

II B.Tech II Semester Regular Examinations, Apr/May 2006

DATA COMMUNICATIONS

(Electronics & Computer Engineering)

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. Draw OIS architectural model for open system inter networking and explain. [16]
2. Explain about:
 - (a) Symbol substitution
 - (b) Retransmission in Error Correction methods.
 - (c) Checksum method. [5+5+6]
3. (a) What is the Difference between selection and polling? And explain.
(b) Explain about Control field on SDLC protocol? [8+8]
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) What is message switching? Discuss about it.
(b) Explain two approaches used for implementation of virtual circuit transmission. [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 frame relay physical layer.
(b) What does the DE bit have to do with congestion?
(c) How can the BECN bit inform the sender of congestion in the network? [2+7+7]
8. (a) Elaborate on the concerns addressed by the designers of SONET.
(b) List different SONET/SDH rates. [8+8]

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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. What is synchronization? Explain about character synchronization? What are the types of data formats. [16]
3. (a) What is polling? Explain how polling works. What are the types of polling?
(b) Explain Asynchronous protocol in Data communications. [6+10]
4. What are the LAN transmission data formats in IEEE 802×LANs. Explain. [16]
5. Discuss the role of authentication in PPP. Explain different PPP authentication protocols in detail. [16]
6. How many countries can be defined by the ISDN address field? How many networks can be defined for each country? How many subscribers per network(NT1 or NT2)? How many TEs per subscriber? How many TEs in total? [16]
7. (a) Describe different service classes defined by ATM forum.
(b) Give network-related attributes of ATM. [10+6]
8. Discuss the SONET configuration as a physical carrier for ATM. [16]

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1. (a) Define data communications. Explain different components of a Data communication system.
(b) Define the four transmission modes for data communication circuits and explain with examples. [8+8]
2. What are the various types of Data Communication codes and explain briefly about each code? [16]
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. (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. Discuss the role of authentication in PPP. Explain different PPP authentication protocols in detail. [16]
6. (a) What is ISDN? Describe the services provided by it.
(b) Discuss the evolution of ISDN. [10+6]
7. (a) Why is frame relay a better solution for connecting LAN's than T-1 lines?
(b) Why is the control field from HDLC totally dropped from frame relay?
(c) What is the definition of bursty data? Give example of bursty traffic. [6+5+5]
8. Discuss the SONET configuration as a physical carrier for ATM. [16]

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1. What is Data Communication? What are there possible ways of Data transmission and explain with examples. Draw a block diagram of Data communication system and explain its components. [16]
2. Explain about Forward error correction method with example? [16]
3. (a) What is a Protocol?
(b) Draw the block diagram of ISO OSI model and explain. [3+13]
4. Explain about TOKEN RING system? [16]
5. Discuss the role of authentication in PPP. Explain different PPP authentication protocols in detail. [16]
6. (a) Differentiate between TE1 and TE2.
(b) Discuss about services and physical specification of broadband ISDN. [6+10]
7. (a) Why is frame relay a better solution for connecting LAN's than T-1 lines?
(b) Why is the control field from HDLC totally dropped from frame relay?
(c) What is the definition of bursty data? Give example of bursty traffic. [6+5+5]
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]
