

THARAKA



UNIVERSITY

COLLEGE

*(A Constituent College of Chuka University)*

## UNIVERSITY EXAMINATIONS

### 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: WEDNESDAY 08/04/2020**

**2.30 PM – 4.30 PM**

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#### **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.
- Marks are awarded for clear and concise answers.

#### **SECTION A**

#### **QUESTION ONE (30MKS)**

- a. Define the following terms in programming (6mks)
  - i. Algorithm
  - ii. Function
  - iii. Variable
- b. State three properties of an algorithm (3mks)
- c. List four rules of naming variables in C programming languages (4mks)
- d. Give the syntax of the following conditional statements in C programming (4mks)
  - i. If statement
  - ii. If...else statement

- e. During program development, errors are likely to appear. Explain any two types of such errors (4mks)
- f. What is the use of the following functions in C? (4mks)  
Printf ()  
Scanf ()
- g. Write a C program the prompts for the first name and age from the user, then displays them as “your name is.....and your current age is..... (5mks)

**SECTION B (Answer any two questions from this section)**

**QUESTION TWO (20MKS)**

- a. Distinguish between Source code and object code (4mks)
- b. Write a C program to add two numbers by prompting the user to enter them and display the result (6mks)
- c. Explain the lifecycle stages that a C program undergoes during its development (10mks)

**QUESTION THREE (20MKS)**

- a. Reserved words are predefined words of any programming language that are used for special purposes in the source program. List four examples of reserved words in C(4mks)
- b. Differentiate between a variable and a constant (4mks)
- c. There are certain characters in C when they are preceded by a backslash they have a special meaning. Write the description of the following escape sequences (10mks)
  - i. \n
  - ii. \t
  - iii. \r
  - iv. \\
  - v. \”
- d. Apart from C programming language, state any other two examples of programming language you know (2mks)

**QUESTION FOUR (20MKS)**

- a. Explain the work of the following language translators (6mks)
  - i. Compiler
  - ii. assembler
  - iii. interpreter
  
- b. What is an infinite loop, give two conditions that can cause infinite loop (4mks)
  
- c. Explain FIVE features of C that make it a strong programming language (10mks)

**QUESTION FIVE (20MKS)**

- a. Illustrate any three parts of a function (3mks)
  
  - b. Draw a flow chart to represent an algorithm of finding the area of a circle (7mks)
  
  - c. Write a C program that prompts a user to enter marks and awards the grades as follows (10mks)
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