**CHUKA**             **UNIVERSITY**

### SUPPLEMENTARY / SPECIAL EXAMINATIONS

### FIRST YEAR EXAMINATION FOR THE AWARD OF CERTIFICATE IN COMPUTER SCIENCE

**COSC 00103: INTRODUCTION TOPROGRAMMING AND ALGORITHM**

**STREAMS: CERT COMPSCI Y1S1**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 16/11/2020**          **11.30 A.M - 1.30 P.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.
- Marks are awarded for clear and concise answers.

**QUESTION ONE (30 Marks)**
a) Define the term Algorithm.          [2Marks]

b) Define the following terms.          [10Marks]
  i. Variables.
  ii. Identifiers.
  iii. Constants.
  iv. Keyword
  v. Translator
c) Write the meaning of the following Escape sequences.

         [5Marks]

  i. \b
  ii. \n
  iii. \r
  iv. \t
  v. \v

d) List down any Three programming languages that one can use to write a computer program. [3Marks]

e)

f) Write a C statement that declares a variable named(marks) of Integer type. [2Marks]

g)

h) Write a C program that prompts for two numbers and outputs their sum. [4Marks]

i) Explain the use of the following operators. [4Marks]
   i.  /
   ii.  %
   iii.  ++
   iv.  +=

## SECTION B (Answer any TWO questions)

## QUESTION TWO (20 Marks)

a) Design a pseudocode and its corresponding flow chart for finding and displaying the average of two numbers [6Marks]

b) Write a C Program to find whether a given number is even or odd. [6Marks]

c) Write a C Program that prompts a user for radius, then calculates the area and circumference of a circle and outputs the results. [8Marks]

## QUESTION THREE (20 Marks)
a) List and Explain Five characteristics of Algorithms. [10Marks]
b) With examples discuss the Three types of programming errors [10 Marks]

## QUESTION FOUR (20 Marks)
a) Write a pseudocode to compute the area of a rectangle. [4Marks]
b) Discuss the three types of translators [6Marks]
c) Write a C program that prompts a user for the interest rate, principle, time and then computes the simple interest. [10Marks]

## QUESTION FIVE (20 Marks)
a) Differentiate between compile time errors and run time errors [6Marks]

b) Discuss the main parts of a C program [7Marks]

c) List FIVE rules for naming identifiers [5Marks]

d) Define the term computer program. [2Marks]

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