**Sri Sri University, Cuttack, Odisha.**

**Faculty of Science**

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| **Program: B.Sc. – Computer Science, Data Science, & Environmental Science**  **(2020-23 Batch)**  **Subject Code/Subject Name: Data Structure Laboratory**  **Assignment –V** | |
| **Full Name of the Student:** | VINAYAK SANJAY CHAVAN |
| **Full Roll Number:** | BCS-001 |
| **Program:** | B.Sc. (Computer Sc.) / B.Sc. (Data Sc.) / B.Sc. (Env. Sc.) |
| **Date:** | 13th March, 2021 (10.00 AM – 12.00 Noon) |
| **Signature** |  |

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| **All Questions are compulsory** | **Total Marks: 50** |

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| **Question (s)** | **Maximum Marks** |
| 1. Define an array of length SIZE. Implement the below operations supported by an array.  * **Traverse**: Print all the elements one by one. * **Insertion**: Adds an element at a given index. * **Deletion**: Delete an element at the given index. * **Search**: Searches an element using by the value. * **Update**: update an element at the given index.   **Your code:**  **TRAVERSE**  **#include <iostream>**  **#include <cstdlib>**  **using namespace std;**  **void myarr(int[],int);**  **int main(){**  **int arr[9] = {54, 71, 18, 54, 31, 22, 47, 83, 12};**  **myarr(arr,9);**  **}**  **void myarr(int arr[],int n){**  **int i=0, j=9;**  **cout<<"original arr elements: \n ";**  **for(i=0; i<n; i++){**  **cout<<"la: "<<i<<" is "<<arr[i]<<endl;**  **}**  **}**  **INSERTION**  **#include<iostream>**  **#define size 100**  **using namespace std;**  **int myarr[size]={1, 2, 3, 4, 5};**  **int n=5;**  **void insertion(int,int);**  **int main(){**  **int position,element;**  **cout<<"enter element which would you like to insert? : ";**  **cin>>position;**  **cout<<"Enter the element to be inserted: ";**  **cin>>element;**  **insertion(position,element);**  **for(int i=0;i<n+1;i++){**  **cout<<myarr[i]<<" ";**  **}**  **}**  **void insertion(int position,int j){**  **for(int i=n;i>=position;i--){**  **myarr[i+1]=myarr[i];**  **}**  **myarr[position]=j;**  **}**  **DELETION**  **#include<iostream>**  **#define size 100**  **using namespace std;**  **int arr[size]={6, 5, 4, 3, 2, 1};**  **int n=6;**  **void deletion(int);**  **int main(){**  **int position;**  **cout<<"enter the position from which element should be deleted: ";**  **cin>>position;**  **deletion(position);**  **cout<<"After deletion array is: ";**  **for(int i=0;i<n-1;i++){**  **cout<<arr[i]<<" ";**  **}**  **}**  **void deletion(int position){**  **for(int i=position;i<n;i++){**  **arr[i]=arr[i+1];**  **}**  **}**  **SEARCH**  **#include<iostream>**  **#define size 100**  **using namespace std;**  **int arr[size]={126,45,879,500,4588,654};**  **int n=6;**  **int search(int);**  **int main(){**  **int num,index;**  **cout<<"Enter the number which we have to searched: ";**  **cin>>num;**  **index=search(num);**  **cout<<"The index in which the number is :"<<index;**  **}**  **int search(int item){**  **int flag;**  **for(int i=0;i<n;i++){**  **if(arr[i]==item){**  **flag=i;**  **break;**  **}**  **}**  **return flag;**  **}**  **UPDATE**  **#include<iostream>**  **#define size 100**  **using namespace std;**  **int arr[size]={256, 789, 654, 659, 326,155};**  **int n=6;**  **void update(int,int);**  **int main(){**  **int position,upd\_value;**  **cout<<"Enter the position: ";**  **cin>>position;**  **cout<<"The value: ";**  **cin>>upd\_value;**  **update(position,upd\_value);**  **for(int i=0;i<n;i++){**  **cout<<arr[i]<<" ";**  **}**  **}**  **void update(int position,int num){**  **arr[position]=num;**  **}**  **Screenshot of output:**  **TRAVERSE**    **INSERTION**    **DELETION**    **SEARCH**    **UPDATE** | 50 |