(y) $DX = 1 \rightarrow A=1 + (B=1 \quad \text{or} \quad D=0)$, $C=1$

$DY=1 \rightarrow (B=0 \quad \text{or} \quad A=0) + D=1$, $B=0$

$DY = 1 \rightarrow B=0 \quad \text{or} \quad (D=1 + A=0)$, $C=0$

A	B	C	D	DX	DY
0	0	0	0	0	1
0	0	0	1	0	1
0	0	1	0	0	0
0	0	1	1	0	0
0	1	0	0	0	0
0	1	0	1	0	1
0	1	1	0	0	0
0	1	1	1	0	0
1	0	0	0	0	1
1	0	0	1	0	1
1	0	1	0	1	0
1	0	1	1	0	0
1	1	0	0	0	0
1	1	0	1	0	0
1	1	1	0	1	0
1	1	1	1	1	0

$DX = \sum(10, 14, 18)$, $DY = \sum(0, 1, 5, 8, 9)$

	C'D'	C'D	CD	CD'
A'B'	0	1	3	2
A'B	4	5	7	6
AB	12	13	1 (15)	1 (14)
AB'	8	9	11	1 (10)

	C'D'	C'D	CD	CD'
A'B'	1 (0)	1 (1)	3	2
A'B	4	1 (5)	7	6
AB	12	13	14	15
AB'	1 (8)	1 (9)	11	10

$DX = ABC + ACD'$ $DY = A'B'C' + A'C'D$

(2) $R=1 \Rightarrow C=1 + [D=0 \text{ or } (A=1 + B=1)]$

OR

$C=0 + [(A=0 + D=0) \text{ or } (B=0)]$

$G=1 \Rightarrow B=0 \text{ or } (D=1 \text{ or } + A=0)$

A	B	C	D	R	G
0	0	0	0	1	1
0	0	0	1	1	1
0	0	1	0	1	1
0	0	1	1	0	1
0	1	0	0	1	0
0	1	0	1	0	0
0	1	1	0	1	0
0	1	1	1	0	0
1	0	0	0	1	1
1	0	0	1	1	1
1	0	1	0	0	1
1	0	1	1	0	0
1	1	0	0	0	0
1	1	0	1	0	0
1	1	1	0	1	0
1	1	1	1	1	0

$R = \Sigma(0,1,2,4,6,8,9,10,14,15)$

	C'D'	C'D	CD	CD'
A'B'	1 (0)	1 (1)	(3)	1 (2)
A'B	1 (4)	(5)	(7)	1 (6)
AB	(12)	(13)	1 (15)	1 (14)
AB'	1 (8)	1 (9)	(11)	1 (10)

$R = CD' + ABC + A'C'D' + B'C'$

$G = \Sigma(0,1,2,3,5,7,8,9,10\ldots$

	A'D'	C'D	CD	CD'
A'B'	1 (0)	1 (1)	1 (3)	(2)
A'B	(4)	1 (5)	1 (7)	(6)
AB	(12)	(13)	(15)	(14)
AB'	1 (8)	1 (9)	1 (11)	1 (10)

$G = AB' + A'D + A'B'C'$

(B) A=1 → G=0 + M=1 ✓
→ M=1 + (D=0 or L=1)
→ G=0 + L=1 + M=1 ✓
→ L=0 + M=0 + D=1 ✓

G	M L	D	m	A
0	0	0	0	0
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	1
1	0	1	0	1
1	0	1	1	0
1	1	0	0	0
1	1	0	1	1
1	1	1	0	0
1	1	1	1	1

$A = \Sigma(1,2,3,5,7,9,10,13,15)$

	D'm'	D'm	Dm	Dm'
G'L'	0	1 [1]	3 [1]	2 [1]
G'L	4	5 [1]	7 [1]	6
GL	12	13 [1]	15 [1]	14
GL'	8	9 [1]	11	10 [1]

$A = D'M + GL'DM' + G'M + LDM$

G L D M
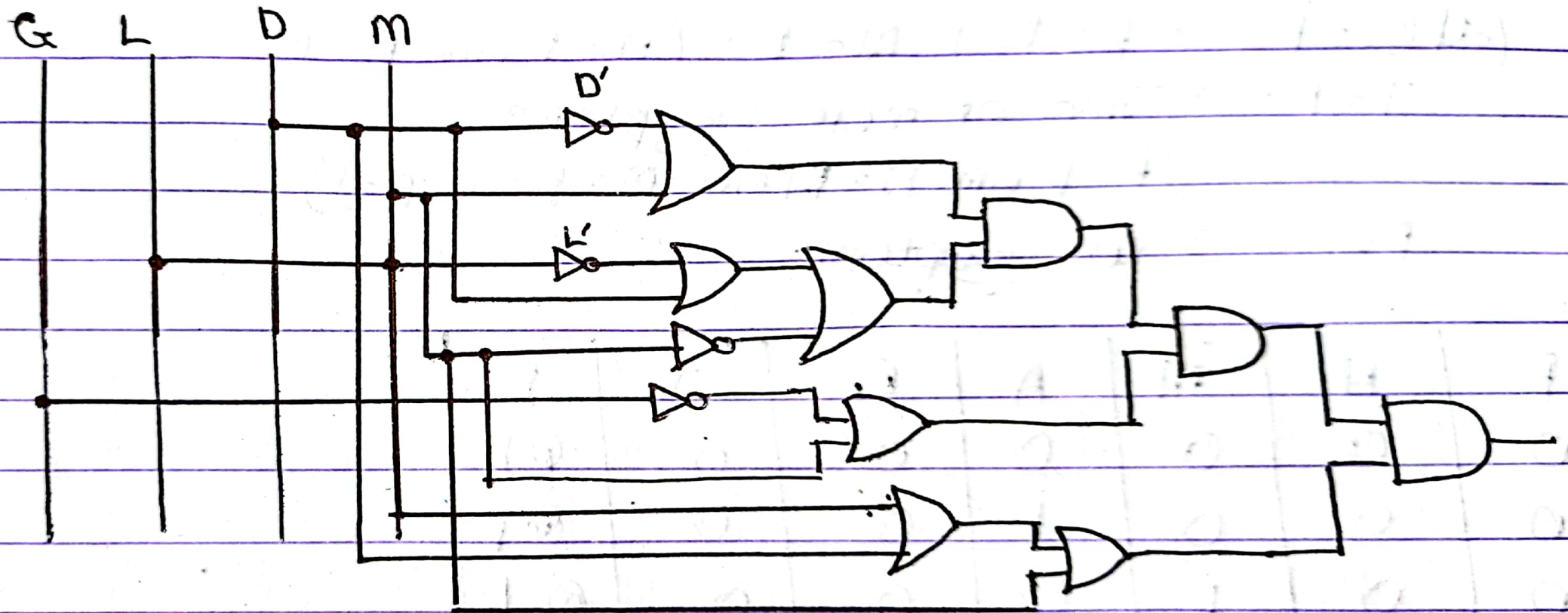
(A) Q=1 → F=1 + M=1 + (H=1 or A=1)

T=1 → Two or more Symptoms

(F=1 or H=0 or M=1 or A=1)

F=1 → no symptoms

F	H	M	A	Q	T	F
0	0	0	0	0	0	1
0	0	0	1	0	0	1
0	0	1	1	0	1	1
0	0	1	0	0	1	0
0	1	0	0	0	0	0
0	1	0	1	0	1	0
0	1	1	1	0	1	0
0	1	1	1	0	1	0
1	0	0	0	0	0	0
1	0	0	1	0	1	0
1	0	1	1	0	1	0
1	1	1	1	1	1	0
1	1	0	0	0	1	0
1	1	0	1	0	1	0
1	1	1	0	0	1	0
1	1	1	1	1	1	0

Q = Σ(1, 4, 15)

	M'A'	M'A	MA	MA'
F'H'	0	1	3	2
F'H	4	5	7	6
FH	12	13	1 15	1 14
FH'	8	9	1 11	10

T = Σ(3, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15)

	M'A'	M'A	MA	MA'
F'H'	0	1	1 3	2
F'H	4	1 5	1 7	1 6
FH	1 12	1 13	1 15	1 14
FH'	8	1 9	1 11	1 10

Q = FHM + FMA

T = MA + FH

$$F = \Sigma(0,1,2,5,9)$$

	m'A'	m'A	mA	mA'
F'H'	1 (0)	1 (1)	(3)	1 (2)
F'H	(4)	1 (5)	(7)	(6)
FH	(12)	(13)	(15)	(14)
FH'	(8)	1 (9)	(11)	(10)

$$f = F'H'm' + F'm'A + F'H'A'$$