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10EC81

Eighth Semester B.E. Degree Examination, Dec.2018/Jan.2019
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. With a neat diagram, explain the early AM wireless transmitter system. (10 Marks)
- b. Describe AMPS handoff operation with flow diagram showing time sequences of events, signals and messages used. (10 Marks)
- 2 a. Explain the common wireless cellular network components with neat block diagram. (08 Marks)
- b. With a neat diagram, explain the steps involved during mobile terminated call operation. (08 Marks)
- c. Explain the hardware view of cellular network with diagram. (04 Marks)
- 3 a. Explain the concept of cell splitting and cell sectoring with diagram. (08 Marks)
- b. Explain the concept of frequency reuse for cellular system. For a mobile system of cluster size 7 (seven) determine the frequency reuse distance if the cell radius is 5 km. Repeat the calculation for a cluster size of 4. (06 Marks)
- c. Explain the three power saving schemes in cellular system. (06 Marks)
- 4 a. Write the classification of logical channels and explain the various functions of this logical channels. (10 Marks)
- b. Explain the TDMA hyperframe structure with diagram in detail. (10 Marks)

PART – B

- 5 a. Explain with a neat flow diagram, (i) Radio resource connection establishment. (10 Marks)
- (ii) Authentication. (10 Marks)
- b. Define handoff. With a neat diagram, explain the steps involved during Intra-BSC handover. (10 Marks)
- 6 a. Explain the basic spectrum spreading operation in CDMA system. (08 Marks)
- b. Explain the network nodes found in CDMA 2000 wireless system. (12 Marks)
- 7 a. Explain error detection and correction codes used for wireless systems. (08 Marks)
- b. With neat block diagram, explain the rake receiver and also list the potential problems of rake receiver. (12 Marks)
- 8 a. Explain with necessary diagrams, Bluetooth piconet and scatternet architectures. (08 Marks)
- b. Explain the IBSS and DSSS topologies supported by IEEE802.11 architecture. (08 Marks)
- c. Briefly explain 4×4 antenna sectoring scheme in WMAN. (04 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.