1. What exactly is []?

Ans: In Python, [] is used to specify a list. Here, it may signify an empty list.
e.g my_list=[]

2. In a list of values stored in a variable called spam, how would you assign the value 'hello' as the third v alue? (Assume [2, 4, 6, 8, 10] are in spam.)
Ans: spam=[2,4,6,8,10]
    spam[2]="hello" ## Putting the third value as "hello", python index starts from zero, so using 2

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: int('3' * 2) will be integer 33.

int('3' * 2) / 11) will be 3.

spam[int(int('3' * 2) / 11)] will output element on index 3 which is "d".

4. What is the value of spam[-1]?
Ans: The first element from the last which is "d".

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

Ans: It will output the values till the indec value less than 2. So, index value 0 and 1 which is ['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: The list has some syntax mistakes, but I am assuming they are typo mistakes in the assignments.

bacon.index('cat') will ouput 1. ## Gives out the first index of 'cat'.

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

Ans: It adds the integer 99 in the list at the end.
now the list is :[3.14, 'cat', 11, 'cat', True,99]

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

Ans: Removes the first "cat" element it encounters.
list is [3.14, 11, 'cat', True]

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

Ans: List concetation is Python is done by "+"
list1=[1,2]
list2=[3,4]
list3=list1+list2

list3 will be
[1,2,3,4]

List replications is done by "*"
list1=[1,2]
list2=list1*2

list2 will be [1,2,1,2]

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

Ans: append() method always the element at the end of the list.
insert() method can be used to add at a specific location.

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

Ans: remove() method and the pop() method can be used to remove the elements from a list.

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

Ans: They are sequential, iterable, slicing operations can be done, follow indexing. However, there are lot of differences too.

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

Ans:Following are some core differences between lists and tuples:
1. Lists are mutable while tuples are not.
2. Lists are specified by [] and tuples by ().
3. Lists have wide range of built in methods while tuples do not offer that.
4. Lists are less secure

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

Ans: mytuple=(42,)

The comma is important to dsintinguish it as tuple. It will just contain 42 as integer.

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

```
Ans:list1=[1,2,3,4]
    m=tuple(list1)
```

tuple keyword can be used to get the tuple form of a list.

```
m=(1,2,3,4)
list(m)
```

list() method can be used to get the list form of a tuple.

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

Ans: Variables that "contain" list values in Python are not actually storing the list itself, but rather a reference to the list. In other words, the variable holds a memory address that points to the location in memory where the list is stored.

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

Ans: copy() creates a shallow copy where references to nested objects are shared, while deepcopy() creates a deep copy where all objects, including nested objects, are independently copied.