

What follows are a series of questions to test your knowledge on definitions, concepts, and techniques of various aspects of information technology. Please answer each question to the best of your ability:

1. Consider the following class declaration for the Circle class:

```
public class Circle
{
    private double radius;
    public Circle(double theRadius)
    {
        radius = theRadius;
    }
    public void shrink()
    {
        radius = radius / 2;
    }
    public double getRadius()
    {
        return radius;
    }
}
```

What will be the output of the following code fragment?

```
Circle myCircle = new Circle(20.0);
Circle yourCircle = myCircle;
yourCircle.shrink();
System.out.println (myCircle.getRadius() + " ,
                    yourCircle.getRadius());
```

- a. 10.0, 10.0
- b. 20.0, 10.0
- c. 20.0, 20.0
- d. 10.0, 20.0

2. Consider the code segment below.

```
    if ( gender == 1 )
    {
        if ( age >= 65 )
            ++seniorFemales;
    }
```

This segment is equivalent to which of the following?

- a. `if (gender == 1 || age >= 65)`
 `++seniorFemales;`
- b. `if (gender == 1 && age >= 65)`
 `++seniorFemales;`
- c. `if (gender == 1 AND age >= 65)`
 `++seniorFemales;`
- d. `if (gender == 1 OR age >= 65)`
 `++seniorFemales;`

3. Suppose method1 is declared as

```
void method1 ( int a, float b )
```

Which of the following methods correctly overloads method1?

- a. `void method2 (int a, float b)`
- b. `void method2 (float a, int b)`
- c. `void method1 (float a, int b)`
- d. `void method1 (int b, float a)`

4. What do the following statements do?

```
double[] array;  
array = new double[ 14 ];
```

- a. Create a double array containing 13 elements.
- b. Create a double array containing 14 elements.
- c. Create a double array containing 15 elements.
- d. Declare but do not create a double array.

5. Which expression adds 1 to the element of array arrayName at index i?
- a. arrayName++[i].
 - b. arrayName[i++]
 - c. ++arrayName[i]
 - d. None of the above
6. Please give a brief description of the 1st, 2nd and 3rd normal forms.
7. When reading a WSDL, where do you start?
- a. At the top
 - b. In the middle
 - c. At the bottom
8. Not knowing anything about the data tables, but assuming they are sparsely populated, which query would you expect to return the least rows?

A)
SELECT a.field1
 ,b.field2
 ,a.field3
FROM a
INNER JOIN b ON a.a_key = b.b_key

B)
SELECT a.field1
 ,b.field2
 ,a.field3
FROM a
RIGHT OUTER JOIN b ON a.a_key = b.b_key

C)
SELECT a.field1
 ,b.field2
 ,a.field3
FROM a
LEFT OUTER JOIN b ON a.a_key = b.b_key

9. In Java, can the static method be overridden?

10. Does Java support multiple inheritance?

11. Describe encapsulation?

12. What is the importance of the 'finally' block in exception handling?

13. Please briefly describe the difference between an inner join and an outer join in SQL.