1. (1 Point) Consider the following line of code:

```java
int[] somearray = new int[30];
```

Which one of the following options is a valid line of code for displaying the twenty-eighth element of `somearray`?

- a) `System.out.println(somearray[28]);`
- b) `System.out.println(somearray(28));`
- c) `System.out.println(somearray(27));`
- d) `System.out.println(somearray[27]);`

2. (1 Point) Identify the correct statement for defining an integer array named `numarray` of ten elements.

- a) `int[] numarray = new int[9];`
- b) `int[] numarray = new int[10];`
- c) `int[10] numarray;`
- d) `int numarray[10];`

3. (1 Point) Which one of the following statements is a valid initialization of an array named `somearray` of ten elements?

- a) `int[] somearray = { 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 };`
- b) `int somearray[] = { 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };`
- c) `int[10] somearray = { 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 };`
- d) `int somearray[10] = { 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 };`

4. (1 Point) What is the result of executing this code snippet?

```java
int[] marks = { 90, 45, 67 };
for (int i = 0; i <= 3; i++) {
    System.out.println(marks[i]);
}
```

- a) The code snippet prints the sum of all marks.
- b) The code snippet displays all the marks stored in the array without any redundancy.
- c) The code snippet causes a `index out of bounds error`.
- d) The code snippet executes an infinite loop.
5. (1 Point) What is the output of the following code snippet?

```java
int[] myarray = { 10, 20, 30, 40, 50 };
System.out.print(myarray[2]);
System.out.print(myarray[3]);
```

a) 1050  
b) 2030  
c) 3040  
d) 4050

6. (2 Points) What is the output of the given code snippet?

```java
int[] mynum = new int[5];
for (int i = 1; i < 5; i++){
    mynum[i] = i + 1;
    System.out.print(mynum[i]);
}
```

a) 2345  
b) 1234  
c) 1345  
d) 1111

7. (3 Points) What is the content of the array `a` after the following code fragment executes?

```java
int[] a = new int[26];
String line =
    "A flight currently showing as delayed may, "+
    "depending on circumstances, depart on time";
for (int i=0; i<line.length(); i++) {
    char ch = line.toUpperCase().charAt(i);
    if ( ((ch >= 'A') && (ch <= 'Z')) ) {
        int index = (ch - 'A');
        a[index]++;
    }
}
```

Note: Array contains the letter counts for each letter of the alphabet

|   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|   | 6 | 0 | 4 | 5 | 8 | 1 | 3 | 2 | 5 | 0 | 0 | 3 | 3 | 5 | 1 | 2 | 0 | 4 | 3 | 4 | 2 | 0 | 0 | 0 | 3 | 0 |