

Design the following DFA using table filling algorithm where A is the start state. The states C, F & I are the final states.

$\delta$	0	1
$\rightarrow$ 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								
* C	X	X							
D				X					
E				X					
* F	X	X	X	X	X	X			
G				X			X		
H				X			X		
* I	X	X		X	X		X	X	
	A	B	C	D	E	F	G	H	

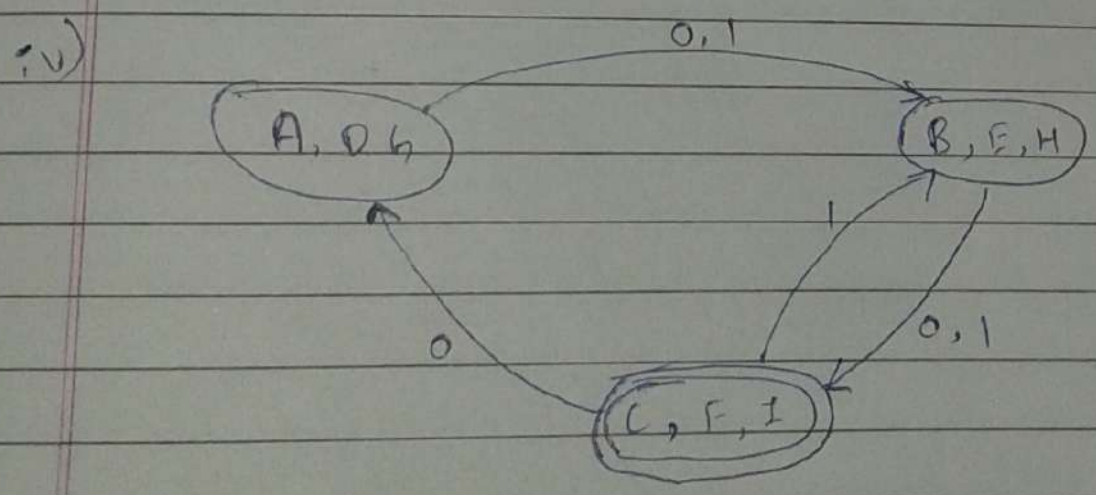
∴)

$\delta$	0	1
(A, B)	(B, C)	(E, F)
(A, D)	(B, E)	(F, H)
(A, E)	(B, F)	(E, I)
(A, G)	(B, H)	(E, B)
(A, H)	(B, I)	(E, C)
(B, D)	(C, E)	(F, H)
(B, E)	(C, F)	(F, I)

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

iii)

A, D, G	(A, D)	0	(B, E)	1	(E, H)
	(A, G)		(B, H)		(F, B)
	(D, G)		(E, H)		(H, B)
B, E, H	(B, E)		(C, F)		(F, I)
	(B, H)		(G, I)		(F, C)
	(E, H)		(F, I)		(I, C)
C, F, I	(C, F)		(D, G)		(H, B)
	(C, I)		(D, A)		(H, E)
	(F, I)		(G, A)		(B, E)





2) Consider the DFA given by the transition table

DATE:

PAGE:

$\delta$	0	1
$\rightarrow q_1$	$q_2$	$q_3$
$q_2$	$q_3$	$q_5$
$q_3$	$q_4$	$q_3$
$q_4$	$q_3$	$q_5$
$q_5$	$q_2$	$q_5$

$q_2$	X		
$q_3$	X	X	
$q_4$	X		X
$q_5$	X	X	X
	$q_1$	$q_2$	$q_3$

$\delta$	0	1
$(q_1, q_2)$	$(q_2, q_3)$	$(q_3, q_5)$
$(q_2, q_3)$	$(q_2, q_3)$	$(q_3, q_5)$
$(q_3, q_4)$	$(q_3, q_3)$	$(q_5, q_5)$
$(q_3, q_5)$	$(q_4, q_3)$	$(q_5, q_5)$
$(q_5, q_2)$	$(q_5, q_2)$	$(q_3, q_5)$

$(q_2, q_4)$	$(q_3, q_3)$	$(q_5, q_5)$
$(q_3, q_5)$	$(q_4, q_2)$	$(q_3, q_5)$

