DIPLOMA IN ENGG (ELECTRONICS /COMPUTER)
I-SEMESTER
ELECTRONICS DEVICES AND CIRCUITS
(COURSE NO: BLE-101)

Annexure I
BOS 13.02.13

Pds/week		Duration of Exam	Max Marks			
L	P	Hours	Course Work	Mid Sem Exam	End Sem Exam	Total
4	-	3	10	15	75	100

Unit-I **SEMI CONDUCTOR PHYSICS AND DIODE:**   20%
1. Semiconductor Physics:
 Intrinsic Semiconductors- Conductivity, atomic and crystal structure of germanium and silicon, covalent bonds, generation and recombination, effect of temperature on conductivity of intrinsic semiconductors, energy levels diagram of conductor, insulators and intrinsic semiconductors,
Extrinsic semiconductor materials- P and N type semiconductors and their conductivity, Definition of Drift and Diffusion currents.
Semiconductor Diode junction diode, mechanism of current flow in P-N junction, zener and avalanche breakdown, Semiconductor diode characteristics, static and dynamic resistances. Introduction to special purpose diodes (Zener diode, LED, photo diode, varactor diode, schotkey diode, tunnel diode)

Unit-II **RECTIFIERS & WAVE –SHAPPING CIRCUIT**   20%
Concept of rectification, specification of rectifier diode, single-phase half wave, full wave, bridge rectifier circuits and their operation calculations of ripple factor and rectification efficiency of rectifiers, basic concept of filtrating and filtering circuits. Working and use of voltage-doublers circuit. Basic concept of clipping and clamping circuits.

Unit-III **BIPOLAR JUNCTIONTANSISTOR**   20%
Concept of transistor, NPN, PNP, their construction and operations, Concept of leakage current I_{cbo}, transistor configuration (common base, common emitter and common collector), idea of their current gain and input, output characteristics.

Unit-IV **FIELD EFFECT TRANSISTOR** Introduction: Types of FET. Construction, operation and   20%
characteristics of JFETS. Introduction to MOSFET: Depletion type and enhancement type MOSFET, their construction and characteristics. Introduction to VMOS and CMOC. Comparisons of JFET, MOSFET, BJT

Unit-V **TRANSISTOR BIASING**   20%
BJT BIASING: Introduction, operating point, need for stabilization of operating point Different transistor biasing circuits for fixing the operating point, bias stabilization and stability factors for various biasing circuits.
FET BIASING: Introduction, fixed bias configuration, self-bias configuration and voltage divider biasing
BOOKS RECOMMENDED
       1. Electronics Devices & circuits by Bogart
       2. Basic Electronics & Linear circuits by N.N Bhargava
       3. Principles of Electronics by V.K Mohta.

BOOKS:
   1. Electrical Technology By R.L Thereja
   2. Fundamentals of Electrical Engineering. By Ashfaq Hussain, Dhanpat Rai & Co.

DIPLOMA IN ELECTRONICS/COMPUTER ENGINEERING
I-SEMESTER
CIRCUIT THEORY
(COURSE NO: BLE-102)

Annexure: I
BOS : 13.02.2013

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

Unit-I   **INTRODUCTIN**   20%
SI units, Definition of various electrical quantities: such as charge, current, voltage, resistance, power, work, energy potential and potential difference their units and relationship with each other. The three basic parameters of electric circuit: resistance, capacitance and inductance, definition, current-voltage relation. Ohm's law, simple circuits: series, parallel and series-parallel connection of resistors, capacitors and inductors (simple problems).

Unit-II   **NETWORK LAWS & THEOREMS**   20%
Kirchhoff's voltage and current laws (with problems).Mesh Analysis, Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum power transfer Theorem for DC network.

Unit-III   **ELECTROMAGNETIC AND MAGNETIC CIRCUIT**   20%
Basics of Electromagnetism, Faraday's law of electromagnetic induction & Lenz's laws of electromagnetic induction, Fleming right hand rule, Magneto motive force, Magnetic field Intensity, Permeability, Relative Permeability, Reluctance, Magnetic Circuit, Series magnetic circuit, Series-parallel magnetic circuit, Magnetic circuit losses.(Problems) Inductively Coupled circuit, Mutual Inductance and Coefficient of coupling.

Unit-IV   **A.C. CIRCUIT**   20%
Definition and explanation of alternating current, voltage and their relative terms, Phasor diagrams of alternating current and voltage in Series and Parallel A.C. Circuit containing Purely Resistive, Capacitive, Inductive elements (a combination of two elements and a combination of all three elements).

Unit-V   **RESONANCE**   20%
Series resonance definition, derivation of expressions for resonant frequency, quality factor, voltage and current, resonance curve, lower and upper half power frequency, bandwidth and selectivity dependence of bandwidth and selectivity on Quality factor (problems based on the above). Parallel resonance circuit (same as for series resonance).
BOOKS:
1. Electrical Technology By R.L Thereja
2. Fundamentals of Electrical Engineering. By Ashfaq Hussain, Dhanpat Rai & Co.

DIPLOMA IN ENGG. (ELECTRONICS/COMPUTER)
II-SEMESTER
DIGITAL ELECTRONICS
(COURSE NO: BLE-201)

			Annexure: I
			BOS : 13.02.2013

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

Unit-I **NUMBER SYSTEMS & CODES**   20%
Definition of digital and analog signals and systems, Review of Decimal Number System, Binary, Octal, and Hexadecimal Number Systems, Conversion of One Number System to Another, Signed numbers, 1's and 2's Complements of Binary no, Binary Arithmetic: Addition, Subtraction, Multiplication, and Division. Introduction to Digital codes.

Unit-II **LOGIC GATES**   20%
NOT (inverter) AND, OR, NAND, and NOR Gates, EXOR and EXNOR gates, Symbol, Truth-table of these gates, pulse waveform, Logic Gate applications, Introduction to ICs, merits and demerits of ICs over discrete circuits, Introduction to IC digital logic families, +ve and –ve Logic, Basic characteristic of IC logic families.

Unit-III **BOOLEAN ALGEBRA**   20%
Logic Expressions. Rules & Laws of Boolean Algebra. Demorgan's Theorems. Boolean expressions for Gate Network-SUM of PRODUCT form & PRODUCT of SUM form. Simplification of Boolean expressions. The Karnaugh Map (upto) 4-variables).

Unit-IV **COMBINATIONAL LOGIC DESIGN**   20%
Analysis of combinational logic Circuits, AND-OR-Invert Logic. Designing combinational logic circuits. Gate minimization using Karnaugh Map. Universal Property of NAND gate and NOR gate, NAND and NOR implementation.

Unit-V **DIGITAL SYSTEM**   20%
Half Adder and Full adder & their realization using combination of AND, OR, NOT, Exclusive-OR, NOR, NAND gates. Half and Full subtractors. Decoder and Encoders. Multiplexers and Demultiplexers.

Books Recommended:
1. *Digital Fundamentals, by Thomas L. Floyd, Prentice Hall Publishers.*
2. *Digital Systems: Principles & Applications, by Ronald J. Tocci, PHI Publishers.*
3. *Digital Design, by M. Morris MANO.*

DIPLOMA IN ELECTRONICS/COMPUTER ENGINEERING
III-SEMESTER
ELECTRICAL ENGINEERING
(COURSE NO: BLE -302)

Annexure: I
BOS :
13.02.2013

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

Unit-I   **D.C. Machine (GENERATOR AND MOTOR)**   20%
Basic principle of generator, Constructional detail of D.C. generator, Derivations of emf equations, simple problems, efficiency of DC generator (simple problems), armature reaction, commutation. Working principle of D.C. motors. Starting and speed control of D.C. motors.

Unit-II   **TRANSFORMER**   20%
Working principle, types of transformer, E.M.F. equation of transformer (simple problems), Losses, Efficiency, condition   of maximum efficiency (simple problems).phasor diagram and equivalent circuit of transformer, auto transformer.

Unit-III   **INDUCTION MACHINES**   20%
Constructional feature of single phase induction motor. Method for the self start of single phase induction motor. Split phase, shaded pole motor and their applications. Concept of rotating magnetic field.

Unit-IV   **SYNCHRONOUS MACHINES AND STEPPER MOTOR**   20%
Method of starting of synchronous motor. Working principle, Constructional feature of Alternator. Introduction to stepper motors**.**

Unit-V   **POWER ELECTRONICS**   20%
Circuit operation of characteristic of S.C.R., Triac, Diac and UJT. Controlled rectification of single phase of supply using S.C.R. D.C. to A.C. inverter.

BOOKS   RECOMMENDED
1- Electrical Machines, by S.K. Bhattacharya, TATA McGraw Hills Pvt, Ltd. TTTI, Chandigarh.
2- Electrical technology, by S.L. Theraja
3- Fundamental of Electrical Engg, by Ashfaque Husain

DIPLOMA IN COMPUTER/ELECTRONICS ENGINEERING
III-SEMESTER
FUNDAMENTALS OF MICROPROCESSORS
(COURSE NO: BLC-302)

Annexure: I
BOS : 13.02.2013

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

Unit-I   **Introduction to the Intel 8085**   20%
Definition of Microprocessor, generation and types of microprocessor. Architecture of 8085, brief description of ALU, CPU register section date and addr. Bus time sharing 8085 CPUpins and associated signal Buffers & Latches, Demultiplexed Address & data buses.

Unit-II   **Programming The 8085**   20%
Instruction, Group of instruction, addressing modes of Instruction, 8o85 instruction set. Machine Language, comparison, Assembly Language programming (simple problem)

Unit-III   **Timing Instruction & Execution**   20%
Machine, Diagrams for Instruction cycle, Machine cycle Read, write (IO/MEM) cycle. Timing diagram for different Instructions: Types of 8085 interrupt system, 8085 SID and SOD lines.

Unit-IV   **Peripheral Inter facing**   20%
PLD'S   Description of 8255(Mode of operation Mode 0,1,2 & BSR mode, Programing technique), 8251 Architecture -USART, Popular applications of Microprocessor in industry.

Unit-V   **I.   Advanced Microprocessors**   20%
Introduction. Intel's 8086 architecture Programming model, Brief Description of Intel's 80186/ INTEL's 80286/Intel's 80386-Architecture, memory management and programming model.
          BOOKS RECOMMENDED:
Introduction to microprocessor, by Mathur.
Microprocessor and Microcomputer by Rafquzzaman.
Microprocessor Architecture, programming & Applications, by Goankar.

DIPLOMA IN ENGG. (ELECTRONICS/COMPUTER)
III-SEMESTER
ELECTRICAL ENGINEERING
(COURSE NO: BLE- 302)

| Annexure: I |
| BOS : 13.02.2013 |

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

D.C. Machine (GENERATOR AND MOTOR)

Unit-I   20%

Basic principle of generator, Constructional detail of D.C. generator, Derivations of emf equations, simple problems, efficiency of DC generator (simple problems), armature reaction, commutation. Working principle of D.C. motors. Starting and speed control of D.C. motors.

TRANSFORMER

Unit-II   Working principle, types of transformer, E.M.F. equation of transformer (simple   20% problems), Losses, Efficiency, condition   of maximum efficiency (simple problems).phasor diagram and equivalent circuit of transformer, auto transformer.

INDUCTION MACHINES

Unit-III   Constructional feature of single phase induction motor. Method for the self start of   20% single phase induction motor. Split phase, shaded pole motor and their applications. Concept of rotating magnetic field.

SYNCHRONOUS MACHINES AND STEPPER MOTOR

Unit-IV   Method of starting of synchronous motor. Working principle, Constructional feature   20% of Alternator. Introduction to stepper motors.

POWER ELECTRONICS

Unit-V   Circuit operation of characteristic of S.C.R., Triac, Diac and UJT. Controlled   20% rectification of single phase of supply using S.C.R. D.C. to A.C. inverter.

BOOKS   RECOMMENDED

4- Electrical Machines, by S.K. Bhattacharya, TATA McGraw Hills Pvt, Ltd. TTTI, Chandigarh.
5- Electrical technology, by S.L. Theraja
6- Fundamental of Electrical Engg, by Ashfaque Husain

DIPLOMA IN ENGG. (ELECTRONICS/COMPUTER)
III-SEMESTER
ELECTRONICS INSTRUMENTATION- I
(COURSE NO: BLE-303)

| Annexure: I |
| BOS : 13.02.2013 |

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

ELECTRONIC VOLT OHM METERS

Unit-I   Electronic (analog) voltmeter and multimeter block diagrams, principles of measurement   20%
of D.C. voltage, D.C. current, A.C. voltage, A.C. current and resistance, rms responding
voltmeter FET input and chopper type EVMS, Typical specifications.

CATHODE RAY OSCILLOSCOPE

Unit-II   CRC-block diagram, CRT-associated circuits, vertical deflection system, delay line,   20%
Horizontal deflection system, Measurement of frequency, phase angle , special purpose
CROs- storage, sampling Digital type, Specifications of a typical CRO.

SIGNAL GENERATION AND ANALYSIS

Unit-III   Sine wave generator, sweep frequency generator, pulse and square wave generator ,   20%
Function generator , AF signal generator specifications.
Wave analyzers, Harmonic distortion analyzers, Basic idea of spectrum analysis.

IMPEDANCE BRIDGES, Q-METERS AND VECTOR METERS

Unit-IV   Review of Wheatston's bridge principle and AC bridges (Induction, Capacitance,   20%
Comparison Bridge, Wein Bridge, Resonance bridge). Block diagram and working
principle of Q-meter, vector impedence meter, vector voltmeter.

DIGITAL INSTRUMENTS

Unit-V   Digital instruments versus Analog instruments Comparison of digital and analog meters,   20%
A/D converters, D.V.M. Digital Multimeters- Typical specifications.

BOOKS   RECOMMENDED
1. *Electrical & Electronics Measurements, A.K. Sawhney*
2. *Electronics Instrumentation & Measuring Tech., Cooper   & Helfric.*

DIPLOMA IN ENGG. (ELECTRONICS/COMPUTER)
III-SEMESTER
PROGRAMMING IN C
(COURSE NO: BLC-301)

Annexure I
BOS

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

Unit-I Introduction to 'C' Programming ,Introduction to 'C', Importance of 'C' basic structure of a C program, constant variables   and Data type's operator and expression, managing I/O operators. 20%

Unit-II Jumping, Breaching and program Looping , Decision making, IF, statement and its various forms, break and continue statements, Go to statement, structured programming and avoiding goto's in "C" for, while and while do loops, Array handling in C Handling of character strings. 20%

DERIVED DATA TYPE IN

Unit-III User defined functions, their use, multiple file programs, structures and unions, simple introduction to pointers, file processing & management. 20%

DATA STRUCTURE CONCEPT THROUGH 'C'

Unit-IV Arrays, Linked Lists, sorting, searching, merging, Stack and queues, concept of trees and graphs. 20%

Unit-V Introduction to basic Unix commands, Unix file system , program development in Unix environment, screen editing with vi editor, communication using Unix, using mail facility of Unix, simple introduction to system administration and shell programming. 20%

BOOKS   RECOMMENDED
1- Programming in 'C' by Gotfried B.S. (Schaum's outline Series)
2- ANSI 'C' by Balaguruswami
3- 'C' by Kochen S.G.
4- Data structures & ALGORITHEMS, by Elan Horwitz & Sartaj Satini.
5- Data structures Schaum's outline Series
6- Data structures by Tremblen J.P. & Sorenson P.G.

DIPLOMA IN ENGG. (ELECTRONICS/COMPUTER)
III-SEMESTER
FUNDAMENTALS OF MICROPROCESSORS
(COURSE NO: BLC-302)

Annexure I BOS

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

Unit-I

Introduction to the Intel 8085

20%

Definition of Microprocessor, generation and types of microprocessor. Architecture of 8085, brief description of ALU, CPU register section date and addr. Bus time sharing 8085 CPUpins and associated signal Buffers & Latches, Demultiplexed Address & data buses.

Unit-II

Programming The 8085

20%

Instruction, Group of instruction, addressing modes of Instruction, 8o85 instruction set. Machine Language, comparison, Assembly Language programming (simple problem)

Unit-III

Timing Instruction & Execution

20%

Machine, Diagrams for Instruction cycle, Machine cycle Read, write (IO/MEM) cycle. Timing diagram for different Instructions: Types of 8085 interrupt system, 8085 SID and SOD lines.

Unit-IV

Peripheral Inter facing

20%

PLD'S Description of 8255(Mode of operation Mode 0,1,2 & BSR mode, Programing technique), 8251 Architecture -USART, Popular applications of Microprocessor in industry.

Advanced Microprocessors

Unit-V

20%

Introduction. Intel's 8086 architecture Programming model, Brief Description of Intel's 80186/ INTEL's 80286/Intel's 80386-Architecture, memory management and programming model

BOOKS   RECOMMENDED
1. Introduction to microprocessor, by Mathur.
2. Microprocessor and Microcomputer by Rafquzzaman.
3. Microprocessor Architecture, programming & Applications, by Goankar.

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

Unit-I   **Introduction**

Importance of Computer, History of computer, Computer Generation, Types of computers, Computer Language (Machine Language, Assembly Language, and High Level Language). Basic block of a computer, central processing unit (ALU & control unit registers)   20 %

Memory

Unit-II   Computer Memory, RAM, ROM, Memory hierarchy, Cache memory, Auxiliary memory, Virtual Memory, Associative Memory.   20 %

PERIPHERAL DEVICES

Unit-III   Input devices:- key board pointing devices ,scanning devices, touch tone devices, terminal etc. Output devices: - Printers, Plotters, monitors, voice output, Add-on cards, serial and parallel ports.   20 %

ARITHMATIC LOGIC & CONTROL

Unit-IV   Design of arithmetic circuit, Design of logic circuit, Design of shifter .Introductory Concepts of Control Unit, Control organization, One flip flop per state method, Sequence and Decoder method.   20 %

COMPUTER ARCHITECHTURE & DESIGN

Unit-V   Flynns Classification of computers, Instruction execution, Concept of parallel processing & pipelining, Array processor. RISC Vs CISC, Computer Instructions, Design of simple Computer   20 %

Books Recommended:

1. *Digital Fundamentals, by Thomas L. Floyd, Prentice Hall Publishers.*
2. *Digital Systems: Principles & Applications, by Ronald J. Tocci, PHI Publishers.*
3. *Digital Design, by M. Morris MANO.*

DIPLOMA IN ENGG. (ELECTRONICS/COMPUTER)
IV-SEMESTER
ANALOG ELECTRONICS CIRCUITS
(COURSE NO: BLE-401)

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

A.F. VOLTAGE AMPLIFIER

Unit-I   General classification of amplifier, Difference between voltage and power amplifier, requirement of A.F. amplifiers. Transistor equivalent circuit and models (Basic idea only). 'h' parameters (basic concept only). RC coupled Amplifier: circuit diagram, operation, frequency response of RC coupled Amplifier at low, Mid & High Frequency, advantage and disadvantages. Transformer couple amplifier: circuit diagram, frequency response, advantages and disadvantages.   **20%**

A.F. POWER APMLIFIER:

Unit-II   Block diagram representation of power amplifier. Class A power amplifier with direct coupled resistive load and with transformer coupled resistive load. Class B Puss Pull Amplifier: operating condition, characteristic, analysis showing cancellation of harmonic Complementary symmetry push pull amplifier, working and advantages. Darlington circuit   **20%**

FEED BACK AMPLIFIER AND OSCILLATORS FEED BACK AMPLIFIER:

Unit-III   Definition, Basic Principles and types of feedback in amplifiers. Effect of negative feedback on gain, stability, distortion and bandwidth (only physical explanation) Types of negative feedback (negative voltage feedback and negative current feedback). gain of negative feed back amplifier. **Introduction to Multivibrator**-(Monostable, bi stable, and Astable)..   **20%**

 Feed back oscillators. Barkhausen criterion of oscillations, Circuit diagram and working of generalized LC, RC and Wein's bridge oscillators. Principle of working and circuit of crystal oscillator.

TUNED AMPLIFIERS

Unit-IV   Series and parallel resonance circuits, expression for resonant frequency, expression for impedance of resonance, relationship between resonant frequency, Q and Band width (no   derivation), single and double tuned   amplifiers;   Their   working principles and frequency response (no mathematical derivation)Problems in RF amplification, RF class C amplifier-circuit operation, efficiency, output power and distortion. (no mathematical derivation)   **20%**

OPERATIONAL AMPLIFIERS AND THEIR APPLICATIONS

Unit-V   Characteristics of ideal operational amplifier and its block diagram, definition of inverting and non-inverting inputs, differential voltage gain, input and output voltages, input offset current, input bias current, common mode rejection ratio (CMRR), slew rate. Technique of offset removal . Use of op-amplifier as an Inverter, Scale changer, Adder, Subtractor, Differentiator, Integrator, Schmitt trigger circuit.   **20%**

BOOKS   RECOMMENDED
 1.   Basic Electronics & Linear Circuit,   (By N.N. Bhargava).
 2.   Electronic Devices and Circuits, (By Bogart)
 3.   Microelectronics, (By Millman)

DIPLOMA IN ENGG. (ELECTRONICS/COMPUTER)
IV-SEMESTER
DIGITAL ELECTRONICS-II
(COURSE NO: BLE-402)

Annexure I
BOS 13.02.13

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

Unit-I

Sequential Logic circuits
Introduction to sequential circuits, difference between combinational logic circuit and sequential logic circuit. RS latch, Flip Flops: SR, JK, D and T flip flops. Counters: Asynchronous (any MOD) and synchronous (MOD 2^n) Counters, Counter applications. SHIFT REGISTER: SISO, SIPO, PISO, PIPO, Shift register applications.

20%

Unit-II

D/A AND A/D CONVERTERS
Digital and analog signal representation. D/A conversion-binary weighted resistor type, R-2R ladder type, performance characteristics of D/A converter. Application of D/A converters, A/D conversion- flash A/D converter, successive approximation type A/D converter, stair step ramp type A/D converter. Performance characteristics of A/D Converter. Application of A/D converters.

20%

Unit-III

LOGIC FAMILIES
Definition of Bipolar logic family, unipolar logic family, characteristics of digital ICs, definitions of Propagation delay, fan-in, fan-out, noise immunity, power dissipation, figure of merit. Logic families: transistor-transistor logic (TTL), emitter-coupled logic (ECL), NMOS, and CMOS logic.

20%

Unit-IV

SEMICONDUCTOR MEMORIES
Introduction, Classification of memories, memory organization, reading and writing, RAMs, semiconductor RAMs, static RAMs, dynamic RAMs, Non-volatile RAMs, ROM and PROM: ROM organization, ROM types, Charge coupled devices (CCD).

20%

Unit-V

PROGRAMMABLE LOGIC DEVICES
Introduction to PLD, Programmable array logic (PAL), Programmable logic array (PLA) (with block diagram of PLA), applications of PLA, introduction to field programmable gate array (FPGA).

20%

1. **BOOKS RECOMMENDED** *Digital Systems: Principles & Applications, by Ronald J. Tocci, PHI Publishers.*
2. *Digital Fundamentals, by Thomas L. Floyd, Prentice Hall Publishers.*
3. *Digital Integrated Electronics, H. Taub & D. Schilling, Mc Graw Hill.*

DIPLOMA IN ENGG. (ELECTRONICS/COMPUTER)
IV-SEMESTER
PRINCIPLE OF COMMUNICATION
(COURSE NO: BLE-403)

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

INTRODUCTION

Unit-I Introduction of signals and communication system, Block diagram of communication system, Different types of communication system, Transmission channel bandwidth, signal bandwidth. Various formats of binary response, Grey code. Noise and its types, SNR, Brief description of Fourier series and Fourier Transform. 20%

MODULATION AND MULTIPLEXING TECHNIQUES

Unit-II Purpose of modulation, AM & FM theory, modulation index, Analysis of AM, & FM techniques, Advantages and limitation of FM over AM, Basic concept of phase modulation, PCM techniques, Sampling and quantization. Multiplexing - needs and types (FDM & TDM). 20%

PROPAGATION OF RADIO WAVES

Unit-III Basic idea of EM waves & their characteristics, Radio communication frequencies and wavelengths, Reflection, interference & diffraction of EM waves, Definition of wavelength, field strength, multipath propagation, fading; causes and effects. 20%

IV   TRANSMISSION CHANNEL

Unit-IV Transmission line , distribution constants of transmission line , infinite line and its properties, Reflection in transmission line, SWR, Line terminated with Characteristic impedance, HF radio wave propagation, Ground wave, sky wave, virtual height, Critical frequency, skip distance, MUF. 20%

ANTENNAS

Unit-V Radiation from a dipole, Resonant and non resonant. Antenna's parameters and characteristics, Radiation power, Effective Gain, Radiation pattern, Half wave dipole antenna, Folded dipole antenna, Yagi- Uda antenna, Antenna arrays. 20%

BOOKS   RECOMMENDED

- Electronics communication system by George Kennedy.
- Electronics communication by Sanjeeva Gupta
- Communication system by Hykin Symom
- Modern digital & Analog communication by B.P. Lathi

DIPLOMA IN ENGG. (COMPUTER)
V-SEMESTER
COMPUTER COMMUNICATION NETWORK
(COURSE NO: BLC-503)

Annexure I BOS

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

1   INTRODUCTION

Unit-I   Basic idea of computer Network, LAN, MAN and WAN, Applications of networks, Network topologies, network architecture, Network models, OSI and TCP/IP reference models.   20%

2 DATA LINK LAYER

Unit-II   Basic idea of the functions performed by data link layer, framing, flow-control, error-control (Cyclic Redundancy Check codes), ARQ-stop and wait, go back N, selective repeat, CSMA and CSMA-CD protocols.   20%

NETWORK LAYER

Unit-III   Brief discussion on the need for network layer, routing algorithm, Shortest Path Routing, Flooding, Distance Vector Routing, Link State Routing, Hierarchical Routing, Broadcast Routing, Routing for Mobile Hosts, introduction to congestion control and internetworking.   20%

TRANSPORT LAYER

Unit-IV   Transport service primitives, quality of service, basic idea of barkeley sockets, elements of transport protocols, Introduction to transmission control protocol (TCP) and user datagram protocol (UDP).   20%

APPLICATION LAYER

Unit-V   Introduction to application layer, email, Simple Mail Transfer Protocol (SMTP), File Transfer Protocol (FTP), Remote Logging, TELNET, Domain Name System (DNS).   20%

BOOKS   RECOMMENDED *1.Data Communication & networking by Forozan.*
2.Computer Networks by A.S. Tanenbaum.
3.Computer Networking: A Top-Down Approach Featuring Internet, Kurose & Ross.

DIPLOMA IN COMPUTER ENGINEERING
VI - SEMESTER
DATA BASE MANAGEMENT SYSTEM
(COURSE NO: BLC- 603)

Annexure: I
BOS: 13.02.2013

Pds/week		Duration of Exam	Max Marks			
L	P	Hrs	Course Work	Mid-Sem Exam	End-Sem Exam	Total
4	-	3	10	15	75	100

CONTENTS

Unit-I	Database and its purpose, Characteristics of the database approach, Advantages and disadvantages of database systems. Classification of DBMS Users; Database Administrators, End Users, System Analysts and Application Programmers, Data management Architecture- interface between application programmes and data management system.	20%
Unit-II	Data Models classification; Entities and Attributes, Entity types and Entity sets, Key attribute and domain of attributes, Relationship among entities. Indexing Techniques: Hashing, Logical data organization, Physical Data Organization.	20%
Unit-III	Hierarchical, network and relational model with a description of the logical data structure, representation of data base system. Study of relational database management system, domains, attributes, Key etc.	20%
Unit-IV	Need for data normalization, first, second, and third normal forms. Introduction to relational algebra and relational calculus, query facilities.	20%
Unit-V	**SQL using Oracle:-** SQL * Plus. DDL (Data Definition Languages): Creating Tables, Creating a table with data from another table, Inserting values into a table, updating columns of a Table, Deleting Rows, Dropping a Table. DML (Data Manipulation Language):	20%

BOOKS RECOMMENDED:

1-Date, C.J- Introduction to data base system. Vol. 1
2- Dasai Vipin- Introduction to data base.
3-Database system, by A, Silberschaiz & Hennery F. Korth.