# **E**E 308: Communication Systems

Homework 5

1. Solve problems 8.33, 8.36, and 8.37 from Chapter 8 of the text.

2. Solve problems 9.10, 9.13, 9.14, 9.16, 9.17, and 9.19 from Chapter 9 of the text.

3.

4. Four signals are to be multiplexed into a digital TDM communication system. The signals, $m_1(t)$, $m_2(t)$, $m_3(t)$, and $m_4(t)$ have bandwidth 1200, 600, 500 and 300 Hz, respectively. They are all to be sampled at the Nyquist rate and 1024 levels of quantization are to be used.

   (a) Design a suitable TDM scheme to multiplex them. Specify the frame and slot durations and the slot assignments. Recall that in each frame, more than one slot can be assigned to a signal.

   (b) Determine the maximum delay between the generation of a sample and its transmission in your scheme. Is there any scheme that can reduce that?