**Step 1: Partition E into n mutually singular components and label nodes**

e1 = a + b

e2 = c + !cd



Label the nodes:



**Step 2: Generate the BOR-CSET constraint for each singular component**

For component e1:



N3 is an OR node

SN3t = (SN1t × {(fN2)})  ({(fN1)} × SN2t)

= ({(t)} × {(f)})  ({(f)} × {(t)})

= {(t, f)}  {(f, t)}

= {(t, f), (f, t)}

SN3f = SN1f  SN2f

= {(f)} {(f)}

= {(f, f)}



**Step 3: Generate the MI- constraint set for each nonsingular component**

e2 = c + !cd

e2 can be written as e2 = u + v where u = c and v = !cd

Tu = {(t, t), (t, f)} Tv = {(f, t)}

TSu = {(t, t), (t, f)} TSv = {(f, t)}

Se2t includes 1 constraint from each TS

Se2t = {(t, t), (f, t)}

**Step 4: Construct F of each of the above true**

u1 = !c v1 = cd v2 = !c!d

Fu1 = {(f, t), (f, f)} Fv1 = {(t, t)} Fv2 = {(f, f)}

**Step 5: Eliminate candidates FS that are true**

FSu1= {(f, f)} FSv1 = {} FSv2 = {(f, f)}

**Step 6: Make SEf minimal**

Se2f = N4f = {(f,f)}

**Step 7: Construct constraint for E**

Se2 = Se2t  Se2f = N4 = {(t, t), (f, t), (f, f)}



**Combine the constraint sets**

N5 is an AND node

SN5t = SN3t  SN4t

= {(t, f), (f, t)}  {(t, t), (f, t)}

= {(t, f, t, t), (f, t, f, t)}

SN5f = (SN3f × {tN4})  ({tN3} × SN4f)

= ({(f, f)} × {(t, t)})  ({(t, f)} × {(f, f)})

= {(f, f, t, t), (t, f, f, f)}

N5 = {(t, f, t, t), (f, t, f, t), (f, f, t, t), (t, f, f, f)}



**Test cases: {t1:<t, f, t, t>, t2: <f, t, f, t>, t3: <f, f, t, t>, t4: <t, f, f, f>}**