Dictionary

PART 1
Objective Questions

• Multiple Choice Questions

1. What will be the output of the following Python code snippet?

```
d1 = {"Neha":86, "Yash":92}
d2 = {"Neha":86, "Yash":88}
d1 > d2
```

(a) True (b) False
(c) Error (d) None

Ans. (*c*) Arithmetic operator '>' cannot be used with dictionaries.

2. What will be the output of the following Python code?

```
Dic1={}
Dic1[2]=85
Dic1[1]=[22,23,24]
print(Dic1[1][1])
```

(a) [22,23,24] (b) 23
(c) 22 (d) Error

Ans. (*b*) Now, Dic1={2 : 85, 1 : [22, 23, 24]}. Dic1[1][1] refers to second element having key on position 1, i.e. 23.

3. What will be the output of the following Python code?

```
dic1 = {0: 'One', 1: 'Two', 2: 'Three'}
for x, y in dic1:
    print(x, y)
```

(a) 0 1 2 (b) One Two Three
(c) 0 One 1 Two 2 Three (d) Error

Ans. (*d*) It will give Error, because objects of type int are not iterable.

4. What will be the output of the following Python code snippet?

```
d = {"Neha" : 140, "Paras" : 145}
print(list(d.keys()))
```

(a) ["Neha", "Paras"]
(b) ["Neha" : 140, "Paras" : 145]
(c) ("Neha", "Paras")
(d) ("Neha" : 140, "Paras" : 145)

Ans. (*a*) The output of the code is a list containing only keys of the dictionary d, with the help of d.keys() method.

5. What will be the output of the following Python code snippet?

```
dic1 = { 1 : 'One', 2 : 'Two', 3 : 'Three'}
dic1 = {}
print (len(dic1))
```

(a) 1 (b) 0 (c) 3 (d) 2

Ans. (*b*) In the second line of code, the dictionary becomes an empty dictionary. Thus, length = **0**.

6. What is the output of following code?

```
dic1 ={11, 12, 13}
for i in dic1 :
    print (i)
```

(a) 11 12 13
(b) {11, 12, 13}{11, 12, 13} {11, 12, 13}
(c) Error
(d) None

7. What is the output of following code?

```
>>> dic = {'A' : 'One', 'B' : 'Two' , 'C' : 'Three' }
>>> dic.keys ( )
```

(a) ['B', 'C', 'A'] (b) dict_keys [('B', 'C', 'A')]
(c) dict_keys (['B', 'C', 'A']) (d) keys (['B', 'C', 'A'])

Ans. (*c*) keys() returns a view object that displays a list of all the keys in the dictionary.

In given dictionary, A, B, C are keys, while One, Two, Three are values.

8. Which one of the following is correct?

(a) In Python, a dictionary can have two same keys with different values.
(b) In Python, a dictionary can have two same values with different keys.
(c) In Python, a dictionary can have two same keys or same values but cannot have two same key-value pair.
(d) In Python, a dictionary can neither have two same keys nor two same values.

Ans. (*b*) In Python, a dictionary can have two same values with different keys.

9.

```
d1={"abc":5,"def":6,"ghi":7}
print(d1[0])
```

What will be the output of above Python code?

(a) abc (b) 5 (c) {"abc":5} (d) Error

Ans. (*d*) The given code will show an error. Because 0 is not a key in given dictionary abc, def and ghi considered as keys to the given dictionary.

10. Which of these about a dictionary is false?
(a) The values of a dictionary can be accessed using keys.
(b) The keys of a dictionary can be accessed using values.
(c) Dictionaries are not ordered.
(d) Dictionaries are mutable.

Ans. (*b*) The values of a dictionary can be accessed using keys but the keys of a dictionary cannot be accessed using values.

11. Keys of a dictionary are
(a) mutable (b) immutable
(c) Both (a) and (b) (d) None of these

Ans. (*b*) Keys of a dictionary must be unique and of immutable data types such as strings, tuples etc. Immutable means they cannot be changed after creation. But in dictionary, key-value can be repeated and be of any type.

12. Dictionaries are also called
(a) mappings (b) hashes
(c) associative arrays (d) All of these

Ans. (*d*) Dictionaries are also called mappings, hashes and associative arrays. These are unordered collection of data values that stored the key : value pair instead of single value as an element. Dictionaries are used to map or associate things you want to store the keys you need to get them.

13. …… method is used to delete key and respective value from dictionary.
(a) del() (b) delete()
(c) pop() (d) remove()

Ans. (*c*) pop() method removes an element from the dictionary. It removes the element which is associated to the specified key. If specified key is present in the dictionary , it removes and returns its value. If the specified key is not present, it throws an error KeyError.

14. Which function returns the value for the given key, if present in the dictionary?
(a) items() (b) get()
(c) clear() (d) keys()

Ans. (*b*) get() method returns the value for the given key, if present in the dictionary. It takes maximum of two
Syntax `dictionary_name.get (key [,value])`

15. Each key-value pair in a dictionary is separated by
(a) ; (b) :
(c) , (d) <

Ans. (*b*) Each key-value pair in a dictionary is separated by colon (:) whereas each key is separated by a comma (,).

16. A dictionary is used to …… things you want to store the keys you need to get them.
(a) map (b) associate
(c) Both (a) and (b) (d) None of these

Ans. (*b*) A dictionary is used to map or associate things you want to store the keys you need to get them.

17. Which type of brackets are used to create dictionary?
(a) [ ] (b) ( )
(c) < > (d) { }

Ans. (*d*) Dictionary is listed in curly brackets, inside these curly brackets, keys and values are declared.
Syntax `dictionary_name = {key1 : value1, key2 : value2, ...}`

18. …… operators are used with dictionary to check whether a specific key is present in dictionary or not.
(a) Comparison (b) Membership
(c) Logical (d) Access

Ans. (*b*) in and not in membership operators are used with dictionary to check whether a specific key is present in dictionary or not. If it is present, then it will give True, otherwise False.

19. Which of the following dictionary means putting a dictionary inside another dictionary?
(a) Nested (b) Sub (c) Classic (d) Internal

Ans. (*a*) Nested dictionary means putting a dictionary inside another dictionary. Nesting is of great use as kind of information we can model in programs expanded greatly.

20. What will be the output of following code?
```
dic = {"Ansh" : 25, "Ritu" : 26}
dic ['Ritu']
```
(a) 25 (b) 26
(c) Ritu : 26 (d) "Ritu" : 26

Ans. (*b*) In Python, to access the element from a dictionary, keys are used. "Ritu" is the key whose value is 26, so output is 26.

• Case Based MCQs

21. Consider the following dictionary :
```
dic = {1 : [45, 89, 65], 'A' : (23, 45, 6)}
```
Based on the above code, answer the following questions.

(i) Find the output.
```
print (dic.keys())
```
(a) dict_keys (['A', 1]) (b) dict_key ('A', 1)
(c) dict_keys ('A', 1) (d) dict_key ['A', 1]

(ii) Choose the correct option of given statement.
```
print (dic.values())
```
(a) ([45, 89, 65], (23, 45,6))
(b) dict_values ([45, 89, 65]), (23, 45, 6))
(c) dict_values ([[45, 89, 65], (23, 45, 6)])
(d) dict ([[45, 89, 65],(23, 45, 6)])

(iii) Identify the output of len(dic).
(a) 2 (b) 6
(c) 8 (d) None of these

(iv) Which output is best suited for given statement?
```
dic.get ('A')
```
(a) 23, 45, 6 (b) (23, 45, 6)
(c) [23, 45, 6] (d) Error

(v) Each key is separated by which symbol?
(a) ; (semicolon) (b) : (colon)
(c) , (comma) (d) @ (At the rate)

Ans. (i) (*a*) keys() method returns a view object that displays a list of all the keys in the dictionary. It does not take any parameters.

(ii) (*c*) values() method returns a view object that displays a list of all the values in the dictionary. It does not take any parameters.

(iii) (*a*) len() method is used to return the total length of the dictionary. It counts the number of keys present in the dictionary.

(iv) (*b*) get () method returns the value for the given key, if present in the dictionary. It takes maximum of two parameters.

(v) (*c*) Each key value pair in a dictionary is separated by a colon (:) whereas each key is separated by a comma (,). In which, key will be a single element and values can be list or list within a list, numbers etc.

PART 2
Subjective Questions

• Short Answer Type Questions

1. How can you add following data in empty dictionary?

Keys	Values
A	Agra
B	Bengluru
C	Chennai
D	Delhi

Ans.
```
dic = {}
dic['A'] = 'Agra'
dic['B'] = 'Bengluru'
dic['C'] = 'Chennai'
dic['D'] = 'Delhi'
```

2. Find the output.
```
Student = {1 : 'Aman', 2 : 'Bablu', 3 : 'Chandan'}
Student [2] = 'Sahil'
print(Student)
Student[4] = 'Aasha'
print (Student)
```

Ans. **Output**

{1 : 'Aman', 2 : 'Sahil', 3 : 'Chandan'}

{1 : 'Aman', 2 : 'Sahil', 3 : 'Chandan', 4 : 'Aasha'}

3. What is the advantage of pop( ) method over a del keyword?

Ans. Advantage of pop( ) method over a del keyword is that it provides the mechanism to print desired value if tried to remove a non-existing dictionary pair.

Syntax
```
dictionary_name.pop(key, 'Text')
```

4. What are in and not in membership operators in dictionary?

Ans. in and not in membership operators are used with dictionary. These operators check whether a specific key is present in dictionary or not. If it is present then it will give True, otherwise False.

Syntax
```
key in dictionary_name
key not in dictionary_name
```

5. Write the short note on

(i) sorted( )

(ii) fromkeys( )

Ans. (i) **sorted**() This method returns a sorted sequence of the keys in the dictionary.

(ii) **fromkeys** () This method creates a new dictionary from the given sequence of elements with a value provided by the user.

6. Find the output of the following code.
```
my_dict = {'data1' : 200, 'data2' : 154, 'data3':277}
print(sum(my_dict.values()))
```

Ans. **Output**

631

7. Find the output.
```
dic = {'data1' : 200, 'data2' : 56, 'data3' : 47}
result = 1
for key in dic:
   result = result*dic[key]
print(result)
```

Ans. **Output**

526400

8. Predict the output.
```
dic = {1 : [45, 89, 65], 'A' : (23, 45, 6)}
print(dic.keys())
print(dic.values())
```

Ans. **Output**

dict_keys(['A', 1])

dict_values ([[45, 89, 65], (23, 45, 6)])

9. Predict the output.
```
dic = {'a' : 1, 'b' : 2, 'c' : 3, 'd' : 4}
print(dic)
if 'a' in dic :
   del dic['a']
print(dic)
```

Ans. **Output**

{'d' : 4, 'a' : 1, 'c' : 3, 'b' : 2}

{'d' : 4, 'c' : 3, 'b' : 2}

10. What is the use of len( ) method in dictionary?

Ans. len( ) method is used to return the total length of the dictionary.

Syntax `len(dictionary_name)`

For example,
```
>>>dic = {1 : 'One', 2 : 'Two',
3 : 'Three', 4 : 'Four'}
>>>len(dic)
4
```

11. Read the code shown below and pick out the keys.

```
d = {"Ansh" : 18, "Varsha" : 20}
```

Ans. "Ansh" and "Varsha"

12. What will be the output?

```
dic = {"Ansh" : 25, "Ritu" : 26}
print (list (dic.keys())
```

Ans. ['Ansh', 'Ritu']

13. Define the popitem ( ) method with its syntax.

Ans. popitem ( ) method in dictionary helps to achieve similar purpose. It removes the arbitrary key value pair from the dictionary and returns it as a tuple. There is an update for this method from Python version 3.7 only.

Syntax `dict.popitem( )`

14. Write the following methods.

(i) max ( ) (ii) min ( )

Ans. (i) **max ()** This method is used to return the maximum key from the dictionary.

Syntax `max(dict)`

(ii) **min ( )** This method is used to return the minimum key from the dictionary.

Syntax `min (dict)`

15. Give an example to iterate over (traversing) a dictionary through all keys value pair?

Ans.
```
dic = {1 : 'One', 2 : 'Two', 3 : 'Three', 4 :'Four'}
print ("Keys : Values")
for i in dic :
        print (i, ":", dic[i])
```

Output

```
Keys  :  Values
  1   :   One
  2   :   Two
  3   :   Three
  4   :   Four
```

16. Define clear( ) method in dictionary.

Ans. clear( ) method is used to remove the elements of the dictionary. It produces an empty dictionary. It will only delete elements not a dictionary. It does not take any parameter and does not return any value.

Syntax `dictionary_name.clear()`

For example,

```
>>>dic = {1 : 'One', 2 : 'Two'}
>>>dic.clear()
>>>dic
{}
```

17. Write about the setdefault ( ) method with an example.

Ans. setdefault ( ) method returns the value of a key (if the key is in dictionary). If not, it inserts key with a value to the dictionary.

Syntax

`dict.setdefault (Key [, default_value])`

For example,

```
dic = {'Anu' : 20, 'Rahul' : 25}
dic1 = dic.setdefault('Anu')
print ('Key : ', dic1)
```

Output

Key : 20

18. When to use tuple or dictionary in Python? Give some examples of programming situations mentioning their usefulness. **[NCERT]**

Ans. Tuples are used to store the data which is not intended to change during the course of execution of the program.

For example, if the name of months is needed in a program, then the same can be stored in the tuple as generally, the names will either be iterated for a loop or referenced sometimes during the execution of the program.

Dictionary is used to store associative data like student's roll no. and the student's name. Here, the roll no. will act as a key to find the corresponding student's name. The position of the data does not matter as the data can easily be searched by using the corresponding key.

19. Write a Python program to find the highest 2 values in a dictionary. **[NCERT]**

Ans.
```
dict1={'One':65,'Two':12,'Three':89,'Four':65,'Five':56}
h=0
sh=0
for key in dict1:
   if dict1[key]>h:
      sh=h
      h=dict1[key]
print('highest value',h)
print('second highest value',sh)
```

20. 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 : {'3': 1, 's': 1, 'r': 2, 'u': 1, 'w': 1, 'c': 1, 'e': 2, 'o': 1} **[NCERT]**

Ans.
```
st = input("Enter a string: ")
dic = {}
for ch in st:
   if ch in dic:
      dic[ch] += 1
   else:
      dic[ch] = 1
for key in dic:
   print(key,':',dic[key])
```

• Long Answer Type Questions

21. Write a Python program to split dictionary keys and values into separate lists.

Ans.
```
dic = {'A' : 'Apple', 'B' : 'Ball', 'C' : 'Cat', 'D' :
'Dog', 'E' : 'Elephant'}
```

```
print("Original Dictionary:",str(dic))
# split dictionary into keys and values
keys = dic.keys()
values = dic.values()
#printing keys and values seperately
print ("keys : ", str(keys))
print ("values : ", str(values))
```

Output

Original Dictionary : {'A' : 'Apple', 'B' : 'Ball', 'C' : 'Cat', 'D' : 'Dog', 'E' : 'Elephant'}
keys : dict_keys (['A', 'B', 'C', 'D', 'E'])
values : dict_values (['Apple', 'Ball', 'Cat', 'Dog', 'Elephant'])

22. Write the short note on following with an example.

(i) update( )

(ii) len( )

Ans. (i) **update**( ) This method is used to update the dictionary with the elements from the another dictionary object or from an iterable of key/value pairs.

Syntax

```
dictionary_name1.update (dictionary_name2)
```

e.g.

```
>>>Student = {1:'Ashwani', 2:'Shiva', 3:'Sourabh',
4:'Harsh'}
>>>Student [2] = 'Manish'
>>>Student
```

Output

1 : 'Ashwani', 2 : 'Manish', 3 : 'Sourabh', 4 : 'Harsh'

(ii) **len**() This method is used to return the total length of the dictionary or number of keys.

Syntax

```
len(dictionary_name)
```

e.g.

```
dic = {'A' : 'One', 'B' : 'Two', 'C' : 'Four', 'D' :
'Four'}
dic1 = {'A' : 'One', 'B' : 'Two, 'C' : 'Three', 'D' :
'Four', 'E' : 'Five'}
dic.update(dic1)
print(dic)
a = len(dic)
print('The length is', a)
```

Output

{'A' : 'One', 'B' : 'Two', 'C' : 'Three', 'D' : 'Four', 'E' : 'Five'}
The length is 5

23. Find the output.

(i)
```
x = {(1, 2) : 1, (2, 3) : 2}
print (x[1, 2])
```

(ii)
```
x = {'a' : 1, 'b' : 2, 'c' : 3}
print (x['a', 'b'])
```

(iii)
```
a = {}
a[1] = 1
a['1'] = 2
a[1] + = 1
sum = 0
for i in a:
  sum = sum + a[i]
print(sum)
```

Ans. (i) 1 (ii) KeyError (iii) 4

24. Predict the output.

(i)
```
dic = {}
dic[1] = 1
dic['1'] = 2
dic[1.0] = 4
sum = 0
for i in dic:
      sum = sum + dic[i]
print(sum)
```

(ii)
```
dic = {}
dic [(1, 2, 4)] = 8
dic [(4, 2, 1)] = 10
dic [(1, 2)] = 24
sum = 0
for i in dic :
      sum = sum + dic [i]
print (sum)
print (dic)
```

Ans. (i) 6

(ii) 42
{(1, 2) : 24, (4, 2, 1) : 10, (1, 2, 4) : 8}

25. Find the output.

(i)
```
n = {'a' : [2, 3, 1], 'b' : [5, 2, 1], 'c' : [2, 3,
4]}
sorted_dic = {i : sorted(j) for i, j in n.items ()}
print(sorted_dic)
```

(ii)
```
dict = {'c' : 789, 'a' : 796, 'b' : 908}
for i in sorted(dict):
      print(dict[i])
```

(iii)
```
students = {'Sahil' : {'Class' : 11,
'roll_no' : 21},
'Puneet' : {'Class' : 11,
'roll_no' : 30}}
for i in students :
      print (i)
      for j in students [i]:
            print (j, ':', students [i][j])
```

Ans. (i) {'b' : [1, 2, 5], 'c' : [2, 3, 4], 'a' : [1, 2, 3]}

(ii) 796
908
789

(iii) Sahil
Class : 11
roll_no : 21
Puneet
Class : 11
roll_no = **30**

26. Write a Python program to remove a dictionary from list of dictionaries.

Ans.
```
list1 = [{"id" : 101, "data" : "HappY"},
```

```
{"id" : 102, "data" : "BirthDaY"},
{"id" : 103, "data" : "Vyom"}]
print("The original list is : ")
for a in list1:
   print(a)
for i in range(len(list1)):
   if list1[i]['id'] == 103:
        del list1[i]
        break
print ("List after deletion of dictionary :")
for b in list1:
   print(b)
```

Output

The original list is :
{'id' : 101, 'data' : 'HappY'}
{'id' : 102, 'data' : 'BirthDaY'}
{'id' : 103, 'data' : 'Vyom'}
List after deletion of dictionary :
{'id' : 101, 'data' : 'HappY'}
{'id' : 102, 'data' : 'BirthDaY'}

27. Find the output of the given Python program.

```
key1 = ["Data 1", "Data 2"]
name = ["Manish", "Nitin"]
marks = [480, 465]
print ("The original key list : " + str(key1))
print ("The original nested name list : " + str(name))
print ("The original nested marks list : " + str(marks))
output = {key : {'Name' : name, 'Marks' : marks} for key,
name, marks in zip(key1, name, marks)}
print("The dictionary after creation :", str(output))
```

Ans. **Output**

The original key list : ['Data 1', 'Data 2']
The original nested name list : ['Manish', 'Nitin']
The original nested marks list : [480, 465]
The dictionary after creation : {'Data 2' : {'Name' : 'Nitin', 'Marks' : 465}, 'Data 1' : {'Name' : 'Manish', 'Marks' : 480}}

28. Write Python program to test if dictionary contains unique keys and values.

Ans.

```
dict1 = {'Manish' : 1, 'Akshat' : 2, 'Akansha' : 3,
'Nikuj' : 1}
print("The original dictionary : " + str(dict1))
flag = False
val = dict()
for keys in dict1:
   if dict1[keys] in val:
        flag = True
        break
else :
   val[dict1[keys]] = 1
print("Does dictionary contain repetition: " +
str(flag))
```

Output

The original dictionary : {'Nikunj' : 1, 'Akshat' : 2, 'Akansha' : 3, 'Manish' : 1}
Does dictionary contain repetition : True

29. Dictionaries are Python's implementation of a data structure that is more generally known as an associative array. A dictionary consists of a collection of key-value pair. Each key-value pair maps the key to its associated value.

You can define a dictionary by enclosing a comma-separated list of key-value pair in curly braces {}. A colon (:) separates each key from its associated value:

(i) What is dictionary?
(ii) Is dictionary mutable or immutable?
(iii) Write the syntax to create dictionary.
(iv) Can we create empty dictionary?
(v) Which feature is used to access the elements from a dictionary?

Ans.

(i) Dictionary is an unordered collection of data values that stored the key : value pair instead of single value as an element.
(ii) Dictionary is immutable which means they cannot be changed after creation.
(iii) `dictionary_name = {key1 : value1, key2 : value2, …}`
(iv) Yes, we can create empty dictionary.
For example, `dic1 = { }`
(v) Keys are used to access the elements from a dictionary.

30. Create a dictionary 'ODD' of odd numbers between 1 and 10, where the key is the decimal number and the value is the corresponding number in words. Perform the following operations on this dictionary:

(i) Display the keys
(ii) Display the values
(iii) Display the items
(iv) Length of the dictionary
(v) Check if 7 is present or not
(vi) Check if 2 is present or not
(vii) Retrieve the value corresponding to the key 9
(viii) Delete the item from the dictionary corresponding to the key 9

```
>>> ODD = {1:'One',3:'Three',5:'Five',7:
'Seven',9:'Nine'}
>>> ODD
{1: 'One', 3: 'Three', 5: 'Five', 7: 'Seven', 9:
'Nine'}
```

[NCERT]

Ans. (i)
```
>>> ODD.keys()
dict_keys([1, 3, 5, 7, 9])
```
(ii)
```
>>> ODD.values()
dict_values(['One', 'Three', 'Five', 'Seven',
'Nine'])
```
(iii)
```
>>> ODD.items()
dict_items([(1, 'One'), (3, 'Three'), (5, 'Five'),
(7, 'Seven'), (9, 'Nine')])
```
(iv)
```
>>> len(ODD)
5
```
(v)
```
>>> 7 in ODD
True
```
(vi)
```
>>> 2 in ODD
False
```
(vii)
```
>>> ODD.get(9)
'Nine'
```
(viii)
```
>>> del ODD[9]
>>> ODD
{1: 'One', 3: 'Three', 5: 'Five', 7: 'Seven'}
```

31. Write a program to enter names of employees and their salaries as input and store them in a dictionary. **[NCERT]**

Ans.
```
num = int(input("Enter the number of employees:
"))
count = 1
employee = dict()
while count <= num:
    name = input("Enter the name of the
Employee: ")
    salary = int(input("Enter the salary: "))
    employee[name] = salary
    count + = 1
print("\n\nEMPLOYEE_NAME\tSALARY")
for k in employee:
    print(k,'\t\t',employee[k])
```

32. Consider the following dictionary
```
stateCapital = {"AndhraPradesh":"Hyderabad",
"Bihar":"Patna","Maharashtra":"Mumbai",
"Rajasthan":"Jaipur"}
```
Find the output of the following statements.

(i) `print(stateCapital.get("Bihar"))`

(ii) `print(stateCapital.keys())`

(iii) `print(stateCapital.values())`

(iv) `print(stateCapital.items())`

(v) `print(len(stateCapital))`

(vi) `print("Maharashtra" in stateCapital)`

(vii) `print(stateCapital.get("Assam"))`

(viii)
```
del stateCapital["Rajasthan"]
print(stateCapital)
```
[NCERT]

Ans. (i) Patna

(ii) dict_keys(['AndhraPradesh', 'Bihar', 'Maharashtra', 'Rajasthan'])

(iii) dict_values(['Hyderabad', 'Patna', 'Mumbai', 'Jaipur'])

(iv) dict_items([('AndhraPradesh', 'Hyderabad'), ('Bihar', 'Patna'), ('Maharashtra', 'Mumbai'), ('Rajasthan', 'Jaipur')])

(v) 4

(vi) True

(vii) None

(viii) {'AndhraPradesh': 'Hyderabad', 'Bihar': 'Patna', 'Maharashtra': 'Mumbai'}

Chapter Test

Multiple Choice Questions

1. Suppose d = {"Rahul":40, "Riya":45}.
To obtain the number of entries in dictionary which command do we use?
(a) d.size() (b) len(d) (c) size(d) (d) d.len()

2. Which of the following is not true about dictionary keys?
(a) More than one key is not allowed.
(b) Keys must be immutable.
(c) Keys must be integers.
(d) When duplicate keys encountered, the last assignment wins.

3. What will be the output of the following Python code?
```
a={1:5,2:3,3:4}
a.pop(3)
print(a)
```
(a) {1: 5}
(b) {1: 5, 2: 3}
(c) Error, syntax error for pop() method
(d) {1: 5, 3: 4}

4. What will be the output of the following Python code snippet?
```
dict1={}
dict1['a']=1
dict1['b']=[2,3,4]
print(dict1)
```
(a) Exception is thrown (b) {'b': [2], 'a': 1}
(c) {'b': [2], 'a': [3]} (d) {'b': [2, 3, 4], 'a': 1}

5. What will be the output of the following Python code?
```
>>> dic1={}
>>> dic1.fromkeys([1,2,3],"Hello")
```
(a) Syntax error (b) {1:"Hello",2:"Hello",3:"Hello"}
(c) "Hello" (d) {1:None,2:None,3:None}

Short Answer Type Questions

6. Predict the output.
```
dic={'a' : 1, 'b' : 2, 'c' : 3, 'd' : 4}
if 'a' in dic :
    del dic['a']
print(dic)
```

7. What is the output of following code?
```
dic = {}
dic[2] = 1
dic['2'] = 6
dic[2.0] = 8
sum = 0
for i in dic:
    sum = sum + dic[i]
print(sum)
```

8. What is the output of following code?
```
d = { }
a, b, c, = 1, 2, 3
d[a, b, c] = a + b – c
a, b, c, = 2, 10, 4
d[a, b, c] = a + b – c
print (d)
```

9. What will be the output of the following Python code snippet?
```
dic1 = {1:'One', 2:'Two', 3:'Three'}
del dic1[1]
dic1[1] = 'Four'
del dic1[2]
print(len(dic1))
```

10. Write any two properties of dictionary keys.

11. Write a program to multiply all the items in a dictionary.

12. Write a Python code to iterate over dictionary using for loop when dictionary is
```
dic = {'A' : 50, 'B' : 100, 'C' : 150}
```

13. Write a Python code to concatenate following dictionaries to create a new one.
```
d1 = {'A' : 10, 'B' : 20}
d2 = {'C' : 30, 'D' : 40}
d3 = {'E' : 50, 'F' : 60}
```

Long Answer Type Questions

14. Write Python code which display the nested dictionary.

15. Write Python code to count the frequencies in a list using dictionary.

16. Write Python code to sort the list in a dictionary.

17. Write Python code to convert dictionary to list of tuple.

18. Find the output of the given Python code to swap keys and values in dictionary.
```
old_dict = {'One' : 742, 'Two':145, 'Three' : 654,
'Four' : 321, 'Five' : 120, 'Six': 365, 'Seven':459,
'Eight': 449}
new_dict = dict([(value, key)for key, value in
old_dict.items()])
print("Original dictonary is :")
print (old_dict)
print()
print("Dictionary after swapping is:")
print("Keys:Values")
for i in new_dict:
        print(i, " : ", new_dict[i])
```

Answers

Multiple Choice Questions

***1.** (b) **2.** (c) **3.** (b) **4.** (d) **5.** (b)*