Lab. (6)
Revision

Answer the following questions

1) Write a C++ Program to Find Transpose of a Matrix using array.

```
#include <iostream>
using namespace std;
int main()
{
   int a[5][5], trans[5][5], r, c, i, j;
   cout << "Enter rows of matrix: ";
   cin >> r;
   cout << "Enter columns of matrix: ";
   cin >> c;
   cout<<"\nEnter Elements to Matrix Below :: \n";
   for(i=0;i<r;i++)
   {
      for(j=0;j<c;++j)
      {
         cout<<"\nEnter a1["<<i<<"]["<<j<<"] Element :: ";
         cin>>a[i][j];
      }
   }
// Displaying the matrix a[ ][ ]
```

```
cout << "\n The Entered Matrix is :: \n" << endl;
for (i = 0; i < r; ++i)
   {          for (j = 0; j < c; ++j)
      {             cout<<"\t"<<a[i][j];          }
      cout<<endl;       }
// Finding transpose of matrix a[][] and storing it in array trans[][].
for(i = 0; i < r; ++i)
   for(j = 0; j < c; ++j)
   {          trans[j][i]=a[i][j];       }
// Displaying the transpose,i.e, Displaying array trans[][].
cout << endl << "Transpose of Matrix :: " << endl;
for (i = 0; i < r; ++i)
   {          for (j = 0; j < c; ++j)          {
         cout<<"\t"<<trans[i][j];          }
      cout<<endl;
   }
return 0;}
```

2) Write a C++ Program to Find Sum of Diagonals elements in a Matrix

```
#include<iostream>
using namespace std;
int main()
{   int a[10][10],d1sum=0,d2sum=0,m,i,j;
   cout<<"Enter size of matrix :: ";
   cin>>m;
   cout<<"\nEnter Elements to Matrix Below :: \n";
```

```
    for(i=0;i<m;i++)
    {
        for(j=0;j<m;++j)
        {
            cout<<"\nEnter a["<<i<<"]["<<j<<"] Element :: ";
            cin>>a[i][j];
        }
    }
cout<<"\nThe given matrix is :: \n\n";
        for (i = 0; i < m; ++i)
        {
            for (j = 0; j < m; ++j)
            {               cout<<"\t"<<a[i][j];            }
            cout<<endl);
        }
    for(i=0;i<m;++i)
        for(j=0;j<m;++j)
        {
            if(i==j)
                d1sum+=a[i][j];
            if(i+j==(m-1))
                d2sum+=a[i][j];
        }
    cout<<"\nSum of 1st diagonal is :: "<<d1sum;
    cout<<"\n\nSum of 2nd diagonal is :: "<<d2sum;
    return 0;
}
```