18MT56

Fifth Semester B.E. Degree Examination, July/August 2022
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.   Define wireless networks. With a neat diagram write about wireless network architecture. **(10 Marks)**
    b.   Write the classification of wireless networks with a neat diagram, and write few points related to each. **(06 Marks)**
    c.   In communication channel, the channel band width is 3.4 KHz and output S/N power ratio is 20dB. Calculate the channel capacity. **(04 Marks)**

OR

2   a.   With a neat block diagram, explain the wireless communication system. **(06 Marks)**
    b.   Discuss the wireless communication problems encountered in wireless networks. **(10 Marks)**
    c.   Explain various networking issues encountered in wireless network. **(04 Marks)**

Module-2

3   a.   Briefly explain characteristics of WBANS. **(06 Marks)**
    b.   Explain the network architecture in the WBAN. **(08 Marks)**
    c.   Explain the design issues to be considered for designing a WBAN system. **(06 Marks)**

OR

4   a.   Explain the piconet and scatternet architecture defined in WPAN. **(08 Marks)**
    b.   Explain protocol stack arrangement of Bluetooth technology. **(08 Marks)**
    c.   A Bluetooth piconet master has three slaves S1, S2 and S3 having the packet types DM1, DM3 and DM5, respectively. All the slaves want to send the data to the master at different intervals of time. Draw the timing diagram for master – slave communication. **(04 Marks)**

Module-3

5   a.   Explain with a neat diagram, QPSK digital modulation technique. **(07 Marks)**
    b.   Explain with a neat diagram, multipath and Doppler's effects. **(06 Marks)**
    c.   Explain Rake receiver with a neat diagram. **(07 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 two modes of WLANS. (08 Marks)
  b. Explain WLAN adapters and WLAN routers. (06 Marks)
  c. Explain the design requirements of WLAN. (06 Marks)

OR

8 a. List and explain main components of WiMaX. (06 Marks)
  b. Discuss the features of Wi-MAX. (06 Marks)
  c. With a neat diagram, explain GSM architecture. (08 Marks)

Module-5

9 a. Explain MANET single hop architecture and mulithop architecture with a neat diagram. (10 Marks)
  b. List out the quantitative and qualitative features of wireless Adhoc networks. (10 Marks)

OR

10 a. Explain wireless Mesh network architecture. (10 Marks)
   b. Write various characteristics of VANETS and its applications. (10 Marks)

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