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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)

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