



AKTU B.E./B.Tech ECE Sem 7 syllabus

Data Communication Networks

DATA COMMUNICATION NETWORKS

Unit - 1 Introduction

Introduction to Networks and Data Communications, Goals and Applications of Networks, Network structure and architecture, The Internet, Protocols and Standards, Layered Tasks, The OSI reference model, TCP / IP, Addressing, Line Coding Review.

Unit - 2 Physical Layer, Transmission Media

Guided and unguided, Network Topology Design, Data Link Layer: Error detection and Correction, Framing, Flow and Error Control Protocols, Networking devices.

Unit - 3 Multiple Access

Random Access Protocols, CDMA, CSMA/CD, CSMA/CA, Controlled Access, Channelization Wired LANs: IEEE Standards, Fast Ethernet, Gigabit Ethernet, Wireless LAN IEEE 802.11, Bluetooth IEEE 802.16.

Unit - 4 Network Layer

Point - to Point Networks routing, Congestion control Internetworking -TCP / IP, IP packet, IPV4, IPv6, Transport Layer Protocol - UDP and TCP, ATM, session Layer-Design issues.

Unit - 5 Application Layer

File Transfer, Electronic mail, Virtual Terminals, Cryptography, Network Security.

VLSI Design

VLSI DESIGN

Unit - 1 Introduction

A Brief History, Preview, MOS Transistors, CMOS Logic, CMOS Fabrication and Layout, Design Partitioning, Logic Design, Circuit Design, Physical Design, Design Verification, Fabrication, Packaging and Testing.

Unit - 2 Delay

Introduction, Transient Response, RC delay model, Linear Delay Model, Logical Effort of Paths, Timing Analysis Delay Models. Power - Introduction, Dynamic Power, Static Power.

Unit - 3 Energy-Delay Optimization, Low Power Architectures, Interconnect

Introduction, Interconnect Modelling, Interconnect Impact, Interconnect Engineering, Logical Effort with Wires.

Unit - 4 Dynamic logic circuits

Introduction, basic principle of pass transistor circuits, synchronous dynamic circuit techniques, dynamic CMOS circuit techniques, domino CMOS logic.

Semiconductor memories - Introduction, DRAM, SRAM, ROM, flash memory.

Unit - 5 Low-Power CMOS Logic Circuits

Introduction, Overview of Power Consumption, Low-Power Design through voltage scaling, Estimation and Optimization of switching activity, Reduction of Switched Capacitance and Adiabatic Logic Circuits.

Design for Testability - Introduction, Fault Types and Models, Controllability and Observability, Ad Hoc Testable Design Techniques, Scan Based and BIST Techniques.

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