

KIBABII UNIVERSITY COLLEGE
(A Constituent College of Masinde Muliro University of Science and Technology)

UNIVERSITY EXAMINATIONS
2014/2015 ACADEMIC YEAR

FOR THE DIPLOMA IN INFORMATION TECHNOLOGY

COURSE CODE: DIT 058

COURSE TITLE: INTRODUCTION TO PROGRAMMING

DATE: DECEMBER, 2014

TIME: 2 Hrs

INSTRUCTIONS : ANSWER Question ONE and ANY TWO QUESTIONS

Q1.

- a) Briefly discuss the evolution of the C programming language. (5 Marks)
- b) Explain the contents of the following program in details

```
#include <stdio.h>
main()
{
    printf("hello, world\n");
}
```

(5 Marks)

- c) Write a program that implements a function that calculates the area and circumference of a circle of any given dimensions defined by the user. (4 marks)
- d) Differentiate between the following: -
 - i) Warning errors and critical errors
 - ii) High-Level Language and Low-Level Language
 - iii) Machine language and assembly language (6 Marks)
- e) Write a program that utilises an iterative control structure to populate a two dimensional array (4 Marks)

Q2.

- a) Using an example, differentiate between the decision making and bifurcation control constructs (6 Marks)
- b) Using an example, differentiate between the Do While ... and the Do ... Loop control constructs (6 Marks)
- c) Briefly describe the differences between the following programs

i)

```
For (int x=0; x<5; ++x)
```

```
    Printf("%d",x);
```

ii) For (int x=0; x<5)

```
{
```

```
    Printf("%d",x);
```

```
    x++;
```

```
}
```

(6 Marks)

Q3.

- a) Describe the structure of the For ... loop control structure (6 Marks)
- b) Write a program that would endlessly loop if a user enters 0, but would terminate if the user enters any other value. (4 Marks)
- c) State whether the following program is correct or wrong.
 - a. If correct, describe its output.
 - b. If wrong,
 - i. state its errors,
 - ii. correct the errors
 - iii. after correcting its errors, describe its output.

```

#include<stdio.h>
int main()
{
    int n;
    n=1;
    for (;n<=10;)
    {
        printf ("%3d", n);
        n++;
    }
    return 0;
}

```

(8 Marks)

Q4.

a) Using appropriate examples, differentiate the following as used in C Programming:-

i) Signed integer and unsigned integer

ii) Procedure and function

iii) A Compiler and a Linker

(6 Marks)

b) Write a program that swaps two values requested from the user such that they are arranged in descending order

(4 Marks)

c) Describe any four compiler errors encountered while programming using the C programming Language.

(8 Marks)

Q5.

a) Discuss the output of the following program

```

#include<stdio.h>

int main() {
    int k,j;
    for(k=8;k>0;k--) {
        for(j=3;j>=k;j--) {
            printf("*");
        }
        printf("\n");
    }
}

```

```

for(k=0;k<8;k++) {
    for(j=3;j>=k;j--) {
        printf("*");
    }
    printf("\n");
}
return 0;
}

```

(8 Marks)

b) Write a program that implements the following pattern

```

*****
*****
*****
*****
*****
*****
*****
*****
*****
*****

```

(5 Marks)

c) Write a program that implements a function that divides three values

(5 Marks)