Class - XI
Computer Science (083)
Worksheet on Lists

	Objective Type Questions
1	Which of the following will create an empty list? (a) L = [] (b) L = list() (c) L = list(0) (d) L = List(empty)
2	Which of the following will return the last element of a list L with 5 elements? (a) L[5] (b) L[4] (c) L[-1] (d) L[6]
3	If L = [1, 2] then L*2 will yield (a) [2,1, 2, 1] (b) [2,4] (c) [1, 1, 2, 2] (d) [1, 2, 1, 2]
4	Given a list L = [10, 20, 30, 40, 50 , 60 , 70], what would L[2 :-2] return? (a) [10, 20, 30, 40] (b) [20, 30, 40, 50] (c) [20, 30, 40] (d) [30, 40, 50]
5	Given a list L = [10, 20, 30, 40, 50 , 60 , 70], what would L[-4 :-1] return? (a) [20, 30, 40] (b) [30, 40, 50] (c) [40, 50, 60] (d) [50, 60, 70]
6	Given a list L = [10, 20, 30, 40, 50 , 60 , 70], what would L[-3 : 99] return? (a) [20, 30, 40] (b) [30, 40, 50] (c) [40, 50, 60] (d) [50, 60, 70]

7	What is printed by the Python code? **print(list(range(3))** (a) [0, 1, 2, 3] (b) [1, 2, 4] (c) [0, 1, 2] (d) 0, 1, 2
8	What is the output when we execute **list("hello")** ? (a) ['h', 'e', 'l', 'l', 'o'] (b) ['hello'] (c) ["hello"] (d) ['olleh']
9	What gets printed? **names = ['Hasan', 'Balwant', 'Sean','Dia']** **print(names[-1][-1])** (a) H (b) n (c) Hasan (d) Dia
10	Which of the following is a standard Python library function and not an exclusively list function? (a) append() (b) remove() (c) pop() (d) len()
11	Which of the following will always return a list? (a) max() (b) min() (c) sort() (d) sorted()
12	Which of the following searches for an element in a list and return its index? (a) search() (b) find()

	(c) index() (d) locate()
	FILL IN THE BLANKS
1	Lists are _____ data types and thus their values can be changed.
2	To create an empty list, the function _____ can be used.
3	The _____ operator adds one list to the end of another list.
4	The _____ operator replicates a list.
5	To check if an element is in a list, _____ operator is used.
6	To delete a list slice from a list, _____ is used.
7	A _____ list contains another list as its member.
8	The _____ function is used to insert an element at a designated position in a list.
9	The _____ function is used to delete an element from a designated index in a list.
10	The _____ function can append a list of elements to a list.
11	The _____ function sorts a list and makes changes in the list.
12	The _____ function sorts a list and returns another list.
	TRUE / FALSE QUESTIONS
1	The list and copy are similar functions.
2	The pop and remove our similar functions.
3	A = [ ] and A = list() will produce the same result.
4	A List once created cannot be changed.
5	To sort a list, sort() and sorted() both can be used.
6	The extend() adds a single element to a list.

7	The append() can add an element in the middle of list
8	The insert() can add an element in the middle of a list.
9	The del statement can only delete list slices and not single elements from a list.
10	The del statement can work similar to the pop() function.
	In the following questions a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as : **(a) Both A and R are true and R is the correct explanation for A** **(b) Both A and R are true and R is not the correct explanation for A** **(c) A is True but R is False** **(d) A is false but R is True**
1	**Assertion:**List indexing means the positioning of the elements in a list. . **Reason:** Each element of a list is available at a defined index. The indexing in a list can be defined into ways (forward and backward). The forward indexing starts with a 0th index for the first element whereas the backward indexing starts with -1.
2	**Assertion:** The pop() function is also used to delete an element from the given index of a list. **Reason:** If no argument is given to the pop() function, then the last element will be deleted (by default) otherwise, the element from the specified index will be deleted. Moreover it also returns the element deleted from the list.
3	**Assertion:** Binary search is the technique of searching in an element that begins from the starting index of the list and continuous searching the existence of an element until it reaches the end of the list. **Reason:** In this technique a flag variable is used that sets the true or false value to decide whether the search is successful or unsuccessful respectively. This technique of searching is called the sequential search.
4	**Assertion:** The sort function is used to arrange the elements of a list in a specific order. . **Reason:** The sort function is applicable to all types of elements such as

	integers, float complex numbers or string. It arranges the elements of a list in the ascending order (by default).
5	**Assertion:** In Python, the list is a mutable collection of data. **Reason:** It means that any change or alteration in data, is maintained in the same place. The updated collection will use the same address for its storage.
	Answer the following:
1	How are lists different from the strings when both are sequences?
2	Write the most appropriate list method to perform the following task. (a) Delete a given element from the list. (b) Delete 3rd element from the list. (c) Add an element at the end of the list. (d) Add elements of a list at the end of a list.
3	What is the difference between sort() and sorted() functions?
4	What will be the output of the following statements? (a) **lst1 = [12,32, 65, 26, 80, 10]** **lst1.sort()** **print(lst1)** (b) **lst1 = [12,32, 65, 26, 80, 10]** **lst2 =sorted(lst1)** **print(lst1)** **print(lst2)** (c) **lst1 =[1,2,3,4,5,6,7,8,9,10]** **print(lst1[::-2])** **print(lst1[:3] +lst1[3:])** (d) **lst1 =[1,2,3,4,5]** **lst1[len(lst1)-1]**

5	What will the following code result in ? **L1 = [1, 3, 5, 7, 9]** **print(L1 == L1.reverse())** **print(L1)**
6	Predict the output: **my_list=['p', 'r', 'o', 'b', 'l', 'e', 'm']** **my_list[2:3] = [ ]** **print(my_list)** **my_list[2:5] =[ ]** **print(my_list)**
7	Predict the output: **List1 = [13, 18, 11, 16, 13, 18, 13]** **print(List1.index(18))** **print(List1.count(18))** **List1.append(List1.count(13))** **print(List1)**
8	Predict the output: **Odd = [1,3,5]** **print((Odd + [2, 4, 6])[4])** **print((Odd +[12, 14, 16])[4] - (Odd +[2, 4, 6])[4])**
9	Predict the output: **a, b, c=[1,2], [1, 2], [1, 2]** **print(a == b)** **print(a is b)** Are the outputs the same? Are the outputs different? Why?
10	Differentiate between the following operations: (a) append() and extend() (b) remove() and pop() (c) index() and count() (d) insert() and find()

	Case study based Questions
1	Given is a code snippet for list operations: **L1 = [1, 2, 'a','b', 'c','$', '@']** **p = L1.index('$')** **q = L1.pop()** **r = L1.insert(3,6)** **s = L1.sort()** With reference to the above code snippet, Identify the function used for each of the following purposes: (a) To place an element at a specified position in the list. (b) To delete the last element of the list. (c) To arrange the elements of the list in the ascending order. (d) To know the position of an element in the list.
2	Two lists are as shown below: L1 = [‘a’ , ‘e’, ‘i’, ‘o’, ‘u’] L2 = [12, 13, 14] Predict the output in the following code snippets: (a) L3 = L1.extend(L2) print(L3) (b) L3 = L1[1:4] + L2[::] print(L3) (c) del L1[1:3] print(L1) (d) print(L3 not in L2)
	Programming Assignment
1	Write a program to accept a list of integers from the user. Find the product of the integers and display the result. Example: Input Enter list : [1,2,3,4,5]

	Output 120
2	Write a program to accept integer numbers in a list. Find and display the sum of even and odd numbers. Example: Input Enter list : [1,2,3,4,5] Output Odd Sum 9 Even Sum 6
3	Write a program to accept a list of integers from a user. Replace each even value with its thrice value and each odd value with its twice value. Print the modified list. Example Input Enter list [1,2,3,4,5,6] Output [2, 6, 6, 12, 10, 18]
4	Write a program to accept a list of integers from a user. Find the largest and the second largest element present in the list without applying any sorting method. Example Input [11,26, 17, 18,10,20, 21,15, 13, 26] Output Largest 26 Second Largest 21
5	Write a program to input a list of integers. Display the unique and duplicate elements present in the list. Example Input [5,6, 7, 5,8,9, 3,4,6] Output Unique [7, 8,9,3,4] Duplicate [5, 6]