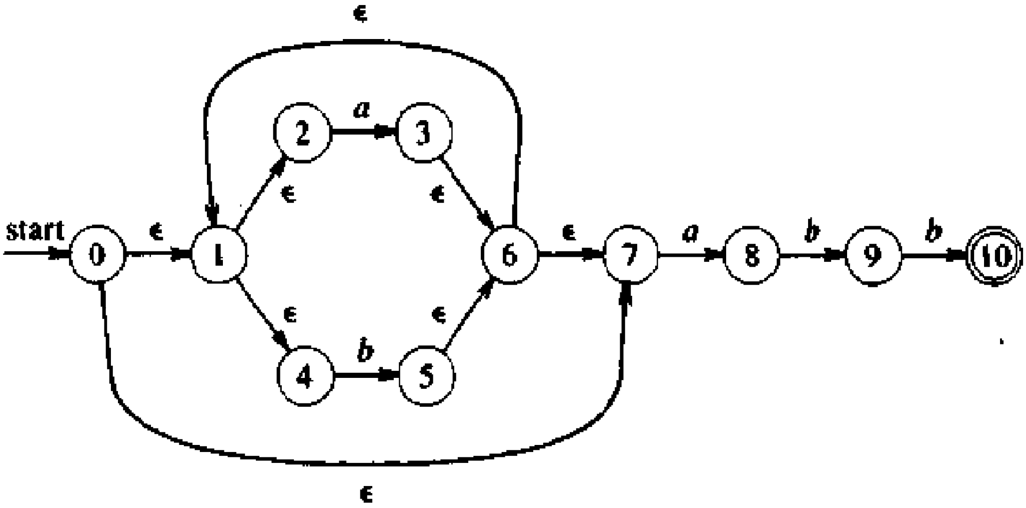


**Fig. 3.27.** NFA $N$ for $(a|b)^*abb$.

$$C = \epsilon\text{-}closure(\{5\}) = \{1, 2, 4, 5, 6, 7\}$$

Thus, $Dtran[A, b] = C$.

If we continue this process with the now unmarked sets $B$ and $C$, we eventually reach the point where all sets that are states of the DFA are marked. This is certain since there are "only" $2^{11}$ different subsets of a set of eleven states, and a set, once marked, is marked forever. The five different sets of states we actually construct are:

$$\begin{array}{ll} A = \{0, 1, 2, 4, 7\} & D = \{1, 2, 4, 5, 6, 7, 9\} \\ B = \{1, 2, 3, 4, 6, 7, 8\} & E = \{1, 2, 4, 5, 6, 7, 10\} \\ C = \{1, 2, 4, 5, 6, 7\} & \end{array}$$

State $A$ is the start state, and state $E$ is the only accepting state. The complete transition table $Dtran$ is shown in Fig. 3.28.

| STATE | INPUT SYMBOL | |
|---|---|---|
| | $a$ | $b$ |
| $A$ | $B$ | $C$ |
| $B$ | $B$ | $D$ |
| $C$ | $B$ | $C$ |
| $D$ | $B$ | $E$ |
| $E$ | $B$ | $C$ |

**Fig. 3.28.** Transition table $Dtran$ for DFA.

Also, a transition graph for the resulting DFA is shown in Fig. 3.29. It should be noted that the DFA of Fig. 3.23 also accepts $(a|b)^*abb$ and has one