

**THIRD YEAR – SEMESTER – VI**  
**PAPER IX: DATA COMMUNICATION AND NETWORKING**

Credits: 4

Hours: 75

*Objective: To give in-depth knowledge of Data Communication and Networking.*

**UNIT - I**

Introduction to Data Communication, Network, Protocols standards - standard organizations – Line Configuration – Topology – Transmission mode – Classification of network – OSI Model – Layers of OSI Model.

**UNIT - II**

Parallel and Serial Transmission – DTE/DCE/interface – Modems – Guided Media – Unguided Media – Performance – Types of Error – Error Detection – Error Corrections.

**UNIT - III**

Multiplexing – Types of Multiplexing – Multiplexing Application – Ethernet – Token Bus – Token Ring – FDDI – Circuit Switching – Packet Switching – Message Switching – Connection Oriented and Connectionless services.

**UNIT - IV**

History of Analog and Digital Network – Access to ISDN – ISDN Layers – Broadband ISDN – X.25 Layers – Packet Layer Protocol – ATM – ATM Topology – ATM Protocol.

**UNIT - V**

Networking and internetworking devices: Repeaters – Bridges – Types – Routers – Routing concepts – Gateway – Routing algorithms: Distance vector and Link state routing – TCP/IP – World Wide Web.

**TEXT BOOK**

1. Behrouz and Forouzan. *Introduction to Data Communication and Networking*. 2<sup>nd</sup> Edition – TMH – 2001

**REFERENCE BOOK**

1. Jean Walrand. *Communication Networks (A first Course)*. Second Edition – WCB/McGraw Hill – 1998