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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)

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.