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M. Tech 1st Semester Examination

Design of Wireless and Mobile Communication Systems

EC-101

Time : 3 Hours   Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt any five questions out of eight. Each question carries equal marks.

1. (a) Explain multipath propagation in detail with suitable diagram. What do you know about short term and long term fading?

    (b) What are the advantages of spread spectrum technique? What are the different ways of achieving it? Explain with proper diagrams.   (20)

2. (a) Explain the architecture of an infrastructure-based IEEE 802.11. Draw the frame of the physical layer of IEEE 802.11 using DSSS.

    (b) What are the various interfaces used in GSM? Explain the architecture of GSM.   (20)

3. (a) Explain the TCP/IP model with suitable diagram.

    (b) What is WLL? Explain the architecture of WLL in detail.   (20)

4. (a) Mention various types of error correcting mechanisms. Explain them briefly.

   (b)   What are various types of satellite orbits? What characteristics do the different orbits have? What are their pros and cons? (20)

5. (a) Explain the system architecture for CDMA? How CDMA is different from TDMA and FDMA?

   (b)   List the entities of mobile IP and describe data transfer from a mobile node to a fixed node and vice versa. (20)

6. (a) Explain different types of communication networks? What are advantages of networking?

   (b)   Name various types of Transmission media. Discuss them briefly with their features. (20)

7. (a) Explain various types of Wireless LAN Standards with their specifications.

   (b)   How can the capacity of a cellular system be increased? (20)

8. (a) Explain signaling applications in CDMA system in brief.

   (b)   Why encoding of signal is performed? Discuss various types of encoding techniques. (20)