

Assignment - 2

1. A) List out the categories of function overloading. 2
B) Which OOPs concept is being implemented in function overloading.
2. What are static data members. How are they different from instance variables? Also mention, can we access non static members through static member functions? 2
3. Differentiate between macro and inline functions 2
4. What is this pointer? Why it is needed. Explain any two applications of this pointer with corresponding code segment. 4
5. A) Write a C++ class to calculate simple interest and compound interest. **Members are to be accessed using member dereferencing operators/ pointer to member operators.** 2.5
B) Write a C++ program using classes to perform addition of time in hours and minutes. 2.5
6. A) Write a C++ program using classes to add two complex numbers together. 2.5
B) Write a C++ program using classes to overload the method area(). The prototypes are as under 2.5

int area(int) → Area of square
int area(int,int) → Area of rectangle
int area(int,int, int) → Area of triangle
7. A) Determine the output, explain your answer: 1.5

```
#include <iostream>
using namespace std;
class A
{
    int x;
    A *p;
public:
    void setdata(int d, A *p1)
    {
        x = d;
        p = p1;
    }
    void display()
    {
        cout<<x<<" "<<(*p).x<<endl;
    }
};
int main()
```

```

{
    A a, b;
    a.setdata(10, &b);
    b.setdata(20, &a);
    a.display();
    b.display();
    return 0;
}

```

B) Write a C++ program using class to read a matrix and transpose it. Use the concept of array of objects. 2.5

C) Determine the error in the following program 1

```

#include<iostream>
using namespace std;
class addition
{
    int p,q,r,s;
    void input(void)
    {
        cout<<"Enter three nos.";
        cin>>p>>q>>r>>s;
    }
    void show()
    {
        cout<<"Addition is"<<add();
    }
    int add()
    {
        s = p+q+r;
        return (s);
    }
};
int main()
{
    addition x;
    x.input();
    x.show();
    return 0;
}

```
