

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (Information Technology) Programme
5th Semester Syllabus

Effective From July-2002

Paper No. : 505

Paper Title : Computer Networks

[L:3, T:1]

1. Introduction

- 1.1 Introduction to networks and its application
- 1.2 Network Structure
- 1.3 Network Architecture
- 1.4 The OSI Reference model & services

2. Physical Layer

- 2.1 Concepts of data transmission (Analog & Digital Transmission)
- 2.2 Multiplexing & switching technique
- 2.3 ISDN (Integrated Service Digital Network)
- 2.4 Terminal Handling

3. MAC Sublayer

- 3.1 LAN protocols & IEEE standards for LAN
- 3.2 Fiber Optic & Satellites networks

4. Data Link Layer

- 4.1 Data Link Layer protocols
- 4.2 Error detection & correction

5. Network Layer

- 5.1 Routing Algorithm
- 5.2 Congestion Control Algorithm
- 5.3 Internetworking

6. Transport Layer

- 6.1 Connection Management

7. Concepts of Session Layer

8. The Presentation Layer

- 8.1 Data Compression Technique
- 8.2 Cryptography

9. The Application Layer

- 9.1 Electronic Mail
- 9.2 Virtual Terminals
- 9.3 General Purpose Applications

- 10. Internetworking with TCP/IP
 - 10.1 Principles - Protocols and Architecture
 - 10.2 Design and implementation
 - 10.3 Internals

- 11. Internet/Intranet
 - 11.1 HTTP, HTML, Web Computing

Reference Book:

1. Computer Networks - A. S. Tanenbaum - Prentice-Hall
2. Data Communication & Networks – Stalling - PHI
3. Data Communication & Networks - Forozun
4. Computer Networks and Distributed Processing - Martin J. - Prentice-Hall
5. Local Area Networks: An Introduction - Stalling, William - Mc-Millan Publishing
6. Computer Networks: Protocols, Standards and Interfaces - Black - Prentice-Hall
7. Data Networks : Concepts Theory and Practices - Black - PHI
8. Internetworking with TCP/IP: Principles, Protocols and Architecture - Comer - Prentice
9. Design and Analysis of Computer Communication Networks - Ahuja - Mc-Graw Hill
10. Computer Networks a system approach – Larry L Peterson
11. Data Communications – Prakash C Gupta
12. The ABC's of Local Area Network – Michael Dortch
13. Networking Complete – Sybex
14. Teach Yourself TCP/IP in 14 Days – Timothy Parker