

**B.Tech. Degree VI Semester Examination in Computer Science and Engineering,  
November 2001**

**CS 604 DATA COMMUNICATIONS**

(1998 Admissions)

Time: 3 Hours

Max.Marks:100

- I a) Explain the various topological configurations of network. (10)  
 b) Briefly explain the services of ISDN. (5)  
 c) Briefly explain any three routing procedures used in a computer network. (5)
- OR**
- II a) Differentiate between synchronous and asynchronous transmission. (5)  
 b) Differentiate between LAN and WAN. (5)  
 c) Write short notes on:  
 (i) Circuit switching  
 (ii) Split stream modem. (2 x 5 = 10)
- III a) Briefly explain the hierarchy of switching offices in a telephone network. (5)  
 b) Write short notes on  
 (i) Synchronous voice grade modem.  
 (ii) Line conditioning.  
 (iii) Optical fibre. (3 x 5 = 15)
- OR**
- IV a) Explain the Shannon's theorem of channel capacity. (5)  
 b) Explain the different pulse modulation techniques. (10)  
 c) Explain briefly the various modulation techniques used in synchronous voice grade modem. (5)
- V a) Explain briefly sequential decoding of a convolutional code. (5)  
 b) What are the sources of errors in data transmission? (5)  
 c) Write short notes on:  
 (i) Block code (ii) Parity check (2 x 5 = 10)
- OR**
- VI a) Explain the different types of ARQ implementation in error control. (10)  
 b) Express the following bit groups in polynomial form  
 (i) 1010 (ii) 1111 (5)  
 c) Explain the operation of a CRC checksum circuit. (5)
- VII a) Differentiate between multiplexing and concentration. (5)  
 b) Write short notes on:  
 (i) FDM (ii) SDLC protocol (iii) Synchronous TDM (3 x 5 = 15)
- OR**
- VIII a) Write short notes on:  
 (i) Message and Packet switching concentration  
 (ii) Inverse multiplexing  
 (iii) Statistical TDM (3 x 5 = 15)  
 b) What are the different approaches for positioning remote multiplexers and concentrators? (5)
- IX a) What is polling? (2)  
 b) Explain the different polling methods used in data communication system. (10)  
 c) Differentiate between message transfer in datagram & virtual circuit. (8)
- OR**
- X a) Explain the general functions of line control procedures. (10)  
 b) Write short notes on  
 (i) BSC protocol  
 (ii) TRIB & Residual Error Rate. (2 x 5 = 10)

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