Memo CS 634 Date: . .

Q25

The probability of a signal at the output here is computed as:

Probability that a parallel of two switches work is computed as:

$= 1 - (1-p)^2$

Therefore probability that a series work is computed as

$= p \times (1 - (1-p)^2)$

$= p \times (2p - p^2)$

$= p^2 (2-p)$

Therefore the probability that the whole system works now is computed as

$= 1 - (1 - p^2 (2-p)^2)$

$= 1 - (1 + p^4 (2-p)^2 - 2p^2 (2-p))$

$= 2p^2 (2-p) - p^4 (2-p)^2$

Q26 = Probability that S3 is open and the below series works / P

$= (1-p) p^2 (2-p) / (2p^2 (2-p) - p^4 (2-p)^2$

$= (1-p) / (2 - p^2 (2-p))$