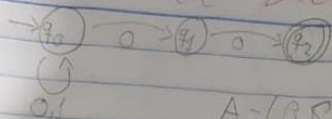


Lista de Exercícios 3

3.1) a)



$$A = (Q, \Sigma, \delta, q_0, F)$$

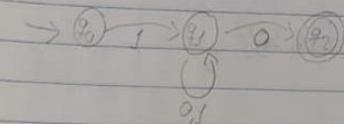
$\delta =$	0	1
$\rightarrow q_0$	$\{q_1\}$	$\{q_0\}$
q_1	$\{q_2\}$	\emptyset
$*q_2$	\emptyset	\emptyset

$$Q = \{q_0, q_1, q_2\}$$

$$\Sigma = \{0, 1\}$$

$$F = \{q_2\}$$

b)



$$A = (Q, \Sigma, \delta, q_0, F)$$

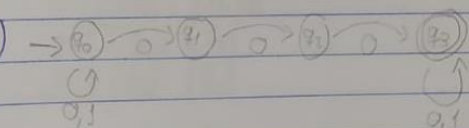
$\delta =$	0	1
$\rightarrow q_0$	\emptyset	$\{q_1\}$
q_1	$\{q_2\}$	$\{q_1\}$
$*q_2$	\emptyset	\emptyset

$$Q = \{q_0, q_1, q_2\}$$

$$\Sigma = \{0, 1\}$$

$$F = \{q_2\}$$

c)



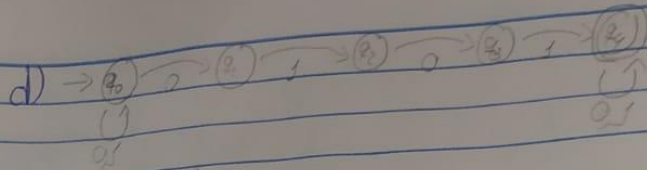
$$A = (Q, \Sigma, \delta, q_0, F)$$

$\delta =$	0	1
$\rightarrow q_0$	$\{q_1\}$	$\{q_0\}$
q_1	$\{q_2\}$	\emptyset
q_2	$\{q_3\}$	\emptyset
$*q_3$	$\{q_3\}$	$\{q_3\}$

$$Q = \{q_0, q_1, q_2, q_3\}$$

$$\Sigma = \{0, 1\}$$

$$F = \{q_3\}$$



$$A = (Q, \Sigma, \delta, q_0, F)$$

$$Q = \{q_0, q_1, q_2, q_3, q_4\}$$

$$\Sigma = \{0, 1\}$$

$$F = \{q_4\}$$

$\delta =$	Σ	Q	δ
$\rightarrow q_0$	$\{0, 1\}$	$\{q_0\}$	
q_1	\emptyset	$\{q_1\}$	
q_2	$\{0\}$	\emptyset	
q_3	\emptyset	$\{q_4\}$	
$*q_4$	$\{0, 1\}$	$\{q_1\}$	

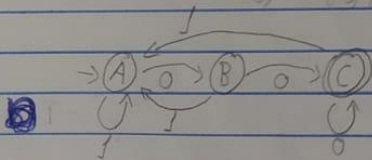
3.2) a) $D = (Q, \Sigma, \delta, q_0, F)$

$$Q = \{A, B, C\}$$

$$\Sigma = \{0, 1\}$$

$$F = \{C\}$$

$\delta =$	Σ	Q	δ
$(A) \rightarrow$	$\{0\}$	$\{B, C\}$	$\{B\}$
(B)	$\{0, 1\}$	$\{A, B, C\}$	$\{B\}$
$(C) *$	$\{0, 1\}$	$\{A, B, C\}$	$\{B\}$



b) $D = (Q, \Sigma, \delta, q_0, F)$

$$\delta =$$

$$(A) \rightarrow \{0\}$$

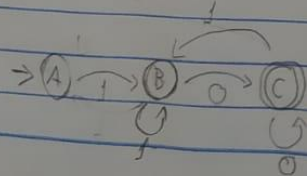
$$(B) \{0\}$$

$$(C) * \{0, 1\}$$

$$Q = \{A, B, C\}$$

$$\Sigma = \{0, 1\}$$

$$F = \{C\}$$



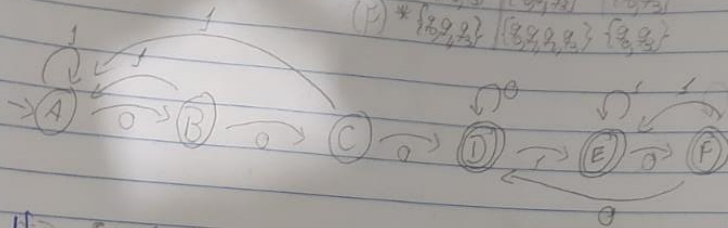
c) $D = \{Q, \Sigma, \delta, q_0, F\}$

$Q = \{A, B, C, D, E, F\}$

$\Sigma = \{0, 1\}$

$F = \{D, E, F\}$

	$\delta = \delta$	0	1
(A) \rightarrow	$\{q_0\}$	$\{q_0\}$	$\{q_0\}$
(B)	$\{q_0, q_1\}$	$\{q_0, q_1, q_2\}$	$\{q_0\}$
(C)	$\{q_1, q_2\}$	$\{q_0, q_1, q_2\}$	$\{q_0\}$
(D) *	$\{q_0, q_1, q_2\}$	$\{q_0, q_1, q_2\}$	$\{q_0, q_1\}$
(E) *	$\{q_0, q_1\}$	$\{q_0, q_1, q_2\}$	$\{q_0, q_1\}$
(F) *	$\{q_0, q_1\}$	$\{q_0, q_1, q_2\}$	$\{q_0, q_1\}$



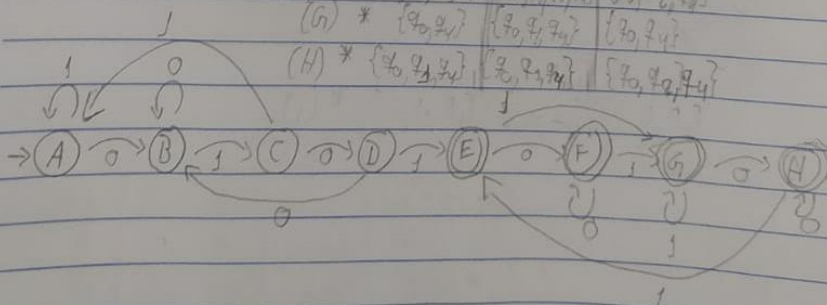
d) $D = \{Q, \Sigma, \delta, q_0, F\}$

$Q = \{A, B, C, D, E, F, G, H\}$

$\Sigma = \{0, 1\}$

$F = \{E, F, G, H\}$

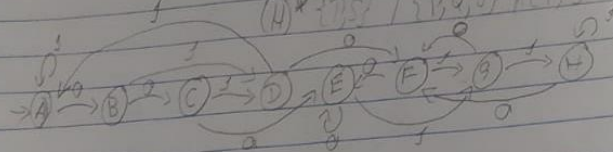
	$\delta = \delta$	0	1
(A) \rightarrow	$\{q_0\}$	$\{q_0, q_1\}$	$\{q_0\}$
(B)	$\{q_0, q_1\}$	$\{q_0, q_1, q_2\}$	$\{q_0, q_1\}$
(C)	$\{q_0, q_1\}$	$\{q_0, q_1, q_2\}$	$\{q_0\}$
(D)	$\{q_0, q_1, q_2\}$	$\{q_0, q_1\}$	$\{q_0, q_1, q_2\}$
(E) *	$\{q_0, q_1, q_2\}$	$\{q_0, q_1, q_2, q_3\}$	$\{q_0, q_1\}$
(F) *	$\{q_0, q_1, q_2, q_3\}$	$\{q_0, q_1, q_2, q_3\}$	$\{q_0, q_1, q_2\}$
(G) *	$\{q_0, q_1\}$	$\{q_0, q_1, q_2, q_3\}$	$\{q_0, q_1, q_2\}$
(H) *	$\{q_0, q_1, q_2, q_3\}$	$\{q_0, q_1, q_2, q_3\}$	$\{q_0, q_1, q_2, q_3\}$



3.3) $D = (Q, \Sigma, P, q_0, F)$

$P =$	δ	0	1
(A) $\rightarrow P$	$\{PQ\}$	$\{P\}$	
(B) $\{PQ\}$	$\{PQR\}$	$\{PR\}$	
(C) $\{PQR\}$	$\{PQRS\}$	$\{PR\}$	
(D) $\{PR\}$	$\{PQ, S\}$	$\{P\}$	
(E) $\{PQRS\}$	$\{PQRS\}$	$\{PR, S\}$	
(F) $\{PQRS\}$	$\{PQRS\}$	$\{PR, S\}$	
(G) $\{PR, S\}$	$\{PQ, S\}$	$\{P, S\}$	
(H) $\{P, S\}$	$\{PQ, S\}$	$\{P, S\}$	

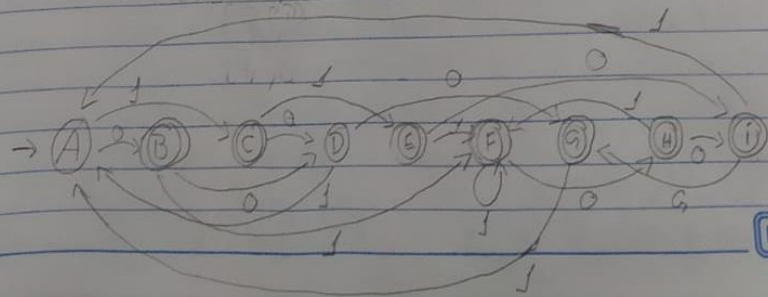
$Q = \{A, B, C, D, E, F, G, H\}$
 $\Sigma = \{0, 1\}$
 $F = \{E, F, G, H\}$



3.4) $D = (Q, \Sigma, P, q_0, F)$

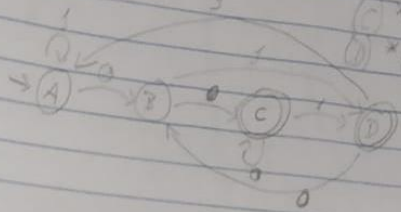
$P =$	δ	0	1
(A) $\rightarrow P$	$\{PQ\}$	$\{P\}$	
(B) $\{PQ\}$	$\{R\}$	$\{PQR\}$	
(C) $\{PQ\}$	$\{R\}$	$\{Q, R\}$	
(D) $\{R\}$	$\{S\}$	$\{P\}$	
(E) $\{PQR\}$	$\{RS\}$	$\{PQR\}$	
(F) $\{PQR\}$	$\{Q, R\}$	$\{Q, R\}$	
(G) $\{S\}$	\emptyset	$\{P\}$	
(H) $\{Q, R\}$	$\{RS\}$	$\{PQR\}$	
(I) $\{RS\}$	$\{S\}$	$\{P\}$	

$Q = \{A, B, C, D, E, F, G, H, I\}$
 $\Sigma = \{0, 1\}$
 $F = \{B, C, E, F, G, H, I\}$



3.5) $D = (Q, \Sigma, \delta, q_0, F)$

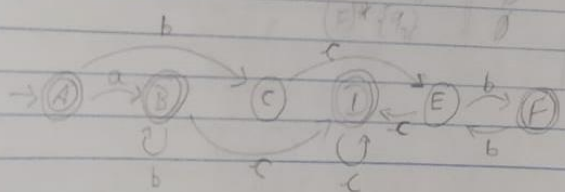
S	P	Q	r
(A) $\rightarrow \{P\}$	$\{P, Q\}$	$\{P\}$	
(A) $\rightarrow \{P, Q\}$	$\{P, P, Q\}$	$\{P, P\}$	
(C) $\rightarrow \{P, Q, R, S\}$	$\{P, Q, R, S\}$	$\{P, P\}$	
(D) $\rightarrow \{P, R\}$	$\{P, Q\}$	$\{P\}$	



$Q = \{A, B, C, D\}$
 $\Sigma = \{0, 1\}$
 $F = \{C, D\}$

3.6) $D = (Q, \Sigma, \delta, q_0, F)$

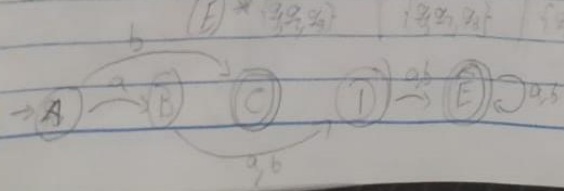
S	P	a	b	c
(A) $\rightarrow \{q_0\}$	$\{q_1, q_2\}$	$\{q_3\}$	\emptyset	
(B) $\rightarrow \{q_1, q_2\}$	\emptyset	$\{q_1, q_3\}$	$\{q_4\}$	
(C) $\rightarrow \{q_3\}$	\emptyset	\emptyset	$\{q_1\}$	
(D) $\rightarrow \{q_2\}$	\emptyset	\emptyset	$\{q_1\}$	
(E) $\rightarrow \{q_1\}$	\emptyset	$\{q_3\}$	$\{q_4\}$	
(F) $\rightarrow \{q_4\}$	\emptyset	$\{q_3\}$	\emptyset	



3.7) $D = (Q, \Sigma, \delta, q_0, F)$

S	P	a	b
(A) $\rightarrow \{q_0\}$	$\{q_1, q_3\}$	$\{q_3\}$	
(B) $\rightarrow \{q_1, q_3\}$	$\{q_1, q_3\}$	$\{q_1, q_3\}$	
(C) $\rightarrow \{q_3\}$	\emptyset	\emptyset	
(D) $\rightarrow \{q_1, q_3\}$	$\{q_1, q_3, q_4\}$	$\{q_1, q_3, q_4\}$	
(E) $\rightarrow \{q_3, q_4, q_5\}$	$\{q_3, q_4, q_5\}$	$\{q_3, q_4, q_5\}$	

$Q = \{A, B, C, D, E\}$
 $\Sigma = \{a, b\}$
 $F = \{C, E\}$



3.8) $D = (Q, \Sigma, P, \delta, F)$

$Q = \{A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S\}$

$\Sigma = \{a, b, c\}$

$F = \{A, C, E, G, I, K, M, O, Q, R, S\}$

	a	b	c
A	B	C	D
B	C	D	E
C	D	E	F
D	E	F	G
E	F	G	H
F	G	H	I
G	H	I	J
H	I	J	K
I	J	K	L
J	K	L	M
K	L	M	N
L	M	N	O
M	N	O	P
N	O	P	Q
O	P	Q	R
P	Q	R	S
Q	R	S	A
R	S	A	B
S	A	B	C

