1. What exactly is []? This brackets in python represent 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.)

**ANSWER**

Since indexing in Python starts 0, in the list the third value has an index of 2, so I assign the string ‘hello’ to index 2 as follows;

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

spam[2] = 'hello'

spam=[2, 4, 'hello', 8, 10]

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)]?

The value is d

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

5. What is the value of spam[:2]? ['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')? **ANSWER IS 1**

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

**ANSWER:** Value 99 is added at the end of the list making the list have 5 indexes instead of 3

8. How does bacon.remove('cat') change the look of the list in bacon? Cat was duplicate so only indexes which has reduced

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

**ANSWERS:** List concatenation operators(+) combine list to a new list lst1+lst2 = newlist

List replication operators(\*) replicate by multiplication of list by an integer like( list1\*2)

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

ANSWER: append adds an element at the end of the list.example

Mylist=[1,3,2,4,] , mylist,append(5) mylist=[1,3,2,4,5]

while insert adds an element at a specific point/index in a list like mylist=[1,3,7,6]

Mylist.insert(2,5) meaning insert 5 at index 1

Output=mylist=[1,5,3,7,6]

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

ANSWERS:

**pop() method** removes the element at a specified index from the list and returns it.

If no index is specified, it removes and returns the last element in the list. Example:

Mylist.pop(2) will remove and return element in index 1 output=[1,5,7,6]

**The remove()** method removes the first duplicate of a specified value from the list.

It takes one argument, which is the value to be removed.

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

ANSWER:Concatenation and Replication: in booth lists and strings support concatenation using the + operator and replication using the \* operator.

They make use of len() function for length

Support index and slicing and also they follow ordered sequence

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

Answer: tuples are immutable list are mutable .list use [] tuples use ()

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

ANSWER; tuple=(42)

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

**ANSWER:** . How do you get a list value's tuple form? mylst=[1,2,34]

Mytuple=tuple(mylst)

**ANSWER** How do you get a tuple value's list form?

Mytuple(1,2,34)

Mylist=list(mytuple)

16. Variables that "contain" list values are not necessarily lists themselves. Instead, what do they contain**? ANSWER:** they contain pointers/references to the memory where the list is stored. They allow access to the lists values and operations but they don’t directly contain the list data**.**

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

**ANSWER:** copy.copy() creates a shallow copy, maintaining references to the original objects**.** means it creates a new object and inserts references to the same objects found in the original.

copy. deepcopy() creates a deep copy, recursively copying all objects, including nested ones, ensuring complete independence from the original. Creates new objects.