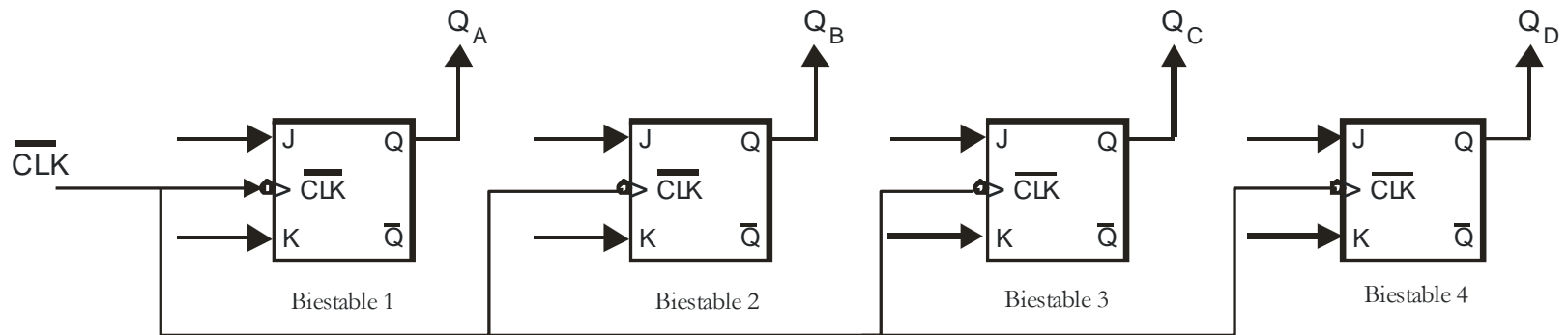


Contador Síncrono Ascendente J-K

Fundamentos de tecnología de
computadores

Contador síncrono ascendente



Transición			
Q_t	Q_{t+1}	J	K
0	0	0	X
0	1	1	X
1	0	X	1
1	1	X	0

Contador síncrono ascendente

t				t+1				B4		B3		B2		B1	
QD	QC	QB	QA	QD	QC	QB	QA	J	K	J	K	J	K	J	K
0	0	0	0	0	0	0	1	0	X	0	X	0	X	1	X
0	0	0	1	0	0	1	0	0	X	0	X	1	X	X	1
0	0	1	0	0	0	1	1	0	X	0	X	X	0	1	X
0	0	1	1	0	1	0	0	0	X	1	X	X	1	X	1
0	1	0	0	0	1	0	1	0	X	X	0	0	X	1	X
0	1	0	1	0	1	1	0	0	X	X	0	1	X	X	1
0	1	1	0	0	1	1	1	0	X	X	0	X	0	1	X
0	1	1	1	1	0	0	0	1	X	X	1	X	1	X	1
1	0	0	0	1	0	0	1	X	0	0	X	0	X	1	X
1	0	0	1	1	0	1	0	X	0	0	X	1	X	X	1
1	0	1	0	1	0	1	1	X	0	0	X	X	0	1	X
1	0	1	1	1	1	0	0	X	0	1	X	X	1	X	1
1	1	0	0	1	1	0	1	X	0	X	0	0	X	1	X
1	1	0	1	1	1	1	0	X	0	X	0	1	X	X	1
1	1	1	0	1	1	1	1	X	0	X	0	X	0	1	X
1	1	1	1	0	0	0	0	X	1	X	1	X	1	X	1

Contador síncrono ascendente

J4

		Qb Qa			
Qd Qc		00	01	11	10
	00	0	1	3	2
	01	4	5	7	6
	11	X ₁₂	X ₁₃	X ₁₅	X ₁₄
	10	X ₈	X ₉	X ₁₁	X ₁₀

K4

		Qb Qa			
Qd Qc		00	01	11	10
	00	X ₀	X ₁	X ₃	X ₂
	01	X ₄	X ₅	X ₇	X ₆
	11	12	13	15	14
	10	8	9	11	10

J3

		Qb Qa			
Qd Qc		00	01	11	10
	00	0	1	3	2
	01	X ₄	X ₅	X ₇	X ₆
	11	X ₁₂	X ₁₃	X ₁₅	X ₁₄
	10	8	9	11	10

K3

		Qb Qa			
Qd Qc		00	01	11	10
	00	X ₀	X ₁	X ₃	X ₂
	01	4	5	7	6
	11	12	13	15	14
	10	X ₈	X ₉	X ₁₁	X ₁₀

J2

		Qb Qa			
Qd Qc		00	01	11	10
	00	0	1	3	2
	01	4	5	7	6
	11	12	13	15	14
	10	8	9	11	10

K2

		Qb Qa			
Qd Qc		00	01	11	10
	00	X ₀	X ₁	3	2
	01	X ₄	X ₅	7	6
	11	X ₁₂	X ₁₃	15	14
	10	X ₈	X ₉	11	X ₁₀

$$J4 = Qc \cdot Qb \cdot Qa$$

$$K4 = Qc \cdot Qb \cdot Qa$$

$$J2 = Qa$$

$$K2 = Qa$$

$$J3 = Qb \cdot Qa$$

$$K3 = Qb \cdot Qa$$

$$J1 = 1$$

$$K1 = 1$$

Contador síncrono ascendente

