TECHNICAL UNIVERSITY OF MOMBASA

INSTITUTE OF COMPUTING AND INFORMATICS

DEPARTMENT OF BUSINESS ADMINISTRATION

UNIVERSITY EXAMINATION FOR:

BBIT Y1S2

EIT 4102: FUNDAMENTALS OF PROGRAMMING

END OF SEMESTER EXAMINATION

SERIES:APRIL2016

TIME:2HOURS

DATE: Pick Date**May2016**

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of Choose No questions. AttemptChoose instruction.

Do not write on the question paper.

Question ONE

a) Provide definitions for the following terms/phrase.

i. Programming syntax [2 marks]

ii. Program semantics [2 marks]

iii. Programming [2 marks]

iv. Algorithm [2 marks]

b) Describe three programming constructs [3 marks]

c) Write a C program to find the sum of the first 20 integers [5 marks]

d) State two methods of defining constants in C. Illustrate how constants may be used in a program that calculates the area a rectangle [6 marks]

e) Create a function called **max () that** takes two parameters num1 and num2 and returns the maximum between the two. [3 marks]

f) Outline the computer problem solving steps [5 marks]

Question TWO

a) Write a C program to perform basic arithmetic operations which are addition, subtraction, multiplication and division of two numbers. Numbers are assumed to be integers and will be entered by the user.
[10 marks]

b) Write a C program that uses an array and outputs the following [10 marks]

```
Element[0] = 100
Element[1] = 101
Element[2] = 102
Element[3] = 103
Element[4] = 104
Element[5] = 105
```

Question THREE

a) Explain the difference machine language, assembly language and high level language. Give one advantage and one disadvantage for each mentioning where each language may be applied
[10 marks]

b) Write a C program to print a pyramid pattern as shown [10 marks]

Question FOUR

a) Describe the key elements of a program development environment (PDE) [4 marks]

b) Write a program that stores a sentence entered by a user into a data file [6 marks]

c) Write a C program that prompts a user for marks and prints A if mark is >=70, B if marks is >=60 and <=69, C if mark is >=50 and <=59, D if mark is >=40 and <=49 and F if mark is <40

[10 marks]

Question FIVE

a) Write an algorithm that reads in, displays and exchanges integer values of two variables [4 marks]

b) Draw a flow chart and write te pseudo code for the algorithm in part a [8 marks]

c) Implement the algorithm using C programming language. [12 marks]