Code No: C9304

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD M.TECH I - SEMESTER EXAMINATIONS, APRIL/MAY-2012 WIRELESS COMMUNICATIONS AND NETWORKS (SYSTEMS AND SIGNAL PROCESSING)

Time: 3hours Max. Marks: 60

Answer any five questions All questions carry equal marks

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- 1.a) Explain the system-generated cellular interference in cellular radio systems.
 - b) If a signal-to-interference ratio of 15 dB is required for satisfactory forward channel performance of a cellular system, what is the frequency reuse factor and cluster size that should be used for maximum capacity if the path loss exponent is (i) n=4, (ii) n=3 Assume that there are six co-channel cells in the first tier, and all of them are at the same distance from the mobile. Use suitable approximations.
- 2. What is duplexing and multiple access? Explain different types of multiple access techniques.
- 3.a) List out the differences between wireless and fixed telephone networks.
 - b) Explain the block diagram of a cellular system.
- 4. Explain Signaling System No.7(SS7) protocol in detail.
- 5. What is Mobile IP? Explain the discovery procedure used by a mobile node to identify Prospective home agents and foreign agents in Mobile IP.
- 6. Explain the following:
 - a) Infrared LANs
 - b) Spread Spectrum LANs
 - c) Narrowband Microwave LANs.
- 7. Explain the physical elements in the CDPD architechture. How mobility support is achieved in CDPD?
- 8.a) Discuss applications of ad-hoc wireless networks.
 - b) Discuss the major issues to be considered for a successful ad-hoc wireless internet.

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