

**Chapter 1 : Introduction****1-1 to 1-38**

Syllabus : Transmission Fundamentals : Signals for Conveying Information, Analog and Digital Data Transmission, Channel Capacity, Transmission Media, Multiplexing.

Communication Networks : LANs, MANs and WANs, Switching Techniques : Circuit switching, Packet switching.

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Chapter 2 : Cellular Wireless Networks 2-1 to 2-56

Syllabus : Cellular Wireless Networks : Principles of Cellular Networks, First-Generation (Analog), Second-Generation TDMA Second-Generation CDMA, Third-Generation Systems.

Antennas and Propagation : Antennas, Propagation Modes, Line-of-Sight Transmission, Fading in the Mobile Environment. **Spread Spectrum :** The Concept of Spread Spectrum, Frequency Hopping Spread Spectrum, Direct Sequence Spread Spectrum. **Coding and Error Control :** Error Detection, Block Error Correction Codes, Convolutional Codes, Automatic Repeat Request.

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Chapter 3 : Multiple Access in Wireless Systems
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Syllabus : Multiple access in Wireless System :
Multiple access scheme, Frequency division multiple access, Time division multiple access, Code division multiple access, Space division multiple access, Packet radio access, Multiple access with collision avoidance.



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Chapter 4 : GSM and GPRS 4-1 to 4-50

Syllabus : Global system for mobile communication :

Global system for mobile communication, GSM architecture, GSM entities, Call routing in GSM, PLMN interface, GSM addresses and identifiers, Network aspects in GSM, GSM frequency allocation, Authentication and security.

General packet radio service (GPRS) : GPRS and packet data network, GPRS network architecture, GPRS network operation, Data services in GPRS, Applications of GPRS, Billing and charging in GPRS.

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