1. What exactly is []?

Ans: In Python [] it represents an empty list. It’s a built in data structure.

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.)

Ans: we can assign the value ‘hello’ to third value with the help of indexing

Spam[2] = ‘hello’

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)]?

Ans: (‘3’ \* 2) = 33

33 / 11 = 3

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

**Ans = d**

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

Ans: d

In python, negative indexing used to access element from the end of a list.

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

Ans: [‘a’,’b’] this slicing method will extract up to the third element but not including it.

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')?

Ans: The value of bacon.index('cat') is **1**. In Python,

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

Ans: The append() method add the element to the end of the list so it will look like:

[3.14, 'cat,' 11, 'cat,' True, 99]

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

Ans: [3.14, 11, 'cat', True, 99]

Remove() methid will remove ‘cat’ which will appear first in the list.

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

Ans: The list concatenation in python is used as +, it will merge two lists into single list.

The replication operator in python is used as \*, it will repeat the element of an existing list into a specific no of times.

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

Ans: The append() method adds an element to the end of a list, while the insert() method adds an element at a specified position within the list.

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

Ans: a) remove() = This method removes the first occurrence of specified value. And syntax is list.remove(value)

b) pop() = This method removes the element at specified index or it will remove the last element of the list if not specified.

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

Ans: Both list values and string values are sequence of values, both supports slicing operation, both list and string allows accessing each element by indexing. Both supports concatenation.

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

Ans: The main difference between tuples and list is mutability, list are mutable, meaning it can be change, add or remove after defining the list. On the other hand, tuples are immutable, meaning it cannot be changed, added or removed after defining.

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

Ans: my\_tuple = (42,)

The comma after integer is necessary to not treat this as an normal integer 42.

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

Ans: To convert a list to a tuple use tuple() constructor,

To convert a tuple to a list use list() constructor.

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

Ans: In python, it doesn’t actually store the entire list directly but it store something like note that tells python where to find the list in computers memory, it helps python to work efficiently.

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

Ans: Use copy.copy() for simple objects or when you only need a shallow copy.

Use copy.deepcopy() when you need to create a completely independent copy of nested objects.