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06TE73

Seventh Semester B.E. Degree Examination, June/July 2011

Wireless Communication

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. Describe the evolution of wireless technology towards cellular radio systems. **(10 Marks)**
b. Explain the network elements of signaling #7 for PSTN. **(10 Marks)**

2 a. Describe the applications of wireless networks. **(08 Marks)**
b. Compare UMTS 3G cellular system and CDMA 2000 3G cellular system. **(08 Marks)**
c. What is meant by harmonization in the context of 3G cellular telephone systems? **(04 Marks)**

3 a. What is the relationship between cluster size and frequency reuse distance? Give the different allowable cluster sizes in a cellular system. **(05 Marks)**
b. For a particular radio transmission technology, a minimum S/I ratio of 15 dB is needed for operation. What is the minimum cluster size? **(05 Marks)**
c. Describe the techniques for expanding the capacity in cellular services. **(10 Marks)**

4 a. Describe the major subsystems of GSM wireless networks. **(10 Marks)**
b. Explain GSM channel concept. **(10 Marks)**

PART – B

5 a. Explain the GSM network element identities. **(06 Marks)**
b. Describe GSM system operations. **(10 Marks)**
c. Explain the basic difference between inter BSC and inter MSC handover. **(04 Marks)**

6 a. With a neat block diagram, explain the generation of CDMA synchronization channel signal. **(10 Marks)**
b. Explain the following :
i) Handoff in CDMA ii) Power control in CDMA **(10 Marks)**

7 a. Describe the theory behind the use of diversity in wireless networks. Explain any two diversity techniques used in wireless applications. **(10 Marks)**
b. Differentiate between FHSS and DSSS. **(06 Marks)**
c. If an OFDM system transmits 32 kbps over each carrier and uses 16 carriers, what is the overall data rate? **(04 Marks)**

8 Explain the following : **(20 Marks)**
a. IEEE 802.11 layer 1
b. Wireless LAN security
c. IEEE 802.15.4 pico nets
d. Wireless PAN

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