

## Python Data Structures Quiz: 25 Multiple-Choice Questions

1. Which fundamental data structure in Python is ordered, changeable (mutable), and allows duplicate members?

A. Tuple

B. List

C. Set

D. Dictionary

Answer: B

2. How is a Python List typically created?

A. Using curly braces {}

B. Using parentheses ()

C. Using angle brackets <>

D. Using square brackets []

Answer: D

3. Which method is used to add a new item to the end of a Python List?

A. insert()

B. add()

C. append()

D. put()

Answer: C

4. Which data structure is ordered, unchangeable (immutable), and allows duplicate members?

- A. List
- B. Tuple
- C. Set
- D. Dictionary

Answer: B

5. How is a Python Tuple typically created?

- A. Using square brackets []
- B. Using parentheses ()
- C. Using curly braces {}
- D. Using the dict() keyword

Answer: B

6. Which built-in function is used to find the number of items in a List, Tuple, or Set?

- A. size()
- B. count()
- C. len()
- D. length()

Answer: C

7. If you try to change an item inside a Tuple after it has been created, what will happen?

- A. The item will be changed successfully.
- B. Python will automatically convert it to a List.
- C. You will get an error.
- D. The item will be added to the end.

Answer: C

8. Which data structure is unordered, changeable (mutable), and does not allow duplicate members?

- A. List
- B. Tuple
- C. Set
- D. Dictionary

Answer: C

9. How is a Python Set typically created?

- A. Using square brackets []
- B. Using parentheses ()
- C. Using curly braces {}
- D. Using the list() keyword

Answer: C

10. If you create a Set from a List that contains duplicate values (e.g., [1, 2, 2, 3]), how many items will be in the resulting Set?

- A. 4
- B. 3
- C. 2
- D. 1

Answer: B

11. What method is used to remove a specified item from a Set?

- A. pop()
- B. remove()
- C. delete()
- D. erase()

Answer: B

12. Which data structure stores data in key:value pairs?

- A. List
- B. Tuple
- C. Set
- D. Dictionary

Answer: D

13. How is a Python Dictionary typically created?

- A. Using square brackets []
- B. Using parentheses ()
- C. Using curly braces {}
- D. Using the set() keyword

Answer: C

14. In a Dictionary, the keys must be:

- A. Mutable (changeable)
- B. Integer numbers only
- C. Unique (no duplicates allowed)
- D. Only strings

Answer: C

15. What is the correct way to retrieve the value associated with the key "city" from the dictionary data = {"name": "Alice", "city": "London"}?

- A. data["London"]
- B. data("city")
- C. data["city"]
- D. data.value("city")

Answer: C

16. What will be the value of the variable result after this code runs: `my_list = [10, 20, 30]; result = my_list[0]`?

- A. 30
- B. 20
- C. 10
- D. 0

Answer: C

17. To add a new key-value pair to an existing dictionary `person = {"age": 25}`, you would use which syntax?

- A. `person.add("job", "Engineer")`
- B. `person["job"] = "Engineer"`
- C. `person("job") = "Engineer"`
- D. `person.insert("job", "Engineer")`

Answer: B

18. What does the List method `.pop()` do without any arguments?

- A. Removes the first item.
- B. Removes the last item.
- C. Removes all items.
- D. Adds an item.

Answer: B

19. Which Dictionary method returns a list of all the keys in the dictionary?

- A. `list()`
- B. `values()`
- C. `keys()`
- D. `get_key()`

Answer: C

20. A Python List can hold items of different data types (e.g., a number, a string, and a boolean).

A. True

B. False

Answer: A

21. Which List method changes the original List by rearranging the items in alphabetical or numerical order?

A. order()

B. sort()

C. arrange()

D. index()

Answer: B

22. What is the process of getting a portion (or segment) of a List or Tuple called?

A. Appending

B. Indexing

C. Slicing

D. Segmenting

Answer: C

23. When accessing an item in a List using a negative index like `my_list[-1]`, which item is returned?

A. The first item.

B. The last item.

C. The middle item.

D. An error occurs.

Answer: B

24. To create an empty Set, what is the required method (since {} creates an empty Dictionary)?

- A. empty\_set = {}
- B. empty\_set = set()
- C. empty\_set = ()
- D. empty\_set = []

Answer: B

25. What is the main characteristic that makes a Tuple useful for storing data that should not be accidentally changed?

- A. It is unordered.
- B. It is mutable.
- C. It is immutable.
- D. It only stores numbers.

Answer: C