

CORE COURSE VII – A - DATA COMMUNICATION CONCEPTS

Unit I Data Communication Overview

A communication model – Data communications – Data communication and networking – Need for a protocol architecture – simple protocol architecture – TCP/IP protocol architecture.

Unit II Data Communications

Concepts and terminology used in data communication – Analog and Digital transmission attenuation – Noise – thermal Noise – cross talk channel capacity – Nyquist band width.

Unit III Guided and wireless transmission

Transmission media – coaxial cable optical fiber – Terrestrial microwave – satellite microwave – wireless propagation – Analog data, digital signals.

Unit IV Digital Data Communication Techniques

Digital data communication techniques – Asynchronous and synchronous transmission – types of errors – error detection – error correction – Interfacing.

Unit V Multiplexing

Frequency division multiplexing – synchronous Time division multiplexing – Routing protocols – SMTP HTTP – SNMP.

Text Book:

Data and Computer Communications, William Stallings, Seventh Edition, Pearson Education, 2006.

Reference:

1. Introduction to Data Communication Networking – TMH, Author: Behrouz Ferouzan.
2. Digital and Analog Communication System, Upper Saddle River NJ, Prentice Hall, 2001.
3. Fundamentals of Telecommunications, New York, Wiley 1999.
4. Communication Systems, Haykin, New York, Wiley, 2001.