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Eighth Semester B.E. Degree Examination, July/August 2022 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. Discuss the advantages of OFDM, which made it to use in LTE technology. (10 Marks)
- b. With neat sketch, Interpret the importance of each module of Evolved packet core architecture of LTE. (10 Marks)

OR

- 2 a. Explain Adaptive modulation and coding with neat Block diagram. (10 Marks)
- b. Analyse the techniques used to mitigate the Broadband fading. (10 Marks)

Module-2

- 3 a. State the importance of timing synchronization used to demodulate an OFDM signal. (08 Marks)
- b. With neat block diagram, analyze the principle operation of OFDMA in downlink transmitter. (08 Marks)
- c. List advantages of OFDMA. (04 Marks)

OR

- 4 a. Explain Spatial diversity of multiple antenna technique. (06 Marks)
- b. With neat block diagram, explain SC-FDMA uplink transmitter and receiver. (10 Marks)
- c. Compare FDMA, TDMA and CDMA. (04 Marks)

Module-3

- 5 a. Interpret the basic design principles of LTE. (10 Marks)
- b. Sketch LTE architecture and explain components of the E-UTRAN and EPC. (10 Marks)

OR

- 6 a. With neat structure of downlink resource grid, explain different resource units. (10 Marks)
- b. Explain Frame structure type – 2 in detail. (10 Marks)

Module-4

- 7 a. In detail, discuss the channel coding procedure for uplink control information. (12 Marks)
- b. Write note on H-ARQ in the uplink. (08 Marks)

OR

- 8 a. Explain Non-synchronized Random access procedures in LTE. (10 Marks)
- b. Explain the seven different transmission modes defined for PDSCH channel. (10 Marks)

Module-5

- 9 a. Discuss the different fields of RLC PDU formats. (12 Marks)
- b. Explain the main services and functions of the PDCP sublayer. (08 Marks)

OR

- 10 a. What is X2 Interface? With neat flow diagram, explain mobility management over X2 interface. (12 Marks)
- b. Interpret the interaction between MAC and RLC sublayer along with three data transfer modes. (08 Marks)