

## **COMPUTER NETWORKS**

### **UNIT I**

INTRODUCTION: Uses of Computer Networks - Network Hardware - Network Software - Reference Models - Example Networks THE PHYSICAL LAYER: Transmission Media - Wireless Transmission - The Telephone System - Narrow Band ISDN - Broadband ISDN and ATM - Cellular Radio -Communication Satellites.

### **UNIT II**

THE DATA LINK LAYER : Design Issues - Error Detection and Correction - Elementary Data Link Protocols -Sliding Window Protocols - The Channel Allocation Problem - Multiple Access Protocols -IEEE Standard 802 for LANs & MANs -Bridges - High Speed LANs - Satellite Networks.

THE NETWORK LA YER: Design Issues - Routing Algorithms -Congestion Control Algorithms -Internet works -The Network Layer in the Internet.

### **UNIT III**

THE TRANSPORT LA YER: Transport Service -Elements of Transport Protocols - The Internet Transport Protocol -THE SESSION LA YER: Design Issues.

THE APPLICATION LA YER: Usenet News -Multimedia.

### **UNIT IV**

Introduction and Overview of TCP/IP -Internetworking and Architectural Model - Internet Protocol: Routing IP Datagram -UDP Reliable Stream Transport Service (TCP) -TCP/IP over ATM Networks -Mobile IP.

### **UNIT V**

Private Network Interconnection (NAT, VPN) - The Socket Interface - Bootstrap and Auto Configuration - DNS -Applications: Remote Login, File Transfer and Access - Electronic Mail - World Wide Web - Voice and Video over IP -SNMP - Internet Security and Firewall Design.

### **TEXT BOOKS:**

1. COMPUTER NETWO~S -Andrew S. Tanenebaum, PHI Publications, Third Edition, 2001.
2. INTERNETWORKING WITH TCP/IP - Douglas E. Comer, Pearson Education Asia, Fourth Edition, 2001.