KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2024/2025 ACADEMIC YEAR
FIRST YEAR, FIRST SEMESTER EXAMINATION
FOR THE DIPLOMA IN INFORMATION & COMMUNICATION TECHNOLOGY
DIT 1002 – STRUCTURED PROGRAMMING

Date: 4TH December 2024
Time: 2:30PM – 4:30PM

INSTRUCTIONS TO CANDIDATES
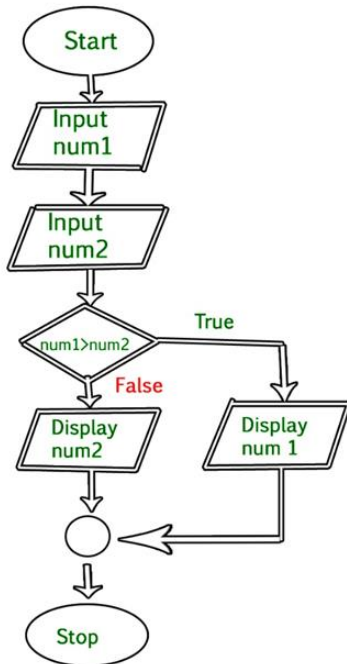**ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**
QUESTION ONE (30 MARKS)

a) Write a C program that would display the message "**Welcome to KIRIRI WOMEN UNIVERITY – THE LEADING WOMEN UNIVERSIT**!" as its output to the screen

(5 Marks)

b) Define functions in the context of programming. (2 Marks)
   i. Explain four reasons why functions are needed in programming. (8 Marks)
c) Identify all the programming errors in the program below. (6 Marks)

```
/*Program to compute the Mean of three numbers using C language/*
#Include<stdio.h>
 void main()
{
//Declare three numbers and the mean
        double num1, num2, num3, mean
//input the three numbers
        printf(\n"input the three numbers");
        scanf(%lf",&num1);
        scanf("%lf",&num2)
        scanf("%lf",&num3);
//compute the mean
        mean =num1+num2+num3/3
 //output the mean
        printf("\nThe Mean is %lf",Mean);
        return 0;
```

d) Define the following terms. (5 Marks)
   i. Computer program
   ii. Assembler
   iii. Compiler
   iv. Datatype
   v. Debugger
e) Explain 4 variable naming conventions applied in C programming language. (4 Marks)

QUESTION TWO (20 MARKS)

a) Write an algorithm that reads three numbers and prints the value of the largest number.
                                                                                    (5 Marks)

b) Give 4 reasons for using a compiler instead of interpreter during translation.   (4 Marks)

c) Explain the major two major differences between structured programming and object-oriented programing as programming paradigm shifts   (4 Marks)

d) Using the bellow flowchart write a C program to input two numbers from the user and display the largest of two numbers   (7 Marks)

QUESTION THREE (20 MARKS)

a) Explain the major benefit a programmer would enjoy while using low level programing languages to write his/her program   (2 Marks)

b) Outline four types of documentations found in a program user manual   (4 Marks)

c) There are THREE categories of errors that can be generated by a program. Explain the three of these and use an example for category   (6 Marks)

d) Write a program in C language that could be used to generate the following   (8 Marks)

8	8	8	8	8	8	8	8
7	7	7	7	7	7	7	
6	6	6	6	6	6		
5	5	5	5	5			
4	4	4	4				
3	3	3					
2	2						
1							

QUESTION FOUR (20 MARKS)

a) A program is required to prompt the user to enter two integers. The program should compute the difference of the two integers. The program should display the result when it is positive, otherwise it should display the message "Negative Result".

    i.   Draw a flowchart for the program   (5 Marks)

   ii.   Write a pseudocode   (5 Marks)

  iii.   Write a program in C to accomplish the above   (5 Marks)

b) Explain any three factors that a programmer may need to consider when deciding on which programming language to use in developing a program.   (3 Marks)

c) Briefly explain two reasons why program documentation is important at all stages of program development.   (2 Marks)

QUESTION FIVE (20 MARKS)

a) i) How is a one-dimensional array declared in C?   (2 Marks)

    ii) Write a program to read in and average a set of n integral values using a one-dimensional array   (5 Marks)

b) Provide any four rules you will use when forming variable names   (4 Marks)

c) Brief explain what is IF ELSE Statement and a write a C program to demonstrate the IF ELSE statement as used in C   (6 Marks)

d) Identify and explain any three relational operators used in C programming language

    (3 Marks)