1. What exactly is []?

Ans. This is open and close square bracket. Use to create list.

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.

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

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. Value=d

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

Ans. Value=d

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

Ans. [b, c]

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. Value= 1 and 3

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

Ans. Value= [3.14, 'cat', 11, 'cat', True, 99]

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

Ans. If we use the code first time, the value will be: [3.14, 11, 'cat', True, 99]

If we use the code second time then the value will be: [3.14, 11, True, 99]

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

Ans.

* List concatenation operator is +, Ex: [1,2,3,4]+[5,6,7,8]
* List Replication operator is \*. EX: [1,2,3]\*3

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

Ans.

* append(): this function helps to add values in list but at end index.
* Insert(): this function helps to add value at any index. Ex: insert (index\_no, Value )

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

Ans. There are Two functions to remove a item from list. 1) remove(‘Value’), pop(index)

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

Ans.

* List is mutable and string is immutable by default but we can convert string mutable too.
* Both are indexed and we can per slicing operation on both datatypes.
* We can iterate data by for loop or built in function (iter)

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

Ans. The major difference is tuple are Immutable and list are Mutable.

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

Ans. x=(42,)

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

Ans. We can use function as list() on tuple() data or tuple on list data.

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

Ans. When we assign a list to a variable, the variable holds a reference to the list object in memory. This reference allows you to access and manipulate the list through the variable.

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

Ans.

* copy.copy() function creates a shallow copy of an object. It constructs a new object and then populates it with references to the objects found in the original.

Ex: import copy

original = [1, [2, 3]]

copied = copy.copy(original)

original[0] = 10

original[1].append(4)

print(original) # Output: [10, [2, 3, 4]]

print(copied) # Output: [1, [2, 3, 4]]

* Copy.deepcopy() function creates a deep copy of an object. It constructs a new object and recursively copies all objects found within the original, creating independent copies.

Ex: import copy

original = [1, [2, 3]]

copied = copy.deepcopy(original)

original[0] = 10

original[1].append(4)

print(original) # Output: [10, [2, 3, 4]]

print(copied) # Output: [1, [2, 3]]