Debugging Exercises

3.1 What will happen when you execute the following code?

The output is 400.

3.2 Identify the error in the following program.

```
#include <iostream.h>
void main()
{
int num[]={1,2,3,4,5,6};
      num[1]==[1]num ?cout<<"Success"  :  cout<<"Error";   //there is
       no such thing like [1]num }
```

3.3 Identify the error in the following program.

```
#include <iostream.h>
void main()
{
int i=5;
while(i)  //the loop here will never be end
    {
        switch(i)
        {
            default:
            case 4:
            case 5:
```

```
                break;
                case 1:
                continue;
                case 2:
                case 3:
                break;
            }
                i-;  //it should be i--;
        }
}
```

3.4 Identify the error in the following program.

```
#include <iostream.h>
#define pi 3.14
int squareArea(int &);
int circleArea(int &);
void main()
{
    int a=10;
    cout<< squareArea(a)<<"  " ;
    cout<<circleArea(a)<<"  " ;
cout<< a<<endl;
}
int squareArea(int &a)
{
```

```
    return a*==a;  //a*==a should be a*=a, or the return value will always
be -1.
    }
    int circleArea(int &r)
    {
        return r=pi*r*r;
         }
```

3.5 Identify the error in the following program.

```
        #include <iostream.h>
        #include <malloc.h>
        char* allocateMemory();
        void main()
        {
            char* str;
            str=allocateMemory();
            cout<<str;
            delete str;      //the memory space shouldn't be deleted here
            str="     " ;
            cout<< str;
            }
            char* allocateMemory()
            {
                str="Memory allocation test, " ;  //str should be declared
here
```

```
return str;
}
```

3.6 Find errors,if any,in the following C++ statements.

(a)long float x; -> float x; //there is no such thing as long float type

(b)char *cp =vp; //vp is a void pointer //a pointer can't point to a void pointer;

(c)int code = three; //three is an enumerator //code can only be initialized by one of the variables in three

(d)int *p = new; //allocate memory with new //the structure should be int *p=new int(number)

(e)enum(green,yellow,red); //it should use{} but not ()

(f)int const *p=total; //a pointer can't be initialized by a variable directly

(g)const int array_size; //a constant should be initialized

(h)for(i=1;int i<10;i++)cout<<i<<"\n" //there shouldn't be ""

(i)int & number=100; //a reference can't be initialized by a number

(j)float *p=new int [10]; //the two data type should be same and the size of memory space should use ()

(k)int public =1000; //public is a function name and can't be used as a name of a variable

(l)char name[3]="USA"; //it should use name[4] to save "USA"