✅ **Python Interview Questions: Complete List (With Coverage)**

**🟦 1. Python Basics**

* What is Python? What are its key features?
* How is Python interpreted?
* Difference between Python 2 and Python 3?
* What are Python’s data types?
* What is dynamic typing?
* What are mutable and immutable types?
* What is the difference between is and ==?
* What are Python literals?
* What is None in Python?
* What are docstrings?

**🟦 2. Variables, Data Types & Type Conversion**

* How do you declare variables in Python?
* Explain type casting in Python.
* What are f-strings and how are they used?
* What is the difference between list, tuple, set, and dictionary?

**🟦 3. Control Flow**

* Explain if, elif, and else in Python.
* What are for and while loops? Give examples.
* What is the difference between break, continue, and pass?

**🟦 4. Functions**

* How to define a function in Python?
* What is the difference between \*args and \*\*kwargs?
* What is a lambda function?
* What are default arguments and keyword arguments?
* Explain recursion with an example.

**🟦 5. Object-Oriented Programming (OOP) in Python**

* What is OOP? What are its key concepts?
* Explain class and object in Python.
* What are \_\_init\_\_() and self?
* What is inheritance? Give an example.
* What is method overriding?
* What is multiple inheritance?
* What are class variables and instance variables?
* What are @staticmethod and @classmethod?
* What is encapsulation? What is the use of private variables?
* What is polymorphism in Python?

**🟦 6. Modules and Packages**

* What is a module in Python? How to create one?
* What is the difference between module and package?
* What is \_\_name\_\_ == "\_\_main\_\_"?
* How to import from another file or package?

**🟦 7. Exception Handling**

* What is exception handling in Python?
* How to use try, except, finally, else?
* What is the difference between Exception and BaseException?
* How to create custom exceptions?

**🟦 8. File Handling**

* How to read and write files in Python?
* What is the difference between r, w, a, and x modes?
* What is the with statement used for?
* How do you read a file line-by-line?

**🟦 9. Advanced Python Concepts**

* What are decorators?
* What is a generator? How is it different from an iterator?
* What is the yield keyword?
* Explain @property decorator.
* What is list comprehension? Set/dict comprehension?
* What are closures?
* What is the Global Interpreter Lock (GIL)?
* What is the difference between deep copy and shallow copy?
* What is monkey patching?

**🟦 10. Data Structures in Python**

* **Difference between list and tuple?**
* **Difference between set and frozenset?**
* **Difference between dictionary and JSON?**
* **What are the common built-in functions of list, set, dict?**

**🟦 11. Built-in Functions & Libraries**

* Commonly used functions: map(), filter(), zip(), enumerate(), all(), any()
* How does sorted() differ from .sort()?
* What is range() vs xrange()?
* What does dir() and help() do?

**🟦 12. Python Standard Libraries**

* What is os, sys, math, datetime, random used for?
* How to use collections module (namedtuple, defaultdict, Counter)?
* What is itertools and when is it useful?

**🟦 13. Testing**

* What is unit testing?
* How to write tests using unittest or pytest?
* What is mocking?

**🟦 14. Python and Databases**

* How to connect Python with a database like SQLite or PostgreSQL?
* What is the use of sqlite3 module?

**🟦 15. Virtual Environments & Package Management**

* What is a virtual environment?
* How do you create and activate a virtual environment?
* What is pip?
* How to install and uninstall packages?

**🟦 16. Python Performance & Memory**

* How to optimize memory usage in Python?
* How is memory managed in Python?
* What are \_\_slots\_\_?
* What is garbage collection?

**🟦 17. Concurrency & Multithreading**

* Difference between threading and multiprocessing?
* What are async, await in Python?
* What is the asyncio module?

**🟦 18. Django / Flask (if mentioned in the job role)**

* What is Django/Flask?
* Django vs Flask?
* What is a view?
* What is ORM?
* How does routing work?
* What is a middleware?
* What are migrations?
* What is a model?
* What is CSRF?

**🟦 19. Data Formats**

* How to read/write JSON in Python?
* Difference between JSON and Pickle?

**🟦 20. Coding Questions / Logic Building**

Practice basic problems on:

* Fibonacci
* Factorial
* Palindrome
* Prime number
* Reverse a string/list
* Remove duplicates
* Anagram check
* Sorting without using sort()
* Dictionary counting (word frequency)
* FizzBuzz
* Recursion-based problems
* Using lambda/map/filter/reduce