ICS 102 Sample QUIZ#04 Key (Term 172)

1. Consider the following **int** array **x**:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 |
| **3** | **4** | **6** | **5** | **7** | **2** |

1. [1 point] What is the output of the following statement?

**System.out.printf("%d", x[x[5]]); 6**

1. [4 points] What is the output of the following program fragment?

**int k;**

**for(k = 1; k <= 5; k++)**

**x[k – 1] = x[k – 1] + x[k]; 7 10 11 12 9 2**

**for(k = 0; k <= 5; k++)**

**System.out.printf("%d ", x[k]);**

1. [4 points] What is the output of the following program fragment?

**int[] x = {7, 6, 9, 5, 7, 4};**

**int k, temp;**

**for(k = 0; k <= 4; k++)**

**if(x[k] > x[k + 1]){ 6 7 5 7 4 9**

**temp = x[k];**

**x[k] = x[k + 1];**

**x[k + 1] = temp;**

**}**

**for(k = 0; k <= 5; k++)**

**System.out.printf("%d ", x[k]);**

1. (a) [6 points]Write a static private Java method that receives two integer values **x** and **y**, it then returns

**2x2 + 3y2** if **x ≥ 0** and **y ≥ 0**; otherwise it returns the minimum of **x** and **y**.

**private static int myMethod(int x, int y){**

**if(x >= 0 && y >= 0)**

**return 2 \* x \* x + 3 \* y \* y;**

**else if(x < y)**

**return x;**

**else**

**return y;**

**}**

(b) [2 points] Write an appropriate method call to the function you wrote in 3(a)

**int result = myMethod(4, 7);**

1. (a) [9 points] Write a static private method **getOddValues** that receives an integer 1D-array **x**, it then

returns a reference to a 1D-array that contains the **odd** values of the passed array **x**.

**private static int[] getOddValues(int[] x){**

**int count = 0;**

**for(int k = 0; k < x.length; k++){**

**if(x[k] % 2 != 0){**

**count++;**

**}**

**}**

**int y[] = new int[count], m = 0;**

**for(int k = 0; k < x.length; k++){**

**if(x[k] % 2 != 0){**

**y[m] = x[k];**

**m++;**

**}**

**}**

**return y;**

**}**

Alternative solution:

**private static int[] getOddValues(int[] x){**

**int y[] = new int[x.length];**

**int count = 0;**

**for(int k = 0; k < x.length; k++){**

**if(x[k] % 2 != 0){**

**y[count] = x[k];**

**count++;**

**}**

**}**

**if(count == x.length)**

**return y;**

**else{**

**int[] z = new int[count];**

**for(int k = 0; k < count; k++){**

**z[k] = y[k];**

**}**

**return z;**

**}**

**}**

(b) [4 points] Assuming that an integer 1D-array **y** has been initialized; write a method call that passes

the array **y** to the method you wrote in 4(b). Provide any other required declarations.

**int[] oddValues = getOddValues(y);**