

**Unit-I****Chapter 1 : Basics of Electrical Engg. 1-1 to 1-30**

Syllabus : Definition of current and voltage, Units of current and voltage, Ohm's law, Symbol and relation. Characteristics of electrical circuit, Resistor in series and parallel, Inductor, Capacitor. Kirchoffs' current and voltage law. Active components (Voltage source and current source), Passive components (Resistor, inductor, capacitor). Sinusoidal signal, Triangular wave, Square wave, Sawtooth wave, Amplitude, frequency, Wave length, Time period.

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Unit-II

Chapter 2 : Diode Theory 2-1 to 2-24

Syllabus : Structure of atom, Valence electron, Conductor, Semiconductor, Insulator. Doping, Intrinsic semiconductor, Extrinsic semiconductor, P-type and N-type semiconductor, Majority charge carrier, Minority charge carrier, P-N junction, Depletion layer, Knee voltage, Forward bias, Reverse bias.

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Unit-II

Chapter 3 : Special Diodes 3-1 to 3-18

Syllabus : Special diodes : LED, Photodiode, Zener diode, Tunnel diode, LASER diode and Power diode, Zener diode as a voltage regulator.

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Unit-II

Chapter 4 : Rectifiers 4-1 to 4-16

Syllabus : Types of Rectifiers : Half Wave, Full Wave Rectifier (bridge and center tapped) : Circuit operation, I/O waveforms for voltage and current.

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Unit-III

Chapter 5 : Transistors 5-1 to 5-20

Syllabus : Types of transistors : PNP, NPN, Working of transistors, Transistor Configurations (CE) : Circuit diagram, Input and output characteristics. Different points of characteristics (Cut-off, Active and Saturation), Input resistance, Output resistance, Current gain, Transistor as a switch.

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Unit-IV

Chapter 6 : Electronic Hardware 6-1 to 6-32

Syllabus : Definition, Construction, Types, Example, PCB layout, Types, Single layer, Multi layer, Manufacturing of PCB. SSI, MSI, LSI, VLSI (Introduction to various technology). RTL, DTL, TTL, CMOS, Fan in, Fan out (Building components, Number of gates supported), Twisted pair, Coaxial cable, Fibre optic cable, RJ45 connector, BNC.

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