

# GUJARAT TECHNOLOGICAL UNIVERSITY

## Master of Computer Application

**Subject Name** : Programming Skills-I (FOP)

**Subject Code** : 610002

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### Program Implementation using C language

**Programs based on following topic should be carried out during practical hours.**

Basic C Programs

Programs based on constants, variable and diff data types.

Programs based on Operator and Expression

Programs based on Decision Making and Branching

Use of Do While loop ,For loop, while loop, if loop, if else if ladder, switch, go to

Programs based on One dimensional and two dimensional array

Programs based on character array and String manipulation functions.

Programs based on user-defined functions, Recursion

Programs based on Structures and pointers

Programs based on file management in C.

Programs based on Dynamic memory allocation and linked list

**Following list is just a sample guide line:**

1. Write a program to print "Hello World" message.
2. Write a program to print Name , Address and Birth Date.
3. Write a program to add, multiply and divide two integers and float numbers.
4. Write a program to convert Rupees(float) to paisa(int).
5. Write a program to accept number of days and print year, month and remaining days.
6. Write a program to check whether the entered number is prime or not.
7. Write a program to check whether the entered number is even or odd.
8. Using While loop print 1 2 3 4 5 .....10.
9. Print series 2, 4, 6, 8,.....n.
10. Print series 2, 4, 16,.....n\*n using shorthand operator and while loop
11. Write a program to generate fibonnacci series.
12. Write a program to print the multiplication table.
13. Write a program to find a factorial of the entered number.
14. Write a program to print all the numbers and sum of all the integers that are greater than 100 and less than 200 and are divisible by 7.
15. Write a program to find the roots of an equation  $ax^2 + bx + c = 0$ .
16. Write a program that accept basic, HRA, and convergence from the user and calculate total salary.

17. Print the following triangle.

```
a   b   c   d   e
  a   b   c   d
    a   b   c
      a   b
        a
```

18. Write a program that prints the following Floyd's triangle.

```
1
2 3
4 5 6
7 8 9 10
11 .....15
.
.
79.....91
```

19. Write a program to find maximum element from 1-Dimensional array.
20. Write a program to sort given array in ascending order.
21. Given the two 1-D arrays A and B, which are sorted in ascending order. Write a program to merge them into a single sorted array C that contains every item from arrays A and B, in ascending order.
22. Write a program to add two matrices.
23. Write a program to find string length.
24. Write a program to print size of int, float, double variable.
25. Write a program that will read a text and count all occurrences of a particular word.
26. Write a program that will read a string and rewrite it in the alphabetical order. i.e. the word STRING should be written as GINRST.
27. Write a program that appends the one string to another string.
28. Write a program that finds a given word in a string.
29. Use recursive calls to evaluate  
 $f(x) = x - x^3/3! + x^5/5! - x^7/7! + \dots$
30. Write a function prime that returns 1 if its argument is a prime no. and returns 0 otherwise.
31. Write a program to add first n numbers.
32. Write a function which returns 1 if the given number is palindrome otherwise returns 0.
33. Write a function that will scan a character string passed as an argument and convert all lower-case character into their upper-case equivalent.
34. Write a function to reverse the string.
35. Write a program that search an item from array of string.
36. Define a structure called cricket that will describe the following information:
- Player name
  - Team name
  - Batting average

- Using cricket, declare an array player with 50 elements and write a program to read the information about all the 50 players and print a team-wise list containing names of player with their batting average.
37. In a program declare following structure member: name, code, age, weight and height. Read all members of the structure for 100 persons and find list of persons with all related data whose weight > 50 and height > 40 and print the same with suitable format and title.
  38. Write a program using pointers to read an array of integers and print its elements in reverse order.
  39. Write a function to calculate the roots of the quadratic equation. The function must use two pointer parameters, one to receive the coefficients a, b, and c, and the other to send the roots to the calling function.
  40. Write a function using pointers to add two matrices and to return the resultant matrix to the calling function.
  41. Write a program to read data from keyboard, write it to a file named STUDENT again read the same data from STUDENT file and write it into DATA file. same data should be displayed on the screen.
  42. Write a program to create linear linked list interactively and print out the list and total number of items in the list.