

01. An array is a

- ** (A) data structure with one, or more, elements of the same type.
- (B) data structure with LIFO access.
- (C) data structure, which allows transfer between internal and external storage.
- (D) data structure with one, or more, elements, called fields, of the same or different data types.

02. Consider the following program segment.

```
int[] list;  
list = new int[100];
```

How many integers can be stored in the **list** array

- (A) 99
- ** (B) 100
- (C) 101
- (D) 100 initial integers plus any additional integers required during program execution

03. Consider the two program segments below.

Segment1

```
int list[ ];  
list = new int[100];
```

Segment2

```
int list[ ] = new int[100];
```

Which of the following is a true statement about the comparison of Segment1 and Segment2?

- (A) Segment1 declares **list** correctly. Segment2 declares **list** incorrectly.
- (B) Segment1 declares **list** incorrectly. Segment2 declares **list** correctly.
- ** (C) Both Segment1 and Segment2 declare **list** correctly.
- (D) Both Segment1 and Segment2 declare **list** incorrectly.

04. Consider the program segment below.

```
double[] grades;  
grades = new double[50];
```

What is the index range capable of accessing an element of the **grades** array?

- ** (A) 0..49
- (B) 1..49
- (C) 0..50
- (D) 1..50

05. What is the output of program **Java1012.java** below?

```
public class Java1012
{
    public static void main(String[] args)
    {
        int list[ ];
        list = new int[10];
        for (int k = 0; k < 10; k++)
            list[k] = 0;
        for (int k = 0; k < 10; k++)
            System.out.print(list[k] + " ");
        System.out.println();
    }
}
```

- **
- (A) 0 0 0 0 0 0 0 0 0 0
 - (B) 0 1 2 3 4 5 6 7 8 9
 - (C) 1 2 3 4 5 6 7 8 9 10
 - (D) 0 0 0 0 0 0 0 0 0 0

06. What is the output of program **Java1013.java** below?

```
public class Java1013
{
    public static void main(String args[ ])
    {
        char[] list = new char[5];
        for (int k = 0; k < list.length(); k++)
            list[k] = 'Q';
        for (int k = 0; k < 5; k++)
            System.out.print(list[k] + " ");
        System.out.println(); }
}
```

- (A) QQQQQQ
 - (B) Q R S T U
 - (C) Q Q Q Q Q
 - (D) QQQQQ
- **
- (E) ERROR

07. What is the output of program **Java1014.java** below?

```
public class Java1014
{
    public static void main(String args[ ])
    {
        int list[ ] = {1,2,3,4,5};
        for (int k = 1; k < list.length; k++)
            System.out.println("list[" + k + "] = " + list[k]);
    }
}
```

(A) list[0] = 0
list[1] = 1
list[2] = 2
list[3] = 3
list[4] = 4

(B) list[0] = 1
list[1] = 2
list[2] = 3
list[3] = 4
list[4] = 5

(C) list[1] = 1
list[2] = 2
list[3] = 3
list[4] = 4
list[5] = 5

** (D) list[1] = 2
list[2] = 3
list[3] = 4
list[4] = 5

(E) Compile Error

08. What is the output of program **Java1015.java** below?

```
public class Java1015
{
    public static void main(String args[ ])
    {
        int list[ ] = {1,2,3,4,5};
        for (int k = 1; k <= 5; k++)
            System.out.println("list[" + k + "] = " + list[k]);
    }
}
```

(A) list[0] = 0
list[1] = 1
list[2] = 2
list[3] = 3
list[4] = 4

(B) list[0] = 1
list[1] = 2
list[2] = 3
list[3] = 4
list[4] = 5

(C) list[1] = 1
list[2] = 2
list[3] = 3
list[4] = 4
list[5] = 5

(D) list[1] = 2
list[2] = 3
list[3] = 4
list[4] = 5

** (E) Array Out of Bounds Exception Error

09. What is the output of program **Java1016.java** below?

```
public class Java1016
{
    public static void main(String args[ ])
    {
        int[] list = {1,2,3,4,5};
        for (int k = list.length-1; k >= 0; k--)
            System.out.println("list[" + k + "] = " + list[k]);
    }
}
```

- ** (A) list[4] = 5
list[3] = 4
list[2] = 3
list[1] = 2
list[0] = 1
- (B) list[5] = 5
list[4] = 4
list[3] = 3
list[2] = 2
list[1] = 1
- (C) list[5] = 4
list[4] = 3
list[3] = 2
list[2] = 1
list[1] = 0
- (D) list[4] = 1
list[3] = 2
list[2] = 3
list[1] = 4
- (E) Compile Error

10. What is the FIRST and LAST output from this program segment?

```
int[] IntNum = new int[100];
int J;
for (J=0; J<100; J++)
    IntNum[J] = J;
for (J=0; J<100; J++)
    System.out.println(IntNum[J]);
```

- **
- (A) 0 and 100
 - (B) 0 and 99
 - (C) 1 and 100
 - (D) 1 and 99
 - (E) ArrayIndexOutOfBounds error

11. What is the FIRST and LAST output from this program segment?

```
int IntNum[] = new int[100];
int J;
for (J=1; J<=100; J++)
    IntNum[J] = J;
for (J=1; J<=100; J++)
    System.out.println(IntNum[J]);
```

- **
- (A) 0 and 100
 - (B) 0 and 99
 - (C) 1 and 100
 - (D) 1 and 99
 - (E) ArrayIndexOutOfBounds error

12. What is the FIRST and LAST output from this program segment?

```
int IntNum[] = new int[100];
int J;
for (J=0; J<100; J++)
    IntNum[J] = 100-J;
for (J=85; J>=15; J--)
    System.out.println(IntNum[J]);
```

- **
- (A) FIRST: 0 LAST: 99
 - (B) FIRST: 99 LAST: 0
 - (C) FIRST: 15 LAST: 85
 - (D) FIRST: 85 LAST: 15
 - (E) ArrayIndexOutOfBounds error

13. What is the output from this program segment?

```
int[] IntNum = new int[10];
int J;
for (J=0; J<10; J++)
    if (J < 2)
        IntNum[J] = J;
    else
        IntNum[J] = IntNum[J-1] + IntNum[J-2];
for (J=0; J<10; J++)
    System.out.print(IntNum[J] + " ");
```

- **
- (A) 1 2 3 4 5 6 7 8 9 10
 - (B) 0 1 2 3 4 5 6 7 8 9
 - (C) 1 1 2 3 5 8 13 21 34 55
 - (D) 0 1 1 2 3 5 8 13 21 34
 - (E) 0 1 1 2 3 5 8 13 21 34 55

Objective 4 – Initialized Arrays and length

Use this program segment to answer questions 14-17.

```
Boolean[] George = new boolean[15];
int J;

System.out.println(George.length);      // Question #21

for (J=0; J<15; J++)
    if (J == 0)
        George [J] = (J==0);
    else
        George [J] = !George[J-1];

System.out.println(George[7]);          // Question #22

System.out.println(George[8]);          // Question #23

System.out.println(George[15]);         // Question #24
```

<p>14. What is the output of the first println?</p> <p>(A) true (B) false (C) 14 ** (D) 15 (E) <code>ArrayIndexOutOfBoundsException</code> error</p>	<p>15. What is the output of the second println?</p> <p>(A) true ** (B) false (C) 14 (D) 15 (E) <code>ArrayIndexOutOfBoundsException</code> error</p>
<p>16. What is the output of the third println?</p> <p>** (A) true (B) false (C) 14 (D) 15 (E) <code>ArrayIndexOutOfBoundsException</code> error</p>	<p>17. What is the output of the fourth println?</p> <p>(A) true (B) false (C) 14 (D) 15 ** (E) <code>ArrayIndexOutOfBoundsException</code> error</p>