Project 3

Project assigned on Mar 7

Project report due on Apr 4 , 6:00 pm

1 Problem

(a) Find or describe all binary-input, binary-output DMCs (2×2 probability transition matrices) that have capacity 0.5. (6 Marks)

(b) Find or describe binary-input, J-output DMCs ($2 \times J$ probabiltiy transition matrices for $J > 2$) that have capacity 0.5. (4 Marks)

I will strongly encourage you to think and solve the above problems independently. If you are unable to proceed, the following reference (available from IEEEXplore) is a good starting point.

- R. A. Silverman, "On binary channels and their cascades," IEEE Trans. on Info. Theory, 1955 , Vol. 1 , No. 3, pp. 19-27.

2 Submission

You will need to submit a report (1 page; 2 sides) explaining your answers and conclusions. Email any programs that you may have to write.

3 Marks

I will grade your reports/programs and assign marks suitably.