



CBGS SCHEME

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16/17ECS41

Fourth Semester M.Tech. Degree Examination, June/July 2019 Wireless Broadband LTE4G

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Draw a Original network architecture for LTE radio protocols, explaining the LTE standardization phases. (08 Marks)
- b. Discuss any two projects that have been addressed in 3GPP during release 9 and 10 work. (03 Marks)
- c. Use a schematic to explain what are the necessary specification numbers and protocols over the radio interface for LTE specifications. (05 Marks)

OR

- 2 a. Name the main elements of the basic system architecture configure with only E – UTRAN Access Network and describe their functions along with neat diagram. (10 Marks)
- b. Explain the functioning of Interworking elements related to IP Multimedia Services Subsystem (IMS) architecture. (06 Marks)

Module-2

- 3 a. Explain Multicarrier principle with a suitable block diagram. (08 Marks)
- b. Describe MIMO principle with two – by – two antenna configuration, with a neat diagram. (08 Marks)

OR

- 4 a. Distinguish between OFDMA and SC – FDMA systems in terms of technology. (06 Marks)
- b. Explain LTE RACH preamble formats for FDD with neat diagrams. (10 Marks)

Module-3

- 5 a. Describe contention and non contention based Random access procedures with signaling diagrams. (10 Marks)
- b. Explain physical layer parameter configuration , with a neat diagram. (06 Marks)

OR

- 6 a. With a neat block diagram, explain the overall LTE radio interface protocol architecture. (08 Marks)
- b. Explain how uplink and downlink logical and transport channels are mapped to physical channels. (08 Marks)

Module-4

- 7 a. Explain RRC connection set up procedure with a neat diagram. (07 Marks)
- b. Define Handover. Give complete diagram showing the importance of a X₂ interface in the intra LTE handover operation. (09 Marks)

OR

- 8 a. Enumerate the mobility management in Idle state by mentioning the S – Criterion that has to be fulfilled for cell selection. (10 Marks)
- b. Bring out any six main differences between UTRAN and E – UTRAN mobility (06 Marks)

Module-5

- 9 a. Explain layer 2 functionalities for dynamic packet scheduling , link adaptation and HARQ management , with a neat diagram. (08 Marks)
- b. With a simple illustration of DRX parameters, explain discontinuous transmission and reception. (08 Marks)

OR

- 10 a. What is meant by Link budget? Mention down line budget parameters for LTE with typical values. (12 Marks)
- b. Discuss how Round trip time measurement is done in user plane latency. (04 Marks)
