

**061005T4ICT**

**ICT TECHNICIAN LEVEL 5**

**IT/OS/ICT/CR/5/5**

**DEVELOP COMPUTER PROGRAM**

**Mar. /Apr. 2023**

**Time: 3 Hours**



**THE KENYA NATIONAL EXAMINATIONS COUNCIL**

**WRITTEN ASSESSMENT**

**3 Hours**

**INSTRUCTIONS TO CANDIDATES**

*Maximum Marks for each question are indicated in the brackets.*

*The 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.*

*Candidate should answer the questions in English.*

*This paper consists of SEVEN (7) printed pages*

*Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

**Section A (40 marks)**

Answer **ALL** the questions in this section.

1. How do we refer to a function that returns no value in C programming? (1 Mark)
  - A. Data type function
  - B. Calling function
  - C. Main function
  - D. Void function
  
2. How is a comment written on a single line in C programming? (1 Mark)
  - A. /\* my comment
  - B. /\*\* my comment //
  - C. // my comment
  - D. /\* my comment \*/
  
3. Which of the following html tag will makes text bold? (1 Mark)
  - A. <fat>
  - B. <strong>
  - C. <black>
  - D. <emp>
  
4. Which of the following functions display “coming soon!” on the screen in a C program? (1 Mark)
  - A. echo("coming soon!");
  - B. print("coming soon!");
  - C. printf("coming soon!");
  - D. show("coming soon!");
  
5. 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
  
6. What kind of files are created in C programming? (1 Mark)
  - A. Images
  - B. Executables
  - C. Sources
  - D. Text files

7. What name is used to refer to the program that translates a low-level language to the binary language? (1 Mark)

- A. Loader
- B. Assembler
- C. Translator
- D. Linker

8. A declared variable is held in which memory? (1 Mark)

- A. RAM
- B. ROM
- C. Hard disk
- D. Microprocessor

9. Which of the following is not a valid variable name in C programming? (1 Mark)

- A. int fryr;
- B. float perte;
- C. int variable\_count;
- D. int \$main;

10. \_\_\_\_\_ is the result of arithmetic expression  $20\%10$  if used in a C program. (1 Mark)

- A. 2
- B. 0.08
- C. 0
- D. 200

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

```
#include <stdio.h>
int main()
{
printf("COME! %d \n", x);
return 0;
}
```

- A. COME! x;
- B. COME! followed by a random value
- C. Compilation error
- D. COME!

12. After the operation  $res = (16/5) - 3$ , what will “res” be equal to when executed in a C software? (1 Mark)

- A. 0
- B. -3
- C. 0,6
- D. 3

13. After these operations are done in C programming, what will “res” be equal to? (1 Mark)

```
int A = 5;  
res = 5 + A++;  
res += 2 + A;
```

- A. 9
- B. 17
- C. 12
- D. 18

14. 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

15. What happens after a return statement in C language?

(1 Mark)

- A. The function stops and returns the indicated result
- B. The function continues and returns the indicated result
- C. The function continues and returns no result
- D. The function calls another function

16. What is a global variable as applied in C language? (1 Mark)
- A. A variable that accessible everywhere
  - B. A variable that can accept any type (int, float, char...)
  - C. A variable declared in the main function
  - D. A variable that is shown as a prototype
17. Which of these data types in C has a variable size? (1 Mark)
- A. int
  - B. struct
  - C. float
  - D. double
18. 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}
19. In which case the return statement is not mandatory? (1 Mark)
- A. When the function takes no input parameters
  - B. When the function return void
  - C. When the function must return 0
  - D. When a function has to produce a value
20. Which conversion is correct regarding the size of the data types? (1 Mark)
- A. char > int > float
  - B. int > char > float
  - C. char < int < double
  - D. double > char > int

**Section B (40 marks)**

Answer **ALL** the questions in this section.

21. Describe **two** types of high-level language translators used in computer programming. (4 Marks)
22. Describe **four** programming approaches as applied in C language. (4 Marks)
23. Explain each of the following types of program development methodologies: (4 Marks)
- a. Agile
  - b. Crystal
  - c. Rapid application development
  - d. Waterfall development
24. State **four** differences between *client-side scripting* and *server-side scripting*. (4 Marks)
25. Explain the use of each of the following terms as used in C programming: (4 Marks)
- a) Scanf()
  - b) Printf()
  - c) Keyword
  - d) variable
26. Explain each of the following tags as used in HTML: (4 Marks)
- a) <HTML>
  - b) <EM>
  - c) <BR>
  - d) <P>
27. Outline **four** rules used when naming identifiers in C programming. (4 Marks)
28. Explain **two** importance of generating a user manual for a program. (4 Marks)
29. Distinguish between a physical and a logical Data Flow Diagram. (4 Marks)
30. Write an HTML table tag sequence that outputs the following: (4 Marks)
- 100 pcs 100 500  
10 pcs 5 50

**Section C (40 marks)**

*Answer any **two** questions in this section.*

31. a) Discuss the **seven** stages of program development life cycle. (14 Marks)
- b) Write a C program that uses a FOR loop type of control structure to display number 1 to 10. (6 Marks)
32. a) Draw a flowchart for a program that can be used to prompt the user to enter two numbers, find the sum and average of the two numbers and then display the output on the screen. (6 Marks)
- b) Write a pseudocode that would prompt the user to enter the Length and Width of a rectangle, calculate the Area and Perimeter, then display the result. (8 Marks)
- c) With the aid of flowcharts, distinguish between the IF statement and IF...ELSE statement. (6 Marks)
33. a) Describe **five** factors one should consider when selecting a programming language. (10 Marks)
- b) Explain the structure of a C program. (10 Marks)

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