**Assignment 1**

**PRACTICAL(Basic Programming in C++)**

### Full marks: 30

**(Complete within 15th September,2018)**

1. Write a program to convert a given temperature value from Fahrenheit scale to Centigrade scale and vice versa.
2. Write a program to display ASCII value of a character.
3. Write a program to check whether a number is perfect or not.
4. Write a program to find out the biggest of three numbers using nested if.
5. A company insures its drivers if either of the following conditions are satisfied

* Driver is married.
* Driver is an unmarried, male and above 30 years of age.
* Driver is unmarried, female and above 25 years of age.

Write a program to decide if a driver is to be insured using logical operators.

1. Write a program to read a list of positive integers terminated by -1 and display the odd and even numbers separately and also their respective counts.
2. Write a program to read values of n and x and print the value of y using switch case where
   1. y=n+x when n=1
   2. y=1+x/n when n=2
   3. y= n+3x when n=3
   4. y=1+nx when n>3 or n<1.
3. Write a program to n values of sales and then calculate the commission on sales amount where the commission is calculated as follows:
   1. If sales <= Rs.500, commission is 5%.
   2. If sales > 500 but <= 2000, commission is Rs 35 plus 10% above Rs 500.
   3. If sales > 2000 but <= 5000,commission is Rs 185 plus 12% above Rs.2000.
   4. If sales > 5000 ,commission is 12.5%.
4. Write a program to find out minimum, maximum, sum and average of n numbers without using array.
5. Write a program to find out the roots of a quadratic equation. Use proper testing to find checks for real and complex roots.
6. Write a program to print the digits of a number in words. ( eg. if a number 841 is entered through the keyboard your program should print “Eight Four One”.)
7. Write a program to print the PASCAL Triangle up to the n-th row where n is an input to the program.
8. Write a function to return the HCF of two positive integers. Write a main function to read two positive integers and print their HCF and LCM by using the above function.
9. Write a program to convert a decimal number into binary number using function.
10. Write aprogram to display the result of sine series using function.
11. Write a program to find the sum of the following series

1+x-x^3/3!+x^5/5!-x^7/7!+ . . . . . corrected up to the 3 decimal place.

1. Write a program to read n numbers in a sorted array and insert a given element in a particular position
2. Write functions to compute the factorial of a number using both recursive and non-recursive procedure.
3. Write a program to print the values of ncr and npr for given positive integers n r > 0. Use a function fact(n) to return the factorial of a non-negative integer n.

ncr=n!/r!\*(n-r)! npr=n!/(n-r)!

1. Write a program to display the first n Fibonacci numbers using function.
2. Write a program to display the prime numbers within a given range. Write a function to check whether a given integer is prime or not and use it.
3. Write a program to Multiply two matrices using function
4. Write a program to display the upper Triangle and lower Triangle of a given square matrix using function.
5. Write a function to check if a given square matrix is symmetric or not. Write a main function to implement it.
6. Write a program to read a m x n matrix and calculate the Row sum and Column Sum of the matrix
7. Write a function to read in an integer and print the representation of the number using the sign and magnitude representation scheme using 8 bits. The program should check for overflow/under flow conditions. The left most bit is to be used as the sign bit.
8. Write a program to merge two sorted arrays.
9. Write a program to implement selection sort using function.
10. Write a program to count the number of vowels in a string.
11. Write a program to concatenate two strings using function (without using library function).
12. Write a program to convert a string from upper case to lower case and vice versa.
13. Write a program to swap two numbers using function (pass the pointers).
14. Write a program to sort n number of strings in ascending order using pointer.
15. Write a program using pointers to copy a string to another string variable (without using library function).
16. Write a program to read a text file and count the number of vowels in the text file.
17. Write a program to copy a text file to another file.