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18MT56

Fifth Semester B.E. Degree Examination, July/August 2021
Wireless Networks and Communication

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions.

1 a. Explain how wireless network are classified on basis of range and applications. **(08 Marks)**
   b. With a neat block diagram, explain Wireless Communication System. **(08 Marks)**
   c. Calculate the minimum SNR required to support information transmission through the telephone channel of bandwidth 3.4 kHz at the data rate of 4800 bps. **(04 Marks)**

2 a. Discuss the various wireless communication problems encountered in wireless network. **(08 Marks)**
   b. Explain wireless switching technologies. **(06 Marks)**
   c. Explain various networking issues encountered in wireless network. **(06 Marks)**

3 a. With a neat diagram, explain the network components and architecture of WBAN. **(10 Marks)**
   b. Explain the MAC layer protocols in WBAN system (i) S-MAC (ii) T-MAC. **(10 Marks)**

4 a. With a neat diagram, explain WPAN architecture and its topologies. **(10 Marks)**
   b. Explain with a neat diagram, Bluetooth protocol stack. **(10 Marks)**

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)**

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

7 a. Explain the design requirements of WLAN. **(10 Marks)**
   b. Briefly explain the description of PHY layer of 802.11 and Direct Sequence Spread Spectrum (DSSS) PHY sub layer in WLAN physical layer protocol. **(10 Marks)**

8 a. Compare IEEE 802.11 standard and IEEE 802.16. **(05 Marks)**
   b. Explain the methods to increase capacity in cellular network. **(05 Marks)**
   c. Explain with a neat diagram, GSM network architecture. **(10 Marks)**

9 a. Discuss MAC protocols of MANET. **(10 Marks)**
   b. Explain the routing protocols of Wireless Sensor Network (WSN). **(10 Marks)**

10 a. With a neat diagram, explain the components and architecture of Wireless Mesh Network (WMN). **(10 Marks)**
   b. Explain Network Architecture and Application of VANET's. **(10 Marks)**

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