THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

CERTIFICATE IN BUILDING & CONSTRUCTION

EBC 1107: CHEMISTRY

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

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

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 **THREE** printed pages

Question One (30 Marks)

a) Describe the structure of an atom. **(4 marks)**

b) Define the following terms:
   i) Passivity
   ii) Polarization **(4 marks)**

c) State **FIVE** control measures used to minimize galuamic corrosion. **(5 marks)**

d) State any **SIX** constituents of a paint **(3 marks)**

e) Explain how you can prevent failure of paint films. **(4 marks)**

f) (i) Define the term polymers **(2 marks)**
   (ii) Using **TWO** examples in each case, state **TWO** types of polymers. **(4 marks)**

g) State any **FOUR** types of chemical solutions. **(4 marks)**

Question Two (15 marks)

Describe how the rate of corrosion in the plaint is affected by the following:

i) Temperature
ii) Water velocity
iii) Oxygen
iv) PH
v) Condition and Composition of the metal surface

Question Three (15 marks)

a) State **TEN** characteristics of good paint **(5 marks)**

b) Differentiate between thermoplastic and thermosetting plastics **(5 marks)**

c) Explain the application of radiation in machine **(5 marks)**

Question Four (15 marks)

a) Describe the effect of passivity and polarization on the corrosion process. **(6 marks)**
b) State eight characteristics of polymers **(4 marks)**
c) State **THREE** types of radio actives **(3 marks)**
d) Differentiate between weak acid and strong acid. **(2 marks)**

Question Five (15 marks)

a) Describe the periodic trend of:
   i) Electro negativity
   ii) Ionization
   iii) Meeting point
   iv) Atomic radius **(10 marks)**

b) Down the group. **(5 marks)**

c) Across the period giving reasons for your answer. **(5 marks)**