



# **MURANG'A UNIVERSITY OF TECHNOLOGY**

## **SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY**

DEPARTMENT OF INFORMATION TECHNOLOGY

TVET EXAMINATION

2023/2024 ACADEMIC YEAR

**FIRST YEAR, FIRST SEMESTER EXAMINATION FOR DIPLOMA  
IN INFORMATION TECHNOLOGY**

IT/OS/ICT/CR/10/6 DEVELOP COMPUTER PROGRAM

DURATION: 2 HOURS

### **INSTRUCTIONS TO CANDIDATES:**

1. Answer ALL the questions in Section A and any other Two questions in Section B.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

**SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION (30 MARKS)**

**QUESTION ONE**

- a) Define the following (2 marks)
  - i. Program
  - ii. Programing
- b) Identify three types of programming languages. (3 marks)
- c) List six stages of software development life cycle (SDLC). (6 marks)
- d) Describe the waterfall model as used in software development process. (6marks)
- e) Differentiate between computers and interpreter as used in programming. (4 marks)
- f) What is an algorithm and give an example? (2 marks)
- g) Differentiate between testing and debugging as used in programming. (4marks)
- h) Explain the different errors found in programing. (3 marks)

**SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)**

**QUESTION TWO**

- a) Write a pseudocode that prompt the user to input the length and width of a triangle. Find the perimeter and the area of the triangle and give an output. (6marks)
- b) With the aid of a diagram describe spiral technique of software development. (10 marks)
- c) List the advantage of prototype methods /technique of software development. (4marks)

**QUESTION THREE**

- a) Outline two circumstances that would make a programmer to use structured programming language when writing a program. (2 marks)
- b) Joshua, a computer programmer intends to create a program using a programming language. State the program development stage in which he could: (8 marks)
  - i. Create a flowchart
  - ii. Choose an identifier
  - iii. Check the desired output is produced
  - iv. Adjust a program to meet a new demand

- c) Write a program that would prompt a user to enter weight of five people and store the value in an array, the program then prints the output of the total weight. (8marks)
- d) Explain what is meant by syntax error. (2marks)

#### **QUESTION FOUR**

- a) Define functions and explain the importance in programming. (4marks)
- b) Describe the role of database in software application. Discuss the SQL & No SQL database. (8 marks)
- c) Write a simple program in C that prints [Hello word] to the console/screen. (6 marks)

#### **QUESTION FIVE**

- a) Describe the concept of data type in programming give an example of different data type. (6 marks)
- b) Define algorithm and algorithm complexity (big O notation). (6 marks)
- c) Explain the purpose of a loop in programming, write a program that uses a for loop to print number from 1 to 10. (8 marks)