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Question Paper Code : 71173

M.E./M.Tech. DEGREE EXAMINATION, JUNE/JULY 2013.

Second Semester

Computer and Communication

CP 9222/CP 922/10244 CCE 63 — WIRELESS NETWORKS

(Common to M.E. Computer Networks Engineering/M.E. Network Engineering/ M.E. Networking and Internet Engineering and M.Tech. Information and Communication Technology)

(Regulation 2009/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Name the different topologies with which WLANs can be built.

2. Name the specifications of IEEE 802.116 data rate.

3. What are the Qos classes in the UMTS?

4. What is reverse link problem in a CDMA system?

5. Write the classification of MANETs.

6. Write any two applications of wireless sensor networks.

7. State the advantages of tight coupling architecture between IEE802.11 WLANs and GPRS.

8. What is the multichannel multipoint distribution system?

9. Name the key challenges in 4G systems.

10. Name the convergent devices in 4G.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Discuss about hidden and exposed node problems in a WLAN. (8)

(ii) Draw the OSI model for IEEE 802.11 WLAN and illustrate the function of each layer. (8)

Or

(b) (i) Draw a comparison between HIPERLANZ and IEEE 802.11. (8)

(ii) Explain the air interfaces of wireless MAN. (8)

12. (a) (i) Draw the UMTS-3G reference architectures and discuss the various domains and reference points. (8)

(ii) Discuss the responsibilities of RNC in the UMTS network. (8)

Or

(b) (i) Draw the CDMA 2000 network architecture and discuss the different interfaces. (8)

(ii) State why is power control used in CDMA 2000. (8)

13. (a) (i) Explain the principle of table-driven routing protocols in MANETs. (8)

(ii) Illustrate the concept in any one of hybrid routing protocols in MANETs. (8)

Or

(b) (i) Discuss the fundamentals of MAC protocol for wireless sensor networks. (8)

(ii) Explain the difference and similarities between adhoc and sensor networks. (8)

14. (a) (i) Discuss briefly the various ways to achieve interworking between a WWAN and a WLAN. (8)

(ii) Explain the internetworking architectures for WLAN. (8)

Or

(b) (i) Discuss briefly the functions provided by WAF. (8)

(ii) Explain the features of local multipoint distribution service. (8)

15. (a) (i) Draw a comparison of key parameters of 4G with 3G system. (8)

(ii) Explain about the carrier mitigation from 3.5 G to 4G. (8)

Or

(b) (i) How are higher spectral efficiency and increased through put achieved in OFDM-MIMO system? (8)

(ii) Write briefly about cognitive radio. (8)
