FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL  & ELECTRONICS ENGINEERING

**UNIVERSITY EXAMINATION FOR:**

BACHELOR OF SCIENCE IN ELECTRICAL AND ELECTRONICS

ENGINEERING

SMA 2175: PROGRAMMING I

END OF SEMESTER EXAMINATION

**SERIES:** APRIL 2016

**TIME:** 2 HOURS

**DATE:** Pick Date Apr 2016

**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. Attempt Choose instruction.
**Do not write on the question paper.**

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**Question ONE**

a) Write a C program that converts a character from lowercase to uppercase             (4 marks)

b) Explain the if else control structure and write a C program to illustrate it             (8 marks)

c) Define the following terms             (6 marks)

- Arrays
- Functions
- Pointers

d) Briefly explain how to compile a C program             (4 marks)

e) In details describe the permissible styles of comments in the C programming language             (4 marks)

f) By using functions in your C programs, you can practice structured programming, What is structured programming and what are its advantages             (4marks)

**Question TWO**

a) Use an algorithm (e.g. flow chart) to represent the flow control structure determined by the "if" statement.
(                                                                                          (6 marks)
b) Differentiate between void main () and int main()                                       (4 marks)
c) Explain the following terms as used in programming                                       (8 marks)
- Compiler
- Bug
- Data Types
- Algorithms

## Question THREE

a) Write a C program to illustrate the use of each of the following operators              (10 marks)
- The assignment operator
- Mathematical operators
- Relational operators
- Logical operators

b) Describe the format of a C program                                                      (10 marks)

## Question FOUR

a) By using a flow diagram, show how a while loop construction works.                      (6 marks)
b) What guidelines should you follow in creating names for variables and constants         (8 marks)
c) Define a Psedu code and explain how is it used a problem solving tool                    (6 marks)

## Question FIVE

a) Using a program example explain the difference between While and Do-While loop statements   (10 marks)
b) What is the difference between puts() and printf ()                                      (4 marks)
c) What's the difference between an integer variable and a floating-point variable          (6 marks)