Tutorial and Assignment Sheet – ODD 2021

15B11CI311 – Data Structures

Week 2

Topics: Array, singly linked list, doubly linked list using STL

Q.1.The following program implement array using STL. What will be the output of the following program?

```
#include<iostream>

#include<array>

using namespace std;

int main()

{

        array<int,6> ar = {11, 21, 31, 41, 51, 61};

        array<int,6> ar1 = {71, 81, 91, 10, 11, 12};

        cout << "1st Ary before swapping are : ";

        for (int i=0; i<6; i++)

        cout << ar[i] << " ";

        cout << endl;

        cout << "2nd Ary before swapping are: ";

        for (int i=0; i<6; i++)

        cout << ar1[i] << " ";

        cout << endl;

        ar.swap(ar1);

        cout << "1st Ary after swapping are: ";

        for (int i=0; i<6; i++)

        cout << ar[i] << " ";

        cout << endl;
```

```
        cout << "2nd Ary after swapping are: ";
        for (int i=0; i<6; i++)

        cout << ar1[i] << " ";

        cout << endl;

        return 0;

}
```

Q.2 Write a program to insert following elements in the doubly linked list using STL:

3,6,2,9,1

After inserting the above elements delete first three elements from the doubly linked list.

Q 3. The following program implement doubly linked list using STL. What will be the output of the following program:

```
#include <bits/stdc++.h>

using namespace std;

int main()

{

        list<int> demoList;

        demoList.push_back(1);

        demoList.push_back(2);

        demoList.push_back(3);

        demoList.push_back(4);

                cout << "Initial List: ";

        for (auto itr = demoList.begin(); itr != demoList.end(); itr++)

                cout << *itr << " ";

                demoList.resize(2);

        cout << "\n\nList after first resize: ";

        for (auto itr = demoList.begin(); itr != demoList.end(); itr++)

                cout << *itr << " ";

                demoList.resize(4);
```

```
        cout << "\n\nList after second resize: ";
        for (auto itr = demoList.begin(); itr != demoList.end(); itr++)

                cout << *itr << " ";

                        demoList.resize(5, 50);

        cout << "\n\nList after third resize: ";

        for (auto itr = demoList.begin(); itr != demoList.end(); itr++)

                cout << *itr << " ";

        return 0;

}
```

Q.4 Write a program to implement singly linked list using STL with the following

elements: 10, 34, 56, 78, 34, 78, 90