



Republic of Rwanda
City of Kigali



GASABO DISTRICT

DISTRICT COMPREHENSIVE ASSESSMENT, RTQF LEVEL... 2022-2023

TRADE:

MODULE:

DATE OF EXAM: Duration:

ACADEMIC YEAR: 2022-2023

Instructions:

- 1. Answer all questions in section A (55 Marks)**
- 2. Answer three question in section B (30 Marks)**
- 3. Answer one question in section c (15 Marks)**

section A : Answer all questions in section A (55 Marks)

1. Define the terms: **/3marks**

- a) Variable
- b) Flowchart
- c) A computer program

2. differentiate an Algorithm and Pseudocode **/2marks**

3. a) what are arrays? **/3marks**

b) Make declaration and initialization of marks obtained by 5 students.

c) Write array statement which will help user to access last element.

4. Write the correct answer: **/5 marks**

- i. What punctuation is used to indicate the beginning and end of C code blocks?
 - A. { }
 - B. -> and <-
 - C. BEGIN and END
 - D. (and)
- ii. What punctuation ends most of C statements?
 - A) .
 - B);
 - C):
 - D) '
- iii. Which of the following is a correct comment block in C programming language?
 - A. */ Comments */
 - B. ** Comment **
 - C. /* Comment */
 - D. { Comment }
- iv. Which of the following is not a correct variable type in C programming language?
 - A. float
 - B. double
 - C. int
 - D. real

- v. Which of the following is the correct operator to compare two variables in C programming language ?
- A. :=
 - B. =
 - C. equal
 - D. ==

5. Differentiate the following terms: /1marks

- scanf()
- printf()

6.State whether each of the following expressions is true or false /3marks

- vi. i. $6 \leq 7$
- vii. ii. $(2 > 7) \ \&\& \ (2 < 6)$
- viii. iii. $(2 > 7) \ || \ (2 < 6)$
- ix. iv. $!(9 \leq 9)$
- x. v. $!(3 == 4)$
- xi. vi. $!((3 > 6) \ || \ (7 < 2))$

7. What is the meaning of the following escape characters in C programming language? /2.5marks

\n	
\r	
\t	
\v	
\b	

8.choose the correct answer /5marks

a) What is the output of the below code snippet?

```
#include<stdio.h>
```

```
Main()
```

```
{
```

```
int a=1;
```

```
float b=1.3;
double c;
c=a+b;
printf("%.2lf",c);
}
```

A) 2.30

B) 2.3

C) Compile error

D) 2.0

b) - What is the output of the following program?

```
#include<stdio.h>
Main()
{
Int a[3] ={2,1};
Printf("%d",a[a[1]]);
}
```

A) 0

B) 1

C) 2

D) 3

c)- Which of the following is a logical NOT operator?

A) !

B) &&

C) &

D) All of the above

d)What will be the output of the following code?

```
#include<stdio.h>
#define max 100+1
int main ()
{
int i;
i=max*max;
printf(“%d”,i);
return 0;
```

e) What will be the output of the following code?

```
b) main ()

{
int x=100;
printf(“%d\n”,100+x++);

}
```

9. What are the steps needed to solve the problem appearing in programming? **/5.5 marks**

10. Write a C program which displays the name of your school. **/2marks**

11. Write a c program that accepts three digits and display the product of the three numbers **/3marks**

12. What are the three basically types of errors that you must contend with when writing computer programs **/3marks**

13. Difference between Interpreter and Compile **/5marks**

14. Write a pseudocode and a flowchart of an algorithm to find the area of a rectangle. **/4marks**

15. write the syntax of If condition in algorithm

(1marks)

16. Write an algorithm which receives a number and informs the user when it is negative
(2marks)

17. The condition to for voting in Rwanda is to have at least 18 years old otherwise you are under age. Write a algorithm and flowchart that will check if one is eligible for voting or not eligible for voting . /5 marks

section B : Answer three question in section B (30 Marks)

18. Write C program to find the sum and average of three given floating point numbers and display the sum and average.

19. Write an algorithm which receives water temperature and displays the states of water as follows:
(10marks)

- Bellow 0: State is Solid
- Between 0 and 100: State is liquid
- 100 and above: State is gas.

20. By using do loop until and for loop , write an algorithm to display the numbers from 20 to 40 in Ascending order
(10marks)

21. Suppose that n,p,q are the variables of integer type and have got 8,13 and 29 as values respectively. What are the values of the following expressions:?

- i. $n+p/q=$
- ii. $n+q/p=$
- iii. $n+p\%q=$
- iv. $(n+p)/(n+p)=$
- v. $n*q-p=$

b) Write a c program to read the age of a student and display if he/she is eligible to get a NID, if the age is greater or equal to 18, otherwise, it will display that he/she is not eligible to get a NID.

22. Write an algorithm of a program which asks for a year and then tells the user if it is a year of the Summer Olympics, a year of the Census or both.

NOTICE: The Summer Olympics are held every four years during each year that is divisible evenly by 4. The U.S Census is taken every 10 years.

section C : Answer one question in section c (15 Marks)

Section c

23. Using the nested if statements write an algorithm which receives the marks of a student in five subjects and calculate their average, and tell him his grade as follows:

Average 90 and above: Grade A

Average 70-89 : Grade B

Average 50-69 : Grade C

Average below 50 : Fail

24. 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 this formula: $\text{tot} = (\text{qty} * \text{rate}) - (\text{qty} * \text{rate} * \text{dis}/100)$.

GOOD LUCK!!!