

**III B.Tech. I Semester Regular Examinations, November -2005**  
**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. Explain Analog transmission for Analog signal, and Digital transmission for Analog signal clearly with examples. [16]

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

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

[16]

3. (a) Define data link protocol?  
(b) What is ISO OSI model and explain. [3+13]

4. (a) What are the differences between Base band versus Broadband Transmissions. [16]

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. Explain the different attributes to control traffic in frame relay. Also find the relationship between them. [16]

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

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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 are the various types of Data Communication codes and explain briefly about each code? [16]
3. (a) What is the Difference between selection and polling? And explain.  
(b) Explain about Control field on SDLC protocol? [8+8]
4. (a) What is switched Ethernet? And explain.  
(b) What is Fast Ethernet? And explain. [8+8]
5. (a) Differentiate between PAP and CHAP.  
(b) Give an overview of different switching methods. [8+8]
6. (a) Discuss different types of subscriber loops in ISDN.  
(b) Explain the functional groupings used at subscriber's premises in ISDN. [8+8]
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) How is an STS-1 frame organized?  
(b) What is a virtual tributary? [10+6]

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1. Define Architecture? What is architectural model for OSI model and give the importance of each layer. [16]
2. What is synchronization? Explain about character synchronization? What are the types of data formats. [16]
3. (a) What is a master station? A slave station?  
(b) What is the difference between a character-oriented protocol and a bit-oriented protocol? Explain with example. [5+11]
4. (a) What is FDDI?  
(b) Draw the FDDILAN circuit configuration and explain. [4+12]
5. Discuss different approaches to packet switching in detail. [16]
6. (a) What is ISDN? Describe the services provided by it.  
(b) Discuss the evolution of ISDN. [10+6]
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) What is the purpose of the pointer in the line overhead?  
(b) Compare STS hierarchy with the DS hierarchy. [5+11]

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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 are the various methods available for error detection in error control? Briefly explain? [16]
3. Explain about IBM's Bisync Protocol? [16]
4. Draw the FDDI data frame structure and explain. [16]
5. (a) Differentiate between PAP and CHAP.  
(b) Give an overview of different switching methods. [8+8]
6. (a) Differentiate between TE1 and TE2.  
(b) Discuss about services and physical specification of broadband ISDN. [6+10]
7. (a) Discuss about VPC switch and routing with it used by ATM.  
(b) Explain about Batcher-Banyan switch with it's merits and demerits. [10+6]
8. (a) Elaborate on the concerns addressed by the designers of SONET.  
(b) List different SONET/SDH rates. [8+8]

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