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**KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR**  
**FOR THE CERTIFICATE IN INFORMATION TECHNOLOGY**  
**CIT 1002- STRUCTURED PROGRAMMING**

Date: 6<sup>TH</sup> DECEMBER 2022  
Time: 11:30AM – 1:30PM

**INSTRUCTIONS TO CANDIDATES**

**ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE (30 MARKS)**

- a) Discuss the different types of errors that are identified in C programs (6 Marks)
- b) Identify and briefly describe the computer languages classifications (6 Marks)
- c) Describe the various tools used in C programming language translators (8 Marks)
- d) Explain the steps to be followed in the program development (6 Marks)
- e) Distinguish the types of variables (4 Marks)

**QUESTION TWO (20 MARKS)**

- a) Explain the following program step by step. (10 Marks)  

```
// This is a C program
#include<stdio.h>
main()
{
printf("Hello World!\n");
return 0;
}
```
- b) Define the term array and write syntax of a 2-dimensional array. (4 Marks)
- c) State the basic types of constants in C programming language. (6 Marks)

**QUESTION THREE (20 MARKS)**

- a) Write C program that displays this exact output (8 Marks)  
Output: This is line one  
This is line two  
This is line three  
This line four
- b) Define the term pointer and describe the rules which are important when using pointers (6 Marks)
- c) State the arithmetic operators used in C programming language and demonstrate their functions using well elaborate examples (6 Marks)

**QUESTION FOUR (20 MARKS)**

- a) Write a C program that uses symbolic constant, allows user to enter values and calculates the area of a circle. (10 Marks)
- b) Explain the different data types used in C programming language and give example in each data type (10 Marks)

**QUESTION FIVE (20 MARKS)**

- a) Describe the rules in operator precedence in C programming language. (4 Marks)
- b) State the six operators in C programming language that form logical expressions (6 Marks)
- c) Using while loop, write a C program that displays 1 through 100. (10 Marks)