PYTHON INTERVIEW QUESTIONS

SECTION-A: CONTROL STATEMENTS (25 Questions)

1. Write a program to check whether a number is **positive or negative** without using comparison operators.
2. Find the **largest of three numbers** without using `max()` and logical operators.
3. Determine whether a year is **leap year** without using `%`.
4. Check whether a number is **divisible by 3 or 7 but not both**.
5. Write a program to validate a **strong password** using only `if-else`.
6. Print grade based on marks, but handle **invalid input** gracefully.
7. Check whether a number is **even or odd** without using `%` or `&`.
8. Determine whether a character is **alphabet, digit, or special symbol**.
9. Write a program to find the **type of triangle** using its sides.
10. Validate a **date** (DD-MM-YYYY) considering leap year.
11. ATM withdrawal logic with **minimum balance condition**.
12. Insurance premium calculation based on **age, health, city**.
13. Find whether a number is **Armstrong (3-digit)** without loops.
14. Determine eligibility for **job interview** based on marks & backlog.
15. Write a program to check whether input is **valid identifier**.
16. Electricity bill calculation using **slab system + fixed charge**.
17. Railway ticket fare calculation using **age & category**.
18. Check whether a number is **Spy number**.
19. Check whether input string is **palindrome (no loop)**.
20. Loan approval system with **nested if-else**.
21. Determine quadrant of point (x, y) including axes.
22. Find whether number is **automorphic**.
23. Validate login system with **3 attempts logic** (no loops).
24. Calculate income tax using **multiple slabs**.
25. Check whether a number belongs to **binary, octal or decimal**.

SECTION-B: LOOPS (25 Questions)

◈ Core Interview Logic

26. Reverse a number using loop.
27. Check whether a number is **palindrome** using loop.
28. Find sum of digits until result becomes **single digit**.
29. Print Fibonacci series **without using recursion**.
30. Find factorial using loop and handle large input.
31. Check whether number is **prime** (optimized logic).
32. Print all prime numbers between 1 to N.
33. Find **Nth prime number**.
34. Find **GCD (HCF)** using loop.
35. Find **LCM** using loop.

◈ Advanced Interview Logic

36. Check whether a number is **perfect number**.
37. Check whether a number is **strong number**.
38. Check whether a number is **neon number**.
39. Find sum of series: `1 + 11 + 111 + ... + n`
40. Convert decimal to binary using loop.
41. Convert binary to decimal using loop.
42. Count frequency of digits in a number.
43. Remove duplicate characters from string without using set.
44. Find longest word in a sentence using loop.
45. Count palindromic numbers in a range.
46. Find sum of prime digits of a number.
47. Print pyramid pattern using nested loop.
48. Check whether a number is **disarium**.
49. Menu-driven calculator using infinite loop.
50. Print numbers from 1–100 without using numbers in code.