061006T4ICT

ICT TECHNICIAN LEVEL 6

IT/OS/ICT/CR/10/6

Develop Computer Program

Nov/Dec 2024

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

WRITTEN ASSESSMENT

Time: 3 HOURS

INSTRUCTIONS TO CANDIDATE

1. Marks for each question are indicated in the brackets.
2. The paper consists of **TWO** sections: **A** and **B**.
3. Candidates are provided with a separate answer booklet
4. **DO NOT** write on this question paper.

This paper consists of THREE (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 the questions in this section.

1. In object orientated programming, the term class and object are used to define real life scenarios. Differentiate the two terms. (2 marks)
2. Design and write a Java program that reads the age of a person and outputs an appropriate message based on the criteria below. (4 marks)

   If age<18 print "minor" and If age>=18 print "Adult"
3. Datatypes specify the size and type of data that can be stored in a variable. Identify FOUR primitive datatypes available in Java programming language. (4 marks)
4. Write a C program compute the area of a circle. In your program, declare PI as constant. (4 marks)
5. A student created the following C program during a practical lesson. Write the output produced when the following program is executed. (2 marks)

```
#include<stdio.h>
int main()
{
int num1, num2;
num1 = 25;
num2=num1- (3*4) + 6*(2+3) + (1+5);
prinf("num2 + %d\n", num2);
return 0;
}
```


6. Comments are used to describe a code segment in a program. Using examples, describe TWO ways of representing comments in Java programming. (4 marks)
7. Java programming is an example of object oriented programming language. Outline THREE principles of this language. (3 marks)
8. Reserved words cannot be used with any other meaning. Identify FOUR such words in Java programming. (4 marks)
9. Control structures control the execution of a program. State THREE looping control structures. (3 marks)
10. Documentation is crucial during software development life cycle. Outline THREE types of documentation. (3 marks)
11. Program errors cause a programs code to behave in unintended way or produce incorrect results. State any THREE types of errors in programming . (3 marks)
12. During a Java programming class, the Lecturer designed various function to perform specific tasks. List TWO types of functions. (2 marks)

13. Calling a function involves passing arguments. Outline TWO ways of passing arguments. (2 marks)

SECTION B (60 MARKS)

Answer Any THREE Questions in This Section

14.

a) Maintaining software involves various tools and techniques. Discuss FIVE maintenance tools used in software programs (10 marks)

b) The program development process can be broken down into various stages. Describe FIVE critical stages in the software development life cycle. (10 marks)

15.

a) System development methodologies provide a framework for managing tasks, resources, and time during system development. Explain FIVE such methodologies. (10 marks)

b) Ochieng, an experienced programmer wishes to design a system using the modular approach. Explain FIVE advantages he is likely to derive from using this approach. (10 marks)

16.

a) A method can be called to execute a task. Explain FIVE components of a java method. (10 marks)

b) A computer programmer uses programming languages to solve a given problem. Discuss FIVE categories of programming languages. (10 marks)

17. As a programmer, you are required to write a program that prompts the user to enter the Length and Width of a rectangle, calculate the Area and Perimeter, then display the result.

a) Write a pseudocode algorithm to illustrate the program logic. (10 marks)

b) Draw a flowchart that describes the program. (10 marks)