III B.Tech I Semester Regular Examinations,Nov/Dec 2009
DATA COMMUNICATION SYSTEMS
Common to Information Technology, Computer Science And Engineering
Time: 3 hours   Max Marks: 80
Answer any FIVE Questions
All Questions carry equal marks
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1. (a) List and explain the three satellite orbital patterns?
   (b) What are the optical properties of radio waves?   [8+8]

2. (a) Explain vertical redundancy checking?
   (b) Discuss the features of Bell system compatible modem?   [8+8]

3. (a) What are the difference between the time domain modulation and the frequency domain modulation.
   (b) What are the different types of network topologies?   [8+8]

4. (a) Describe the differences between asynchronous and synchronous protocols?
   (b) Explain the ENQ/ACK line discipline?   [8+8]

5. (a) List and describe the four primary constants of a transmission line.
   (b) Explain the different types of rays in fiber optics.   [8+8]

6. (a) Describe digital cellular telephone?
   (b) List the advantages and disadvantages of PCSS?   [8+8]

7. (a) What is the reference frequency for attenuation distortion?
   (b) What are the steps involved in completing a local telephone call? [8+8]

8. (a) Explain the difference between linear and nonlinear PCM codes.
   (b) Describe the North American Digital Hierarchy.   [8+8]

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1. (a) Explain the classifications of CDMA radiated power?
   (b) Describe GSM architecture?   [8+8]

2. (a) Describe the Clark orbit?
   (b) List and explain the three satellite elevation categories?   [8+8]

3. (a) What is Topology? Explain briefly about network Topologies.
   (b) Explain the probability of error and bit error rate?   [16]

4. Explain SDLC loop operation?   [16]

5. (a) What are the characteristics of asynchronous voice-band mdems.
   (b) Generate the hamming codeword for ASCII character "U" = 1010101. Assume even parity for the hamming code.
                                                                              [8+8]

6. (a) List and describe the types of losses associated with metallic transmission lines.
   (b) What is meant by mode of operation and index profile.   [8+8]

7. (a) For the following bit sequence, draw the timing diagram for UPRZ, UPNRZ, BPRZ, BPNRZ, and BPRZ-AMI: 1 1 1 0 0 1 0 1 1 0 0.
   (b) Explain the relationship between dynamic range, resolution and the number of bits in a PCM code?   [8+8]

8. (a) What is meant by line conditioning? What are the types of line conditioning?
   (b) Explain the paging systems?   [10+6]

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