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Question Paper Code : Q 2808

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2009.

Seventh Semester

Information Technology

IT 1402 — MOBILE COMPUTING

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Why do Hidden and Exposed terminal problems arise?
2. Differentiate Broadcast from Multicast.
3. Detail the features of MSAT.
4. How can an efficient routing be made in satellite systems?
5. When are tuning frequency and frequency considered?
6. How can you utilize mobile antennas efficiently?
7. Compare various modulation techniques.
8. When it's required to go for GMSK, GFSK and DQPSK?
9. In what functionalities Switches differ from Routers?
10. How and why does I-TCP isolate problems on the wireless link?

11. (a) Consider three users and Barker code of six bits each for the users transmitting the signals, introduce noise and near/far problem while transmitting and reconstruct the data in the receiving side providing the proper countermeasures for the complications. (Note: Use CDMA technologies)

Or

- (b) (i) Table the frequency bands used for wireless applications with their ranges, propagation models and applications. (6)
- (ii) Represent diagrammatically the protocol machines for multiple access with collision avoidance. (10)
12. (a) (i) Sketch the data network in your campus. How many hosts are there and how large is the user population? What is the speed of the access link to the Internet? How so you gain access to the Internet? How much does home access to the Internet costs? (10)
- (ii) Why are so many different identifiers/addresses (e.g. MSISDN, TMSI, IMSI) needed in GSM? Give reasons and distinguish between user-related and system related identifiers. (6)

Or

- (b) (i) Consider a mobile user who is migrating from a place to another place, provide him a seamless service by satellite system, also sketch the architecture. (8)
- (ii) Discuss the importance of DECT Protocol Layers. (8)
13. (a) (i) Detail the time-bounded service on top of the standard DCF mechanism where ad hoc networks cannot use the function. (8)
- (ii) Discuss the PHY frame format of an IEEE 802.11 using the spread spectrum technique which separates by code. (8)

Or

- (b) (i) The channel access control sublayer of HIPERLAN offers a connectionless data transfer service to the higher MAC layer. Justify the above statement with related references. (10)
- (ii) Discuss the functionalities and support provided by L2CAP. (6)

14. (a) Discuss and detail the differences in topology reorganization in DSDV and DSR routing protocols.

Or

- (b) (i) What are the general problems of mobile IP regarding security and support of quality of service? (8)
- (ii) Name the inefficiencies of mobile IP regarding data forwarding from a correspondent node to a mobile node. What are optimizations and what additional problems do they cause? (8)

15. (a) What are the major difference between WAP 2.0 and WAP 1.x? What influenced the WAP 2.0 development?

Or

- (b) Detail about UMTS Radio Interfaces in Frequency Division Duplex and Time Division Duplex modes.
