

## Sadie's Super Fabulous Practice Exam!

(1) Of the Big O's we discussed in class, which was the quickest (most efficient)?

(2) What is the Big O of selection sort?

- a)  $n^2 \log_2(n)$
- b)  $n \log_2(n)$
- c)  $n^2$

(3) Which of the following are mutable?

- a) Integers
- b) Boolean
- c) Lists
- d) Strings

(4) Returning more than one item from a function can create a temporary tuple.

**True**      **False**

(5) Given the two sets below, what will be displayed after ...

```
set1 = set([1, 2, 3, 4, 5])
set2 = set([4, 5, 6, 7])
```

- a) `print(set1.intersection(set2))`
  
- b) `print(set1.union(set2))`

(6) Write a single line of code that will print

```
Han Yolo
```

When given:

```
myString = "I lead a Han Yolo life"
```

(7) A stack is First In First Out (FIFO)

**True          False**

(8) If I push 5, 9, and 0 onto an empty queue in that order, my first .pop() will return?

- a) 5
- b) 9
- c) 0

(9) { "sara":7409, "tom":8009, "cynthia":2090, "greg":8009 } is a valid dictionary

**True          False**

(10) What will the following code display?

```
baz, bar, foo = True, 10, False
if foo:
    print("red")
elif not bar:
    print("green")
elif baz and foo:
    print("pink")
elif baz or foo:
    print("orange")
```

(11) Use the radix sort to sort the following list (try starting with a list of 8 zeroes)

```
myList = [ 7, 0 , 0 , 7 , 2 , 0 , 1 , 3 ]
```

(12) Name the different file I/O “modes” and briefly describe what they do and any problems they may cause if used incorrectly.

(13) What will the following code display when called with `baz(15, 1)`?

```
def baz(num1, num2):
    if num1 <= num2:
        return
    if num1 % num2 == 0:
        print(num2)
    baz(num1, num2 = num2 + 2)
```

(14) What will the following code display?

```
print(bakedPotato(2, [1, 2, 3, 4, 5, 6, 7]))

def bakedPotato(num, list1):

    if num == len(list1):
        return list1
    else:
        if num % 2 == 0:
            list1[num] = "Cheese"
        else:
            list1[num] = "Sour Cream"
        num += 1
        return bakedPotato(num, list1)
```

(15) If you change a variable passed into a function you must ALWAYS return that variable to make the changes to the variable persist in the code that called the function

**True**      **False**

(16) From first to last rank the order in which the following items will be evaluated

`+, *, -, /, %, **, ()`

(17) What must be true in order to run binary search?

(18) Write code that will create a set containing 1, 2, 4, 5, 6, 8 and then remove all the odd numbers from the set. (should be 3 lines)

(19) Write a recursive search function that will return true if the given number is found.

```
def search( num , list1 ):
```

(20) Write a recursive function that will print 1 through n in descending order (so it should start at n, and end at 1)

(21) Add a print statement that will cause the following for loop to print 1 through 100 in ascending order.

```
for i in range( 100 , 0 , -1 ):
```

(22) Write code that will make a 5 by 5 matrix filled with X's

(23) Write a function that will return True if any of the items in the list are duplicates and False if all the elements in the list are unique.

(24) I'm gonna ROCK this exam!

**True**      **False**