CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

CHUKA & EMBU

FIRST YEAR EXAMINATION FOR THE AWARD OF DIPLOMA IN COMPUTER SCIENCE

COSC 0140: FUNDAMENTALS OF COMPUTER PROGRAMMING

STREAMS: DIP (COMP SCI)   **TIME: 2 HOURS**

DAY/DATE: WEDNESDAY 08/04/2020   **11.30 AM – 1.30 PM**

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 Array.   (2mks)

b) Explain the following terms.   (6mks)

    i.   Compilers
   ii.   Interpreters.
  iii.   Linkers.

c) List and Explain Three main types of programming languages.   (6mks)

d) Explain the difference between Debugging and Testing.   (3mks)

e) Explain the term program documentation.   (2mks)

f) List down any Three programming languages that one can use to write a computer program.   (3mks)

g) Write a C++ program that accepts two numbers and outputs their Average.   (6mks)

h) Write a C++ statement that declares a variable named(marks) of Integer type. (2mks)

i) **SECTION B (Answer any TWO questions)**

QUESTION TWO (20 Marks)

a) List and Explain the six phases of the program development life cycle.   (12mks)

b) List and Explain Four programming methodologies that one can use when developing a computer program.   (8mks)

QUESTION THREE (20 Marks)

a) List and Explain Five characteristics of Algorithms.   (10mks)

b) List and Explain Five Debugging strategies that one can use.   (10mks)

QUESTION FOUR (20 Marks)

a) Write a C++ Program to find whether a given number is even or odd.   (6mks)

b) Define the term Algorithm.   (2mks)

c) Write a pseudocode to compute the area of a rectangle.   (3mks)

d) Define the following terms.   (6mks)
   i.   Variables.
   ii.   Identifiers.
   iii. Constants.

e) List Three advantages of program documentation.   (3mks)

QUESTION FIVE (20 Marks)

a) Write a C++ computer program to show function overload.   (6mks)

b) By use of diagrams(flowcharts) explain the following constructs of the control structures.   (6mks)
   i.   The sequence structure.
   ii.   Decision or selection structure.
   iii. Repetition or Iteration structure.

c) List and Explain Three types of Errors that one may run into when executing a computer program.   (6mks)

d) Define the term computer program.   (2mks)