

CSC2-140 Foundations of Computer Science

Sample Exam 2 Part 1 October 2019

_____ name

This exam has 2 parts and this is part 1. This part is worth 60 points. Closed book, closed notes. You may not use any devices while taking this part of the exam.

1. (2 pts. each) Fill in the blanks.
 - a. A data type whose values cannot be changed (modifying functions create a totally new object that does not change the original one) is called a(n) _____ data type.
 - b. A(n) _____ is a variable or value used to select a member of an ordered collection, such as a character from a string, or an element from a list.
 - c. A function which has no side effects rather it only make changes to the calling program through their return values is called a(n) _____ .
 - d. A(n) _____ is a change in the state of a program made by calling a function that is not a result of reading the return value from the function.
 - e. A(n) _____ data type is a data type in which the values are made up of components, or elements, that are themselves values.
 - f. A(n) _____ is a part of a string (substring) specified by a range of indices.
 - g. You must _____ a file before you can read its contents. When you are done with a file, you should _____ it.

2. (8 pts.) What is the value of each of the following expressions:
 - a. 'Python'[1]
 - b. "Strings are sequences of characters."[5]
 - c. len("wonderful")
 - d. 'Mystery'[:4]
 - e. 'p' in 'Pineapple'
 - f. 'pear' not in 'Pineapple'
 - g. 'apple' > 'pineapple'
 - h. 'pineapple' < 'Peach'

3. (5 pts.) Write a code segment that will create a list called scores that will contain 1000 random integers.

4. (5 pts.) Write a code segment that will create a tuple called evens containing all the even integers between 2 and 100 inclusive. *Hint: recall that a tuple holding the integer 5 has to be represented as (5,) rather than just (5).*

5. (2 pts. each) What is printed by the following code segments?

a.

```
fr = {'one':'un', 'two':'deux', 'three':'trois'}
del fr['one']
print(len(fr))
```

b.

```
fr = {'one':'un', 'two':'deux', 'three':'trois'}
print('two' in fr)
```

c.

```
fr = {'one':'un', 'two':'deux', 'three':'trois'}
print(fr['four'])
```

6. (8 pts.) Consider the following 2 code segments, similar in structure:

```
#segment 1
```

```
s = 2
```

```
t = s
```

```
s = s + 1
```

```
print (t)
```

```
#segment 2
```

```
this = ["do", "re", "me", "fa"]
```

```
that = this
```

```
this[3] = "sol"
```

```
print (that)
```

Produce a reference diagram for each code segment. What will be printed by this code? Explain the difference.

7. (3 pts) What will the following code do?

```
this = "Oops that wat a typo"
```

```
this[12] = "s"
```

```
print(this)
```

8. (4 pts.) Consider the following function and function invocation. What is printed? Explain.

```
def change ( myList):
```

```
    myList.append('The End')
```

```
demo = [1,2,3]
```

```
change(demo)
```

```
print (demo)
```

9. (3 pts.) Write a Python statement that would create a dictionary to translate acronyms to their full string. Include these three—GIF is “graphics interchange format”, IP is “internet protocol”, and RAM is “random access memory”.

10. (4 pts.) Give what is printed out by the following code segments

a.

```
aList= ["Hello","Goodbye"]  
other = aList[:]  
print(aList == other)  
print (aList is other)
```

b.

```
str = 'Hello'  
print(str.find('h'))  
print(str.find('o'))
```