

Java Genesis Chapter 7

Quick Quiz

Question 1

Consider the class A below:

```
public class A {  
  
    private int x = 12, y = 5;  
  
    public int getX ( ) {  
        return x;  
    }  
  
    public int getY ( ) {  
        return y;  
    }  
  
    public void setX (int a) {  
        x = a;  
    }  
  
    public void setY (int a) {  
        y = a;  
    }  
}
```

What is printed in the Output window by the following Java fragment?

```
A a1 = new A();  
int temp = a1.getY();  
a1.setY(a1.getX());  
a1.setX(temp);  
System.out.println(a1.getX()+" "+a1.getY());  
A a2 = new A();  
a2.setX(a1.getX());  
a2.setY(a1.getY());  
System.out.println(a2.getX()+" "+a2.getY()+" "+(a1==a2));
```

Question 2

Consider the class Person below:

```
public class Person {  
  
    private char [] name;  
    private static int count = 0;  
  
    public Person (char [] who) {  
        name = who;  
        count++;  
    }  
  
    public String toString ( ) {  
        String s = "";  
        for (int i=0; i<name.length; i++) s = s+name[i];  
        return s+"("+count+)";  
    }  
}
```

What is printed in the Output window by the following Java fragment?

```
char [] fred = {'F', 'r', 'e', 'd'};  
Person p1 = new Person(fred);  
char [] jane = {'J', 'a', 'n', 'e'};  
Person p2 = new Person(jane);  
System.out.print(p1);  
System.out.print(p2);
```

Question 3

Consider the class C below (and at the top of the next page):

```
public class C {  
  
    private int x = 0;  
    private static int y = 0;  
  
    public void incX ( ) {  
        x++;  
    }  
  
    public static void incY ( ) {  
        y++;  
    }  
}
```

```
        public String toString ( ) {  
            return x+" "+y;  
        }  
    }  
}
```

What is printed in the Output window by the following Java fragment?

```
C c1 = new C();  
C c2 = new C();  
c1.incX();  
c1.incY();  
c2.incY();  
System.out.println(c1+" "+c2);  
c1 = c2;  
c1.incX();  
C.incY();  
System.out.println(c1+" "+c2);
```

Question 4

Consider the classes X (below) and Y (at the top of the next page):

```
public class X {  
  
    private Y y;  
    private int a = 12;  
  
    public void setY (Y theY) {  
        y = theY;  
    }  
  
    public void inc ( ) {  
        y.inc();  
    }  
  
    public void incA ( ) {  
        a++;  
    }  
  
    public String toString ( ) {  
        return ""+a;  
    }  
}
```

```
public class Y {  
  
    private X x;  
    private int b = 5;  
  
    public void setX (X theX) {  
        x = theX;  
    }  
  
    public void inc ( ) {  
        b++;  
        x.incA();  
    }  
  
    public String toString ( ) {  
        return ""+b;  
    }  
}
```

What is printed in the Output window by the following Java fragment?

```
X x = new X();  
Y y = new Y();  
x.setY(y);  
y.setX(x);  
x.inc();  
System.out.print(x+ " "+y);
```

Question 5

Consider again the class `Person` whose code is given in Question 2. What is printed in the Output window by the following Java fragment?

```
String fred = "Fred";  
String jane = "Jane";  
char [] who = new char [4];  
for (int i=0; i<4; i++) who[i] = fred.charAt(i);  
Person p1 = new Person(who);  
for (int i=0; i<4; i++) who[i] = jane.charAt(i);  
Person p2 = new Person(who);  
System.out.print(p1);  
System.out.print(p2);
```