GASABO DISTRICT

Republic of Rwanda
City of Kigali

DISTRICT COMPREHENSIVE ASSESSMENT

SECTOR: ICT

TRADE: SOD

RTQF: LEVEL 4

MODULE: APPLY PROGRAMMING FUNDAMENTALS

ACADEMIC YEAR: 2022-2023

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SECTION A: ATTEMPT ALL QUESTIONS /55MARKS

1. Define C programming language **(5marks)**

2. Briefly explain the following terms: **(5marks)**

   - Variable
   - Constant
   - Identifier
   - Array
   - Function

3. Differentiate between an interpreter and compiler. **(5marks)**

4. What is the meaning of the following escape characters? **(5marks)**

\n	
\t	

5. List any five types of relational operators and their meaning. **(5marks)**

6. Differentiate the following terms: **(5marks)**

   - Scanf( )
   - Printf( )

7. Write a C program that allows the user to enter two numbers and display their sum. **(5marks)**

8. Write a C program to perform sum, product and average of 4 integer numbers, entered by a user at runtime. **(5marks)**

9. State any five rules of naming an identifier. **(5marks)**

10. Fill in the following table on base of these two operators OR (||), AND (&&).**(5marks)**

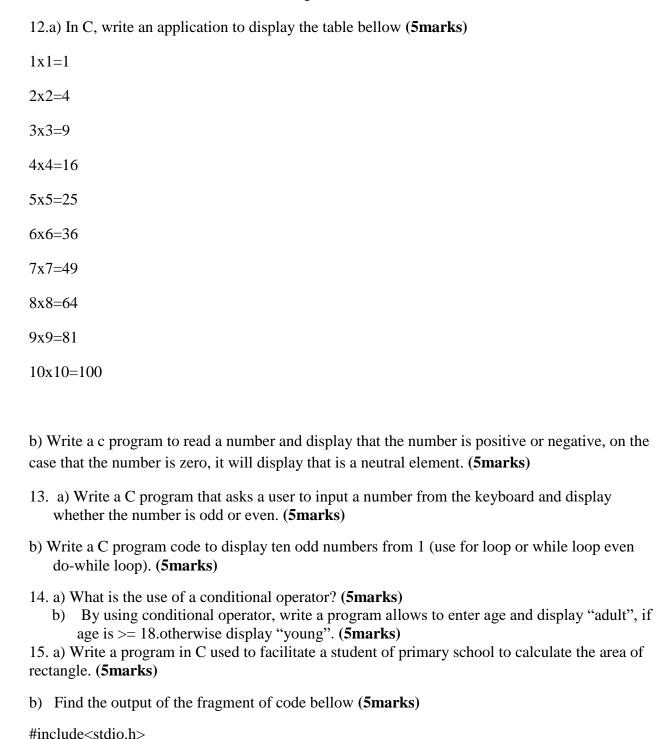| A	B	A||B	A&&B
True	True		
True	False		
False	True		
False	False		

11. Write a C program which displays the name of your school. **(5marks)**

SECTION B: ANSWER ANY THREE QUESTIONS /30MARKS

12.a) In C, write an application to display the table bellow **(5marks)**

1x1=1

2x2=4

3x3=9

4x4=16

5x5=25

6x6=36

7x7=49

8x8=64

9x9=81

10x10=100

b) Write a c program to read a number and display that the number is positive or negative, on the case that the number is zero, it will display that is a neutral element. **(5marks)**

13. a) Write a C program that asks a user to input a number from the keyboard and display whether the number is odd or even. **(5marks)**

b) Write a C program code to display ten odd numbers from 1 (use for loop or while loop even do-while loop). **(5marks)**

14. a) What is the use of a conditional operator? **(5marks)**
    b) By using conditional operator, write a program allows to enter age and display "adult", if age is >= 18.otherwise display "young". **(5marks)**

15. a) Write a program in C used to facilitate a student of primary school to calculate the area of rectangle. **(5marks)**

b) Find the output of the fragment of code bellow **(5marks)**

#include<stdio.h>

main( ){

int i,j;

for(i = 1; i < = 5; i++){

```
for(j=5;j>=i;j--)

printf( "%d\t",i);

printf("\n");

}}
```

SECTION C: CHOOSE THE ONLY ONE QUESTION /15MARKS

16. While purchasing certain items a discount of 10% is offered if the quantity purchased is more than 1000. If the quantity and price per item are input through the keyboard, write a program to calculate the total expenses.
NB: The total expenses is calculated by the this formula: **tot = (qty * rate) -(qty *rate * dis/100).**

17. Write a Program in C to generate Fibonacci series. HINT: Fibonacci series is the one in which a number is equal to the sum of the two previous numbers as follows: 1 1 2 3 5 8 13 21 …

18. Write a C program code to find the factorial of a number entered by the user through the keyboard.

HINT: n!=n*(n-1)*(n-2)*(n-3)*….*(n-(n-1))

$5!=5*(5-1)*(5-2)*(5-3)*(5-4)$

$5!=5*4*3*2*1= 1*2*3*4*5=120$

$0!=1$ and $1!=1$

SUCCESS!