Class XII

Assignment-4

Sub: Computer Science

Q1. Write the output of the following program:

```
#include<iostream.h>
int Execute (int M)
{
if(M%3==0)
return M=3;
else
return M+10;
}
void Output (int B=2)
{
for(int T=0;T<B;T++)
cout<<Execute(T)<<"*";
cout<<endl;
}
void main()
{
Output(4);
Output();
Output(3);
}
```

Q2. Write an interactive program in C++ to read the values of three coefficients of quadratic equation ($Ax^2 + Bx + C=0$). Find the roots of the equation and display them on your screen (including complex roots) specifying the nature of roots.

Q3. Write an interactive C++ program to accept an integer and reverse the integer. Display both the numbers on your screen.

Q4. Write a program to accept 10 integers from a user in a single dimension array and sort the array in ascending order.

Q5. Write a program to read to check the equality of two matrices.

Q6. Write a program to read a string and check whether it is a palindromic string or not. (Palindrome is a string that reads the same from left to right and vice-versa.)

Q7. Write a program C++ to find number of vowels in a given line of text.

Q8. Write an interactive program in C++ to read a string and make a table displaying different types of characters in the following format: For Example;
Input string: THE QUICK BROWN fox jumps over the LAZY LITTLE DOG
Output table

Uppercase Vowels : 6
Lowercase Vowels : 7
Uppercase Consonants : 15
Lowercase Consonants : 13

Q9. Let A [n x n] be a given matrix. Write a program to find the sum of all the elements which lie on either diagonal. For example, for the matrix shown below, your program should output 68=(1+6+11+6+16+4+7+10+13);

$$\begin{pmatrix} 1 & 2 & 3 & 4 \\ 5 & 6 & 7 & 8 \\ 9 & 10 & 11 & 12 \\ 15 & 14 & 15 & 16 \end{pmatrix}$$

Q10. Write a function to accept a string and search for a sub-string (a group of contiguous characters). If the search is successful, the function should return the position of the sub-string and minus one (-1) otherwise.