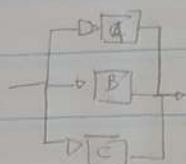


4ª Lista

1)



p/ o sistema funcionar deve $\rightarrow A/B$ ou A/C ou $A/B/C$

$$A/B \Rightarrow C_s(t) = (1 - 0,95 \cdot 0,9)(1 - 0,85) + 1 = 0,9483$$

$$A/C \Rightarrow C_s(t) = 1 - (1 - 0,85 \cdot 0,95)(1 - 0,9) = 0,9808$$

$$A/B/C \Rightarrow C_s(t) = 0,95 \cdot 0,9 \cdot 0,85 = 0,7268$$

2) $\lambda_A = 0,03 \Rightarrow e^{-\lambda t} = e^{-0,03t}$

$$C_s(t) = \sum_{i=0}^{n-1} (\lambda t)^i e^{-\lambda t} / i! \Rightarrow C_s(10) = \sum_{i=0}^2 (\lambda t)^i e^{-\lambda t} / i!$$

$$C_s(10) = (0,03 \cdot 10)^0 e^{-0,03 \cdot 10} / 0! + (0,03 \cdot 10)^1 e^{-0,03 \cdot 10} / 1! + (0,03 \cdot 10)^2 e^{-0,03 \cdot 10} / 2!$$

$$C_s(10) = 0,7408 + 0,2222 + 0,0333 = 0,9961$$

3) $C_{12}(t) = 0,8464$; $C_{345}(t) = 0,8034$; $C_{678}(t) = 0,6884$; $C_9 = 0,92$; $C_{10} = 0,94$

$$C_{11 \times 3}(t) = 0,9844$$

$$C_e(t) = 1 - (1 - 0,8034)(1 - 0,6884)(1 - 0,92) = 0,9951$$

$$C_s(t) = 0,7494$$

4) a) $C_s(t) = e^{-t/3000} \cdot e^{-t/8000} \cdot e^{-t/3000} \cdot e^{-t/10000}$

$$C_s(1500) = 0,6065 \cdot 0,8290 \cdot 0,8465 \cdot 0,8604 = 0,3663$$

b) $C_{serie}(t) = 0,6040$

$$C_{paralelo}(t) = 0,9391$$

$$C_s(t) = 0,5672$$


5) Atrás



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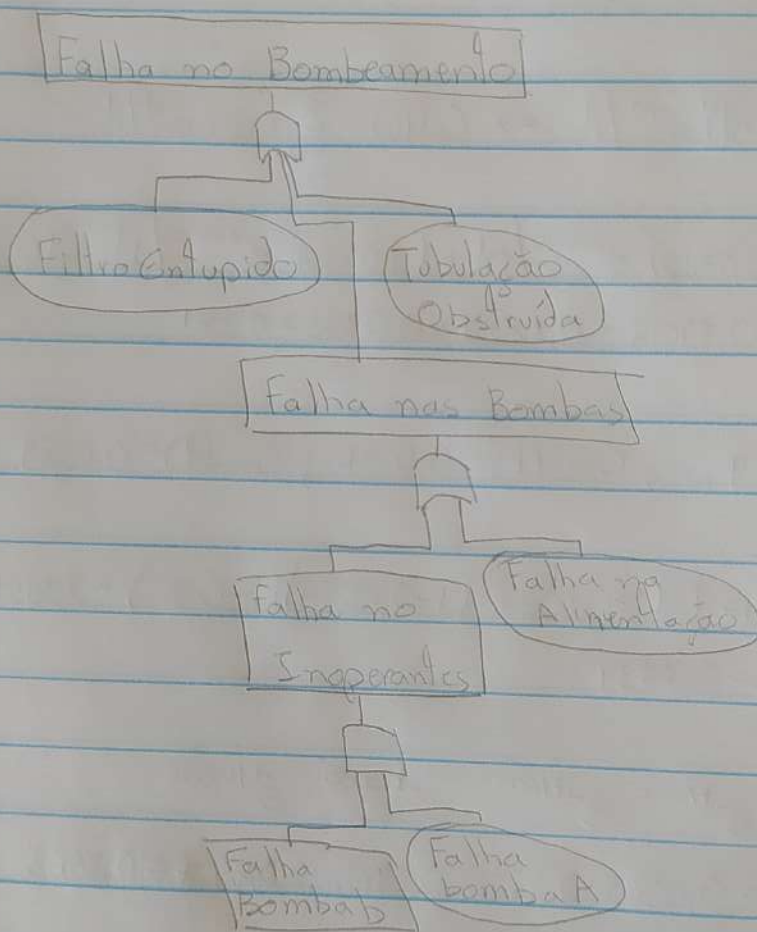
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6) $C_s(t) = (1 - (1 - p_1)(1 - p_2)) \cdot p_3$

7)  $C_{23} = 1 - (1 - p)(1 - p) = 1 - (1 - p)^2$

$C_s = p^2 \cdot (1 - (1 - p)^2)$

5)



8)

Falha no Sistema

Lâmpada Queimada

Fusível queimado

Interruptor quebrado

Fonte quebrada



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