

Systemes Logiques

I/A $F = (a++c)/(b++d)/$

I/B $F = (a++c)/(b++d)+(c++b).(d++a)/$

II/A $F=(x++y)=((x+y)/(x+y/)/)/$

II/B $F=(x++y)++z=((x+y+z)/(x+y/z/)/+(x/y+z/)/+(x/y/z/)/)/$

III/A $F = (c/a + c.b/ + c.a/)/ = [(((c/a)/)((c.b/)/))]/((c.a/)/)/$

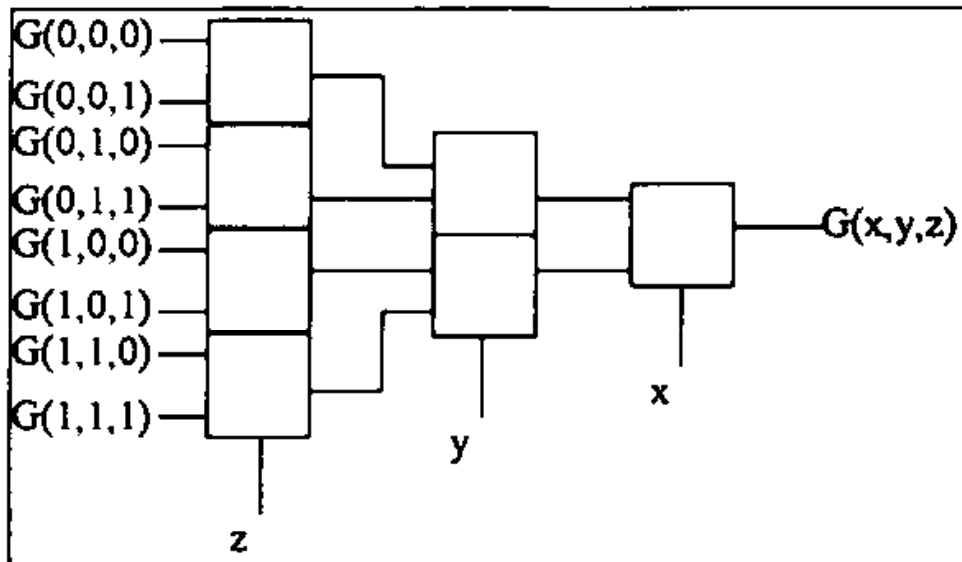
temps de propagation = $5 * 4ns = 20ns$

Ou

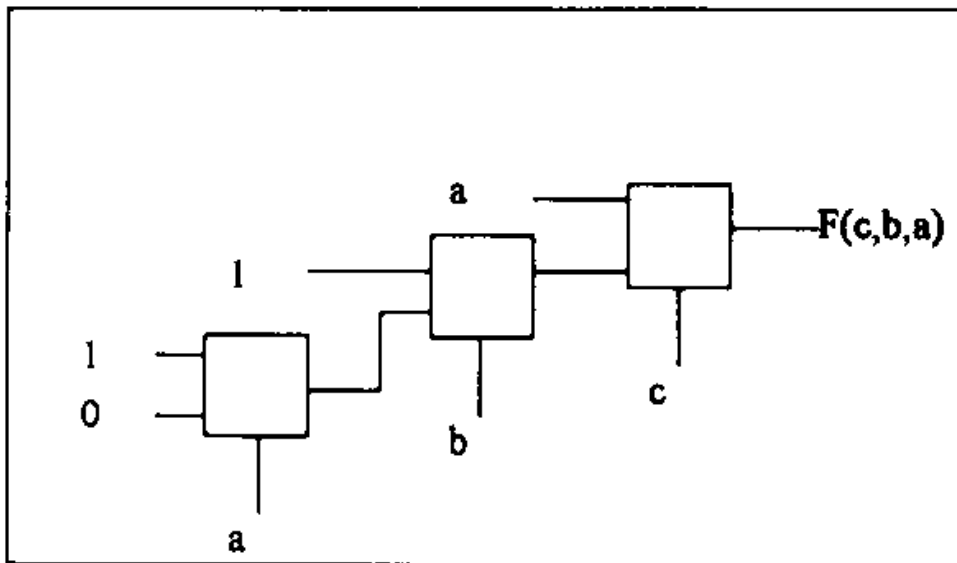
$F = (c/a + c.b/ + c.a/) = c/a + c.(b/ + a/) = (c/a + c.(a.b/)/)/ = [((c/a)/)((c.(a.b/)/)/)/$

temps de propagation = $3 * 4ns = 12ns$

III/B



III/c



IV/B $Y3 = A8/(A7+A8) = A8/A7/$

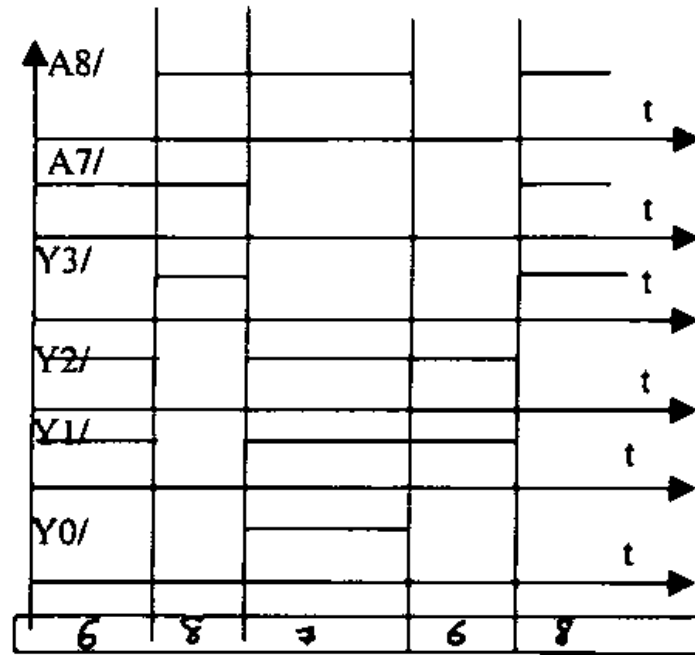
$Y2 = (A6+A7+A8)(A5/A6+A7+A8)(A4/A5+A6+A7+A8)(A3/A4+A5+A6+A7+A8)$

$Y2 = A7+A8+A6/A5/A4/A3/$

$$Y1/=(A6/+A7+A8)(A5/+A6+A7+A8)(A2/+A3+A4+A5+A6+A7+A8)(A1/+A2+A3+A4+A5+A6+A7+A8)$$

$$Y1/=((A7/.A8/).(A6+A5+A2A3/A4/+A1.A3/A4/))/$$

IV/C



V/A $Y0/=E+X+Y,$ $Y1/=E+X+Y/,$ $Y2/= E+X/+Y,$
 $Y3/= E+X/+Y/,$

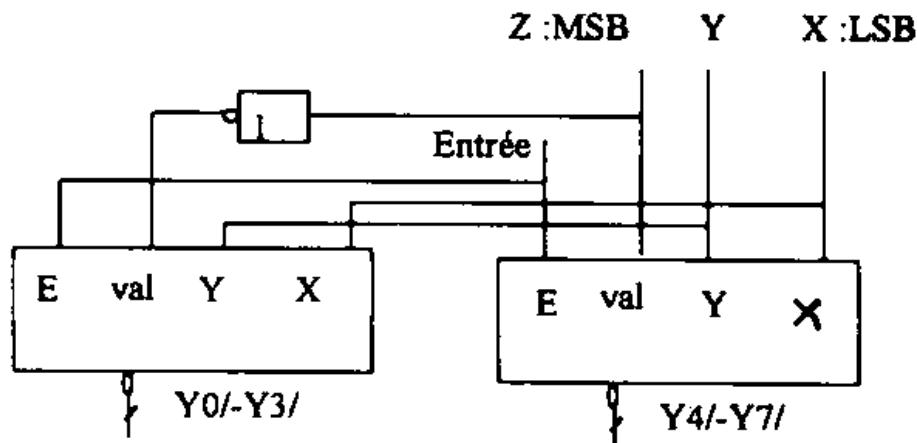
V/B $E=0,$ Non-ET = Y3/, Non-ou=Y1/.Y2/.Y3/, $(X :+ :Y)/=Y1/.Y2/$

V/C

| val | X | Y | Y0/ | Y1/ | Y2/ | Y3/ |
|-----|---|---|----------|----------|----------|----------|
| 0 | x | x | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | E | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | E | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 | E | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | E |

$Y0/=val/+E+X+Y,$ $Y1/= val/+E+X+Y/,$ $Y2/= val/+E+X/+Y,$
 $Y3/= val/+ E+X/+Y/,$

V/D



V/E Entrée=0, $(X :+ :Y :+Z)=Y0/.Y3/.Y5/.Y6/.$