Lab Tasks Weight: 4.00

Task # 01

Following are given the function declarations/prototypes. You've to implement the definition of given function prototypes. Input all values from user in the Main () program and pass these variables/values to the below functions as parameters. Call all these functions in Main () program and test them.

1. int **maximum**(int num1, int num2, int num3, int num4, int num5)
   // it returns maximum value of five numbers.

2. int **integerNumberLength**(int num);
   // functions calculates the length of variable num and returns it's length

3. char **lowerLetter**(char ch);
   // function converts a uppercase letter to lowercase and returns an lowercase letter. If letter is
   // already in lowerercase then return the same letter

4. bool **pallindrome**(int number);
   // function checks wether a number is pallindrome or not. Returns true if number is
   // pallindrome otherwise returns false. A number is palindrome if it is the same while reading
   // from left or right sides i.e. 454, 6776, 123321 etc.

5. void **largestNumberLength**(int num1, int num2, int num3, int num4);
   // displays on console which number has highest length. Use **integerNumberLength()** function
   // you've written above in part-3.

Task # 02

Write a function isPrime to test whether its parameter is prime. Apply the function in a program which prints all the prime numbers up to 100.

Task # 03

Write a function reverse (int num) which reverses the digits in its parameter and returns the result. For example if num is 927 then it would return 729. Apply the function in a program that asks the user 10 numbers and reverses them.

Task # 04

The formula for the Pentagonal numeric sequence is **Pn=n*(3n-1)/2**. This yields the sequence 1, 5, 12, 22, 35, and so on. Define a function having one input parameter 'N', function displays the pentagonal sequence upto 'N' numbers on console. i.e

```
void pentagonal ( int n );
```

Use above given formula to calculate the pentagonal sequence.

Task # 05

Let a , b , c, d and e be five integer numbers. Input these five numbers from user. Write a C++ program with a function having following prototype.

```
void rotate(int& a, int& b, int& c, int& d, int& e)
```

rotate function swaps the values of five input parameters a,b,c,d and e inside the function. Call the **rotate** function in main program and display the updated values of variables.

Swap values such that a = b , b = c, c=d, d=e and e = a.

Task # 06

Write a function `fibonacci ( int n )` which calculates the Fibonacci series up to n-terms.