**lectronic Devices:**

Electronic Components: Resistors, Capacitors, Inductors, Voltage, Current

Nature of the atom. Basic Concepts of semiconductor charge carriers, Energy bands, Intrinsic and Extrinsic semiconductors. Carrier Transport: Diffusion current, drift current, mobility, conductivity and resistivity. Generation and recombination of carriers.

P-N junction Diode, Zener Diode, tunnel diode, p-I-n diode, avalanche photo diode, LED, BJT, JFET, MOSFET, Basics of LASERS

Introduction to IC fabrication

**Basic Analog Circuits:**

Small Signal Equivalent circuits of diodes, BJTs, and MOSFETs.

Basic diode circuits: clipping, clamping, rectifier circuits

Basic BJT circuits: BJT characteristics, BJT configurations (CB, CC, CE), switching , Amplifiers: single and multi-stage. Frequency response of amplifiers

**Basic Digital Cicuits:**

Boolean Algebra

Basic Logic Gates: AND, OR, NOT, NAND, NOR

Digital IC Families: DTL, TTL, ECL, MOS, CMOS