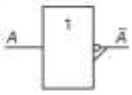
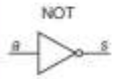
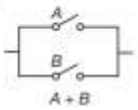
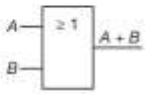
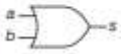
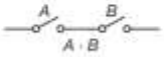
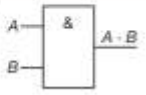
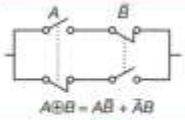
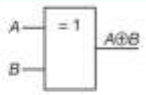
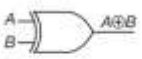
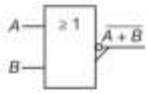
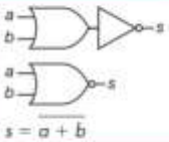
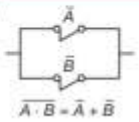
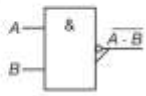
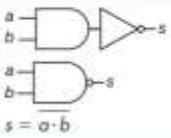
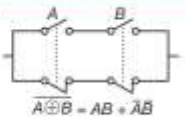
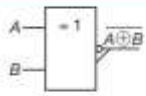
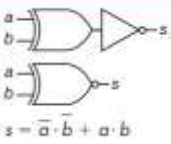
Clase 2 - Puertas lógicas

Las más importantes se muestran en la siguiente tabla: sea posible construir.

Nombre de la puerta	Equivalencia eléctrica y símbolo lógico: a) Equivalente eléctrico b) Símbolo ANSI c) Símbolo lógico tradicional	Tabla de verdad y función lógica
Puerta NOT	a)  b)  c) 	NOT  $s = \bar{a}$
Puerta OR (O)	a)  b)  c) 	 $s = a + b$
Puerta AND (Y)	a)  b)  c) 	 $s = a \cdot b$
Puerta X-OR (OR exclusiva)	a)  b)  c) 	 $s = a \cdot \bar{b} + \bar{a} \cdot b$
Puerta NOR (No O)	a)  b)  c) 	 $s = \overline{a + b}$
Puerta NAND (No Y)	a)  b)  c) 	 $s = \overline{a \cdot b}$
Puerta X-NOR (NOR exclusiva)	a)  b)  c) 	 $s = \bar{a} \cdot \bar{b} + a \cdot b$

Ejercicio N° 1

Completar la siguiente tabla

A	B	AND	NAND	OR	NOR	XOR
0	0					
0	1					
1	0					
1	1					

Ejercicio N°2

Verificar mediante las tablas de verdad de las compuertas las leyes de De Morgan:

$$\overline{AB} = \overline{A} + \overline{B}$$

$$\overline{A + B} = \overline{A}.\overline{B}$$

A	B	AB	$\overline{AB}$	$\overline{A}$	$\overline{B}$	$\overline{A} + \overline{B}$
0	0					
0	1					
1	0					
1	1					

A	B	A + B	$\overline{A + B}$	$\overline{A}$	$\overline{B}$	$\overline{A}.\overline{B}$
0	0					
0	1					
1	0					
1	1					