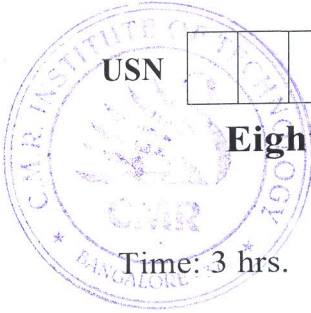


# CBCS SCHEME

15EC81



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## Eighth Semester B.E. Degree Examination, Dec.2023/Jan.2024 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 EPC Architecture. (08 Marks)  
b. Explain Multiantenna technique which supports LTE. (08 Marks)

OR

- 2 a. Explain in brief : i) Fading ii) Sectoring. (08 Marks)  
b. Explain Equalizers in brief. (08 Marks)

### Module-2

- 3 a. With a neat block diagram, explain OFDM communication system. Also mention the need of timing and frequency synchronization. (09 Marks)  
b. Explain SC-FDMA uplink transmitter with a neat figure. (07 Marks)

OR

- 4 a. Explain spatial diversity of multiple antenna techniques. (08 Marks)  
b. Explain open-loop MIMO in spatial multiplexing. (08 Marks)

### Module-3

- 5 a. Discuss the radio interface protocol stack of LTE. (08 Marks)  
b. Write the structure of downlink resource grid and explain the types of resource allocation. (08 Marks)

OR

- 6 a. Write the Frame structure Type 2 and explain the various fields applicable to TDD mode. (08 Marks)  
b. Discuss the Broadcast channels and multicast channels. (08 Marks)

### Module-4

- 7 a. Explain in brief : i) Frequency hopping ii) Multiantenna transmission. (08 Marks)  
b. Explain Non – synchronized Random Access procedure. (08 Marks)

OR

- 8 a. Explain CQI feedback in brief. (08 Marks)  
b. Explain the cell search process in LTE. (08 Marks)

### Module-5

- 9 a. Explain the main services and functions of PDCP sublayer for the user plane. (08 Marks)  
b. Explain RRC states and its functions. (08 Marks)

OR

- 10 a. Explain mobility management over the S1 transfer. (08 Marks)  
b. Explain three basic approaches to mitigate ICI in downlink. (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.

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