

III B.Tech. I Semester Supplementary Examinations, April/May -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

1. (a) What is topology? Explain topologies in Data Communications?
(b) What are the various types of transmission modes and explain.
2. (a) What is Data Communications? Explain briefly?
(b) Mention some standard organizations for Data Communications?
3. (a) What is the Difference between selection and polling? And explain.
(b) Explain about Control field on SDLC protocol?
4. Draw the Ethernet Data Format and explain?
5. (a) Explain the evolution of space-division switches.
(b) Discuss the two popular methods used in time-division multiplexing.
6. (a) What is ISDN? Describe the services provided by it.
(b) Discuss the evolution of ISDN.
7. (a) Describe different service classes defined by ATM forum.
(b) Give network-related attributes of ATM.
8. (a) How does SONET carry a data from a DS-1 service?
(b) How many VT 1.5(s) can be carried in an STS-1 frame?

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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.
2. (a) What is Data Communications? Explain briefly?
(b) Mention some standard organizations for Data Communications?
3. (a) Why are Synchronous characters always transmitted in pairs? Give example also.
(b) What is an SPA? An SSA? What is the purpose of a leading pad? A trailing pad?
4. Describe a local area network? What is the connecting medium used with local area networks? Explain the two transmission formats used with local area networks?
5. (a) Differentiate between PAP and CHAP.
(b) Give an overview of different switching methods
6. (a) Explain about control and management planes of ISDN
(b) Explain network layer packet format of ISDN.
(c) List call establishment messages in ISDN.
7. (a) Give an overview of ATM applications.
(b) Describe user-related attributes of ATM.
8. Discuss the location of overhead information for each SONET layer.

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1. (a) Explain about Data link layer, Network layer and Transport layer on OSI model.
(b) What is protocol?
2. Explain about Forward error correction method with example?
3. (a) What is the Difference between selection and polling? And explain.
(b) Explain about Control field on SDLC protocol?
4. Briefly describe the following Ethernet systems:
10BASE-5, 10BASE-2 and 10BASE-T.
5. (a) Differentiate between PAP and CHAP.
(b) Give an overview of different switching methods
6. (a) Explain about control and management planes of ISDN
(b) Explain network layer packet format of ISDN.
(c) List call establishment messages in ISDN.
7. (a) Give an overview of ATM applications.
(b) Describe user-related attributes of ATM.
8. Discuss the SONET configuration as a physical carrier for ATM.

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1. Draw OIS architectural model for open system inter networking and explain.
2. Determine the BCS for the following data and CRC generating polynomials?

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

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?
4. Explain about TOKEN RING system?
5. (a) Elaborate on password authentication protocol(PAP).
(b) Discuss in detail about network control protocol(NCP).
6. (a) What is ISDN? Describe the services provided by it.
(b) Discuss the evolution of ISDN.
7. (a) Discuss about VP switch and routing with it used by ATM
(b) Elaborate on the types of connections used by ATM
8. (a) Elaborate on the concerns addressed by the designers of SONET.
(b) List different SONET/SDH rates.
