



(Knowledge for Development)
KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR**

YEAR ONE SEMESTER ONE EXAMINATIONS

**FOR THE DEGREE OF BACHELOR OF
MATHEMATICS AND SCIENCE [SMA]**

COURSE CODE : CSC 111
COURSE TITLE : INTRODUCTION TO PROGRAMMING

DATE: 25 /02/2021 TIME: 08:00 A.M – 10:00 A.M

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [COMPULSORY] [30 MARKS]

- a) Distinguish between V=F and G==J [2 Marks]
- b) Differentiate between 3GL and 4GL. [6 Marks]
- c) What are the differences between a compiler and an interpreter [6 Marks]
- d) Define the following terms and give example [6 Marks]
- I. Algorithm
 - II. Flow chart
 - III. Pseudocode
- e) Identify which one of the following is not an identifier and which one is an identifier [4 Marks]
- I. 00tt
 - II. _0r
 - III. %ty
 - IV. K99
- f) Write a program in C programming language to calculate simple interest. Given simple interest=principal *time*rate. [6 Marks]

QUESTION TWO [20 MARKS]

- a) Differentiate between passing by value and passing by reference. Give relevant example for each. [8 Marks]
- b) Analyze the following programming C code:

```
I
#include <stdio.h>
int main() {
    for(int i=1; i<3; i++){
        for(j=1; j<4; j++){
            printf("%d",i);
        }
        print("\n");
    }
    return 0;
}
```

```
II.
#include <stdio.h>
int main() {
    int num = 8;
    switch (num) {
        case 7:
            printf("Value is 7");
            break;
        case 8:
            printf("Value is 8");
            break;
        case 9:
            printf("Value is 9");
            break;
        default:
            printf("Out of range");
            break;
    }
    return 0;
}
```

QUESTION THREE [20 MARKS]

- a) Explain the term function Signature and give relevant example [2 Marks]
- b) Explain the meaning of the following
Expr1? Expr2: Expr3. [4 Marks]
- c) Write a program using while loop to product of numbers from 1 to 10. [8Marks]
- d) Identify if the following statements are true or False
- Only character or integer can be used in switch statement
 - #define is known as preprocessor compiler directive.
 - It is necessary that a loop counter must only be an int. It cannot be a float.
 - The ++ operator increments the operand by 1, whereas, the -- operator decrements it by 1.
 - Algorithm is the graphical representation of logic.
 - A do-while loop is used to ensure that the statements within the loop are executed at least twice [6 Marks]

QUESTION FOUR [20 MARKS]

- a) State and Explain the three features of an algorithm [6 Marks]
- b) Describe the three types of errors in a program [6 Marks]
- c) Write a program to calculate the factorial of any given Number in C programming language. [8Marks]

QUESTION FIVE [20 MARKS]

- a) Describe the term Array and give relevant example [4 Marks]
- b) Analyze and Identify the errors in the following program
- ```
Include<stdio.h>
Main(){
Float k;
Printf("please input Number");
Scant("%d, k);
Printf("Number =",k);
Return;
}
```
- [6 Marks]
- c) Write c program that has functions to calculate area of circle and area of rectangle. The program should also have the main program [10 Marks]