**Assignment 4 Solution**

Q.1 => What exactly is []?

**Answer :-**

**[] is a representation of list. A mutable collection of values.**

Q.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 :-**

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

**spam[2] = “Hello”**

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)]?

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

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

**Answer :-**

**spam = [‘a’,’b’,’c’,’d’]**

**spam[int(int(‘3’\*2)/11)] = > d**

**spam[-1] => d**

**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')?

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

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

**Answer :-**

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

**bacon.index(‘cat’) => 1**

**bacon.append(99) => [3.14,’cat’,11,’cat’,True,99]**

**bacon.remove(‘cat’) => [3.14,11,’cat’,True,99]**

Q.9 => What are the list concatenation and list replication operators?

**Answer :-**

**The operator for list concatenation is ‘+’**

**The operator for list replication is ‘\*’**

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

**Answer :-**

**The only difference between append() and insert() is**

**append() :- append() method is used to add the value at the end of the list.**

**Insert() :- Insert() method allow us to add specific element at specific index of the list.**

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

**Answer :-**

1. **remove()**
2. **pop()**

Q.12 => Describe how list values and string values are identical.

**Answer :-**

**The similarity between list and string is that both are sequence.**

**The difference between list and string is lists are mutuable object and string are immutable object.**

**The second difference is lists can be of different data type while string contain only character.**

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

**Answer :-**

**The main difference between tuple and list is tuples are immutable object while lists are mutable object, that mean we can’t change the element of tuple.**

**Tuples are more memory efficient than list.**

**We use parathesis to represent tuple .**

**For example :- t1 =(1,2,3,4)**

**We use square brackets to represent list.**

**For example:- l1 = [1,2,3,4]**

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

**Answer :-**

**t1 = (42,)**

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

**Answer :-**

**We need to do type casting.**

**For Example:-**

**l1 = [1,2,3,4]**

**tuple(l1) This code return list value in tuple form.**

**t1 = (1,2,3,4)**

**list(t1) This code return tuple value in list form.**

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

**Answer :-**

**Variable will contain references to list value.**

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

**Answer :-**

**copy.copy() create reference to original object. If you change the copied object – you change the original object.**

**copy.deepcopy() create new object and does real copying of original object to new one.**