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10EC81

Eighth Semester B.E. Degree Examination, Dec.2016/Jan.2017
Wireless Communication

Time: 3 hrs. Max. Marks:100

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

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

PART – A

1 a. Explain with a neat diagram SS7 signaling system and their function. **(10 Marks)**
b. Explain with a neat flow diagram, AMPS mobile originated call. **(10 Marks)**

2 a. With a neat block diagram, the MSC sub system. **(08 Marks)**
b. Define and explain the generation of IMSI, IMEI and CGI. **(08 Marks)**
c. What is the purpose of visitor location register and interworking location register? **(04 Marks)**

3 a. Explain capacity expansion techniques :
i) Cell splitting
ii) Cell sectoring
iii) Overlaid cells. **(10 Marks)**
b. A service provider wants to provide cellular communication to a particular geographic area. The total bandwidth, the service provider is licensed for 5 MHz and system subscriber requires 10 KHz of bandwidth. Determine the system capacity; If the service provider implements a cellular system with 35 transmitter sites and cluster size of 7, determine the new system capacity. **(06 Marks)**
c. Determine frequency reuse distance for cell radius 5 km and cluster size of 7. **(04 Marks)**

4 a. Explain briefly service provided by GSM. **(06 Marks)**
b. With a neat block diagram, explain different protocols used in GSM signaling model. **(10 Marks)**
c. Draw and explain GSM TDMA frame with logical channel. **(04 Marks)**

PART – B

5 a. Explain GSM intra BSC handover with a neat diagram. **(10 Marks)**
b. Describe GSM chiphering mode setting operation and IMEI check. **(10 Marks)**

6 a. Explain with block diagram the generation of CDMA forward traffic control with power control channel for 14.4 kbps traffic. **(10 Marks)**
b. Draw and explain CDMA synchronization channel signal. **(10 Marks)**

7 a. Explain convolutional and turbo encoders. **(06 Marks)**
b. Discuss path loss model. **(04 Marks)**
c. Explain with a neat block diagram RAKE receiver. **(10 Marks)**

8 a. Discuss the design issues of IEEE 802.11. **(04 Marks)**
b. Explain the working of BDS, DS and ESS network with a neat diagram. **(08 Marks)**
c. Describe the Bluetooth protocol stack with relevant figures. **(08 Marks)**

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