**Python – Assignment 4**

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| 1 | What exactly is []? |
|  | It describes an empty list. List is a type of data structure 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.)  Let's pretend the spam includes the list ['a', 'b', 'c', 'd'] for the next three queries. |
|  | spam[2] = ‘hello’ |
| 3 | What is the value of spam[int(int('3' \* 2) / 11)]? |
|  | ‘d’ |
| 4 | What is the value of spam[-1]? |
|  | ‘d’ |
| 5 | What is the value of spam[:2]?  Let's pretend bacon has the list [3.14, 'cat,' 11, 'cat,' True] for the next three questions. |
|  | [‘a’, ‘b’] |
| 6 | What is the value of bacon.index('cat')? |
|  | 1 |
| 7 | How does bacon.append(99) change the look of the list value in bacon? |
|  | [3.14, ‘cat’, 11, ‘cat’, True, 99] |
| 8 | How does bacon.remove('cat') change the look of the list in bacon? |
|  | [3.14, 11, ‘cat’, True] |
| 9 | What are the list concatenation and list replication operators? |
|  | List Concatenation – (+)  List Replication – (\*) |
| 10 | What is difference between the list methods append() and insert()? |
|  | Append() – Inserts the element only at the end of the list.  Insert() – Inserts the element at a given position in the list. |
| 11 | What are the two methods for removing items from a list? |
|  | del and remove() |
| 12 | Describe how list values and string values are identical. |
|  | List values and string values share these qualities:   * Both have indexes, elements can be accessed using index. Index based operation possible * Both can be used with ‘in’ operator * Both are collection type of data structures * Both can be concatenated / replicated. |
| 13 | What's the difference between tuples and lists? |
|  | The difference is that tuples are immutable and lists are mutable. That is, tuples ones defined can not be modified, while lists can be modified at any point of time. |
| 14 | How do you type a tuple value that only contains the integer 42? |
|  | (42,) |
| 15 | How do you get a list value's tuple form? How do you get a tuple value's list form? |
|  | Tuple to list: list(tup\_obj)  List to tuple: tuple(list\_obj) |
| 16 | Variables that "contain" list values are not necessarily lists themselves. Instead, what do they contain? |
|  | References to the values in the list |
| 17 | How do you distinguish between copy.copy() and copy.deepcopy()? |
|  | Copy.copy() does shallow copy of the list.  Copy.deepcopy() does a deep copy of the list, thus copying nested lists as well. |