

# Sistemas Digitales

## XOR / Paridad / Comparadores

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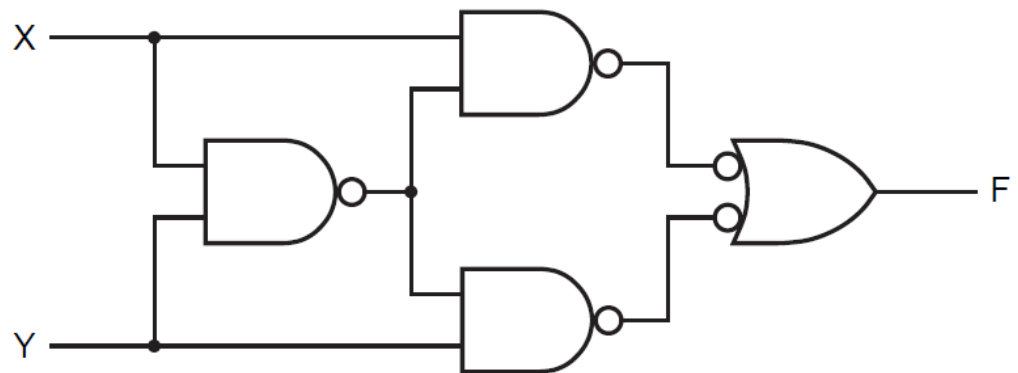
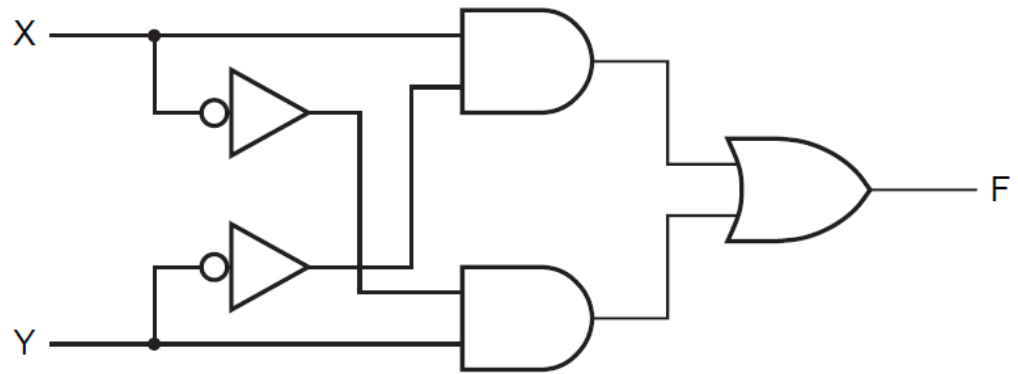
Escuela de Ingeniería Eléctrica



# Compuerta XOR

$$x \cdot \bar{y} + \bar{x} \cdot y = F$$

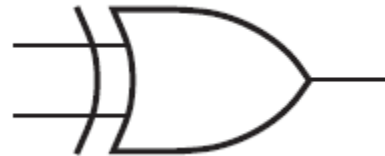
| X | Y | F |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |



# Compuerta XOR

- XOR:

$$x \cdot \bar{y} + \bar{x} \cdot y = x \oplus y$$



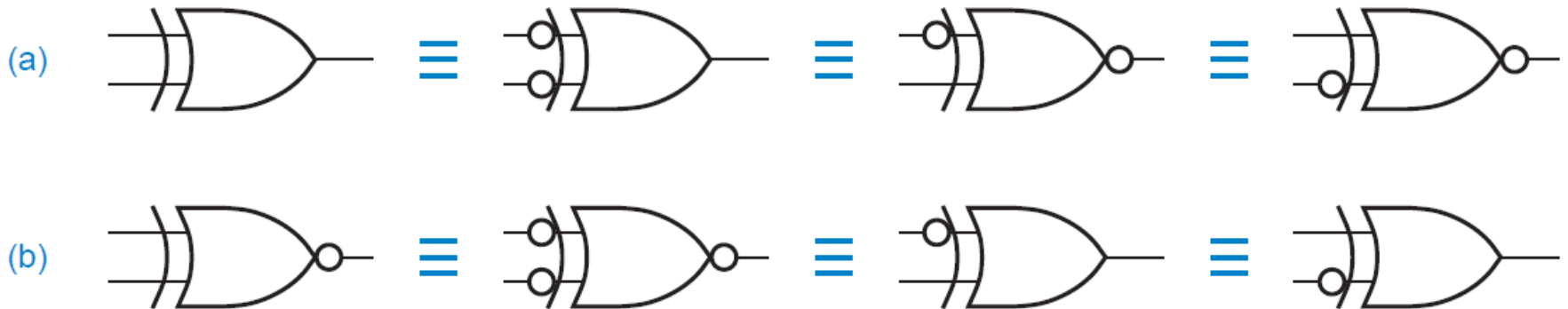
- XNOR:

$$x \cdot y + \bar{x} \cdot \bar{y} = \overline{x \oplus y} = x \odot y$$



# Compuerta XOR

- Compuertas Duales:

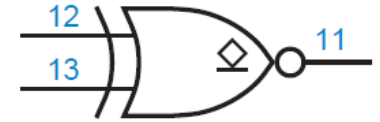
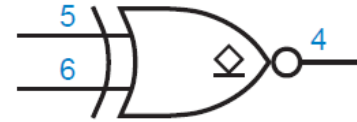
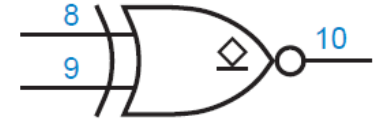
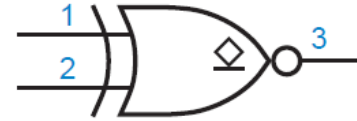


# Compuerta XOR

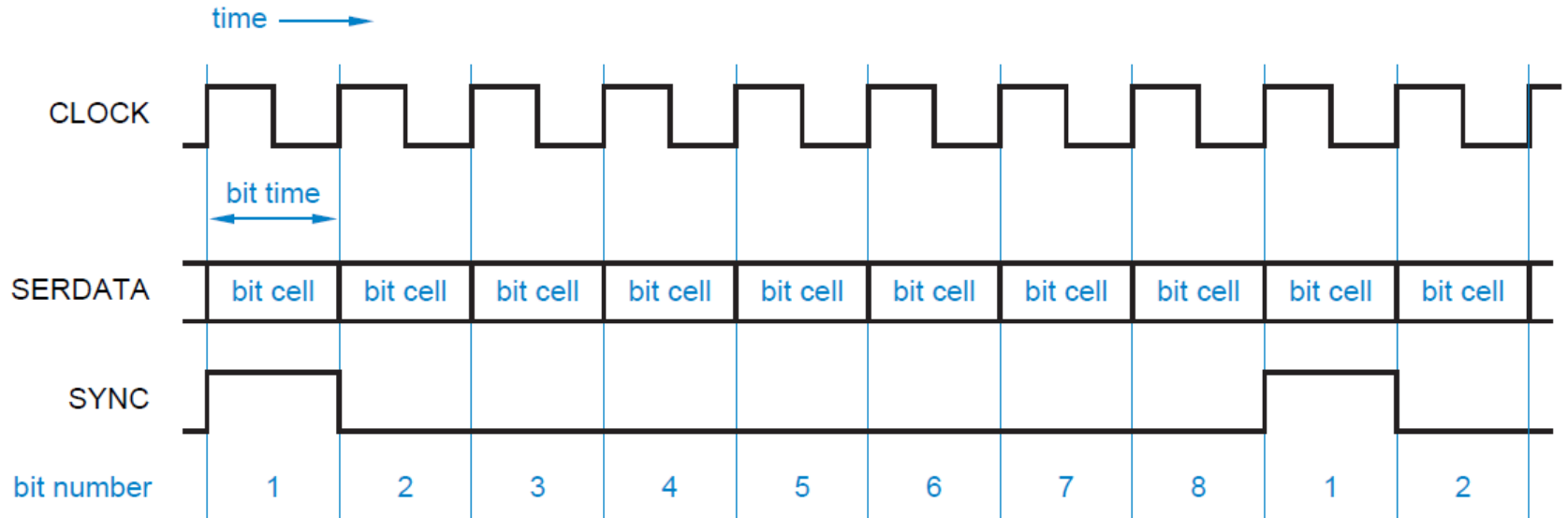
- Compuertas Comerciales:

74X86

74X266



# Comunicación Serial



# Paridad

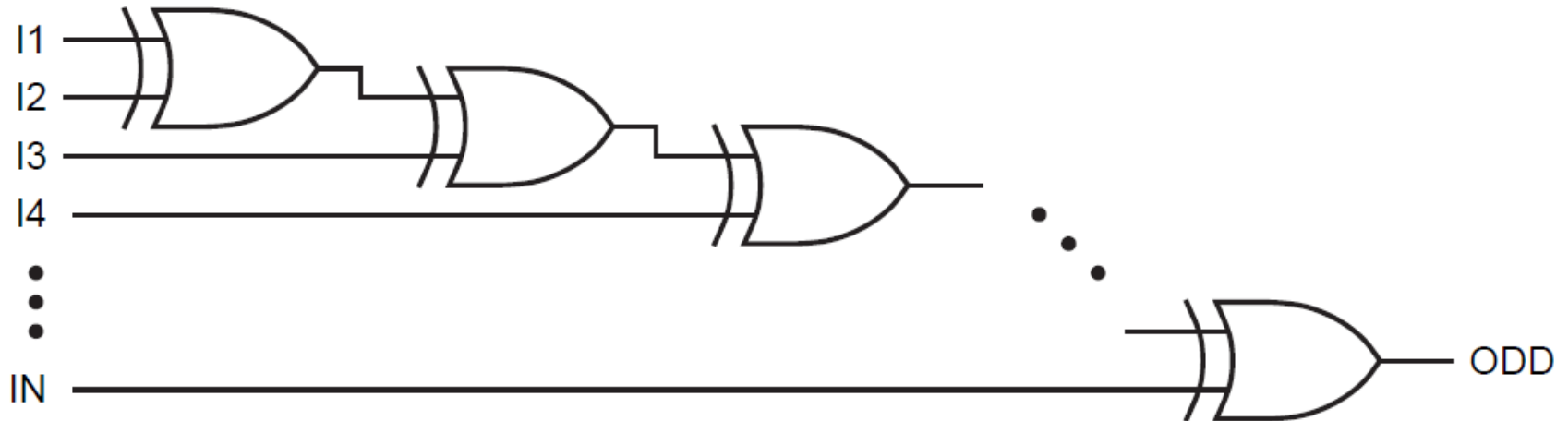
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| Information Bits | Even-parity Code | Odd-parity Code |
|------------------|------------------|-----------------|
| 000              | 000 0            | 000 1           |
| 001              | 001 1            | 001 0           |
| 010              | 010 1            | 010 0           |
| 011              | 011 0            | 011 1           |
| 100              | 100 1            | 100 0           |
| 101              | 101 0            | 101 1           |
| 110              | 110 0            | 110 1           |
| 111              | 111 1            | 111 0           |

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# Paridad

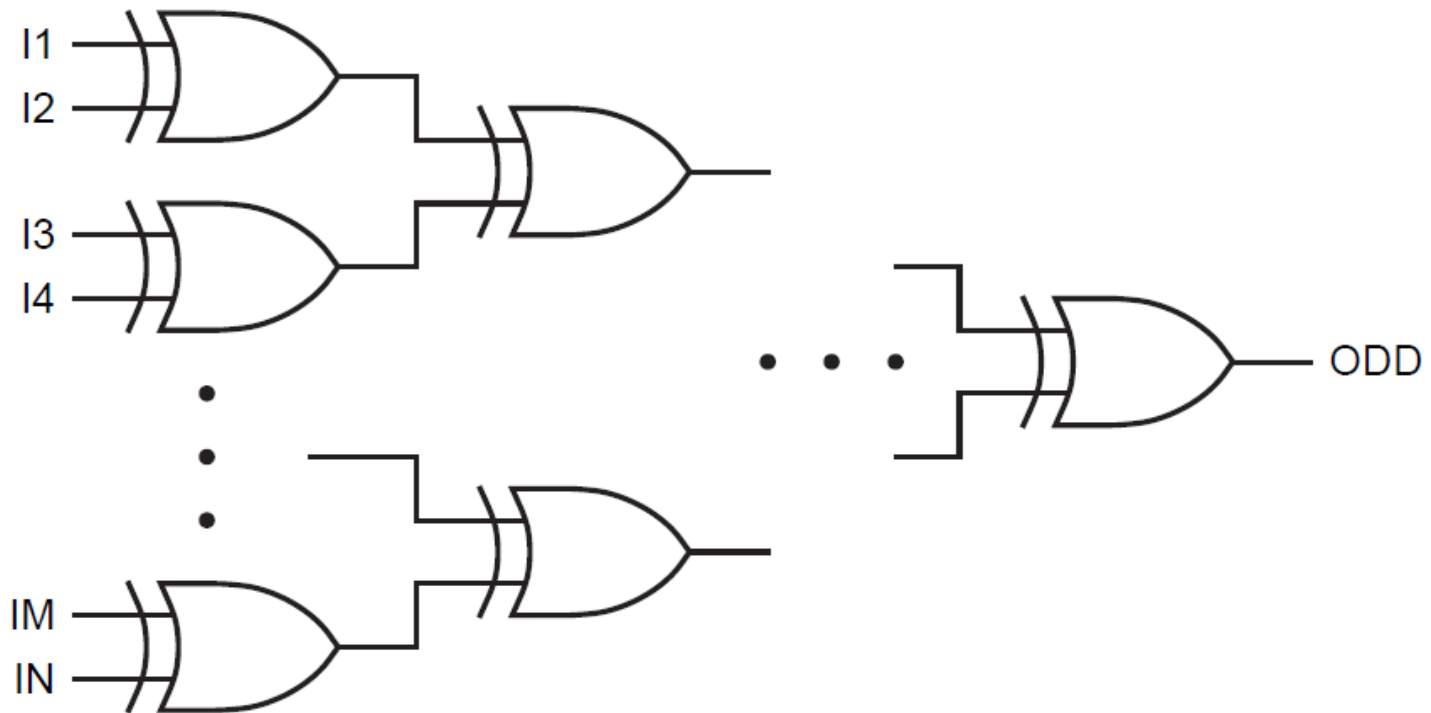
- Generador de Paridad en Cascada:





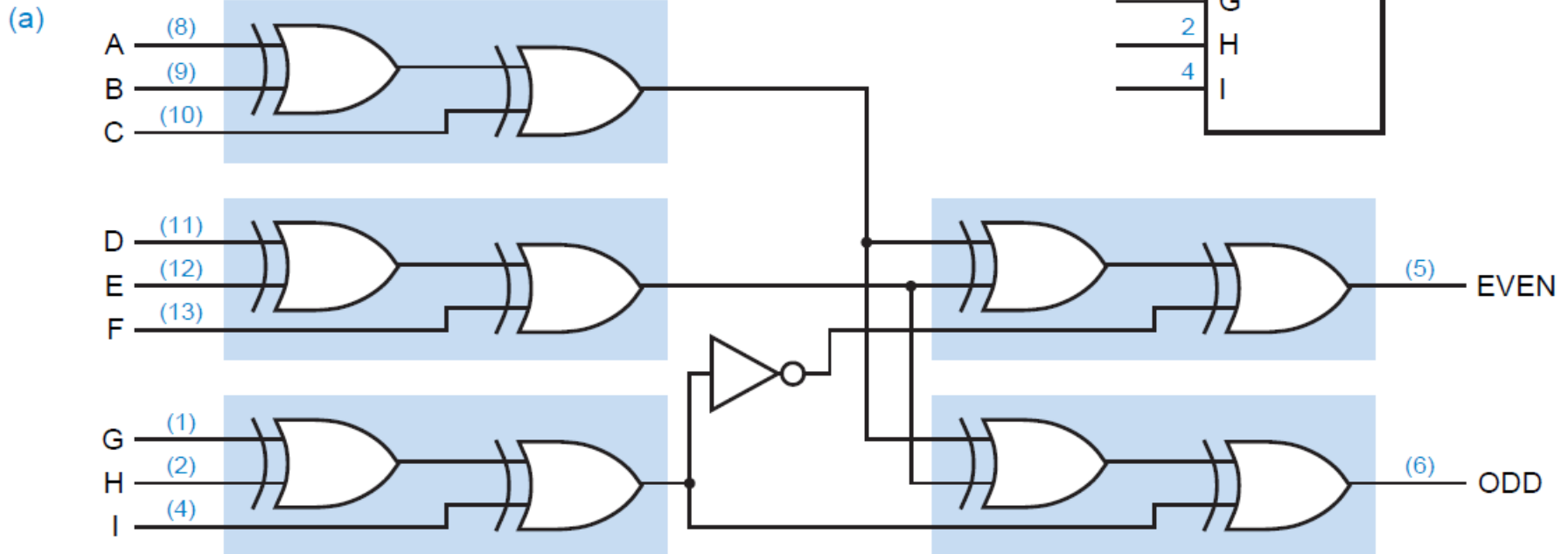
# Paridad

- Generador de Paridad en Árbol:



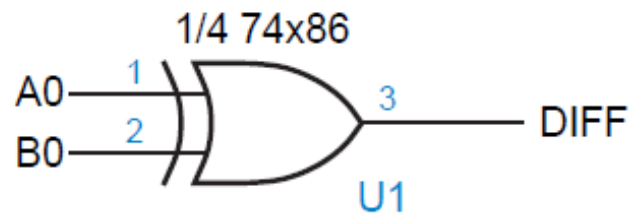
# Paridad

- Generador de Paridad Comercial:



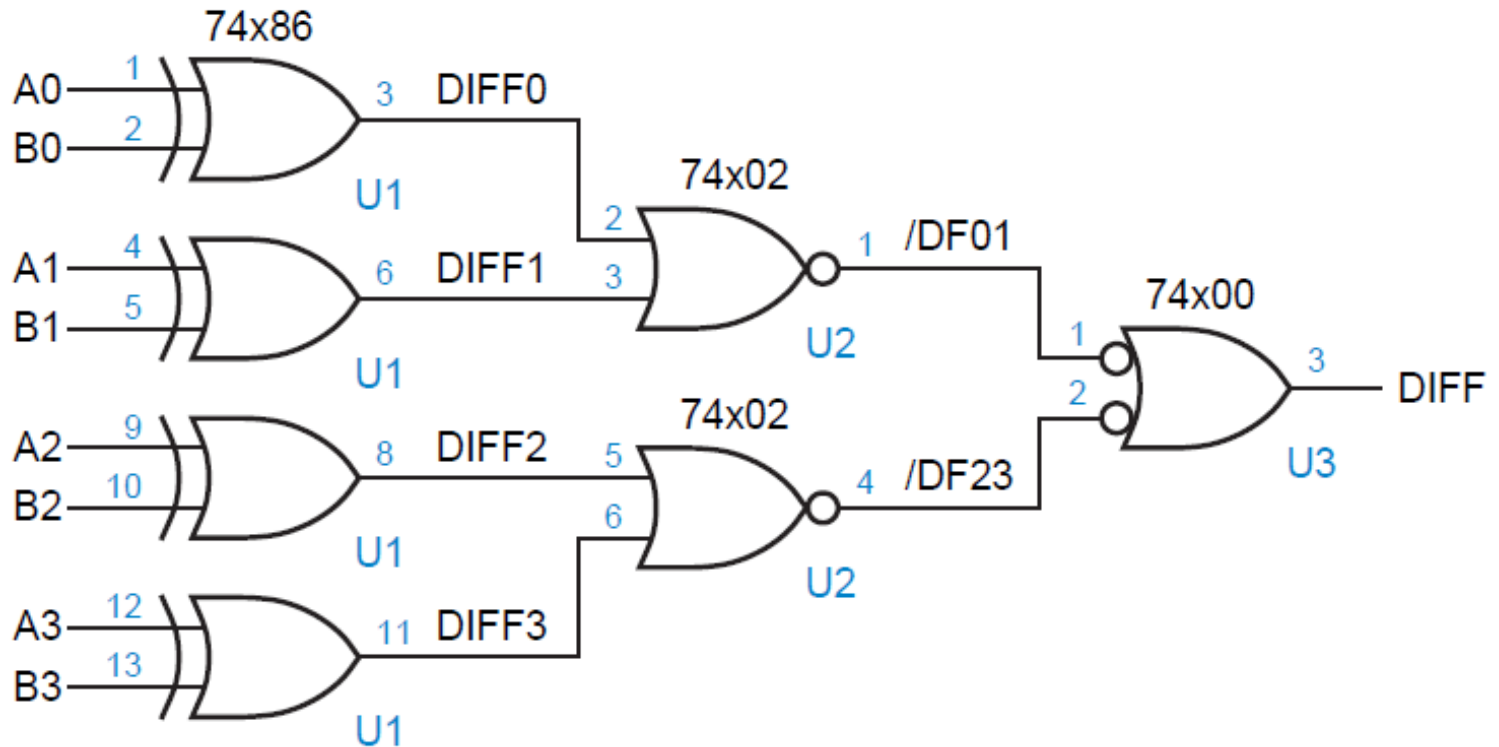
# Comparadores

| X | Y | X xor Y |
|---|---|---------|
| 0 | 0 | 0       |
| 0 | 1 | 1       |
| 1 | 0 | 1       |
| 1 | 1 | 0       |



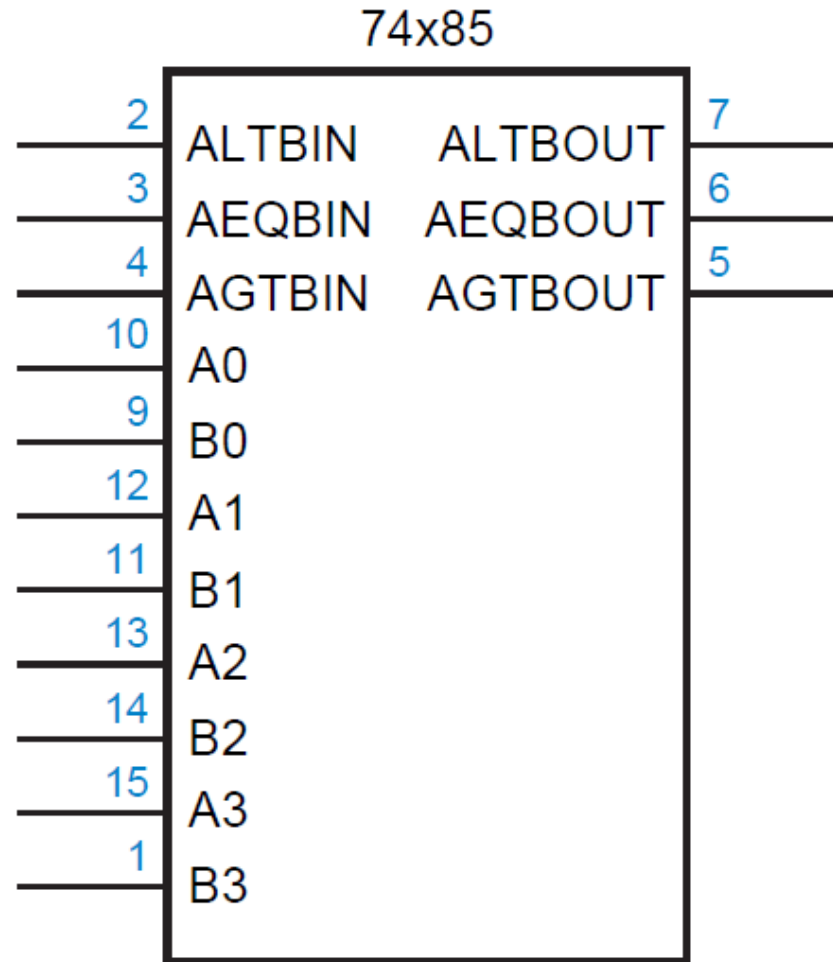
# Comparadores

| A3 | A2 | A1 | A0 |
|----|----|----|----|
| B3 | B2 | B1 | B0 |



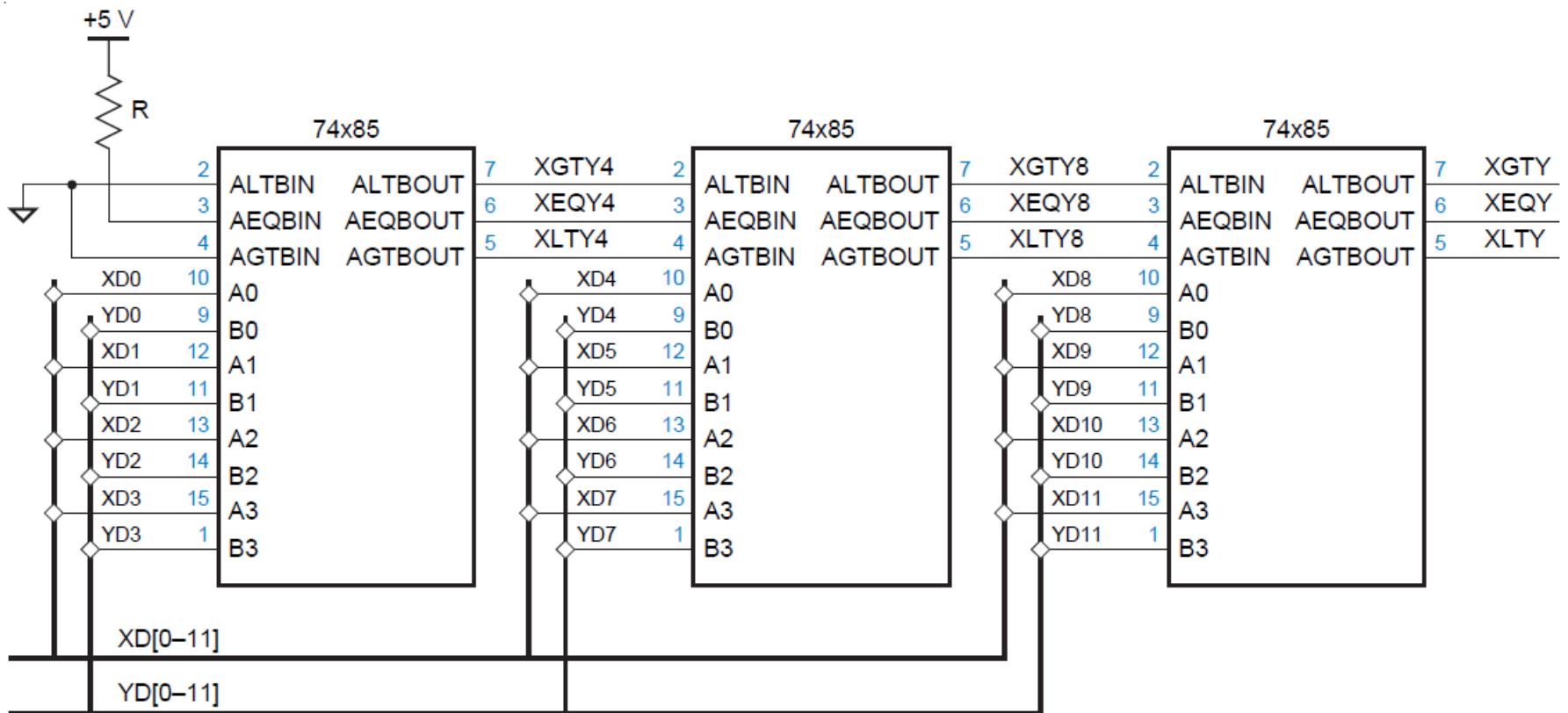
# Comparadores

Comparador  
Comercial  
4 bits:



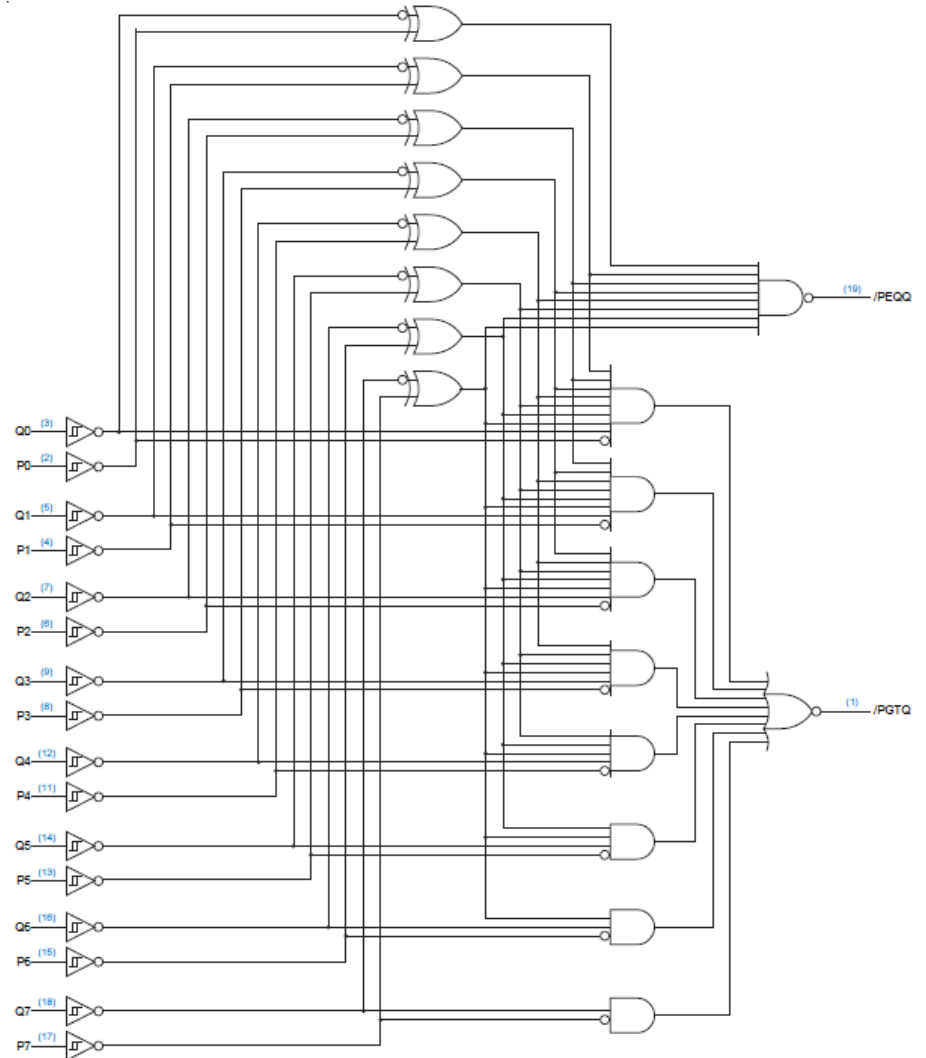
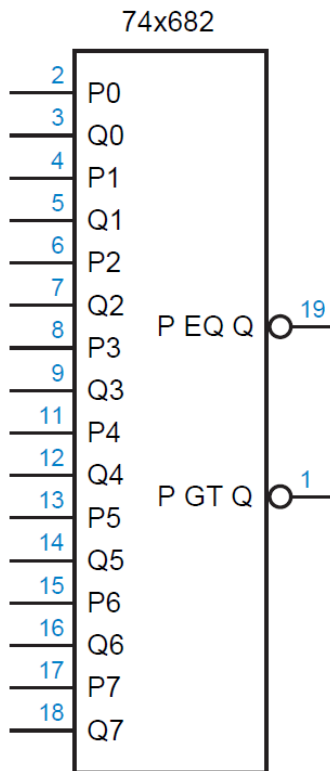
# Comparadores

## Comparadores en cascada:



# Comparadores

Comparador  
Comercial 8 bits:



# Comparadores

