1. What exactly is []?
Ans:- [] is an empty 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:- You can assign the value ‘hello’ as the third value in a list called spam by using the index. In Python, indexing starts from 0, so the third value is at index 2. You can do this with spam[2] = 'hello'

Let's pretend the spam includes the list ['a', 'b', 'c', 'd'] for the next three queries.
Ans:- The expression spam[int(int('3' * 2) / 11)] evaluates to 'd’

3. What is the value of spam[int(int('3' * 2) / 11)]?
Ans:- The expression spam[int(int('3' * 2) / 11)] evaluates to 'd’

4. What is the value of spam[-1]?
Ans:- The expression spam[int(int('3' * 2) / 11)] evaluates to 'd’

5. What is the value of spam[:2]?
Ans:- spam[-1] gives the last item in the list spam. So, it will return 'd’.

Let's pretend bacon has the list [3.14, 'cat,' 11, 'cat,' True] for the next three questions.
Ans:- spam[:2] returns the first two items of the list spam. So, it will return [‘a’, ‘b’]

6. What is the value of bacon.index('cat')?
Ans:- The method bacon.index('cat') returns the index of the first occurrence of ‘cat’ in the list bacon. So, it will return 1.

7. How does bacon.append(99) change the look of the list value in bacon?
Ans:- The method bacon.append(99) adds the number 99 at the end of the list bacon. So, the new list 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:- The method bacon.remove('cat') removes the first occurrence of ‘cat’ from the list bacon. So, the new list will look like [3.14, 11, ‘cat’, True]6.

9. What are the list concatenation and list replication operators?
Ans:- The list concatenation operator is +, and the list replication operator is *.

10. What is difference between the list methods append() and insert()?
Ans:- The difference between the methods append() and insert() is that append() adds an element to the end of a list while insert() can add an element at any specific position in a list.

11. What are the two methods for removing items from a list?
Ans:- The two methods for removing items from a list are remove(), which removes the first occurrence of a value, and pop(), which removes an element at a specific index.

12. Describe how list values and string values are identical.
Ans:- List values and string values are similar in that they are both sequences that can be indexed and sliced. They can also be used with operators like + and *.

13. What's the difference between tuples and lists?
Ans:- The main difference between tuples and lists is that tuples are immutable (they cannot be changed after they are created) while lists are mutable.

14. How do you type a tuple value that only contains the integer 42?
Ans:- A tuple value that only contains the integer 42 can be typed as (42,).

15. How do you get a list value's tuple form? How do you get a tuple value's list form?
Ans:- You can get a list value’s tuple form using the tuple() function, and you can get a tuple value’s list form using the list() function.

16. Variables that "contain" list values are not necessarily lists themselves. Instead, what do they contain?
Ans:- Variables that “contain” list values actually contain references to list values.

17. How do you distinguish between copy.copy() and copy.deepcopy()?
Ans:- The copy.copy() function performs a shallow copy of a list, while copy.deepcopy() performs a deep copy. In a shallow copy, elements like lists within the original list are not copied but referenced. If you change these elements in one list, it changes in both lists. In a deep copy, all elements including lists within the original list are copied as new objects.