THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

DIPLOMA IN BUILDING & CIVIL ENGINEERING

DIPLOMA IN ARCHITECTURE

DIPLOMA IN CIVIL ENGINEERING

EBC 2315: COMPUTER PROGRAMMING

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: MAY/JUNE 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Mathematical tables*
- *Scientific calculator*

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 **THREE** printed pages

SECTION I (Compulsory – 20 marks)

Question 1 (20 marks)

a) State **FIVE** application areas for the following.
   (i) Computer languages for each language stated.
   (ii) Standard symbols used in flour charts (10 marks)

b) Write a program to evaluate the factorial of any number using the "FOR….NEXT' statement (10 marks)

SECTION II (Answer any TWO questions)

Question 2 (20 marks)

a) Briefly explain the term 'compute registers' (10 marks)

b) Write a program in Basic to evaluate.

$$\frac{3}{4}+\frac{5}{4}+\frac{7}{43}+.....$$

using the first five terms (10 marks)

Question 3 (20 marks)

a) Outline **SIX** steps followed in problem solving where algorithms are used (12 marks)

b) Write a program in BASIC the produce 10 row mathematical tables for any number using the "FOR----NEXT" statement (8 marks)

Question 4 (20 marks)

a) Describe any **TWO** computer softwares (10 marks)

b) Outline **THREE** types of programming errors and their effects (6 marks)

c) Write the output of the following program.

```
10  Y          =     5
20  FOR Y      =     1 TO 3
30 X           =     X +5
40 FOR Z       =     1 TO 4
50 P           =     X x Z
60 PRINT X, Y, Z, P
70 NEXT Y
80 NEXT Z
100 END
```

(4 marks)

Question 5 (20 marks)

a) Briefly outline SIX characteristics of a well designed program (12 marks)

b) Write a program to evaluate the following series for first 10 terms:

$$\frac{x^3}{3!}+\frac{x^6}{6!}+\frac{x^9}{12!}+.....\frac{x^{3n}}{3n!}$$

(8 marks)