OOP Lab Final

Total Marks: 25 **Time: 1 Hour**

Name: **Roll:**

1. Given:

```
2. public class Jail {
3.       private int x = 4;
4.       public static void main(String[] args) {
5.                protected int x = 6;
6.                new Jail().new Cell().slam();
7.       }
8.       class Cell {
9.                void slam() { System.out.println("throw away key " + x); }
10.      }
11. }
```

Which are true? (Choose all that apply.)

A. Compilation succeeds.
B. The output is `"throw away key 4"`.
C. The output is `"throw away key 6"`.
D. Compilation fails due to an error on line 5.
E. Compilation fails due to an error on line 6.
F. Compilation fails due to an error on line 9.

2. Given:

```
2. public class Fabric extends Thread {
3.       public static void main(String[] args) {
4.                Thread t = new Thread(new Fabric());
5.                Thread t2 = new Thread(new Fabric());
6.                t.start();
7.                t2.start();
8.       }
9.       public static void run() {
10.               for(int i = 0; i < 2; i++)
11.                        System.out.print(Thread.currentThread().getName() + " ");
12.      }
13. }
```

Which are true? (Choose all that apply.)

A. Compilation fails.
B. No output is produced.
C. The output could be `Thread-1 Thread-3 Thread-1 Thread-2`
D. The output could be `Thread-1 Thread-3 Thread-1 Thread-3`
E. The output could be `Thread-1 Thread-1 Thread-2 Thread-2`
F. The output could be `Thread-1 Thread-3 Thread-3 Thread-1`
G. The output could be `Thread-1 Thread-3 Thread-1 Thread-1`

3. Given:

```
2. class Feline { }
3.       public class BarnCat2 extends Feline {
4.       public static void main(String[] args) {
5.                Feline ff = new Feline();
6.                BarnCat2 b = new BarnCat2();
7.                // insert code here
```

```
8.      }
9. }
```

Which, inserted independently at line 7, compile? (Choose all that apply.)

A. `if(b instanceof ff) System.out.print("1 ");`
B. `if(b.instanceof(ff)) System.out.print("2 ");`
C. `if(b instanceof Feline) System.out.print("3 ");`
D. `if(b instanceOf Feline) System.out.print("4 ");`
E. `if(b.instanceof(Feline)) System.out.print("5 ");`

4. Which are true? (Choose all that apply.)

A. All classes of Exception extend Error.
B. All classes of Error extend Exception.
C. All Errors must be handled or declared.
D. All classes of Exception extend Throwable.
E. All Throwables must be handled or declared.
F. All Exceptions must be handled or declared.
G. Runtime Exceptions need never be handled or declared.

5. Given:

```
1. public class Twine {
2.      public static void main(String[] args) {
3.              String s = "";
4.              StringBuffer sb1 = new StringBuffer("hi");
5.              StringBuffer sb2 = new StringBuffer("hi");
6.              StringBuffer sb3 = new StringBuffer(sb2);
7.              StringBuffer sb4 = sb3;
8.              if(sb1.equals(sb2)) s += "1 ";
9.              if(sb2.equals(sb3)) s += "2 ";
10.             if(sb3.equals(sb4)) s += "3 ";
11.             String s2 = "hi";
12.             String s3 = "hi";
13.             String s4 = s3;
14.             if(s2.equals(s3)) s += "4 ";
15.             if(s3.equals(s4)) s += "5 ";
16.             System.out.println(s);
17.     }
18. }
```

What is the result?

A. `1 3`
B. `1 5`
C. `1 2 3`
D. `1 4 5`
E. `3 4 5`
F. `1 3 4 5`
G. `1 2 3 4 5`
H. Compilation fails.

6. Given:

```
3. public class RediMix extends Concrete {
4.      RediMix() { System.out.println("r "); }
5.      public static void main(String[] args) {
6.              new RediMix();
7.      }
8.  }
9. class Concrete extends Sand {
10.     Concrete() { System.out.print("c "); }
```

```
11.     private Concrete(String s) { }
12.     }
13.     abstract class Sand {
14.             Sand() { System.out.print("s "); }
15. }
```

What is the result?

A. `r`
B. `c r`
C. `r c`
D. `s c r`
E. `r c s`
F. Compilation fails due to a single error in the code.
G. Compilation fails due to multiple errors in the code.

7. Which statement(s) are true? (Choose all that apply.)

A. Coupling is the OO principle most closely associated with hiding a class's implementation details.
B. Coupling is the OO principle most closely associated with making sure classes know about other classes only through their APIs.
C. Coupling is the OO principle most closely associated with making sure a class is designed with a single, well-focused purpose.
D. Coupling is the OO principle most closely associated with allowing a single object to be seen as having many types.

8. Given:

```
4. public static void main(String[] args) {
5.      try {
6.              if(args.length == 0) throw new Exception();
7.      }
8.      catch (Exception e) {
9.              System.out.print("done ");
10.             doStuff(); // assume this method compiles
11.     }
12.     finally {
13.             System.out.println("finally ");
14.     }
15. }
```

Which are possible outputs? (Choose all that apply.)

A. `"done "`
B. `"finally "`
C. `"done finally"`
D. Compilation fails.
E. No output is produced.

9. Given:

```
2. class SafeDeposit {
3.      private static SafeDeposit singleton;
4.      public static SafeDeposit getInstance(int code) {
5.              if(singleton == null)
6.              singleton = new SafeDeposit(code);
7. return singleton;
8. }
9. private int code;
10. private SafeDeposit(int c) { code = c; }
11. int getCode() { return code; }
```

12. }
13. public class BeSafe {
14. // insert lots of code here
25. }

Which are true? (Choose all that apply.)

A. Compilation fails.
B. Class `BeSafe` can create many instances of `SafeDeposit`.
C. Class `BeSafe` CANNOT create any instances of `SafeDeposit`.
D. Class `BeSafe` can create only one instance of `SafeDeposit`.
E. Class `BeSafe` can create instances of `SafeDeposit` without using the `getInstance()` method.
F. Once class `BeSafe` has created an instance of `SafeDeposit`, it cannot change the value of the instance's `"code"` variable.

10. Given:

1. class c1 { }
2. class c2 { }
3. interface i1 { }
4. interface i2 { }
5. class A extends c2 implements i1 { }
6. class B implements i1 implements i2 { }
7. class C implements c1 { }
8. class D extends c1, implements i2 { }
9. class E extends i1, i2 { }
10. class F implements i1, i2 { }

What is the result? (Choose all that apply.)

A. Class `A` does not compile.
B. Class `B` does not compile.
C. Class `C` does not compile.
D. Class `D` does not compile.
E. Class `E` does not compile.
F. Class `F` does not compile.
G. Compilation succeeds for all of the classes.

11. Assume you created a class MyThread by extending Thread class. Now fill the code below.

```
public static void main(String[] args)
{
        MyThread myThread = new MyThread();
        // write code to run myThread as separate thread




        // Write code to wait the main method until myThread is complete




 }
```

12. Write a single line code: Send a Socket request to Server with ip 172.27.12.3 and port 4000.

13. Complete code below without any error.

```
import java.io.*;
public class TestFinalQuiz {
	public static void main(String[] args) {
	// call finalQuiz in proper way so that compiler don't give any error









	}

	public static void finalQuiz() throws IOException{
		InputStream fr = System.in;
		System.out.println(fr.read());
		fr.close();
	}
}
```

14. Complete the following code (DummyClass) such that we can get the number of objects created of DummyClass.

```
class  DummyClass {
// complete this class









}
public class Counter {
	public static void main(String[] args) {
		DummyClass a = new DummyClass();
		DummyClass b = new DummyClass();
		DummyClass c = new DummyClass();

		System.out.println(c.getObjectCount()); // output: 3
	}
}
```