



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

*Faculty of Engineering & Technology*

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION TECHNOLOGY (DIT/JAN 2012)

DIPLOMA IN INFORMATION COMMUNICATION (DICT/JAN 2012)

**EIT 2104/ECT 2101: STRUCTURED PROGRAMMING (C Programming)**

END OF SEMESTER EXAMINATION

**SERIES:** APRIL 2012

**TIME:** 2 HOURS

## **Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions in **TWO** sections **A & B**

Answer question **ONE (COMPULSORY)** plus any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

## SECTION A (COMPULSORY)

### Question One (20 Marks)

- a) (i) Explain the difference between compiler and interpreter (4 marks)  
(ii) Draw a program flow chart to calculate the sum and average of even integers from 1 to 100.  
Use a loop (8 marks)  
(iii) Implement the Q1 (ii) above using C programming language (8 marks)

## SECTION B (Attempt any TWO sections)

### Question Two (20 Marks)

- a) With examples, explain the **THREE** control structures in C programming language (8 marks)  
b) Develop a program to read three integer values and compare them to display the smallest (8 marks)  
c) Explain any **TWO** types of errors in computer programming (4 marks)

### Question Three (20 Marks)

- a) (i) Explain the term structured programming (2 marks)  
(ii) Explain any **FOUR** advantages of structured programming (8 marks)  
b) Explain the following standard math library functions  
(i) Exp (x)  
(ii) Pow (x,y) (4 marks)  
c) Develop C program having a function to calculate the cube of value x. Give cube  $x*x*x$  (6 marks)

### Question Four (20 Marks)

Explain the following levels of programming languages giving advantages and disadvantages for each.

- (i) Machine programming language  
(ii) High level programming language  
(iii) Fourth generation programming language (20 marks)

### Question Five (20 Marks)

- a) Develop a C program to read two integer values then multiply, divide, subtract and add them. The following menu should be developed.

PRESS 1 TO MULTIPLY  
PRESS 2 TO DIVIDE  
PRESS 3 TO SUBTRACT  
PRESS 4 TO ADD  
SELECT YOUR CHOICE –

Use the switch statement (12 marks)

- b) Explain the objective of drawing program flow charts (8 marks)