

**Module 1**

**Chapter 1 : Number Systems 1-1 to 1-36**

**Syllabus :** Number formats : Binary, Signed binary, Octal, Hexadecimal, BCD and their basic math operations (addition and subtraction).

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**Chapter 3 : Logic Families****3-1 to 3-24**

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| <b>Syllabus</b> : Specifications of digital IC, Logic families : TTL, CMOS logic families, Comparison of TTL and CMOS, Interfacing of TTL and CMOS, Tri-state logic. |
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**Module 2**

**Chapter 4 : Simplification Techniques 4-1 to 4-32**

**Syllabus :** Design and simplification of logic functions :  
K-map representation, simplification of logic functions using  
K-map (upto 4 variables), Minterm, maxterm, SOP and POS  
implementation, realization of logic function using universal  
gates.

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**Module 3**
**Chapter 6 : Flip Flops**
**6-1 to 6-30**

**Syllabus** : Sequential logic circuits : Comparison of combinational and sequential circuit, Flip-flops -SR, JK, T, D, Master slave JK.

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**Module 4**

**Chapter 9 : A/D and D/A Converters 9-1 to 9-30**

**Syllabus :** Digital to analog converter : Weighed resistor converter, R-2R ladder D/A converter, Examples of D/A converter ICs, Analog to digital converter : Sample and hold circuit, Quantization and encoding, Successive approximation A/D converter, Dual slope A/D converter, Voltage to frequency and voltage to time conversion, Specifications of A/D converters, Examples of A/D converter ICs.

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| <b>Syllabus</b> : Classification and characteristics of memories, Memory organization and operation, Expanding memory size - Memory mapping and address decoding, Sequential memory, Read only memory (ROM), Read and write memory (RAM), Content addressable memory (CAM), Commonly used memory chips. |  |             |         |  |       |
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**Module 6**

**Chapter 11 : Programmable Logic Devices**

**11-1 to 11-22**

**Syllabus** : ROM as a programmable logic device, Programmable logic array, Programmable array logic, Complex Programmable Logic Devices (CPLDs), Field Programmable Gate Array (FPGA).

