	ITER, SIKSHA 'O' ANUSANDHAN (Deemed to be University)		Assignment
Branch	**CAIML**	Programme	**B. Tech**
Course Name	**Security and Networking with Python**	Semester	**IV**
Course Code	**CSE 2157**	Academic Year	**2023-24**
Assignment- 6		**Topic: Mutable and Immutable Objects**	
Learning Level (LL)	**L1**: Remembering	**L3:** Applying	**L5**: Evaluating
	L2: Understanding	**L4**: Analysing	**L6**: Creating

Q's	Questions	Cos	LL
1	Write a Python script to concatenate the following dictionaries to create a new one. Sample Dictionary : dic1={1:10, 2:20} dic2={3:30, 4:40} dic3={5:50,6:60} Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}	**CO1**	**L3**
2	Write a Python script to generate and print a dictionary that contains a number (between 1 and n) in the form (x, x*x). Sample Dictionary (n = 5) : Expected Output : {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}	**CO1**	**L3**
3	Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are the square of the keys. Sample Dictionary {1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225}	**CO1**	**L3**
4.	Write a Python program to check if a dictionary is empty or not.	**CO1**	**L3**
5.	Write a Python program to combine two dictionary by adding values for common keys. d1 = {'a': 100, 'b': 200, 'c':300} d2 = {'a': 300, 'b': 200, 'd':400} Sample output: Counter({'a': 400, 'b': 400, 'd': 400, 'c': 300})	**CO1**	**L3**
6.	Write a Python program to print all distinct values in a dictionary. Sample Data : [{"V":"S001"}, {"V": "S002"}, {"VI": "S001"}, {"VI": "S005"}, {"VII":"S005"}, {"V":"S009"},{"VIII":"S007"}]	**CO1**	**L3**
7.	Write a Python program to create and display all combinations of letters, selecting each letter from a different key in a dictionary. Sample data : {'1':['a','b'], '2':['c','d']} Expected Output: ac ad bc bd	**CO1**	**L3**
8.	Write a Python program to combine values in a list of dictionaries. Sample data: [{'item': 'item1', 'amount': 400}, {'item': 'item2', 'amount': 300}, {'item': 'item1', 'amount': 750}] Expected Output: Counter({'item1': 1150, 'item2': 300})	**CO1**	**L3**

9.	Write a Python program to create a dictionary from a string. Note: Track the count of the letters from the string. Sample string : 'w3resource' Expected output: {'w': 1, '3': 1, 'r': 2, 'e': 2, 's': 1, 'o': 1, 'u': 1, 'c': 1}	**CO1**	**L3**
10.	Write a Python program to count the values associated with a key in a dictionary. Expected Output: 6 2	**CO1**	**L3**
11.	Write a Python program to get the top three items in a shop. Sample data: {'item1': 45.50, 'item2':35, 'item3': 41.30, 'item4':55, 'item5': 24} Expected Output: item4 55 item1 45.5 item3 41.3	**CO1**	**L3**
12.	Write a Python program to sort Counter by value. Sample data : {'Math':81, 'Physics':83, 'Chemistry':87} Expected data: [('Chemistry', 87), ('Physics', 83), ('Math', 81)]	**CO1**	**L3**
13.	Write a Python program to create a dictionary from two lists without losing duplicate values. Sample lists: ['Class-V', 'Class-VI', 'Class-VII', 'Class-VIII'], [1, 2, 2, 3] Expected Output: defaultdict(<class 'set'>, {'Class-V': {1}, 'Class-VI': {2}, 'Class-VII': {2}, 'Class-VIII': {3}})	**CO1**	**L2, L3**
14.	Write a Python program to match key values in two dictionaries. Sample dictionary: {'key1': 1, 'key2': 3, 'key3': 2}, {'key1': 1, 'key2': 2} Expected output: key1: 1 is present in both x and y	**CO1**	**L3**
15.	Write a Python program to create a dictionary of keys x, y, and z where each key has as value a list from 11-20, 21-30, and 31-40 respectively. Access the fifth value of each key from the dictionary. {'x': [11, 12, 13, 14, 15, 16, 17, 18, 19], 'y': [21, 22, 23, 24, 25, 26, 27, 28, 29], 'z': [31, 32, 33, 34, 35, 36, 37, 38, 39]} 15 25 35 x has value [11, 12, 13, 14, 15, 16, 17, 18, 19] y has value [21, 22, 23, 24, 25, 26, 27, 28, 29] z has value [31, 32, 33, 34, 35, 36, 37, 38, 39]	**CO1**	**L3**
16.	Write a Python program to drop empty items from a given dictionary. Original Dictionary: {'c1': 'Red', 'c2': 'Green', 'c3': None} New Dictionary after dropping empty items: {'c1': 'Red', 'c2': 'Green'}	**CO1**	**L3**
17.	Write a Python program to filter a dictionary based on values. Original Dictionary: {'Cierra Vega': 175, 'Alden Cantrell': 180, 'Kierra Gentry': 165, 'Pierre Cox': 190} Marks greater than 170: {'Cierra Vega': 175, 'Alden Cantrell': 180, 'Pierre Cox': 190}	**CO1**	**L3**
18.	Write a Python program to convert more than one list to a nested dictionary. Original strings: ['S001', 'S002', 'S003', 'S004'] ['Adina Park', 'Leyton Marsh', 'Duncan Boyle', 'Saim Richards']	**CO1**	**L3**

	[85, 98, 89, 92] Nested dictionary: [{'S001': {'Adina Park': 85}}, {'S002': {'Leyton Marsh': 98}}, {'S003': {'Duncan Boyle': 89}}, {'S004': {'Saim Richards': 92}}]		