1. What exactly is []?

Ans: - It is empty 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: - a[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: - ‘d’

4. What is the value of spam[-1]? Ans: ‘d’

5. 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')? Ans: 1

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

Ans: [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] #removes first occurrence of values

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

Ans: ‘+’ is list concatenation operator and ‘\*’ is list replication operator.

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

Ans: append() takes one positional argument (value to be appended) that appends value at the last position in the list. Insert() takes 2 positional argument (index, value to be appended) that inserts value at the index mentioned.

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

Ans: list.pop() -> removes item by its index position, list.remove() -> removes item first occurrence by value, list.clear() -> removes all items from the list, del list[] -> removes item by its index position or index slice.

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

Ans: list values and string values are not identical. It can be made identical using type-casting.

Example: l= [‘a’, ‘b’, ‘c’, ‘d’] s=’abcd’ list(s) -> [‘a’, ‘b’, ‘c’, ‘d’]

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

Ans: tuples are immutable collections and it supports only count and index operations whereas lists are mutable collections that supports manipulation operations like pop, insert, remove, extend, etc.

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

Ans: (42)

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

Ans: By type-casting such as tuple(list) for list value's tuple form and list(tuple) for tuple value's list form.

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

Ans: list values can be string, integer, floating-point number, complex number, set, dictionary or tuple data types.

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

Ans: Both shallow copy (copy.copy()) and deep copy (copy.deepcopy()) copies values from one variable to another variable. Only difference is that, in case of shallow copy, any changes made in copied new child variable reflects in the parent variable also. In case of deep copy, any changes made in child variable will not impact values in parent variable.