



# CBCS SCHEME

18MT56

## Fifth Semester B.E. Degree Examination, Jan./Feb. 2023 Wireless Networks and Communication

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Discuss the various wireless communication problems encountered in wireless network. (10 Marks)
- b. List the classification of wireless network. Explain briefly, highlighting important points. (10 Marks)

OR

- 2 a. Explain various networking issues encountered in wireless network. (10 Marks)
- b. Find the transmitted power, if a transmitting node is operating at a frequency of 90MHz and a mobile phone receiver at a distance of 650m establishes the communication with the transmitting node. Assume the captured power at the mobile phone is  $1 \times 10^{-6}W$ . (05 Marks)
- c. For a mobile communication, it is given that average noise power at the receiver is  $25\mu W$  and the captured power is 100mW. Calculate SNR in dB. (05 Marks)

### Module-2

- 3 a. With a neat sketch, explain the WBAN network architecture. (10 Marks)
- b. Discuss WBAN network protocols in network layer. (10 Marks)

OR

- 4 a. Discuss design issues in WBAN system. (10 Marks)
- b. Discuss Bluetooth and Zigbee of WBAN technologies. Mention WBAN applications. (10 Marks)

### Module-3

- 5 a. Discuss spread spectrum modulation techniques used in wireless network. (10 Marks)
- b. Explain time, frequency and space diversity techniques. (10 Marks)

OR

- 6 a. With a neat sketch, explain GSM hardware used in mobile or any wireless network. (10 Marks)
- b. With a neat diagram, explain QPSK modulation scheme. (10 Marks)

### Module-4

- 7 a. With a neat sketch, explain the WLAN architecture. Mention its standards. (10 Marks)
- b. Explain the following in WLAN physical layer protocol:
  - i) Layer description of IEEE802.11.
  - ii) Direct sequence spectrum.
  - iii) Peer to peer data routing. (10 Marks)

OR

- 8 a. With a neat sketch, explain WMAN network architecture. (10 Marks)  
b. Discuss the advantages and properties of IEEE802.16 standards. (10 Marks)

Module-5

- 9 a. Explain the characteristics of VANET. (10 Marks)  
b. With a neat diagram, explain the architecture of VANET. (10 Marks)

OR

- 10 a. Explain wireless mesh network architecture. (10 Marks)  
b. List out quantitative and qualitative features of AdHoc networks. (10 Marks)

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