(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

UNIVERSITY EXAMINATIONS

2019/2020 ACADEMIC YEAR

SPECIAL/SUPPLEMENTARY EXAMINATIONS

YEAR ONE SEMESTER TWO EXAMINATIONS

FOR THE DIPLOMA IN

(INFORMATION TECHNOLOGY)

COURSE CODE : DIT058

COURSE TITLE : INTRODUCTION TO PROGRAMMING

DATE: 15/02/2021 TIME: 2.00 P.M. – 4.00 P.M.

INSTRUCTIONS TO CANDIDATE

ANSWER QUESTION ONE AND ANY OTHER TWO

QUESTION ONE (COMPULSORY) [24 Marks]

a) What is C language? **[2 Marks]**

b) What is the difference between printf(...) and sprintf(…) **[2 Marks]**

c) Write a program to display the following pattern. **[8 Marks]**

```
*
* *
* * *
* * * *
* * * * *
```

d) Explain the four stages of the program development cycle of a program **[8 Marks]**

e) Explain reasons for using C language as a program language of choice **[4 Marks]**

QUESTION TWO [18 MARKS]

a) What is an Algorithm? **[2 Marks]**

b) Explain some of the characteristics of an algorithm **[5 Marks]**

c) Write a Program to calculate and display the volume of a CUBE having its height (h=10cm), width (w=12cm) and depth (8cm). **[6 Marks]**

d) Describe four rules for naming the C variables? **5 Marks]**

QUESTION THREE [18 MARKS]

a) Explain several categories of operators in C. **[6 Marks]**

b) What is a recursion? **[2 Marks]**

c) Write a recursive function that calculates the factorial of a number. **[6 Marks]**

d) Using examples differentiate literal constant from symbolic constant. **[4 Marks]**

QUESTION FOUR [18 MARKS]

a) Define *Comments* and their use in C. **[5 Marks]**

b) How many * does the following program segment print **[3 Marks]**

```
for(x=0;x<10;x++)
{
        for(y=5;y>0;y--)
        {
                printf("*");
        }
}
```

e) Write a C program to process the grades of a student. The marks are obtained from the user through input from the keyword. **[10 Marks]**

QUESTION FIVE [18 MARKS]

a) Explain the structure of for loop in C? **[4 Marks]**

b) Write a program to print whether a given number is even or odd. **[8 Marks]**

c) What is an operator? **[2 Marks]**

d) C language is rich in built-in operators. Name five types of operators giving example of each. **[4 Marks]**