CT 513: Detection and Estimation Theory
Assignment # 1
(Date assigned: February 17, 2016)

Guidelines:

• Note: You need not submit the assignment. There would be a viva-voce on the problems assigned.

1. Show that the minimum Bayes risk of a binary symmetric channel (BSC) with parameter \( \lambda \) is equal to \( \min(\lambda, 1 - \lambda) \) assuming equal priors and uniform cost structure.

2. For the Problem 2.10 in Levy’s book design a NP test.

3. For the Problem 2.12 in Levy’s book design a minimax test for the following cost structure: \( C_{00} = C_{11} = 0, C_{10} = 1 \) and \( C_{01} = 2 \). You may assume \( A = \frac{1}{2} \).