

S. Y. B. C. A. Semester 4
Effective From: June-2010

Paper No.: 405

Paper Title: COMPUTER NETWORK

1. An Introduction to Networks, Network Topologies and Types

- 1.1 Introduction: Networking, LAN, MAN, WAN
- 1.2 Information: Exchange, Shaping, Preserving and Protecting
- 1.3 Method of Delivering- Unicast, Multicast, Broadcast
- 1.4 Hardware and Software Resource Sharing
- 1.5 Need, Uses and Advantages of Network
- 1.6 Clients, Servers, Peers based and Hybrid Networks
- 1.7 Server Types
- 1.8 Network Topologies (Bus, Star, Ring, Star Bus, Star Ring and Physical Mesh)
- 1.9 Defining Network Protocols (H/W Protocols, S/W Protocols, H/W-S/W Interface)

2. The OSI Model

- 2.1 Introduction to OSI Model
- 2.2 The OSI Model Lower Layer Functions (Physical and Data Link Layers)
- 2.3 The OSI Model Middle Layer Functions (Network and Transport Layers)
- 2.4 The OSI Model Upper Layer Functions (Session, Presentation and Application Layers)

3. Network H/W

- 3.1 Network Media (Cables, Fiber Optics)
- 3.2 Role, Installing and Configuring Network Cards
- 3.3 Introduction: Repeater, Hub, Switch, Router, Gateways

4. Network S/W (Operating System)

- 4.1 What is Network Operating System?
- 4.2 Common features of Different Operating System (Windows 95-98-NT workstation)
- 4.3 Common popular Network Operating Systems (Client Operating System, Server Operating System)

5. Managing Network Connections

- 5.1 Reviewing Networking and internet protocols
- 5.2 Network S/W: Drivers, Protocols, Services, Redirectors, Multiple Transport Stack, Network Binding Interfaces
- 5.3 Installing and Configuring Network Adapters
- 5.4 Managing Network Bindings
- 5.5 Sharing Files and Printers

6. Basic of TCP/IP

- 6.1 IP Address, IP Subnet
- 6.2 Introduction of UDP and TCP
- 6.3 Installing, Basic and Advance Configuring TCP/IP Protocol

7. Network Security Introductory Concepts and Terminology

- 7.1 Various Types of Securities
- 7.2 Securities with Certificates: Concept of Encryption, Decryption, Cryptography, Public-Key, Secret-Key , Digital Signature, PKI
- 7.3 Firewalls

Reference Books:

- 1 Computer Networks - by A. S. Tanenbaum Prentice Hall
- 2 Networking complete – 3rd Edition – BPB Publication (Text Book)
- 3 Mastering Local Area Network - by Christa Anderson & Mark Minasi – BPB Publication
- 4 MCSE: Networking Essentials Study Guide – Tata McGraw Hill Publication
- 5 MCSE: Windows 2000 N/W Infrastructure Design – Tata McGraw Hill Publication
- 6 MCSA/MCSE: Windows 2000 Professional Study Guide – Tata McGraw Hill Publication
- 7 Data Communication & N/W – B Forouzan, Tata McGraw Hill