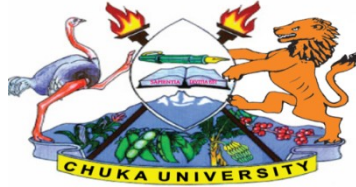


CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF CERTIFICATE IN COMPUTER SCIENCE

COSC 00103: INTRODUCTION TO PROGRAMMING AND ALGORITHMS

STREAMS: CERT COMP SCI

TIME: 2 HOURS

DAY/DATE: FRIDAY 24/09/2021

8.30 A.M – 10.30 A.M

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

QUESTION ONE (30 MARKS)

- a. Define The Following Terms:
- i. Program (2 marks)
 - ii. Programming language (2 marks)
 - iii. Translator (2 marks)
- b. Differentiate an interpreter from a compiler (4 marks)
- c. Explain the following types of program errors
- i. Syntax errors (2 marks)
 - ii. Semantic errors (2 marks)
 - iii. Logical errors (2 marks)
- d. Declare a variable int type using C syntax (4 marks)
- e. List Four common resource tools to learn C (4 marks)

- f. Write the Syntax for a simple C Programme, that outputs the result “Hello, World!” five times. (6 marks)

SECTION B (ANSWER ANY TWO QUESTIONS ONLY)

QUESTION TWO (20 MARKS)

- a. Assume the given marks are $y=50$ for a student
If given marks are more than 80, then
Student is brilliant
If given marks are less than 40, then
Student is poor
If given marks are less than 80 and more than 40, then
Student is average

Write a C program with the help of **if conditional statements** to convert the above given situation into a programming code (10 marks)

- b. Briefly outline the history of programming (10 marks)

QUESTION THREE (20 MARKS)

- a. Draw A flow chart to sum TWO numbers entered by user (6 marks)
b. Write a pseudocode for Q.3 a. flowchart (4 marks)
c. Using C programming language, write the syntax of the programme of Q.3 b. pseudocode (5 marks)
d. Illustrate the software development life cycle of the Q.3 c programme (5 marks)

QUESTION FOUR (20 MARKS)

- a. There are over 250 programming languages. List & Explain FIVE major differentiation factors in programming languages (10 marks)
b. Using functions, create a calculator in C to prompt a user for two integers. Then the program should calculate their addition, subtraction, multiplication, division, and modulus. Your program should display the results on the screen (10 marks)

QUESTION FIVE (20 MARKS)

- a. What is an algorithm, Explain the Five major characteristics of an algorithm (10 marks)
- b. List Four GENERAL Naming conventions for a good Programming Style (4 marks)
- c. What do the following Operators mean (6 marks)

i. &&
ii.
iii. %

