

061005T4ICT

ICT TECHNICIAN LEVEL 5

IT/OS/ICT/CR/05/5/A

Printed By: Technical And Vocational College

IT/OS/ICT/CR/05/5/A

Date: 25.07.2025 07:38 AM

Develop Computer Program

July/August 2025

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

WRITTEN ASSESSMENT

Printed By: Technical And Vocational College Date: 25.07.2025

07:38 AM

Time: 3 HOURS

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INSTRUCTIONS TO CANDIDATE

1. The paper consists of **TWO** sections: **A** and **B**.

2. Answer all **A** and **ANY THREE (3) questions in section B**.

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3. Marks for each question are indicated in the brackets.

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4. Candidates are provided with a separate answer booklet.

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5. **DO NOT** write on the question paper.

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This paper consists of FOUR (4) printed pages

Candidate 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. Program development life set of stages that are used to develop a program in a given programming language. State FOUR program development stages indicating activities involved at each stage. (4 marks)
2. A software developer has been contracted to develop a management Information System for a certain organization. Outline FOUR circumstances that would make him to use a structured programming language while performing the task. (4 marks)
3. For good programming practices, certain styles of programming need to be applied by programmers in order to produce quality programs. Highlight FOUR different styles of programming that can be adopted by programmers. (4 marks)
4. The following is a C program code written by a student during a practical session. Identify FOUR errors in the program with a brief comment in each. (4 marks)
 1. #include<stdio.h>
 2. Void main()
 4. char number=0
 5. For(i=0;i<=4;i++)
 6. i++ ;
 7. }
5. During a programming session, a student created a C program that uses a function to capture data, compute and output the results. Highlight THREE advantages of using functions in the program. (3 marks)
6. Study the program code and interpret it. (4 marks)


```
{
int num=9;
while (num<=0)
printf ("%d\n", num);
}
```
7. An ICT student was tasked to develop a C program during a practical assessment that makes use of different data types and identifiers. Identify the most appropriate data type for each of the following variables as used in the program. (4 marks)
 - a) Gender

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- b) Age
- c) Grade
- d) Salary

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8. The following is a C++ segment code. Write the output of the code. (3 marks)

```
for ( i=0; i<9; i++) {
```

```
if (i==4) {
```

```
continue;
```

```
}
```

```
printf(i);
```

```
}
```

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9. A software developer has been tasked by a client to design a website for marketing purpose. The website is supposed to contain various form objects to capture different kinds of data items. One of the form objects is a text box that captures text data items such as name of a person. With relevant examples in each, highlight other FOUR form objects as applied in HTML. (4 marks)

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10. Programming languages have evolved through various stages in computing environment from low level languages to high level languages. Outline TWO characteristics of low level programming languages. (2 marks)

11. Write a HTML list tag sequence that outputs the following (4 marks)

- Kenya
- Uganda
- Tanzania

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SECTION B (60 MARKS)

Answer Any *THREE* Questions in This Section

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12. An ICT student developed a program using C programming language but realized that the program was not executing due to occurrence of unknown errors.

a) Explain FOUR possible errors that are likely to be found in the program. (8 marks)

b) Describe methods of error testing that could be performed on the program in order for the program to execute successfully. (8 marks)

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c) Explain TWO types of test data that could be used during error testing in the program. (4 marks)

13. The management of a certain company wishes to acquire an automated system that could manage employees' information using a special data structure called an array.

a) Write a C program that may called salary which captures salary for 10 employees, stores and outputs employees' salaries using an appropriate control structure

(10 marks)

b) Explain THREE benefits of using the array data structure in the program. (6 marks)

c) Apart from arrays describe other TWO data structures that company could have opted to use. (4 marks)

14. The table below was created by an ICT student during a practical assessment. Use the table to answer questions that follow:

Age	Remarks
>=18 years	YOU ARE AN ADULT
Below 18 years	YOU ARE STILL YOUNG

a) Illustrate the program logic using a flow chart. (6 marks)

b) Explain TWO advantages of using a flow chart in the program. (4marks)

c) Write a C program that would prompt the user to input age of an individual. The program then outputs an appropriate remark on the screen using the (if...else) control statement.

(10 marks)

14 A wholesaler has two categories of customers for order processing; category 'A' obtains 10% discount on all orders up to Kshs 10,000 otherwise the discount is 20% on the entire order.

Category "B" obtains 30% discount on all orders if the debt repayment is 'good' otherwise the discount is 15%.

a) Draw a decision tree for the order processing. (12 marks)

b) Explain TWO advantages of using the decision tree in presenting the program logic. (4 marks)

c) Describe TWO application areas where decision trees are used. (4 marks)