

B.Sc. 501

Data Communication & Networking

Unit I:

Introduction: Computer Networks, goals and applications, Line configuration- point-to-point and multipoint, topologies – star, bus, mesh, ring etc. Network Types LAN, MAN, WAN, Wireless Networks, Home Networks, Internetworks

Unit II:

Network Models: OSI Reference Model, Functionality of each layer, TCP/IP Reference Model, TCP/IP Protocol Suite, Comparison of OSI and TCP/IP model, Introduction to IP, TCP, and UDP, Addressing Physical, Logical and Port addresses

UNIT III:

Modulation and Demodulation, Digital to Digital Conversion, Analog to digital conversion, Digital to analog Conversion, Analog to Analog conversion, Digital data transmission, DTE- DCE Interface, EIA449, EIA530, X.21 Standards, Modems, Cable Modem.

UNIT IV:

Transmission media - Introduction, Guided Media, Unguided Media, Transmission Impairment, Performance, Wavelength, Shannon capacity, Media Comparison, Multiplexing – FDM, WDM, TDM, Switching, DSL and types of Digital subscriber lines.

UNIT V:

Error detection and correction, types of errors, detection, VRC, LRC, CRC, error correction, LAN Project 802, IEEE 802.x, LLC, MAC,PDU, Ethernet , Token Bus, Token Ring. FDDI, LAN Comparison.

References:

1. Ames Chellis Charles Perkins, Matthew Strebe “Networking Essentials:Study Guide MCSE”, Second Edition, BPB Publications.
2. S.K.Basandra & S. Jaiswal, “Local Area Networks”, Galgotia Publications
3. MCSE Windows 2000 Network Infrastructure Design
4. Andrew & Tanenbaum, “Computer Network ”
5. William Stallings, “Data and Computer Communication”
6. Prakash C Gupta, “Data Communication