

CBCS SCHEME

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Fifth Semester B.E. Degree Examination, Feb./Mar. 2022 Wireless Networks and Communications

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain the wireless network architecture with a neat diagram. (10 Marks)
b. Discuss the various wireless communication problems encountered in the wireless network. (10 Marks)

OR

- 2 a. What are wireless networking issues? Discuss in detail. (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 captured power at the mobile phone is 1×10^{-6} W. (05 Marks)
c. A mobile receiver communicates at a distance of 5km with the transmitter which is having the frequency of 750MHz. Calculate the path loss in the system. (05 Marks)

Module-2

- 3 a. Discuss the properties and components of wireless body area network. (10 Marks)
b. Discuss S-MAC and T-MAC in wireless body area network. (10 Marks)

OR

- 4 a. Explain the network layers in wireless body area network. (10 Marks)
b. Explain the following WBAN technologies:
i) Bluetooth ii) Zig Bee. (10 Marks)

Module-3

- 5 a. With the help of diagram, explain the different diversity techniques. (10 Marks)
b. Explain the spread spectrum technique. And also ultra wide band radio technology. (10 Marks)

OR

- 6 a. With a neat diagram, explain OFDM modulation technique. (10 Marks)
b. Discuss the speech coding and Block inter leaving. (10 Marks)

Module-4

- 7 a. Explain the following in LAWN physical layer protocol:
i) Layer description of IEEE 802.11
ii) Direct sequence spread spectrum sublayer
iii) Peer to peer data routing. (10 Marks)
b. Explain the design requirements of WLAN. (10 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.

OR

- 8 a. Discuss the physical layer of wireless Metropolitan Area Network. (10 Marks)
- b. Explain the features of WiMAX. (10 Marks)

Module-5

- 9 a. Listout and explain quantitative and qualitative features of MANET. (10 Marks)
- b. Explain the wireless Mesh network architecture. (10 Marks)

OR

- 10 a. Discuss the unique characteristics of VANETs. (10 Marks)
- b. Explain the technologies involved in the MANET, VANET and WSN. (10 Marks)

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