1) The statement: double[] array1 = new double[10]
   A) Declares array1 to be a reference to an array of double values
   B) Creates an instance of an array of 10 double values
   C) Will allow valid subscripts in the range of 0–9
   D) All of the above
Answer: D

2) What will be the value of x[8] after the following code has been executed?
   final int SUB = 12;
   int[] x = new int[SUB];
   int y = 100;
   for(int i = 0; i < SUB; i++)
   {
     x[i] = y;
     y += 10;
   }
   A) 170
   B) 180
   C) 190
   D) 200
Answer: B

3) What will be the results of the following code?
   final int ARRAY_SIZE = 5;
   float[] x = new float[ARRAY_SIZE];
   for(int i = 1; i <= ARRAY_SIZE; i++)
   {
     x[i] = 10.0;
   }
   A) All the values in the array are initialized to 10.0
   B) All the values, except the first, are set to 10.0
   C) The program will crash when it is executed
   D) There will be a compilation error
Answer: C

4) What would be the results of the following code?
   int[] x = {55, 33, 88, 22, 99, 11, 44, 66, 77};
   int a = 10;
   if(x[2] > x[5])
     a = 5;
   else
     a = 8;
   A) a = 5
   B) a = 8
   C) a = 10
   D) This is a compilation error, you cannot compare array elements
Answer: A
5) What would be the results after the following code was executed?

```java
int[] x = {23, 55, 83, 19};
int[] y = {36, 78, 12, 24};
for(int a = 0; a < x.length; a++)
{
    x[a] = y[a];
    y[a] = x[a];
}
```

A) y[ ] = {23, 55, 83, 19} and x[ ] = {36, 78, 12, 24}
B) x[ ] = {36, 78, 12, 24} and y[ ] = {36, 78, 12, 24}
C) x[ ] = {23, 55, 83, 19} and y[ ] = {23, 55, 83, 19}
D) This is a compilation error

Answer: B

6) What will be the value for x[1] after the following code is executed?

```java
int[] x = {22, 33, 44};
arrayProcess(x);
public static void arrayProcess(int[] a)
{
    for(int k = 0; k < 3; k++)
    {
        a[k] = a[k] + 5;
    }
}
```

A) 27
B) 33
C) 38
D) 49

Answer: C

7) When an array is passed to a method
   A) A reference to the array is passed
   B) It is passed just as an object
   C) The method has direct access to the original array
   D) All of the above

Answer: D

8) To compare the contents of two arrays, you must compare the elements of the two arrays.

Answer: True

9) What would be the results of the following code?

```java
int[] array1 = new int[25];
... // Code that will put values in array1
int value = array1[0];
for (int a = 1; a < array1.length; a++)
{
    if (array1[a] < value)
        value = array1[a];
}
```

A) value contains the highest value in array1
B) value contains the lowest value in array1
C) value contains the sum of all the values in array1
D) value contains the average of the values in array1

Answer: B
10) A partially-filled array is normally used
   A) When you know how many elements will be in the array
   B) With an accompanying parallel array
   C) With an accompanying integer value that holds the number of items stored in the array
   D) To display array elements
   Answer: C

11) To return an array of long values from a method, use ________ as the return type for the method.
   A) long
   B) long[ ]
   C) long[array_size]
   D) [ ]long
   Answer: B

12) In memory, an array of String objects
   A) Consists of an array of references to String objects
   B) Is arranged the same as an array of primitive objects
   C) Consists of elements, each of which is a String
   D) Must be initialized when the array is declared
   Answer: A

13) Given String[ ] str has been initialized, to convert all the characters in the String str[0] to upper case, use the following statement:
   A) str.uppercase();
   B) str[0].toUpperCase();
   C) str.toUpperCase();
   D) str[0].toUpperCase();
   Answer: D

14) When an array of objects is declared, but not initialized, the array values are set to null.
   Answer: True  False

15) The sequential search algorithm
   A) Requires the array to be ordered
   B) Returns the value it was searching for
   C) Uses a loop to sequentially step through an array, starting with the first element
   D) Will not execute, if the element is not in the array
   Answer: C
[Inst. 8.1] Use the below mentioned code to answer following question(s).

```java
public class Class1 {
    public static void main(String[] arg) {
        String[] stID = {"ABC", "DEF", "GHI", "JKL", "MNO"};
        int[] grade = {95, 78, 88, 98, 86};
        String str1 = "GHI";
        boolean found = false;
        int loc = -1;
        int sub = 0;
        while (!found && sub < stID.length) {
            if (stID[sub] == str1) {
                found = true;
                loc = sub;
            }
            sub++;
        }
        System.out.println(grade[loc]);
    }
}
```

16) Refer to Inst. 8.1. The while loop is an example of
   A) A sort algorithm
   B) An algorithm to locate the largest element
   C) A sequential search algorithm
   D) An algorithm to sum the values of an array
   Answer: C

17) Refer to Inst. 8.1. What is the value of stID.length?
   A) 1
   B) 2
   C) 3
   D) 4
   E) 5
   Answer: E

18) A sorting algorithm is a technique for scanning through an array and rearranging its contents in some specific order.
    Answer: True    False

19) In order to do a binary search on an array,
    A) The values of the array must be numeric
    B) The array must first be sorted in ascending order
    C) You must first do a sequential search of the array to assure the element you are looking for is there
    D) There are no requirements
    Answer: B

20) Any items typed on the command-line, separated by space, after the name of the class are considered to be one or more arguments that are to be passed into the main method.
    Answer: True    False
21) What is the value of scores[2][3] in the following array?

```java
int[][] scores = {{88, 80, 79, 92}, {75, 84, 93, 80}, {98, 95, 92, 94}, {91, 84, 88, 96}};
```

A) 94  
B) 84  
C) 93  
D) 95  
Answer: A

22) If numbers is a two-dimensional array, which of the following would give the length of row, r?

A) numbers.length  
B) numbers.length[r]  
C) numbers[r].length[r]  
D) numbers[r].length  
Answer: D

23) Which of the following is a correct method header for receiving a two-dimensional array as an argument?

A) public static void passArray(int[1,2] intArray)  
B) public static void passArray(int[][] intArray)  
C) public static void passArray(int[1],[2] intArray)  
D) public static void passArray(int[ ], int[ ]intArray)  
Answer: B

24) A ragged array is

A) A two-dimensional array for which the number of rows is unknown  
B) A one-dimensiona array for which the number of elements is unknown  
C) A two-dimensional array when the rows are of different lengths  
D) There is no such thing as a ragged array  
Answer: C

25) Java limits the number of dimensions that an array may have to 15.

Answer: True  

26) The following statements

```java
final int ARRAY_SIZE = 10;
long[ ] array1 = new long[ARRAY_SIZE];
```

A) Declares array1 to be a reference to an array of long values  
B) Creates an instance of an array of 10 long values  
C) Will allow valid subscripts in the range of 0–9  
D) All of the above  
Answer: D
27) What will be the value of \( x[8] \) after the following code has been executed?

```java
final int SUB = 12;
int[ ] x = new int[SUB];
int y = 20;
for(int i = 0; i < SUB; i++)
{
    x[i] = y;
    y += 5;
}
```

A) 50  
B) 55  
C) 60  
D) 65  
Answer: C

28) What will be the result of executing the following code?

```java
int[ ] x = {0, 1, 2, 3, 4, 5};
```

A) An array of 6 values ranging from 0-5 and referenced by the variable x will be created  
B) A compilation error will occur  
C) The program will crash when it is executed  
D) The value of \( x[0] \) will be 15 and \( x[1] \) - \( x[5] \) will be set to 0
Answer: A

29) If final int sub = 15 and int[ ] x = new int[sub], what would be the range of subscript values that could be used with \( x[ ] \)?

A) 1-15  
B) 1-14  
C) 0-14  
D) 0-15  
Answer: C

30) What would be the results after the following code was executed?

```java
int[ ] x = {23, 55, 83, 19};
int[ ] y = {36, 78, 12, 24};
x = y;
y = x;
```

A) \( y[ ] = \{23, 55, 83, 19\} \) and \( x[ ] = \{36, 78, 12, 24\} \)  
B) \( x[ ] = \{36, 78, 12, 24\} \) and \( y[ ] = \{36, 78, 12, 24\} \)  
C) \( x[ ] = \{23, 55, 83, 19\} \) and \( y[ ] = \{23, 55, 83, 19\} \)  
D) This is a compilation error  
Answer: B
31) What will be the value for x[1] after the following code is executed?

    int[ ] x = {22, 33, 44};
    arrayProcess(x[1]);
    ...
    public static void arrayProcess(int a)
    {
        a = a + 5;
    }
    A) 27
    B) 33
    C) 38
    D) 49
    Answer: B

32) When an individual element of an array is passed to a method
    A) A reference to the array is passed
    B) It is passed just as an object
    C) The method does not have direct access to the original array
    D) All of the above
    Answer: C

33) If a[ ] and b[ ] are two integer arrays, then if( a == b) compares the array contents.
    Answer: True

34) What would be the results of the following code?

    int[ ] array1 = new int[25];
    ... // Code that will put values in arrat1
    int value = 0;
    for (int a = 0; a <= array1.length; a++)
    {
        value += array1[a];
        value = array1[a];
    }
    A) value contains the highest value in array1
    B) value contains the lowest value in array1
    C) value contains the sum of all the values in array1
    D) This would cause the program to crash
    Answer: D

35) To use the Scanner utility, you must
    A) import java.util.Scanner
    B) import java.Swing
    C) import java.Scanner.util
    D) import.java.Arrays
    Answer: A

36) What will be returned from the following method?

    public static float[ ] getValue(int x)
    A) A float value
    B) A reference to an array of float values
    C) An integer
    D) A reference to an array of integers
    Answer: B
37) For the following code, what would be the value of str[2]?

```java
String[ ] str = {"abc", "def", "ghi", "jkl"};
A) "ghi"
B) "def:
C) A reference to the String "ghi"
D) A reference to the String "def:"
Answer: C
```

38) Which of the following statements is a valid statement, given the following?

```java
String[ ] names = {"abc", "def", "ghi", "jkl"};
A) for (int i = 0; i < names.length; i++)
   System.out.println(names[i].length);
B) for (int i = 0; i < names.length(); i++)
   System.out.println(names[i].length);
C) for (int i = 0; i < names.length; i++)
   System.out.println(names[i].length());
D) for (int i = 0; i < names.length(); i++)
   System.out.println(names[i].length());
Answer: C
```

39) Objects in an array are accessed with subscripts, just like any other data type in an array.

Answer: True

40) A search algorithm is a

A) Method for locating a specific item in a larger collection of data
B) Is rarely used with arrays
C) Arranges elements in ascending order
D) Arranges elements in descending order

Answer: A
[Inst. 8.2] Use the below mentioned code to answer following question(s).

```java
public class Class1 {
    public static void main(String[] arg) {
        String[] partNumber = {"ABC123", "DEF456", "GHI789", "JKL246", "MNO579"};
        int[] price = {9.25, .78, 8.58, 9.38, 0.86};
        String str1 = "GHI789";
        boolean found = false;
        int loc = -1;
        int sub = 0;
        while (!found && sub < partNumber.length) {
            if (partNumber[sub] == str1) {
                found = true;
                loc = sub;
            }
            sub++;
        }
        System.out.println(price[loc]);
    }
}
```

41) Refer to Inst. 8.2. The while loop is an example of
   A) A sort algorithm
   B) An algorithm to locate the largest element
   C) A sequential search algorithm
   D) An algorithm to sum the values of an array
   Answer: C

42) Refer to Inst. 8.2. What is the value of partNumber.length?
   A) 1
   B) 2
   C) 3
   D) 4
   E) 5
   Answer: E

43) A sorting algorithm is used to locate a specific item in a larger collection of data.
   Answer: True False

44) The binary search algorithm
   A) Is less efficient than the sequential search algorithm
   B) Will cut the portion of the array being searched in half each time the loop fails to locate the search value
   C) Will have a maximum number of comparisons equal to the number of elements in the array
   D) Will have an average of \( \frac{N}{2} \) comparisons, where \( N \) is the number of elements in the array
   Answer: B

45) The String[] args parameter in the main method header allows the program to receive arguments from the operating system command-line.
   Answer: True False
46) Given the following two-dimensional array declaration, which statement is true?

```java
int [ ] [ ] numbers = new int [6] [9];
```

A) The array numbers has 6 columns and 9 rows  
B) The array numbers has 6 rows and 9 columns  
C) The array numbers has 15 rows  
D) The array numbers has 54 rows

Answer: B

47) If numbers is a two-dimensional int array that has been initialized and total is an int that has been set to 0, which of the following will sum all the elements in the array?

A) ```
   for (int row = 1; row < numbers.length; row++)
   {
      for (int col = 1; col < numbers.length; col++)
      {
         total += numbers[row][col];
      }
   }
```  
B) ```
   for (int row = 0; row < numbers.length; row++)
   {
      for (int col = 0; col < numbers.length; col++)
      {
         total += numbers[row][col];
      }
   }
```  
C) ```
   for (int row = 0; row < numbers[row].length; row++)
   {
      for (int col = 0; col < numbers.length; col++)
      {
         total += numbers[row][col];
      }
   }
```  
D) ```
   for (int row = 0; row < numbers.length; row++)
   {
      for (int col = 0; col < numbers[row].length; col++)
      {
         total += numbers[row][col];
      }
   }
```  

Answer: D

48) Which of the following is a correct method header for receiving a two-dimensional array as an argument?

A) ```
   public static void passArray(int[2] intArray)
```  
B) ```
   public static void passArray(int [ ][ ] intArray)
```  
C) ```
   public static void passArray(int[1][2] intArray)
```  
D) ```
   public static void passArray(int [ ] intArray, int[ ]intArray)
```  

Answer: B

49) Which of the following is a valid declaration for a ragged array, after which you would declare each row?

A) ```
   int[ ] ragged = new int[5];
```  
B) ```
   int[ ][ ] ragged = new int[5][6];
```  
C) ```
   int[ ][ ] ragged = new int[5][ ];
```  
D) ```
   int[ ][ ] ragged = new int[ ][5];
```  

Answer: C

50) Java does not limit the number of dimensions that an array may have.

Answer: True    False