

1) What is displayed by

```
System.out.println("1" + new Integer(2) + 3);
```

- a. The statement has a syntax error and won't compile
- b. 6
- c. 15
- d. 123
- e. ClassCastException

=====

2) Consider the following classes:

```
public class Year2005
{
    public String toString() { return "2005"; }
}

public class Test2005 extends Year2005
{
    public void print()
    {
        <missing statement>
    }
}
```

Which of the following could replace <missing statement> so that Test2005 would compile with no errors and

```
Test2005 test = new Test2005();
test.print();
```

would display 2005?

- I. System.out.println(new Year2005());
- II. System.out.println(new Test2005());
- III. System.out.println(this);

- a. I only
- b. II only
- c. I and II
- d. II and III
- e. I, II, and III

=====

3) What is the value of a[1] after the following code is executed?

```
int[] a = {0, 2, 4, 1, 3};
for (int i = 0; i < a.length; i++)
    a[i] = a[(a[i] + 3) % a.length];
```

- a. 0
- b. 1
- c. 2
- d. 3
- e. 4

=====

4) Consider the method

```
public String mystery(String s)
{
    String s1 = s.substring(0,1);
    String s2 = s.substring(1, s.length() - 1);
    String s3 = s.substring(s.length() - 1);

    if (s.length() <= 3)
        return s3 + s2 + s1;
    else
        return s1 + mystery(s2) + s3;
}
```

What is the output of

```
System.out.println(mystery("DELIVER"));
```

- a. DELIVER
- b. DEVILER
- c. REILED
- d. RELIVED
- e. DLEIEVR

=====

5) What is the output of the following code segment?

```
List cities = new ArrayList();
cities.add("Atlanta");
cities.add("Boston");

for (int i = 1; i < cities.size(); i++)
    cities.add(i, "+");

System.out.println(cities);
```

- a. [Atlanta, Boston]
- b. [Atlanta, +, Boston]
- c. [Atlanta, Boston, +]
- d. [Atlanta, +, Boston, +]
- e. No output because the program goes into an infinite loop

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6) Which of the following statements is TRUE?

- a. A static variable cannot be initialized in a constructor
- b. A static variable must be declared final
- c. An instance variable can't be declared final
- d. A static method can't access an instance variable
- e. Only a static method can access a static variable

=====

7) For any object obj, a call obj.getClass().getName() returns the name of the obj's class.
Suppose

```
System.out.println(new A() + "+" + new B());
```

displays

A+B

Which of the following implementations would produce that result?

I. Class A has a method

```
public String toString() { return "A"; }
```

and class B has a method

```
public String toString() { return "B"; }
```

II. Both class A and class B extend class X that has a method

```
public String toString() { return getClass().getName(); }
```

III. Both class A and class B extend an abstract class X that has methods

```
public abstract String getName();  
public String toString() { return getName(); }
```

Class A has a method

```
public String getName() { return "A"; }
```

and class B has a method

```
public String getName() { return "B"; }
```

- a. I only
- b. II only
- c. I and II
- d. II and III
- e. I, II, and III

=====

8) The method 'twist' is defined as follows:

```
public void twist(String[] w)
{
    String temp = w[0].substring(0, 1);
    w[0] = w[1].substring(0, 1) + w[0].substring(1);
    w[1] = temp + w[1].substring(1);
}
```

What is the output of the following code segment?

```
String[] words = {"HOW", "NEAT"};
twist(words);
System.out.println(words[0] + " " + words[1]);
```

- a. NOW NOW
- b. HOW HOW
- c. NOW HOW
- d. HOW NEAT
- e. NOW HEAT

=====

9) What are the values in arr after the following statements are executed?

```
int[] arr = {1, 1, 0, 0, 0};

for (int i = 2; i < arr.length; i++)
    arr[i] = arr[i-1] + arr[i-2];
```

- a. 11011
- b. 11210
- c. 11222
- d. 11235
- e. 11248

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10) A class 'Particle' has a private field 'double velocity' and public methods 'double getVelocity()' and 'void setVelocity(double v)'. It also has a method:

```
public void hit(Particle p) { <missing statements> }
```

Which of the following could replace <missing statements> in hit to make it compile with no errors?

- I. double v = getVelocity();
 setVelocity(p.getVelocity());
 p.setVelocity(v);
- II. double v = velocity;
 velocity = p.getVelocity();
 p.setVelocity(v);
- III. double v = velocity;
 velocity = p.velocity;
 p.velocity = v;

- a. I only
- b. II only
- c. I and II
- d. II and III
- e. I, II, and III

=====

11) What is the output of the following code?

```
String s = "ONION";  
System.out.println(s.substring(1, 5).substring(1, 4).substring(0, 3));
```

- a. I
- b. IO
- c. ION
- d. ONI
- e. NION

=====

Answers

- 1) d
- 2) e
- 3) b
- 4) b
- 5) e
- 6) d
- 7) e
- 8) e
- 9) d
- 10) e
- 11) c