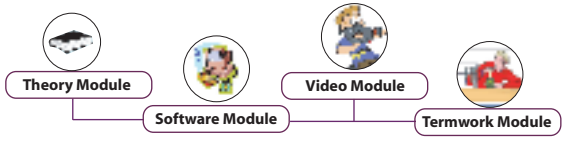
Learning Resources

Learning/Training Resources with Computer Aided Instructions in subject of

Electronic Devices & Circuits

SoftTech ENGINEERS PVT.LTD. Introduces, Global e-Learning System in Education & Training in the form of Learning Resources with Computer Aided Instructions



System Requirement:- IBM-PC Compatible Min P-III with Window-OS, 128 MB RAM/Multimedia Kit

Theory module

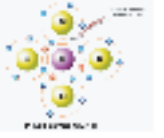
Features : Theory, Figures, Photographs, Animations With Controller, Highlighter Tool, Note Creation Facility, Systematic Page Navigation, Printing Facility.

List of Topics

Introduction to Basic Electronics

Modern Trends in Electronics, Communication and Entertainment Applications, Measurement and Instruments Applications, Defence Applications, Applications in Medicine, Passive Components, Active Components, SI Units.

Semiconductor Theory

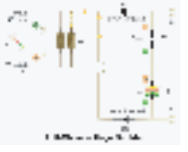


Atomic Theory, Structure of Atom, Band Theory, Classification of Material Based on Band Theory, Conductors, Insulators,& Semiconductors {materials} & their Comparison, Semiconductor Materials, Intrinsic & Extrinsic Semiconductors, Trivalent & Pentavalent Impurities, P-Type & N-Type Semiconductor.

Rectifier Circuits

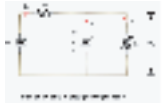
PN-Junction Diode, PN-junction With Forward & Reversed Bias, V-I Characteristic of P-N junction diode, Operating Principle, Applications of Diode, Static & Dynamic Resistance, Other Types of Diodes Symbol, Principle of Operation and Characteristics of, Photo Diode, Varactor Diode, Tunnel Diode, Point Contact Diode, Diode as Rectifier Definition of Rectifier Circuit, Rectifier Circuits -HW, FW Center Tapped and FW Bridge Type, Ripple Factor PIV, Comparison, Merits and Demerits of Different Rectifier Circuits.

Filter Circuits



Circuit Parameters Resistor, Inductor and Capacitor, Necessity of Filter Circuits, **Type of Filter Circuits :** Series Inductor Type, Shunt Capacitor Type, L-C Filter, Filter. Comparison, Merits & Demerits of Different Filters, Nature of o/p Waveform of Different Filters, Voltage Multipliers, Voltage Doubler, Trippler, & Quadrupler Circuits Using P-N Junction Diode.

Zener Diode and its Application



V-I Characteristics of Zener Diode, Zener Diode Specifications, Zener Diode Voltage Regulator, Optimum Value of Current Limiting Resistor.

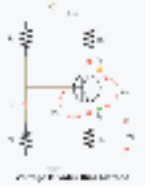
Bipolar Junction Transistor

Introduction, Construction, Symbol, Operating principle of PNP & NPN Transistors, Three Configurations, Transistor Characteristics, Comparison Between the Three Configurations, Transistor as an Amplifier, Why CE Configuration is Widely Used in Amplifier Circuit.

Field Effect Transistor

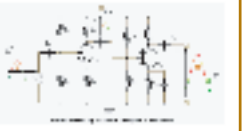
Construction, Symbol & Working Principle & Types of JFET, Characteristics of JFET, JFET Parameters, Dynamic Drain Resistance, Mutual Conductance or Transconductance Pinch Off Voltage, Amplification Factor, Comparison, Merits & Demerits of JFET with BJT, Metal Oxide Semiconductor FET, Construction, Symbol of MOSFET, Working Principle of MOSFET.

Transistor Biasing & Stabilization



Introduction, Transistor Biasing, Faithful Amplification, Transistor Operating Points, Selection of Operating Point, Variation of Transistor Parameters, Stabilization for Operating Point, Need for Stabilization, Thermal Runaway, Stability Factor, Requirement of Transistor Biasing, Methods of Transistor Biasing, Base Resisters, Method or Fixed Bias Circuits, Negative Feedback & its Effect on Stabilization, Voltage Divider Bias Method, Transistor Hybrid Parameters, Biasing With Feedback Resister or Collector to Base Bias Circuit, Four Parameter System, Meaning of h Parameters for CB, CE & CC Configuration.

Transistor Amplifiers



Introduction, Classification of Amplifiers, Single Stage Amplifiers, Graphical Explanation of Amplifiers, Practical Circuit of Amplifiers, D-C & A-C Equivalents Circuit of Amplifiers, Load Line Analysis, Multistage Amplifiers, Amplifiers Coupling, R-C coupled Transformer Coupled & Direct Coupled Amplifiers, Comparison of Different Type of Coupling, Frequency Response of Multistage Amplifiers, Gain, Bandwidth, Merits, & Demerits of Deferent coupling.

Transistor AF Power amplifiers

Transistors AF Power Amplifiers, Difference Between Voltage & Power Amplifiers, Classification of Power Amplifiers, Properties of class A, B, AB, and C Amplifiers, Comparison & their applications, Single Ended Amplifier, Push-Pull Amplifier, Complementary-Symmetry Push-Pull Circuits, Thermal-Runaway & Heatsinks.

Software Module

Bipolar Junction Transistor, Field Effect Transistor, Filter Circuits, Rectifier Circuit, Transistor AF Power Amplifier, Transistor Amplifier, Transistor Biasing & Stabilization, Zener Diodes & its Attributes.

Termwork Module

Contains Assignments on Various Topics Covering Subjective Questions, Objective Questions, Random Selection of Objective Type Questions, Numerical Assignments.

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