**Quiz Questions:**  
  
We have a channel with a 1-MHz bandwidth. The SNR for this channel is 63. What are the appropriate bit rate and signal level? example from chapter 3  
  
We need to send 280 bps over a noiseless channel with a bandwidth of 20 Hz. How many signal levels do we need?  
  
A line has a signal-to-noise ratio of 1000 and a bandwidth of 4000 KHz. What is the maximum data rate supported by this line?  
  
A file contains two million bytes of data. How long does it take to download this file using a one Mbps channel? Exercise from chapter 3  
  
We want to digitize the human voice (0 to 4kHz). What is the bit rate, assuming eight bits per sample?  
  
In networking, the term bandwidth refers to two contexts. What are they? Explain briefly.  
  
Explain briefly the Throughput, and the Latency.  
  
What are the major steps of a block coding scheme  
  
What is the result of scrambling the sequence 11100000000000 using the following techniques? Assume that the last non-zero signal level has been positive.  
B8ZS  
HDB3 exercise from chapter 4  
  
What are the differences between the synchronous TDM and the statistical TDM?  
  
What strategies are used in data rate management? Give examples in each of the strategies.  
  
Four channels, two with a bit rate of 300 kbps and two with a bit rate of 250 kbps, are to be multiplexed using multiple slot TDM with no synchronization bits. Answer the following questions with necessary figure:  
OR  
Two channels, one with a bit rate of 150 kbps and another with a bit rate of 130 kbps, are to be multiplexed using pulse stuffing TDM with no synchronization bits. Answer the following questions with necessary figure  
  
What is the size of a frame in bits?  
What is the frame rate?  
What is the duration of a frame?  
What is the data rate?