

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF DIPLOMA IN COMPUTER SCIENCE

COSC 0140: FUNDAMENTALS OF COMPUTER PROGRAMMING

STREAMS:DIP COM SCI Y1S2

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 12/04/2023

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.

SECTION A (Answer ALL questions in this section)

QUESTION ONE (30 Marks)

- a) What is the main difference between while loop and do-while loop? (4marks)
- b) Define the following terms
- i. Source code [2 marks]
 - ii. Algorithm [2 marks]
 - iii. Pseudocode [2 marks]
 - iv. Computer programming [2 marks]
- c) Explain two ways of representing an algorithm. [4 marks]

d) With the aid of an example illustrate how comments are written in python code

[2 marks]

e) Explain the difference between Debugging and Testing. (4marks)

f) Explain the difference between a compiler and an interpreter as used in computer programming.

[2 marks]

g) Discuss FOUR disadvantages of using low level languages in programming

[4 marks]

h) State FOUR examples of high-level languages

[2 marks]

SECTION B (Answer only TWO questions in this section)

QUESTION TWO

a) Giving an example, distinguish between syntax, run time, and logical error experienced in

programming

(9marks)

b) Write a python program to request the user to input two integers, then sum them up and display the output

[3 marks]

c) Discuss FOUR characteristics that a good algorithm should have

[8 marks]

QUESTION THREE [20 MARKS]

a) State THREE differences between machine language and assembly languages in computer programming

[6 marks]

b) Generally, there are stages involved in developing and implementing a solution. Explain five main stages of a software development process.

[10 marks)

c) Write a python program to find the area of a square

[4 marks]

QUESTION FOUR [20 MARKS]

a) Using flow diagrams, write the syntax for the following decision structures

i. For-loop

[5marks]

ii. WHILE loop

[5marks]

b) List and Explain Three main types of programming languages.

(3marks)

c) Define the following terms.

(6marks)

i. Variables.

ii. Identifiers.

iii. Constants.

d. Explain the term program documentation.

(1mark)

Question FIVE (20 MARKS)

a. Draw and describe five symbols used in flow charts

[10 marks]

b. Given a university grading system as shown below

If mark is greater than 70 the student is assigned A

B - between 60 and 69

C - between 50 and 59

D - between 40 and 49

F - between 0 and 39

I. Write an algorithm to depict the above information

[5 marks]

II. Draw a flowchart of the university grading system

[5 marks]

