# CS23C04 PROGRAMMING IN C : 03.09.2026, 'P' Batch

1. Write a C program to check whether a number is positive or negative.
2. Write a C program to check whether a number is even or odd.
3. Write a C program to find the larger of two numbers.
4. Write a C program to find the largest of three numbers.
5. Write a C program to check whether a year is a leap year
6. Write a C program to check whether a character is a vowel.
7. Write a C program to read marks in 5 subjects. Calculate total and percentage. Using `if-else`, determine whether the student has passed or failed. If passed, display the grade:

   - $\geq 90 \rightarrow$ A+
   - $\geq 80 \rightarrow$ A
   - $\geq 70 \rightarrow$ B
   - $\geq 60 \rightarrow$ C
   - $\geq 50 \rightarrow$ D
   - $< 50 \rightarrow$ Fail

8. Write a C program to calculate the electricity bill based on units consumed:

   - First 100 units → ₹2/unit
   - Next 200 units → ₹3/unit
   - Next 200 units → ₹4/unit
   - Above 500 units → ₹6/unit

Add a fixed charge of ₹100 if the calculated bill exceeds ₹1,000.

## Spot Questions:

1. Write a C program to read `a`, `b`, and `c` and determine the nature of the roots of:

   $$ax^2 + bx + c = 0$$

   Use the discriminant: $D = b^2 - 4ac$ and Display whether the roots are **real and distinct, real and equal, or imaginary**.

2. Write a C program to calculate the final bill based on purchase amount:

- Below ₹5,000 → No discount
- ₹5,000–₹10,000 → 10%
- ₹10,001–₹20,000 → 20%
- Above ₹20,000 → 30%

If the customer is a **member**, provide an additional 5% discount.