PYTHON BASIC QUESTIONS WITH ANSWERS

**✅ 1. What is Python?**

**Definition**: A high-level, interpreted, general-purpose programming language with an emphasis on readability.

**Example**:

print("Hello, World!")

**✅ 2. Areas where Python is used**

* **Web Development** – Django, Flask
* **Data Science** – Pandas, NumPy
* **Machine Learning** – TensorFlow, Scikit-learn
* **Automation/Scripting** – Selenium, PyAutoGUI
* **Game Development** – Pygame
* **Desktop GUI** – Tkinter, PyQt
* **IoT** – MicroPython
* **Cybersecurity** – Nmap scripting, Pentesting

**✅ 3. High-level vs Low-level Language**

* **High-level**: Easy to code, human-readable (Python, Java)
* **Low-level**: Closer to machine (Assembly, C)

**✅ 4. What is an Interpreted Language?**

Python runs line-by-line using an interpreter.

**Example**:

print("Line 1")

print("Line 2") # Executes only after Line 1

**✅ 5. What is a Compiled Language?**

Languages like C are compiled into machine code before execution.

**✅ 6. What is Statically Typed?**

Variable types are declared and checked at compile time.

**Example in Java**:

int age = 30;

**✅ 7. What is Dynamically Typed?**

Variable types are checked at runtime in Python.

**Example**:

age = 30 # int

age = "thirty" # Now a string, allowed

**✅ 8. What is Weakly Typed?**

Languages that allow implicit type conversion.

**Example in JavaScript**:

"5" + 5 // "55"

**✅ 9. What is Strongly Typed?**

Python doesn’t allow operations between incompatible types without explicit conversion.

**Example**:

# print("Age: " + 25) ❌ Error

print("Age: " + str(25)) # ✅ Correct

**✅ 10. What is .pyc File (Byte Code)?**

When Python runs a script, it converts it to bytecode (.pyc) stored in \_\_pycache\_\_/.

**✅ 11. What is PVM?**

**Python Virtual Machine** – It executes Python’s bytecode (.pyc).

**✅ 12. How Python Internally Works?**

1. Python file (.py) is written
2. Compiled to Bytecode (.pyc)
3. Executed by PVM line-by-line

**✅ 13. What is PEP 8?**

A style guide for writing clean, readable Python code.

**Examples**:

* Use 4 spaces per indentation
* Use snake\_case for variables
* Limit lines to 79 characters

**✅ 14. What is PIP and its use?**

PIP = Python Installer Package  
Used to install Python libraries.

**Command**:

bash

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pip install numpy

**✅ 15. What is Byte Code and When Is It Created?**

Byte code is intermediate code created after the Python script is compiled. It helps in faster execution.

**✅ 16. What is Indentation? Does Python Rely on It?**

Yes. Indentation defines code blocks.

**Example**:

if True:

print("Correct")

else:

print("Incorrect")

**✅ 17. What is a Variable?**

A variable stores data.

**Example**:

name = "Alice"

age = 25

**✅ 18. Variable Naming Rules**

* Must start with a letter or \_
* Can contain letters, numbers, and underscores
* Cannot use keywords
* Case-sensitive

✅ Valid: user\_name, Age2  
❌ Invalid: 2user, if

**✅ 19. Data Type and Names of Data Types**

Common Python data types:

a = 10 # int

b = 10.5 # float

c = "Python" # str

d = [1, 2, 3] # list

e = (1, 2, 3) # tuple

f = {"key": "value"} # dict

g = {1, 2, 3} # set

h = True # bool

**✅ 20. What is a Keyword in Python?**

Reserved words that have special meaning.

**Examples**:  
if, for, class, return, def, import, True, False, None

**To see all**:

import keyword

print(keyword.kwlist)