THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

DIPLOMA IN BUILDING & CIVIL ENGINEERING
DIPLOMA IN ARCHITECTURE

ECV 2101: CIVIL ENGINEERING MATERIAL I

END OF SEMESTER EXAMINATION
SERIES: AUGUST 2012
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*
- *Scientific Calculator*

This paper consists of **FIVE** questions. Answer any **THREE** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages
Question One (20 marks)

a) Briefly describe the following processes as used in stones:
    i) Digging
    ii) Wedging
    iii) Dressing
    iv) Blasting   **(8 marks)**

b) State **FOUR** uses of stones in Building and Civil Engineering   **(2 marks)**

c) Define a BRICK giving **TWO** advantages and **TWO** disadvantages for their use.   **(6 marks)**

d) Briefly describe how the following types of glass are made.

    i) Wired glass
    ii) Polished plate glass.   **(4 marks)**

Question Two (20 marks)

With the aid of sketch, describe the drying shrinkage test in clay bricks.   **(20 marks)**

Question Three (20 marks)

a) Briefly describe **THREE** methods of protecting steel.   **(6 marks)**

b) Explain the following hest treatment processes.
    i) Hardening
    ii) Tempering
    iii) Annealing
    iv) Normalizing   **(8 marks)**

c) Explain the following engineering properties of materials.   **(6 marks)**
    i) Ageing
    ii) Impact strength
    iii) Ductility
    iv) Elasticity
    v) Malleability
    vi) Work hardening

Question Four (20 marks)

a) State **FIVE** properties and **FIVE** uses of wrot iron   **(5 marks)**

b) State **FIVE** processes in which glues set.   **(5 marks)**

c) Explain the difference between pot life and shelf life in adhesives.   **(4 marks)**

d) Briefly describe the "**WET ROT**" in timber giving two methods of its eradication.   **(6 marks)**

Question Five (20 marks)

Outline the manufacture of glazed stoneware products using flow diagrams. **(20 marks)**