1) What is Python and why is it called an interpreted language ?

Python is a high-level general purpose programming language known for its simplicity and readability. Its called an interpreted language because code is excuted line by line by the Python interpreter, not Compiled beforehand. This allows for quick testing and debugging without Separate Compilation. The interpreter translates code to bytecode and excutes it directly, making Python flexible but slightly slower than Compiled languages.

2) What are the key features of Python and make it popular for beginners and professionals?

Python has a simple and readable syntax, making it beginner-friendly. It supports multiple paradigms - object-oriented, procedural, and functional programming. Its vast Standard library and third-party modules Simplify Complex tasks. Python is cross-platform and has strong Community support, making it ideal for both learning and large-scale projects.

3) What is the difference between Python 2 and Python 3?

Python 3 is the newer, improved version introduced to fix issues in Python 2. It uses print() as a function, supports Unicode by default, and returns floats for division. Python 2 uses older syntax and has been officially discontinued since 2020. All modern development and libraries now focus on Python 3.

4) What are Python's applications in real world Projects?

Python is used in data science, machine learning, web development, automation, and AI. Frameworks like Django and Flask power web apps, while Pandas and TensorFlow support data analysis and ML. It's also used in finance, cybersecurity, and game development. Its flexibility makes its suitable for everything from small scripts to enterprise systems.

5) What is PEP 8 and why is it important in Python programming?

PEP 8 is Python's official style guide, defining best practices for writing clean and consistent

Code. It Covers naming Conventions, indentation line length and formatting. Following it improves readability, teamwork, and code maintenance. Adhering to PEP 8 also reflects professionalism and coding discipline.

6) Who developed Python and in which year was it released?

Python was created by Guido van Rossum at CWI, Netherlands, and released in 1991. It was designed as a successor to the ABC language with a focus on simplicity and readibility. Guido later became known as the language "Benevolent Dictator for Life".

7) What do you mean by "dynamically typed" in Python?

Python is dynamically typed, meaning variable types are determined at runtime, not declared in advanced. You can assign any type of value to a variable without specifying its type. This makes coding faster and more flexible. However, it can cause runtime errors if data types are used inconsistently

8) What is the difference between a compiler and an interpreter, and which does Python use?

A compiler converts the entire code into machine language before execution, while an interpreter excutes code line by line. Compiled languages run faster but are harder to debug. Python uses as interpreter, which translates code into bytecode and runs it via the Python Virtual Machine (PVM). This makes Python easier to test and modify during development.