

**061306T4CPM**  
**COMPUTER PROGRAMMING LEVEL 6**  
**IT/OS/CP/CR/03/6/A**  
**DEMONSTRATE PROGRAMMING CONCEPTS**  
**NOV /DEC 2023**



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION  
COUNCIL (TVET CDACC)**

**CANDIDATE WRITTEN ASSESSMENT**

**TIME: 3 Hours**

**INSTRUCTIONS TO CANDIDATES**

- 1. The paper consists of **two** sections: **A** and **B***
- 2. Answer **ALL** questions in Section **A** and any **Three** from section **B***
- 3. Marks for each question are indicated in the brackets*
- 4. A separate answer booklet will be provided*
- 5. Do not write on the question paper*

*Candidates should answer the questions in English*

*This paper consists of 3 printed pages*

*Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing*

**SECTION A: (40 Marks)**

*(Answer ALL questions in this section)*

1. State FOUR functions of a computer program (4 Marks)
2. Explain the significance of comments in code (2 Marks)
3. Outline FOUR principles of good coding practices (4 Marks)
4. Discuss THREE common programming paradigms (6 Marks)
5. Explain the role of pseudocode in programming (3 Marks)
6. Differentiate between an interpreter and compiler (2 Marks)
7. Enumerate FOUR characteristics of a well-structured program (4 Marks)
8. Discuss THREE factors that influence the efficiency of an algorithm (6 Marks)
9. Identify FOUR common looping structures in programming (4 Marks)
10. Write a C# program code that prompts the user to enter a series of integers, calculates their average and displays the result (5 Marks)

**SECTION B: (60 Marks)**

*(Answer any THREE questions in this section)*

- 11.
- a. Explain the concept of exception handling in programming using FIVE examples of common exceptions and how they can be handled in code. (15 Marks)
  - b. State FIVE key concepts in C# for effective memory management and explain their significance in software development. (5 Marks)
- 12.
- a. John is learning C# programming and is exploring various C# data types. Describe FIVE common data types in C# and provide examples of scenarios where each would be appropriate. (15 Marks)
  - b. State FIVE functions of a compiler (5 Marks)
- 13.
- a. Mark is tasked with developing a C# application for a financial institution. Explain the SEVEN phases of the software development life cycle he should follow to ensure the successful completion of the financial application. (14 Marks)
  - b. Explain each of the following terminologies (6 Marks)
    - i. Namespace
    - ii. Source Code
    - iii. Executable
- 14.
- a. Alex is working on a project to create a program that utilizes loops. Describe FOUR types of loops and provide a code snippet illustrating their application (12 Marks)
  - b. Explain FOUR factors that one should consider while choosing a programming language (8 Marks)

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