

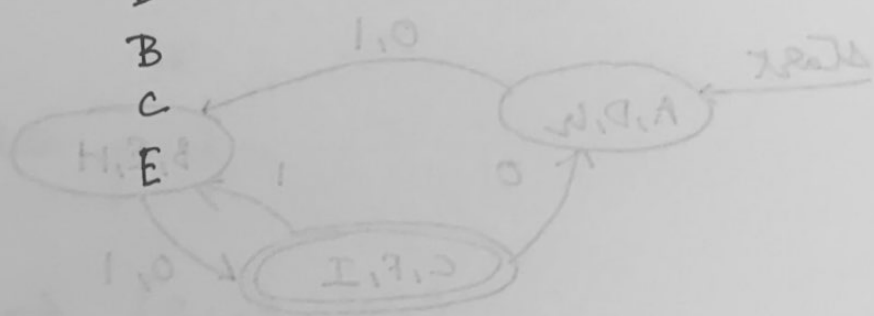
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4-B.

1BM18CS090

(1)

δ	θ	ι
\rightarrow A	B	E
B	C	F
* C	D	H
D	E	H
E	F	I
* F	G	B
G	H	B
H	I	C
* I	A	E



B	X							
C	X	X						
D		X	X					
E	X		X	X				
F	X	X		X	X			
G		X	X		X	X		
H	X		X			X	X	
I	X	X		X	X		X	X
	A	B	C	D	E	F	G	H

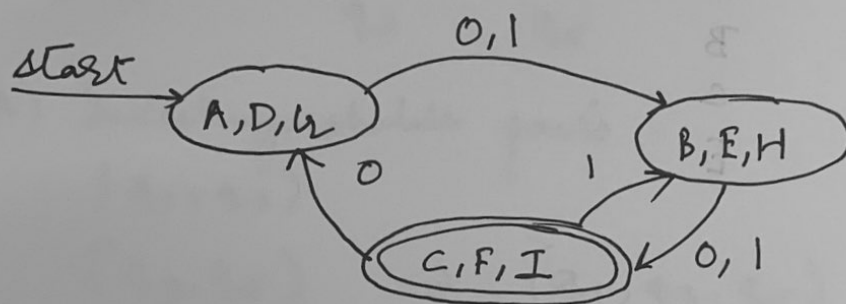
In distinguishable pairs:-

(A, D) (A, G) $(D, G) \Rightarrow (A, D, G)$
 (B, H) (B, E) $(E, H) \Rightarrow (B, E, H)$
 (C, F) (C, I) $(F, I) \Rightarrow (C, F, I)$

Transition Table

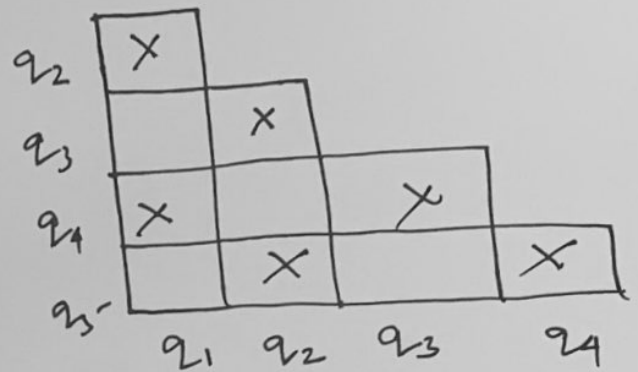
	$\{$	\emptyset	1
\rightarrow	(A, D, U)	(B, E, H)	(B, E, H)
	(B, E, H)	(C, F, I)	(C, F, I)
$*$	(C, F, I)	(A, D, U)	(B, E, H)

Transition Diagram



2)

	δ	0	1
$\rightarrow q_1$	q_2	q_3	
q_2	q_3	q_5	
* q_3	q_4	q_3	
q_4	q_3	q_5	
* q_5	q_2	q_5	



(a) Indistinguishable pairs :-

(q_1, q_3)

$(q_3, q_5) \Rightarrow (q_1, q_3, q_5)$

(q_1, q_5)

(q_2, q_4)

Transition Table. :-

	δ	0	1
\rightarrow *	(q_1, q_3, q_5)	(q_2, q_4)	(q_1, q_3, q_5)
	(q_2, q_4)	(q_1, q_3, q_5)	(q_1, q_3, q_5)

(b) DFA.

