PET6J003 MOBILE COMMUNICATION

MODULE-I

Fundamentals of Cellular Communications- Introduction, Cellular Systems, Hexagonal Cell Geometry, Co-channel Interference Ratio, Cellular System Design in Worst-Case Scenario with an Omni directional Antenna, Co-channel Interference Reduction, Directional Antennas in Seven-Cell Reuse Pattern, Cell Splitting, Adjacent Channel Interference (ACI), Segmentation.

MODULE-II

An Overview of Wireless Systems- Introduction, First and Second Generation Cellular Systems, Cellular Communications from 1G to 3G, Wireless 4G Systems; Future Wireless Networks Radio Propagation, Propagation Path-Loss Models- Introduction, Free-space Attenuation, Attenuation over Reflecting Surfaces, Radio wave Propagation, Characteristics of Wireless Channel, Signal Fading Statistics, Propagation Path-loss Models, Cost 231 Model.

MODULE-III

Wireless Application and Standards- Fundamentals of WLAN transmission technology, WLAN applications, IEEE 802.11, 802.11 systems performance; WiMAX standards, WiFi standards, Zigbee.

MODULE-IV

Multiple Access Techniques- Introduction, Narrowband Channelized Systems, Comparisons of FDMA, TDMA and DS-CDMA, Comparison of DS-CDMA vs. TDMA; System Capacity, Multicarrier DS-CDMA (MC-DS-CDMA).

ADDITIONAL MODULE (TERMINAL EXAMINATION-INTERNAL)

Modulation schemes- Introduction to modulation, Phase Shift Keying, Quadrature Amplitude Modulation, M-ary Frequency Shift Keying, Synchronization, Equalization Spread Spectrum(SS) and CDMA Systems- Introduction, Concept of Spread Spectrum, System Processing Gain, Requirements of Direct-Sequence Spread Spectrum, Frequency-Hopping Spread Spectrum Systems.

TEXT BOOKS

1. Wireless Communication and Networking, Essential Reading, V K Garg, Morgan Kaufman Publishers India; 2008
2. Wireless and Mobile Communication, Upena Dalal and Manoj K. Shukla, Oxford University Press, 2016
3. Wireless communication & networks, Upena Dalal, Oxford University Press, 2014

REFERENCE BOOKS

1. Wireless Communications, T S Rappaport, Pearson Education, India
2. Mobile Communication Engineering – Theory and Applications, W C Y Lee, TMH
3. Wireless Communications, T L Singhal, Tata McGraw Hill, 2010
4. Wireless communication, A Goldsmith, Cambridge