



CBCS SCHEME

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15EC81

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

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Explain briefly EPS architecture. (08 Marks)
b. List the advantages of OFDM leading to its selection for LTE. (08 Marks)

OR

- 2 a. Explain the cellular concept briefly. Discuss how interference can be reduced in cellular communication. (08 Marks)
b. Explain Delay Spread and Coherence Bandwidth. (08 Marks)

Module-2

- 3 a. Explain the basic multicarrier transmitter and receiver with neat block diagram. (08 Marks)
b. What is PAR Problem? Explain the methods used for PAR reduction. (08 Marks)

OR

- 4 a. With a neat diagram, explain SC-FDMA. List out the advantages and disadvantages of SC-FDM. (08 Marks)
b. Explain 2 * 2 SFBC approach in open-loop transmit diversity. (08 Marks)

Module-3

- 5 a. Explain frame structure used in LTE. (08 Marks)
b. Discuss the Radio Interface Protocol layers of LTE. (08 Marks)

OR

- 6 a. Briefly explain downlink transport channel processing. (08 Marks)
b. Discuss the broadcast channels and multicast channels. (08 Marks)

Module-4

- 7 a. Explain in brief : (i) Frequency hopping (ii) Multi antenna transmission (08 Marks)
b. Discuss the random access procedures in detail. (08 Marks)

OR

- 8 a. Explain Channel Quality Indicator (CQI) feedback. (08 Marks)
b. Discuss the power control schemes used in LTE. (08 Marks)

Module-5

- 9 a. Explain the function and services of RLC and MAC layers. (08 Marks)
b. Describe the various phases of S1 mobility with neat diagram. (08 Marks)

OR

- 10 a. Explain RAN procedure for mobility. (08 Marks)
b. Explain the basic approaches for uplink ICI mitigation (08 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.