

**CS3353: Data Structures and Algorithm Analysis I  
Fall 2022**

**Review Quiz #5**

- Name only: \_\_\_\_\_
- Release date: Oct 05, 2022 (Wednesday)
- Total 5 pts

1. Which of the following is the best definition of a recursive method?

[1 pt]

- a) A method that iterates itself exactly 5 times.
- b) A method that invokes itself by name within the method.
- c) A method that will never iterate infinitely.
- d) A method that cannot be called more than once.

2. The program may run out of memory in a [            ].

[1 pt]

- a) non-recursive function call
- b) recursive function call
- c) condition when too many variables are declared
- d) none of the above

3. Which of the following problems can be solved using recursion?

[1 pt]

- a) finding Nth number of the Fibonacci sequence
- b) finding the factorial of a number
- c) finding the length of a string
- d) all of the above

4. What would happen if the base case is not defined in the recursive method?

[1 pt]

- a) Stack Overflow
- b) Stack Underflow
- c) Program runs forever
- d) None of the above

5. Predict output of following program

[1 pt]

```
#include <stdio.h>
int fun(int n) {
    if (n == 4)
        return n;
    else return 2*fun(n+1);
}

int main() {
    printf("%d ", fun(2));
    return 0;
}
```

- a) 4
- b) 8
- c) 16
- d) runtime error