

Assignment 1 (8%)

Assignment 1 is the first of three assignments in this course, and it contributes 8% towards your final course grade. Each question is worth 1 mark, and the assignment total is 26 marks.

You should begin Assignment 1 in Module 4; refer to your suggested Course Schedule for details. General guidelines for preparing and submitting your assignments can be found under the Assignments Overview tab of your course.

Answer the following *Practice Set* questions listed at the end of the specified chapters (5th edition).

Chapter 1

- No questions

Chapter 2

- Questions: Q2-2, Q2-10, and Q2-12
- Problems: P2-4, P2-6, P2-8, P2-14

Chapter 4

- Questions: Q4-8
- Problems: P4-12.a. and P4-16.a.

Chapter 5

- Questions: Q5-2 and Q5-4
- Problems: P5-2, P5-8, and P5-10

Chapter 6

- Questions: Q6-4
- Problems: P6-2, P6-4, and P6-8

Chapter 7

- No questions

Chapter 3

For Chapter 3, answer the following questions:

1. A device is sending out data at the rate of 2000 bps.
 - a. How long does it take to send out 10 bps?
 - b. How long does it take to send out a single character (8bits)?
 - c. How long does it take to send a file of 100,000 characters?
2. The attenuation of a signal is -10 dB. What is the final signal power if it was originally 500 mW?
3. If the bandwidth of the channel is 4Kbps, how long does it take to send a frame of 100,000 bits out of this device?
4. We measure the performance of a telephone line (4KHz of bandwidth). When the signal is 5 V, the noise is 1 mV. What is the maximum data rate supported by this line?
5. A computer monitor has a resolution of 600 by 480 pixels. If each pixel uses 1024 colours, how many bits are needed to send the complete contents of a screen?
6. What is the transmission time of a packet sent by a station if the length of the packet is 1 million bytes and the bandwidth of the channel is 400Kbps?
7. How many bits can fit on a link with a 5 ms delay if the bandwidth of the link is
 - a. 1 Mbps?
 - b. 10 Mbps?
 - c. 100 Mbps?