Code No: RR221901 **Set No. 1**

II B.Tech II Semester Supplementary Examinations, November/December 2005
DATA COMMUNICATIONS
(Electronics & Computer Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Draw OIS architectural model for open system inter networking and explain. [16]
2. (a) What is Redundancy? With redundancy how will you minimize the errors in data, give any example. Mention advantages and disadvantages of it.
   (b) How do you detect the errors using Echoplex? Mention advantages and disadvantages of it. [8+8]
3. (a) What are the three common switching techniques are used with public data net works?
   (b) Explain about Value-Added Network and Packet-Switching Network. [8+8]
4. Explain about TOKEN RING system? [16]
5. Explain about circuit switching system and message switching system with examples. [16]
6. (a) What is the purpose of Triple X protocols?
   (b) How are flow and error control handled by X.25? Are all the layers involved. [6+10]
7. (a) How does a frame get retransmitted in frame relay?
   (b) Can two devices connected to the same frame relay network use the same DLCI's? [10+6]
8. (a) Discuss the physical configuration of SONET system. Also give an example of a SONET network.
   (b) Explain the four functional layers of SONET standard. [6+10]

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Code No: RR221901 **Set No. 2**

II B.Tech II Semester Supplementary Examinations, November/December 2005
DATA COMMUNICATIONS
(Electronics & Computer Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Explain the difference between a two point and a multipoint circuit.
   (b) What is a data communications topology and explain different topologies.

   [6+10]

2. Determine the BCS for the following data and CRC generating polynomials?

   $$\text{DataG(x)} = x_7+x_5+x_4+x_2+x_1+x_0$$
   $$\text{Generator(x)} = x_5+x_4+x_1+x_0$$

   [16]

3. (a) What are the types of Data transmission Modes and explain?
   (b) What are the types of Data Communications Protocols and give the Frame Format of these protocols. [4+12]

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

6. (a) The address of a TE is 104 and the D channel is used for signalling show the contents of the address field in the D frame.
   (b) How do you store and forward messages in B-ISDN. [6+10]

7. (a) How can the FECN bit inform the receiver of congestion in the network?
   (b) Is the out put rate at a frame relay switch really a fixed rate? Why or Why not?
   (c) How is the committed burst size related to the committed information rate?

   [6+5+5]

8. Discuss the location of overhead information for each SONET layer. [16]

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Code No: RR221901 **Set No. 3**

II B.Tech II Semester Supplementary Examinations, November/December 2005
DATA COMMUNICATIONS
(Electronics & Computer 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. What is a data communications code? What are some of the other names for data communications codes and explain different data communication codes. [16]
3. (a) What are the types of Data transmission Modes and explain?
   (b) What are the types of Data Communications Protocols and give the Frame Format of these protocols. [4+12]
4. Draw the Ethernet Data Format and explain? [16]
5. (a) Elaborate on password authentication protocol(PAP).
   (b) Discuss in detail about network control protocol(NCP). [6+10]
6. (a) Design a B-ISDN access method for customers who need to receive distributive services but do not provide distributive services to others.
   (b) ISDN uses out of band signaling in which the D channel is used for signaling. What happens if the D channel is used for data transfer? Is this still out-of-Band signalling? [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. (a) What is the relationship between SONET and Synchronous Digital Hierarchy(SDH)
   (b) Why is SONET called a Synchronous network? [10+6]

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Code No: RR221901 **Set No. 4**

II B.Tech II Semester Supplementary Examinations, November/December 2005
DATA COMMUNICATIONS
(Electronics & Computer Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain about transmission of digital data with neat diagram and indicate the signals level at each and every stage. [16]

2. (a) What is the difference between Asynchronous & Synchronous data formats.
   (b) How do you identify characters in the given Asynchronous encoded bit stream. Explain with example. [10+6]

3. (a) What are the five fields used with an SDLC frame? Briefly explain each.
   (b) What are the three frame formats used with SDLC? Explain what each format is used for. [6+10]

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

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. Show how STS-9s can be multiplexed to create an STS-36. Is there any extra overhead involved in this type of multiplexing? Why or Why not? [16]

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