

CS2401 – QUIZ 4

February 12, 2014 – 17 questions / 20 points / 20 minutes

NAME:

Questions on Objects and Classes

1 _____ represents an entity in the real world that can be distinctly identified.

- A. A class
- B. An object
- C. A method
- D. A data field

2 _____ is a construct that defines objects of the same type.

- A. A class
- B. An object
- C. A method
- D. A data field

3 An object is an instance of a _____.

- A. program
- B. class
- C. method
- D. data

4 The keyword _____ is required to declare a class.

- A. public
- B. private
- C. class
- D. All of the above.

5 _____ is invoked to create an object.

- A. A constructor
- B. The main method
- C. A method with a return type
- D. A method with the void return type

6 Which of the following statements are true?

- A. A default constructor is provided automatically if no constructors are explicitly declared in the class.
- B. At least one constructor must always be defined explicitly.
- C. Every class has a default constructor.
- D. The default constructor is a no-arg constructor.

7 Which of the following statements are true?

- A. Multiple constructors can be defined in a class.

- B. Constructors do not have a return type, not even void.
- C. Constructors must have the same name as the class itself.
- D. Constructors are invoked using the new operator when an object is created.

Questions on Multi-Dimensional Arrays

8 Which of the following statements are correct?

- A. `char[][] charArray = {'a', 'b'};`
- B. `char[2][2] charArray = {{'a', 'b'}, {'c', 'd'}};`
- C. `char[2][] charArray = {{'a', 'b'}, {'c', 'd'}};`
- D. `char[][] charArray = {{'a', 'b'}, {'c', 'd'}};`

9 Assume `double[][] x = new double[4][5]`, what are `x.length` and `x[2].length`?

- A. 4 and 4
- B. 4 and 5
- C. 5 and 4
- D. 5 and 5

10 What is the index variable for the element at the first row and first column in array `a`?

- A. `a[0][0]`
- B. `a[1][1]`
- C. `a[0][1]`
- D. `a[1][0]`

11 How many elements are in the matrix (`int[][] matrix = new int[5][5]`)?

- A. 14
- B. 20
- C. 25
- D. 30

12 Analyze the following code:

```
public class Test {  
    public static void main(String[] args) {  
        boolean[][] x = new boolean[3][];  
        x[0] = new boolean[1]; x[1] = new boolean[2];  
        x[2] = new boolean[3];  
  
        System.out.println("x[2][2] is " + x[2][2]);  
    }  
}
```

- A. The program has a compile error because `new boolean[3][]` is wrong.
- B. The program has a runtime error because `x[2][2]` is null.
- C. The program runs and displays `x[2][2]` is null.
- D. The program runs and displays `x[2][2]` is true.
- E. The program runs and displays `x[2][2]` is false.

13 What will be displayed by the following program?

```
public class Test {
    public static void main(String[] args) {
        int[][] values = {{3, 4, 5, 1}, {33, 6, 1, 2}};

        int v = values[0][0];
        for (int row = 0; row < values.length; row++)
            for (int column = 0; column < values[row].length; column++)
                if (v < values[row][column])
                    v = values[row][column];

        System.out.print(v);
    }
}
```

- A. 1
- B. 3
- C. 5
- D. 6
- E. 33

14 What will be displayed by the following program?

```
public class Test {
    public static void main(String[] args) {
        int[][] values = {{3, 4, 5, 1}, {33, 6, 1, 2}};

        int v = values[0][0];
        for (int[] list : values)
            for (int element : list)
                if (v > element)
                    v = element;

        System.out.print(v);
    }
}
```

- A. 1
- B. 3
- C. 5
- D. 6
- E. 33

15 What is the output of the following code?

```
public class Test {
    public static void main(String[] args) {
        int[][] matrix =
            {{1, 2, 3, 4},
             {4, 5, 6, 7},
             {8, 9, 10, 11},
             {12, 13, 14, 15}};

        for (int i = 0; i < 4; i++)
            System.out.print(matrix[i][1] + " ");
    }
}
```

```
    }  
}
```

- A. 1 2 3 4
- B. 4 5 6 7
- C. 1 3 8 12
- D. 2 5 9 13
- E. 3 6 10 14

16 What will be displayed by the following program?

```
public class Test {  
    public static void main(String[] args) {  
        int[][] values = {{3, 4, 5, 1}, {33, 6, 1, 2}};  
  
        for (int row = 0; row < values.length; row++) {  
            System.out.print(m(values[row]) + " ");  
        }  
    }  
  
    public static int m(int[] list) {  
        int v = list[0];  
        for (int i = 1; i < list.length; i++)  
            if (v < list[i])  
                v = list[i];  
        return v;  
    }  
}
```

- A. 3 33
- B. 1 1
- C. 5 6
- D. 5 33
- E. 33 5

17 What will be displayed by the following code?

```
public class Test {  
    public static void main(String[] args) {  
        int[][][] data = {{{1, 2}, {3, 4}},  
                           {{5, 6}, {7, 8}}};  
  
        System.out.print(data[1][0][0]);  
    }  
}
```

- A. 1
- B. 2
- C. 4
- D. 5
- E. 6