Python Set Data Type Concepts Interview Questions - Answers

1. **What is a set in Python?**

   - A set is an unordered collection of unique elements in Python.

2. **How to create and get the length of python set?**

   - Create: `my_set = {1, 2, 3}`

   - Length: `len(my_set)`

3. **How do you create homogeneous elements set in Python?**

   - Example: `homogeneous_set = {1, 2, 3, 4}`

4. **How do you create a heterogeneous elements set in Python?**

   - Example: `heterogeneous_set = {1, 'Python', 3.5}`

5. **How do you check the length of a set in Python?**

   - Use `len(set_name)`

6. **Can you concatenate two sets in Python?**

   - No direct concatenation. Use union: `set1.union(set2)` or `set1 | set2`

7. **Can you repeat a set in N number of times in Python?**

   - No, sets do not support repetition.

8. **Is set object follows ordering of elements?**

   - No, sets are unordered collections.

9. **Is set object supporting packing & unpacking? Examples?**

- Yes. Example: `a, b, c = {1, 2, 3}`

10. How to convert other type objects into set type?

- Use `set()`. Example: `set([1, 2, 3])`

11. How do you create an empty set in Python?

- `empty_set = set()` (not `{}`, which creates a dictionary)

12. Is set mutable or immutable type object? Why?

- Sets are mutable; you can add or remove elements after creation.

13. Is set allows duplicate values and unique indexing?

- No duplicates allowed; no indexing.

14. How do you access individual elements from a set object?

- You cannot access by index; loop through it.

15. Can you do changes in the set object?

- Yes, you can add or remove elements.

16. How to check if items are present/exist in set?

- Use `in` keyword: `item in set_name`

17. How do you remove the duplicate values of list object?

- Convert to set: `list(set(my_list))`

18. Is set supporting indexing & slicing?

- No.

19. How can you initialize a set with values in Python?

- Example: `my_set = {1, 2, 3}`

20. **What is the purpose of the add() method in Python sets?**

   ○ To add a single element to the set.

21. **What is the purpose of the update() method in Python sets?**

   ○ To add multiple elements from another iterable.

22. **What is the purpose of the remove() method in Python sets?**

   ○ Removes a specified element; raises an error if element not found.

23. **What is the purpose of the discard() method in Python sets?**

   ○ Removes a specified element; does not raise an error if element not found.

24. **What is the difference between remove() vs discard() in sets?**

   ○ `remove()` raises `KeyError` if the item is not found, `discard()` does not.

25. **How to remove all items from a set at a time?**

   ○ Use `set_name.clear()`