CSC148 Summer 2016 Quiz 06 (15 minutes)

First Name …… Last Name …….. Lab room# ……

Read the following code for the recursive function **`Fibonacci`** Series, and trace `fib(4)`.

```
1. def fib(n):
2.     # pre: n >= 0
3.     # post: returns the
4.     #  nth Fibonacci number
5.
6.     if n < 2:
7.         return 1
8.     else:
9.         t1 = fib(n-1)
10.        t2 = fib(n-2)
11.        return t1 + t2
12.
13. if __name__=="__main__":
14.     print(fib(4))
```

You are required to use the following stack of activation records, where `line#` represents the return address, `n` is the function argument, and `t1` and `t2` are the local variables.

Hint: There are a total of 9 pushes, and we have already done the first two pushes for you.

line#:	n:	t1:	t2:		
~~line#: 10~~	~~n: 0~~	~~t1:~~	~~t2:~~	RETURN 1	15 16
~~line#: 9~~	~~n: 1~~	~~t1:~~	~~t2:~~	RETURN 1	13 14
~~line#: 10~~	~~n: 2~~	~~t1: 1~~	~~t2: 1~~	RETURN 1+1	12 17
~~line#: 10~~	~~n: 1~~	~~t1:~~	~~t2:~~	RETURN 1	9 10
~~line#: 10~~	~~n: 0~~	~~t1:~~	~~t2:~~	RETURN 1	6 7
~~line#: 9~~	~~n: 1~~	~~t1:~~	~~t2:~~	RETURN 1	4 5
~~line#: 9~~	~~n: 2~~	~~t1: 1~~	~~t2: 1~~	RETURN 1+1	3 8
~~line#: 9~~	~~n: 3~~	~~t1: 2~~	~~t2: 1~~	RETURN 2+1	2 11
~~line#: 14~~	~~n: 4~~	~~t1: 3~~	~~t2: 2~~	RETURN 3+2	1 18

Stack of Activation Records

line#:	n:	t1:	t2: