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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2014

Electronics and Communication Engineering

VII

EC527 Wireless Networks

(Regulation 2004)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. How does a radio signal propagate in the wireless medium?
2. Define medium access and list the different types of medium access techniques for voice oriented network.
3. Discuss on fixed channel assignment and dynamic channel assignment for cellular networks
4. Explain the open loop power control technique in CDMA network
5. list any two functions of SGSN block in GPRS network.
6. Draw the typical frame format of Wireless ATM.
7. What are differences between the 802.11a and HIPERLAN-2?
8. Explain the association of a node to the WLAN network.
9. How many anchor points are required to find the location of a mobile using signal power based triangulation method.
10. Define the coverage capacity of a Geolocation systems.

Part – B (5 x 16 = 80 marks)

11. With required diagram explain TDMA, FDMA and CDMA
ii) Compare the capacity of IS95 CDMA with AMPS FDMA and IS-136 TDMA systems for the available bandwidth of 1.25MHz. For the CDMA system, assume an acceptable SIR of 6dB, data rate of 9600bps, voice duty cycle of 50%, effective antenna separation factor of 2.75, neighboring interference factor = 1.67.
12. a. What are different types of interference in cellular network. Calculate the SIR ratio for a cellular system with 6 co channel interfering cells. How to mitigate adjacent channel interference?

(OR)

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- 12.b)j) With necessary diagrams explain the mobility management process.
ii) Discuss on the power control mechanisms of wireless networks.

13. a) With required diagram explain the operation of Wireless geolocation system using direction based method and TDOA method.

OR

- b) Explain the four states that a Bluetooth terminal can take.
ii) What is the difference between the MAC protocol used by Blue tooth and IEEE 802.11.

14. a) With the architecture of GSM explain the operation of call processing.

OR

- b) Explain the Forward channel of CDMA and its power control mechanism.

15. a) Explain the Physical and MAC layer of IEEE 802.11.

OR

- b) Give the general architecture HIPERLAN –II.

ALL THE BEST_____