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Paper-III : Digital Electronics

UNIT - I

Positional Number System : . Binary, decimal, octal and Hexadecimal number system. conversion from one base to another base. Representation of positive and negative integers,

Real   numbers,Characters.

Digital codes : weighted binary code, Non weighted code, Gray code. Binary to Gray conversion, Gray to binary conversion. BCD code. Binary Arithmetic in 1's and 2's complement.

UNIT - II

Boolean Algebra : Binary valued quantities, Logical Operations, Basic postulates of Boolean Algebra, Principle of Duality , Basic theorems of Boolean algebra , De- Morgan's Theorem. Finding complements of Boolean expressions. Minterm and Maxterm of Boolean Function.

Simplifications of SOP Boolean expressions using karnaugh map - 3 variables Boolean function, 4 variables Boolean Function.

UNIT - III

Basic Logic Gate, Universal Logic gate , Exclusive -OR, Equvalence OR gates.

Combinational Circuits : Half Adder , Full Adder, Parallel Binary Adder, Subtractor,

Comparator , Decoder , Encoder , Multiplexer , Demultiplexer.

UNIT - IV

Combinational versus Synchronous circuits.

Flip Flop : Edge Triggered verus Pulse Triggered Flip Flop, S-R , D , J-K , T edge triggered Flip flop. J-K Master slave Flip flop

UNIT - V

Shift Register: Shift Register Function , Serial and Parallel Shift registers , Bi-directional Shift registers.

Counters : Asynchronous and Synchronous counters, Up/Down Counters, Decade Counters.

Recommended Books :
1. **Digital Fundamentals :-Thomas L. Floyd**
2. **Digital Logic and Computer Design :- Mano M.M.**