TECHNICAL UNIVERSITY OF MOMBASA

INSTITUTE OF COMPUTING AND INFORMATICS

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

SMA 2175: COMPUTER PROGRAMMING I

END OF SEMESTER EXAMINATION (PAPER2)

SERIES: SEPT. 2017

TIME: 2HOURS

DATE:SEPT 2017

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **five** questions. Attemptquestion ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

:

Question one (30 marks)

(a) Briefly discuss any two types of errors in C {4 Marks}

(b) Describe the four basic data types in C programming language {4 Marks}

(c) Briefly describe basic structure of a C Program {4 Marks}

(d) List down four relational operators {4 marks}

(e) Explain the following terms as used in programming

- Top down programming method
- Bottom up programming method {6 marks}

(f) Distinguish between a low level language and a high level language {8 marks}

Question two (20 marks)

(a) Identify syntax errors in the following program. After corrections, what output would you expect when you execute it.

```
#define PI 3.142
Main
{
Int R, C
Float perimeter
```

```
Float area;
C = PI
R = 10;
Perimeter = 2.0*C*R;
Area = C*R*R;
Printf("%f" "%d", &perimeter, &area)
}
```
{10 marks}

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

Question three (20 marks)

(a) Distinguish between putchar() and getchar() functions {4 marks}

(b) Write a C program that converts a character from a lowercase to uppercase {6 marks}

(c) Explain the if else control structure and write a C program to illustrate the it {10 marks}

Question four (20 marks)

(a) Write a C program to illustrate the use each of the following operators

- Arithmetic operators
- Logical operators
- Relational operators {10 marks}

(b) What will be the output of the following segment when executed {5 marks}

```
int a = 20, b = 10;
if (a>b)
{
If (b>5)
}
printf("%d", b);
else
printf("%d", a);
 }
```

(c) Using a program example explain the difference between While and Do-While loop statements {5 marks}

Question five (20 marks)

(a) State three advantages of using functions in a program {3 marks}

(b) Using functions write a program to perform multiplication and division of two variables. {6 marks}

(c) Explain how to initialize a one dimensional array and a two dimensional array {4 marks}

(d) Write a pseudo code and draw a flowchart for a program to find even numbers between 1 to 100 {7 marks}