

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF CERTIFICATE IN COMPUTER SCIENCE

COSC 00103: INTRODUCTION TO PROGRAMMING AND ALGORITHMS

STREAMS: CERT COMP SCIENCE

TIME: 2 HOURS

DAY/DATE: TUESDAY 13 /07/ 2021

8.30 AM – 10.30 AM

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)

1. Declare a variable int type using C syntax (4 marks)
2. Define the Following Terms:
 - i. BASIC (2 marks)
 - ii. Programming language (2 marks)
 - iii. Algorithm (2 marks)
3. Differentiate an interpreter from a compiler (4 marks)
4. List three common resource tools to learn C (3 marks)
5. Explain the following types of program errors:
 - i. Syntax errors (2 marks)

- ii. Semantic errors (2 marks)
- iii. Logical errors (2 marks)

- 6. Why is studying programming style important (2 marks)
- 7. Write Syntax of a simple C++ Programme outputting the result “Hello,World!” (5 marks)

SECTION B (ANSWER ANY TWO QUESTIONS ONLY)

Question two (20 marks)

- a. Draw A flow chart to sum Two numbers entered by user (5 marks)
- b. List THREE data types supported by both C and Java programming languages (3 marks)
- c. What do the following Operators mean (4 marks)

i.&&
ii.

- d. You have two variables, a with stored value of 10 and b with stored value of 20
Declare the variables, assign the stored values and print the values in Python Language
(8 marks)

Question Three (20 marks)

- a. Assume the given marks are x for a student

If given marks are more than 70, then
Student is brilliant

If given marks are less than 30, then
Student is poor

If given marks are less than 70 and more than 30, 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. Draw Flow chart for above Programme (5 marks)

c. Write Pseudocode for above FLOWCHART (5 marks)

Question Four (20 marks)

a. What is an Algorithm? Explain Five major characteristics of a good algorithm (10 marks)

b. Write a **do...while** loop in C for printing the words **Hello, World** Ten times (10 marks)

Question Five (20 marks)

a. What are the stages a Software Developer goes through in order to develop a successful and beneficial computer programme (10 marks)

b. There are over 250 programming languages. List & Explain FIVE major differentiation factors in programming languages. (10 marks)

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