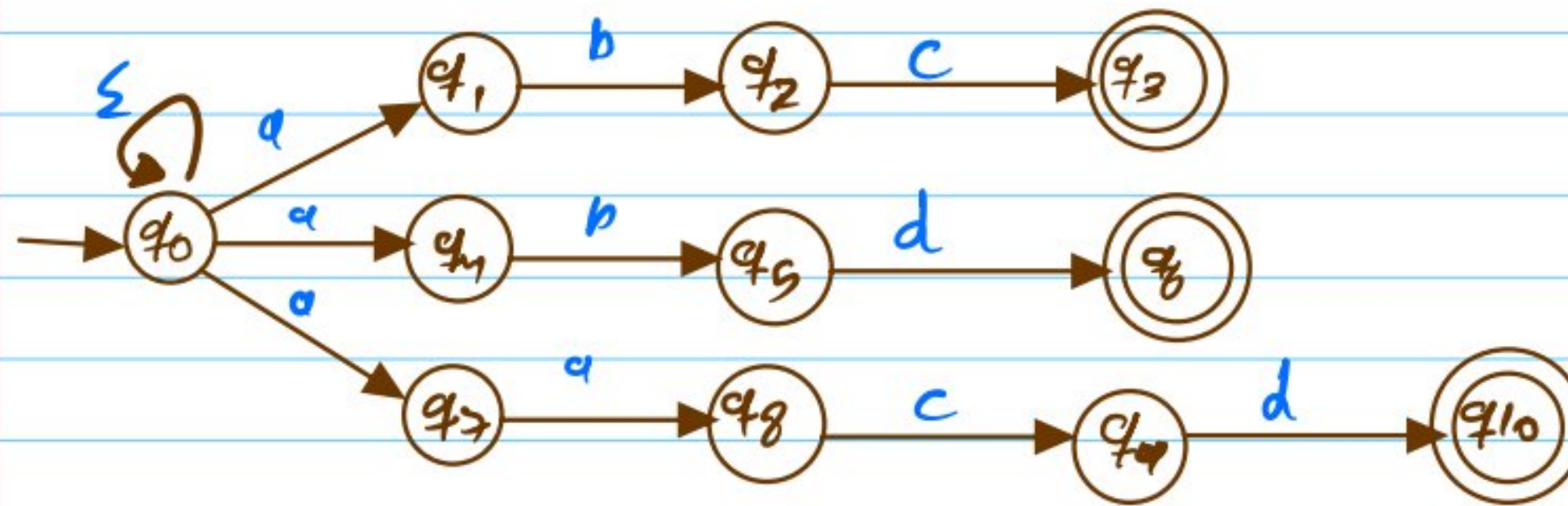


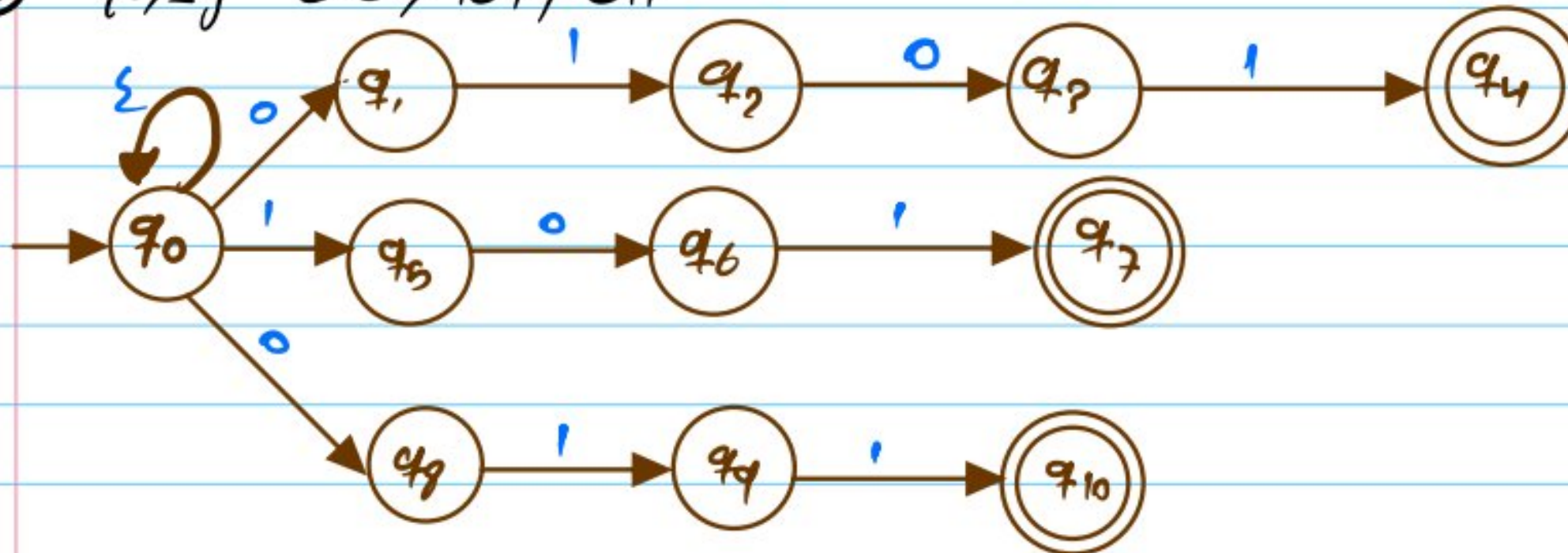
Qutaiba ALASHQAR, 20240036.

Ex / 2.4.1 // Ex / 2.4.2 //

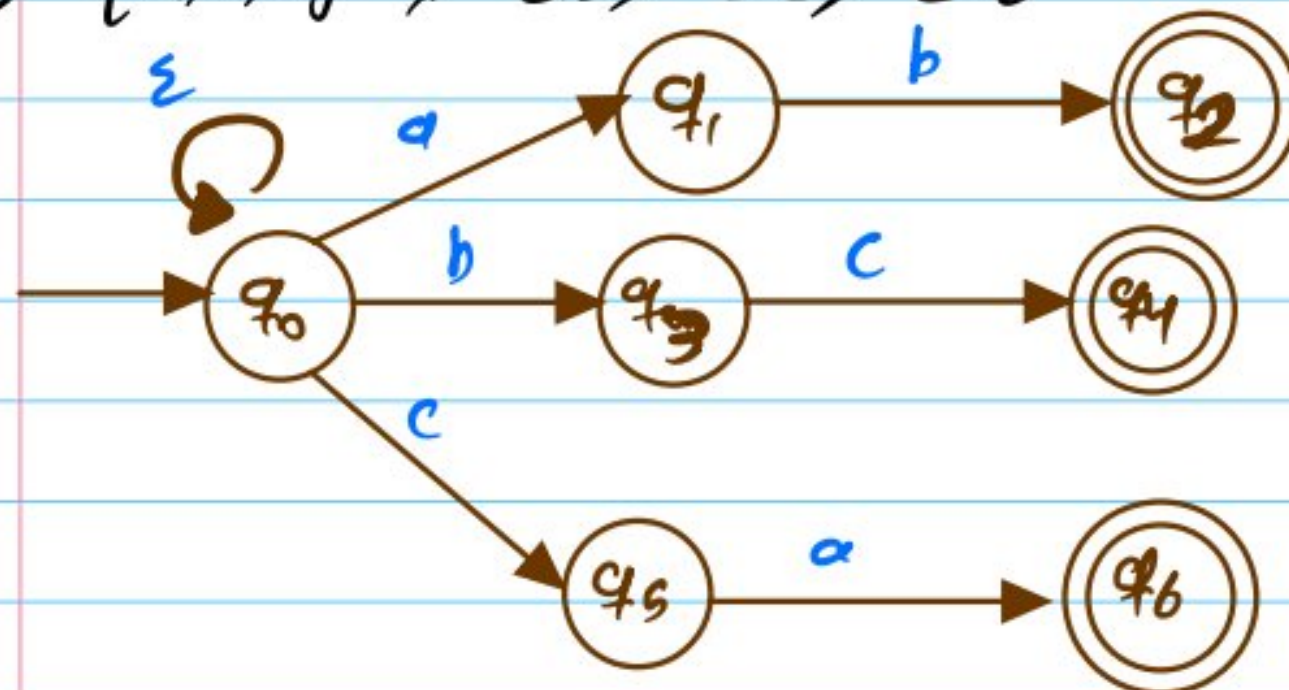
a) $\{a, b, c, d\}$, abc, abd, acd



b) $\{0, 1\}$, $0101, 101, 011$

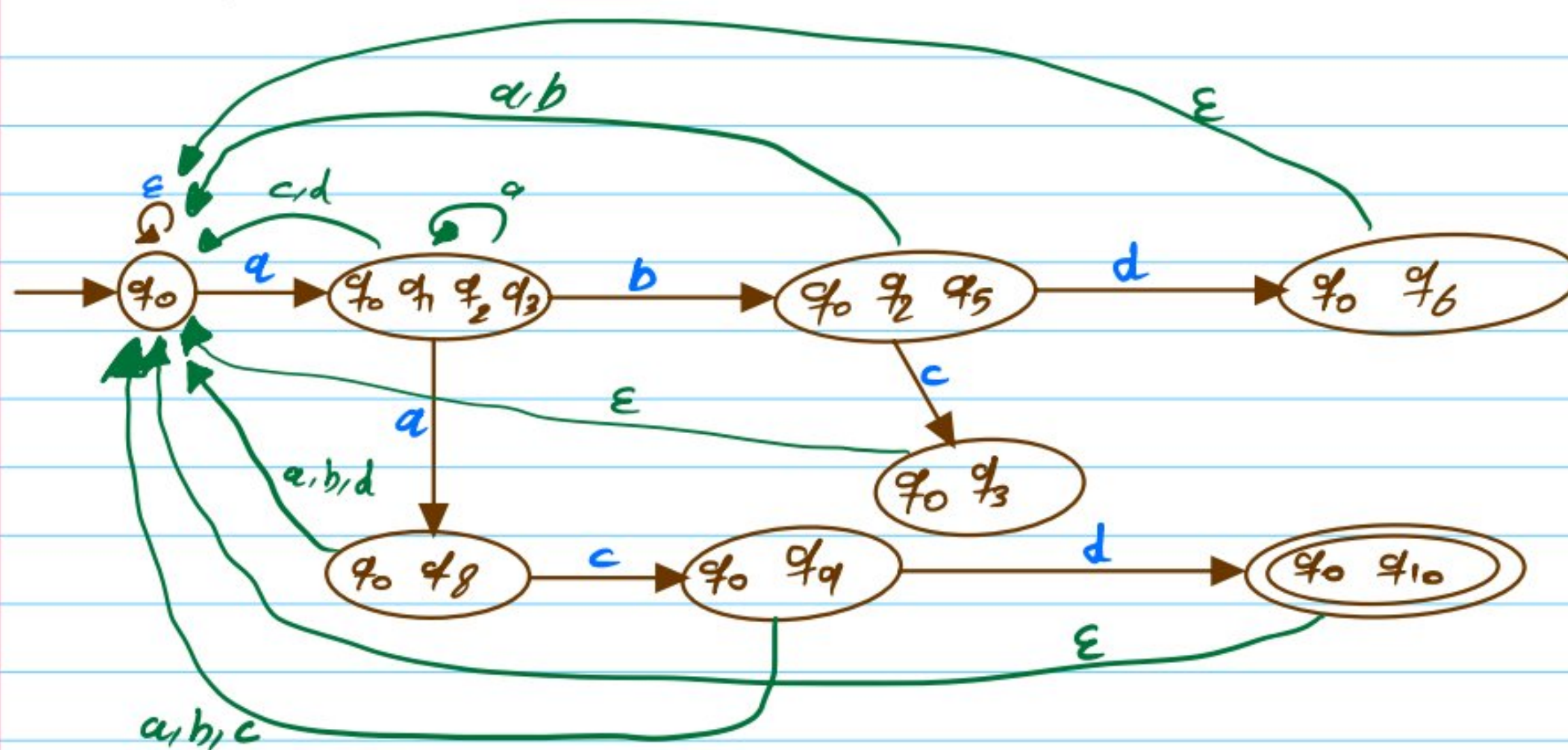


c) $\{a, b, c\}$, ab, bc, ca

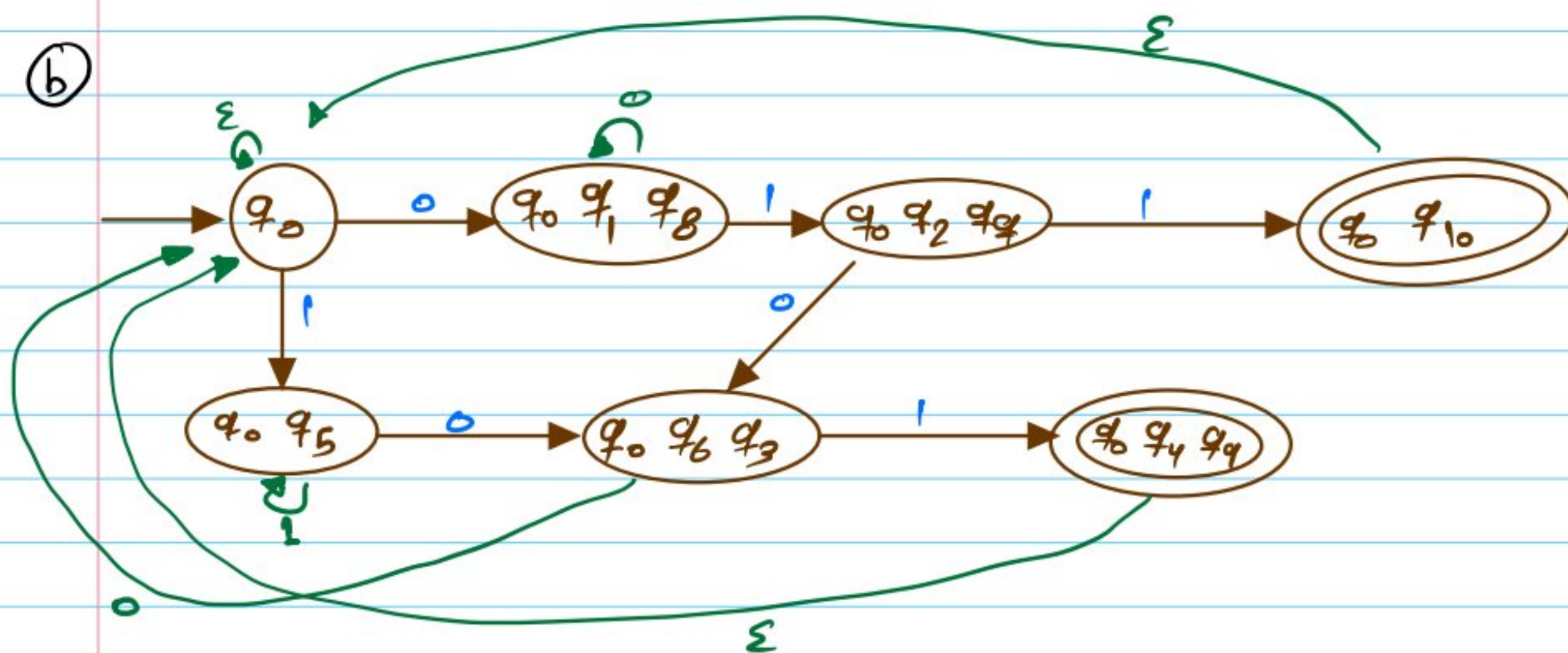


Ex / 2.4.21/

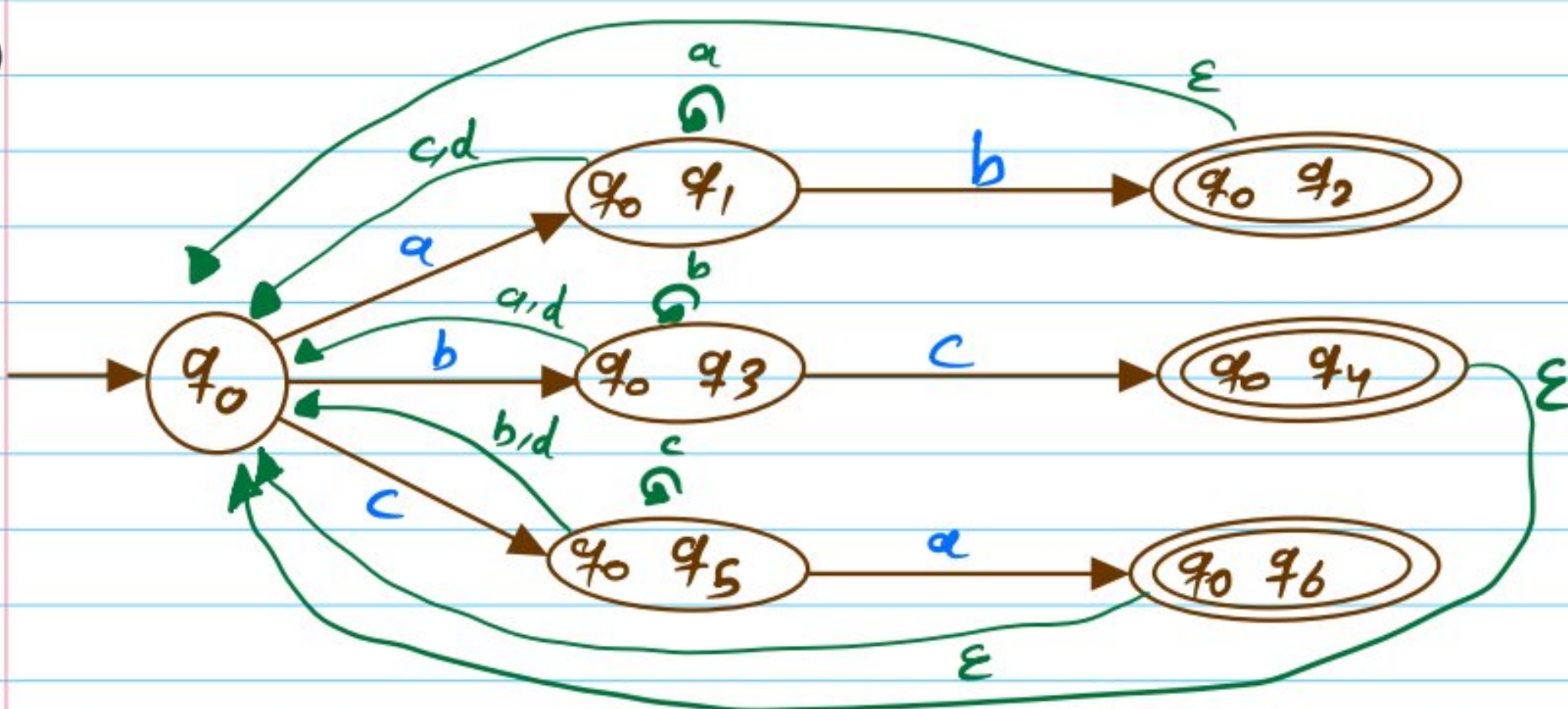
a)



b)



c)



Ex// 2.5.1 //

consider E-NFA

	ϵ	a	b	c
$\rightarrow p$	\emptyset	$\{p\}$	$\{q\}$	$\{r\}$
q	$\{p\}$	$\{q\}$	$\{r\}$	\emptyset
$*r$	$\{q\}$	$\{r\}$	\emptyset	$\{p\}$

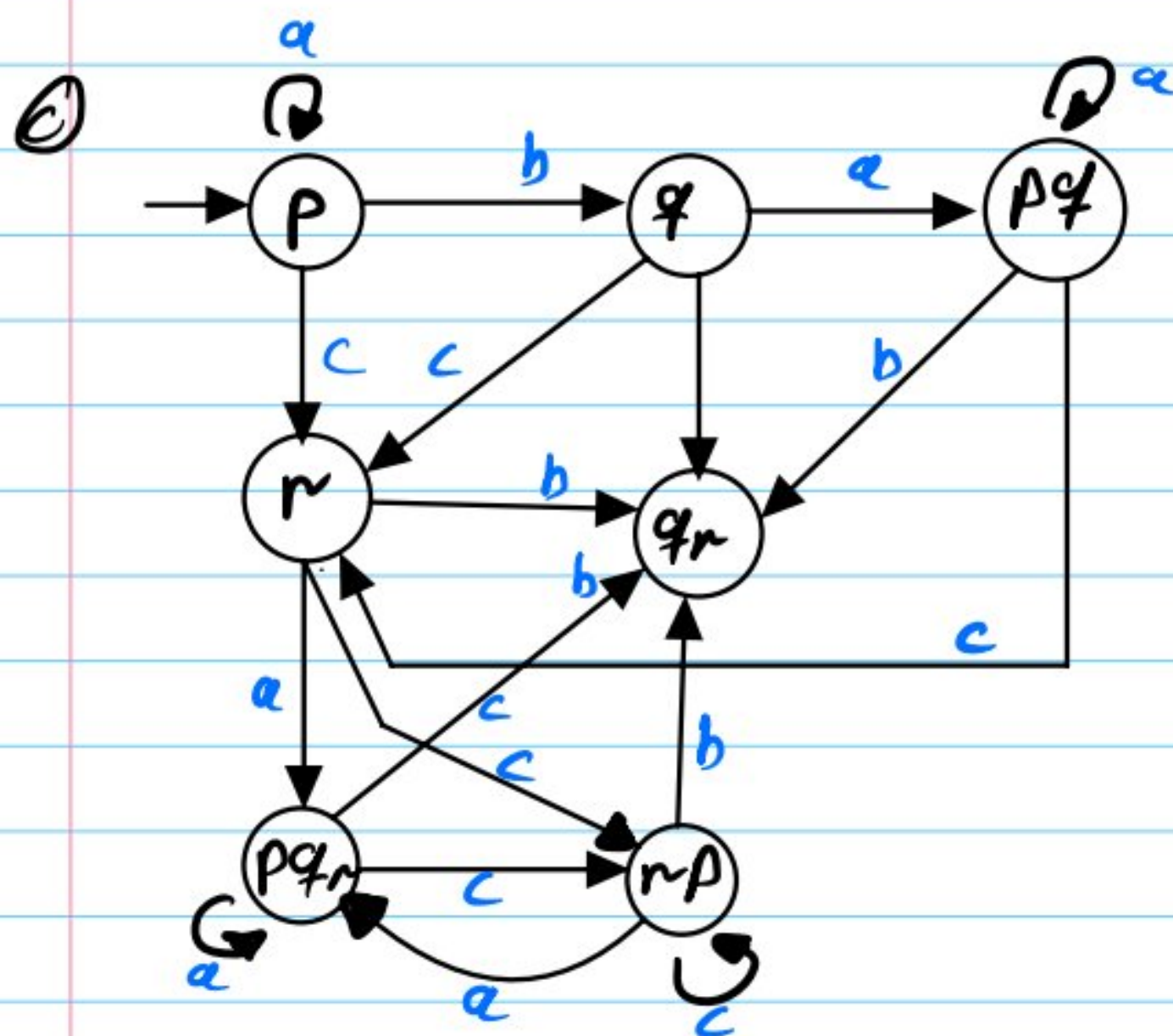
(a) E-closure

$p \rightarrow p$

$q \rightarrow p, q$

$r \rightarrow p, q, r$

(b) $\{c, ca, acb, acac, bc, ccc, cad, baab, bac, bca, cba, abc, acb\}$

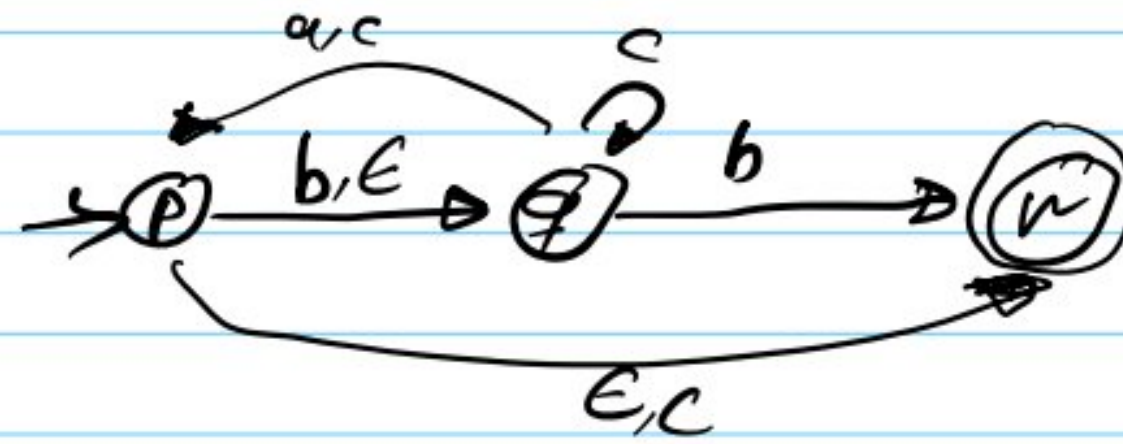


Ex // 2.5.2 //

	ϵ	a	b	c
$\rightarrow p$	$\{q, r\}$	\emptyset	$\{q\}$	$\{r\}$
q	\emptyset	$\{p\}$	$\{r\}$	$\{p, q\}$
$*r$	\emptyset	\emptyset	\emptyset	\emptyset

(a)

$p \rightarrow p, q, r$
 $q \rightarrow q$
 $r \rightarrow r$



(b) $\{\epsilon, b, c, cb, cb, ab, bb, bcb, ccb, abh, acb\}$

(c)

