**St. Aloysius Sr. Sec. School, Cantt., Jabalpur**

**Class 12 Commerce (IP)**

**Unit 1** **Dated: 27/4/2020**

**Week 4:** **Solved and unsolved questions for you.**

**(Do not worry for the sequence of questions. Few are not included)**

## MEMORY BYTES

List is a sequence data type.
A list is a mutable sequence of values which can be of any type and they are indexed by integer.
A list is created by placing all the items (elements) inside a square bracket [ ], separated by commas.
Also, a list can even have another list as an item. This is called nested list.
Another way of creating tuple is built-in function list().
Traversing a list means accessing each element of a list. This can be done by using looping statement either for or while.
List slicing allows you to obtain a subset of items.
You can combine lists to form a new list. The '+' operator simply performs a concatenation with list.
The 'in' operator checks whether a given element is contained in a list. It returns true if element appears in the list, otherwise returns false.
You can compare two lists by using comparison operators, *i.e.*, <,>,==,!= etc.
We can also create a new list from an existing list using list-slicing.
append() method adds a single item to the existing list. It doesn't return a new list; rather it modifies the original list.
The extend() adds all the items of a list (passed as an argument) at the end of another list.
pop() function removes the element from the specified index, and also returns the element which was removed.
del statement removes the specified element from the list, but does not return the deleted value.
remove() function is used when we know the element to be deleted, not the index, of the element.
There are various other list methods available like len(), mean(), index(), clear(), count(), insert(), reverse(), sort(), sorted().

## LL IN THE BLANKS

1. A list is a _____ data type.
2. Lists need not be always _____ .
3. Lists are indexed by an _____ .
4. In a list, elements are enclosed in _____ .
5. Lists are _____, you can update or edit the list.
6. _____ method is used to delete elements from a list if index is not known.
7. _____ is to arrange the list in an ascending or descending order.
8. _____ method is used to delete elements from a list, if index is known.
9. The _____ method adds a single item to the existing list at the end.
10. You can compare two lists by using _____ operators.

## ANSWERS TO FILL IN THE BLANKS

1. sequence
2. homogeneous
3. integer
4. square brackets
5. mutable
6. remove()
7. Sorting
8. pop()/del()
9. append()
10. comparison

## SOLVED QUESTIONS

**1.** What is a list?

**Ans.** A list is a mutable sequence of values which can be of any type and they are indexed by an integer.

**2.** What are the differences between lists and strings?

**Ans.** The differences between lists and strings are:

(a) Strings cannot be changed, but lists are mutable, they can be changed.

(b) Lists use square brackets unlike strings which are enclosed in quotes.

(c) Strings store single type of elements but list can store elements of different types.

**3.** What is the difference between extend() and append()?

**Ans.** The append() method adds a single item to the existing list. It doesn't return a new list, rather it modifies the original list. The extend() adds all the items of a list at the end of another list.

**4.** What is the difference between pop() and remove()?

**Ans.** pop() function removes the element from the specified index, and also returns the element which was removed. *If no index value is provided in pop(), then last element is deleted.* Function remove() is used when we know the element to be deleted but not the index of the element.

**5.** Following are the statements for creating lists. Find the errors in the statements and rewrite the s after correcting them.

(a) `L1= 1,6,a,8`

(b) `L2=(10)`

(c) `L1=[[0,1,2,3]['my','book']]`

(d) `L1=[[0,1,2,3),[4,5,6]]`

(e) `L1=['a','b','c'[1,2,3,A])`

(f) `L1=[Aman,Lakshay,Aushim,Nishant]`

**Ans.** (a)
```
L1= [1,6,'a',8]
```
(b)
```
L2=[10]
```
(c)
```
L1=[[0,1,2,3],['my','book']]
```
(d)
```
L1=[[0,1,2,3],[4,5,6]]
```
(e)
```
L1=['a','b','c',[1,2,3,'A']]
```
(f)
```
L1=['Aman','Lakshay','Aushim','Nishant']
```

**6.** Suppose `L=["abc",[6,7,8], 3,'mouse']`

Consider the above list and answer the following:

(a) `L[3:]`

(b) `L[::2]`

(c) `L[1:2]`

(d) `L[1][1]`

**Ans.** (a)
```
L[3:]
['mouse']
```
(b)
```
L[::2]
['abc', 3]
```
(c)
```
L[1:2]
[[6, 7, 8]]
```
(d)
```
L[1][1]
7
```

**10.** Write the output of the following:

```
L=[]
L1=[]
L2=[]
for i in range(6,10):
  L.append(i)
for i in range(10,4,-2):
  L1.append(i)
for i in range(len(L1)):
  L2.append(L[i]+L1[i])
L2.append(len(L)-len(L1))
print(L2)
```

**Ans.** `[16, 15, 14, 1]`

**11.** Write the output of the following:

(a)
```
L=[1,2,3,4,5,6,7,8,9,10]
S=[ i for i in L if i%2==0]
print(S)
```

(b)
```
A=[1,2,3,4]
B=[value*3 for value in A]
print(B)
```

**Ans.** (a) `[2,4,6,8,10]`

(b) `[3,6,9,12]`

## UNSOLVED QUESTIONS

1. What are the various ways to create a list?
2. What are the similarities between strings and lists?
3. Why are lists called mutable data type?
4. What is the difference between insert() and append() methods of a list?
5. Suppose `L=[10,["few","facts","fun"], 3,'Good']`

   Consider the above list and answer the following:

   (i) `L[3:]`
   (ii) `L[::2]`
   (iii) `L[1:2]`
   (iv) `L[1][1]`

6. Find the output of the following:

```
L1=[1, 2, 3]
L2=[4,5,6]
print(L1+ list ("45"))
print(L1.pop())
L1.remove(2)
print(L1)
L1.extend(L2)
print(L2)
```

**********end**********