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Question Paper Code : 52579

B.E/B.Tech. DEGREE EXAMINATION, APRIL 2016

Eighth Semester

Electronics and Communication Engineering

EC 2043 / EC 808 / 10144ECE57 – WIRELESS NETWORKS

(Regulations 2008/2010)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Find out the capacity of a single IS-95 cell which is using QPSK modulation and convolutional coding $3 \text{ db} < S_r < 9 \text{ db}$, and bandwidth of the channel is 1.25 MHz.
2. Determine the capacity of GSM for $k = 3$.
3. What are the duties of SGSN and GGSN in GPRS ?
4. Mention the five logic channel in GSM standard.
5. State the challenges faced by WLAN industry.
6. State the difference between a probe and a beacon signal in IEEE 802.11.
7. List out the important characteristics of MANET.
8. Define Wireless sensor network.
9. What is the frequency band and channel bandwidth specification of WiMax standard ?
10. Mention the three error correction mechanism used by Bluetooth systems.

PART – B (5 × 16 = 80 Marks)

11. (a) Discuss the methods by which data services get integrated with Voice-oriented Networks. (16)

OR

- (b) Discuss the methods by which data services get integrated with voice-oriented Networks.

12. (a) (i) Describe the different air interface connection between MS and BTS in a GSM network. (10)

- (ii) Compare GSM and CDMA. (6)

OR

- (b) Explain the architecture, location and handoff management in GPRS network. (16)

13. (a) (i) What are the requirements and applications of wireless LANS ? (4)

- (ii) Describe the services offered by MAC and MAC management sublayers of IEEE 802.11 wireless LAN. (12)

OR

- (b) (i) Wifi and Wimax may be the alternative solution of fixed broadband services in real time applications. Comment on this issue. (6)

- (ii) Explain the overview of Wimax IEEE 802.16 MAC layer and the functionalities. (10)

14. (a) Explain in detail about the WiMax layer. (16)

OR

- (b) Explain in detail about the followings for Bluetooth :

- (i) MAC management (ii) Connection management.

15. (a) With relevant sketches, explain thoroughly about the MAC layer of Wireless MAN. (16)

OR

- (b) Draw and explain protocol architecture of Bluetooth.