ITC07 :: Digital Circuits and Systems

(3L-0T-2P)

Boolean Algebra, Venn diagram, switching function and minimization of switching functions with don’t care terms etc. (Karnaugh’s Map Method & Tabulation Techniques)

Introduction Logic Gates, Logic Families TTL, Tristate Logic, ECL, CMOS and T2L Logic, Logic parameters etc.

Bistable, Monostable, Astable and Schmitt trigger circuit.

Gated memories, M/S flipflops, Shift Registers Serial & Parallel Counters, Ring counters, Up Down counters.

Designing of combinational circuits like code converter, address, comparators, etc.

Introduction to semiconductor memories: ROM, PROM, EPROM, STATIC & DYNAMIC RAM.

Introduction to Encoders, Decoders, Multiplexer, demultiplexer, Designing combinational circuits with multiplexers and other digital logic blocks, PROM.

Concept of Digital to Analog Conversion Ladder Networks, and Concept of Analog to Digital conversion: Dual slope method, V-F conversion, stair-case Ramp-method/counter method, successive approximation type of A/D converters etc.

Introduction to design of synchronous & asynchronous sequential circuit flow table realization from verbal description, ASM charts, minimization of flow-table and concept of state assignments.