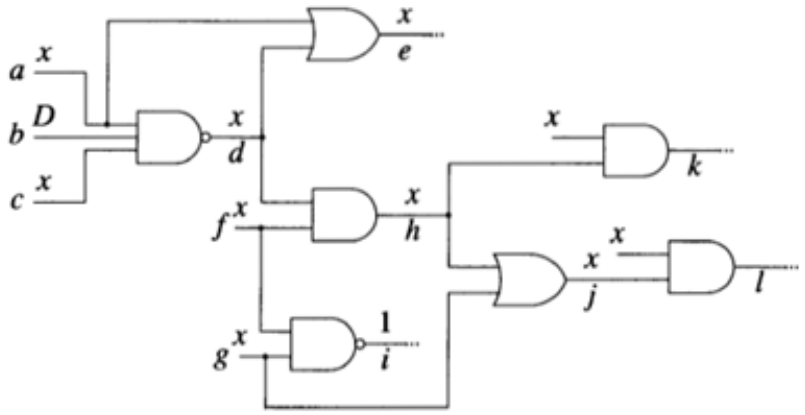
Problem 6.6 For the circuit of Figure 6.90, perform all possible implications starting from the given values.



The question is interpreted as solving the problem with the Imply and Check process to propagate fault to at least one of the outputs (e, k, l).

Figure 6.90

There is a unique D-drive through d, which implies that both a & c must equal one
(set a=c=1) ➡ d=D' and e=1

Another unique D-drive is created through h, which implies that f must equal one
(set f=1) ➡ h=D'

With f=1, g must be set to zero to satisfy the output constraint of i equal to one
(since f=i= 1) ➡ g=0

With h=D' and setting g=0 causes j = D'

The are two D-drives through k and l, which implies that the un-named inputs are equal to one
(set both un-named inputs=1) ➡ k=l=D'

Problem 6.7 For the circuit of Figure 6.91, perform all possible implications starting from the given values.

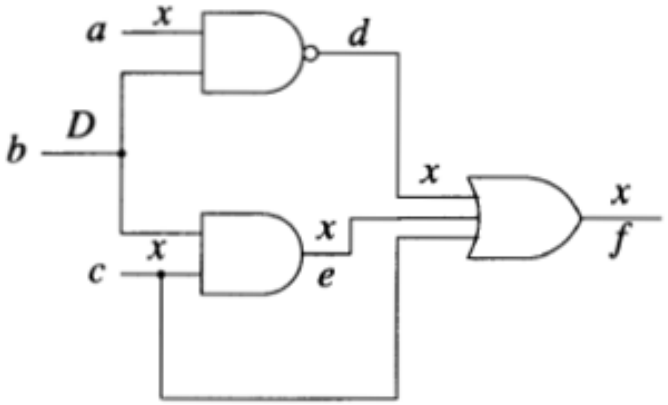


Figure 6.91

The question is interpreted as solving the problem with the Imply and Check process to propagate fault to the output f.

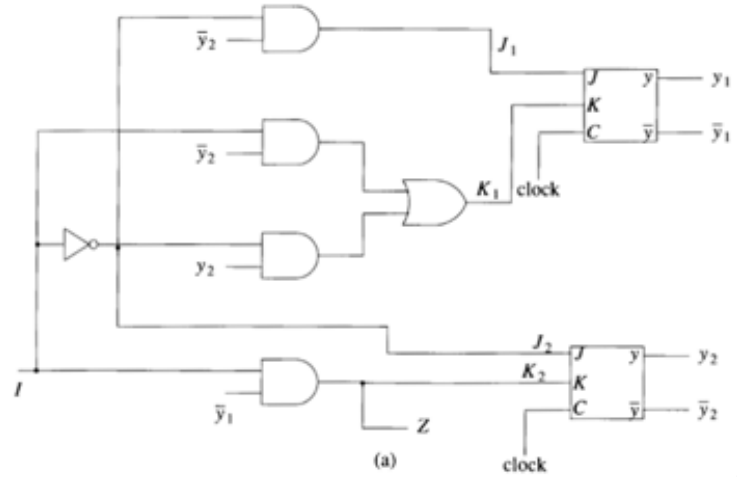
Can either propagate error through d or e.

Trying to propagate error through e would imply that c must equal one, however with c=1 it follows that f=1 which results in a failure.

Trying to propagate error through d would imply that a must equal one, then d=D'
A unique D-drive through f implies that c &e = 0.
Setting c=0 implies that e=0, therefore f=D'

6.33 Derive a self-initializing test sequence for the fault J1 s-a-1 in the circuit of Figure 6.77.

q+=Jq'+qK'



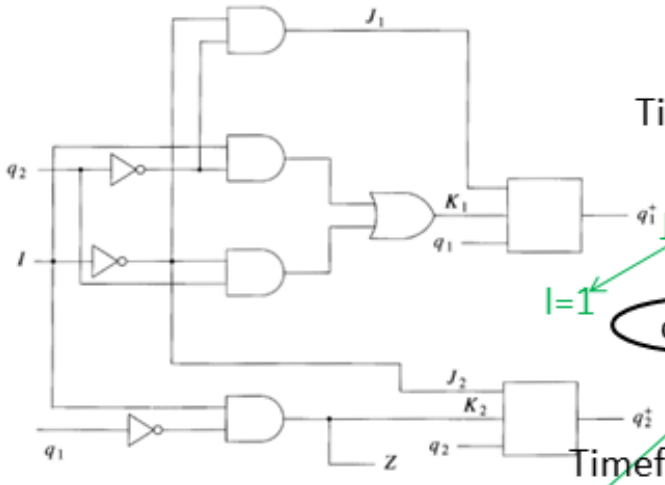
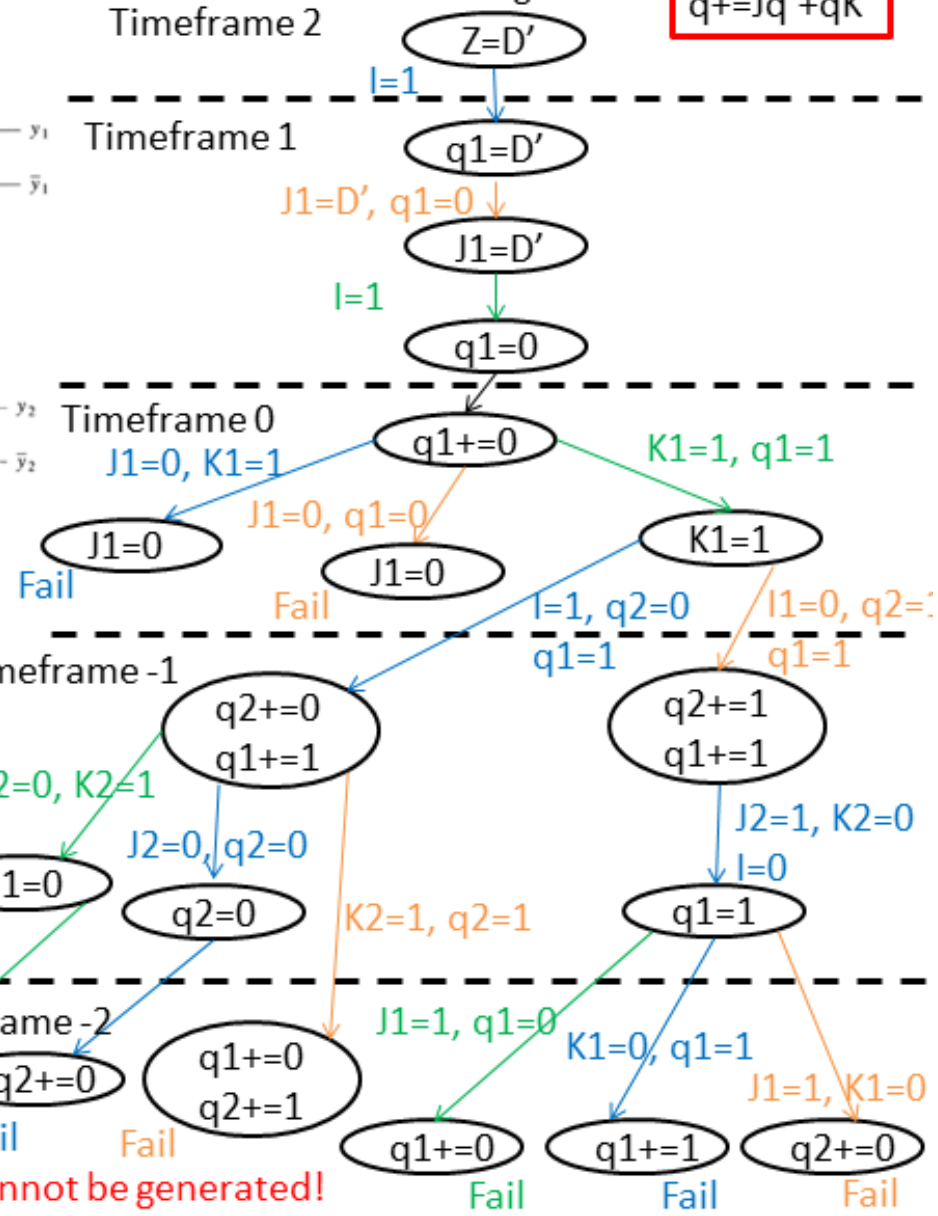


Figure 6.77



It is believed that a self-initializing test cannot be generated!