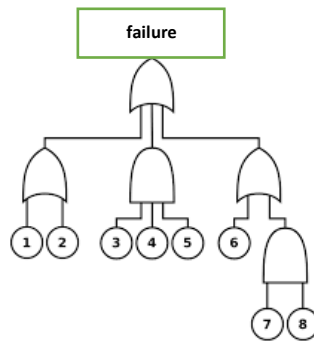


TD 3 : Dependability Analysis tool

Exercise 1*: consider this fault tree:



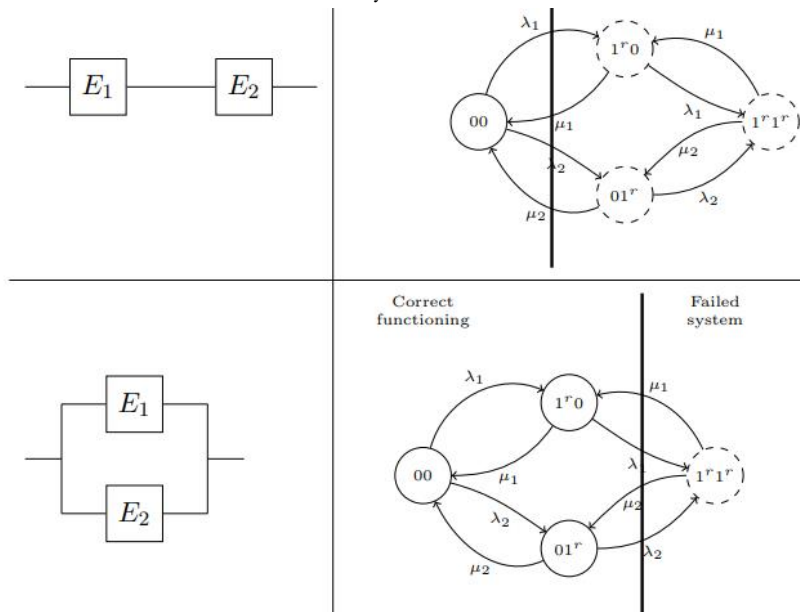
1. Give the Boolean formula for the failure F?
2. Evaluate the unreliability according to the probabilities on input 1,2,3...8 . the probability of events are : $p_1=0.1, p_2=0.05, p_3=0.1, p_4=0.02, p_5=0.1, p_6=0.1, p_7=0.05, p_8=0.1$?
3. Considering that event 1, 3 and 8 are the same, what is the simplified boolean formula? Establish the truth table

Exercise 2* :

Model a Petri net of two reparable systems with two shared Identical repairers?
 What will be the case if the repairers are not identical?
 Give the states of the marking vector?
 Give the Post incidence matrix (Matrix, nbr of places * nbr of transitions).

Exercise 3*:

below the markov chain for parallel and serie design with two component. $\lambda_1=\lambda_2=10^{-5}$ f/h and $\mu_1=\mu_2=10^{-2}$ r/h. Evaluate the avaiability?



What is the markov chain associated to the following reliability block diagram?

