1. What exactly is []?

Solution: The empty list value, which is a list value that contains no items.

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.)

Solution: spam.insert(2, ‘hello’)

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

Solution: Let’s break it down:

‘3’\*2 = ‘33’ -> int(‘33’) = 33 -> 33/11 = 3.0 -> int(3.0) = 3 -> spam[3] -> spam element at index 3

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

Solution: The value of spam[-1] is the last element of list spam.

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

Solution: The value is the list of first 2 elements of spam (i.e., elements at index 0 and 1).

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’)?

Solution: The value is 1. (Index of first occurrence of element ‘cat’)

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

Solution: The element 99 will be appended towards the tail of the list. [3.14, ‘cat’, 11, ‘cat’, True, 99]

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

Solution: First occurrence of element ‘cat’ will be removed from the list. The list will look like: [3.14,11,’cat’,True,99]

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

Solution: The operator for the list concatenation is ‘+’, whereas the operator for replication is ‘\*’.

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

Solution: The append() method adds an item to the end of a list, whereas the insert() method inserts an item in a specified position in the list.

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

Solution: The methods are remove() and pop(). The remove() method helps to remove the very first occurrence of the given element matching from the list. The pop() method removes an element from the list based on the index given.

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

Solution: Lists and Strings are identical as they are both Sequences. The values that make up a list are called its elements. Lists are similar to strings, which are also sequences made up of a collection of characters, except that the elements of a list can be of any type.

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

Solution: The primary difference between tuples and lists is that tuples are immutable as opposed to lists which are mutable. It implies that it is possible to change a list but not a tuple.

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

Solution: (42,)

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

Solution: To get tuple form of a list value, we can use a builtin function tuple(). We can simply pass the list value as an argument to tuple() method and get the required tuple form. Similarly, we can use list() method to convert a tuple value to its list form.

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

Solution: They contain the references to the list values.

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

Solution: The copy() method creates reference to the original object. If you change copied object, the change is reflected in the original object. The deepcopy() method creates new object and does real copying of original object to a new one.