**I Year – I SEMESTER** **T P C**
**0 3 2**

# C PROGRAMMING LAB

**Exercise l**

a) Write a C Program to calculate the area of triangle using the formula
area = ( s (s-a) (s-b)(s-c))$^{1/2}$ where s= (a+b+c)/2

b) Write a C program to find the largest of three numbers using ternary operator.

c) Write a C Program to swap two numbers without using a temporary variable.

**Exercise 2**

a) 2's complement of a number is obtained by scanning it from right to left and complementing all the bits after the first appearance of a 1. Thus 2's complement of 11100 is 00100. Write a C program to find the 2's complement of a binary number.

b) Write a C program to find the roots of a quadratic equation.

c) Write a C program, which takes two integer operands and one operator form the user, performs the operation and then prints the result. (Consider the operators +,-,*, /, % and use Switch Statement)

**Exercise 3**

**a)** Write a C program to find the sum of individual digits of a positive integer and find the reverse of the given number.

**b)** A Fibonacci sequence is defined as follows: the first and second terms in the sequence are 0 and 1. Subsequent terms are found by adding the preceding two terms in the sequence. Write a C program to generate the first n terms of the sequence.

**c)** Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.

**Exercise 4**

a) Write a C Program to print the multiplication table of a given number n up to a given value, where n is entered by the user.

b) Write a C Program to enter a decimal number, and calculate and display the binary equivalent of that number.

c) Write a C Program to check whether the given number is Armstrong number or not.

**Exercise 5**

a) Write a C program to interchange the largest and smallest numbers in the array.

b) Write a C program to implement a liner search.

c) Write a C program to implement binary search

**Exercise 6**

**a)** Write a C program to implement sorting of an array of elements .

b) Write a C program to input two m x n matrices, check the compatibility and perform addition and multiplication of them

**Exercise 7**

Write a C program that uses functions to perform the following operations:

i. To insert a sub-string in to given main string from a given position.
ii. To delete n Characters from a given position in a given string.
iii. To replace a character of string either from beginning or ending or at a specified location

**Exercise 8**

Write a C program that uses functions to perform the following operations using Structure:

i) Reading a complex number ii) Writing a complex number
iii) Addition of two complex numbers iv) Multiplication of two complex numbers

**Exercise 9**

Write C Programs for the following string operations without using the built in functions

- to concatenate two strings
- to append a string to another string
- to compare two strings

**Exercise 10**

Write C Programs for the following string operations without using the built in functions

- to find t he length of a string

- to find whether a given string is palindrome or not

**Exercise 11**

**a)** Write a C functions to find both the largest and smallest number of an array of integers.

b) Write C programs illustrating call by value and call by reference cncepts.

**Exercise 12**

Write C programs that use both recursive and non-recursive functions for the following

i) To find the factorial of a given integer.

ii) To find the GCD (greatest common divisor) of two given integers.

iii) To find Fibonacci sequence

**Exercise 13**

a) Write C Program to reverse a string using pointers

b) Write a C Program to compare two arrays using pointers

**Exercise 14**

a) Write a C program consisting of Pointer based function to exchange value of two integers using passing by address.

b) Write a C program to swap two numbers using pointers

**Exercise 15**

Examples which explores the use of structures, union and other user defined variables

**Exercise 16**

**a)** Write a C program which copies one file to another.

**b)** Write a C program to count the number of characters and number of lines in a file.

c) Write a C Program to merge two files into a third file. The names of the files must be entered using command line arguments.