

Laboratorio #3:

Ejercicio #1:

- Tabla 01:

* Ecuación SOP: $Y = m_0 + m_2 + m_4 + m_5 + m_7$

$$m_0 = \bar{A}\bar{B}\bar{C} = 1 \quad m_2 = A\bar{B}\bar{C} = 1 \quad m_4 = A\bar{B}C = 1$$

$$m_5 = \bar{A}B\bar{C} = 1 \quad m_7 = ABC = 1$$

$$\rightarrow Y = \bar{A}\bar{B}\bar{C} + A\bar{B}\bar{C} + A\bar{B}C + \bar{A}B\bar{C} + ABC$$

* Ecuación POS: $Y = m_1 \cdot m_3 \cdot m_6$

$$m_1 = A\bar{B}\bar{C} = 0 \quad m_3 = A\bar{B}C = 0 \quad m_6 = \bar{A}BC = 0$$

$$\rightarrow Y = (A + B + \bar{C}) \cdot (A + \bar{B} + \bar{C}) \cdot (\bar{A} + \bar{B} + C)$$

- Tabla 02:

* Ecuación SOP: $Y = m_1 + m_6 + m_7$

$$m_1 = \bar{A}\bar{B}C = 1 \quad m_6 = A\bar{B}\bar{C} = 1 \quad m_7 = ABC = 1$$

$$\rightarrow Y = \bar{A}\bar{B}C + A\bar{B}\bar{C} + ABC$$

* Ecuación POS: $Y = m_0 \cdot m_2 \cdot m_3 \cdot m_4 \cdot m_5$

$$m_0 = ABC = 0 \quad m_2 = A\bar{B}\bar{C} = 0 \quad m_3 = \bar{A}B\bar{C} = 0$$

$$m_4 = \bar{A}\bar{B}C = 0 \quad m_5 = A\bar{B}C = 0$$

$$\rightarrow Y = (A + B + C) \cdot (A + \bar{B} + \bar{C}) \cdot (A + \bar{B} + C) \cdot (\bar{A} + B + C) \cdot (\bar{A} + B + \bar{C})$$

- Tabla 03:

* Ecuación SOP: $Y = m_0 + m_1 + m_2 + m_3 + m_8 + m_{10} + m_{14}$

$$m_0 = \bar{A}\bar{B}\bar{C}\bar{D} = 1 \quad m_2 = \bar{A}\bar{B}C\bar{D} = 1 \quad m_8 = A\bar{B}\bar{C}\bar{D} = 1 \quad m_{14} = A\bar{B}C\bar{D} = 1$$

$$m_1 = \bar{A}\bar{B}\bar{C}D = 1 \quad m_3 = \bar{A}\bar{B}CD = 1 \quad m_{10} = A\bar{B}\bar{C}D = 1$$

$$\rightarrow Y = \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}C\bar{D} + \bar{A}\bar{B}\bar{C}D + \bar{A}\bar{B}CD + A\bar{B}\bar{C}\bar{D} + A\bar{B}C\bar{D} + A\bar{B}\bar{C}D$$

* Ecuación POS: $Y = m_4 + m_6 + m_9 + m_{12} + m_{11} + m_{13} + m_{15}$

$$m_4 = A\bar{B}C\bar{D} = 0 \quad m_6 = A\bar{B}C\bar{D} = 0 \quad m_{12} = A\bar{B}C\bar{D} = 0$$

$$m_5 = A\bar{B}C\bar{D} = 0 \quad m_7 = A\bar{B}C\bar{D} = 0 \quad m_{13} = A\bar{B}C\bar{D} = 0$$

$$m_6 = A\bar{B}C\bar{D} = 0 \quad m_{11} = A\bar{B}C\bar{D} = 0 \quad m_{15} = A\bar{B}C\bar{D} = 0$$

$$\rightarrow Y = (A + \bar{B} + C + D) \cdot (A + \bar{B} + C + \bar{D}) \cdot (A + \bar{B} + \bar{C} + D) \cdot (A + \bar{B} + \bar{C} + \bar{D}) \cdot (\bar{A} + \bar{B} + C + \bar{D}) \cdot (\bar{A} + \bar{B} + \bar{C} + D) \cdot (\bar{A} + \bar{B} + \bar{C} + \bar{D})$$

- Tabla 04:

* Ecuación SOP: $Y = m_0 + m_2 + m_3 + m_6 + m_7 + m_8 + m_{10}$

$$m_0 = \bar{A}\bar{B}\bar{C}\bar{D} = 1 \quad m_2 = \bar{A}\bar{B}C\bar{D} = 1 \quad m_3 = \bar{A}\bar{B}C\bar{D} = 1 \quad m_{10} = A\bar{B}\bar{C}\bar{D} = 1$$

$$m_2 = \bar{A}\bar{B}C\bar{D} = 1 \quad m_6 = A\bar{B}C\bar{D} = 1 \quad m_7 = A\bar{B}C\bar{D} = 1$$

* Ecuación POS: $Y = m_1 + m_4 + m_5 + m_9 + m_{11} + m_{12} + m_{13} + m_{14} + m_{15}$

$$m_1 = A\bar{B}\bar{C}\bar{D} = 0 \quad m_4 = A\bar{B}\bar{C}\bar{D} = 0 \quad m_{13} = A\bar{B}\bar{C}\bar{D} = 0$$

$$m_{14} = A\bar{B}\bar{C}\bar{D} = 0 \quad m_{11} = A\bar{B}\bar{C}\bar{D} = 0 \quad m_{14} = A\bar{B}\bar{C}\bar{D} = 0$$

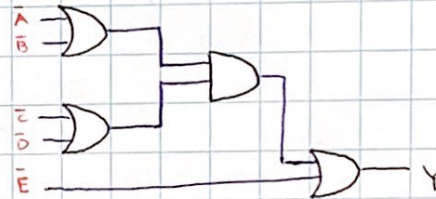
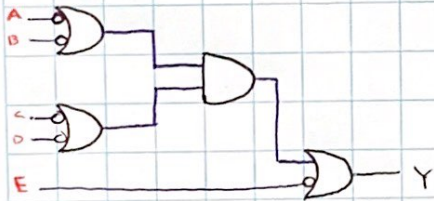
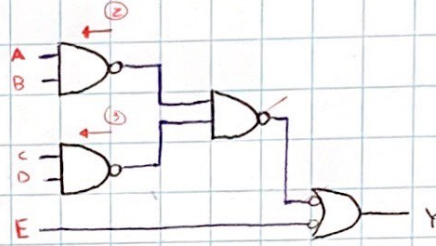
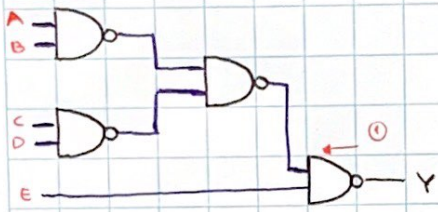
$$m_5 = A\bar{B}\bar{C}\bar{D} = 0 \quad m_{12} = A\bar{B}\bar{C}\bar{D} = 0 \quad m_{15} = A\bar{B}\bar{C}\bar{D} = 0$$

$$\rightarrow \text{Ecuación SOP: } Y = \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}C\bar{D} + \bar{A}\bar{B}\bar{C}D + \bar{A}\bar{B}CD + A\bar{B}\bar{C}\bar{D} + A\bar{B}C\bar{D} + A\bar{B}\bar{C}D + A\bar{B}CD$$

$$\rightarrow \text{Ecuación POS: } Y = (A + \bar{B} + C + \bar{D}) \cdot (A + \bar{B} + C + D) \cdot (A + \bar{B} + \bar{C} + \bar{D}) \cdot (\bar{A} + \bar{B} + C + \bar{D}) \cdot (\bar{A} + \bar{B} + \bar{C} + \bar{D}) \cdot (\bar{A} + \bar{B} + C + D) \cdot (\bar{A} + \bar{B} + \bar{C} + D) \cdot (\bar{A} + \bar{B} + \bar{C} + D)$$

• Ejercicio #4:

- Ejercicio 00: $\rightarrow Y = [(\bar{A} + B) \cdot (\bar{C} + \bar{D})] + \bar{E}$



- Ejercicio 01: $\rightarrow Y = [(A \cdot B \cdot C) + \bar{D}] + [\bar{E} \cdot (\bar{F} \cdot \bar{G})]$

