Code No: 07A50505 | R07 | | Set No. 2 |

III B.Tech I Semester Examinations,May 2011
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. What is sliding window protocol? Explain the sliding window flow control?   [16]

2. Explain the optical fiber communications system with a neat block diagram? [16]

3. (a) Describe CDMA?

   (b) Outline the CDMA frequency and channel allocation for cellular telephone?

   [8+8]

4. (a) What are the advantages and disadvantages of geostationary satellite?

   (b) Describe a satellite footprint?   [8+8]

5. (a) Enumerate difference between asynchronous and synchronous modems?

   (b) Explain longitudinal redundancy checking?   [8+8]

6. (a) Where in a telephone system is the local loop?

   (b) Describe nonlinear, transmittance and coupling crosstalk?   [8+8]

7. (a) What are the differences between peer-to-peer client/server networks and dedicated client/server networks?

   (b) Describe the relationship between bit rate, bandwidth, and baud for 16-QAM.

   (c) Briefly describe the TCP/IP protocol model?   [8+4+4]

8. (a) Explain the difference between linear and nonlinear PCM codes.

   (b) Describe the North American Digital Hierarchy.   [8+8]

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Set No. 4

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DATA COMMUNICATION SYSTEMS
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Time: 3 hours   Max Marks: 80
Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Describe the differences between cable modems and standard voice-band modems.?
   (b) Explain the data communication circuit with a diagram?   [8+8]

2. (a) Describe synchronous data link protocols?
   (b) Describe asynchronous data link protocols?   [8+8]

3. (a) Describe twin-lead transmission lines?
   (b) List and briefly explain the losses associated with optical fibers. [8+8]

4. (a) What is the difference between a station busy signal and an equipment busy signal?
   (b) What is the reference frequency for attenuation distortion?   [8+8]

5. (a) Explain the Kepler's laws?
   (b) Explain the satellite look angles?   [8+8]

6. (a) Explain quantization noise?
   (b) Describe the synchronous optical SONET network.   [8+8]

7. (a) Describe a cellular geographic serving area?
   (b) Explain the types of handoff?   [8+8]

8. (a) Name and briefly describe the differences between the two kinds of data communication standards?
   (b) Describe a constellation diagram and explain for what it is used?   [8+8]

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Code No: 07A50505 | R07 | Set No. 1

III B.Tech I Semester Examinations,May 2011
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) Describe twisted pair transmission lines?

   (b) Why is single-mode propagation impossible with graded-index optical fibers? Explain?   [8+8]

2. (a) What is Topology? Explain briefly about network Topologies.

   (b) Explain the probability of error and bit error rate?   [16]

3. Explain what loading coils and bridge taps are and when they can be detrimental to the performance of a telephone circuit?   [16]

4. (a) Discuss the features of modem equalizers?

   (b) Explain the ITU-T modem recommendations?   [8+8]

5. (a) List and explain the functions of data link protocol?

   (b) Briefly describe the stop-and-wait method of flow control?   [8+8]

6. (a) Describe digital cellular telephone?

   (b) List the advantages and disadvantages of PCSS?   [8+8]

7. (a) Define and explain the pulse code modulation?

   (b) A PCM-TDM system multiplexes 20 voice-band channels . Each sample is encoded into seven bits, and a framing bit is added to each frame. The sampling rate is 10,000 samples per second. Determine maximum analog input frequency and line speed in bps.   [8+8]

8. (a) Describe wave attenuation and absorption and the relationship between them.

   (b) Determine the power density for a radiated power of 1000W at a distance 30 km from the antenna.   [8+8]

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Code No: 07A50505

R07

Set No. 3

III B.Tech I Semester Examinations,May 2011
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) Explain the CRC-16 generating circuit? With example.
   (b) List and explain the basic blocks of a voice-band modem?   [8+8]

2. Discuss the features two asynchronous data link protocols XMODEM and YMO-
   DEM?
                                                                              [16]

3. (a) Explain flat-top and natural sampling?
   (b) Explain the SONET standard?   [8+8]

4. (a) Explain the Data link layer, Network layer and Transport layer of OSI archi-
       tecture model functionalities.
   (b) What is digital modulation? Explain the types of digital modulation?   [8+8]

5. (a) Describe IS-136 and explain its relationship to IS-54?
   (b) List the advantages and disadvantages of a digital cellular system?   [8+8]

6. (a) What is the difference between a TLP and a DLP?
   (b) Explain how caller ID operates?   [8+8]

7. Describe the satellite orbits and orbital patterns?   [16]

8. (a) Explain how waves are propagated down a metallic transmission line.
   (b) What is the relationship between bandwidth and information capacity.
   (c) For a glass(n = 1.5)/quarts(n=1.38) interface and an angle of incidence of 35
       degrees, determine the acceptance angle for the fiber.   [8+4+4]

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