1) What is C Programming?

C programming is a general-purpose programming language that allows developers to write efficient and structured programs. It is widely used for system-level programming because it provides direct access to memory and hardware while still supporting high-level programming concepts.

2) Features of C Programming

- **Simple and Efficient:** Uses a small set of keywords and clear syntax.
- **Structured Language:** Programs can be divided into functions and modules.
- **Portable:** C programs can run on different machines with minimal changes.
- **Fast Execution:** Produces optimized machine-level code.
- **Low-level Access:** Supports pointers for direct memory manipulation.
- **Rich Library Support:** Provides standard libraries for common operations.

3) Applications of C Programming

- Development of **Operating Systems** (e.g., UNIX, Linux kernel)
- **Embedded Systems** and microcontroller programming
- Writing **Compilers and Interpreters**
- **Device Drivers** and system utilities
- **Game Engines** and performance-critical applications
- Database and networking software

4) Difference between Compiler and Interpreter

Aspect	Compiler	Interpreter
Translation	Converts entire program at once	Converts program line by line
Output	Generates executable file	No separate executable file
Execution Speed	Faster execution	Slower execution
Error Detection	Shows errors after compilation	Shows errors one line at a time
Examples	C, C++	Python, JavaScript