Review of Number Systems

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Number Systems

Review of Number Systems:
- Decimal, Binary, Octal, and Hexadecimal number systems and their significance in digital systems.

Conversion of Number Systems:
- Methods for converting numbers between Decimal, Binary, Octal, and Hexadecimal.

Binary Arithmetic:
- Binary Addition and Subtraction rules with examples.

Binary Representation:
- **Signed Magnitude Representation**: Uses the leftmost bit as a sign bit.
- **Complement Representations**: One’s complement and Two’s complement representation.

Binary Codes:
- BCD (Binary-Coded Decimal), Gray Code, and Excess-3 Code.

Boolean Algebra and Boolean Functions:
- Boolean Theorems and Laws, Representation of Boolean functions.

Simplifications of Boolean Functions:
- Canonical forms: Sum of Products (SOP) and Product of Sums (POS).
- Simplification using Karnaugh Map (K-Map) and Quine-McCluskey method.