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| Digital Logic Design | |
| **SOURCE: 01** | **Digital Logic (GATE EXAM)** | |
| 01 | [Digital Logic Syllabus](https://www.youtube.com/watch?v=O0gtKDu_cJc&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=1&pp=iAQB) | |
| 02 | Properties of Various Logic Gates | Commutative, Associative, Idempotent | |
| 03 | Types of Logic Gates | Symbols | Truth Tables | |
| 04 | Implement All Gates Using NAND and NOR Gate | Why NAND and NOR are Called Universal Gate | |
| 05 | XOR Gate Properties with Example | Digital Electronics | |
| 06 | XNOR Gate Properties with Example | Digital Electronics | |
| 07 | Canonical Sum of Product (SOP) with Example | |
| 08 | Dualty Theorem | How to Find Dual of Any Boolean Expression | |
| 09 | Self-Dual Function | How to Find Self Dual Function of Any Boolean Expression with 1 Variable | |
| 10 | How Many Boolean Function and Self-Dual Functions Possible with ‘N’ Variables | |
| 11 | Minimization Using K-Map | Introduction to K-Map | Digital Electronics | |
| 12 | What is K-Map | Design K-Map | 3 Variable K-Map | |
| 13 | 4 Variable K-Map with Examples | Design K-Map | Minimization in Digital Electronics | |
| 14 | Essential Prime Implicates vs Prime Implicates | K-Map Minimization with Examples | |
| 15 | Half-Adder | Combination Circuits | Digital Electronics | |
| 16 | Full-Adder | Combinational Circuit | Digital Electronics | |
| 17 | Half Subtractor | Combinational Circuits | Digital Electronics | |
| 18 | Introduction to Multiplexer | What are Multiplexers | Digital Electronics | |
| 19 | Implement Function Using Multiplexer | How Multiplexer Implement Any Function | |
| 20 | How Multiplexers Are Functionally Complete | Implement AND, OR, NOT Using 2\*1 Mux | |
| 21 | Introduction to DE-multiplexers | What are DE-multiplexers | Digital Electronics | |
| 22 | Working of Multiplexers | Inside Block Diagram of Multiplexers | |
| 23 | Working of DE-multiplexers | Digital Electronics | |
| 24 | What is Cascading Multiplexer | Multiplexers in Digital Electronics | |
| 25 | Introduction to Encoder and Decoder | Digital Electronics | |
| 26 | Sequential Circuit Introduction with Examples | |
| 27 | SR Latch Using NAND Gate | NAND SR Latch | Digital Electronics | |
| 28 | SR Flip-Flop Using NAND Gate | Digital Electronics | |
| 29 | SR Latch Using NOR Gate | NOR SR Latch | Digital Electronics | |
| 30 | SR Flip-Flop Using NOR Get | Digital Electronics | |
| 31 | SR Flip-Flop Characteristic and Excitation Table | Sequential Circuits | |
| 32 | Introduction to JK-Flip Flop | JK-Flip –Flop Full Explanation | Digital Electronics | |
| 33 | Level Trigger vs Edge Trigger Flip-Flop | Types of Triggering | |
| 34 | JK Flip-Flop Characteristic and Excitation Table | Sequential Circuits | Digital Electronics | |
| 35 | Race Around Condition | Race Condition in JK Flip-Flop | |
| 36 | Master Slave JK Flip-Flop | Digital Electronics | |
| 37 | Introduction to D Flip-Flop | Circuit, Working, Truth Table, Characteristics and Excitation | |
| 38 | Introduction to T Flip-Flop | Circuit, Working, Truth Table, Characteristics and Excitation | |
| 39 | Convert SR to D Flip-Flop | Digital Electronics | |
| 40 | T Flip-Flop to JK ff Conversion | |
| 41 | Preset and Clear Inputs in Flip-Flop | Asynchronous Input s | |
| 42 | Introduction to Counters | Digital Electronics | |
| 43 | Synchronous vs Asynchronous Counter | Digital Electronics | |
| 44 | Up and Down Counter | Recognize Up and Down Counter | |
| 45 | Design Synchronous Counter | How to Design Synchronous Counter | Digital Electronics | |
| 46 | Ring Counter | Synchronous Counters | Digital Electronics | |
| 47 | Johnson Counter | Twisted Ring Counter | |
| 48 | Shift Registers | SISO, SIPO, PISO, PIOP | |
| 49 | Convert SR to JK Flip-Flop | Digital Electronics | |
| 50 | Convert JK to SR Flip-Flop | Digital Electronics | |
| 51 | Ranges of Sign Magnitude 1’s and 2’s Complement | Number System | |
| 52 | XOR Get Properties | |
| 53 | Universal Gates | |
| 54 | Self-Complementary Codes | Digital Electronics | |
| 55 | XNOR Gate Properties | |
| 56 | Combinational Circuit and Types | |
| 57 | Half Adder | |
| 58 | Priority Encode | Digital Electronics | |