10EC81

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

Time: 3 hrs.

Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1   a. Explain the various steps in AMPS mobile terminated call. **(10 Marks)**
    b. Explain the characteristics of 2G and 3G cellular systems. **(10 Marks)**

2   a. Explain the generation of MSISDN, IMSI and IMEI. **(06 Marks)**
    b. Explain the function of HLR and ILR. **(06 Marks)**
    c. Explain a mobile originated call in a cellular network with a neat flow diagram. **(08 Marks)**

3   a. A service provider is given license for total bandwidth of 5 MHz and each system subscriber requires 10 kHz bandwidth. Determine the system capacity if the service provider implements a cellular system with 35 transmitter sites and cluster size of 7. **(06 Marks)**
    b. Determine frequency reuse distance for a cluster size of 7 and a cell radius of 6 km. **(04 Marks)**
    c. Explain mobility management concept. Explain the functions of location management with a figure. **(10 Marks)**

4   a. Explain the GSM signaling model. **(10 Marks)**
    b. Explain the steps in call setup in GSM using mobile station roaming number. **(10 Marks)**

PART – B

5   a. List out the ten operations in call setup in GSM system. Explain in detail ciphering mode setting and IMEI check. **(10 Marks)**
    b. Explain GSM intra BSC handover operation with a figure. **(10 Marks)**

6   a. Explain the functions of three layers in a network management system. **(10 Marks)**
    b. Explain the generation of CDMA paging channel. **(10 Marks)**

7   a. Explain the path loss model for free space propagation. **(05 Marks)**
    b. What is the received power in dBm for a signal in free space with a transmitting power of 1 kW, frequency of 1800 MHz and distance from the receiver of 2000 meters if the transmitting antenna and receiving antennas have a gain of 1.6? What is the path loss in dB? **(05 Marks)**
    c. Explain frequency hopping and direct sequence spread spectrum techniques. **(10 Marks)**

8   a. Discuss the design issues of IEEE802.11 and explain the working of BSS, DS and ESS network. **(10 Marks)**
    b. Explain the details of Bluetooth protocol stack with a figure. **(10 Marks)**

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