

Digital Communication I

Homework 6: due Jan. 7, before the final exam

1. Problem 10.23
2. Write a Matlab program for the MLSE for the channel of Problem 10.24 and signaling scheme of Problem 10.24.
3. Derived Eq. (10.3-20) for the predictive decision-feedback equalizer
4. For the system in Problem 10.11, determine the coefficients for both linear and decision-feedback equalizers based on the minimum square error (MSE) criterion. Assume that signal-to-noise ratio at the input is equal to 10 and linear equalizer has 10 taps and decision-feedback equalizer has 5 and 2 taps before and after the decision circuits, respectively.

Hint: Only numerical results and calculation steps (may be in Matlab) are required.

5. Problem 11.4
6. Problem 11.7