

**1. What is Python, and why is it popular?**

Python is a programming language that is easy to read and write. It is popular because it is beginner-friendly, used in many fields like web development and data science, and has many built-in tools.

**2. What is an interpreter in Python?**

An interpreter reads Python code line by line and runs it. If there is an error, it shows the error and stops.

**3. What are pre-defined keywords in Python?**

Keywords are special words that Python uses, like if, else, while. You cannot use them as variable names.

**4. Can keywords be used as variable names?**

No, you cannot use keywords as variable names.

**5. What is mutability in Python?**

Mutability means changeable. If something is mutable, we can change it after creating it.

**6. Why are lists mutable, but tuples are immutable?**

Lists can be changed (mutable), but tuples cannot be changed (immutable) after creation. This is how Python is designed.

**7. What is the difference between '==' and 'is' operators in Python?**

'==' checks if values are the same. 'is' checks if they are the same object in memory.

**8. What are logical operators in Python?**

Logical operators are used to make decisions: and (both true), or (any one true), not (reverses result).

**9. What is type casting in Python?**

Type casting means changing one data type to another, like string to int.

**10. What is the difference between implicit and explicit type casting?**

Implicit is automatic type change by Python. Explicit is when we manually change type using int(), str(), etc.

**11. What is the purpose of conditional statements in Python?**

They help make decisions in code, using if, else, etc.

**12. How does the elif statement work?**

elif means 'else if'. It checks another condition if the first if is false.

**13. What is the difference between for and while loops?**

for loop runs a fixed number of times. while loop runs while a condition is true.

**14. Describe a scenario where a while loop is more suitable than a for loop.**

If we don't know how many times to run, like asking for correct password, we use a while loop.