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**Fifth Semester B.E. Degree Examination, Dec.2024/Jan.2025**  
**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 the wireless communication system. (10 Marks)
- b. In a communication channel, the bandwidth is 10 MHz and SNR is 100:
  - (i) Determine the channel capacity.
  - (ii) If SNR drops to 10, how much bandwidth is needed to achieve the same channel as in (i). (10 Marks)

**OR**

- 2 a. Discuss the wireless communication problems encountered in wireless network. (10 Marks)
- b. Explain various networking issues encountered in wireless network. (10 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. Explain the following telecommunication coding techniques:
  - (i) Convolution encoder
  - (ii) Speech coding (10 Marks)
- b. Explain QPSK digital modulation and modulation techniques. (10 Marks)

**OR**

- 6 a. Explain spread spectrum modulation technique. (10 Marks)
- b. Explain diversity techniques in wireless communication. (10 Marks)

**Module-4**

- 7 a. Explain design requirements of WLAN. (10 Marks)
- b. Discuss the various W-LAN standards. (10 Marks)

OR

- 8 a. Discuss the features of Wi-MAX.  
b. With a neat diagram, explain GSM architecture.

(10 Marks)

(10 Marks)

Module-5

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

(10 Marks)

(10 Marks)

OR

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

(10 Marks)

(10 Marks)

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