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Seventh Semester B.E. Degree Examination, June/July 2016
Wireless Communication

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting
atleast TWO questions from each part.**

PART – A

- 1 a. Describe with a block diagram, the AMPS cellular system. Illustrate with a diagram the various signals that flow over the AMPS forward and reverse control channels. (10 Marks)
- b. With a flow diagram, explain AMPS mobile originated call and terminated call operations. (10 Marks)
- 2 a. Describe the basic sections of the subscriber device with a neat block diagram. (10 Marks)
- b. Illustrate hardware view and software view of a cellular system. (10 Marks)
- 3 a. With relevant sketches, explain cellular capacity expansion techniques. (10 Marks)
- b. For a mobile system of cluster size 3, determine the frequency reuse distance, if the cell radius is 3 km. Repeat the calculation for cluster size of 4 and 7 and comment on relation between N, D and interference. (05 Marks)
- c. Discuss the different handoff algorithms criteria using RSS measurements with a signal graph. (05 Marks)
- 4 a. With a block diagram, explain GSM network architecture. (10 Marks)
- b. Explain GSM channel concept. (10 Marks)

PART – B

- 5 a. List the GSM call setup operations. Briefly explain any three operations. (10 Marks)
- b. With a neat diagram, explain GSM inter- BSC handover operation steps. (10 Marks)
- 6 a. Explain the basic spectrum spreading operation and procedure used on CDMA forward channels. (10 Marks)
- b. With a neat diagram, explain the generation of the CDMA synchronization and paging channel. (10 Marks)
- 7 a. Explain the following :
 - i) Frequency hopping spread spectrum (10 Marks)
 - ii) RAKE receiver. (10 Marks)
- b. What is the received power in dBm for a signal in free space with a transmitting power of 1W frequency of 1900 MHz and distance from the receiver of 1000 meters, if the transmitting antenna and receiving antennas both use dipole antennas with gains of approximately 1.6? What is the path loss in dB? (10 Marks)
- 8 a. Explain the components of the Bluetooth architecture with relevant figure. (10 Marks)
- b. Describe IEEE 802.16 wireless MAN'S network and its deployment and antenna sectoring scheme. (10 Marks)

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