Constructors and Destructors - Basic

1. Answer the questions at the end after going through the following code:

```
class Seminar
{
    int time;
public:
    Seminar()        //Function 1
    {
        time = 30;
        cout << "Seminar starts now" << endl;
    }
    void lecture()        //Function 2
    {
        cout << "Lectures in the seminar on" << endl;
    }
    Seminar(int duration)        //Function 3
    {
        time = duration;
        cout << "Seminar starts now" << endl;
    }
    ~Seminar()        //Function 4
    {
        cout << "Thanks" << endl;
    }
};
```

i. Write statements in C++ that would execute Function 1 and Function 3 of class Seminar.

ii. In Object Oriented Programming, what is Function 4 referred as and when does it get invoked/called?

iii. In Object Oriented Programming, which concept is illustrated by Function 1 and Function 3 together?

2. Answer the questions at the end after going through the following code:

```
class Test
{
    char paper[20];
    int marks;
public:
    Test ()    // Function 1
    {
        strcpy (paper, "Computer");
        marks = 0;
    }
    Test (char p[])    // Function 2
    {
        strcpy(paper, p);
        marks = 0;
    }
    Test (int m)    // Function 3
    {
        strcpy(paper,"Computer");
        marks = m;
    }
    Test (char p[], int m)    // Function 4
    {
        strcpy (paper, p);
        marks = m;
    }
};
```

i. Write statements in C++ that would execute Function 1, Function 2, Function 3 and Function 4 of class Test.

3. Consider the definition of the following class:

```
class Sample
{
private:
    int x;
    double y;
public :
    Sample(); //Constructor 1
    Sample(int); //Constructor 2
    Sample(int, int); //Constructor 3
    Sample(int, double); //Constructor 4
};
```

i. Write the definition of the constructor 1 so that the private member variables are initialized to 0.

ii. Write the definition of the constructor 2 so that the private member variable x is initialized according to the value of the parameter, and the private member variable y is initialized to 0.

iii. Write the definition of the constructors 3 and 4 so that the private member variables are initialized according to the values of the parameters.

4. Create a class called Square, which has a single private member, side, stored as a double. Create a default and a parameterized constructor. Create a destructor that displays the area of the square before destructing.

```
/* Copy paste this in your main function to test your code. */

int main()
{
  cout << "Program started...." << endl;

  {
    Square s1 = Square(5);
  }

  cout << "Program terminated...." << endl;

}

/*
Output:

  Program started....
  The area of the square is 25 units squared.
  Program terminated....

*/
```

Good Luck!