

Microwave Engineering Godse Bakshi

Electronic Circuits and Applications
Electrical Machines
Electronic Circuit Analysis
Elements Of Electronics Engineering
Computer Architecture
Management Science
Electromagnetic Field Theory
Network Theory
Microwave Engineering - I
Elements Of Electrical Engineering
Linear Integrated Circuits
Basic Electrical And Electronics Engineering
Analog Electronics
Basic Electrical And Electronics Engineering
Basic Electronics Engineering
Basic Electronics
Basic Electrical & Electronics Engineering
Electronics Engineering
Electrical Engineering
Microwave Engineering
Telecommunication Engineering
FOUNDATIONS FOR MICROWAVE ENGINEERING, 2ND ED
Microprocessors and microcontroller
Microprocessor and Microcontroller
Microwave Engineering-II
Measurements and Instrumentation
Basics Of Electrical And Electronics Engineering
Electronic Devices And Circuits
Linear Ic Applications
Basic Electronics
PULSE AND DIGITAL CIRCUITS
Digital Communication
Industrial Electronics
Analog and Digital Electronics
Digital Electronics (Digital Logic Design)
Analog Communication
Basic Electrical And Electronics Engineering
Linear Integrated Circuits
Basic Electrical Engineering
Basic Electrical and Electronics Engineering:

Electronic Circuits and Applications

D.C. and A.C. Circuits Definition of current, Potential, Resistance, Power, and energy, Symbol and units, International system of units, Ohm's law, Kirchhoff's laws, Solution of series, Parallel and series parallel circuits. Generation of alternating emf, Average and rms values, Form and peak factors, Concept of phasor representation, Complex operator j , AC circuits involving R, L, C parameters, Reactance and impedance, Power factor and power components in ac circuits, Series and parallel resonances, Simple problems. Construction and principle of operation of moving coil and moving iron instruments (only voltmeters and ammeters), Dynamometer type wattmeter, Induction type energy meter, Megger DC Machines and Transformers Construction of DC Machines, Theory of operation of DC Generators, Characteristics of DC Generators, Operating principle of DC motors, Types of DC motors and their characteristics, Speed controls of DC motors. Principles of operation of Transformers, Types, Equivalent circuit, Voltage regulation, Efficiency, Testing, All day efficiency, Principle of operation of three phase transformers, Transformer connection. Induction Machines Construction of single phase motors, Types of single phase motors, Double revolving field theory, Starting methods, Capacitor start capacitor run motors, Shaded pole, Repulsion type, Universal motors, Construction, Types, Equivalent circuit, Starting and Speed control. Principle of alternator, Construction details, Types, Equation of induced EMF, Voltage regulation, Methods of starting of synchronous motors, Torque equation, V curves, Synchronous condensers. Electronic Components, Devices and Power Converters Active and Passive components, Introduction to transducers,

Resistive, Inductive and Capacitive transducers. Basic principle and characteristics of PN diode, Zener diode, Bipolar Junction Transistor, Field Effect Transistors, (JFET, MOSFET), UJT, Thyristor, (SCR, Diac, Triac) Photoelectric devices, (LDR, Photodiode, Phototransistor), Photovoltaic devices, Operating principles of Half and Full wave rectifiers, Bridge rectifier, Choppers, Inverters, Voltage controllers, Voltage Regulators. Digital Electronics and Communications Symbol, Truth table and circuit of basic logic gates, Universal gates, Half adder, Full adder, Flip-flops, RS, JK, T and D, Basic of counters, Shift registers. Telecommunication system, Block diagram, Principles of Modulation, AM, FM, Pulse and Digital Modulation, Data Transmission, Modem, Various communication systems like Radio, TV, Microwave, Satellite, Radar, Fiber optic and ISDN (block diagram discription only), Principle of operation of Mobile phones.

Electrical Machines

Electronic Circuit Analysis

Elements Of Electronics Engineering

Electrical Engineering Essence of electricity, Conductors, Semiconductors and insulators (elementary treatment only); Electric field, electric current, Potential and potential difference, Electromotive force, Electric power, Ohm's law, Basic circuit components, Electromagnetism related laws, Magnetic field due to electric current flow, Force on a current carrying conductor placed in a magnetic field, Faradays laws of electromagnetic induction. Types of induced EMF's, Kirchhoff's laws, Simple problems. Network Analysis Basic definitions, Types of elements, types of sources, Resistive networks, Inductive networks, Capacitive networks, Series parallel circuits, Star delta and delta star transformation, Network theorems-Superposition, Thevenin's, Maximum power transfer theorems and simple problems. Magnetic Circuits Basic definitions, Analogy between electric and magnetic circuits, Magnetization characteristics of Ferro magnetic materials, Self inductance and mutual inductance, Energy in linear magnetic systems, Coils connected in series, Attracting force or electromagnets. Alternating Quantities Principle of ac voltages, Waveforms and basic definitions, Relationship between frequency, Speed and number of poles, Root mean square and average values of alternating currents and voltage, form factor and peak factor, Phasor representation of alternating quantities, The j operator and phasor algebra, analysis of ac circuits with single basic network element, single phase series circuits, Single phase parallel circuits, Single phase series parallel circuits, Power in ac circuits. Transformers Principles of operation, Constructional details, Ideal Transformer and Practical Transformer, Losses, Transformer Test, Efficiency and Regulation Calculations. Direct current

machines Principle of operation of dc machines, Armature windings, E.M.F. equation in a dc machine, Torque production in a dc machine, Operation of a dc machine as a generator, Operation of a dc machine as a motor. A.C. Machines Three phase induction motor, principle of operation, Slip and rotor frequency, Torque (simple problems). Synchronous Machines Principle of operation, EMF equation (Simple problems on EMF). Synchronous motor principle and operation (Elementary treatment only) Basic Instrument Classification of instruments, Operating principles, Essential features of measuring instruments, Moving coil permanent magnet (PMMC) instruments, Moving Iron of Ammeters and Voltmeters (elementary treatment only).

Computer Architecture

Analog and Digital Electronics is designed specifically to cater to the needs of third Semester students of B.Tech. in Computer Science and Engineering, JNTU. The book has a perfect blend of focused content and complete coverage as per the syllabus. Simple, easy-to-understand and difficult-jargon-free text elucidates the fundamentals of analog and digital electronics. Several solved examples, including circuit diagrams and adequate questions further help students understand and apply the concepts. Few Highlights: • Comprehensive syllabus coverage as per latest pattern • Lucid presentation style • Rich pool of pedagogy: Illustrative Examples and Review Questions

Management Science

IC Fabrication IC classification, Fundamental of monolithic IC technology, Epitaxial growth, Masking and etching, Diffusion of impurities. Realisation of monolithic ICs and packaging. Characteristics of Op-amp Ideal Op-amp characteristics. DC characteristics, AC characteristics, Offset voltage and current : Voltage series feedback and shunt feedback amplifiers, Differential amplifier; Frequency response of Op-amp; Basic applications of Op-amp-Summer, Differentiator and Integrator. Applications of Op-amp Instrumentation amplifier, First and second order active filters, V/I and I/V converters, Comparators, Multivibrators, Waveform generators, Clippers, Clampers, Peak detector, S/H circuit, D/A converter (R-2R ladder and weighted resistor types), A/D converter-Dual slope, Successive approximation and Flash types. Special Ics 555 Timer circuit - Functional block, Characteristics and applications ; 566-Voltage controlled oscillator circuit; 565-Phase lock loop circuit functioning and applications, Analog multiplier ICs. Application Ics IC voltage regulators - LM317, 723 regulators, Switching regulator, MA 7840, LM 380 power amplifier, ICL 8038 function generator IC, Isolation amplifiers, Opto coupler, Opto electronic Ics.

Electromagnetic Field Theory

Single Stage Amplifiers Review, Small signal analysis of junction transistor, Frequency response of common emitter amplifier, Common base amplifier, Common collector amplifier, JFET amplifiers, Common drain (CD) amplifier, Common gate amplifier, gain band-width product. Multistage Amplifiers Multi stage amplifiers, Methods of inter stage coupling, n-stage cascaded amplifier, Equivalent circuits, Miller's theorem, Frequency effects, Amplifier analysis, High input resistance transistor circuits, Cascode - transistor configuration, CE-CC amplifiers, Two stage RC coupled JFET amplifier (in common source (CS) configuration), Difference amplifier. High Frequency Transistor Circuits Transistor at high frequencies, Hybrid- common emitter, Transconductance model, Determination of hybrid- conductances, Variation of Hybrid parameters with $|I_C|$, $|V_{CE}|$ and temperature. The parameters f_T , expression for f , Current gain with resistance load, CE short circuit current gain, Hybrid - (π) parameters, Measurement of f_T variation of Hybrid- parameters with Voltage, Current and temperature, Design of high frequency amplifier. Power Amplifiers Class A power amplifier, Maximum value of efficiency of class a amplifier, Transformer coupled amplifier, Transformer coupled audio amplifier, Push pull amplifier, Complimentary symmetry circuits (Transformer less class B power amplifier), Phase inverters, Class D operation, Class S operation, Heat sinks. Tuned Amplifiers - I Single tuned capacitive coupled amplifier, Tapped single tuned capacitance coupled amplifier, Single tuned transformer coupled or inductively coupled amplifier, CE double tuned amplifier, Application of tuned amplifiers. Tuned Amplifiers - II Stagger tuning, Stability

considerations, Tuned Class B and Class C amplifiers, Wideband amplifiers, Tuned amplifiers. Voltage Regulators Terminology, Basic regulator circuit, Short circuit protection, Current limiting, Specifications of voltage regulator circuits, Voltage multipliers. Switching and IC Voltage Regulators IC 723 voltage regulators and three terminal IC regulators, DC to DC converter, Switching regulators, Voltage Multipliers, UPS, SMPS.

Network Theory

Writing differential equations for electrical and electronic circuits, Kirchhoff's Current Law (KCL), Kirchhoff's Voltage Law (KVL), Mesh Analysis, Initial Conditions, Star-Delta networks and Transformation, Matrix Solution of steady state network equations, Phasors, AC steady-state network equations. Waveform Synthesis, Properties of driving point impedance, Amplitude, Phase, Phase Delay, Convolution integral, Network synthesis, Active Network synthesis, Realizability of one part network, Hurwitz Network synthesis polynomials. Network Theorems : Superposition, Thevenin's, Norton, Miller, Tellegan, Maximum Power Transfer theorem, Reciprocity, Substitution, Current and Voltage source transformation, Star-Delta transformation. Network functions, Poles and Zeroes, Parts of Network functions, obtaining a network from a given part. Two port network parameters z , y , h and transmission parameters, Combinations of two ports, Analysis of common two ports. Analog Filter Design : Time domain, Frequency domain approximation,

Low pass filter, Butterworth Chebyshev Filter, Linear Phase Filters.

Microwave Engineering - I

Elements Of Electrical Engineering

D.C. CircuitsCircuits : Identifying the elements and the connected terminology, Kirchhoff's laws - Statement and illustration, Method of solving circuits by Kirchhoff's laws, Computation of resistance at constant temperature, Temperature dependence of resistance, Computation of resistance at different temperatures, Ohm's law - Statement, Illustration and limitation, Units - Work, Power and energy (electrical, thermal and mechanical)A.C. FundamentalsGeneration of alternating emf, Concept of 3-phase EMF generation, Root mean square or effective value, Average value of A.C., Phasor representation of alternating quantities, Analysis of A.C. circuit representation of alternating quantities in rectangular and polar forms, Introduction of resistors, Conductors and capacitors, R-L series circuits, R-C series circuits, R-L-C series circuits, Admittance and its components, Resonance in series and parallel, Analysis of simple 3-phase system, Star-delta connections and conversion.Magnetic Circuits and MachinesComparison between magnetic and electric circuits, Electromagnetic induction, Magnetic effects of electric current,

Current carrying conductor in magnetic field, Law of electromagnetic induction, Self inductance, Mutual inductance, coupling coefficient between two magnetically coupled circuits. Transformer : Principle, construction, working, efficiency, application. D.C. Generator : Principle, construction, working, application. D.C. motor : Principle, construction, working, application. Three phase induction motor : Principle, construction, working, application. Measuring Instruments Classification of instruments, Basic principles of indicating instruments, Moving iron instruments - Attraction and repulsion type, Moving coil instruments - Permanent magnet - Dynamometer type, Induction type energy meter, Multimeters fundamentals of analog and digital multimeter. Transducers Capacitive transducer, Inductive transducers, Linear variable differential transformer (LVDT), Potentiometric transducer, Electrical strain gauges, Thermistor, Thermocouple, Hall effect, Piezoelectric transducer, Photoelectric transducer. Semiconductor Devices Principle of operation; Characteristic and application of PN junction diode, Zener diode, Bipolar junction, Field effect transistor, Thyristor, Opto-electronics devices, Rectifiers. Integrated Circuits Linear ICs, Digital ICs, Linear ICs : PIN diagram and its description for IC741, IC555, IC78XX series (Regulator ICs), Digital ICs : 74XX series ICs. Digital Electronics Binary number system, Octal and hexadecimal, Logic Galleries, Introduction and truth tables, Flip flops and the truth tables; R-S, J-K, D and T.

Linear Integrated Circuits

Basic Electrical And Electronics Engineering

Management Concepts of management and organization - nature, Importance and functions of management, Taylor's scientific management theory, Fayol's principles of management, Mayo's Hawthome experiments, Maslow's theory of human needs, Douglas McGregor's theory X and theory Y, Herzberg's two-factor theory of motivation, Systems approach to management, Leadership styles, Social responsibilities of management. Designing Organisational Structures Basic concepts related to organisation - Departmentation and decentralisation, Types of mechanistic and organic structures of organisation (Line organization, Line and staff organization, Functional organization, Committee organization, Matrix organization, Virtual organisation, Cellular organisation, Team structure, Boundaryless organization, Inverted pyramid structure, Lean and flat organization structure) and their merits, Demerits and suitability. Operations Management Principles and types of plant layout - methods of production (Job, batch and mass production), Work study - basic procedure involved in method study and work measurement, Statistical quality control : Chart, R chart, c chart, p chart, (simple problems), Acceptance sampling, Deming's contribution to quality. Materials Management Objectives, Need for inventory control, EOQ, ABC analysis, Purchase procedure, Stores management and stores records. Marketing :

Functions of marketing, Marketing mix, Marketing strategies based on product life cycle, Channels of distribution. Human Resources Management (HRM) Concepts of HRM, HRD and personnel management and industrial relations (PMIR), HRM Vs. PMIR, Basic functions of HR manager : Manpower planning, Recruitment, Selection, Training and development, Placement, Wage and salary administration, Promotion, Transfer, Separation, Performance appraisal, Grievance handling and welfare administration, Job evaluation and merit rating. Project Management (PERT/CPM) Network analysis, Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM), Identifying critical path, Probability of completing the project within given time, Project cost analysis, Project crashing. (Simple problems). Strategic Management Mission, Goals, Objectives, Policy, Strategy, Programmes, Elements of corporate planning process, Environmental scanning, Value chain analysis, SWOT analysis, Steps in strategy formulation and implementation, Generic strategy alternatives. Contemporary Management Practices Basic concepts of MIS, End user computing, Materials Requirement Planning (MRP), Just-In-Time (JIT) system, Total Quality Management (TQM), Six sigma and Capability Maturity Model (CMM) levels, Supply chain management, Enterprise Resource Planning (ERP), Performance management, Business Process Outsourcing (BPO), Business process re-engineering and bench marking, Balanced score card.

Analog Electronics

The second edition of this well-received text continues to provide a coherent and comprehensive coverage of Pulse and Digital Circuits, suitable as a textbook for use by undergraduate students pursuing courses in Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, and Telecommunication Engineering. It presents clear explanations of the operation and analysis of semiconductor pulse circuits. Practical pulse circuit design methods are investigated in detail. The book provides numerous fully worked-out, laboratory-tested examples to give students a solid grounding in the related design concepts. It includes a number of classroom-tested problems to encourage students to apply theory in a logical fashion. Review questions, fill in the blanks, and multiple choice questions offer the students the opportunity to test their understanding of the text material. This text will be also appropriate for self-study by AMIE and IETE students. NEW TO THIS EDITION :

- Includes two new chapters—Logic Gates and Logic Families—to meet the curriculum requirements.
- Provides short questions with answers at the end of each chapter.
- Presents several new illustrations, examples and exercises

Basic Electrical And Electronics Engineering

Basic Electronics Engineering

Basic Electronics

Basic Electrical and Electronics Engineering provides an overview of the basics of electrical and electronic engineering that are required at the undergraduate level. The book allows students outside electrical and electronics engineering to easily

Basic Electrical & Electronics Engineering

Electronics Engineering

Semiconductor Diodes Classification of materials as insulator, Conductors and semiconductors, Types of semiconductors-intrinsic and extrinsic semiconductors, P-type and N-type, Majority and minority charge carriers, Drift current. The PN junction, Formation of depletion layer, Junction voltage, Effect of temperature on junction voltage, Forward and reverse biased PN junction. Reverse saturation current, V-I characteristics. Junction breakdown, Zener and avalanche breakdown, Junction capacitance and equivalent circuit. PN junction diode, V-I characteristics, Diode parameters, Applications, Diode ratings or specifications, Ideal diode and real diode, Introduction to zener diode. Bipolar Junction Transistor Introduction,

Emitter, Base and collector of transistor, Transistor construction and biasing. Transistor circuit configurations, Common base, Common emitter, Common collector, Leakage current and thermal runaway. Field Effect Transistor Introduction, Symbol, Classification of FET, Basic construction of JFET, Operation and characteristics, MOSFET, Depletion and enhancement type MOSFET, Construction, Working. FET applications. Opto and Power Devices Introduction, Wavelength and frequency, Spectral response of human eye, LED, Photo emissive devices, Photo diode. UJT, SCR, TRIAC, DIAC, SCSS Construction, Parameters, Characteristics, Operation and applications. Operational Amplifiers and Power Supplies Ideal operational amplifier. Inverting and non-inverting amplifier, Difference amplifier. Ground concept, Summing amplifier, Voltage follower. DC Power Supplies Introduction, Unregulated and regulated power supply, Rectifiers, Regulation, Zener diode shunt regulator, Transistor series voltage regulator. Voltage multipliers, Complete power supply. Cathode Ray Oscilloscope Introduction, Cathode ray tube, Theory and construction, Applications. Electronic Instruments Electronic voltmeters, Differential amplifiers, DC voltmeters, Electronic multimeters. Logic Circuits Binary numbers, Conversion of decimal numbers to binary numbers. HEX and OCTAL numbers, Conversion to binary form, AND, OR, NOR, NAND and all logic gates, Symbols and truth table each case.

Electrical Engineering

Microwave Engineering

Telecommunication Engineering

FOUNDATIONS FOR MICROWAVE ENGINEERING, 2ND ED

D.C. CircuitsCircuits : Identifying the elements and the connected terminology, Kirchhoff's laws - Statement and illustration, Method of solving circuits by Kirchhoff's laws, Computation of resistance at constant temperature, Temperature dependence of resistance, Computation of resistance at different temperatures, Ohm's law - Statement, Illustration and limitation, Units - Work, Power and energy (electrical, thermal and mechanical)A.C. FundamentalsGeneration of alternating emf, Concept of 3-phase EMF generation, Root mean square or effective value, Average value of A.C., Phasor representation of alternating quantities, Analysis of A.C. circuit representation of alternating quantities in rectangular and polar forms, Introduction of resistors, Conductors and capacitors, R-L series circuits, R-C series circuits, R-L-C series circuits, Admittance and its components, Resonance in series and parallel, Analysis of simple 3-phase system, Star-delta connections and conversion.Magnetic Circuits and MachinesComparison between magnetic and

electric circuits, Electromagnetic induction, Magnetic effects of electric current, Current carrying conductor in magnetic field, Law of electromagnetic induction, Self inductance, Mutual inductance, coupling coefficient between two magnetically coupled circuits. Transformer : Principle, construction, working, efficiency, application. D.C. Generator : Principle, construction, working, application. D.C. motor : Principle, construction, working, application. Three phase induction motor : Principle, construction, working, application. Measuring Instruments Classification of instruments, Basic principles of indicating instruments, Moving iron instruments - Attraction and repulsion type, Moving coil instruments - Permanent magnet - Dynamometer type, Induction type energy meter, Multimeters fundamentals of analog and digital multimeter. Transducers Capacitive transducer, Inductive transducers, Linear variable differential transformer (LVDT), Potentiometric transducer, Electrical strain gauges, Thermistor, Thermocouple, Hall effect, Piezoelectric transducer, Photoelectric transducer. Semiconductor Devices Principle of operation; Characteristic and application of PN junction diode, Zener diode, Bipolar junction, Field effect transistor, Thyristor, Opto-electronics devices, Rectifiers. Integrated Circuits Linear ICs, Digital ICs, Linear ICs : PIN diagram and its description for IC741, IC555, IC78XX series (Regulator ICs), Digital ICs : 74XX series ICs. Digital Electronics Binary number system, Octal and hexadecimal, Logic Galleries, Introduction and truth tables, Flip flops and the truth tables; R-S, J-K, D and T.

Microprocessors and microcontroller

Microprocessor and Microcontroller

Microwave Engineering-II

Measurements and Instrumentation

About The Book: The book covers the major topics of microwave engineering. Its presentation defines the accepted standard for both advanced undergraduate and graduate level courses on microwave engineering. It is an essential reference book for the practicing microwave engineer

Basics Of Electrical And Electronics Engineering

Electron Dynamics and CROMotion of charged particles in electric and magnetic fields. Simple problems involving electric and magnetic fields only. Electrostatic and magnetic focusing. Principles of CRT, deflection sensitivity (Electrostatic and

magnetic deflection), Parallel Electric and Magnetic fields, perpendicular Electric and Magnetic fields.

Electronic Devices And Circuits

Linear Ic Applications

Basic Electronics

PULSE AND DIGITAL CIRCUITS

Digital Communication

Industrial Electronics

Integrated Circuits : Differential amplifier-D.C. and A.C. analysis of dual input

balanced output configuration, Properties of other differential amplifier configuration (Dual input unbalanced output, Single ended input - Balanced/Unbalanced output), D.C. coupling and cascade differential amplifier stages, Level translator.Characteristics of Op-amps, Integrated circuits - Types, Classifications, Package types of temperature ranges, Power supplies, Op-amp block diagram, Ideal and practical op-amp specifications, D.C. and A.C. characteristics, 741 op-amp and its features, FET input. Op-amps, Op-amp parameters and measurement, Input and output off-set voltages and currents, Slew rates, CMRR, PSRR, Drift, Frequency compensation technique.Linear Applications of Op-Amps : Inverting and non-inverting amplifier, Integrator and differentiator, Difference amplifier, Instrumentation amplifier, A.C. amplifier, V to I , I to V converters, Buffers.Nonlinear Applications of Op-Amps : Nonlinear function generation, Comparators, Multivibrators, Triangular and square wave generators, Log and antilog amplifiers, Precision rectifiers.Oscillators and Waveform Generators : Introduction, Butterworth filters - order, order LPF, HPF filters, Band pass, Band reject and all pass filters, Applications of VCO (566).Timers and Phase Locked Loops : Introduction to 555 timer, Functional diagram, Monostable and astable operations and applications, Schmitt trigger. PLL-Introduction, Block schematic, Principles and description of individual blocks, 565 PLL, Applications of PLL - Frequency multiplication, Frequency translation, AM, FM and FSK demodulators.D to A and A to D Converters : Introduction, Basic DAC techniques, Weighted resistor DAC, R-2R ladder DAC, Inverted R-2R DAC, And IC 1408 DAC,

Different types of ADCs - Parallel comparator type ADC, Counter type ADC, Successive approximation ADC and dual slope ADC. DAC and ADC specifications, Specifications AD 574 (12 bit ADC). Analog Multipliers and Modulators : Four quadrant multiplier, Balanced modulator, IC 1496, Applications of analog switches and multiplexers, Sample and Hold amplifiers.

Analog and Digital Electronics

Digital Electronics (Digital Logic Design)

Electrical Circuits and Measurements Ohm's law, Kirchoff's laws, Steady state solution of DC circuits, Introduction to AC circuits, Waveforms and RMS value, Power and power factor, Single phase and three phase balanced circuits. Operating principles of moving coil and moving iron instruments (Ammeters and voltmeters), Dynamometer type watt meters and energy meters. Electrical Machines Construction, Principle of operation, Basic equations and applications of DC generators, DC motors, Single phase transformer, Induction motors and stepper motors. Semiconductor Devices and Applications Characteristics of PN junction diode, Zener effect, Zener diode and its characteristics, Half wave and full wave rectifiers, Voltage regulation. Bipolar junction transistor, CB, CE, CC configurations

and characteristics, Necessity of biasing, Principles of biasing circuits, Elementary treatment of small signal amplifier. Characteristics and simple applications of SCR, DIAC, TRIAC and UJT. Digital Electronics Binary number system, Logic gates, Boolean algebra, Half and full adders, Flip-flops, Registers and counters, A/D and D/A conversions. Fundamentals of Communication Engineering Types of signals : Analog and digital signals - Modulation and demodulation : Principles of amplitude and frequency modulations. Communication systems : Radio, TV, Fax, Microwave, Satellite and optical fibre.

Analog Communication

Basic Electrical And Electronics Engineering

Linear Integrated Circuits

Amplitude Modulation Introduction. Amplitude Modulation : Time-domain description, Frequency-domain description, Generation of AM wave : Square law modulator, Switching modulator. Detection of AM waves : Square law detector, Envelope detector. Double sideband suppressed carrier modulation (DSBSC) : Time-

domain description. Frequency-domain representation. Generation of DSBSC waves : Balanced modulator, Ring modulator. Coherent detection of DSBSC modulated waves. Costas loop. Quadrature carrier multiplexing. Hilbert transform, Properties of Hilbert transform, Pre-envelope, Canonical representation of bandpass signals, Single sideband modulation, Frequency-domain description of SSB modulated signals, Frequency discrimination method for generating an SSB modulated wave, Time-domain description, Phase discrimination method for generating an SSB modulated wave, Demodulation of SSB wave. Vestigial sideband modulation, Frequency-domain description, Generation of VSB modulated wave, Time-domain description, Envelop detection of VSB wave plus carrier, Comparison of amplitude modulation techniques, Frequency translation, Frequency division multiplexing, Application : Radio broadcasting, AM radio, Television, Color television, High definition television. Angle Modulation Basic definitions, Frequency modulation, Narrow band frequency modulation, Wide band frequency modulation, Transmission bandwidth of FM waves, Generation of FM waves : Indirect FM and direct FM, Demodulation of FM waves, FM stereo multiplexing, Phase-locked loop, Nonlinear model the phase-locked loop. Linear model of phase-locked loop. Nonlinear effects in FM systems. Random Processes Introduction, Probability theory : Relative-frequency approach, Axioms of probability, Conditional probability, Random variables : Several random variables. Statistical averages : Function of random variables, moments. Random process stationarity. Mean, Correlation and Covariance functions : Properties of the autocorrelation function, Cross-correlation

functions, Power spectral density : Properties of the spectral density, Gaussian process : Central limit theorem, Properties of Gaussian process. Noise Introduction, Shot noise, Thermal noise, White noise, Noise equivalent bandwidth, Narrowband noise, Noise figure, Equivalent noise temperature, Cascade connection of two-port networks. Noise in Continuous Wave Modulation Systems Introduction, Receiver model, Noise in DSB-SC receivers, Noise in SSB receivers, Noise in AM receivers, Threshold effect, Noise in FM receivers, FM threshold effect, Pre-emphasis and De-emphasis in FM, Summary and discussion.

Basic Electrical Engineering

Basic Electrical and Electronics Engineering:

Semiconductor Diodes and Applications p-n junction diode, Characteristics and parameters, Diode approximations, DC load line, Temperature dependence of p-n characteristics, AC equivalent circuits, Zener diodes, Half-wave diode rectifier, Ripple factor, Full-wave diode rectifier, Other full-wave circuits, Shunt capacitor - Approximate analysis of capacitor filters, Power supply performance, Zener diode voltage regulators, Numerical examples as applicable. Transistors Bipolar junction transistor, Transistor voltages and currents, Amplification, Common base, Common

Emitter and Common Collector Characteristics, DC load line and bias point. Biasing Methods Base bias, Collector to base bias, Voltage divider bias, Comparison of basic bias circuits, Bias circuit design, Thermal stability of bias circuits (Qualitative discussions only). Other Devices Silicon Controlled Rectifier (S.C.R.), SCR control circuits, More S.C.R. applications ; Unijunction transistor, UJT applications, Junction field effect transistors (Exclude fabrication and packaging), JFET characteristics, FET amplifications, Numerical examples as applicable. Amplifiers and Oscillators Decibels and half power points, Single stage CE amplifier and capacitor coupled two stage CE amplifier (Qualitative discussions only), Series voltage negative feedback and additional effects of negative feed back (Qualitative discussions only), The Barkhausen criterion for oscillations, BJT RC phase shift oscillator, Hartley Colpitts and crystal oscillator (Qualitative discussions only,) Numerical problems as applicable. Introduction to Operational Amplifiers Ideal Op-amp, Saturable property of an Op-amp, Inverting and noninverting Op-amp circuits, Need for Op-amp, Characteristics and applications - Voltage follower, Addition, Subtraction, Integration, Differentiation ; Numerical examples as applicable, Cathode Ray oscilloscope (CRO). Communication Systems Block diagram, Modulation, Radio systems, Superhetrodyne receivers, Numerical examples as applicable. Number Systems Introduction, Decimal system, Binary, Octal and hexadecimal number systems, Addition and subtraction, Fractional number, Binary coded decimal numbers. Digital Logic Boolean algebra, Logic gates, Half-adder, Full-adder, Parallel binary adder.

[ROMANCE](#) [ACTION & ADVENTURE](#) [MYSTERY & THRILLER](#) [BIOGRAPHIES & HISTORY](#) [CHILDREN'S](#) [YOUNG ADULT](#) [FANTASY](#) [HISTORICAL FICTION](#) [HORROR](#) [LITERARY FICTION](#) [NON-FICTION](#) [SCIENCE FICTION](#)