THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN ELECTRICAL & ELECTRONIC ENGINEERING (BSC.EE Y2 S2)

SMA 2175: COMPUTER PROGRAMMING I

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions

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

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

Question One (Compulsory)

a) Define the following:

(i)	Program	**(2 marks)**
(ii)	Syntax	**(2 marks)**
(iii)	Algorithm	**(2 marks)**
(iv)	Variable	**(2 marks)**

b) Using appropriate examples, briefly discuss the rules that apply in naming a variable. **(4 marks)**

c) Differentiate between the following:

(i)	Compiler and Interpreter	**(4 marks)**
(ii)	Syntax errors and Logical Errors	**(4 marks)**
(iii)	Pseudo code and Flow chart	**(4 marks)**

d) Briefly explain the qualities of a good program. **(6 marks)**

Question Two

a) Giving examples in each case, list the different types of programming languages and outline the key features that marked each programming language. **(16 marks)**

b) List at least one advantage and disadvantage of the different types of programming languages discussed in question 2(a) above. **(4 marks)**

Question Three

a) State flowchart symbols that would be used to represent the following:
   (i) Enter data **(2 marks)**
   (ii) Increment counter by 1 **(2 marks)**
   (iii) Link diagram on separate pages. **(2 marks)**

b) Describe:
   (i) The **TWO** methods used to create comments in C programming languages. **(2 marks)**
   (ii) State **FOUR** uses of comments in programming. **(4 marks)**

c) Draw a flow chart that:
   (i) Reads and displays a set of SIX numbers **(4 marks)**
   (ii) Find and display the greatest common divisor (GCD) of any given two positive integers. **(4 marks)**

Question Four

a) Describe the **THREE** main programming constructs. **(9 marks)**

b) Briefly discuss the different levels of programming languages. Give at least **ONE** advantage and disadvantage for each of level. **(9 marks)**

c) What is the advantage of using a high level language to write programs as opposed to using machine language? **(2 marks)**

Question Five

Using a high level programming language, write a program that:

a) Adds two numbers by allowing the user to enter them on the keyboard, then calculates the results and output it to the user. **(10 marks)**

b) Prints the name of an input number if it's a digit, if it is not it informs the user that the number is not a digit. **(10 marks)**

Hint: If user enter 1, it prints ONE on the screen.