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10EC81

Eighth Semester B.E. Degree Examination, June/July 2018
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 the characteristics of 2G and 3G cellular systems. **(10 Marks)**

b. Explain with a neat flow diagram AMPS mobile originated call. **(10 Marks)**

2 a. With a neat block diagram, explain the functions performed by various blocks of a subscriber device. **(10 Marks)**

b. Define and explain the generation of IMSI, IMEI and CGI. **(10 Marks)**

3 a. Explain capacity expansion techniques:
(i) Cell splitting
(ii) Cell sectoring
(iii) Overlaid cells **(10 Marks)**

b. Explain the concept of frequency reuse for cellular system. For a mobile system of cluster size of 7, determine the frequency reuse distance if the cell radius is 5 km. Repeat the calculation for a cluster size of 4. **(10 Marks)**

4 a. With a neat sketch, explain GSM signaling model. **(10 Marks)**

b. Explain the various logical channels used in GSM. **(10 Marks)**

PART – B

5 a. Explain GSM Inter-BSC handover operation with a neat diagram. **(10 Marks)**

b. With a neat block diagram, explain the generation of CDMA reverse access channel. **(10 Marks)**

6 a. Explain with block diagram the generation of CDMA forward traffic control with power control for 14.4 kbps traffic. **(10 Marks)**

b. Describe the soft handoffs process in CDMA. **(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. What are the IEEE 802.11 extensions? **(06 Marks)**

b. Describe the blue tooth protocol stack with relevant figures. **(08 Marks)**

c. Depict the relationship between IEEE 802.11 sending and receiving station with a state diagram. **(06 Marks)**

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