

CBCS SCHEME

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17EC81

Eighth Semester B.E. Degree Examination, Jan./Feb. 2023 Wireless Cellular and LTE 4G Broadband

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the key enabling features used in LTE design technology. (06 Marks)
- b. Explain flat LTE – SAE architecture. (08 Marks)
- c. Explain briefly the multiantenna techniques used in LTE. (06 Marks)

OR

- 2 a. Briefly explain the cellular concept. Discuss how interfacing can be reduced in cellular communication. (10 Marks)
- b. With the help of block diagram, explain AMC. (10 Marks)

Module-2

- 3 a. Explain the different multiple access system which can be implemented with OFDM. (10 Marks)
- b. Discuss the significance of PAR problem in LTE. Briefly explain PAR reduction technique. (10 Marks)

OR

- 4 a. Explain SC – FDE system with a principle difference of SC – FED performance versus OFDM. (10 Marks)
- b. Explain open-loop MIMO in spatial multiplexing. (10 Marks)

Module-3

- 5 a. Discuss the basic principles involved in designing the LTE network architecture. (10 Marks)
- b. Explain the different transport channels supported in LTE for uplink and downlink. (10 Marks)

OR

- 6 a. Explain the hierarchical channel structure of LTE. (10 Marks)
- b. Explain the H – ARQ in the downlink. (10 Marks)

Module-4

- 7 a. Explain in detail the uplink control information. (10 Marks)
- b. Explain in detail about frequency hopping in LTE. (10 Marks)

OR

- 8 a. Explain the functions of H – HRQ in uplink and downlink transmission. (10 Marks)
- b. Discuss the power control schemes used in LTE. (10 Marks)

Module-5

- 9 a. Explain briefly the functional overview of PDCP and RLC layer. (10 Marks)
- b. Explain RRC states and its functions. (10 Marks)

OR

- 10 a. Explain mobility management over the SI interface. (10 Marks)
- b. Explain the basic approaches to mitigate ICI in the downlink. (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.