

Printed By: Technical And Vocational College

061005T4ICT
Date: 19.11.2025 10:56 AM

ICT TECHNICIAN LEVEL 5

IT/OS/ICT/CR/5/5

DEVELOP COMPUTER PRM

Printed By: Bunge Technical And Vocational College Date:

19.11.2025 10:56 AM

November/ December 2025

Printed By: Technical And Vocational College
Date: 19.11.2025 10:56 AM



Printed By: Technical And Vocational College

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

WRITTEN ASSESSMENT

Printed By: Technical And Vocational College
Date: 19.11.2025 10:56 AM

TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATE

Printed By: Technical And Vocational College

1. This paper consists of **TWO** sections: **A** and **B**.
2. Answer **ALL** questions in section A and **ANY THREE** (3) questions in section B.
3. Marks for questions are indicated in the brackets.
4. Candidates are provided with a separate answer booklet.
5. Do not write on the question paper.

Date: 19.11.2025 10:56 AM

Printed By: B Technical And Vocational College

Date: 19.11.2025 10:56 AM

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

Printed By: And Vocational College Date: 19.11.2025 10:56 AM

This paper consists of FIVE (5) printed pages

Printed By: B North Technical And Vocational College

Date: 19.11.2025 10:56 AM

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. A Loans office department has given the following conditions for customers who qualify loans

Printed By: Technical And Vocational College Date:

19.11.2025 10:56 AM

- i. Income level (above or below Ksh 30,000)
- ii. Credit score (good or poor)

Draw a **decision tree** to determine whether a customer is qualified for a loan based on

Date: 19.11.2025 10:56 AM

(4 marks)

2. As a program instructor, guide the learners to draw checks whether a number entered by the user is even or odd. Use numbers **7** and **8**

Date: 19.11.2025 10:56 AM

(4 marks)

3. As an IT trainer, state TWO differences between a compiler and an interpreter.

(4 marks)

4. Imagine you are training junior developers. Use the **IF-ELSE selection control** structure to design a program that checks whether a student has passed or failed, given that the pass mark is 50.

(3 marks)

5. Write a decision-making logic using selection that determines if a

Date: 19.11.2025 10:56 AM

customer is entitled to a discount:

(3 marks)

- i. If amount spent \geq 10,000 \rightarrow give 10% discount
- ii. Otherwise \rightarrow no discount

Printed By North Technical And Vocational College

6. As a program instructor, write a FOR loop to print numbers from 1 to 10 in order.

Date: 19.11.2025 10:56 AM

(2 marks)

7. Program development follows specific procedures to get the final product. Identify

Printed By: North Technical And Vocational College

- FOUR phases in the program development cycle.

Date: 19.11.2025 10:56 AM

(4 marks)

8. Write a C program using a **recursive function** to calculate the factorial of a number. Test the program with input **5** and display the output.

Printed By Technical And Vocational College

Date: 19.11.2025 10:56 AM

(3 marks)

9. Assume you are a system analyst. Apply the Bottom-Up programming approach to show how smaller modules can be combined to build a payroll management system.

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

(2 marks)

10. A trainee has been asked to design a simple **student registration program**.

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

- a) **Data-Driven Design approach**, show how the program can use data (like

Student Name, Student ID, and Course) to control the design of the system. (4 marks)

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM
b) Explain what will happen in your program if a **new course** is added. (2 marks)

11. As an ICT trainer, you are required to guide learners in understanding the basics of web programming using HTML. Carry out the following tasks:

- a. State the **purpose** in web development. (2 marks)
- b. Write a simple **HTML code snippet** that displays the heading “Welcome to Web Programming” and a paragraph with the text “This is my first web page”.

Printed By: Technical And Vocational College Date:

19.11.2025 10:56 AM

(3 marks)

SECTION B : 60 M

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM
Attempt any THREE questions in this section

12. As a development consultant

- a) , advise your client on five key characteristics to consider when selecting relevant software for developing a program. (10 marks)
- b) Create a simple **HTML form** in a text editor with the following fields: (10 marks)
- Name (text input)

Printed By: Technical And Vocational College Date:

19.11.2025 10:56 AM

ii. mail (text input)

iii. Submit button

- Save the file as form.html and open it in a browser to demonstrate how the **client interface** collects input from a user.

Printed By: Technical And Vocational College

13. The following C program is supposed to read two numbers entered by the user and display their addition.

```
e <studio.h>
int
```

```
main() {
```

```
    int num1, num2, total;
```

```
    printf("Enter first number: ");
```

```
    scanf("%d", num1);
```

```
    printf("Enter second number: ");
```

```
    scanf("%d", &num2);
```

```
    total = num1 + num2
```

```
    printf("The sum is: %d\n", total)
```

```
    return 0;
```

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

- a) Identify
- i. Three errors in the program. (3 marks)
 - ii. Correct the proper working program. (3 marks)

b) An ICT trainee required to carry out a presentation of flowchart functionality.

- i. Draw a flowchart to convert temperature from $^{\circ}\text{C}$ to $^{\circ}\text{F}$. $\text{Fahrenheit} = 32 + (9^{\circ} \times \text{C} / 5)$ (5 marks)

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

- ii. Write a pseudocode to represent the flow chart above. (4 marks)

iii. A C program to illustrate the flow chart above. (5 marks)

14. Write a C program that does the following:

- a. Asks the user to enter a **trainees name** and their **marks**, and loops back to ask for the trainees name and marks. (4 marks)
- b. The program should **stop** asking for names and marks when the user types the word **"stop"** as the student's name. (3 marks)
- c. Use **if-else statements** to give the trainee a grade based on the following rules. (4 marks)

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

70–100 → Grade A

60–69 → Grade B

50–59 → Grade C

40–49 → Grade D

Below 40 → Grade E

Printed By: And Vocational College Date: 19.11.2025 10:56 AM

d. After stopping, the program should **display a list of all student names, their marks, and their grades**. (3 marks)

Printed By: Burtgoma North Technical And Vocational College

Date: 19.11.2025 10:56 AM

- e. Write a short description of the requirements for a **Library Management System** (program specification). (3 marks)

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

- f. Identify which development methodology (**Agile, RAD, or Crystal**) would be most suitable for this system and identify 2 reasons for your choice. (3 marks)

Printed By: Technical And Vocational College

15.

- a) Use a **switch/case control structure** to write a program that asks the user to enter a

Printed By: And Vocational College Date: 19.11.2025 10:56 AM

n 1 and 7.

(5 marks)

The program should display the **day of the week** that matches the number.

Printed By: Technical And Vocational College

Date: 19.11.2025 10:56 AM

For example:

If the user enters 1, the program should display **Monday**.

If the user enters 2, the program should display **Tuesday**.

And Vocational College

... Date: 19.11.2025 10:56 AM

If the user enters 7, the program should display **Sunday**.

- b) As an ICT trainer, guide the learners to develop a **C program** that simulates an **ATM cash withdrawal system using a do-while loop**

Printed By: Burgundy Technical And Vocational College

Date: 19.11.2025 10:56 AM

The program should

- i. Ask the customer to enter the **amount** draw. (1 mark)
- ii. Deduct the amount from the account balance. (1 mark)
- iii. Display the **remaining balance**. (1 mark)
- iv. Continue the process as long as the balance is greater than zero. (1 mark)
- v. Ensure that the withdrawal is carried out **at least once**, since the balance check is performed at the end of the loop. (1 mark)

- c) Write a program that asks the user to enter their **age**. (6 marks)

Printed By: Burgundy Technical And Vocational College

Date: 19.11.2025 10:56 AM

Use else statement to display

Age below 18 → "You are a minor"

Age between 18 and 59 → "You are an adult"

Age 60 or above → "You are a senior citizen"

- d) Write a small program in C that calculates the **area of a parallelogram**. (4 marks)

- i. The user should enter the **base** and the **height**.

The program should then calculate and display the area using the formula:

Printed By: Burgundy Technical And Vocational College

Date: 19.11.2025 10:56 AM

Printed By: B Technical And Vocational College Date: 19.11.2025
10:56 AM

Printed By: Technical And Vocational College Date: 19.11.2025
10:56 AM

Printed By Technical And Vocational College Date: 19.11.2025
10:56 AM