Answers - Top 50 Interview Questions (C++ and Python)

1. Basic data types in C++ include int, float, double, char, and bool.

2. '==' compares values, '=' is the assignment operator.

3. A pointer stores the address of another variable.

4. C++ uses manual memory management via new/delete.

5. 'new' allocates dynamic memory, 'delete' deallocates it.

6. Lists are mutable, tuples are immutable sequences.

7. Python uses automatic garbage collection.

8. A dictionary stores key-value pairs.

9. List comprehension is a concise way to create lists.

10. '==' checks equality, 'is' checks identity (memory location).

11. Encapsulation hides internal state using access modifiers.

12. Inheritance allows a class to derive from another class.

13. Polymorphism allows different classes to use methods with the same name.

14. Constructor initializes objects; destructor frees resources.

15. Use 'class' keyword and __init__ method in Python.

16. Use slicing or loop to reverse a string.

17. Check divisibility by numbers less than input.

18. Define class with name and marks, then compute average.

19. Use loop to generate Fibonacci up to n terms.

20. Compare and swap adjacent elements in loop.

21. C++ is compiled and statically typed; Python is interpreted and dynamically typed.

22. Lists are mutable; tuples are immutable.

23. 'for' is definite loop, 'while' is conditional.

24. Compilation translates to machine code, interpretation runs line by line.

25. Static typing requires type declaration; dynamic typing does not.

26. Talk about education, strengths, and projects.

27. Mention interest in role, company culture, and growth.

28. Strength: dedication. Weakness: over-perfection.

29. Yes, give example from a project or college.

30. Leading a development team, skilled in multiple languages.

31. STL is Standard Template Library (e.g., vector, map, set).

32. Anonymous function using 'lambda x: x+1'.

33. Use try-except blocks for error handling.

34. Virtual function allows runtime polymorphism.

35. Recursion is a function calling itself.

36. Use open(), read(), write(), and close() in Python.

37. Constructor: __init__(); destructor: __del__().

38. Local exists within function, global outside.

39. Iterator is an object with __iter__() and __next__().

40. Macro is a preprocessor directive in C++ (e.g., #define).

41. 'self' refers to the instance in Python class.

42. Namespace avoids naming conflicts in large projects.

43. pass: do nothing, break: exit loop, continue: skip iteration.

44. 'this' is a pointer to the current object in C++.

45. Same function name with different parameters.

46. Tuple is immutable in Python.

47. ':' (colon) in class definition is used for inheritance.

48. 'getline()' reads a line in C++.

49. range(5) produces 0 to 4.

50. Use if number % 2 == 0 to check for even.