



(Knowledge for Development)

**KIBABII UNIVERSITY**

(KIBU)

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS  
YEAR ONE SEMESTER TWO EXAMINATIONS**

**FOR THE DEGREE OF  
(CS & SMA)**

**COURSE CODE : CSC 125/CSC121**

**COURSE TITLE : PROCEDURAL PROGRAMMING**

**DATE: 13/5/2022**

**TIME: 02.00 P.M – 04.00 P.M**

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**INSTRUCTIONS TO CANDIDATES**

**ANSWER QUESTIONS ONE AND ANY OTHER TWO.**

### QUESTION ONE (COMPULSORY) [30 MARKS]

- a) What do you understand by the following terms as used in C++? [3 Marks]
- Identifier
  - Function Signature
  - Array
- b) Write a program to calculate compound interest and draw appropriate flowchart [6 Mark]
- c) Describe the advantages for using C++ language as a program language of choice [4 Marks]
- d) Discuss various types of errors in C++ language [3 Marks]
- e) What extension is used for C++ source file [2 Marks]
- f) Describe four rules for naming the C++ variables? [6 Marks]
- g) Write a program with three functions. One of the functions should be main and the second function should calculate area of a circle and the last function area of a rectangle. The two functions should be linked to the main function [6 Marks]

### QUESTION TWO [20 MARKS]

- a) Using example, explain different types of functions in C++? [4 Marks]
- b) Explain the structure of C++ user defined functions. [4 Marks]
- c) Write C++ function that will return interest given Principle, Time and Rate. The simple interest **I** is calculated given the Principle as **P**, Rate per annum as **R** (%) and Time **T** in years using the formula **I=PTR/100**. [6 Marks]
- d) Using examples differentiate call-by-value and call-by-reference [6 Marks]

### QUESTION THREE [20 MARKS]

- a) Describe how constants are declared in C++. [4 Marks]
- b) Using examples differentiate literal constant from symbolic constant. [4 Marks]
- c) Write a C++ program to display every third number from the even numbers from 1 to the number entered by the user. [6 Marks]

**Enter Positive number:16**

**Expected output:**

**Numbers are:**

d) Explain several categories of operators in C++.

[6 Marks]

#### QUESTION FOUR [20 MARKS]

- a) Define *Comments* and their use in C++. [4 Marks]
- b) C++ has been designed in such a way that data is handled efficiently; using examples, explain various data types that help in achieving the goal above. [6 Marks]
- c) A good program is a result of equally good program development practice, explain step by step procedure of developing good programs [6 Marks]
- d) Distinguish between a variable and a constant [4 Marks]

#### QUESTION FIVE [20 MARKS]

- a) Write a code segment to create a file named **temp.txt** if it does not exist. [4 Marks]
- b) Write a simple program that writes *Welcome to C++ programming file operations.* to a file named *welcome.txt* [4 Marks]
- c) Write a C++ program that reads the content in file above (*welcome.txt*) and display the results on the screen. [4 Marks]
- d) What is a recursion? [2 Marks]
- e) Write a recursive function that calculates the factorial of a number. [6 Marks]