1. What exactly is []?

Ans. Square brackets are used to create list in python.

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] = ‘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]

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

Ans. In Python, the list concatenation operator is the + symbol. It is used to combine two or more lists into a new list.

list1 = [1, 2, 3]

list2 = [4, 5, 6]

result = list1 + list2

print(result) # Output: [1, 2, 3, 4, 5, 6]

The list replication operator is the \* symbol. It is used to create a new list that contains multiple copies of an existing list. For example:

list1 = [1, 2, 3]

result = list1 \* 3

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

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

Ans. The append() method is used to add an element to the end of a list. It takes a single argument, which is the value to be added. The insert() method, on the other hand, is used to add an element to a specific position in a list. It takes two arguments: the first argument is the index where the element should be added, and the second argument is the value to be added.

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

Ans. The remove() method: This method is used to remove the first occurrence of a specified element from a list. It takes a single argument, which is the value to be removed.

The pop() method: This method is used to remove an element from a specific position in a list. It takes a single argument, which is the index of the element to be removed. If no index is specified, the last element in the list is removed.

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

Ans. In python both list and string can be used for indexing, iteration, and slicing. For example we can use x[2], if x is a list and also if x is string.

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

Ans. Tuples are immutable. While list are mutable.

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

Ans. x = tuple(42)

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

Ans. To get a list value's tuple form, you can use the tuple() function. For example:-

my\_list = [1, 2, 3]

my\_tuple = tuple(my\_list)

print(my\_tuple)

Output: (1, 2, 3)

In this example, the tuple() function is used to convert the list my\_list to a tuple.

my\_tuple = (1, 2, 3)

my\_list = list(my\_tuple)

print(my\_list)

Output: [1, 2, 3]

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

Ans. For example :-

my\_list = [1, 2, 3]

my\_var = my\_list

In above example, my\_list is a list object containing the values [1, 2, 3]. The variable my\_var is then assigned to reference the same list object as my\_list. So although we might say that my\_var "contains" a list value, it's more accurate to say that it contains a reference to the list object stored in memory.

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

Ans. copy.copy() creates a shallow copy of an object. This means that it creates a new object with a new memory address. copy.deepcopy() creates a deep copy of an object. This means that it creates a completely new object with new memory addresses for all the objects inside it.