CSC 1103 - Midterm Exam 2

Version D

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Student Information

Name: _____

ID Number: _____

Instructions:

- Answer all questions in the space provided.

- Total points: 100.

- Topics: Loops, Strings, Math Methods, Static/Recursive Methods.

- **This exam contains 8 pages.**

Part I: Multiple Choice Questions (60 Points)

Instructions: Circle the letter of the single best answer. (3 Points Each)

1. What is the output of `1 + "2" + 3`?

    (A) `6`

    (B) `123`

    (C) `15`

    (D) Error

2. Which loop checks the condition AFTER executing the body?

    (A) `for`

    (B) `while`

    (C) `do-while`

    (D) `if`

3. Which of the following is true for **method overloading**?

    (A) Same name, different parameters

    (B) Different names, same parameters

    (C) Same name, identical parameters

    (D) Must have different return types

4. What is the first character of the String `"World"`?

    (A) `'W'`

    (B) `'o'`

    (C) `'d'`

    (D) `0`

5. Static methods are typically called using the:

    (A) `ClassName.method()`

    (B) `ObjectName.method()`

    (C) `new Method()`

    (D) `void.method()`

6. What is the result of `Math.min(-5, -10)`?

   (A) `-5`

   (B) `-10`

   (C) `5`

   (D) `10`

7. The `Scanner.nextInt()` method reads:

   (A) A word

   (B) A line

   (C) An integer

   (D) A double

8. Executing `"Hi".charAt(2)` results in:

   (A) `'i'`

   (B) `' '`

   (C) Exception

   (D) `null`

9. Which method parses `"2.5"` to a `double`?

   (A) `Double.parse("2.5")`

   (B) `Double.parseDouble("2.5")`

   (C) `Integer.parseInt("2.5")`

   (D) `"2.5".toDouble()`

10. How many total times is the method `f` called (including the first call) if we execute `f(3)`?

```
public static void f(int n) {
    if (n > 0) {
        f(n - 1);
    }
}
```

   (A) `1`

   (B) `3`

   (C) `4`

   (D) Infinite

11. What is the result of `"STOP".toLowerCase()`?

    (A) `"stop"`

    (B) `"Stop"`

    (C) `"sTOP"`

    (D) `"STOP"`

12. In `while(condition)`, the loop runs as long as the condition is:

    (A) `true`

    (B) `false`

    (C) `null`

    (D) `zero`

13. Which of the following results in **ambiguous invocation**?

    (A) Compiler finding multiple matching methods

    (B) Calling a private method

    (C) Calling a method with too many arguments

    (D) Using a reserved keyword as a method name

14. The index of the last character in String `str` is:

    (A) `str.length()`

    (B) `str.length()-1`

    (C) `str.size()`

    (D) `str.count()`

15. A base case is necessary in recursion to prevent:

    (A) Compilation

    (B) `StackOverflow`

    (C) Execution

    (D) Logic

16. Which method converts a string to all upper case letters?

    (A) `toUpperCase()`
    (B) `toUpper()`
    (C) `upper()`
    (D) `raise()`

17. What is the result of `"Rain".concat("Bow")`?

    (A) `Rain Bow`
    (B) `RainBow`
    (C) `BowRain`
    (D) `Error`

18. The keyword `break` inside a loop causes it to:

    (A) Skip one step
    (B) Restarts loop
    (C) Exits loop
    (D) Exits method

19. What is the length of `" A "` (space A space)?

    (A) `1`
    (B) `2`
    (C) `3`
    (D) `0`

20. If the character is not found, `indexOf` returns:

    (A) `0`
    (B) `1`
    (C) `null`
    (D) `-1`

Part II: Short Answer Questions (40 Points)

1. **(Fill in Blank)** `Math.max(5, 5)` returns _____.

2. **(Code)** Write a statement to cast `int i = 100` to a `char` variable `c`.

3. **(Code)** Write a loop that prints: `2, 4, 6, 8`.

4. **(True/False)** The `Math.random()` method can return the value `1.0`.

5. **(Fill in Blank)** A method calling a different method is a _____ call.

6. **(Code)** Write a static method `msg(String s)` that prints the passed string.

7. **(Code)** Write a loop printing numbers from **1 to 50** divisible by **3 and 5**.

8. **(Completion)** Fill in:

```
int j = 10;
while (_____) { // Run while j >= 0
    System.out.println(j);
    _____;
}
```

9. **(Tracing)** What is the output of `"A" + "B" + "C"`?

10. **(Code)** Write a statement to parse `"0"` into an `int`.