**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