

Q1. What are the characteristics of the tuples? Is tuple immutable?

Ans->Tuples are data structure in python. Round brackets are used to represent tuple.

Tuple is immutable that is we cannot manipulate data in tuple unlike list though we can iterate.

Q2. What are the two tuple methods in python? Give an example of each method. Give a reason why tuples have only two in-built methods as compared to Lists.

Ans->Two tuple method in python are count and index. Count to count frequency of given element in tuple and index to find occurrence of element in tuple.

Eg:

```
t=(1,1,1,1,1,3,4,5,2,5,5)
```

```
print(t.index(5))
```

As Tuple is immutable so we can't manipulate tuple value so we have only two in built methods in tuple compared to list

Q3. Which collection datatypes in python do not allow duplicate items? Write a code using a set to remove

duplicates from the given list.

```
List = [1, 1, 1, 2, 1, 3, 1, 4, 2, 1, 2, 2, 2, 3, 2, 4, 3, 1, 3, 2, 3, 3, 3, 4, 4, 1, 4, 2, 4, 3, 4, 4]
```

Ans->Set data structure in python do not allow duplicate element

Code:

```
lst = [1, 1, 1, 2, 1, 3, 1, 4, 2, 1, 2, 2, 2, 3, 2, 4, 3, 1, 3, 2, 3, 3, 3, 4, 4, 1, 4, 2, 4, 3, 4, 4]
```

```
s=set(lst)
```

```
lst=list(s)
```

```
print(lst)
```

Q4. Explain the difference between the union() and update() methods for a set. Give an example of each method.

Ans->Union operation is done on two sets it give union of two sets

While update operation updates previous set by new set

Union is not inplace operation while update is inplace operation

Code:

```
s1={1,3,5,9}
```

```
s2={2,4,6,8}
```

```
s1.update(s2)
```

```
print(s1)
```

```
s2={2,4,6,8}
```

```
print(s1.union(s2))
```

Q5. What is a dictionary? Give an example. Also, state whether a dictionary is ordered or unordered.

Ans-> Dictionary is collection of key value pair in built data structure in python

Dictionary does not have indexing so it is unordered in nature unlike list ,tuple and sets

Q6. Can we create a nested dictionary? If so, please give an example by creating a simple one-level nested dictionary.

Ans->Yes we can create a nested dictionary

Code:

```
d={"a":1,2:3,4:5,6:7,8:9}
```

```
d[11]={12,13,14,15,16,17,18,19}
```

```
print(d)
```

Q7. Using setdefault() method, create key named topics in the given dictionary and also add the value of

the key as this list ['Python', 'Machine Learning', 'Deep Learning']

Ans->

Code:

```
dict1 = {'language': 'Python', 'course': 'Data Science Masters'}
```

```
dict1.setdefault("topics",['Python', 'Machine Learning', 'Deep Learning'])
```

```
print(dict1)
```

Q8. What are the three view objects in dictionaries? Use the three in-built methods in python to display these three view objects for the given dictionary.

```
dict1 = {'Sport': 'Cricket' , 'Teams': ['India', 'Australia', 'England', 'South Africa', 'Sri Lanka', 'New Zealand']}
```

Ans->Keys Values and Items are the three view objects in python dictionary

```
dict1 = {'Sport': 'Cricket' , 'Teams': ['India', 'Australia', 'England', 'South Africa', 'Sri Lanka', 'New Zealand']}
```

```
print(f"View -1 Keys : {dict1.keys()}\nView -2 Values : {dict1.values()}\nView -3 Items : {dict1.items()}")
```