

CHUKA



UNIVERSITY

**SUPPLEMENTARY / SPECIAL EXAMINATIONS**

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

**COSC 00103: INTRODUCTION TO PROGRAMMING AND ALGORITHM**

**STREAMS: CERT COMPSCI Y1S1**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 16/11/2020**

**11.30 A.M - 1.30 P.M.**

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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.

**QUESTION ONE (30 Marks)**

a) Define the term Algorithm. [2Marks]

b) Define the following terms. [10Marks]

- Variables.
- Identifiers.
- Constants.
- Keyword
- Translator

c) Write the meaning of the following Escape sequences. [5Marks]

- \b
- \n
- \r
- \t
- \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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