**1. What exactly is []?**

[ ] is a empty list, like a =[ ]

**2. In a list of values stored in a variable called spam, how would you assign the value 'hello' as the third value? (Assume [2, 4, 6, 8, 10] are in spam.)**

spam = [2, 4, 6, 8, 10]

spam[2] = 'hello'

spam

**Let's pretend the spam includes the list ['a', 'b', 'c', 'd'] for the next three queries.**

**3. What is the value of spam[int(int('3' \* 2) / 11)]?**

spam = ['a', 'b','c','d']

spam[int(int('3' \* 2) / 11)]

**4. What is the value of spam[-1]?**

spam = ['a', 'b','c','d']

spam[-1]

**5. What is the value of spam[:2]?**

spam[:2]

**Let's pretend bacon has the list [3.14, 'cat,' 11, 'cat,' True] for the next three questions.**

**6. What is the value of bacon.index('cat')?**

bacon = [3.14, 'cat', 11, 'cat', True]

bacon.index('cat')

**7. How does bacon.append(99) change the look of the list value in bacon?**

bacon = [3.14, 'cat', 11, 'cat', True]

bacon.append(99)

bacon

**8. How does bacon.remove('cat') change the look of the list in bacon?**

bacon = [3.14, 'cat', 11, 'cat', True]

bacon.remove('cat')

bacon

**9. What are the list concatenation and list replication operators?**

(+ ) is list concatenation operator and (\* ) is list replication operator

**10. What is difference between the list methods append() and insert()?**

append() Appends object to the end of the list

insert() Insert object before index

**11. What are the two methods for removing items from a list?**

a) remove(item) - removes first occurrence of an item

bacon = [3.14, 'cat', 11, 'cat', True]

bacon.remove('cat')

bacon

b) pop() - Remove and returns item at index (default last).

bacon = [3.14, 'cat', 11, 'cat', True]

bacon.pop()

bacon

**12. Describe how list values and string values are identical.**

* Both lists and strings can be passed to len()
* Have indexes and slices
* Can be used in for loops
* Can be concatenated or replicated
* Can be used with the in and not in operators

**13. What's the difference between tuples and lists?**

Lists : are mutable - they can have values added, removed, or changed. lists use the square brackets, [ and ]

Tuples : are immutable; they cannot be changed at all. Tuples are written using parentheses, ( and )

**14. How do you type a tuple value that only contains the integer 42?**

tuple = (42,)

tuple

**15. How do you get a list value's tuple form? How do you get a tuple value's list form?**

l1 = [2,3]

l = tuple(l1)

l

t1 = (3,4)

t = list(t1)

t

**16. Variables that "contain" list values are not necessarily lists themselves. Instead, what do they contain?**

They contain references to list values

17. How do you distinguish between copy.copy() and copy.deepcopy()?

The copy.copy() function will do a shallow copy of a list,

The copy.deepcopy() function will do a deep copy of a list. only copy.deepcopy() will duplicate any lists inside the list