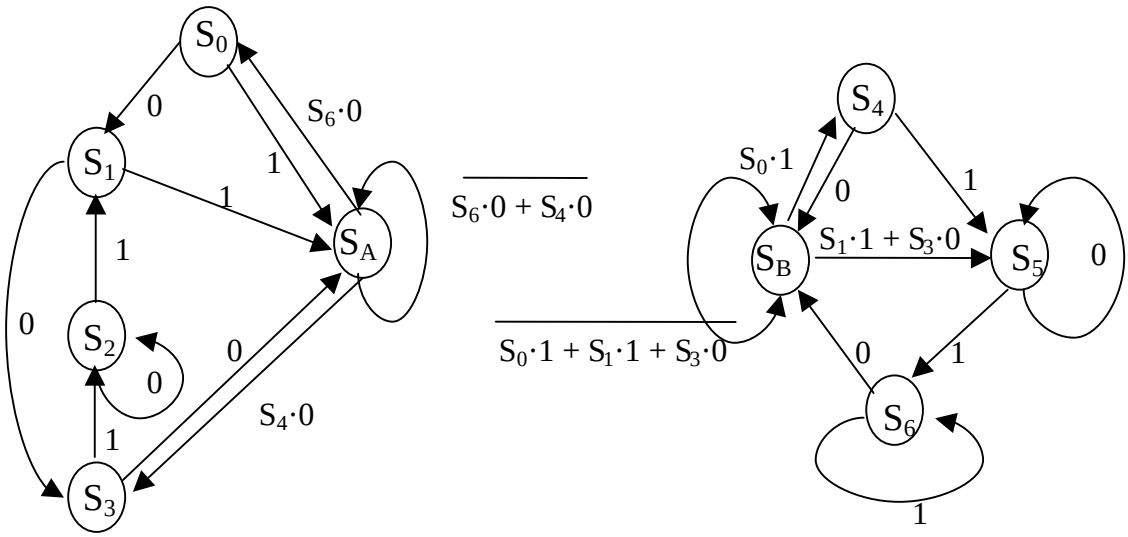
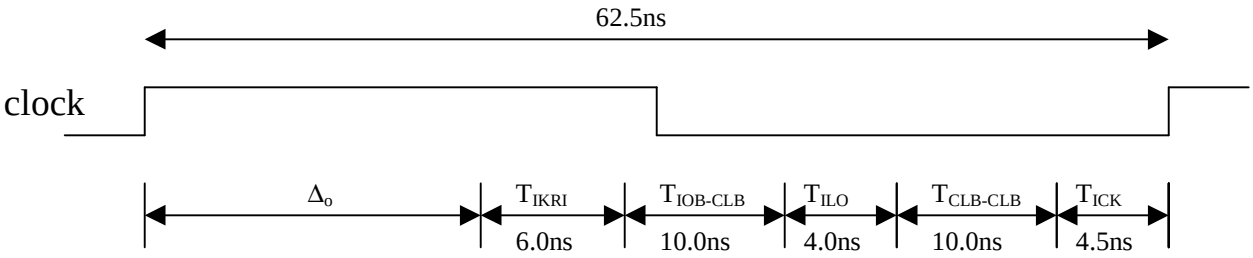
1



2. (a)



Δ_o=62.5–6–10–4–10-4.5=28ns

(b) $1/MTBF=f1 \cdot f2 \cdot K1 \cdot e^{-K2 \cdot t}$

$= 16 \times 10^6 \times 15.75 \times 10^3 \times 1.5 \times 10^{-10} \times e^{-3.69 \times 28} = 5.21 \times 10^{-44}$ (/s)

(c) Δ_o=62.5–6–10–4–10–4.5–25 = 3ns

$1/MTBF=f1 \cdot f2 \cdot K1 \cdot e^{-K2 \cdot t}$

$= 16 \times 10^6 \times 15.75 \times 10^3 \times 1.5 \times 10^{-10} \times e^{-3.69 \times 3} = 5.89 \times 10^{-4}$ (/s)

3. Node1 can not be completely tested for functionality by setting ABC and observing output Y. The unobservable fault is stuck-at-one.
   Node 5 has a stuck-at-zero fault which can not be tested by setting ABC and observing output at Y. Node 3 has a stuck-at-one and stuck-at-zero possible fault.