MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (ELECTRICAL AND ELECTRONICS ENGINEERING)

BACHELOR OF SCIENCE (CIVIL ENGINEERING)

EEE 102: COMPUTER PROGRAMMING

EVC 102: COMPUTER PROGRAMMING

DATE: 26/5/2019   **TIME: 2.00-4.00 PM**

INSTRUCTIONS

Answer **question ONE and any other TWO questions.**

QUESTION ONE (30 MARKS)

a)   State two advantages and two disadvantages of machine language   (4 marks)

b)   Distinguish between the following giving an example of each   (8 marks)

      i)   Operator and Operand

      ii)   Local Variable and Global Variable

c)   Write a C program that computes the area of a rectangle. It should prompt the user for the length and width of the rectangle.   (4 marks)

d)   Identify the errors in the following code;   (4 marks)

```c
#includ <stdio.h>
int main ()
{
        for( ; ; )
        {
                printf("This loop will run forever.\n")
        }
return 0
}
```

e)   Explain the purpose of the following directives in C   (6 marks)

      i.   Return 0;

      ii.   Int main()

      iii.   Printf

f)   Describe using examples two ways in which constant values can be used in C expression statements.   (4 marks)

QUESTION TWO (20 MARKS)

a)   Briefly explain five arithmetic operators used in C   (5 marks)

b)   Write a C program which displays value of variable j is 0 - 3 using do while statement

                                                               (5 marks)

c)   Explain the different stages involved in program development   (5 marks)

d)   Define the term loop and write the general syntax of a for loop   (5 marks)

QUESTION THREE (20 MARKS)

a)   State what the following translators do and describe how each work.   (6 marks)

      i)   Assembler

      ii)   Compiler

      iii)   Interpreter

b)   Write a simple C program to display a character and a float number typed in through the key board.   (8 marks)

c)   Describe three types of errors that a programmer can encounter during programming.

(6 marks)

QUESTION FOUR (20 MARKS)

a)   Compare and contrast the following pairs of terms   (8 marks)

    i)   Object code and source code

    ii)   Program and algorithm

b)   Develop an algorithm for a program to accept the student marks (one input only) and assign the grade according to the table below:.   (6 marks)

MARKS	GRADE
0 - 39	F
40 – 49	D
50 – 59	C
60 – 69	B
70 – 100	A
Any Other Marks	INVALID

c)   Write a C program for the above algorithm.   (6 marks)

QUESTION FIVE (20 MARKS)

a)   Table 1 Shows East Africa countries with their corresponding stable foods.

    Use it to answer the question that follows

Country	Name	Stable Food
1	Tanzania	Rice
2	Kenya	Ugali
3	Uganda	Matoke
Any Number	Sudan	Bread

Table 1.

    i.   Draw a flowchart to represent the logic displaying the name of the country and its stable food when supplied with the county number   (7 marks)

    ii.   Write a C program to accept the country number the program should the display the name and the stable food for the country based on the number entered. Use switch statement   (8 marks)

b)   State five advantages of high level languages   (5 marks)