|  |  |
| --- | --- |
| 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](https://www.youtube.com/watch?v=KkA3j-gdBfw&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=2&pp=iAQB) | |
| 03 | [Types of Logic Gates | Symbols | Truth Tables](https://www.youtube.com/watch?v=47u7b2yh7s8&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=3&pp=iAQB) | |
| 04 | [Implement All Gates Using NAND and NOR Gate | Why NAND and NOR are Called Universal Gate](https://www.youtube.com/watch?v=w2hK0JVKmJc&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=4&pp=iAQB) | |
| 05 | [XOR Gate Properties with Example | Digital Electronics](https://www.youtube.com/watch?v=U6lPqzLnF2E&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=5&pp=iAQB) | |
| 06 | [XNOR Gate Properties with Example | Digital Electronics](https://www.youtube.com/watch?v=nHDi29S0hXI&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=6&pp=iAQB) | |
| 07 | [Canonical Sum of Product (SOP) with Example](https://www.youtube.com/watch?v=DgsvuhG7ShI&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=7&pp=iAQB) | |
| 08 | [Dualty Theorem | How to Find Dual of Any Boolean Expression](https://www.youtube.com/watch?v=b_KpV--c_n8&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=8&pp=iAQB) | |
| 09 | [Self-Dual Function | How to Find Self Dual Function of Any Boolean Expression with 1 Variable](https://www.youtube.com/watch?v=GmY4Gz-WL7Y&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=9&pp=iAQB) | |
| 10 | [How Many Boolean Function and Self-Dual Functions Possible with ‘N’ Variables](https://www.youtube.com/watch?v=wbLlmHr2aG4&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=10&pp=iAQB) | |
| 11 | [Minimization Using K-Map | Introduction to K-Map | Digital Electronics](https://www.youtube.com/watch?v=y-aYzGdlM-8&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=11&pp=iAQB) | |
| 12 | [What is K-Map | Design K-Map | 3 Variable K-Map](https://www.youtube.com/watch?v=36LjWW-BSyU&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=12&pp=iAQB) | |
| 13 | [4 Variable K-Map with Examples | Design K-Map | Minimization in Digital Electronics](https://www.youtube.com/watch?v=0vEvpcY8O3o&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=13&pp=iAQB) | |
| 14 | [Essential Prime Implicates vs Prime Implicates | K-Map Minimization with Examples](https://www.youtube.com/watch?v=V9aV2qTSlFg&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=14&pp=iAQB) | |
| 15 | [Half-Adder | Combination Circuits | Digital Electronics](https://www.youtube.com/watch?v=zm71wFsj-fs&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=15&pp=iAQB) | |
| 16 | [Full-Adder | Combinational Circuit | Digital Electronics](https://www.youtube.com/watch?v=wysI90Xtxvc&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=16&pp=iAQB) | |
| 17 | [Half Subtractor | Combinational Circuits | Digital Electronics](https://www.youtube.com/watch?v=7WoTCwgx0kE&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=17&pp=iAQB) | |
| 18 | [Introduction to Multiplexer | What are Multiplexers | Digital Electronics](https://www.youtube.com/watch?v=p6yPvw88BJk&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=18&pp=iAQB) | |
| 19 | [Implement Function Using Multiplexer | How Multiplexer Implement Any Function](https://www.youtube.com/watch?v=AXi-n6uGO4c&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=19&pp=iAQB) | |
| 20 | [How Multiplexers Are Functionally Complete | Implement AND, OR, NOT Using 2\*1 Mux](https://www.youtube.com/watch?v=LX8UPEYcEJ8&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=20&pp=iAQB) | |
| 21 | [Introduction to DE-multiplexers | What are DE-multiplexers | Digital Electronics](https://www.youtube.com/watch?v=Eb56gaw6JrQ&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=21&pp=iAQB) | |
| 22 | [Working of Multiplexers | Inside Block Diagram of Multiplexers](https://www.youtube.com/watch?v=BRqKzUkJSrU&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=22&pp=iAQB) | |
| 23 | [Working of DE-multiplexers | Digital Electronics](https://www.youtube.com/watch?v=sfO49TABrNo&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=23&pp=iAQB) | |
| 24 | [What is Cascading Multiplexer | Multiplexers in Digital Electronics](https://www.youtube.com/watch?v=kx3Dj6HuIF8&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=24&pp=iAQB) | |
| 25 | [Introduction to Encoder and Decoder | Digital Electronics](https://www.youtube.com/watch?v=DqCDQH44y9w&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=25&pp=iAQB) | |
| 26 | [Sequential Circuit Introduction with Examples](https://www.youtube.com/watch?v=v0pxOfTg18Y&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=26&pp=iAQB) | |
| 27 | [SR Latch Using NAND Gate | NAND SR Latch | Digital Electronics](https://www.youtube.com/watch?v=zVjxEIy33Fs&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=27&pp=iAQB) | |
| 28 | [SR Flip-Flop Using NAND Gate | Digital Electronics](https://www.youtube.com/watch?v=PWB3dn0azg8&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=28&pp=iAQB) | |
| 29 | [SR Latch Using NOR Gate | NOR SR Latch | Digital Electronics](https://www.youtube.com/watch?v=Jxod1NNXbUg&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=29&pp=iAQB) | |
| 30 | [SR Flip-Flop Using NOR Get | Digital Electronics](https://www.youtube.com/watch?v=ZWikSnUxka8&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=30&pp=iAQB) | |
| 31 | [SR Flip-Flop Characteristic and Excitation Table | Sequential Circuits](https://www.youtube.com/watch?v=ij2CY8PmWoM&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=31&pp=iAQB) | |
| 32 | [Introduction to JK-Flip Flop | JK-Flip –Flop Full Explanation | Digital Electronics](https://www.youtube.com/watch?v=qU7x1XLjhn4&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=32&pp=iAQB) | |
| 33 | [Level Trigger vs Edge Trigger Flip-Flop | Types of Triggering](https://www.youtube.com/watch?v=SK0bSphgBgI&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=33&pp=iAQB) | |
| 34 | [JK Flip-Flop Characteristic and Excitation Table | Sequential Circuits | Digital Electronics](https://www.youtube.com/watch?v=iX_jzBL1-Dk&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=34&pp=iAQB) | |
| 35 | [Race Around Condition | Race Condition in JK Flip-Flop](https://www.youtube.com/watch?v=0Aglla_ICvU&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=35&pp=iAQB) | |
| 36 | [Master Slave JK Flip-Flop | Digital Electronics](https://www.youtube.com/watch?v=IrbF3ew0Qxs&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=36&pp=iAQB) | |
| 37 | [Introduction to D Flip-Flop | Circuit, Working, Truth Table, Characteristics and Excitation](https://www.youtube.com/watch?v=SCZaFD9Zv1s&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=37&pp=iAQB) | |
| 38 | [Introduction to T Flip-Flop | Circuit, Working, Truth Table, Characteristics and Excitation](https://www.youtube.com/watch?v=ECsNvi0wgyA&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=38&pp=iAQB) | |
| 39 | [Convert SR to D Flip-Flop | Digital Electronics](https://www.youtube.com/watch?v=kOq-OZA4bRs&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=39&pp=iAQB) | |
| 40 | [T Flip-Flop to JK ff Conversion](https://www.youtube.com/watch?v=2M4tZaPiWj4&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=40&pp=iAQB) | |
| 41 | [Preset and Clear Inputs in Flip-Flop | Asynchronous Input s](https://www.youtube.com/watch?v=mIxJB-Bao8I&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=41&pp=iAQB) | |
| 42 | [Introduction to Counters | Digital Electronics](https://www.youtube.com/watch?v=Mxfsl5dhsyo&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=42&pp=iAQB) | |
| 43 | [Synchronous vs Asynchronous Counter | Digital Electronics](https://www.youtube.com/watch?v=sdQO4ryAovs&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=43&pp=iAQB) | |
| 44 | [Up and Down Counter | Recognize Up and Down Counter](https://www.youtube.com/watch?v=qBhP0-8g4AA&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=44&pp=iAQB) | |
| 45 | [Design Synchronous Counter | How to Design Synchronous Counter | Digital Electronics](https://www.youtube.com/watch?v=7XVnPZb8b-I&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=45&pp=iAQB) | |
| 46 | [Ring Counter | Synchronous Counters | Digital Electronics](https://www.youtube.com/watch?v=esFP48kLxuw&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=46&pp=iAQB) | |
| 47 | [Johnson Counter | Twisted Ring Counter](https://www.youtube.com/watch?v=r80M7hOpzhA&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=47&pp=iAQB) | |
| 48 | [Shift Registers | SISO, SIPO, PISO, PIOP](https://www.youtube.com/watch?v=NjMX4hohyRI&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=48&pp=iAQB) | |
| 49 | [Convert SR to JK Flip-Flop | Digital Electronics](https://www.youtube.com/watch?v=Q6jiXpclSGU&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=50&pp=iAQB) | |
| 50 | [Convert JK to SR Flip-Flop | Digital Electronics](https://www.youtube.com/watch?v=k-jzR07dY1s&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=51&pp=iAQB) | |
| 51 | [Ranges of Sign Magnitude 1’s and 2’s Complement | Number System](https://www.youtube.com/watch?v=2t2mQMcUNGo&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=52&pp=iAQB) | |
| 52 | [XOR Get Properties](https://www.youtube.com/watch?v=i8F3k439NYo&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=53&pp=iAQB) | |
| 53 | [Universal Gates](https://www.youtube.com/watch?v=7dWMqR51eKY&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=54&pp=iAQB) | |
| 54 | [Self-Complementary Codes | Digital Electronics](https://www.youtube.com/watch?v=0H2EA9NWJ44&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=55&pp=iAQB) | |
| 55 | [XNOR Gate Properties](https://www.youtube.com/watch?v=ePVuZ0SmKDM&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=56&pp=iAQB) | |
| 56 | [Combinational Circuit and Types](https://www.youtube.com/watch?v=j0xnLS9IFfw&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=57&pp=iAQB) | |
| 57 | [Half Adder](https://www.youtube.com/watch?v=2B8I-2bSCc8&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=58&pp=iAQB) | |
| 58 | [Priority Encode | Digital Electronics](https://www.youtube.com/watch?v=qkCQbaw_Aoo&list=PLxCzCOWd7aiGmXg4NoX6R31AsC5LeCPHe&index=60&pp=iAQB) | |