TWO QUESTIONS)

1. Take off all quantities for the “substructure works” shown on drawing no.01 up to and including the damp proof course (use 5 mm). (30 marks)
2. Drawing no.02 shows the plan and section of a reinforced concrete pumping chamber. Take off all quantities for the works (Use CESMM). (30 marks)
3. A) Briefly outline 4 roles of a quantity surveyor in a project cycle (4 marks)  
b) Briefly explain the 4 main process in traditional bill preparation; using examples where necessary. (10 marks)

c) Explain the following documents used by a quantity surveyor or:

i) Standard method of measurement for building and civil engineering works.

ii) Bills of quantities (BQ) (10 marks)

d) Out 3 main uses of bills of quantities to a project quantity surveyor during the construction of a building. (6 marks)

## **Section B**

**Answer any two questions from this section**

4. a) State three roles of quantity surveyor in each of the following.

i) Pre-tender period

ii) Construction period

iii) Post-tender period (9 marks)

b) Explain the following terms as included in bill of quantities

i) Prime cost sum

ii) Provisional sum

iii) Contingency sum (6 marks)

5. a) Explain three payment certificates as applied in estimating and costing. (9 marks)

b) State seven sources of cost information (5 marks)

c) Define the following terms as used in estimating and costing.

i) Tender

ii) variations

iii) Contract (6 marks)

6. A) Describe any three types of contracts. (13 marks)

b) State five types of tendering systems as applied in costing. (5 marks)

c) State four roles of an estimator. (2 marks)