Question Paper Code : X60423

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020

Eighth Semester

Electronics and Communication Engineering

EC2043/EC808/10144ECE57 – WIRELESS NETWORKS

(Regulations 2008/2010)

Time : Three Hours   Maximum : 100 Marks

Answer ALL questions

PART – A   **(10×2=20 Marks)**

1. Compare the performance of connection oriented voice services and connectionless data services.

2. What is the difference between carrier sense mechanism in Ethernet, IEEE 802.3 wired LAN and IEEE 802.11 wireless LAN.

3. How do you generate and exchange secrete key in wireless networks ?

4. What are the data services offered by GSM ?

5. What are the functions of physical layer of IEEE 802.11 system ?

6. Write the expansion for WiMax and features of the system.

7. List out the important characteristics of MANET.

8. Define wireless sensor network.

9. How is interference between Bluetooth and 802.11 handled ?

10. What is the difference between the MAC protocol of the protocol and the IEEE 802.11 ?

PART – B   **(5×16=80 Marks)**

11. a) i) Explain Non-persistent, I-persistent and P-persistent CSMA protocols. **(10)**

    ii) Compare the throughput performance of ALOHA, Slotted Aloha and CSMA protocols. **(6)**

    (OR)

    b) i) Explain the principle, Frame structures and working of TDMA system. **(8)**

    ii) What is meant by hand off ? Describe the different handoff mechanism. **(8)**

12. a) Describe the four mechanisms supported in GSM technology for mobile environment scenario.

    (OR)

    b) Explain the reference architecture of CDPD networks.

13. a) Compare and contrast the various parameters for WCDMA and CDMA 2000. **(16)**

    (OR)

    b) i) Design a WLAN for an office building based on statistical models with certain information provided. There is a constraint on where to place an access point on the wireless environment. Consider the following information for network design : there is 4 maximum number of walls between an access point and a mobile terminal, there is 2 maximum number of floors between an access point and the mobile terminal, transmit power possibility starts from 250 mW to 100 mW, receiver sensitivity is –80 dbm, maximum access point to building edge is 30 m, and shadow fading margin is 8 db. **(8)**

    ii) Explain about the MAC mechanism of IEEE 802.11 WLAN. **(8)**

14. a) i) Classify the wireless sensor networks. **(8)**

    ii) How can range based localization algorithm used for localizing sensor networks with reference to nearby land marking ? **(8)**

    (OR)

    b) i) Explain the concept of AODV routing in MANET.

    ii) State the importance of QOS in Adhoc networks. Explain with example.

15. a) With relevant sketches, explain thoroughly about the MAC layer of wireless MAN.

    (OR)

    b) Draw and explain protocol architecture of Bluetooth.

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