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

**🟦 1. Python Basics**

* What is Python? What are its key features?
  + Python is a high-level, interpreted programming language known for its simplicity and readability.
  + Easy to learn, interpreted, dynamically typed, object-oriented, vast libraries, and open source.
* How is Python interpreted?
  + Translates the entire source code line by line
* Difference between Python 2 and Python 3?
  + Python 3 is the future and supports modern features, while Python 2 is outdated and no longer maintained.
* What are Python’s data types?
  + Text Type: str
  + Sequence Types: list, tuple, range
  + Numeric Types: int, float, complex
  + Set Types: set, frozenset
  + Mapping Type: dict
  + Boolean Type: bool
  + Binary Types: bytes, bytearray, memoryview
  + None Type: NoneType
* What is dynamic typing?
  + Python uses dynamic typing, meaning we don’t need to declare variable types — the type is decided at runtime based on the assigned value.
* What are mutable and immutable types?
  + Mutable types can be changed after creation (like list, dict), while immutable types cannot be changed (like int, str, tuple).
* What is the difference between is and ==?
  + 'is' check’s identity; '==' checks value equality.
* What are Python literals?
  + Python literals are fixed values assigned to variables, such as numbers, strings, Booleans, and special values like None.
* What is None in Python?
  + It represents the absence of a value.
* What are docstrings?
  + A documentation string for functions, classes, or modules.

🟦 2. Variables, Data Types & Type Conversion

* How do you declare variables in Python?
  + You declare variables by assigning a value directly without specifying type, e.g., x = 5.
* Explain type casting in Python.
  + Type casting is converting a value from one data type to another using functions like int(), str(), or float().
* What are f-strings and how are they used?
  + F-strings are formatted string literals prefixed with f that allow embedding expressions inside {}, e.g., f"Hello {name}".
* What is the difference between list, tuple, set, and dictionary?
  + Lists and tuples are ordered collections (lists mutable, tuples immutable), sets are unordered unique elements, and dictionaries store key-value pairs.