Code No: RR310503

III B.Tech I Semester Supplimentary Examinations, November 2008
DATA COMMUNICATIONS
**(Common to Computer Science & Engineering, Information Technology
and Computer Science & Systems Engineering)**

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. (a) What is topology? Explain topologies in Data Communications?

   (b) What are the various types of transmission modes and explain.   [8+8]

2. (a) Explain what is serial and parallel Data Transmission. When do you use serial parallel transmission.

   (b) What is configurations? Explain what are the types of configurations in Data Communications?   [8+8]

3. (a) What is a transparent switch? A transactional switch.

   (b) What are the purposes of the nr and ns sequences on SDLC? What is delimiting sequence?   [6+10]

4. What are the LAN transmission data formats in EEE 802×LANs. Explain.   [16]

5. (a) What is DQDB? Explain different DQDB network architectures.

   (b) Discuss about DQDB protocol architecture.   [6+10]

6. (a) What is ISDN? Describe the services provided by it.

   (b) Discuss the evolution of ISDN.   [10+6]

7. (a) Discuss about VP switch and routing with it used by ATM.

   (b) Elaborate on the types of connections used by ATM.   [8+8]

8. How many VT2s, VT3s and VT6s can be carried in an STS-1 frame?   [16]

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Set No. 2

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1. (a) What is 'Interface'in Data Communications?
   (b) Mention any one of the Interface standard, and draw its architecture. [5+11]

2. (a) What is Data Communications? Explain briefly Data communication circuit.
   (b) Mention some standard organizations for Data Communications? [10+6]

3. Explain about IBM's Bisync Protocol? [16]

4. (a) Draw the block diagram of a typical local area network component configuration and explain. What are the typical characteristics of LAN.
   (b) Write range of data services, where LAN's are used extensively. [10+6]

5. (a) Discuss about principles of queued arbitrated access protocol.
   (b) Explain the algorithm used to control the transmission of segments on bus A of a dual bus DQDB subnetwork. [6+10]

6. (a) What is ISDN? Describe the services provided by it.
   (b) Discuss the evolution of ISDN. [10+6]

7. (a) Discuss the advantages and disadvantages of frame relay over X.25 networks.
   (b) Discuss about frame relay operation. [5+11]

8. Draw a SONET network using all of the following devices. Label all lines, sections and paths.

   (a) Three STS multiplexers(Two as input and One as output)
   (b) Four add/drop multiplexers.
   (c) Five regenerators. [16]

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Set No. 3

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1. (a) What is the difference between Analog signal and Digital signal, with example.
   (b) Explain about Analog Data, Analog Signals, is this encoding technique exist or not?   [10+6]

2. (a) What is Serial Interfaces? What are the various standard Interfaces?
   (b) Explain about RS-232 Interface?   [4+12]

3. (a) Define the three operating modes used with data communications circuits?
   (b) What is the function of the clearing character? What is a unique address? A group addresses? A broadcast address?   [8+8]

4. Explain CSMA/CD operation?   [16]

5. (a) Differentiate between PAP and CHAP.
   (b) Give an overview of different switching methods.   [8+8]

6. (a) Differentiate between NT1 and NT2.
   (b) What is reference point. Explain different reference points.   [8+8]

7. (a) Compare the format of an HDLC protocol frame with a frame relay protocol frame. Which fields are missing in the frame relay protocol frame? Which fields are added in the frame relay protocol frame?
   (b) Is there a need for a sliding window in frame relay protocol.   [8+8]

8. Discuss the SONET configuration as a physical carrier for ATM.   [16]

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Set No. 4

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Time: 3 hours   Max Marks: 80
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1. (a) Explain about Data link layer, Network layer and Transport layer on OSI model.
   (b) What is protocol?   [10+6]

2. What is synchronization? Explain about character synchronization? What are the types of data formats.   [16]

3. (a) What is the Difference between selection and polling? And explain.
   (b) Explain about Control field on SDLC protocol?   [8+8]

4. List and describe the access control methods?   [16]

5. (a) What is DQDB? Explain different DQDB network architectures.
   (b) Discuss about DQDB protocol architecture.   [6+10]

6. (a) What is ISDN? Describe the services provided by it.
   (b) Discuss the evolution of ISDN.   [10+6]

7. (a) Differentiate between packet and cell networks.
   (b) Discuss about asynchronous TDM used by ATM.   [8+8]

8. (a) Elaborate on the concerns addressed by the designers of SONET.
   (b) List different SONET/SDH rates.   [8+8]

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