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**KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
FIRST YEAR, FIRST SEMESTER EXAMINATION
FOR THE DIPLOMA IN BUSINESS INFORMATION TECHNOLOGY
DIT 1002 – STRUCTURED PROGRAMMING**

Date: 14TH AUGUST 2023
Time: 8:30AM – 10:30AM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Define the following terms as used in structured programming: (5 Marks)
- Computer language
 - Algorithm
 - Software
 - Keyword
 - Case sensitive
- b) Constants can be used in C expressions in two ways. State the two ways and give example of each (4 Marks)
- c) A variable is an identifier that is used to represent some specified type of information within a designated portion of the program. Describe types of variables (5 Marks)
- d) State and discuss the files used in C program (4 Marks)
- e) Define the term format specifier and highlight various format specifiers with their meaning (6 Marks)
- f) While programming, a programmer may encounter different errors. Describe the types of errors and give example of each (6 Marks)

QUESTION TWO (20 MARKS)

- a) Various tools are used to transform the instructions prepared by programmers into a form which can be interpreted & executed by the computer. Identify and discuss the various tools to achieve this purpose (8 Marks)
- b) There are five arithmetic operators in C programming language. Discuss (4 Marks)
- c) Discuss the different elements that make up the following simple program (8 Marks)

```
#include<stdio.h>
#define PI 3.14
main()
```

```

{
float radius, area;
printf("Enter the radius of the circle \n");
scanf("%f", &radius);
area = PI * radius * radius; /* PI is a symbolic constant */
printf("Area is %.2f cm squared ",area);
return 0;
}

```

QUESTION THREE (20 MARKS)

- C supports five basic data types. Giving examples of each, discuss the data types along with the C keywords that represent them (10 Marks)
- Write a C program that creates variables of types **char**, **float**, and **double** assigns each a value and outputs these values to the screen. (10 Marks)

QUESTION FOUR (20 MARKS)

- Logical expression contains four relational and two equality operators. Highlight the logical expression (6 Marks)
- The order of executing the various operations makes a significant difference in the result. C assigns each operator a precedence level. Explain the rules that apply (4 Marks)
- Using the do-while loop, write a C program that outputs values from 15 to 105 (10 Marks)

QUESTION FIVE (20 MARKS)

- A student is unable to calculate the area of a rectangle. Write a C program computes the area of a rectangle, given its dimensions. It first prompts the user for the length and width of the rectangle and then displays the area. (10 Marks)
- Write a C program that will calculate the following expression. (10 Marks)

bread = 250.0 + 600.0 * y / wheat;
 Where y = 50.0 and wheat= 20.0.