Computer Networking
Homework#1.1 Data Communication

1. What is the analog bandwidth of a signal?

2. Suppose an engineer increases the number of possible signal levels of a digital signal from 2 to 8. How many more bits can be sent in the same amount of time? Explain.

3. If the maximum frequency audible to a human ear is 20,000 Hz, at what rate must the analog signal from a microphone be sampled when converting it to digital?

4. Identify the three major steps to convert an analog signal to a digital signal.

5. If a system has an average signal power level of 100, an average noise level of 33.33, and a bandwidth of 100 MHz, what is the effective limit on channel capacity?

6. Two major modulation techniques for an analog signal are Amplitude Modulation (AM) and Frequency Modulation (FM). Explain the differences between these two modulation schemes.