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

It is an empty list.

1. **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]=’hello’

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

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

spam[int(int('3' \* 2) / 11)] = spam[int(int('33’) / 11)] = spam[int(33/ 11)]

spam[int(33/ 11)] = spam[int(3)] = spam[3] = 'd'

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

Ans : 'd'. Negative indexing starts from end.

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

Ans : ['a', 'b']

**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')?**

1

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

[3.14, 'cat,' 11, 'cat,' True’,99]

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

[3.14, ' 11, 'cat,' True’] Removes the first occurrence of the cat

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

The '+' operator can be used to concatenate two lists. It appends one list at the end of the other list and results in a new list as output.

The replication operator \* repeats a list a given number of times.

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

append() adds the element at the end of the list. While insert() add the element at the specified index.

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

“remove()” list method and “del” statement are two methods for removing items from a list.

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

* Both lists and strings can be passed to len() function.
* Both have indexes and slices.
* Both can be used in for loops.
* Both can be concatenated and replicated.
* Both can be used with the “in” and “not” in operators.

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

Lists are mutable. i.e. values can be added, removed and changed from or in lists. Lists uses square [] brackets.

Tuples are immutable. It uses () parenthesis.

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

(42,) Trailing comma is mandatory.

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

l=[1,2,3]

print(tuple(l))

Output: (1,2,3)

t=(1,2,3)

print(list(t))

Output: [1,2,3]

**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, while the copy.deepcopy() function will do a deep copy of a list.
* Shallow copy only creates a new variable that shares the reference of the original object. Any changes made to a copy of object will be reflected in the original object as well.
* In case of deep copy, a copy of object is copied in other object with no reference to the original. Any changes made to a copy of object will not be reflected in the original object.