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| **UNIT NO.** | **CONTENT** | **CONTACT HOURS** |
| 1 | **NUMBER SYSTEMS:** DATA REPRESENTATION, BINARY NUMBER SYSTEM, OCTAL & HEXA-DECIMAL NUMBER SYSTEM, CONVERSION BETWEEN NUMBER SYSTEM, ARITHEMATIC OPERATION ON BINARY NUMBERS, r's & r-1's COMPLEMENT, OVERFLOW AND UNDERFLOW,FIXED AND FLOTING POINT REPRESENTATION, CODES, ASCII, EBCDIC CODES, GRAY CODE, EXCESS-3 & BCD, ERROR DETECTION & CORRECTING CODES | 10 |
| 2 | **LOGIC GATES:** LOGIC GATES AND, OR, NOT GATES AND THEIR TRUTH TABLES, NOR, NAND, XOR & XNOR GATES, UNIVERSAL GATES & THEIR IMPLEMENTATION, BOOLEAN ALGEBRA, BASIC BOOLEAN LAW'S, DEMORGAN'S THEOREM, MINTERMS AND MAXTERMS,K-MAP SIMPLIFICATION,MINIMIZATION TECHNIQUES, SUM OF PRODUCT & PRODUCT OF SUM, CANONICAL FORMS. | 10 |
| 3 | **COMBINATIONAL CIRCUITS:** DESIGN PROCEDURE - ADDERS-SUBTRACTORS - SERIAL ADDER / SUBTRACTOR - PARALLEL ADDER / SUBTRACTOR. MULTIPLEXER / DEMULTIPLEXER, ENCODER / DECODER, IMPLEMENTATION OF COMBINATIONAL LOGIC CIRCUITS. | 10 |
| 4 | **SEQUENTIAL CIRCUITS:** FLIP FLOPS, TYPES OF FLIP FLOPS, SR, JK, T, D & MASTER SLAVE - CHARACTERISTICS TABLE & EQUATION. REALIZATION OF ONE FLIP FLOP USING OTHER FLIP FLOPS. DEFINITION OF REGISTERS, TYPES OF REGISTERS, BASIC SHIFT REGISTERS , APPLICATION OF REGISTERS. | 10 |
| 5 | **COUNTERS:** DEFINITION OF COUNTERS, TYPES OF COUNTERS, ASYNCHRONOUS COUNTERS, SYNCHRONOUS COUNTERS, RING COUNTERS, UP/DOWN COUNTERS ETC. APPLICATIONS OF COUNTERS. | 8 |
|  | **TOTAL** | 48 |

**DIGITAL ELECTRONICS**