



FreeExams.co.ke

**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

**SPECIAL/SUPPLEMENTARY
EXAMINATIONS**

SECOND YEAR SEMESTER TWO EXAMINATIONS

**FOR THE DEGREE OF
BACHELOR OF SCIENCE
(COMPUTER SCIENCE)**

COURSE CODE : CSC 125

COURSE TITLE : PROCEDURAL PROGRAMMING

DATE: 08/08/2023

TIME: 2.00PM- 4.00PM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

SECTION ONE [COMPULSORY]

Question #1 [30 Marks]

- a) What do you understand by the following terms as used in C++? [3 Marks]
- Variable
 - Scope
 - Array
- b) What are the keywords used to define the following, state with example? [6 Marks]
- Integral Data Type
 - Unsigned long integral data type
 - Floating point data type
 - signed character data type
 - signed short integral data type
- c) Explain reasons 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) Using an Example, discuss the structure of a C++ program. [6 Marks]

SECTION TWO [ANSWER ANY TWO]

Question #2 [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 #3 [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 process the grades of a student. The marks are obtained from the user through input from the keyword. [6 Marks]
- d) Explain several categories of operators in C++. [6 Marks]

Question #4 [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) Write an appropriate control structure that will take input *temp* from the user and Print following messages depending on the value assigned to temp.
- i) Ice, if value of temp is less than 0
 - ii) Water, if value of temp lies between 0 and 100
 - iii) Steam, if value of temp exceeds 100 [6 Marks]
- d) Explain the structure of for loop in C++? [4 Marks]

Question #5 [20 Marks]

- a) Write 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]