Unit 6 AP Computer Science A Practice Exam
Arrays

Section I – Multiple Choice
Optional Time – 20 minutes
10 Questions

1) Which of the following are true about arrays?

   I. All of the elements inside of an array must be of the same type or related types.
   II. When creating an array with the keyword *new*, booleans are initialized to *True*.
   III. The first element of an array is located at the index of 1.

   (A) I only
   (B) II only
   (C) I and II
   (D) II and III
   (E) I, II, and III

2) Which of the following is the output of the code below?

```
int[] myArray = new int[5];

System.out.println(myArray.length);
```

   (A) 0
   (B) 1
   (C) 4
   (D) 5
   (E) 6

3) Which of the following is the output of the code below?

```
double[] myArray = new double[3];

myArray[0] = 2.0;
myArray[1] = 4.6;

System.out.println(myArray[1] - myArray[2]);
```

   (A) 4.6
   (B) 2.6
   (C) -4.6
   (D) -2.6
   (E) There is an error

4) Which of the following is the output of the code below?

```
String[] myArray = {"Hello", "World", "!"};

int i = 3;

while(i>=0) {

    System.out.print(myArray[i]);
    System.out.print(" ");
    i--;
}
```

   (A) Hello World !
   (B) Hello ! World
   (C) ! Hello World
   (D) ! World Hello
   (E) There is an error

```
int a = 8;
a *= 2;
a = a * 3 / 5;

int[] myIntegers = new int[a];

for(int i = a - 1; i >= 0; i--) {

  myIntegers[i] = i % 4;

}
```

5) What is the length of the *myIntegers* array initialized in the code above?

(A) 8
(B) 9
(C) 10
(D) 16

6) What are all of the values of the *myIntegers* array after the code is executed?

(A) {0, 1, 2, 3, 0, 1, 2, 3, 0}
(B) {1, 2, 3, 1, 2, 3, 1, 2, 3}
(C) {1, 2, 3, 1, 2, 3, 1, 2}
(D) {1, 2, 1, 2, 1, 2, 1, 2, 1, 2}
(E) All values will be 0.

7) Which of the following is the output of the code below?

```
double[] array = new double[4];

int increment = 1;

for(double a : array) {

  System.out.println(a + increment);

  increment += 2;
}
```

(A) 2.0, 3.0, 4.0, 5.0
(B) 0.0, 2.0, 4.0, 6.0
(C) 1.0, 3.0, 5.0, 7.0
(D) 0.0, 0.0, 0.0, 0.0
(E) 1.0, 3.0, 3.0, 3.0

8) Which of the following print out the last element of the integer array?

```
int[] array = {1, 2, 3, 4};
```

I.
```
int last = array[array.length];
System.out.println(last);
```

II.
```
int last = array[array.length - 1];
System.out.println(last);
```

III.
```
int last = array[-1];
System.out.println(last);
```

(A) I only
(B) II only
(C) III only
(D) II and III
(E) I, II, and III

9) What are the value of the array once the code below is executed?

```java
int[] array = new int[5];

for(int i = 0; i < array.length; i++) {
 for(int j = 1; j <= 3; j++) {

     array[i] += (j + i);
  }
 }
```

(A) {3, 6, 9, 12, 15}
(B) {6, 9, 12, 15, 18}
(C) {9, 12, 15, 18, 21}
(D) {12, 15, 18, 21, 24}

10) Which of the following is the best loop to use in order to traverse an array backwards?

(A) While loop
(B) Do-While loop
(C) For loop
(D) For-Each loop

END OF SECTION I

(a)   Write the method `highestNumber`, which returns the highest value inside of the given `numbers` array.

Complete the method `highestNumber` below.

```
/**  Returns the highest value in the given array.  */
public int highestNumber(int[] numbers)
```

(b)   Write the method `averageNumber`, which returns the average of the numbers inside of the given `numbers` array.

Complete the method `averageNumber` below.

```
/**  Returns the average of the numbers in the given array.  */
public double averageNumber (double[] numbers)
```

END OF SECTION II