1. WAP to create an empty dictionary and add elements to it one by one. The values of different elements should be of different data types. Perform the following operations on it.

(i) Display all keys
(ii) Display all values
(iii) Display all items

2. Create a dictionary as follows:

d1 = {‘k1‘: ‘value1’, ‘k2’ : {‘k2a’ : ‘apple’, ‘k2b’ : 123, ‘k2c’ : [1,2,3]}, ‘k3’ : [4, ‘orange’, 5]}

Perform the following operations on the above dictionary.

(i) Grab the 2nd element from the value of key ‘k2c’
(ii) Grab the 4th element from the value of k3’s 2nd element
(iii) Grab the letter ‘l’ from ‘apple’
(iv) Add 5 to the last element of value of ‘k2c’
(v) Convert the word orange to uppercase

3. Create a tuple with different elements and demonstrate its immutable behaviour by trying to modify an element.

4. Create a tuple with different elements and perform 5 different slicing operations on it.

5. Create a set with different elements and demonstrate it unique element feature by trying to add an already existing element.

6. Create 2 lists. First list contains keys and second list contains values. Use these lists to create a dictionary.

7. Create 2 dictionaries and merge them.

8. Create a list with elements having multiple entries and grab the unique elements.

9. Reassign 'hello' in this nested list to say 'goodbye' instead: list3 = [1,2,[3,4,'hello']]

10. Grab the word hello from the following nested dictionary:

d = {'k1':[1,2,{'k2':['this is tricky',{'tough':[1,2,['hello']]}]}]}