1. What exactly is []?

**Q1. Ans-** [] is used in python to represent a list or to initialize a variable with list type.

Ex-

a=[]

a.append(1)

print(a) # [1]

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.)

**Q2 Ans –**

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

**spam.insert(2,'hello')**

**print(spam) #output -**

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)]?

**Q3 Ans – spam[int(3)) # Output - d**

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

**Q4** Ans – d

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

**Q5 Ans -** ['a', 'b']

Let's pretend bacon has the list [3.14, 'cat,' 11, 'cat,' True] for the next three questions.

**# It seems to be above given list has incorrect ‘ and ,. Fixed in the given below bacon list and will refer the same in the question.**

**bacon=[**3.14, 'cat', 11, 'cat', True**]**

6. What is the value of bacon.index('cat')?

**Q6 Ans – 1 # list.index() returns first element’s index.**

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

**Q7 Ans – It will append 99 as last element in the list. Bacon 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?

**Q8 Ans – list.remove(‘element’) removes the first presence of an element from the list.**

**Thus, bacon list will look like – [**3.14, 11, 'cat', True]

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

**Q9 Ans** – In python + operator is used as list concatenation operator. When we use + operator in between two or multiple lists. It just concatenates all the lists element into first list.

Ex –

d=[1,2,3,4]+[5,6,7]+[0,88,78,2]

print(d) # Output – [1,2,3,4, 5,6,7,0,88,78,2]

On the other hands – ‘\* ’ operator used to replicate a list number of times.

Ex- d=[1,2,3,4]\*3

# Above code will replicate list [1,2,3,4] 3 times. Output will be – [1,2,3,4,1,2,3,4,1,2,3,4]

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

**Q10 Ans – append() is used to append an element at the end of a list. However, insert method used to insert an element at a particular index.**

**Ex. a=[1,2,3]**

**a.append(5) # it will append 5 at the end of list a. list a will be like – [1,2,3,4,5]**

**a.insert(1,’Hello’) # It will insert element ‘Hello’ at 1st index in list a. [1,’Hello’,2,3,4,5]**

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

**Q11 Ans – Below are the two methods using that we can delete items from a list.**

1. **remove(element)- This method is used to remove an element permanently from the list. In case of duplicate values, it will delete first matching element first.**
2. **pop(index)- pop method is used to delete list elements using index number. By default it deletes last index of the list if no index is passed to the pop().**

**We can also delete list elements by del keyword. Below is the syntax.**

**del list[index]**

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

**Q12 Ans – list and string values are identical as we can access elements by index and both of these refer group of sequential data.**

**A string's length is the number of characters in the string; a list's length is the number of items in the list**.

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

**Q13 Ans- The basic difference between list and tuple is –**

**lists are mutable i.e., element assignments are possible in case of list however tuples are immutable.**

**Lists are represented by either [] or list(). However tuples are represented by either () or tuple()**

|  |
| --- |
| **The list is better for performing operations, such as insertion and deletion. However, Tuple data type is appropriate for accessing the elements.** |

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

**14 Ans - tup=(42,)**

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

**Q15 Ans – list values tuple – ([1,2,3],[4,5,6])**

**Tuple values list – [(1,2),(‘Hi’,2)]**

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

**Q16 Ans - Variables that contains list values will contain references to list values rather than list values themselves.**

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

**Q17 Ans -**

**copy.copy() create reference to original object.** **If we change copied object - we change the original object. However, copy.deepcopy() creates new object and does real copying of original object to new one. If we change anything to the deepcopy() object it won’t make changes to original one.**