MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) Analyze the following code:

```java
public class Test {
    public static void main(String[] args) {
        int[] x = {1, 2, 3, 4};
        int[] y = x;
        x = new int[2];
        for (int i = 0; i < y.length; i++)
            System.out.print(y[i] + " ");
    }
}
```

A) The program displays 1 2 3 4  
B) The program displays 0 0 0 0  
C) The program displays 0 0  
D) The program displays 0 0 3 4

2) Analyze the following code:

```java
public class Test {
    public static void main(String[] args) {
        int[] a = new int[4];
        a[1] = 1;
        a = new int[2];
        System.out.println("a[1] is " + a[1]);
    }
}
```

A) The program has a compile error because new int[2] is assigned to a.  
B) The program displays a[1] is 0.  
C) The program has a runtime error because a[1] is not initialized.  
D) The program displays a[1] is 1.
3) Analyze the following code:

```java
public class Test {
    public static void main(String[] args) {
        int[] oldList = {1, 2, 3, 4, 5};
        reverse(oldList);
        for (int i = 0; i < oldList.length; i++)
            System.out.print(oldList[i] + " ");
    }

    public static void reverse(int[] list) {
        int[] newList = new int[list.length];
        for (int i = 0; i < list.length; i++)
            newList[i] = list[list.length - 1 - i];
        list = newList;
    }
}
```

A) The program displays 5 4 3 2 1 and then raises an ArrayIndexOutOfBoundsException.
B) The program displays 1 2 3 4 5 and then raises an ArrayIndexOutOfBoundsException.
C) The program displays 1 2 3 4 5.
D) The program displays 5 4 3 2 1.

4) Analyze the following code:

```java
public class Test1 {
    public static void main(String[] args) {
        xMethod(new double[]{3, 3});
        xMethod(new double[5]);
        xMethod(new double[3][1, 2, 3]);
    }

    public static void xMethod(double[] a) {
        System.out.println(a.length);
    }
}
```

A) The program has a compile error because xMethod(new double[5]) is incorrect.
B) The program has a runtime error because a is null.
C) The program has a compile error because xMethod(new double[3][1, 2, 3]) is incorrect.
D) The program has a compile error because xMethod(new double[[3, 3]]) is incorrect.

5) The reverse method is defined in the textbook. What is list1 after executing the following statements?

```java
int[] list1 = {1, 2, 3, 4, 5, 6};
list1 = reverse(list1);
```

A) list1 is 1 2 3 4 5 6 
B) list1 is 6 6 6 6 6 6 
C) list1 is 0 0 0 0 0 0 
D) list1 is 6 5 4 3 2 1
6) Which of the following declarations are correct? (Choose all that apply.)
   A) public static void print(int n, double... numbers)
   B) public static void print(double... numbers)
   C) public static void print(double... numbers, String name)
   D) public static void print(String... strings, double... numbers)
   E) public static double... print(double d1, double d2)

7) The reverse method is defined in this section. What is list1 after executing the following statements?

   int[ ] list1 = {1, 2, 3, 4, 5, 6};
   int[ ] list2 = reverse(list1);

   A) list1 is 1 2 3 4 5 6  
   B) list1 is 6 5 4 3 2 1  
   C) list1 is 6 6 6 6 6 6  
   D) list1 is 0 0 0 0 0 0

8) What would be the result of attempting to compile and run the following code?

   public class Test{
   public static void main(String[ ] args){
       double[ ] x = new double[ ]{1, 2, 3};
       System.out.println("Value is " + x[1]);
   }
   }

   A) The program has a compile error because the syntax new double[ ]{1, 2, 3} is wrong and it should be replaced by {1, 2, 3}.
   B) The program compiles and runs fine and the output "Value is 2.0" is printed.
   C) The program has a compile error because the syntax new double[ ]{1, 2, 3} is wrong and it should be replaced by new double[3]{1, 2, 3};
   D) The program has a compile error because the syntax new double[ ]{1, 2, 3} is wrong and it should be replaced by new double[ ]{1.0, 2.0, 3.0};
   E) The program compiles and runs fine and the output "Value is 1.0" is printed.

9) Suppose int i = 5, which of the following can be used as an index for array double[ ] t = new double[100]? (Choose all that apply.)
   A) Math.random() * 100
   B) (int)(Math.random() * 100))
   C) i
   D) i + 6.5
   E) i + 10
10) Analyze the following code:

```java
public class Test {
    public static void main(String[] args) {
        int[] x = {1, 2, 3, 4};
        int[] y = x;
        x = new int[2];
        for (int i = 0; i < x.length; i++)
            System.out.print(x[i] + " ");
    }
}
```

A) The program displays 1 2 3 4
B) The program displays 0 0 3 4
C) The program displays 0 0
D) The program displays 0 0 0 0

11) In the following code, what is the printout for list2?

```java
class Test {
    public static void main(String[] args) {
        int[] list1 = {1, 2, 3};
        int[] list2 = {1, 2, 3};
        list2 = list1;
        list1[0] = 0; list1[1] = 1; list2[2] = 2;
        for (int i = 0; i < list2.length; i++)
            System.out.print(list2[i] + " ");
    }
}
```

A) 1 1 1
B) 0 1 3
C) 0 1 2
D) 1 2 3

12) The selectionSort method is defined in this section. Assume list is {3.1, 3.1, 2.5, 6.4, 2.1}, what is the content of list after the first iteration of the outer loop in the method?

A) 2.1, 2.5, 3.1, 3.1, 6.4
B) 3.1, 3.1, 2.5, 2.1, 6.4
C) 3.1, 3.1, 2.5, 6.4, 2.1
D) 2.5, 3.1, 3.1, 6.4, 2.1

13) The ______ method copies the sourceArray to the targetArray.

A) System.copyarrays(sourceArray, 0, targetArray, 0, sourceArray.length);
B) System.copyArrays(sourceArray, 0, targetArray, 0, sourceArray.length);
C) System.arraycopy(sourceArray, 0, targetArray, 0, sourceArray.length);
D) System.arrayCopy(sourceArray, 0, targetArray, 0, sourceArray.length);

14) Which of the following statements are correct?

A) char[2][2] charArray = {["a", 'b'], ['c', 'd']};
B) char[ ][ ] charArray = {'a', 'b'};
C) char[2][ ] charArray = {["a", 'b'], ['c', 'd']};
D) char[ ][ ] charArray = {["a", 'b'], ['c', 'd']};

15) Assume double[ ][ ] x = new double[4][5][6], what are x.length, x[2].length, and x[0][0].length?

A) 4, 5, and 4
B) 4, 5, and 6
C) 5, 5, and 5
D) 6, 5, and 4
16) Assume \[ \text{double}[ ][ ] x = \text{new double}[4][5], \] what are \( x \).length and \( x[2] \).length?
   A) 5 and 4    B) 4 and 5    C) 5 and 5    D) 4 and 4

17) Suppose a method \( p \) has the following heading:
   \[
   \text{public static int[ ][ ] } p()
   \]
   What return statement may be used in \( p() \)?
   A) return int[ ]{1, 2, 3};
   B) return new int[ ][ ]{1, 2, 3, 4, 5};
   C) return {1, 2, 3};
   D) return new int[ ]{1, 2, 3};
   E) return 1;

18) Which of the following statements are correct? (Choose all that apply.)
   A) char[ ][ ][ ] charArray = {'a', 'b'}, {'c', 'd'}, {'e', 'f'};
   B) char[ ][ ][ ] charArray = {{'a', 'b'}, {'c', 'd'}, {'e', 'f'}};
   C) char[ ][ ][ ] charArray = new char[2][2][ ];
   D) char[2][2][ ] charArray = {'a', 'b'};

19) Analyze the following code:
   \[
   \begin{align*}
   \text{public class Test} & \\
   & \text{public static void main(String[ ] args)} \\
   & \quad \text{boolean[ ][ ] } x = \text{new boolean}[3][ ];
   \end{align*}
   \]
   What is the outcome of compiling TestCircle.java and then Circle.java?
   A) Both compile fine.
   B) Only TestCircle.java compiles.
   C) Only Circle.java compiles.
   D) Neither compiles successfully.

20) Suppose TestCircle and Circle in Listing 7.1 in the textbook are in two separate files named TestCircle.java and Circle.java, respectively. What is the outcome of compiling TestCircle.java and then Circle.java?
   A) Both compile fine.
   B) Only TestCircle.java compiles.
   C) Only Circle.java compiles.
   D) Neither compiles successfully.

21) Which of the following statements are true? (Choose all that apply.)
   A) You may assign an int value to a reference variable.
   B) Data fields have default values.
   C) Local variables do not have default values.
   D) A variable of a reference type holds a reference to where an object is stored in the memory.
   E) A variable of a primitive type holds a value of the primitive type.
22) What is the value of times displayed?

```java
public class Test {
    public static void main(String[] args) {
        Count myCount = new Count();
        int times = 0;

        for (int i = 0; i < 100; i++)
            increment(myCount, times);

        System.out.println("myCount.count = " + myCount.count);
        System.out.println("times = " + times);
    }

    public static void increment(Count c, int times) {
        c.count++;
        times++;
    }
}

class Count {
    int count;

    Count(int c) {
        count = c;
    }

    Count() {
        count = 1;
    }
}
```

A) 100  B) 0  C) 99  D) 98  E) 101

23) To declare a constant MAX_LENGTH as a member of the class, you write

A) final static MAX_LENGTH = 99.98;
B) final static float MAX_LENGTH = 99.98;
C) final static double MAX_LENGTH = 99.98;
D) static double MAX_LENGTH = 99.98;
E) final double MAX_LENGTH = 99.98;

24) When invoking a method with an object argument, ________ is passed.

A) a copy of the object
B) the contents of the object
C) the object is copied, then the reference of the copied object
D) the reference of the object
25) Which of the following statements are true? (Choose all that apply.)
A) A default no-arg constructor is provided automatically if no constructors are explicitly declared in the class.
B) Constructors are invoked using the new operator when an object is created.
C) Constructors must have the same name as the class itself.
D) At least one constructor must always be defined explicitly.
E) Constructors do not have a return type, not even void.

26) Analyze the following code and choose the best answer:

```java
public class Foo {
    private int x;

    public static void main(String[] args) {
        Foo foo = new Foo();
        System.out.println(foo.x);
    }
}
```

A) Since x is an instance variable, it cannot be directly used inside a main method. However, it can be accessed through an object such as foo in this code.
B) Since x is private, it cannot be accessed from an object foo.
C) You cannot create a self-referenced object; that is, foo is created inside the class Foo.
D) Since x is defined in the class Foo, it can be accessed by any method inside the class without using an object. You can write the code to access x without creating an object such as foo in this code.

27) Analyze the following code.

```java
public class Test {
    public static void main(String[] args) {
        int n = 2;
        xMethod(n);

        System.out.println("n is " + n);
    }

    void xMethod(int n) {
        n++;
    }
}
```

A) The code has a compile error because xMethod does not return a value.
B) The code prints n is 1.
C) The code prints n is 2.
D) The code prints n is 3.
E) The code has a compile error because xMethod is not declared static.

28) Suppose you wish to provide an accessor method for a boolean property finished, what signature of the method should be?
A) public boolean isFinished()
B) public boolean getFinished()
C) public void isFinished()
D) public void getFinished()
29) You should add the static keyword in the place of ? in line _______ in the following code:

```java
public class Test {
    private int age;
    public ? int square(int n) {
        return n * n;
    }
    public ? int getAge() {
    }
}
```

A) in both line 4 and line 8  
B) in line 8  
C) in line 4  
D) none

30) To check if a string s contains the prefix "Java", you may write (Choose all that apply.)

A) if (s.charAt(0) == 'J' && s.charAt(1) == 'a' && s.charAt(2) == 'v' && s.charAt(3) == 'a') ...
B) if (s.substring(0, 4).equals("Java")) ...
C) if (s.indexOf("Java") == 0) ...
D) if (s.startsWith("Java")) ...

31) _______ returns a string. (Choose all that apply.)

A) String.valueOf(false)  
B) String.valueOf(12.53)  
C) String.valueOf(123)  
D) String.valueOf(new char[ ]{ 'a', 'b', 'c' })

32) Suppose you enter 34.3 57.8 789, then press the ENTER key. Analyze the following code.

```java
Scanner scanner = new Scanner(System.in);
int value = scanner.nextDouble();
int doubleValue = scanner.nextInt();
String line = scanner.nextLine();
```

A) After the last statement is executed, line contains characters '7', '8', '9', '\n'.  
B) The program has a runtime error because 34.3 is not an integer.  
C) After the last statement is executed, line contains characters '7', '8', '9'.  
D) After the last statement is executed, intValue is 34.

33) Suppose s1 and s2 are two strings. What is the result of the following code?

```java
s1.equals(s2) == s2.equals(s1)
```

A) true  
B) false

34) Which of following is not a correct method in Character? (Choose all that apply.)

A) toLowerCase(char)  
B) isLetterOrDigit(char)  
C) isDigit()  
D) toUpperCase()  
E) isLetter(char)
35) To check if a string s contains the suffix "Java", you may write (Choose all that apply.)
   A) if (s.substring(s.length() - 5).equals("Java")) ...
   B) if (s.substring(s.length() - 4).equals("Java")) ...
   C) if (s.lastIndexOf("Java") >= 0) ...
   D) if (s.endsWith("Java")) ...
   E) if (s.charAt(s.length() - 4) == 'J' && s.charAt(s.length() - 3) == 'a' && s.charAt(s.length() - 2) == 'v' && s.charAt(s.length() - 1) == 'a') ...

36) Which of the following is the correct statement to return a string from an array a of characters?
   A) new String(a)  B) String.toString(a)
   C) convertToString(a)  D) toString(a)

37) Which of the following is the correct statement to return JAVA?
   A) String.toUpperCase("Java")  B) toUpperCase("Java")
   C) "Java".toUpperCase()  D) "Java".toUpperCase("Java")

38) You can declare two variables with the same name in _______.
   A) two nested blocks in a method (two nested blocks means one being inside the other)
   B) a method one as a formal parameter and the other as a local variable
   C) a block
   D) different methods in a class

39) Which of the following statements are true about an immutable object? (Choose all that apply.)
   A) An object type property in an immutable object must also be immutable.
   B) An immutable object contains no mutator methods.
   C) All properties of an immutable object must be private.
   D) The contents of an immutable object cannot be modified.
   E) All properties of an immutable object must be of primitive types.

40) Analyze the following code:

   ```java
   class Circle {
       private double radius;

       public Circle(double radius) {
           radius = radius;
       }
   }
   ```

   A) The program will compile, but you cannot create an object of Circle with a specified radius. The object will always have radius 0.
   B) The program does not compile because Circle does not have a default constructor.
   C) The program has a compilation error because you cannot assign radius to radius.
   D) The program has a compilation error because it does not have a main method.
41) Analyze the following code: (Choose all that apply.)

```java
class Test {
    private double i;

    public Test(double i) {
        this.t();
        this.i = i;
    }

    public Test() {
        System.out.println("Default constructor");
        this(1);
    }

    public void t() {
        System.out.println("Invoking t");
    }
}
```

A) this.i may be replaced by i.
B) this(1) must be called before System.out.println("Default constructor").
C) this.t() may be replaced by t().
D) this(1) must be replaced by this(1.0).

42) What is the printout for the first statement in the main method?

```java
public class Foo {
    static int i = 0;
    static int j = 0;

    public static void main(String[ ] args) {
        int i = 2;
        int k = 3;
        {
            int j = 3;
            System.out.println("i + j is " + i + j);
        }
        k = i + j;
        System.out.println("k is " + k);
        System.out.println("j is " + j);
    }
}
```

A) i + j is 6  B) i + j is 23  C) i + j is 22  D) i + j is 5
43) What is the printout for the third statement in the main method?

```java
public class Foo {
    static int i = 0;
    static int j = 0;

    public static void main(String[ ] args) {
        int i = 2;
        int k = 3;
        {
            int j = 3;
            System.out.println("i + j is " + i + j);
        }
        k = i + j;
        System.out.println("k is " + k);
        System.out.println("j is " + j);
    }
}
```

A) j is 2  B) j is 0  C) j is 3  D) j is 1

44) What is the printout for the second statement in the main method?

```java
public class Foo {
    static int i = 0;
    static int j = 0;

    public static void main(String[ ] args) {
        int i = 2;
        int k = 3;
        {
            int j = 3;
            System.out.println("i + j is " + i + j);
        }
        k = i + j;
        System.out.println("k is " + k);
        System.out.println("j is " + j);
    }
}
```

A) k is 0  B) k is 3  C) k is 2  D) k is 1

45) Which of the statements regarding the super keyword is incorrect?

A) You can use super.super.p to invoke a method in superclass's parent class.
B) You can use super to invoke a super class method.
C) You cannot invoke a method in superclass’s parent class.
D) You can use super to invoke a super class constructor.
public class Test {
    public static void main(String[] args) {
        B b = new B();
        b.m(5);
        System.out.println("i is " + b.i);
    }
}

class A {
    int i;

    public void m(int i) {
        this.i = i;
    }
}

class B extends A {
    public void m(String s) {
    }
}

A) The method m is not overridden in B. B inherits the method m from A and defines an overloaded method m in B.
B) The program has a compilation error, because b.m(5) cannot be invoked since the method m(int) is hidden in B.
C) The program has a compilation error, because m is overridden with a different signature in B.
D) The program has a runtime error on b.i, because i is not accessible from b.
47) What is the output of running class C?

```java
class A {
    public A() {
        System.out.println("The default constructor of A is invoked");
    }
}

class B extends A {
    public B() {
        System.out.println("The default constructor of B is invoked");
    }
}

global class C {
    public static void main(String[] args) {
        B b = new B();
    }
}
```

A) "The default constructor of A is invoked""The default constructor of B is invoked"
B) "The default constructor of B is invoked"
C) Nothing displayed
D) "The default constructor of A is invoked"
E) "The default constructor of B is invoked""The default constructor of A is invoked"

48) Analyze the following code.

```java
// Program 1:
public class Test {
    public static void main(String[] args) {
        Object a1 = new A();
        Object a2 = new A();
        System.out.println(a1.equals(a2));
    }
}

class A {
    int x;

    public boolean equals(A a) {
        return this.x == a.x;
    }
}

// Program 2:
public class Test {
    public static void main(String[] args) {
        A a1 = new A();
        A a2 = new A();
        System.out.println(a1.equals(a2));
    }
}
```
class A {
    int x;

    public boolean equals(A a) {
        return this.x == a.x;
    }
}

A) Program 1 displays false and Program 2 displays true
B) Program 1 displays true and Program 2 displays true
C) Program 1 displays false and Program 2 displays false
D) Program 1 displays true and Program 2 displays false

49) You can assign ________ to a variable of Object[ ] type. (Choose all that apply.)
   A) new String[100]
   B) new int[100]
   C) new char[100]
   D) new double[100]
   E) new java.util.Date[100]

50) What modifier should you use on a class so that a class in the same package can access it but a class in a different package cannot access it?
   A) protected
   B) public
   C) private
   D) Use the default modifier.

51) If you declare an array double[ ] list = {3.4, 2.0, 3.5, 5.5}, list[1] is ________.
   A) 3.4
   B) 5.5
   C) 2.0
   D) 3.4
   E) undefined

52) The selectionSort method is defined in this section. What is list1 after executing the following statements?
   double[ ] list1 = {3.1, 3.1, 2.5, 6.4};
   selectionSort(list1);

   A) list1 is 3.1, 3.1, 2.5, 6.4
   B) list1 is 3.1, 2.5, 3.1, 6.4
   C) list1 is 6.4, 3.1, 3.1, 2.5
   D) list1 is 2.5 3.1, 3.1, 6.4

53) Assume int[ ] t = {1, 2, 3, 4}. What is t.length?
   A) 3
   B) 0
   C) 4
   D) 5

54) What is the representation of the third element in an array called a?
   A) a[3]
   B) a(3)
   C) a(2)
   D) a[2]
55) In the following code, what is the printout for list1?

```java
class Test {
    public static void main(String[] args) {
        int[] list1 = {1, 2, 3};
        int[] list2 = {1, 2, 3};
        list2 = list1;
        list1[0] = 0;
        list2[2] = 2;
        for (int i = 0; i < list1.length; i++)
            System.out.print(list1[i] + " ");
    }
}
```

A) 1 1 1 B) 1 2 3 C) 0 1 3 D) 0 1 2

56) An object is an instance of a _______.
A) data B) class C) program D) method

57) Analyze the following code:

```java
public class Test {
    private int t;

    public static void main(String[] args) {
        int x;
        System.out.println(t);
    }
}
```

A) The variable x is not initialized and therefore causes errors.
B) The variable t is private and therefore cannot be accessed in the main method.
C) t is non-static and it cannot be referenced in a static context in the main method.
D) The program compiles and runs fine.
E) The variable t is not initialized and therefore causes errors.

58) How many JFrame objects can you create and how many can you display?
A) one B) unlimited C) three D) two

59) What code may be filled in the blank without causing syntax or runtime errors:

```java
class Test {
    java.util.Date date;

    public static void main(String[] args) {
        Test test = new Test();
        System.out.println(________);
    }
}
```

A) test.date B) date C) date.toString() D) test.date.toString()
60) Which method can be used to write data?  
A) rename  
B) close  
C) exist  
D) print

61) Which of the following statements creates an instance of File on Window for the file c:\t.txt?  
A) new File("c:\txt.txt")  
B) new File("c:\\txt.txt")  
C) new File("c:/txt.txt")  
D) new File("c:/txt.txt")

62) Analyze the following code.
```
class Test {
    public static void main(String[ ] args) {
        String s;
        System.out.println("s is " + s);
    }
}
```
A) The program has a runtime error because s is null in the println statement.  
B) The program has a compilation error because s is not initialized, but it is referenced in the println statement.  
C) The program has a runtime error because s is not initialized, but it is referenced in the println statement.  
D) The program compiles and runs fine.

63) Suppose ArrayList x contains two strings [Beijing, Singapore]. Which of the following methods will cause the list to become [Beijing, Chicago, Singapore]?  
A) x.add("Chicago")  
B) x.add(1, "Chicago")  
C) x.add(0, "Chicago")  
D) x.add(2, "Chicago")

64) Invoking _______ returns the first element in an ArrayList x.  
A) x.get(1)  
B) x.first()  
C) x.get()  
D) x.get(0)

65) Analyze the following code:
```
public class Test {
    public static void main(String[ ] args) {
        String s = new String("Welcome to Java");
        Object o = s;
        String d = (String)o;
    }
}
```
A) s, o, and d reference the same String object.  
B) When casting o to s in String d = (String)o, the contents of o is changed.  
C) When assigning s to o in Object o = s, a new object is created.  
D) When casting o to s in String d = (String)o, a new object is created.

66) When you return an array from a method, the method returns _______.  
A) a copy of the first element  
B) the length of the array  
C) the reference of the array  
D) a copy of the array
67) How can you initialize an array of two characters to 'a' and 'b'? (Choose all that apply.)
A) char[ ] charArray = new char[ ]{'a', 'b'};  
B) char[2] charArray = ['a', 'b'];  
C) char[ ] charArray = {'a', 'b'};  
D) char[ ] charArray = new char[2]; charArray = {'a', 'b'};  

68) What is the printout of the third println statement in the main method?

```java
public class Foo {
    int i;
    static int s;

    public static void main(String[ ] args) {
        Foo f1 = new Foo();
        System.out.println("f1.i is " + f1.i + " f1.s is " + f1.s);
        Foo f2 = new Foo();
        System.out.println("f2.i is " + f2.i + " f2.s is " + f2.s);
        Foo f3 = new Foo();
        System.out.println("f3.i is " + f3.i + " f3.s is " + f3.s);
    }

    public Foo() {
        i++;
        s++;
    }
}
```

A) f3.i is 3 f3.s is 3  
B) f3.i is 1 f3.s is 1  
C) f3.i is 3 f3.s is 1  
D) f3.i is 1 f3.s is 2  
E) f3.i is 1 f3.s is 3  

69) The keyword ________ is required to declare a class.
A) private  
B) class  
C) public  
D) All of the above.  

70) Given the following program:

```java
public class Test {
    public static void main(String[ ] args) {
        for (int i = 0; i < args.length; i++) {
            System.out.println(args[i] + "");
        }
    }
}
```

What is the output, if you run the program using

```
java Test 1 2 3
```

A) 1  
B) 1 2 3  
C) 3  
D) 1 2
71) Suppose ArrayList x contains two strings [Beijing, Singapore]. Which of the following method will cause the list to become [Beijing]? (Choose all that apply.)
   A) x.remove("Singapore")   B) x.remove(0)
   C) x.remove(2)   D) x.remove(1)

72) Show the output of the following code:

   public class Test {
      public static void main(String[ ] args) {
         int[ ] x = {1, 2, 3, 4, 5};
         increase(x);

         int[ ] y = {1, 2, 3, 4, 5};
         increase(y[0]);

         System.out.println(x[0] + " " + y[0]);
      }

      public static void increase(int[ ] x) {
         for (int i = 0; i < x.length; i++)
            x[i]++;
      }

      public static void increase(int y) {
         y++;
      }
   }

   A) 0 0   B) 2 1   C) 1 1   D) 2 2   E) 1 2
73) What is the value of myCount.count displayed?

```java
public class Test {
    public static void main(String[] args) {
        Count myCount = new Count();
        int times = 0;

        for (int i = 0; i < 100; i++)
            increment(myCount, times);

        System.out.println("myCount.count = " + myCount.count);
        System.out.println("times = " + times);
    }

    public static void increment(Count c, int times) {
        c.count++;
        times++;
    }
}

class Count {
    int count;

    Count(int c) {
        count = c;
    }

    Count() {
        count = 1;
    }
}

A) 98    B) 100    C) 99    D) 101
```

74) Which class do you use to write data into a text file?

A) Scanner    B) System    C) File    D) PrintWriter

75) Inheritance means _______.

A) that a class can contain another class
B) that a variable of supertype can refer to a subtype object
C) that a class can extend another class
D) that data fields should be declared private
76) Analyze the following code.

```java
public class Test {
    public static void main(String[ ] args) {
        int[ ] x = new int[3];
        System.out.println("x[0] is " + x[0]);
    }
}
```

A) The program has a runtime error because the array element x[0] is not defined.
B) The program has a runtime error because the array elements are not initialized.
C) The program runs fine and displays x[0] is 0.
D) The program has a compile error because the size of the array wasn’t specified when declaring the array.

77) What is the printout of the second println statement in the main method?

```java
public class Foo {
    int i;
    static int s;

    public static void main(String[ ] args) {
        Foo f1 = new Foo();
        System.out.println("f1.i is " + f1.i + " f1.s is " + f1.s);
        Foo f2 = new Foo();
        System.out.println("f2.i is " + f2.i + " f2.s is " + f2.s);
        Foo f3 = new Foo();
        System.out.println("f3.i is " + f3.i + " f3.s is " + f3.s);
    }

    public Foo() {
        i++;
        s++;
    }
}
```

A) f2.i is 1 f2.s is 1  B) f2.i is 2 f2.s is 1  C) f2.i is 1 f2.s is 2  D) f2.i is 2 f2.s is 2

78) "abc".compareTo("aba") returns ________.

A) -2  B) -1  C) 0  D) 1  E) 2

79) Analyze the following code:

```java
Circle c = new Circle (5);
Cylinder c = cy;
```

A) The code has a runtime error.
B) The code has a compile error.
C) The code is fine.
80) Assume int[ ] scores = {1, 20, 30, 40, 50}, what value does java.util.Arrays.binarySearch(scores, 3) return?

A) 1  B) 0  C) 2  D) -1  E) -2
Answer Key
Testname: QUIZ2

1) A
   ID: jp8 6-17
   Diff: 0
   Topic: Section 6.5 Copying Arrays

2) B
   ID: jp8 6-21
   Diff: 0
   Topic: Section 6.5 Copying Arrays

3) C
   ID: jp8 6-26
   Diff: 0
   Topic: Section 6.6 Passing Arrays to Methods

4) C
   ID: jp8 6-27
   Diff: 0
   Topic: Section 6.6 Passing Arrays to Methods

5) D
   ID: jp8 6-31
   Diff: 0
   Topic: Section 6.7 Returning an Array from a Method

6) A, B
   ID: jp8 6-33
   Diff: 0
   Topic: Section 6.8 Variable-Length Argument Lists

7) A
   ID: jp8 6-32
   Diff: 0
   Topic: Section 6.7 Returning an Array from a Method

8) B
   ID: jp8 6-11
   Diff: 0
   Topic: Section 6.2 Array Basics

9) B, C, E
   ID: jp8 6-7
   Diff: 0
   Topic: Section 6.2 Array Basics

10) C
    ID: jp8 6-18
    Diff: 0
    Topic: Section 6.5 Copying Arrays

11) C
    ID: jp8 6-15
    Diff: 0
    Topic: Section 6.5 Copying Arrays

12) B
    ID: jp8 6-37
    Diff: 0
    Topic: Section 6.10 Sorting Arrays
Answer Key
Testname: QUIZ2

13) C
   ID: jp8 6-22
   Diff: 0
   Topic: Section 6.5 Copying Arrays

14) D
   ID: jp8 7-1
   Diff: 0
   Topic:

15) B
   ID: jp8 7-5
   Diff: 0
   Topic:

16) B
   ID: jp8 7-2
   Diff: 0
   Topic:

17) B
   ID: jp8 7-4
   Diff: 0
   Topic:

18) B, C
   ID: jp8 7-6
   Diff: 0
   Topic:

19) A
   ID: jp8 7-3
   Diff: 0
   Topic:

20) A
   ID: jp8 8-15
   Diff: 0
   Topic: Section 8.5 Accessing Objects via Reference Variables

21) B, C, D, E
    ID: jp8 8-12
    Diff: 0
    Topic: Section 8.5 Accessing Objects via Reference Variables

22) B
    ID: jp8 8-37
    Diff: 0
    Topic: Section 8.10 Passing Objects to Methods

23) C
    ID: jp8 8-23
    Diff: 0
    Topic: Section 8.7 Static Variables, Constants, and Methods

24) D
    ID: jp8 8-35
    Diff: 0
    Topic: Section 8.10 Passing Objects to Methods
Answer Key
Testname: QUIZ2

25) A, B, C, E
   ID: jp8 8-6
   Diff: 0
   Topic: Section 8.4 Constructing Objects Using Constructors

26) A
   ID: jp8 8-31
   Diff: 0
   Topic: Section 8.8 Visibility Modifiers

27) E
   ID: jp8 8-24
   Diff: 0
   Topic: Section 8.7 Static Variables, Constants, and Methods

28) A
   ID: jp8 8-33
   Diff: 0
   Topic: Section 8.9 Data Field Encapsulation

29) C
   ID: jp8 8-21
   Diff: 0
   Topic: Section 8.7 Static Variables, Constants, and Methods

30) A, B, C, D
   ID: jp8 9-19
   Diff: 0
   Topic: Section 9.2 The String Class

31) A, B, C, D
   ID: jp8 9-26
   Diff: 0
   Topic: Section 9.2 The String Class

32) A
   ID: jp8 9-57
   Diff: 0
   Topic: Section 9.7 Text I/O

33) A
   ID: jp8 9-6
   Diff: 0
   Topic: Section 9.2 The String Class

34) C, D
   ID: jp8 9-30
   Diff: 0
   Topic: Section 9.3 The Character Class

35) B, D, E
   ID: jp8 9-20
   Diff: 0
   Topic: Section 9.2 The String Class

36) A
   ID: jp8 9-22
   Diff: 0
   Topic: Section 9.2 The String Class
Answer Key
Testname: QUIZ2

37) C
   ID: jp8 9-21
   Diff: 0
   Topic: Section 9.2 The String Class

38) D
   ID: jp8 10-5
   Diff: 0
   Topic: Section 10.3 Scope of Variables

39) A, B, C, D
   ID: jp8 10-1
   Diff: 0
   Topic: Section 10.2 Immutable Objects and Classes

40) A
   ID: jp8 10-6
   Diff: 0
   Topic: Section 10.4 The this Keyword

41) B, C
   ID: jp8 10-7
   Diff: 0
   Topic: Section 10.4 The this Keyword

42) B
   ID: jp8 10-2
   Diff: 0
   Topic: Section 10.3 Scope of Variables

43) B
   ID: jp8 10-4
   Diff: 0
   Topic: Section 10.3 Scope of Variables

44) C
   ID: jp8 10-3
   Diff: 0
   Topic: Section 10.3 Scope of Variables

45) A
   ID: jp8 11-7
   Diff: 0
   Topic: Section 11.4.3 Calling Superclass Methods

46) A
   ID: jp8 11-8
   Diff: 0
   Topic: Section 11.5 Overriding Methods

47) A
   ID: jp8 11-6
   Diff: 0
   Topic: Section 11.4.2 Constructor Chaining

48) A
   ID: jp8 11-25
   Diff: 0
   Topic: Section 11.10 The Object's equals() Method
Answer Key
Testname: QUIZ2

49) A, E
   ID: jp8 11-21
   Diff: 0
   Topic: Section 11.9 Casting Objects and the instanceof Operator

50) D
   ID: jp8 11-35
   Diff: 0
   Topic: Section 11.13 The protected Data and Methods

51) C
   ID: jp8 6-2
   Diff: 0
   Topic: Section 6.2 Array Basics

52) D
   ID: jp8 6-38
   Diff: 0
   Topic: Section 6.10 Sorting Arrays

53) C
   ID: jp8 6-12
   Diff: 0
   Topic: Section 6.2 Array Basics

54) D
   ID: jp8 6-1
   Diff: 0
   Topic: Section 6.2 Array Basics

55) D
   ID: jp8 6-16
   Diff: 0
   Topic: Section 6.5 Copying Arrays

56) B
   ID: jp8 8-3
   Diff: 0
   Topic: Section 8.2 Defining Classes for Objects

57) C
   ID: jp8 8-30
   Diff: 0
   Topic: Section 8.8 Visibility Modifiers

58) B
   ID: jp8 8-19
   Diff: 0
   Topic: Section 8.6 Using Classes From the Java Library

59) A
   ID: jp8 8-27
   Diff: 0
   Topic: Section 8.7 Static Variables, Constants, and Methods

60) D
   ID: jp8 9-53
   Diff: 0
   Topic: Section 9.7 Text I/O
Answer Key
Testname: QUIZ2

61) B
   ID: jp8 9-48
   Diff: 0
   Topic: Section 9.6 The File Class

62) B
   ID: jp8 9-18
   Diff: 0
   Topic: Section 9.2 The String Class

63) B
   ID: jp8 11-29
   Diff: 0
   Topic: Section 11.11 The ArrayList Class

64) D
   ID: jp8 11-32
   Diff: 0
   Topic: Section 11.11 The ArrayList Class

65) A
   ID: jp8 11-20
   Diff: 0
   Topic: Section 11.9 Casting Objects and the instanceof Operator

66) C
   ID: jp8 6-29
   Diff: 0
   Topic: Section 6.7 Returning an Array from a Method

67) A, C
   ID: jp8 6-10
   Diff: 0
   Topic: Section 6.2 Array Basics

68) E
   ID: jp8 8-26
   Diff: 0
   Topic: Section 8.7 Static Variables, Constants, and Methods

69) B
   ID: jp8 8-4
   Diff: 0
   Topic: Section 8.2 Defining Classes for Objects

70) B
   ID: jp8 9-41
   Diff: 0
   Topic: Section 9.5 Command-Line Arguments

71) A, D
   ID: jp8 11-30
   Diff: 0
   Topic: Section 11.11 The ArrayList Class

72) B
   ID: jp8 6-24
   Diff: 0
   Topic: Section 6.6 Passing Arrays to Methods
Answer Key
Testname: QUIZ2

73) D
   ID: jp8 8-36
   Diff: 0
   Topic: Section 8.10 Passing Objects to Methods

74) D
   ID: jp8 9-51
   Diff: 0
   Topic: Section 9.7 Text I/O

75) C
   ID: jp8 11-43
   Diff: 0
   Topic: Section Comprehensive

76) C
   ID: jp8 6-8
   Diff: 0
   Topic: Section 6.2 Array Basics

77) C
   ID: jp8 8-25
   Diff: 0
   Topic: Section 8.7 Static Variables, Constants, and Methods

78) E
   ID: jp8 9-12
   Diff: 0
   Topic: Section 9.2 The String Class

79) B
   ID: jp8 11-17
   Diff: 0
   Topic: Section 11.9 Casting Objects and the instanceof Operator

80) E
   ID: jp8 6-41
   Diff: 0
   Topic: Section 6.11 The Arrays Class