**1.Which of the following data structures in Python is unordered and contains unique elements?**

* List
* Dictionary
* Set
* Tuple

**Explanation**

A set is an unordered collection of unique elements, therefore, it does not record element position or order of insertion.

**2.What is the output of the following code? my\_tuple = (1, 2, 3, 4, 5) my\_tuple[1] = 7 print(my\_tuple)**

* (1, 7, 3, 4, 5)
* (1, 2, 3, 4, 5)
* Error
* (1, 2, 7, 4, 5)

**Explanation**

Tuples are immutable in Python, which means you cannot change or update the values of tuple elements after it is created. Therefore, the given code will result in an error.

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**3.Which of the following is true about Python dictionaries?**

* The keys and values both must be unique
* The keys must be unique, but the values can have duplicates
* The values must be unique, but the keys can have duplicates
* The keys and values both can have duplicates

**Explanation**

In a dictionary, the keys must be unique, but the values need not be unique. Hence, option 3 is the correct choice.

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**4.What will be the output of the following code snippet? my\_set = {1, 2, 3, 3, 4, 5} print(len(my\_set))**

* 5
* 6
* 4
* 3

**Explanation**

A set in Python is an unordered collection of unique elements. In the given set, the duplicates are automatically removed, and the length of the set is 5.

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**5.What is the correct way to initialize an empty set in Python?**

* empty\_set = {}
* empty\_set = set([])
* empty\_set = set()
* empty\_set = set({})

**Explanation**

To create an empty set in Python, you should use set() instead of {}. The option 3 represents the correct way of initializing an empty set.

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**6.What is the output of the following code? dict1 = {'a': 1, 'b': 2} print(dict1['c'])**

* 1
* None
* KeyError: 'c'
* 0

**Explanation**

Accessing a key that doesn't exist in a dictionary raises a KeyError. In the given code, 'c' key is not present in dict1, so it will raise a KeyError.

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**7.Which of the following is true about tuples in Python?**

* Tuples are mutable
* Tuples are immutable
* Tuples are unordered
* Tuples are not used in Python

**Explanation**

Tuples are immutable sequences, typically used to store collections of heterogeneous data. Option 2 represents the correct choice as once a tuple is created, you cannot update its values.

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**8.What is the output of the following code? my\_dict = {'a': 1, 'b': 2, 'c': 3} print('b' in my\_dict)**

* True
* False
* 1
* 2

**Explanation**

The 'in' operator checks if the given key exists in the dictionary. So, the output of the given code will be True.

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**9.Which of the following is the correct syntax to create a dictionary in Python?**

* my\_dict = {'a': 1, 'b': 2, 'c': 3}
* my\_dict = {'a', 1, 'b', 2, 'c', 3}
* my\_dict = {'a' = 1, 'b' = 2, 'c' = 3}
* my\_dict = {'a': 1, 'b': 2, 'c': 3}

**Explanation**

Option 4 represents the correct syntax for creating a dictionary in Python. The key-value pairs are enclosed in curly braces {} and separated by a colon.

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**10.What is the type of the following data structure? my\_set = {1, 2, 3, 4, 5}**

* Set
* List
* Tuple
* Dictionary

**Explanation**

The given data structure represents a set in Python, which is an unordered collection of unique elements. Hence, the type of my\_set will be set.

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**11.Which of the following statements about sets in Python is true?**

* Sets can contain duplicate elements
* Sets are ordered collections
* Sets can contain key-value pairs
* Sets do not contain duplicate elements

**Explanation**

Sets in Python are unordered collections of unique elements. Hence, the option 4 is the correct choice representing the true statement about sets.

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**12.Which of the following is a valid tuple in Python?**

* (1, 2, 3, 4, 5)
* [1, 2, 3, 4, 5]
* {1, 2, 3, 4, 5}
* 1, 2, 3, 4, 5

**Explanation**

Tuples are written with round brackets. Option 2 represents a valid tuple as it follows the correct syntax for defining a tuple in Python.