

061005T4ICT
ICT TECHNICIAN LEVEL 5
IT/OS/IT/CR/5/5
DEVELOP COMPUTER PROGRAM
July / August 2024



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

WRITTEN CANDIDATE TOOL

TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATE

- i. This paper consists of two sections: **A** and **B**.
- ii. Answer **ALL** questions in sections **A** and any **THREE** questions in section **B**.
- iii. Marks for each question are indicated in the brackets.
- iv. You are provided with a separate answer booklet to answer the questions
- v. Do not write in this question paper.

This paper consists of FOUR (4) 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 the questions in this section

1. There are various programming approaches that can be applied when developing a program. Describe TWO such approaches as used in C language. (4 Marks)
2. Susan wanted to write a program in C language and decided to use functions. Explain TWO types of functions she would use. (4 Marks)
3. A data flow diagram maps out flow of information for any process. Distinguish between a physical data flow diagram and a logical data flow diagram. (4 Marks)
4. High level languages allow programmers to develop programs that are machine independent. List FOUR characteristics of high level languages other than being machine independent. (4 Marks)
5. Compiler and interpreters are types of translators used in programming. Differentiate between the TWO types of translators mentioned above. (4 Marks)
6. Program testing is usually done to check for error in a program. Differentiate between dry run testing method and wet run testing method. (4 Marks)
7. Rose opted to use flowchart algorithm over pseudo-code algorithm when developing a program. Outline FOUR advantages she would get from her choice. (4 Marks)
8. Hypertext Markup Language is a standard language for making and designing web pages. Outline FOUR areas of application of Hypertext Markup Language. (4 Marks)
9. There are several programming languages available for programmers in the market. As a programmer. Outline FOUR factors you would consider when choosing a programming language. (4 Marks)
10. Jackson wanted to insert an image in his webpage. Using appropriate HTML tag, describe how he would achieve this. (4 Marks)

SECTION B: (60 MARKS)

Answer Any THREE the questions in this section

11. a) During a mentorship program, you were task with writing a C program. Using Table 1 below, write the program that would grade the marks of trainees using the grading system as shown in the table. The program should not accept marks less than zero or more than one hundred. The program should prompt the user to input marks and display the marks and the grade. (10 Marks)

Marks	Grade
<50	F
>=50 and <60	D
>=60 and <70	C
>=70 and <80	B
>=80 and <=100	A

Table 1

- b) Programing languages have evolved over the years with new languages emerging over generations. Explain the first FIVE generations of programing languages. (10 Marks)
12. a) The basic structure of a C program is divided into parts which makes it easy for a programmer to read, modify, document, and understand in a particular format. Explain the various parts of the structures (8 Marks)
- b) Write a pseudo-code that would prompt the user to enter the Length and Width of a rectangle, calculate the Area and Perimeter of the rectangle, then display the results. (8 Marks)
- c) HTML tags has both attributes and elements. Differentiate between HTML attribute and HTML element. (4 Marks)
13. a) During Program Development, a programmer is required to follow certain phases for the purpose of producing a good software product. Discuss the SIX phases involved in Program Development Life Cycle. (12 Marks)
- b) Write a HTML code that would be used to implement an ordered list of five items and unordered list of four elements. (8 Marks)
14. a) A HTML form is a document containing normal content, markup, controls and labels on those controls. Users complete a form by modifying these controls before submitting. Explain the use of the following input types giving an example in each
- i. Text input (2 Marks)

- ii. Password input (2 Marks)
 - iii. Email input (2 Marks)
 - iv. Checkbox input (2 Marks)
 - v. Submit (2 Marks)
- b) Developing applications and services that operate over the internet requires a programmer to understand the internet-based programming concepts. Describe FIVE of these concepts. (10 Marks)

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