Assignment No 3

Functions (8 Beginner Questions)

1. Write a function `greet(name)` that prints `"Hello, <name>!"`.
2. Write a function `cube(n)` that returns the cube of a number.
3. Create a function `sum_list(lst)` that returns the sum of all numbers in a list.
4. Write a function `average(a, b, c)` that returns the average of three numbers.
5. Create a function `min_of_two(a, b)` that returns the smaller of two numbers.
6. Write a function that checks if a number is prime (return True/False).
7. Write a function `count_words(s)` that returns the number of words in a string.
8. Create a function `last_char(s)` that returns the last character of a string.

Tuples (6 Beginner Questions)

9. Create a tuple with numbers from 1 to 5 and print it.
10. Write a program to access the third element of a tuple `(10, 20, 30, 40, 50)`.
11. Write a program to find the length of a tuple.
12. Convert a tuple `(1,2,3)` into a list.
13. Concatenate two tuples `(1,2,3)` and `(4,5,6)`.
14. Write a program to check if an element exists in a tuple.

Dictionaries (8 Beginner Questions)

15. Create a dictionary with three fruits and their prices, then print it.
16. Write a program to print only the values of a dictionary.
17. Write a program to add a new key-value pair to a dictionary.
18. Given `{"name": "Rahul", "age": 22}`, print the value of `"name"`.
19. Write a program to delete a key from a dictionary.
20. Create a dictionary of squares of numbers from 1 to 5.
21. Write a program to count how many keys are in a dictionary.
22. Given `{"apple": 2, "banana": 5, "mango": 7}`, increase the value of `"banana"` by 2.

Operators (8 Beginner Questions)

A. Arithmetic Operators (3)

23. Input two numbers and print their product.
24. Write a program to calculate the perimeter of a rectangle.
25. Find the remainder when 25 is divided by 4.

B. Bitwise Operators (3)

26. Print the binary representation of a number using `bin()`.
27. Use bitwise AND (`&`) on two numbers 7 and 3.
28. Use bitwise OR (`|`) on two numbers 7 and 3.

C. Conditional (Ternary) Operators (2)

29. Write a one-liner using ternary operator to check if a number is positive or negative.
30. Using ternary operator, print `"Pass"` if marks ≥ 40 else `"Fail"`.

10 Logical Python Questions (Loops + Functions)

1. **Prime Number Check**
   Write a function `is_prime(n)` that checks if a number is prime.
2. **Palindrome Number**
   Write a function to check whether a number is a palindrome (e.g., 121 → Palindrome).
3. **Palindrome String**
   Write a function to check if a string is a palindrome (`"madam"` → True).
4. **Factorial of a Number**
   Write a function `factorial(n)` that calculates factorial using a loop.
5. **Fibonacci Series**
   Write a function to print the first `n` terms of the Fibonacci series.
6. **Armstrong Number**
   Write a function to check if a number is an Armstrong number (e.g., 153 = $1^3+5^3+3^3$).
7. **Sum of Digits**
   Write a function to calculate the sum of digits of a number.
8. **Reverse a Number**
   Write a function to reverse a number (e.g., 123 → 321).
9. **Count Vowels in a String**
   Write a function to count the number of vowels in a given string.
10. **Find GCD of Two Numbers**
    Write a function `gcd(a, b)` that finds the greatest common divisor of two numbers using a loop.