

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS
MAIN/EMBU

FIRST YEAR EXAMINATION FOR THE AWARD OF DIPLOMA IN COMPUTER
SCIENCE

COSC 0140: FUNDAMENTALS OF COMPUTER PROGRAMMING

STREAMS: DIP COMP SCI Y1S2

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 07/07/2021

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

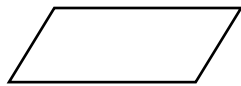
- Answer question **ONE** and **TWO** other questions
- Do not write anything on the question paper
- This is a **closed book exam**, No reference materials are allowed in the examination room
- There will be **NO** use of mobile phones or any other unauthorized materials
- Write your answers legibly 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) Define the following terms
- Source code [2 marks]
 - Algorithm [2 marks]
 - Pseudocode [2 marks]
 - Computer programming [2 marks]
- b) With the aid of an example illustrate how comments are written in python code [2 marks]
- c) Write an algorithm to find the area of a circle [4 marks]

- d) State TWO differences between a compiler and an interpreter as used in computer programming [4 marks]
- e) Discuss FOUR disadvantages of using low level languages in programming [4 marks]
- f) State FOUR examples of high level languages [2 marks]
- g) State TWO uses of comments in a python program [2 marks]
- h) Discuss the use of the following symbols in a flowchart [4 marks]



SECTION B (Answer only TWO questions in this section)

QUESTION TWO

- a) Discuss the problem solving steps in computer programming [10 marks]
- b) Write a python program to request the user to input two integers, then sum them up and display the output [4 marks]
- c) State THREE differences between machine language and assembly languages in computer programming [6 marks]

QUESTION THREE [20 MARKS]

- a) Define a flowchart [2 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 [6 marks]
- ii. Draw a flowchart of the university grading system [6 marks]
- iii. Write a python program for the university grading system [6 marks]

QUESTION FOUR [20 MARKS]

- a) Discuss FOUR errors that a programmer can encounter during program development [8 marks]
- b) By the aid of examples, discuss FOUR datatypes in python language [8 marks]
- c) Write a python program to find the area of a square [4 marks]

QUESTION FIVE [20 MARKS]

- a) By the aid of a python example, discuss the following loops in as used in computer programming [6 marks]
 - i. WHILE loop
 - ii. For loop
 - b) Discuss FIVE characteristics that a good algorithm should have [10 marks]
 - c) Draw a flowchart to multiply two numbers and display the output: The two numbers should be an input from the user [4 marks]
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