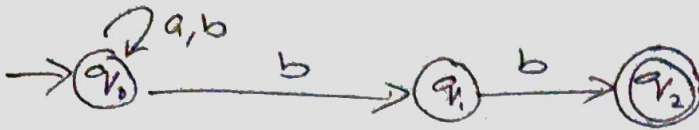


\* Convert the following NFA to DFA.



Ans Here the initial state of the given NFA is  $q_0$  with final state being  $q_2$ . The input symbols are  $a$  and  $b$ .

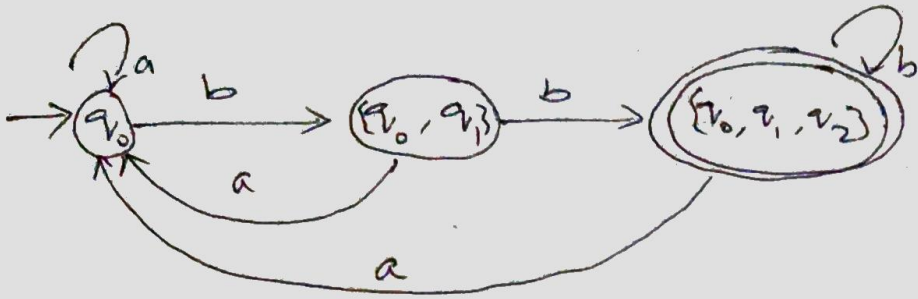
The transition table for the given NFA is

Input state \	a	b
$\rightarrow q_0$	$q_0$	$q_0, q_1$
$q_1$	$\phi$	$q_2$
$q_2$	$\phi$	$\phi$

From the above table, we construct the transition table for DFA as follows.

Input state \	a	b
$q_0$	$q_0$	$\{q_0, q_1\}$
$\{q_0, q_1\}$	$q_0$	$\{q_0, q_1, q_2\}$
$\{q_0, q_1, q_2\}$	$q_0$	$\{q_0, q_1, q_2\}$

Hence, the DFA for the given NFA is



\* Find a DFA equivalent to the following NFA.

Input state	a	b
$\rightarrow q_0$	$q_0, q_1$	$q_2$
$q_1$	$q_0$	$q_1$
$(q_2)$	$\phi$	$q_0, q_1$

Sol: Here  $q_0$  is the initial state and  $q_2$  is the final state. The input symbols are  $a$  and  $b$ .

Input state	a	b
$\rightarrow q_0$	$\{q_0, q_1\}$	$q_2$
$(q_2)$	$\phi$	$\{q_0, q_1\}$
$\{q_0, q_1\}$	$\{q_0, q_1\}$	$\{q_1, q_2\}$
$(q_1, q_2)$	$q_0$	$\{q_0, q_1\}$

