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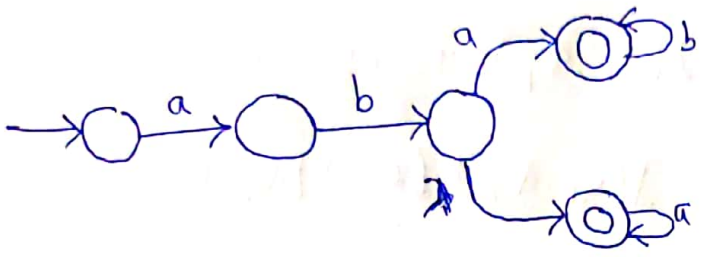
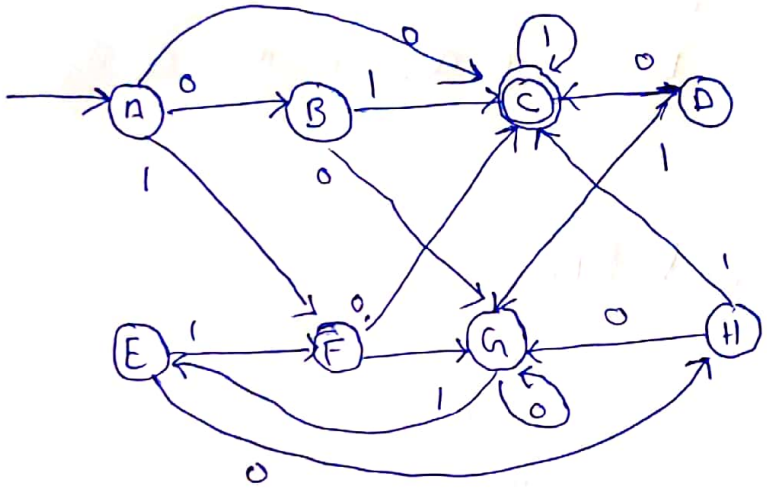
B) An nfa for the set is given by the following transition graph:



A)



(*) Replacing it by.

A - Q_0
B - Q_1
C - Q_2
D - Q_3
E - Q_4
F - Q_5
G - Q_6
H - Q_7

Step1: Try to delete all the states to which we cannot reach from initial state. [Delete D (or Q_3)]

Step2: Draw state transition table of DFA:

Present State	Next State Input a	Next State Input b
$\rightarrow Q_0$	Q_1	Q_5
Q_1	Q_6	$*Q_2$
$*Q_2$	Q_6	$*Q_2$
Q_4	Q_7	Q_5
Q_5	$*Q_2$	Q_6
Q_6	Q_6	Q_4
Q_7	Q_6	$*Q_2$

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Step 3: Find out equivalent sets:

01- Equivalent Set : $[Q_0, Q_1, Q_4, Q_5, Q_6, Q_7]\,[Q_2]$

1- Equivalent Set : $[Q_0, Q_4, Q_6]\,[Q_1, Q_7]\,[Q_5]\,[Q_2]$

2- Equivalent Set : $[Q_0, Q_4]\,[Q_6]\,[Q_1, Q_7]\,[Q_5]\,[Q_2]$

3- Equivalent Set : $[Q_0, Q_4]\,[Q_6]\,[Q_1, Q_7]\,[Q_5]\,[Q_2]$

Again, replacing it by.

A - Q_0, B - Q_1, C - Q_2, D - Q_3, E - Q_4, F - Q_5, G - Q_6

H - Q_7.

Step 4: Draw minimized DFA: