(K*nowledge for Development)*

KIBABII UNIVERSITY COLLEGE

A CONSTITUENT COLLEGE OF

MASINDE MULIRO UNIVERSITY OF

SCIENCE AND TECHNOLOGY

UNIVERSITY EXAMINATIONS

2014/2015 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER

MAIN EXAMINATION

FOR THE DEGREE OF COMP SCIENCE & BIT

COURSE CODE: CSC 111

COURSE TITLE: INTRODUCTION TO COMPUTING

DATE: 4TH MAY, 2015 **TIME** 11.30AM - 1.30PM

INSTRUCTIONS TO CANDIDATES

Answer Question One in Section A and Any other TWO (2) Questions in Section B

Instructions to candidates:

This paper consists of FIVE Questions.
Answer Question ONE [30 Marks] and any other TWO Questions [20 Marks Each].
Write your college number on the answer sheet.

This paper consists of 2 printed pages

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A

Question 1: [30 MARKS] Compulsory

a)
- i. Distinguish between a compiler and an interpreter (4 marks)
- ii. Describe the term recursion and illustrate using suitable examples. (5 marks)
- iii. Describe the difference between pass by value and pass by reference. Use a problem to evaluate the area of a circle using a function getting data from main. (4 marks)
- iv. Using an Example illustrate the nested loop programming concept. (2 marks)

b)
- i. Explain the three types loops used in C programming language. (6 marks)
- ii. Explain any three types of programming errors. (6 marks)
- iii. Explain the function of the symbol } in C program (3 marks)

SECTION B: Answer any Two Questions from this section

Question 2: [20 Marks]

Describe the Five generations of computer programming languages; clearly highlight the characteristics, advantages, disadvantages and Examples of each generation. (20 marks)

Question 3: [20 Marks]

a) With the aid of a flowchart, write a program in C language that allows a user to input any integer number then determine if the number is a power of two. (10 marks)

b) Write a C program that finds the factorial of a given number N using recursive function. (10 marks)

Question 4: [20 Marks]

a) Write a program in C language using FOR loop that allows the user to input a number and produce a multiplication table. (8 marks)

b) Analyze the programs 1 and 2 below and write the output:- (12 marks)

Program1

```
#include <stdio.h>
Void main ( ) {
int i=1;
 for (k=1; k<10; k++)
{
i*=k;
printf (“%d”, k,” \t”); printf (“%d”, i, “\n”);
}
printf (“%d”, i);
}
```

Program2

```
#include<stdio.h>
void main(){
   int a=5,b=10;
   swap(&a,&b);
   printf("%d     %d",a,b);
}
void swap(int *a,int *b)
{
   int  *temp;
   *temp =*a;
   *a=*b;
  *b=*temp;
}
```

Question 5: [20 Marks]

a) Explain the program development Cycle. (10 marks)

b) Identify the errors in the following programs. (10marks)

Program1

```
#include<stdio>
        int main()
        {
            int a = 5;
            switch (a)
            {
            case 1:
            printf ("First")
           case 2:
            printf ("Second");
              case 3 + 2:
            printf ("Third");
            case 5:
            printf("Final");
            break;
      }
            return 0;
        }
```

Program 2:

```
#include<stdio.h>
int main ()
{
   int i=1;
   while ()
   {
      printf ("%d\n", i++);
      if (i>10)
         break;
   }
   return ;
```