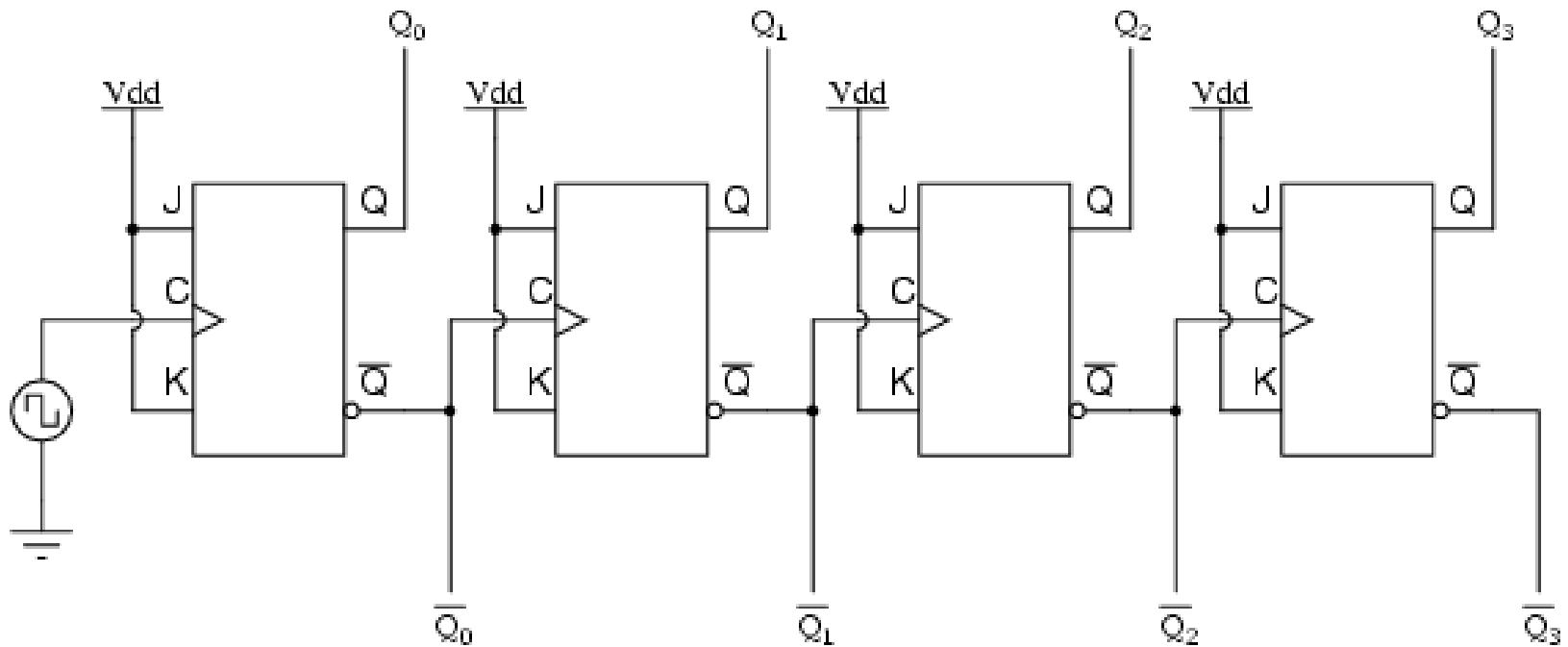


Asynchronous Counter

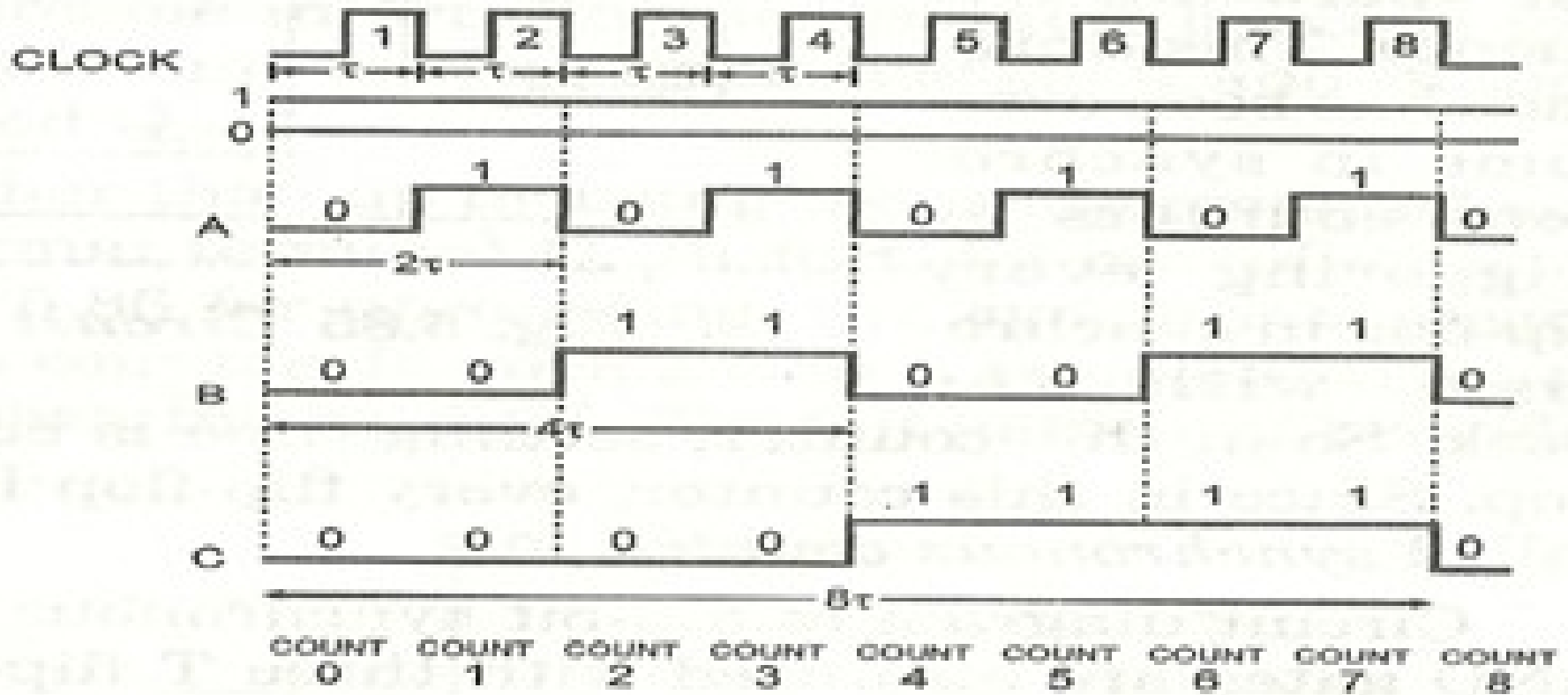
A simultaneous "up" and "down" counter



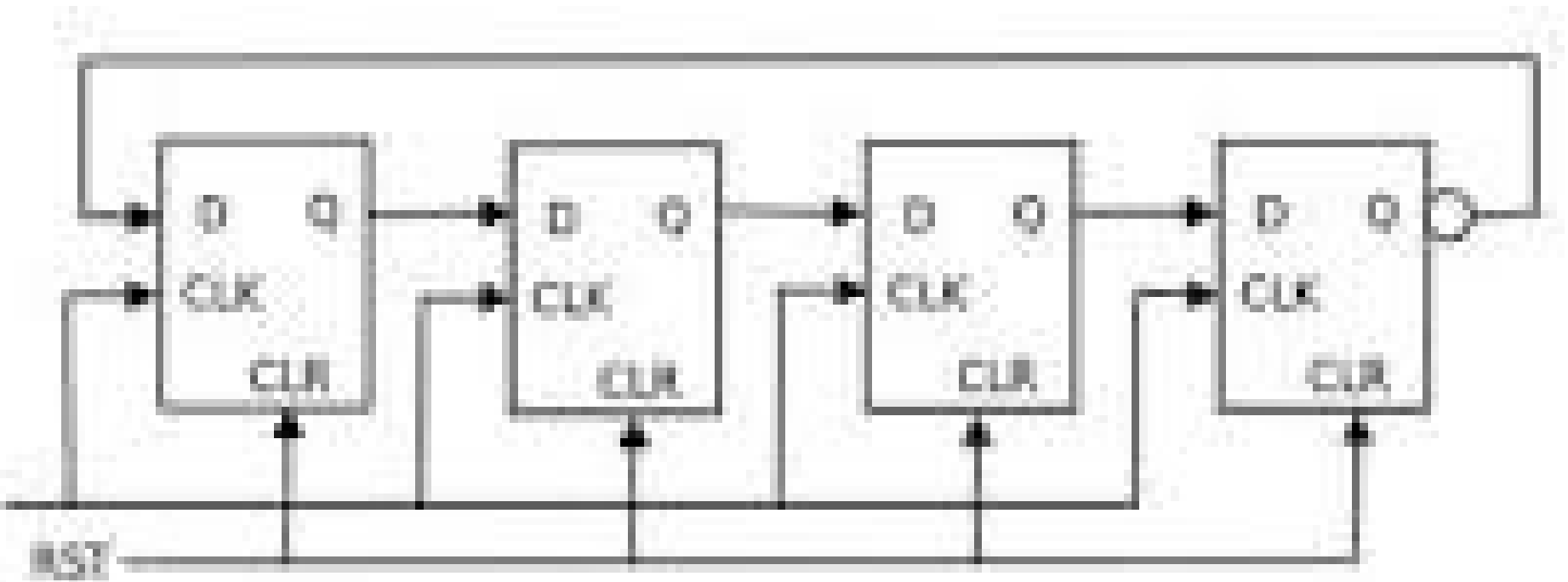
Asynchronous Counter

Q_C	Q_B	Q_A	<i>Clock Count Pulse</i>
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	0	0	4
1	0	1	5
1	1	0	6
1	1	1	7
0	0	0	8 (recycles)

Asynchronous Counter



Ring Counter



Binary Counter

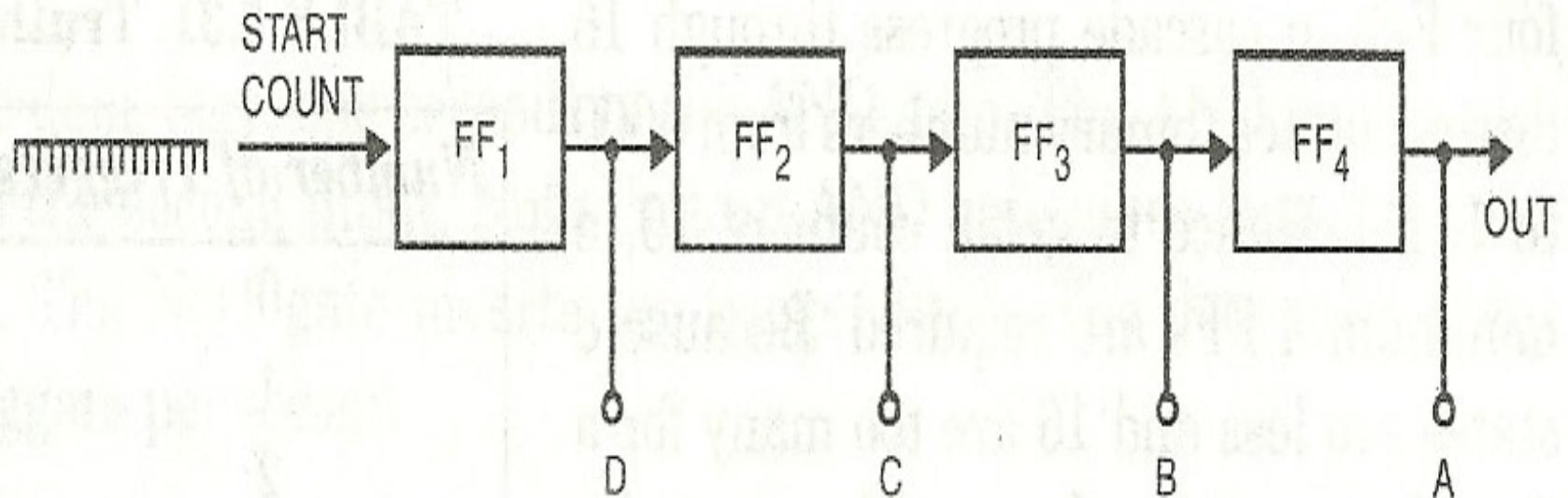


Fig. *Block Diagram of Binary Counter*

Binary Counter

TABLE 1. Truth Table for Binary Counter

<i>Number of Triggers</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1
16	0	0	0	0