



# CBCS SCHEME

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18EC81

## Eighth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Wireless and Cellular Communication

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain three basic propagation mechanisms. (10 Marks)  
 b. Discuss about the parameters coherence bandwidth and delay spread. In what way does it effect the wireless channel? (10 Marks)

OR

- 2 a. Explain free space propagation model with necessary equations. (10 Marks)  
 b. Exhibit the difference between fast fading and slow fading channel. (10 Marks)

### Module-2

- 3 a. With block diagram, explain the GSM architecture. (10 Marks)  
 b. Explain the GSM hyper frame with TDMA. (10 Marks)

OR

- 4 a. Explain the functions of three layers in a network management subsystem. (10 Marks)  
 b. Explain the dedicated control channels. (10 Marks)

### Module-3

- 5 a. With a neat block diagram, explain about CDMA network system architecture. (10 Marks)  
 b. Explain about 3G CDMA. (10 Marks)

OR

- 6 a. Explain about the concept of CDMA channels. (10 Marks)  
 b. Explain about Layer 3 operations. (10 Marks)

### Module-4

- 7 a. Explain about channel dependent, multi-resource scheduling and signaling for scheduling in downlink and uplink. (10 Marks)  
 b. With the help of neat diagram, explain how the timing and frequency synchronization is performed by the receiver to demodulate OFDM signal. (10 Marks)

OR

- 8 a. Discuss about flat IP architecture. (10 Marks)  
 b. With a neat diagram, explain SC-FDE. List out the advantages and disadvantages of SC-FDE. (10 Marks)

### Module-5

- 9 a. List the advantages of OFDM leading to its selection for LTE and explain. (10 Marks)  
 b. With a neat block diagram of OFDMA down link transmitter and explain the principle of operation. (10 Marks)

OR

- 10 a. With a neat diagram, explain SC-FDMA uplink transmitter. (10 Marks)  
 b. Explain about download link OFDMA radio receivers. (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.