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FT

B.E DEGREE END SEMESTER EXAMINATIONS, APR / MAY 2019

Electronics and Communication Engineering
EC 8022 Wireless Networks
VII Semester

Time : 3 Hours R2012 Max. Marks: 100

Answer all questions

PART A (10×2=20 marks)

1. Draw the ESS of 802.11 and name all the components.
2. Differentiate the wi-fi and Hiperlan-2 with respect to frequency of operations, data rate and bandwidth.
3. There are eight users in a CDMA system, using walsh code find the chip sequence assigned to each user.
4. Define soft handoff and hard handoff in 3G systems.
5. Define life time and throughput for sensor network.
6. Differentiate proactive and reactive routing.
7. Explain the need for interworking.
8. Give the advantages of tight coupling over loose coupling.
9. Explain the basic concept behind the MVNO (Mobile Virtual Network Operator) .
10. What is 4G?

ADDITIONAL CONTROLLER OF EXAMINATIONS ★ AU CHENNAI 600 025

Part – B (5 x 16 = 80 marks)

11. i)Design a OFDM signal for the IEEE 802.11 a wi-fi access point operating at a frequency of 5GHz,with single user bandwidth of 5 MHz and data rate 54Mbps, for the wireless channel with delay spread 20μsec.

    ii)With required diagram explain the Wi-fi MAC protocol for IBSS mode.

12. a) i)Explain with diagram the architecture of WCDMA.

    ii)Explain the air interface of WCDMA.

OR

b) i)Differentiate CDMA 2000 and WCDMA systems.

ii)Explain with diagram the IS95 forward channel.

13. a) i)Draw a single node architecture of a sensor node and explain the functions of each element.(10)

ii) Discus on any two applications of WSN.(6)

OR

b) i)Describe the characteristics of ad hoc network.

ii)Explain the Adhoc on demand distance vector routing protocol with suitable diagrams.

14. a) Explain the operation of WAF and GIF

OR

b) Draw and explain the tight coupling architecture of WLAN with GPRS.

15. a) Explain with required diagrams the architecture of WiMax

OR

b) Explain with diagrams the 4 G enabling technologies.