CHUKA   **UNIVERSITY**

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UNIVERSITY EXAMINATIONS

Y1S1 EXAMINATION FOR THE AWARD OF CERTIFICATE IN

COMPUTER SCIENCE

COSC 00103: INTRODUCTION TO PROGRAMMING AND ALGORITHMS

STREAMS: CERT COMP SCI.   **TIME: 2 HOURS**

CAMPUSES: MAIN CAMPUS

DAY/DATE…………………   **……………………….**

INSTRUCTIONS:

- Answer question **ONE** and **TWO** other questions
- Do not write anything on the question paper
- This is a **closed book exam**, no reference materials are allowed in the examination room
- There will be **NO** use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely.

SECTION A: ANSWER <u>ALL</u> QUESTION IN THIS SECTION

Question one (30 marks)

a. Define the Following terms:
   i.   Program [2 mks]

   ii.   Algorithm[2 mks]

   iii. variable[2 mks]

b. What is FORTRAN?[3 mks]

c. What is **BASIC** computer programming?[3 MKS]

d. WRITE GENERAL SYNTAX FOR FOLLOWING PROGRAMMING LANGUAGES?
   i.   C [3 MKS]

   ii.   C++[3 MKS]

e. Draw & CLEARLY label flow diagram of if/else selection statement[4 mks]

f. List TWO guidelines to writing Pseudocode[2 mks]

g. What is the function of a Pre-processor in a C program structure[2 mks]

h. Why is studying programming style important[2 mks]

i. If a friend asked you for resource tools to learn C,which TWO would you recommend [2 mks]

SECTION B

Question two (20 marks)

a. Draw A flow chart to sum TWO numbers entered by user[8 mks]

b. Write Pseudocode of above FLOW CHART you have created[6 mks]

c. Write algorithm for above Pseudocode[6 mks]

Question three (20 marks)

a. Explain FOUR characteristics of a good algorithm?[4 MKS]

b. Write a C program to print Hello,World! FIVE times using WHILE LOOP[8 Mks]

c. AS a programmer developing a computer program,LIST & explain the SIX stages you to go through in order to develops a successful and beneficial computer programme[8 mks]

Question Four (20 marks)

a. Write short notes on following programming languages[8 MKS]

i. BCPL

ii.SIMULA

iii.COBOL

iv.LISP

b. What function do the following programming language Translators perform[6 mks]

1.COMPILERS [2 MKS]

2.Interpreters [2 MKS]

3.Assemblers [2 MKS]

c. List THREE differences between interpreter and compiler [6 mks]

Question Five (20 marks)

a. If variable A=10 and variable B=20, Describe the following operators [4 MKS]

1.) !=

2.) &&

b. Identify & explain errors in following Java texts [8 mks]

    1.) int a = 5

2.) String s = "...";
      int a = 5 - s;

3.) public static int sum (int a, int b) {
    return a - b;
    }

4.) Division by zero:

    int a, b, x;
    a = 10;
    b = Integer.parseInt(kb.readLine());
       x = a / b;

c.Write a simple JAVA program that captures an employee name and salary and outputs the details [8 mks]