061006T6ICT

ICT TECHNICIAN LEVEL 6

IT/OS/ICT/CR/10/6

DEVELOP COMPUTER PROGRAM

NOV/DEC 2023

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

WRITTEN ASSESSMENT

Time: 3 Hours

INSTRUCTIONS TO CANDIDATES

1. This paper has TWO sections A and B. Attempt questions in each section as per instructions given in the section.
2. You are provided with a separate answer booklet.
3. Marks for each question are indicated in the brackets.
4. Do not write on the question paper

This paper consists of 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. What is Programming? (2 Marks)

2. During the development of a program, fundamentals of structured programming are critical. State any SIX fundamentals involved in C language. (6 Marks)

3. Format of a computer program is considered while developing a computer program. Mention FOUR elements to be considered under the format of this program. (4 Marks)

4. What is Exception handling in JAVA? (2 Marks)

5. Differentiate between *black box* and *white box* testing. (4 Marks)

6. Performing program design and analysis is one of the critical stage in program development. Outline FOUR elements involved in program design and analysis.

(4 Marks)

7. Outline THREE differences between *abstraction* and *encapsulation* as used in computer programming. (6 Marks)

8. Spiral approach of program development is essential in computer programming. State FIVE characteristics of spiral. (5 Marks)

9. As an expert in the ICT field. State THREE software design levels. (3 Marks)

10. Identify FOUR levels of testing a computer program. (4 Marks)

SECTION B: 60 MARKS

Answer any THREE questions in this section.

11.

   a) IDE plays a crucial role in programming. Without the use of IDE most of the programmers will have difficulties in developing programs. Discuss any FIVE roles of IDE. (10 Marks)

   b) Peter a student at a technical institute was considering using agile program development approach. Explain FIVE reasons why he could have considered this approach. (10 Marks)

12.

   a) Apart from enhancing readability of a program. Variable and function names in a program are essential for several reasons. Discuss FIVE reasons why a variable and function name is essential. (10 Marks)

   b) Discuss FIVE considerations put in place to ensure that the code satisfies the functional and design requirements established earlier in the project during the implementation phase. (10 Marks)

13.

   a) Joseph a student at tusome Pamoja College didn't see the reason why a maintenance schedule should exist once the program has been developed. Explain FIVE reasons why you may differ with his reasoning. (10 Marks)

   b) Understanding the phases involved in developing a program is key in computer programming. Discuss FIVE phases involved in computer programming.

(10 Marks)

14.

   a) Peter while developing a program in class, included comments. Discuss FIVE reasons for including his comments. (10 Marks)

   b) Mary a student at Igonje Technical training institute was trained to use various maintenance tools when maintaining developed programs. Discuss FIVE tools that she may have used. (10 Marks)