

**3. B) Write a Java program that implements a multi-thread application that has three threads. First thread generates a random integer for every 1 second; second thread computes the square of the number and prints; third thread will print the value of cube of the number.**

3B) import java.util.Random;

**//Thread1**

class GenerateInteger extends Thread

```
{
    Random r = new Random();
    //Define run() method of Thread
    public void run()
    {
        try
        {
            for(int i=0;i<10;i++)
            {
                MultiThreadDemo.randomInt[i] = r.nextInt(10);
                System.out.println("Random Integer "+i+" is:"+ MultiThreadDemo.randomInt[i] );
                Thread.sleep(1000);
            }
        }
        catch(InterruptedExcepion e)
        {
            System.out.println("Exception" + e);
        }
    }
}
```

**//Thread2**

class PrintSquare extends Thread

```
{
    //Define run() method of Thread
    public void run()
    {
        try
        {
            for(int i=0;i<10;i++)
            {
                System.out.println("Square of number "+MultiThreadDemo.randomInt[i] + " is:" +
                    Math.pow( MultiThreadDemo.randomInt[i],2));
                Thread.sleep(1000);
            }
        }
        catch(InterruptedExcepion e)
```

```
    {  
        System.out.println("Exception" + e);  
    }  
}
```

### //Thread3

```
class PrintCube extends Thread  
{  
    //Define run() method of Thread  
    public void run()  
    {  
        try  
        {  
            for(int i=0;i<10;i++)  
            {  
                System.out.println("Cube of " + MultiThreadDemo.randomInt[i] + " is:" + Math.pow(  
                    MultiThreadDemo.randomInt[i],3));  
                Thread.sleep(1000);  
            }  
        }  
        catch(InterruptedException e)  
        {  
            System.out.println("Exception" + e);  
        }  
    }  
}
```

```
public class MultiThreadDemo  
{  
    /* Declare an integer array */  
    static int randomInt[] = new int[10];  
    public static void main(String[] args)  
    {  
        try  
        {  
            System.out.println("Generate Random numbers");  
            GenerateInteger thread1 = new GenerateInteger();  
            thread1.start();//start thread1  
            thread1.join(); // Pauses current thread until thread1 is completed  
            System.out.println("Print Squares of a number");  
            PrintSquare thread2 = new PrintSquare();  
            thread2.start();//start thread2  
            thread2.join();// Pauses current thread until thread2 is completed  
  
            System.out.println("Print Cubes of a number");
```

```
PrintCube thread3 = new PrintCube();
thread3.start(); //start thread3
thread3.join(); //Pauses current thread until thread3 is completed

    }
    catch(InterruptedException e)
    {
        System.out.println("Exception" + e);
    }
}
}
```