**ASSIGNMENT 25**

1) . What is the difference between enclosing a list comprehension in square brackets and

Parentheses?

Ans: Enclosing a list comprehension in square brackets will create a list and enclosing in parenthesis will create a generator object.

2) What is the relationship between generators and iterators?

Ans: Every generator is an iterator but not every iterator is a generator.

3) What are the signs that a function is a generator function?

Ans: If a function has at least one yield statement than that function is a generator function.

4) What is the purpose of a yield statement?

Ans: Yield statement returns a value from the function by keeping all temporary function variable values in memory, unlike return statements where the values are destroyed after execution of the function. Also, yield statement produces generator objects which can be accessed by using next() function.

5) What is the relationship between map calls and list comprehensions? Make a comparison and

contrast between the two.

Ans: List comprehensions return the list of values and map calls return the map objects. For example, if we say:

List1=[x\*\*2 for x in range(5)]

print(list1) #output: [0,1,4,9,16]

In the above code we are using list comprehension and it is directly giving us another list.

If we write:

List1=[0,1,2,3,4]

list2=map(lambda x:x\*\*2, list1)

print(list2)#output: <map object at 0x7f61986b16c0>

print(list(list2)) #output:[0,1,4,9,16]

We are getting map object first and if we convert it into list it will give the same output as list comprehension. The main difference is that the list comprehension uses a lot of memory by story every value in the system, but map function will only store the required values, therefore, becoming more memory efficient.