

MID SEMESTER EXAM SYLLABUS (2023-24)

(DIGITAL ELECTRONICS-303105220)

Unit 1: Fundamentals of Digital Systems and logic families:

Digital signals, digital circuits, Number Systems: binary, signed binary, octal, hexadecimal number, binary arithmetic, 1's and 2's complements arithmetic, codes, BCD arithmetic, error detecting and correcting codes, AND, OR, NOT, NAND, NOR and Exclusive-OR operations, examples of IC gates, characteristics of digital ICs, Digital Logic families: TTL and CMOS logic, interfacing CMOS and TTL.

Unit 2: Minimization Techniques:

Boolean algebra, Boolean postulates and laws, De-Morgan's Theorem, Principle of Duality, Boolean expression, Minterm, Maxterm, Sum of Products (SOP), Product of Sums (POS), K-map representation, simplification and minimization of logic functions using K-map, Don't care conditions and Quine-McCluskey method of minimization, Variable Entered Map, Realizing Logic Function with Gates.

Unit 3: Combinational Digital circuits

Half binary adder, Full binary adder, Half binary Subtractor, Full binary Subtractor.

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