



Puzzle 1: Binary Addition Simplification

Problem: You have two binary numbers:

- A = 101110
- B = 011101

Simplify the result of adding these two binary numbers without converting them to decimal. Show your steps.

Solution:

Step 1: Align the numbers for addition

101110

011101

Step 2 : Perform binary addition from right to left:

- $0 + 1 = 1$
- $1 + 0 = 1$
- $1 + 1 = 10$ (write 0, carry 1)
- $1 + 1 + 1$ (carry) = 11 (write 1, carry 1)
- $0 + 1 + 1$ (carry) = 10 (write 0, carry 1)
- $1 + 0 + 1$ (carry) = 10 (write 0, carry 1)
- Write the final carry: 1

The result is: 1001011



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

Accredited by NAAC-UGC with 'A++' Grade (Cycle III) &

Accredited by NBA (B.E - CSE, EEE, ECE, Mech&B.Tech.IT)

COIMBATORE-641 035, TAMIL NADU

