DAY -5

Questions

1. Write a C program to read the age of a candidate and determine whether he is eligible to cast his/her own vote.

   Test Data : 21
   Expected Output :
   Congratulation! You are eligible for casting your vote.

2. Write a C program to read the roll no, name and marks of three subjects and calculate the total, percentage and division.

   Test Data :
   Input the Roll Number of the student :784
   Input the Name of the Student :James
   Input the marks of Physics, Chemistry and Computer Application : 70 80 90
   Expected Output :
   Roll No : 784
   Name of Student : James
   Marks in Physics : 70
   Marks in Chemistry : 80
   Marks in Computer Application : 90
   Total Marks = 240
   Percentage = 80.00
   Division = First

3. Write a C program to read temperature in centigrade and display a suitable message according to the temperature state below:
   Temp < 0 then Freezing weather
   Temp 0-10 then Very Cold weather
   Temp 10-20 then Cold weather
   Temp 20-30 then Normal in Temp
   Temp 30-40 then Its Hot
   Temp >=40 then Its Very Hot
   Test Data :
   42

Expected Output :
Its very hot.

4. Write a C program to check whether a character is an alphabet, digit or special character.
Test Data :
@
Expected Output :
This is a special character.

5. Write a program in C to display the n terms of a harmonic series and their sum.
 1 + 1/2 + 1/3 + 1/4 + 1/5 ... 1/n terms
Test Data :
Input the number of terms : 5
Expected Output :
1/1 + 1/2 + 1/3 + 1/4 + 1/5 +
Sum of Series upto 5 terms : 2.283334

6. Write a C program to display Pascal's triangle.

 Test Data :
Input number of rows: 5
Expected Output :

```
            1
         1     1
      1     2     1
   1     3     3     1
1     4     6     4     1
```

7. Write a program in C to concatenate two given arrays of integers.
   Sample Data:
   ({ 10, 20, 30, 40, 50, 60 }, { 70, 80, 90, 100, 110, 120 }) -> "10 20 30 40 50 60 70 80 90 100 110 120"

8. Write a program in C to accept two matrices and check whether they are equal.
   Test Data :
   Input Rows and Columns of the 1st matrix :2 2
   Input Rows and Columns of the 2nd matrix :2 2

Input elements in the first matrix :
element - [0],[0] : 1
element - [0],[1] : 2
element - [1],[0] : 3
element - [1],[1] : 4
Input elements in the second matrix :
element - [0],[0] : 1
element - [0],[1] : 2
element - [1],[0] : 3
element - [1],[1] : 4
Expected Output :
The first matrix is :
1 2
3 4
The second matrix is :
1 2
3 4
The Matrices can be compared :
Two matrices are equal.

9. Write a program in C to check whether a given matrix is an identity matrix.
   Test Data :
   Input number of Rows for the matrix :3
   Input number of Columns for the matrix :3
   Input elements in the first matrix :
   element - [0],[0] : 1
   element - [0],[1] : 0
   element - [0],[2] : 0
   element - [1],[0] : 0
   element - [1],[1] : 1
   element - [1],[2] : 0
   element - [2],[0] : 0
   element - [2],[1] : 0
   element - [2],[2] : 1
   Expected Output :
   The matrix is :
   1 0 0
   0 1 0
   0 0 1
   The matrix is an identity matrix.

10. Write a program in C to read a sentence and replace lowercase characters with uppercase and vice versa.

Test Data :
Input the string : This Is A Test String.

Expected Output :

```
The given sentence is    : This Is A Test String.
After Case changed the string  is: tHIS iS a tEST sTRING.
```

11. Write a program in C to remove characters from a string except alphabets.

Test Data :
Input the string : way2sms.com

Expected Output :

```
    After removing the Output String : waysmscom
```

12. Write a C program to count each character in a given string. Test Data :
Input a string: way2sms.com

Expected Output:

```
Enter a str1ing: The count of each character in the string
w3resource is
w     1
a     1
y     1
2     1
s     2
m     2
c     1
0     1
```

13. Write a program in C to print the Fibonacci Series using recursion.

Test Data :
Input number of terms for the Series (< 20) : 10
Expected Output:

```
Input number of terms for the Series (< 20) : 10
The Series are :
1  1  2  3  5  8  13  21  34  55
```

14. Write a program in C to find the GCD of two numbers using recursion. Test Data :
Input 1st number: 10
Input 2nd number: 50
Expected Output :

```
The GCD of 10 and 50 is: 10
```

15. Write a program in C to get the largest element of an array using recursion.

Test Data :
Input the number of elements to be stored in the array :5
Input 5 elements in the array :
element - 0 : 5
element - 1 : 10
element - 2 : 15
element - 3 : 20
element - 4 : 25
Expected Output :

```
Largest element of an array is: 25
```

16. Write a program in C to check if a number is a prime number or not using recursion. Test Data :
Input any positive number : 7
Expected Output :

```
The number 7 is a prime number.
```

17. Write a program in C to find the maximum number between two numbers using a pointer.

Test Data :
Input the first number : 5
Input the second number : 6
Expected Output :

```
 6  is the maximum number.
```

18. Write a program in C to find the largest element using Dynamic Memory Allocation.

Test Data :
Input total number of elements(1 to 100): 5

Number 1: 5
Number 2: 7
Number 3: 2
Number 4: 9
Number 5: 8
Expected Output :

```
The Largest element is :   9.00
```

19. Write a program in C to find the number of lines in a text file.
Test Data :
Input the file name to be opened : test.txt
Expected Output :

```
The lines in the file test.txt are : 4
```

20. Write a program in C to copy a file to another name.

```
Assume that the content of the file test.txt is :
test line 1
test line 2
test line 3
test line 4
```

Test Data :
Input the source file name : test.txt
Input the new file name : test1.txt
Expected Output :

```
The file test.txt  copied successfully in the file test1.txt.
```
If you read the new file you will see the content of the file :

```
test line 1
test line 2
test line 3
test line 4
```