

# CBCS SCHEME

Librarian  
Learning Resource Centre  
Acharya Institute & Technology

15EC81

## Eighth Semester B.E. Degree Examination, Feb./Mar. 2022 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 the LTE network architecture. (08 Marks)  
b. Explain the advantages and disadvantages of OFDM. (08 Marks)

OR

- 2 a. Explain the different techniques for mitigation of narrow band fading. (08 Marks)  
b. Explain the following terms with respect to cellular system: (08 Marks)  
(i) Frequency Reuse (ii) Sectoring (iii) Handoff

### Module-2

- 3 a. Explain FDMA and TDMA techniques. (08 Marks)  
b. With a neat block diagram, explain OFDM communication system. (08 Marks)

OR

- 4 a. With a neat diagram, explain SC-FDMA uplink transmitter. (08 Marks)  
b. Explain the terms Array Gain and Diversity Gain with respect to multiple antenna transmission. (08 Marks)

### Module-3

- 5 a. List the various Logical, Transport and Physical channels used in LTE. (08 Marks)  
b. Explain the Radio Interface Protocol Stack of LTE. (08 Marks)

OR

- 6 a. Explain Type-1 frame structure of LTE. (08 Marks)  
b. Explain Broadcast and Multicast channels. (08 Marks)

### Module-4

- 7 a. With a neat block diagram, explain the overview of uplink transport channel processing. (08 Marks)  
b. Briefly explain H-ARQ on uplink. (08 Marks)

OR

- 8 a. Explain the different power control schemes used in LTE. (08 Marks)  
b. Explain the Random Access Procedure in LTE. (08 Marks)

### Module-5

- 9 a. Explain the functions and services of PDCP sub layers for user plane and control plane. (08 Marks)  
b. Explain mobility management over the SI interface. (08 Marks)

OR

- 10 a. Explain the RRC states and its functions. (08 Marks)  
b. Explain the Intercell Interference Coordination in down link and up link. (08 Marks)

\* \* \* \* \*

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.