Practical No: - 6 Write a program for matrix multiplication using Strassen's matrix multiplication.

```
#include<iostream>
#include<conio.h>
using namespace std;
class SMATRIX
{
int i,j,A[20][20],B[20][20],C[20][20],P,Q,R,S,T,U,V;
public:
void getdata();
void SMATRIX1();
};
void SMATRIX::getdata()
{
cout<<"\n Enter the 1st 2*2 matrix: -\n";
for(i=1;i<=2;i++)
{
for(j=1;j<=2;j++)
{
cin>>A[i][j];
}
}
cout<<"Enter the 2nd 2*2 matrix: - \n";
for(i=1;i<=2;i++)
{
for(j=1;j<=2;j++)
{
cin>>B[i][j];
}
}
}
void SMATRIX::SMATRIX1()
{
P=(A[1][1]+A[2][2])*(B[1][1]+B[2][2]);
Q=(A[2][2]+A[2][2])*(B[1][1]);
R=A[1][1]*(B[1][2]-B[2][2]);
S=A[2][2]*(B[2][1]-B[2][2]);
T=(A[1][1]+A[1][2])*B[2][2]; U=(A[2][2]-A[1][1])*(B[1][1]+B[1][2]);
```

```
V=(A[1][2]-A[2][2])*(B[2][1]+B[2][2]);
C[1][1]=(P+S)-(T-V);
C[1][2]=R+T;
C[2][1]=Q+S;
C[2][2]=(P+R)-(Q+U);
cout<<"\n Matrix Multiplication is :- \n";
for(i=1;i<=2;i++)
{
for(j=1;j<=2;j++)
{
cout<<"\t"<<C[i][j];
}
cout<<endl;
}
}
void main()
{
//clrscr();
SMATRIX s;
s.getdata();
s.SMATRIX1();
getch();
}
```

/*OUTPUT*/

```
Enter the 1st 2*2 matrix: -
4 7
5 3
Enter the 2nd 2*2 matrix: -
2 3
5 1
 Matrix Multiplication is :-
        46      19
        24      22
```