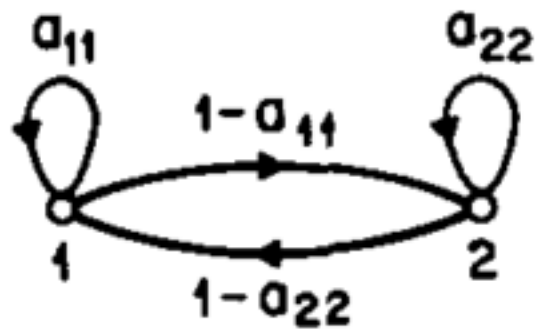(b)

a_{11} a_{22}

$1-a_{11}$

1   2

$1-a_{22}$

$P(H) = P_1$ $P(H) = P_2$
$P(T) = 1-P_1$ $P(T) = 1-P_2$

O = H H T T H T H H T T H ...
S = 2 1 1 2 2 2 1 2 2 1 2 ...