S D M College of Engineering and Technology, Dhavalagiri, Dharwad

Department of Computer Science and Engineering

Principles of Programming using C (POP) lab

PART A

1. Write a C program to convert a given temperature from Celsius to Fahrenheit and vice versa.

2. Write a C program to compute area of a triangle given three sides a, b & c.

   Area = $\sqrt{s(s-a)(s-b)(s-c)}$ $\sqrt{s(s-a)(s-b)(s-c)}$

   Where s = $\frac{(a+b+c)}{2}$ $\frac{(a+b+c)}{2}$

3. Write a C program to print the following patterns:

   1
   1 2
   1 2 3
   ….

   1
   2 2
   3 3 3
   …

4. Write a C program to find the factorial of a given integer number.

5. Write a C program to print the 1st ‘n’ elements in a Fibonacci series.

6. Write a C program to print the sum of digits of a given integer number.

7. Write a C program to find the maximum and minimum element in an array of n elements.

8. Write a C program to find and print the number of vowels in a given string.

9. Write a C program to show the use of the following built-in functions in strings:
   i. strcat ii. strcpy iii. strcmp

10. Write a C program to include two functions – add (int , int) and subtract (int, int) and main () calls these functions to print the sum and difference of 2 input numbers passed as parameters from main.

S D M College of Engineering and Technology, Dhavalagiri, Dharwad

Department of Computer Science and Engineering

Principles of Programming using C (POP) lab

PART B

1. Write a C program to find the GCD and LCM of any 3 given integers**.**

2. Write a C program to check whether a given number is a prime number or not.

3. Write a C program, which calculates the roots of a Quadratic Equation, given the values of a, b and c and print the type of the roots and roots of the equation.

4. Write a C program to search an element from a list of 'n' array elements using binary search technique.

5. Write a C program to sort elements of an integer array using bubble sort technique. Print both unsorted and sorted array of elements.

6. Write a C program that computes the mean, variance and standard deviation of n elements in an array.

7. Write a C program to multiply two matrices of order m x n and p x q and print the product matrix in the matrix format. *[NOTE: Check the matrices for multiplication compatibility.]*

8. Write a C program to check whether a string is palindrome or not, without using built-in string handling functions.

9. Write a C Program to convert alphabets in a string from lowercase to uppercase and vice-versa, without using built-in string handling functions. Print both the original string and the modified string.

10. Write a C program to read the values of n and r, and call a user defined function factorial () to compute factorial of a number and calculate $^{n}\mathbf{C}_{r}$ and $^{n}\mathbf{P}_{r}$.