

Set 1

Q1. Perfect Number (4 Marks)

👉 A **Perfect Number** is a number equal to the sum of its proper divisors.

Example: $6 = 1 + 2 + 3$

Example: $28 = 1 + 2 + 4 + 7 + 14$

Problem: Write a C program to check whether a given number is Perfect or not.

Sample I/O:

Input: 28

Output: 28 is a Perfect Number

Q2. String Vowels & Consonants (3 Marks)

Problem: Write a C program to input a string and count vowels and consonants.

Sample Input/Output:

Input: Hello World

Output: Vowels = 3, Consonants = 7

Q3. Sum of Array Elements (5 Marks)

Problem: Write a C program to input 10 numbers in an array and find their odd sum and even sum.

Sample I/O:

Input: 1 2 3 4 5 6 7 8 9 10

Output:

odd sum = 25

even sum = 30

Q4. Student Marks using Structure (6 Marks)

Problem: Create a structure `Student` with roll number, name, and marks of 3 subjects.

Input details of one student and calculate total and average.

Sample I/O:

Input:

Roll No: 101

Name: Ali

Marks: 80 70 90

Output: Total = 240, Average = 80.00

Q5. Square Pattern (7 Marks)

Problem: Print the following pattern for `n=4`.

Sample Output:

```
4 4 4 4 4 4 4
4 3 3 3 3 3 4
4 3 2 2 2 3 4
4 3 2 1 2 3 4
4 3 2 2 2 3 4
4 3 3 3 3 3 4
4 4 4 4 4 4 4
```