$$
\begin{array}{cccc}
a & 0 & 0 & 1 & 1 \\
+\,b & +\,0 & +\,1 & +\,0 & +\,1 \\
\hline
s_1\,s_0 & 0\ 0 & 0\ 1 & 0\ 1 & 1\ 0
\end{array}
$$

(a) Evaluation of $S = a + b$

a	b	s_1	s_0
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

(b) Truth table
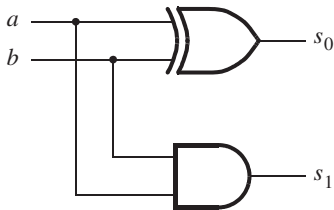
(c) Logic network

Figure 2.12   Addition of binary numbers.