CPSC 1213 Practice Exam

Last Name: _____ First Name: _____ Section: _____

Multiple Choice: Select the most correct answer.

1. True/False: The semantics of a language define the meaning of a statement in the language.
   a. True
   b. False

2. Which of the following is an access modifier?
   a. //
   b. ==
   c. `String`
   d. `int`
   e. `public`

3. Which of the following is used to concatenate a `String`?
   a. +
   b. --
   c. \n
   d. \r\n
   e. None of the above

4. True/False: `++` is a valid escape sequence.
   a. True
   b. False

5. Which of the following is not a valid primitive type?
   a. `boolean`
   b. `int`
   c. `String`
   d. `double`
   e. `char`

6. True/False: `// is used for a multiline comment.`
   a. True
   b. False

7. Once an object is no longer referenced by any variables, it becomes _____.
   a. imported
   b. aliased
   c. primitive
   d. garbage
   e. None of the above

8. Which two modifiers (reserved words) are needed to create a constant?
   a. `final` and `int`
   b. `public` and `static`
   c. `private` and `static`
   d. `static` and `final`
   e. None of the above

9. Assuming that `x`, `y`, and `z` are of type double, which of the following lines of code matches the equation? $x = 2y^5 + |z|^2$
   a. `x = 2 * y^5 + Math.abs(z)^2;`
   b. `x = 2 * Math.pow(y, 5) + Math.pow(Math.abs(z), 2);`
   c. `x = 2y^5 + |z|^2;`
   d. `x = Math.pow(2y, 5) + Math.pow(Math.abs(z), 2);`
   e. None of the above

10. After the following lines of code are executed, what is the value of `x`? (assume correct imports)
```
DecimalFormat df = new DecimalFormat("#,###.000#");
String x = df.format(1000.1);
```
   a. `1000.1`
   b. `1000.10`
   c. `1,000.10`
   d. `1,000.100`
   e. `1,000.1000`

11. After the following lines of code are executed, what is the value of `myIndex`?
```
String myStr = "Exam 1";
int myIndex = myStr.indexOf("x");
```
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4

12. Suppose you have an instance of the `Random` class called `gen`. Which of the following lines of code generates a random integer in the range 10 to 40 (inclusive) and assigns it to `myNum`?
   a. `int myNum = gen.nextInt(31) + 10;`
   b. `int myNum = gen.nextInt(41);`
   c. `int myNum = gen.nextInt(40);`
   d. `int myNum = gen.nextInt(10) + 40;`
   e. `int myNum = gen.nextInt(60) - 20;`

Use the code below for questions 13 – 19. Note that questions 18 and 19 are on the next page.

```
public class Dog
{
 private double weight;
 public String name;

 public __13__ (double weightIn, String nameIn) { //question 13
    weight = weightIn;
    name = nameIn;
 }

 public __14__ getWeight() { //question 14
    return weight;
 }


 public void setWeight(double weightIn) {
    weight = __15__;  //question 15
 }

 public String getName() {
    return name;
 }

 public __16__ setName(String nameIn) { //question 16
    name = nameIn;
 }

 public __17__ toString() {  //question 17
    return name + " weighs " + weight;
 }

}
```

13. What belongs in blank __13__?

a. void b. String c. Dog d. double e. weightIn

14. What belongs in blank __14__?

a. void b. String c. Dog d. double e. weightIn

15. What belongs in blank __15__?

a. void b. String c. Dog d. double e. weightIn

16. What belongs in blank __16__?

a. void b. String c. Dog d. double e. weightIn

17. What belongs in blank __17__?

a. void b. String c. Dog d. double e. weightIn

18. Which one of the following violates encapsulation?
    a. `setWeight`
    b. `name`
    c. `getName`
    d. `weight`
    e. `weightIn`

19. Which one of the following is an accessor method?
    a. `setWeight`
    b. `name`
    c. `getName`
    d. `weight`
    e. `weightIn`

20. What is the value of `x` after the following code is executed?

```
int x = 0;
x = 13 % 2 * 3;
```

    a. `1`
    b. `2`
    c. `3`
    d. `0`
    e. None of the above

21. True/False: When using the assignment operator, the expression on the right side is evaluated before being stored in the variable on the left side.
    a. True
    b. False

22. A method with `void` return type will always return what variable type?
    a. `String`
    b. `int`
    c. `double`
    d. `Scanner`
    e. None of the above

23. True/False: jGRASP is an integrated development environment (IDE).
    a. True
    b. False

24. Which of the following is not a wrapper class?
    a. `Boolean`
    b. `Double`
    c. `Integer`
    d. `Byte`
    e. `String`

25. When a _____ error occurs, the program's execution ends normally but has incorrect results.
    a. run-time
    b. coding style
    c. logical
    d. compile-time
    e. None of the above

26. Which of the following lines of code properly converts the String `"98.6"` to a `double`?
    a. `double x = Double.parseDouble("98.6");`
    b. `double x = String.toDouble("98.6");`
    c. `double x = String.toFloat("98.6");`
    d. `double x = Double.parse("98.6");`
    e. None of the above

27. Which one of the modifiers below is used to indicate that an instance variable is directly accessible only inside the class where it is defined (e.g., the instance variable cannot be assigned a value outside of its class)?
    a. `public`
    b. `final`
    c. `protected`
    d. `private`
    e. `static`

28. One way to convert one numeric type to another numeric type is by _____.
    a. encapsulation
    b. white boxing
    c. black boxing
    d. using the Random class
    e. casting

29. How many bits are used to store a value of type `int`?
    a. 4
    b. 8
    c. 16
    d. 32
    e. None of the above

30. A valid value for a variable of type `boolean` is _____.
    a. `true`
    b. `1`
    c. `0`
    d. `yes`
    e. All of the above

31. Which operator is used to call a constructor?
    a. `void`
    b. `new`
    c. `public`
    d. `private`
    e. None of the above

32. `x += y` is equivalent to _____.
    a. `x = y`
    b. `x = x + y`
    c. `x++ == y ++`
    d. `x++`
    e. None of the above

33. True/False: An instance variable has scope of the entire class
    a. True
    b. False

34. What two pieces of information are needed to declare a local variable?
    a. Type and value
    b. Variable name and value
    c. Access modifier and variable name
    d. Type and variable name
    e. None of the above

35. True/False: A UML class diagram shows the dependencies among the classes in the diagram.
    a. True
    b. False

Use the following code segment to answer questions 36 through 40.

```
public int example(int x, int y, int z) {

    int myNum = 0;
    if(x > 7) {
        myNum = y;
    }
    else if (x > 10) {
        myNum = z;
    }

    if (x == z) {
        myNum = x;
    }

    return myNum;
}
```

36. True/False: `myNum` is a parameter of the `example` method.
    a. True
    b. False

37. What value is returned when `example(1, 2, 3)` is called?
    a. 0
    b. 1
    c. 2
    d. 3
    e. None of the above

38. What value is returned when `example(7, 2, 3)` is called?
    a. 0
    b. 1
    c. 2
    d. 3
    e. None of the above

39. What value is returned when `example(20, 2, 3)` is called?
    a. 0
    b. 1
    c. 2
    d. 3
    e. None of the above

40. What value is returned when `example(3, 2, 3)` is called?
    a. 0
    b. 1
    c. 2
    d. 3
    e. None of the above

Fill in the numbered blanks in the following code by answering questions 12-14. This loop should print:
`1 3 5 7 9`

```
for (__12__; __13__; __14__) {
          System.out.print(i + " ");
}
```

41. What belongs in blank __12__?
    a. `int i = 0`
    b. `i = 0`
    c. `int i = 1`
    d. `i = 1`
    e. None of the above

42. What belongs in blank __13__?
    a. `i % 2 == 0`
    b. `i <= 11`
    c. `i < 9`
    d. `i % 2 != 0`
    e. `i < 10`

43. What belongs in blank __14__?
    a. `i += 2`
    b. `i++`
    c. `i % 2 != 0`
    d. `i % 2 == 0`
    e. `i % 2 == 1`

44. Which of the following reserved words will skip the remainder of the code in an iteration of a loop and exit the loop?
    a. `static`
    b. `break`
    c. `private`
    d. `continue`
    e. `final`

45. Which of the following reserved words will skip the remainder of the code in an iteration of a loop and then attempt the next iteration?
    a. `static`
    b. `break`
    c. `private`
    d. `continue`
    e. `final`

Use the following code to answer items 46 – 52. Assume all imports have been made. Be sure to notice the statement: `mascots.remove("UGA");` the while loop prints all of the elements in the `ArrayList` on the same line, whereas the for-each loop prints each elements on a separate line.

```
ArrayList<String> mascots = new ArrayList<String>();
mascots.add("Aubie");
mascots.add("UGA");
mascots.add("Mike");
mascots.add("Bully");
mascots.remove("UGA");
int i = __46__;
while (i < __47__) {
    System.out.print(mascots.get(i) + " ");
    __48__;
}
System.out.println();
for (__49__ name : mascots) {
    System.out.println(__50__ + " ");
}
```

46. What belongs in blank __46__?
    a. `-1`
    b. `0`
    c. `1`
    d. `n`
    e. `n + 1`

47. What belongs in blank __47__?
    a. `n`
    b. `n - 1`
    c. `mascots.size() - 1`
    d. `mascots.size())`
    e. `mascots.size()) + 1`

48. What belongs in blank __48__?
    a. `i--`
    b. `--i`
    c. `inc i`
    d. `i + 1`
    e. `i++`

49. What belongs in blank __49__?
    a. `String`
    b. `int`
    c. `double`
    d. `Integer`
    e. `Double`

50. What belongs in blank __50__?
    a. `Aubie`
    b. `mascots`
    c. `name`
    d. `address`
    e. `phone`

51. After all lines have executed, what does `mascots.get(2)` return?
    a. `Aubie`
    b. `UGA`
    c. `Mike`
    d. `Bully`
    e. `2`

52. After all lines have executed, what does `mascots.size()` return?
    a. `1`
    b. `2`
    c. `3`
    d. `4`
    e. None of the above

Fill in the numbered blanks in the following code by answering questions 53-57. The purpose of the code is to print the `String "Auburn wins big on the road!"` in reverse order using a `while` loop. The code should complete without throwing an exception. The correct output is:
`!daor eht no gib sniw nrubuA`

```
String wellDone = "Auburn wins big on the road!";
String reverse = "";
int index = __53__;

while (index >= __54__) {
    reverse += wellDone.charAt(__55__);
    __56__;
}

System.out.println(__57__);
```

53. What belongs in blank __53__?
    a. `wellDone.length() - 1`
    b. `index`
    c. `index--`
    d. `index++`
    e. `0`

54. What belongs in blank __54__?
    a. `wellDone.length() - 1`
    b. `index`
    c. `index--`
    d. `index++`
    e. `0`

55. What belongs in blank __55__?
    a. `wellDone.length() - 1`
    b. `index`
    c. `index--`
    d. `index++`
    e. `0`

56. What belongs in blank __56__?
    a. `wellDone.length() - 1`
    b. `reverse`
    c. `index`
    d. `index--`
    e. `0`

57. What belongs in blank __57__?
    f. `wellDone`
    g. `reverse`
    h. `index`
    i. `index++`
    j. `0`

Use the following code for questions 58 – 60. Note that `case 1` has no break statement.

```
int i = 1;
double x = 1.0, y = 2.0, z = 3.0;

do {

    switch(i) {
        case 1:
            x += 1.0;

        case 2:
            y += 2.0;
            break;

        default:
            z += 3.0;
            break;
    }

    i++;

} while (i < 5);
```

58. After the code has completed, what is the value of `x`?
    a. `2.0`
    b. `4.0`
    c. `6.0`
    d. `8.0`
    e. `9.0`

59. After the code has completed, what is the value of `y`?
    a. `2.0`
    b. `4.0`
    c. `6.0`
    d. `8.0`
    e. `9.0`

60. After the code has completed, what is the value of `z`?
    a. `2.0`
    b. `4.0`
    c. `6.0`
    d. `8.0`
    e. `9.0`