Week 3 Lab Experiment using C++ (Functions)

1. Write a C++ program to demonstrate the Inline functions

A. CODE:

```cpp
#include<iostream>
using namespace std;
inline int add(int a, int b)
{
return a+b;
}

int main()
{
cout<<"The addition of 289 and 548 is "<<"\n"<<"289 + 548 = "<<add(289,548)<<endl;
return 0;
}
```

SAMPLE INPUT AND SAMPLE OUTPUT:

```
The addition of 289 and 548 is
289 + 548 = 837
```

2. Write a program in C++ to demonstrate call by value

A. *CODE:*

```cpp
#include<iostream>
using namespace std;
void swap(int a, int b)
{
    int temp;
    temp = a;
    a = b;
    b = temp;
    cout<<"Value of a after swapping"<<a<<endl<<"\n";
    cout<<"Value of b after swapping"<<b<<endl;
    return;
}
int main()
{
    int a = 100, b = 200;
    cout<<"Value of a before swapping"<<a<<endl<<"\n";
    cout<<"Value of b before swapping"<<b<<endl<<"\n";
    swap(a, b);
}
```

SAMPLE INPUT AND SAMPLE OUTPUT:

```
Value of a before swapping100

Value of b before swapping200

Value of a after swapping200

Value of b after swapping100
```

3. Write a program in C++ to demonstrate call by reference

A. _CODE:_

```cpp
#include<iostream>
using namespace std;
void swap(int &a, int &b)
{
    int temp;
    temp = a;
    a = b;
    b = temp;
    cout<<"Value of a after swapping"<<a<<endl<<"\n";
    cout<<"Value of b after swapping"<<b<<endl;
    return;
}
int main()
{
    int a = 100, b = 200;
    cout<<"Value of a before swapping"<<a<<endl<<"\n";
    cout<<"Value of b before swapping"<<b<<endl<<"\n";
    swap(a, b);
}
```

SAMPLE INPUT AND SAMPLE OUTPUT:

```
Value of a before swapping100

Value of b before swapping200

Value of a after swapping200

Value of b after swapping100
```

4. Write a C++ Program to understand storage specifiers (auto, register, static,extern)

A. _CODE:_

```cpp
#include <iostream>
using namespace std;
extern int x=0;
int storage_classes()
{
    static int a=10;
    auto b=2;
    register int c=0;
    a++;
    b++;
    c++;
        cout<<"Extern = "<<x<<", Static is = "<<a;
    cout<<", Auto is = "<<b<<", Register is = "<<c<<endl;
    return 0;
}
int main()
{
    while(x<3)
    {
        storage_classes();
        x++;
    }
    return 0;
}
```

SAMPLE INPUT AND SAMPLE OUTPUT:

```
Extern = 0, Static is = 11, Auto is = 3, Register is = 1
Extern = 1, Static is = 12, Auto is = 3, Register is = 1
Extern = 2, Static is = 13, Auto is = 3, Register is = 1
```