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10EC81

**Eighth Semester B.E. Degree Examination, July/August 2022**  
**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 neat flow diagram, the AMPS initialization operation. (10 Marks)  
b. Briefly discuss the characteristics of 3G mobile network. (06 Marks)  
c. Compare 1G, 2G, 3G cellular system. (04 Marks)
- 2 a. Explain common cellular system components. (10 Marks)  
b. Explain the following terms : (10 Marks)  
i) MS ISDN ii) IMSI iii) IMEI iv) CGI v) GTT.
- 3 a. Mention the cellular capacity expansion techniques. (10 Marks)  
b. Explain the concept of frequency reuse in a cellular system. (06 Marks)  
c. A service provider wants to provide cellular communication to a particular geographic area. The total bandwidth the service provider licensed is 5MHz and system subscriber requires 10 KHz of band width. Determine the system capacity, if the service provider implements a cellular system with 35 transmitter sites and cluster size of 7. Also determine frequency reuse distance for a cell radius of 2 km and cluster size of 8. (04 Marks)
- 4 a. List the various GSM services. (04 Marks)  
b. With a neat diagram, explain the GSM protocols signaling model. (06 Marks)  
c. Explain GSM logical channel concept. (10 Marks)

**PART – B**

- 5 a. List the different call set up operations and with flow diagram explain interrogation phase and IMEI check operation. (10 Marks)  
b. With neat flow diagrams, briefly explain GSM intra – BSC and inter – BSC handover. (10 Marks)
- 6 a. Explain basic spreading procedure used on CDMA forward channels. (06 Marks)  
b. Explain in brief mobile station initialization registration procedure in CDMA system. (06 Marks)  
c. Explain access channel probing in CDMA system. (08 Marks)
- 7 a. Explain in detail the various path loss models. (10 Marks)  
b. Explain RAKE receiver for a diversity technique with a block diagram. (10 Marks)
- 8 a. Explain the architecture of a blue tooth WPAN with a diagram. (10 Marks)  
b. Describe the basic difference between a wireless LAN and a wireless PAN. (10 Marks)

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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.