061005T4ICT

ICT TECHNICIAN LEVEL 5

IT/OS/ICT/CR/5/5

DEVELOP COMPUTER PROGRAM

Nov. /Dec. 2022

THE KENYA NATIONAL EXAMINATIONS COUNCIL

WRITTEN ASSESSMENT

Time: 3 hours

INSTRUCTIONS TO CANDIDATES

Maximum marks for each question are indicated in brackets.

*This paper consists of **THREE** sections: **A**, **B** and **C**.*

Answer questions as per instructions in each section.

You are provided with a separate answer booklet.

Answer all questions in English.

This paper consists of SEVEN 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: MULTIPLE CHOICE QUESTIONS (20 MARKS)

Answer all the questions in this section

1. What is the output of the following program? (1 Mark)

```
#include<stdio.h>
main()
{
  #undef NULL
  char *s = "Hello";
    while(*s != NULL)
  {
    printf("%c", *s++);
  }
}
```

   A. Hello

   B. Compile error: there is no macro called "undef"

   C. Compile error: improper place of #undef

   D. Compile error: NULL is undeclared.xt

2. Which of the following tags is used for creating unordered lists in HTML? (1 Mark)

   A.

   B.

   C.

   D.

3. A program code that is not yet translated in machine readable form is called? (1 Mark)

   A. Object program

   B. C program

   C. Source program

   D. Programming language

4. Which among the following is the C compiler of UNIX? (1 Mark)

   A. gcc

   B. Borland

   C. cc

   D. vc++

5. Inside which HTML element do we put the JavaScript? (1 Mark)

   A. <script>

   B. <js>

   C. <javascript>

   D. <scripting?

6. Which of the following characters is used to make a line break in a C program?

(1 Mark)

    A. \b

    B. \c

    C. \r

    D. \n

7. How is a standard library included in C programming? (1 Mark)

    A. #include <windows.h>

    B. #include "windows.h"

    C. #include [windows.h]

    D. #include {windows.h}

8. A pointer is a special type of variable that contain? (1 Mark)

    A. Memory Address

    B. Data values

    C. Both Values and Memory

    D. Nothing

9. What kind of file is created in C programming before compilation? (1 Mark)

    A. Object code

    B. Executable

    C. Source code

    D. Text files

10. Which of the following tools are needed to write HTML code? (1 Mark)

    A. A graphics program

    B. A text editor

    C. An interpreter

    D. A database

11. Where does the JavaScript code really gets executed? (1 Mark)

    A. The web server

    B. The machine which is running a web browser

    C. Java Script engine

    D. Java Script containe

12. Which of the following syntax is correct to refer to an external script named
    "formValidation.js"? (1 Mark)

      A. < script href = "formValidation.js">

      B. < script source = "formValidation.js">

      C. < script name = "formValidation.js">

      D. < script src = "formValidation.js">

13. Where does the result of the program entered in the program editor gets stored during
    execution? (1 Mark)

      A. Hard Disk

      B. RAM

      C. ROM

      D. Flash

14. Which among the following is **not** a 3ʳᵈ generation programming language? (1 Mark)

      A. C

      B. C++

      C. Java

      D. Ruby

15. Which of the following HTML tag makes text bold? (1 Mark)

      A. <fat>

      B. <strong>

      C. <black>

      D. <emp>

16. Which among the following is **not** a type of software development methodology?

                    (1 Mark)

      A. Agile

      B. Cystal

      C. Rapid Application Development

      D. Linear

17. _____is the result of arithmetic expression *20%10* if used in a C program.

                    (1 Mark)

      A. 2

      B. 0

      C. 0.08

      D. impossible

18. Which of the following HTML tag makes a bulleted list with numbers?   (1 Mark)

    A. <dl>

    B.

    C. <list>

    D.

19. How many times do we get through the following loop written using C language?

                                                                       (1 Mark)

```
int c = 10;
do{
c++;
printf("Hello World\n");
}
while(c < 10);
```

    A. 0

    B. 1

    C. 9

    D. 10

20. Which one of the following is a client-side JavaScript object?   (1 Mark)

    A. File

    B. Function

    C. FileUpload

    D. Time

SECTION B (40 MARKS)

Answer all the questions in this section

21. Define the following terms as used in program development. (4 Marks)

    i) Algorithm

    ii) Bug

22. State **three** types of control structures in used in C. (3 Marks)

23. Identify **four** rules for naming an identifier in C programming. (4 Marks)

24. Describe the following terms as used in C language. (4 Marks)

    a) Scanf()

    b) Printf()

    c) Keyword

    d) Variable

25. Explain the output of the **© or & #169** in HTML pages. (2 Marks)

26. Explain **two** ways of defining constants in a C program. Give an example in each case.

    (4 Marks)

27. Explain **two** differences between interpreters and compilers. (4 Marks)

28. Outline **three** uses of HTML programming language in our day-to-day lives. (3 Marks)

29. State the function of each of the following reserved words in C program. (2 Marks)

    i) Break

    ii) Return

30. Write an HTML table tag sequence that outputs the following: (4 Marks)

    100 pcs 100 500

    10 pcs 5 50

31. Sate **five** advantages of documenting a program. (4 Marks)

32. State the purpose of the following data types. (2 Marks)

    a. Doubles

    b. Booleans

SECTION C (40 MARKS)

Answer only TWO questions in this section.

33. (a) Hezbon is tasked by his programming trainer to write a program that would grade the marks of trainees using the grading system in the table below, the program should not accept any marks less than zero and more than one hundred. Create a C program that looks similar to what Hezbon will develop in order to perform the above task. (10 Marks)

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

b) Explain *five* features of procedural programming languages. (10 Marks)

34. (a) During system development, a programmer is required to follow certain steps designed to ensure that a good software is produced. Discuss the **six** phases of Program Development Life Cycle. (12 Marks)

(b) Discuss any **four** program design tools. (8 Marks)

35. (a) Explain **two** program testing methods that are used in program development.

(4 Marks)

(b) Draw a flowchart to prompt a user to enter two numbers, find the sum and average of the two numbers and then display the output on the screen. (6 Marks)

(c) Daudi works for HS Softwares, a company that specialises in developing applications using for billing customers. The company has won a tender to develop a billing system for Nairobi City County's car parking services. Discuss any **five** factors that Daudi and his team will have to consider when choosing a programming language for the project.

(10 Marks)

THIS IS THE LAST PRINTED PAGE.