



# CBCS SCHEME

18ECS31

## Third Semester M.Tech. Degree Examination, Jan./Feb. 2021 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 basic system Architecture configuration for E-UTRAN. (10 Marks)  
b. Explain IMS (IP Multimedia Services Subsystem) Architecture. (10 Marks)

OR

- 2 a. Explain system Architecture for 3GPP and non 3GPP access networks. (10 Marks)  
b. Explain PCC (Policy and Charging Control) basic functioning along with roaming with PMIP. (10 Marks)

### Module-2

- 3 a. Explain the mapping of transport channel to physical channel. (10 Marks)  
b. Explain PUCCH configuration and resource allocation. (10 Marks)

OR

- 4 a. Explain the seven Downlink transmission modes with a block diagram. (10 Marks)  
b. Explain PUSCH channel coding. (10 Marks)

### Module-3

- 5 a. Explain the HARQ in LTE. (10 Marks)  
b. Explain LTE radio protocol stack. (10 Marks)

OR

- 6 a. Explain the contention and non contention based random access procedures. (10 Marks)  
b. Explain the RRC functions. (10 Marks)

### Module-4

- 7 a. Explain the mobility management in idle mode. (10 Marks)  
b. Explain the intra LTE handover. (10 Marks)

OR

- 8 a. Explain the signaling in handover process. (12 Marks)  
b. List the difference in UTRAN and E-UTRAN mobility. (08 Marks)

### Module-5

- 9 a. Explain the eNode B user plane and control plane protocol architecture. (10 Marks)  
b. Explain uplink RRM functionalities. (10 Marks)

OR

- 10 a. Explain DTX/DRX along with its parameters and functionalities. (10 Marks)  
b. Write a short note on any two of the following:  
i) Sounding reference signal  
ii) Buffer status report  
iii) Interference management and power setting in LTE. (10 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.