

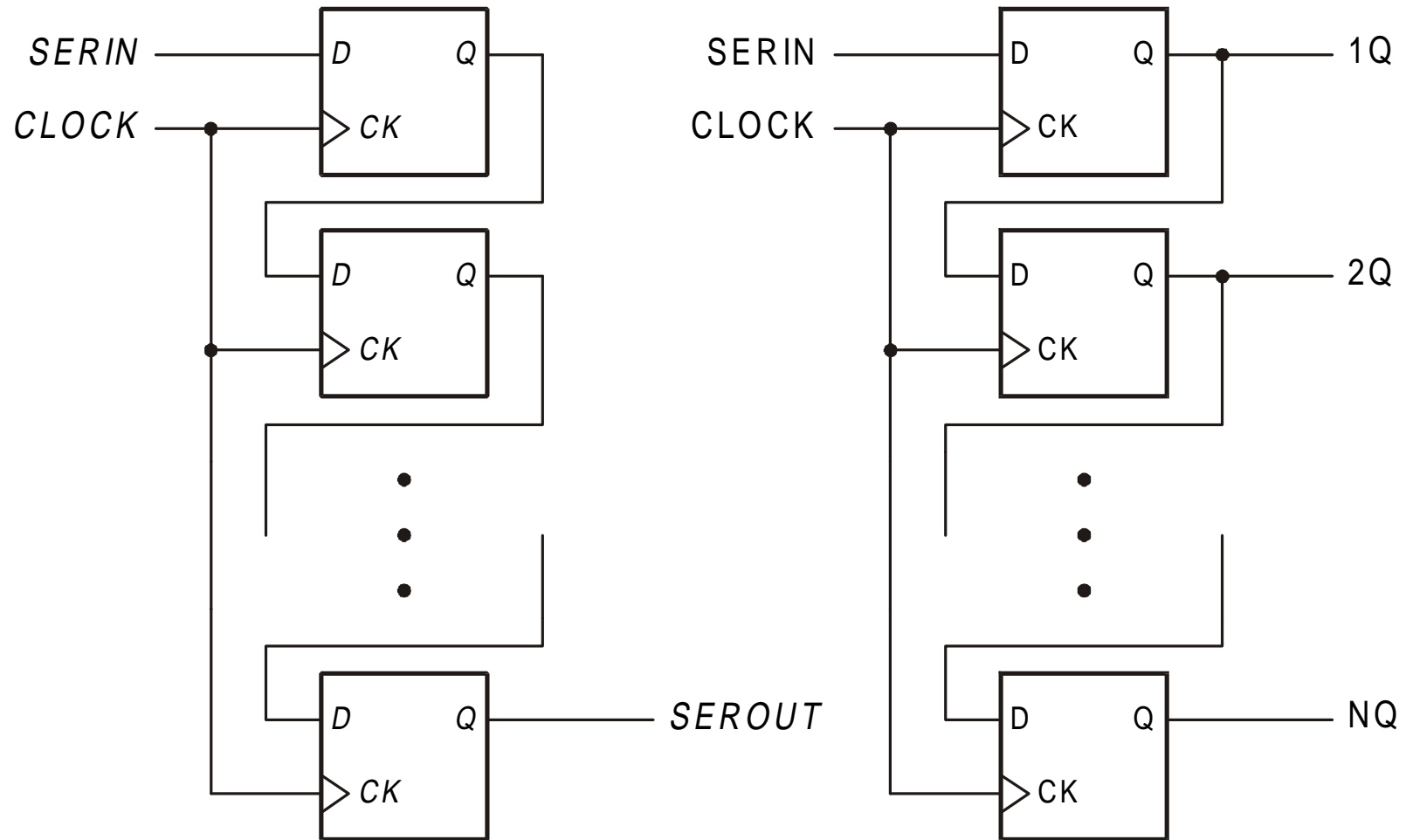
# Lógica Secuencial Modular

Prof. Luis Araujo

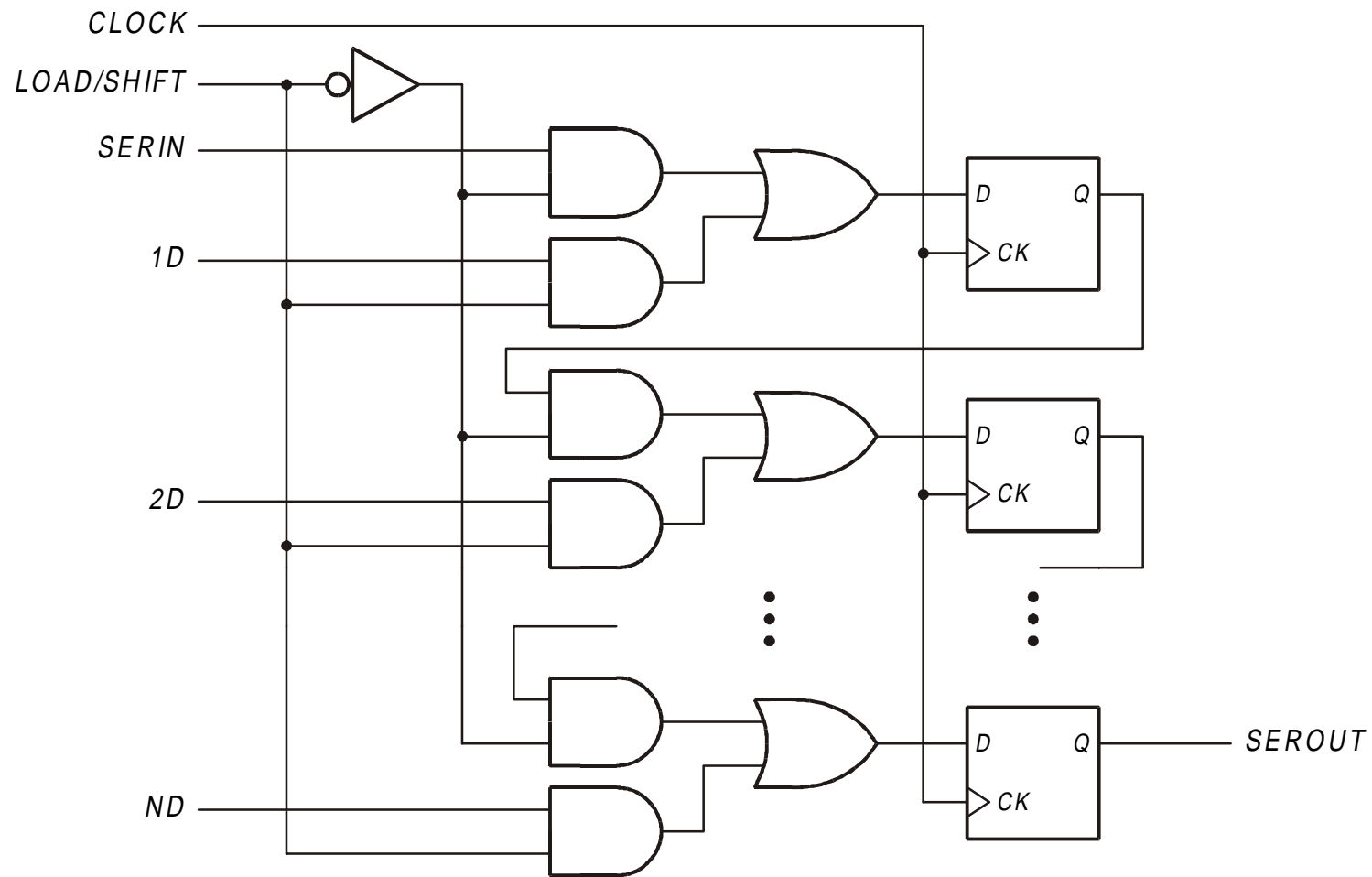
Sistemas Digitales

[www.ing.ula.ve/~araujol/sd](http://www.ing.ula.ve/~araujol/sd)

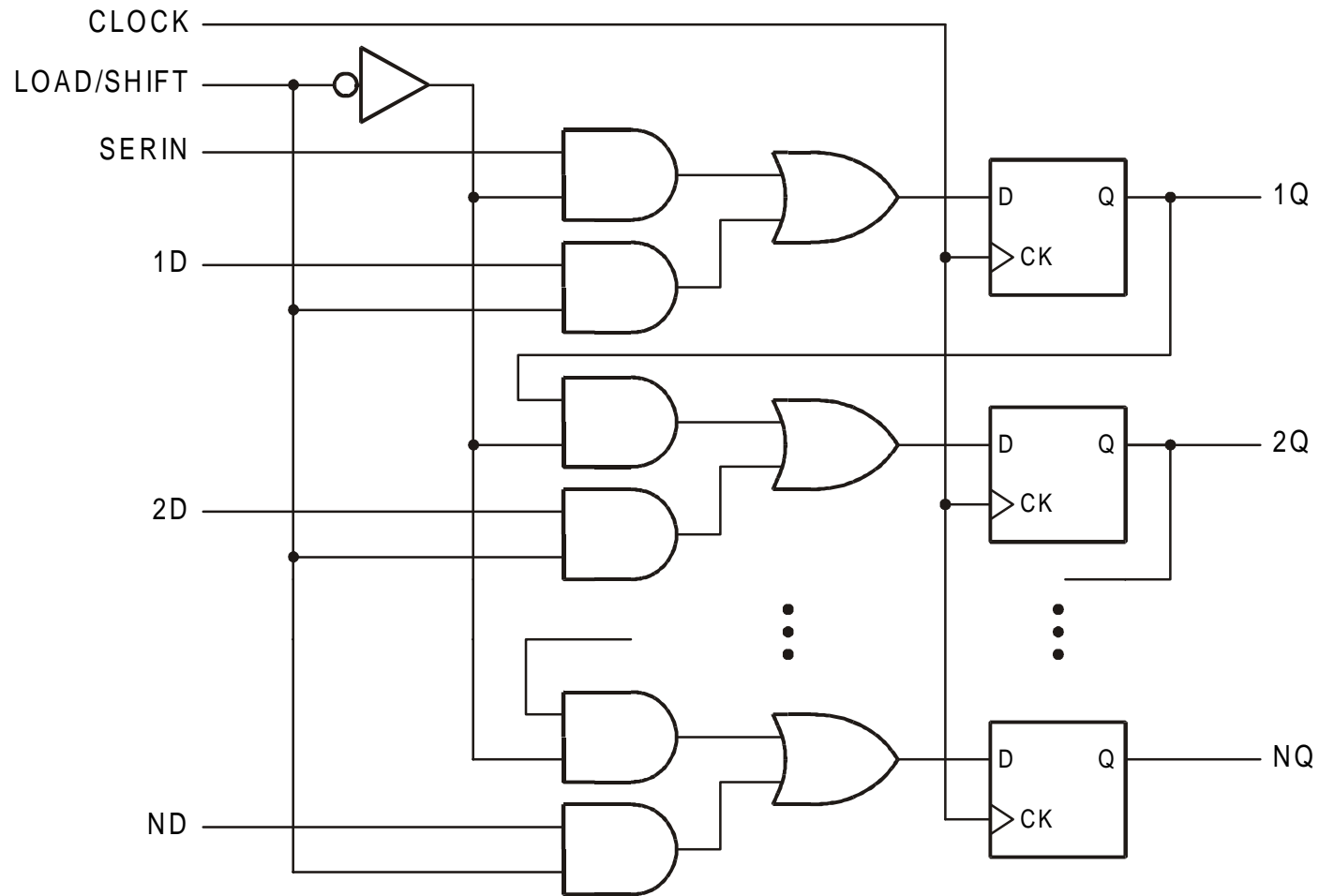
# Registros de desplazamiento



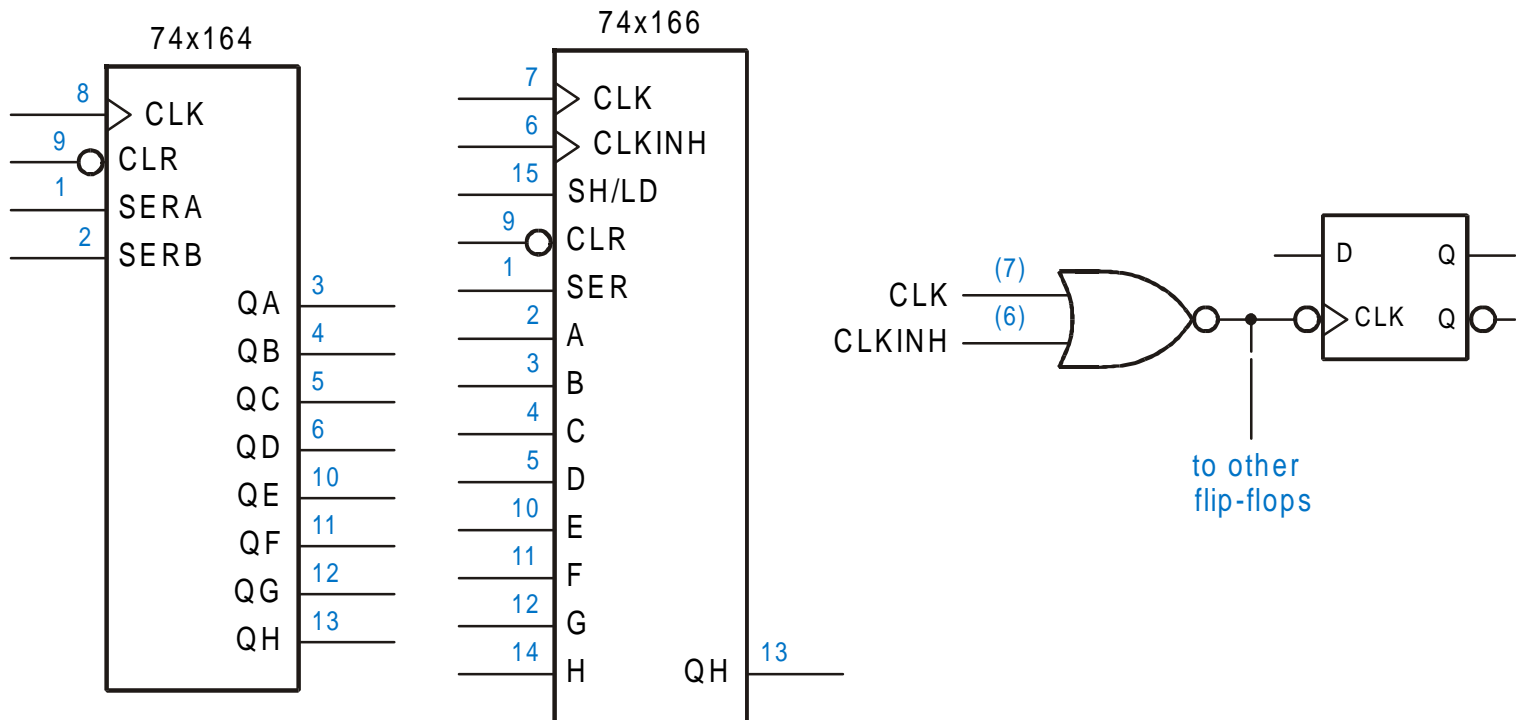
# Entrada paralela, salida serial



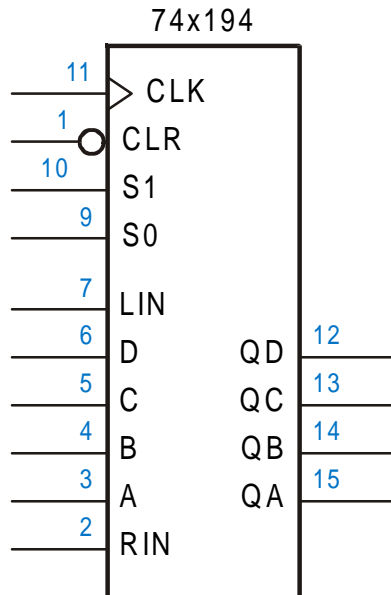
# Entrada paralela, salida paralela



# Registros comerciales

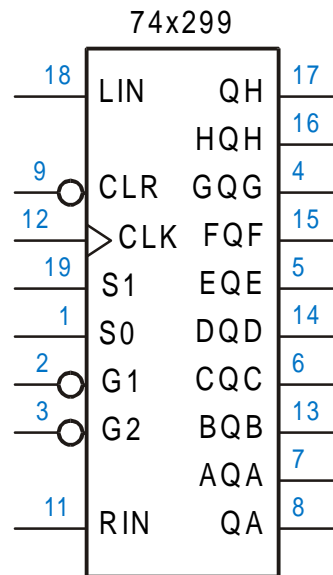


# Registros comerciales



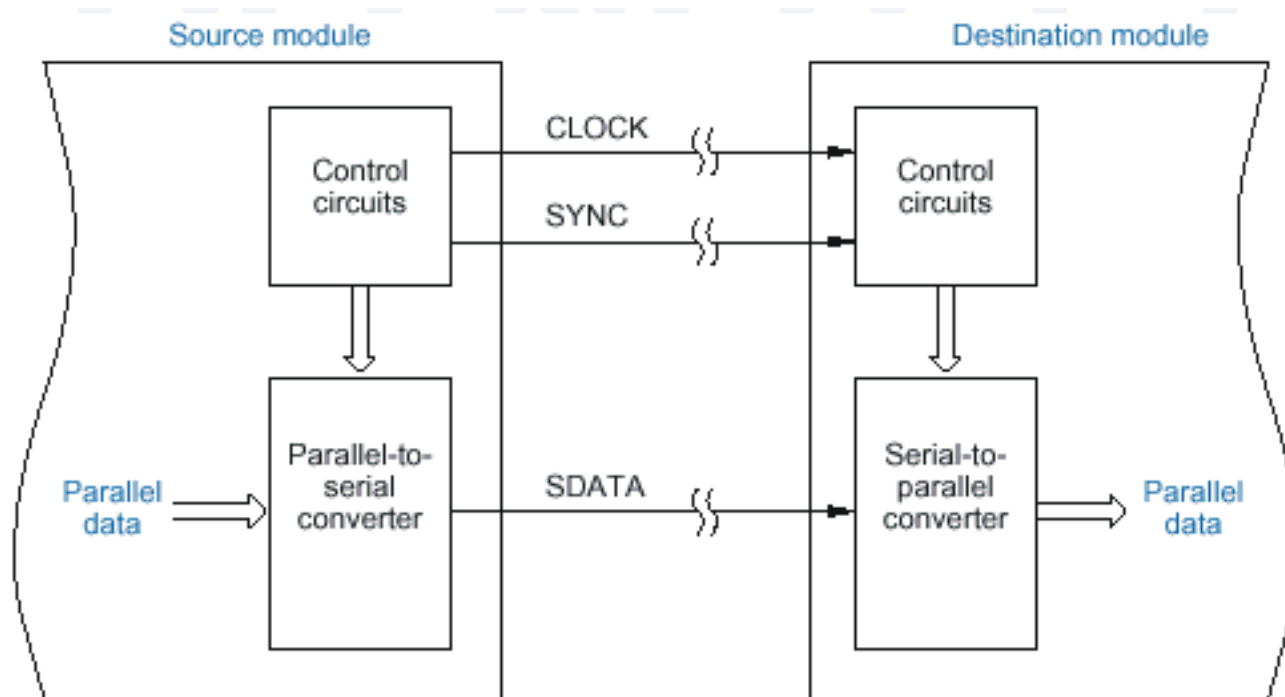
Function	Inputs		Next state			
	S1	S0	QA*	QB*	QC*	QD*
Hold	0	0	QA	QB	QC	QD
Shift right	0	1	RIN	QA	QB	QC
Shift left	1	0	QB	QC	QD	LIN
Load	1	1	A	B	C	D

# Registros comerciales



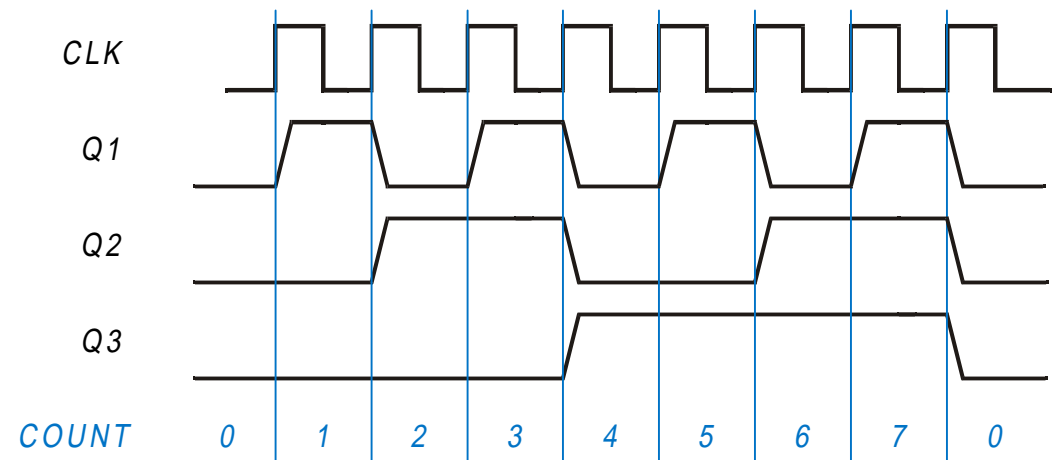
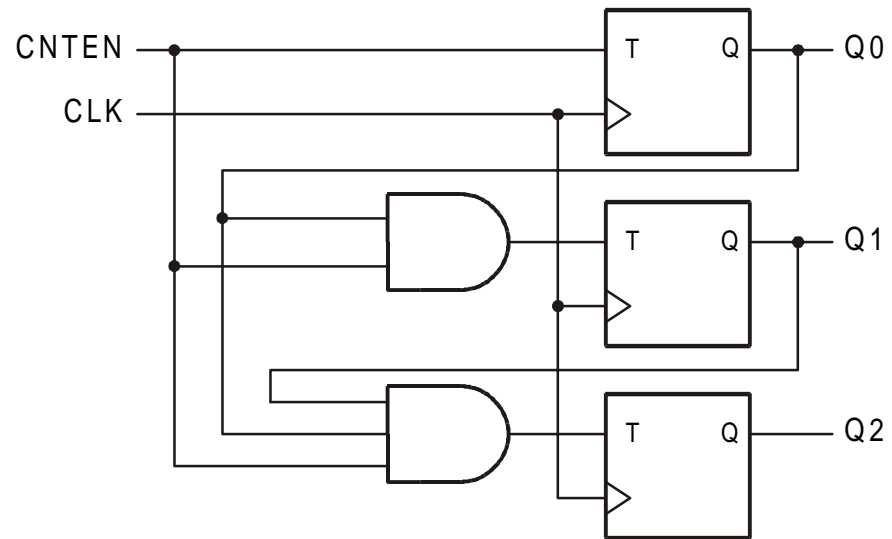
Function	Inputs		Next state							
	S1	S0	QA*	QB*	QC*	QD*	QE*	QF*	QG*	QH*
Hold	0	0	QA	QB	QC	QD	QE	QF	QG	QH
Shift right	0	1	RIN	QA	QB	QC	QD	QE	QF	QG
Shift left	1	0	QB	QC	QD	QE	QF	QG	QH	LIN
Load	1	1	AQA	BQB	CQC	DQD	EQE	FQF	GQG	HQH

# Aplicación

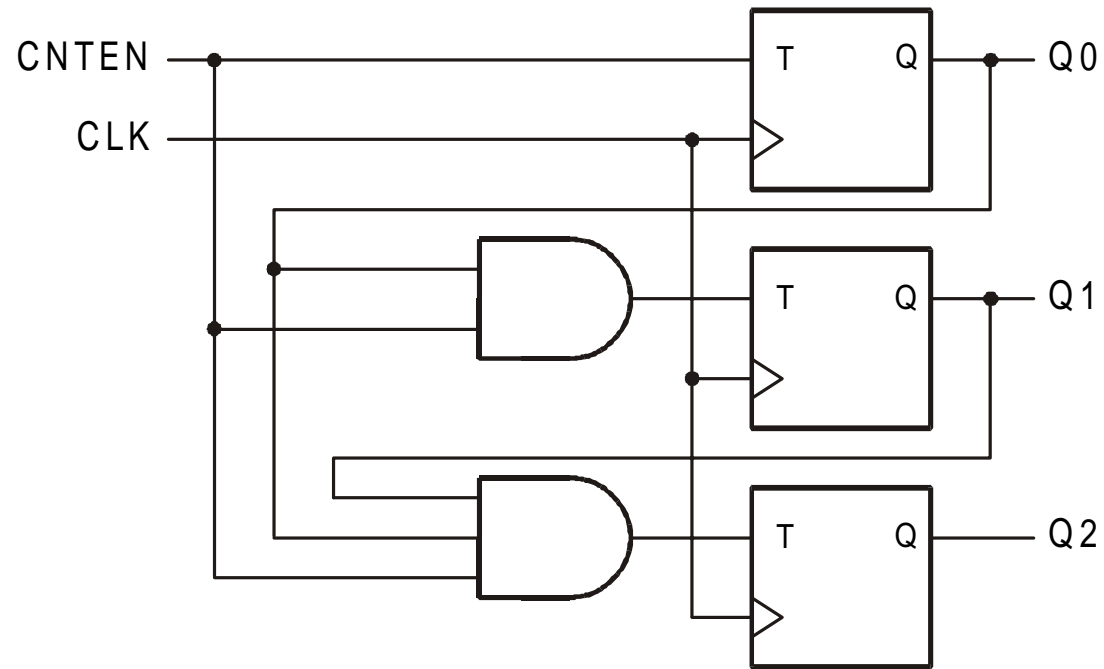




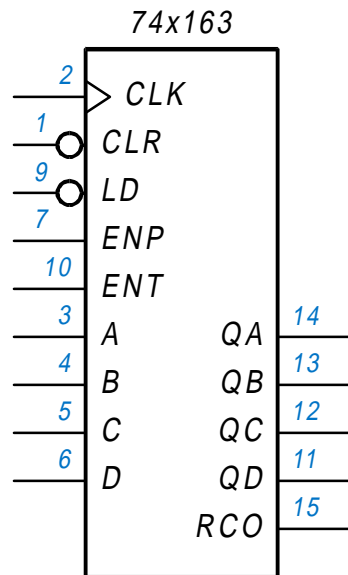
# Contador sincrono



# Contador sincrono

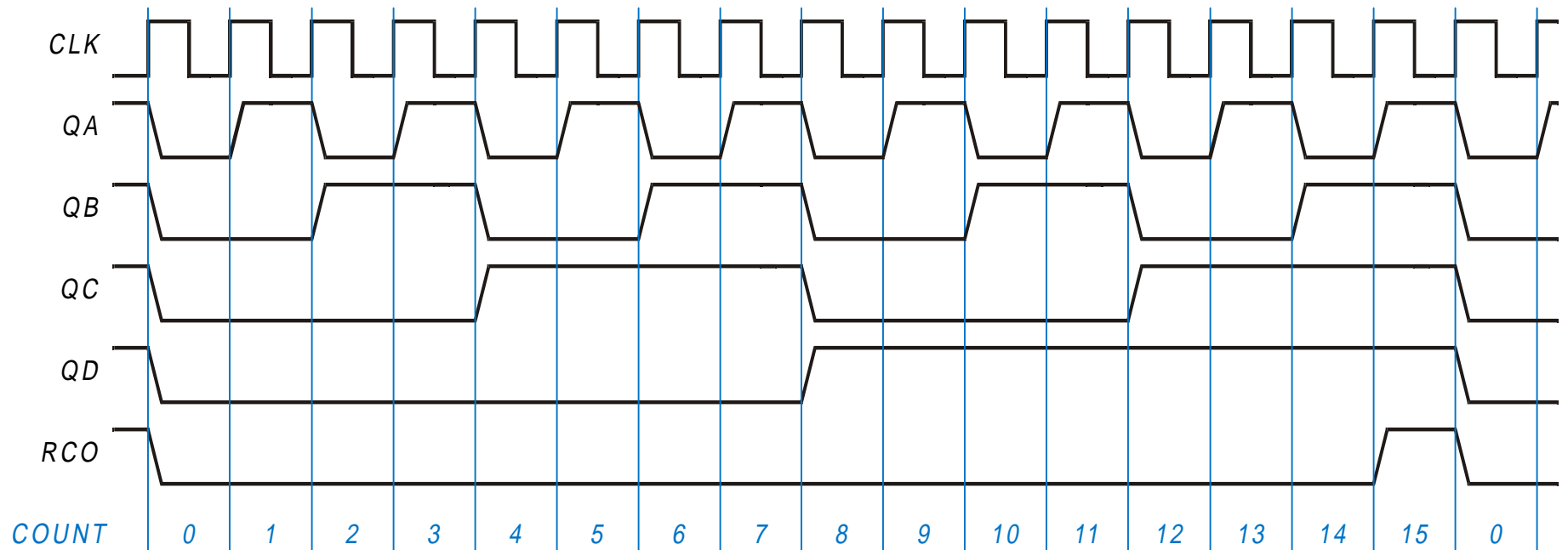
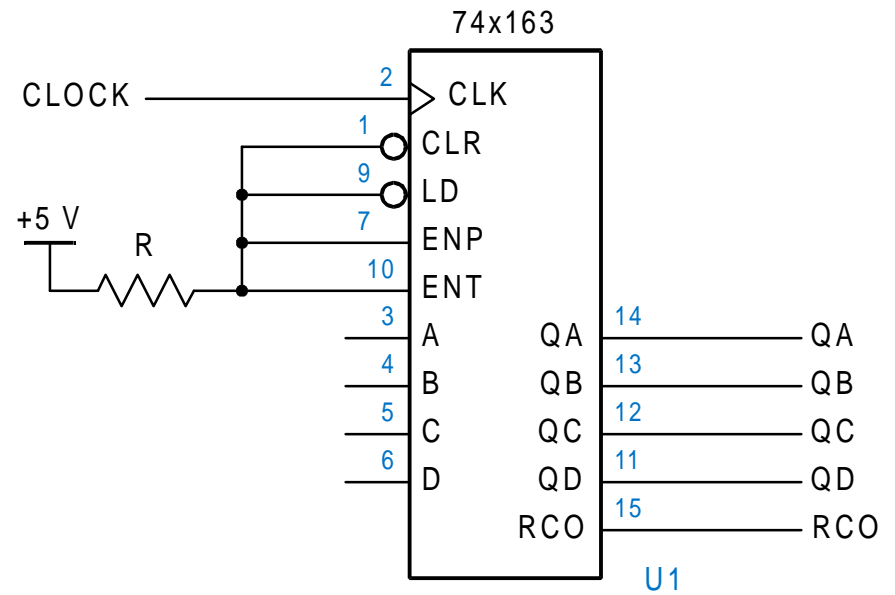


# Contadores comerciales

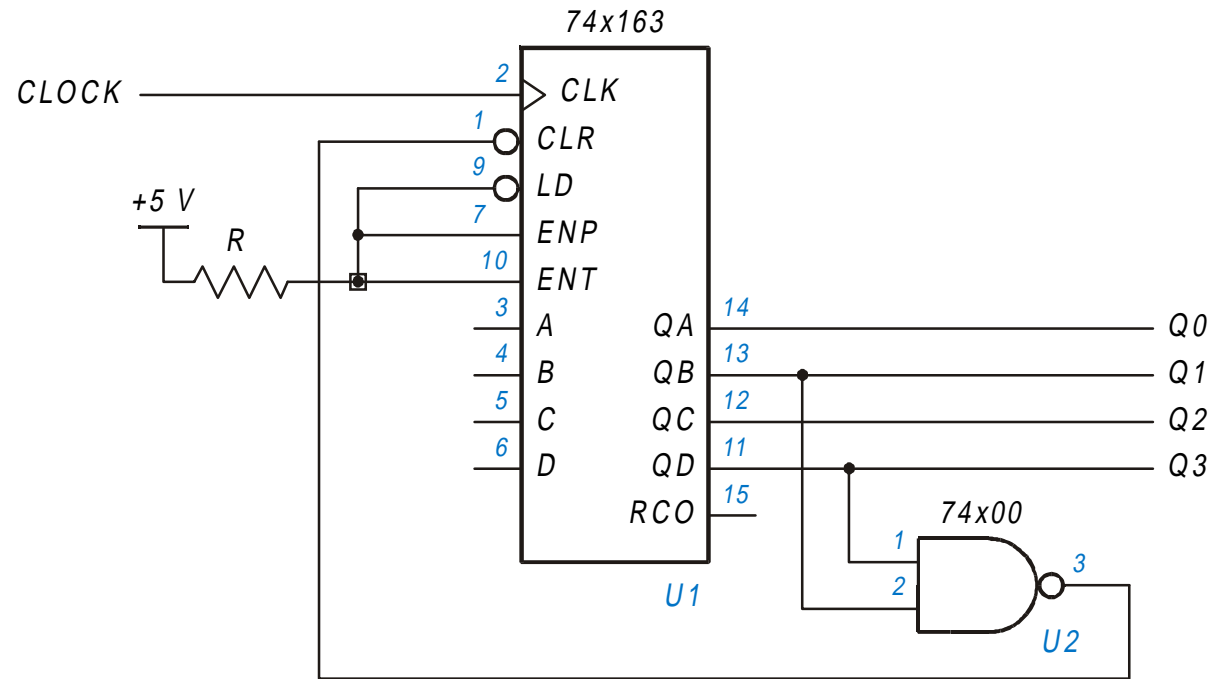


Inputs				Current State				Next State			
CLR	LD	ENT	ENP	QD	QC	QB	QA	QD*	QC*	QB*	QA*
0	x	x	x	x	x	x	x	0	0	0	0
1	0	x	x	x	x	x	x	D	C	B	A
1	1	0	x	x	x	x	x	QD	QC	QB	QA
1	1	x	0	x	x	x	x	QD	QC	QB	QA
1	1	1	1	0	0	0	0	0	0	0	1
1	1	1	1	1	1	1	1	0	0	0	0

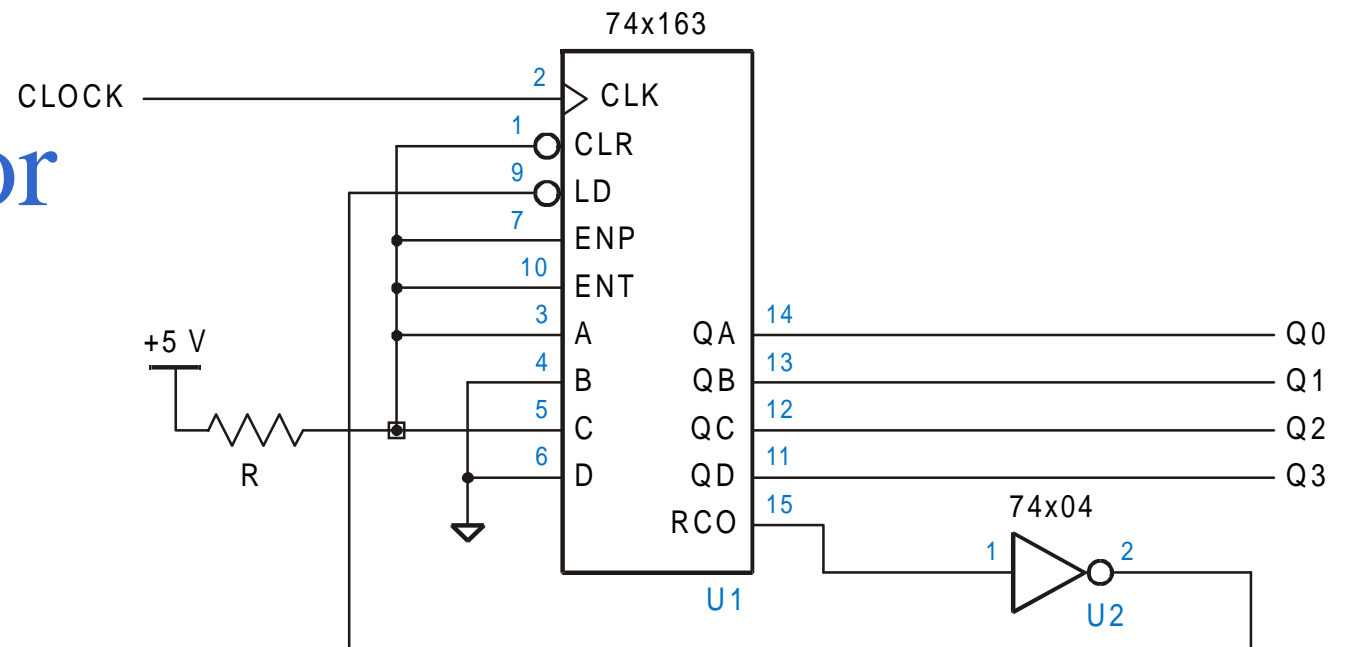
# Contador 0 - 15



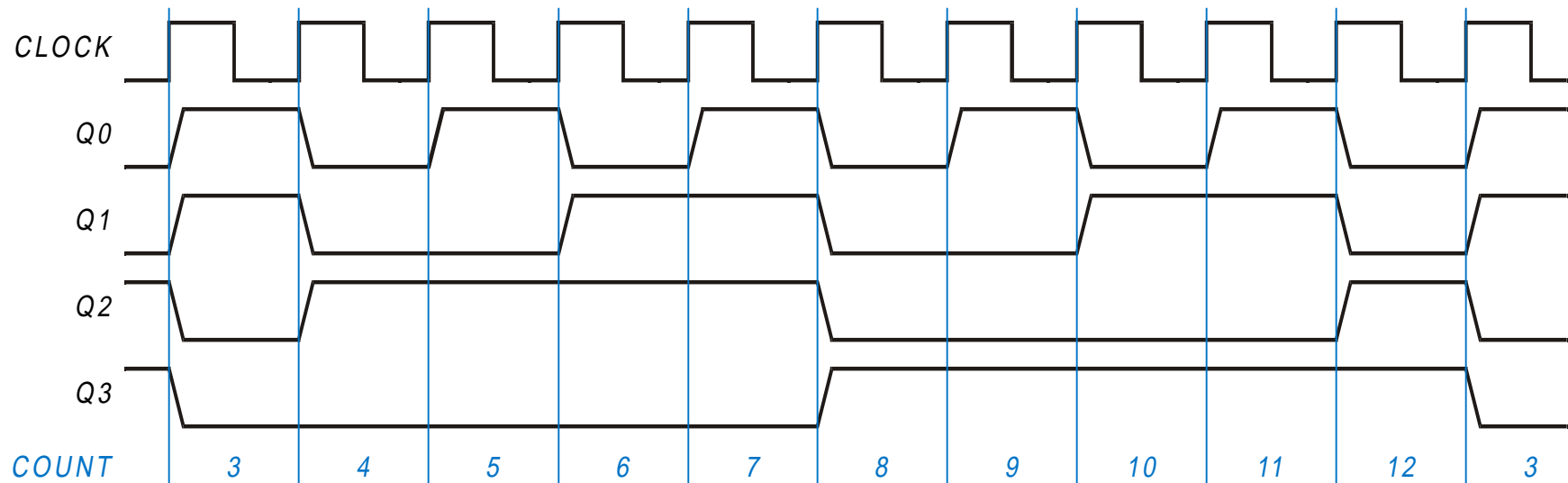
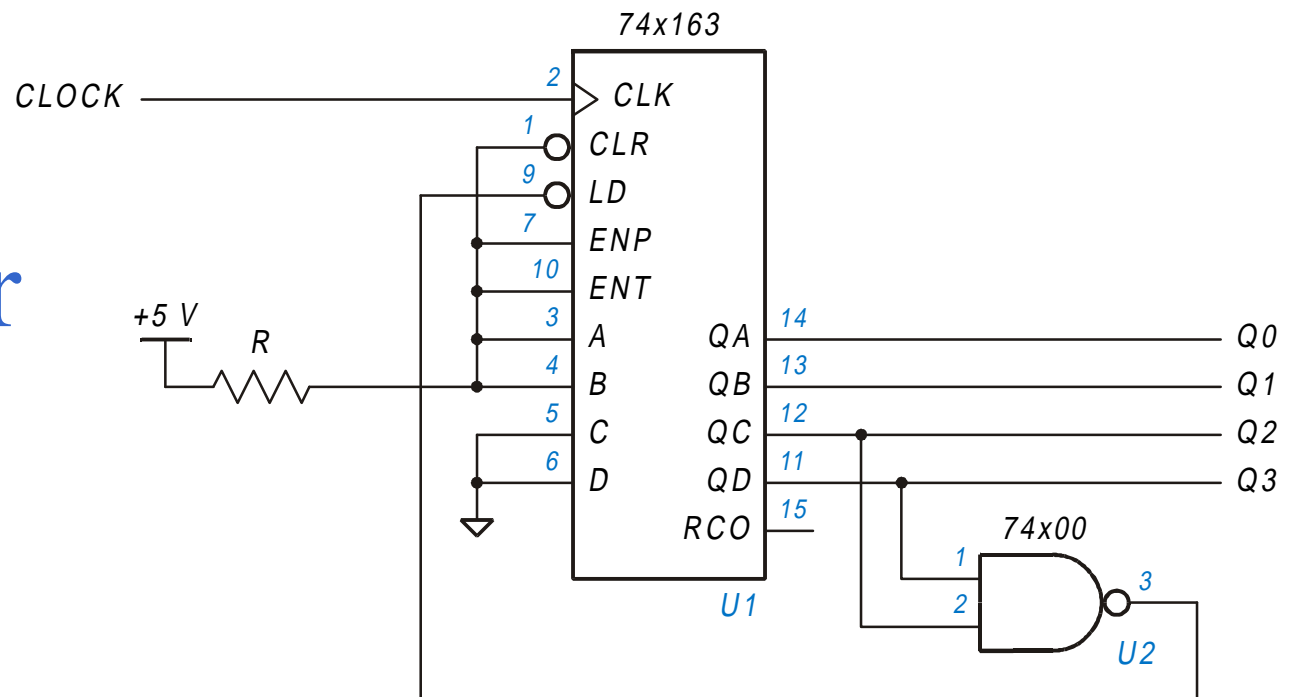
# Contador 0 - 10



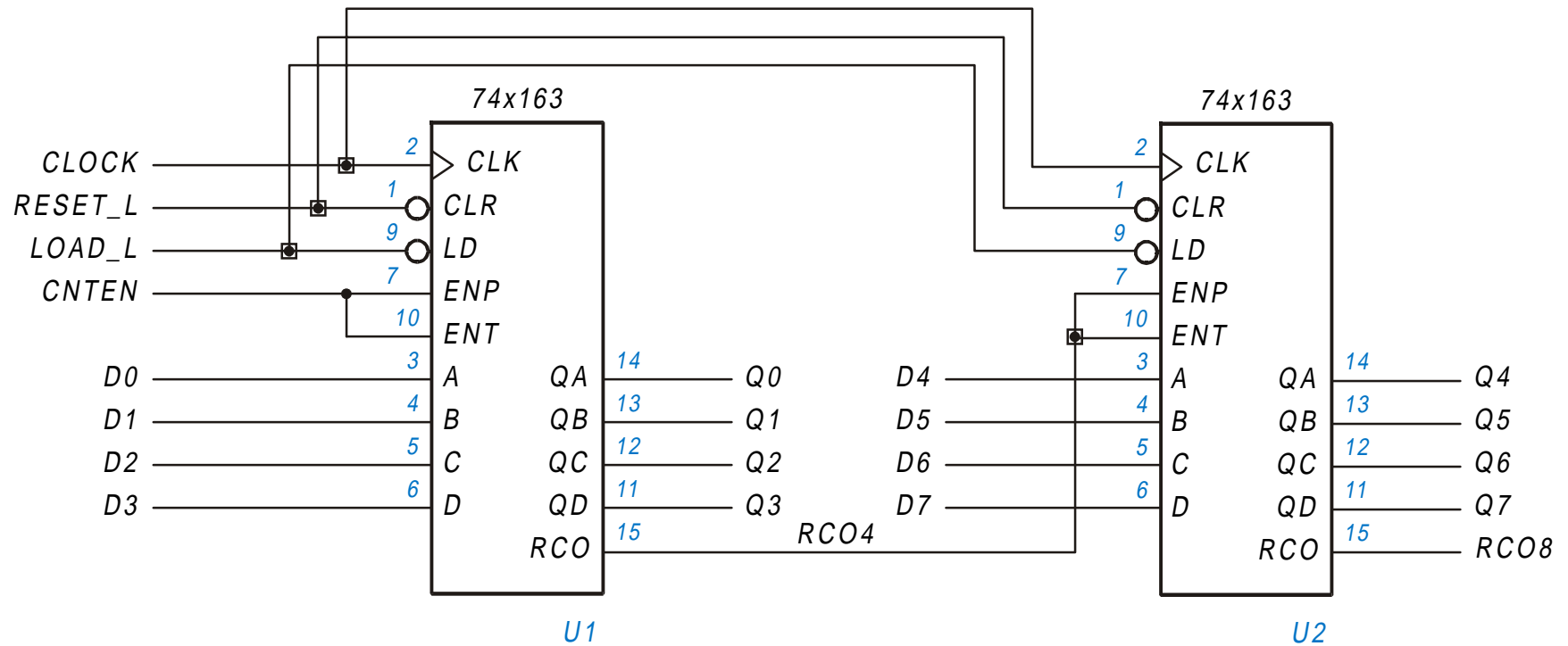
# Contador 5 - 15



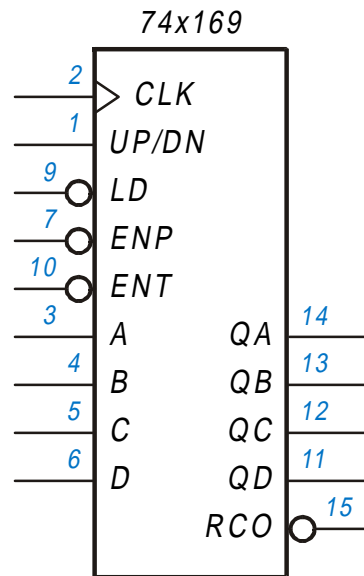
# Contador 3 - 12



# Conexión en cascada



# Contador comercial up/down



UP/DN = 1 ➔ Arriba

UP/DN = 0 ➔ Abajo