1. a) $Y = BC + A'B'C' + BC'$

$= (BC + BC') + A'B'C'$

$= B + A'B'C'$ (combining)

$= (B + B')(B + A'B'C') = B + A'C'$

b) $y = (A + A'B + A'B')' + (A + B')'$

$= (A + A'(B + B'))' + (A + B')'$ (combining)

$= 1' + A' \cdot B''$ (De Morgan)

$= 0 + A' \cdot B$

$= A'B$

2. Rút gọn các biểu thức

a) $F(x, y, z, w) = xz + yw + xz'$

$= x(z + z') + yw$ (phối hợp)

$= x + yw$

x	y	w	yw	F(x, y, z, w)
0	0	0	0	0
0	0	1	0	0
0	1	0	0	0
0	1	1	1	1
1	0	0	0	1
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

b) $F(x, y, z) = (x + z)'(x + y')$

$= x'z'(x + y')$ (De Morgan)

$= xx'z' + x'y'z'$ (phân bố)

x	y	z	y'	z'	xx'z'	x'y'z'	F
0	0	0	1	1	0	1	1
0	0	1	1	0	0	0	0
0	1	0	0	1	0	0	0
0	1	1	0	0	0	0	0
1	0	0	1	1	0	0	0
1	0	1	1	0	0	0	0
1	1	0	0	1	0	0	0
1	1	1	0	0	0	0	0

c) $F(x,y,z,w) = x'y'z + x'z'w' + xzw' + xy'w$

p2 mới:

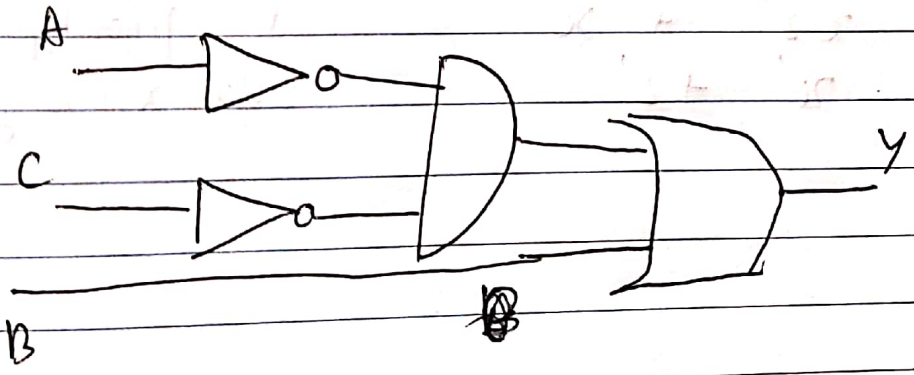
Xét $F = 1 \Leftrightarrow$ $\begin{cases} x'y'z = 1 \\ x'z'w' = 1 \\ xzw' = 1 \\ xy'w = 1 \end{cases} \Leftrightarrow \begin{cases} x=0, y=0, z=1 \\ x=0, z=0, w=0 \\ x=1, z=1, w=0 \\ x=1, y=0, w=1 \end{cases}$

$\Leftrightarrow$

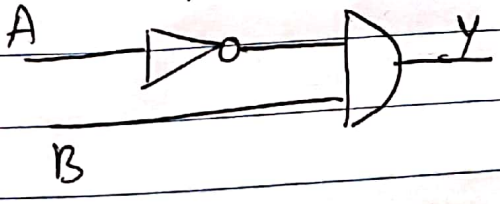
x	y	z	w	F
0	0	0	0	1
0	0	0	1	0
0	0	1	0	1
0	0	1	1	1
0	1	0	0	1
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0

x	y	z	w	F
1	0	0	0	0
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	0
1	1	0	1	0
1	1	1	0	1
1	1	1	1	0

3. a) $Y = B + A'C'$



b) $Y = A'B$



4) a) $z + xy + y = (x + xy) + y$ (thu hút)

$= x + y$

b) $xy + x'z + yz$

x	y	z	xy	x'z	yz	xy + x'z	xy + x'z + yz
0	0	0	0	0	0	0	0
0	0	1	0	1	0	1	1
0	1	0	0	0	0	0	0
0	1	1	0	1	1	1	1
1	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0
1	1	0	1	0	0	1	1
1	1	1	1	0	1	1	1

c) $x'y'z + yz + xy$

$= z(x'y' + y) + xy$ (phối)

$= z(y + x') + xy$ (do $x + x'y = x + y$)

$= x'yz + zy + xy$

$= x'z + xy$ (câu b)

d) $xy'z' + x' + xyz'$

$= (xy'z' + xyz') + x'$

$= xz' + x'$ (phối hợp)

$= x' + z'$ (do $x + x'y = x + y$)