

Engineering Economics And Industrial Management

UNIT I:

Demand Utility and indifference curves, Approach to Analysis of demand, elasticity of demand, Measure of demand elasticity, Factors of Production, Advertising elasticity, Marginalism

UNIT II

Laws of Return and costs, price and output determination under perfect competition, monopoly, monopolistic, competition, oligopoly, Depreciation and methods for its determination.

UNIT III

Functions of central and commercial banks Inflation, Deflation, Stagflation, Direct and Indirect Taxes, Monetary and cycles, New economic policy, Liberalization, Globalization, Privatization, Market friendly state. Fiscal policy of the government, Meaning and phases of business.

UNIT IV

Definition, Nature and scope of management, Functions of management- Planning, organizing, Directing, Controlling, Communicating

UNIT V

Meaning of marketing management, Concept of marketing, Marketing Mix, Administrative and cost plus pricing, Channel of distribution, Advertising and sales promotion.

UNIT VI

Meaning, Nature and scope of financial management, Brief outline of profit and loss account, Balance sheet, Budget and their importance, Ratio Analysis, Principles of costing.

TEXT / REFERENCE BOOKS

- a. Modern Economics by H.L.Ahuja
- b. Modern economics theory by K.K.Dewett
- c. Monetary economics by M.L.Seth
- d. Industrial Management by L.K.Chopde,A.M.Sheikh
- e. Business organization and management by S.A.Sherlekar
- f. Managerial economics by joel dean
- g. Managerial economics by Pylee
- h. Economics by Samuelson

SIGNALS & SYSTEMS

UNIT-1

Spectral Analysis, Fourier series, Fourier Transforms, Dirac Delta Function, Fourier transform of periodic signal, Spectral density, Auto correlation and cross correlation, Transmission of signals through linear systems, phase and group delay.

UNIT-II

Random process, probability, random variables, processes stationary, mean correlation covariance functions, time average and ergodicity, transmission of random process through a linear filter, spectral density, Gaussian process noise, narrow band noise, envelope of sine wave plus narrow band noise.

UNIT-III

Elementary theory of SSB ,DSB,& noise calculation, noise calculations in SSBSC,DSB with carrier ,square law demodulation, envelope demodulator, noise in FM reception, effect of transmitter noise, FM threshold effect.

UNIT –IV

Bandwidth and rate of pulse transmission pulse spreading & interference, PSD of digital signals line coding, signaling schemes like on-off, polar and bipolar signaling, control of PSD by pulse shaping, Nyquist first & second criteria.

UNIT-V

Digital carrier Systems : Matched filter detection of binary signals, decision, threshold, error probability, salient features of ASK,FSK,& PSK systems ,DPSK systems including Mary communication Systems.

UNIT-VI

Transform theory, information measures, Entropy, Chaney capacity of discrete & continuous channels, error control, coding concepts of hamming distance * hamming codes, convolution codes, comparison Of codes & uncoded systems.

BOOKS:

- 1.Communication Systems: -B.P.Lathi
- 2.Modern Digital & Analog Communication Systems: -B.P.Lathi
- 3.Communication System: - A.B. Carlson.

POWER ELECTRONICS

UNIT-I

Semiconductor Devices used in power electronics: Silicon controlled rectifier (SCR), Asymmetrical SCR (ASCR) Reverse conduction thyristor (RCT), Light activated SCR (LASCR), Field Controlled thyristor (FCT), TRIAC, Monitoring Darlington (MD), Insulated gate bipolar transistor (IGBT), power MOSFET, GTO, Triggering devices: UJT, PUT, GOS, SCS, SUS, SBU. Device treatment should deal with construction characteristics, ratings, Applications Thermal equivalent circuit, heat sink calculation, protection requirements and methods.

UNIT-II

Thyristor as power controller: -phase angle control, extinction angle control, Symmetrical angle control, time ratio control, pulse width modulation, Burst-Integral cycle, turn on systems. Requirements: Methods circuits r, re, UJT MSI (medium scale integrated circuits) for a single phase converter, single phase inverter, digital methods, turn off (commutation) systems. Requirements: -methods (circuits) types A,B,C,D,E, and F

UNIT-III

Uncontrolled rectifiers: - Single phase Midpoint two pulse (M-2), bridge two pulse (B-2) for resistive inductive and motor loads three phase: - midpoint three pulse (M.s), midpoint six pulse (M-6) Bridge three pulse (B-3) Bridge six pulse (B-6) for resistivity, inductive and motor loads, filter-c inputs, L-inputs LC. Analysis of wave forms, Fourier.

UNIT-IV

Single phase /three phase half control (one quadratic operation) single phase, midpoint two pulse, bridge two pulse of resistive, inductive and motor loads.

Three-phase midpoint three pulse, midpoint six pulse for resistive, inductive and motor loads.

Single phase: midpoint two pulse, midpoint Bridge two plus, inductive and motor loads.

Three-phase midpoint three pulse, midpoint six pulse for resistive, inductive and motor loads.

UNIT-V

Inverters: - types series, parallel, bridge, PWM voltage source inverter (CSI) Current Source Inverters (CSI) Filters types circulation. Commutations methods Auxiliary, complementary, transistorized power controllers, circuits (Treatment for inverters should consists of a circuit, wave form and analysis)

UNIT-VI

Choppers: -Types A, B,C,D,E, multiphase ,line filter one, two, and four quadrant operation of choppers

, Commutation methods, voltage current, load treatment should consists of a circuit, wave form analysis)

AC regulator: Single phase and three-phase manual, auto, solid-state servo control, uninterrupted power supplies, switched mode power supplies (SMPS)

BOOKS: _

- 1.Power Electronics: -P.S.Sen
- 2.Thyristorised power controllers: - Joshi, Dubey, Doradia
3. Thyristor & their application: Ram Moorthy
- 4.GEC Manual
- 5.Power Electronics: -Cyril Landet
6. Power Electronics: Kjeld Thorborg
- 7.Power semiconductor Devices and Applications by Rasid.

MICROPROCESSOR AND INTERFACING

UNIT-I

Approach to integrated system design using microprocessor, bus concept, address data & control, organization of a computer & precision with MPU. Bits /bytes/words/long words their ranges accuracy & precision memory organization, linear /absolute decoding.

UNIT-II

Introduction to Intel 8085 A architecture –description, software, instrumentation, addressing modes –timing diagrams, assemblers & dis-assemblers (by hand coding)

UNIT-III

Flag structure, concept of PSW stacks & subroutines –simple & nested, PUSH POP instructions & CALL /RETURN instruction, stacks manipulation, simple program.

UNIT-IV

Interrupts –concepts and structure of 8085, interrupts devices routines, advanced structures & programming of 8085 A.

UNIT-V

Methods of data transfer-serial, parallel, synchronus & asynchronus. IN/OUT instructions, timing diagrams simple hardware interface to 8085 standards lathes /buffers keys /display devices as I/O ports. Handshaking concepts Architecture and interface of 8255 & 8085.Interfaceing of ADC & DAC, Stepper motor interfaces with 8085.

UNIT-VI

Hardware consideration bus contention slow memory interfacing complete signal description of 8085.Multplexed keyboard, display interface and assembler directives.

General awareness about microprocessor system related.

BOOKS:-

1. programming & interfacing 8085 A, Wietey Eastern: Gaonkar
2. Programming of 8085 ,Mcgraw Hill:D. V.Hall