



Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020  
**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. With a neat block diagram, explain wireless communication system. (06 Marks)
- b. Explain wireless communication channel specification for allocating finite resources. (07 Marks)
- c. Explain how wireless networks are classified on basis of range and application. (07 Marks)

OR

- 2 a. Discuss the various wireless communication problems encountered in wireless network. (08 Marks)
- b. The transmitter power of a transmitter is 20mW operating at a frequency of 75MHz. At a distance of 500m, a mobile phone establishes the communication with the transmitter. Find the captured power. (04 Marks)
- c. Give comparison of important standards used for wireless communication in wireless networks. (08 Marks)

### Module-2

- 3 a. Explain network architecture and design issues in WBAN system. (08 Marks)
- b. Discuss WBAN routing protocols in network layer. (08 Marks)
- c. Discuss WBAN applications. (04 Marks)

OR

- 4 a. With a neat diagram, explain WPAN architecture and its topologies. (08 Marks)
- b. With neat diagram, explain Bluetooth protocol stack. (08 Marks)
- c. Consider a Bluetooth piconet where a slave in piconet 1 is sending a packet to the master with DM3 packet format. What is the supported maximum rate of the user from slave to master direction? (04 Marks)

### Module-3

- 5 a. With illustration, explain QPSK modulation technique. (08 Marks)
- b. Explain spread spectrum modulation technique. (08 Marks)
- c. Explain any one error detection and correction coding technique. (04 Marks)

OR

- 6 a. Explain diversity techniques in wireless communication. (10 Marks)
- b. Write a note on Ultra-WideBand radio technology (UWB). (05 Marks)
- c. Write a note on GSM hardware. (05 Marks)

### Module-4

- 7 a. Explain WLAN architecture and WLAN standards. (08 Marks)
- b. Give comparison of IEEE 802.16 and IEEE 802.11 wireless standards. (06 Marks)
- c. Discuss WMAN applications. (06 Marks)

OR

- 8 a. With a neat diagram, explain GSM architecture. (10 Marks)  
b. Explain architecture, key features, functioning and limitations of CDPD. (10 Marks)

Module-5

- 9 a. Explain five routing protocols of WSN. (10 Marks)  
b. Explain with neat diagram wireless Mesh network architecture and give its classification. (10 Marks)

OR

- 10 a. Explain the unique characteristics of VANETs. (10 Marks)  
b. With neat diagram, explain architecture and protocols in VANET. (10 Marks)

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