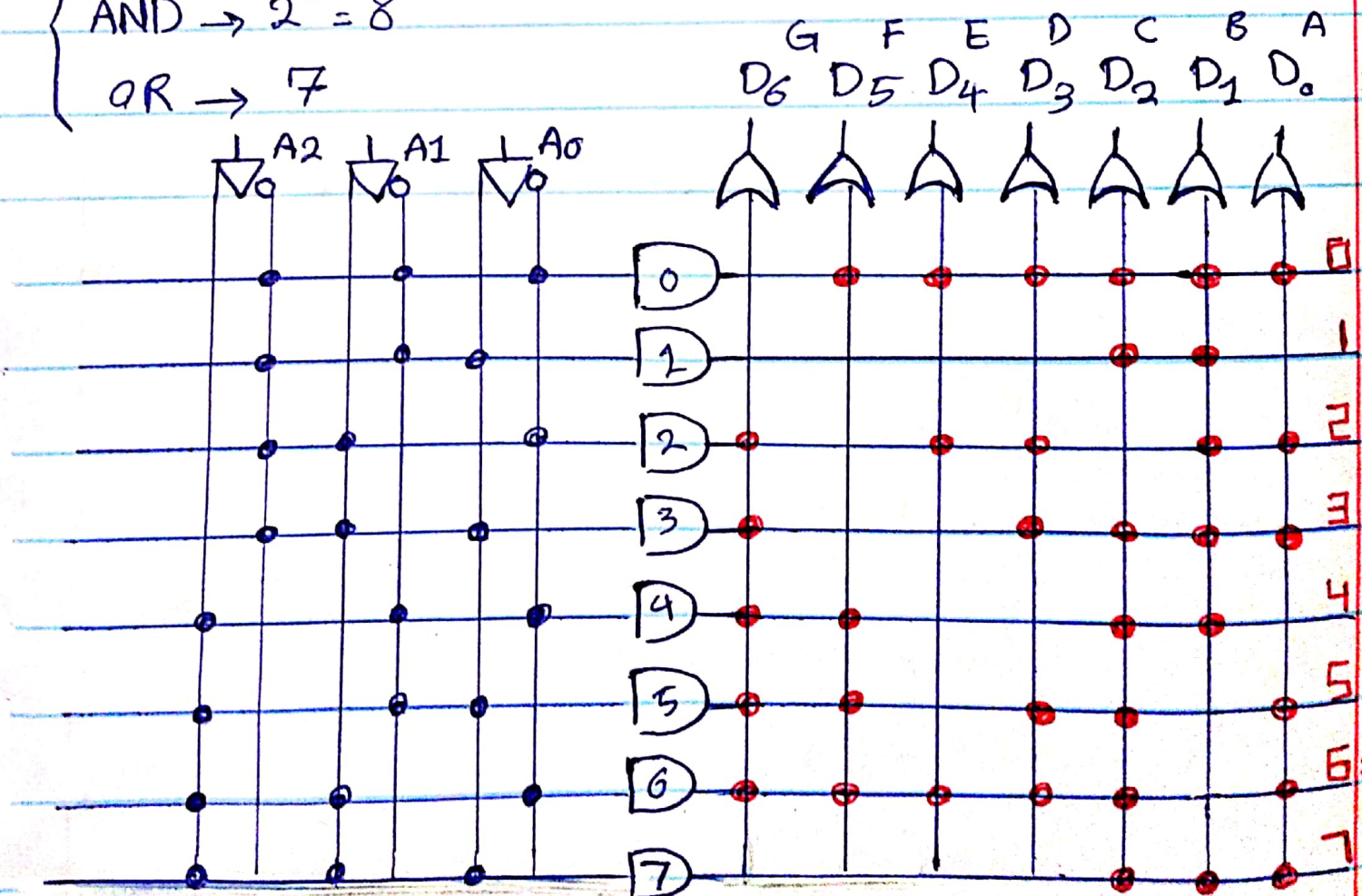


| | | | A | | | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| A ₂ | A ₁ | A ₀ | D ₆ | D ₅ | D ₄ | D ₃ | D ₂ | D ₁ | D ₀ | |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 2 |
| 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 3 |
| 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 4 |
| 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 5 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 6 |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 7 |

$\left\{ \begin{array}{l} \text{AND} \rightarrow 2^3 = 8 \\ \text{OR} \rightarrow 7 \end{array} \right.$



PROM 3x7

| AB \ CD | | C | | | |
|---------|----|----|----|----|----|
| | | 00 | 01 | 11 | 10 |
| A | 00 | 0 | 0 | 0 | 1 |
| | 01 | 0 | 0 | 0 | 1 |
| | 11 | 0 | 0 | 0 | 0 |
| | 10 | 1 | 1 | 0 | 0 |

D

$$W(A, B, C, D) = \Sigma(1, 4, 11, 9)$$

$$W = AB'C' + A'CD'$$

$$W = (\underline{A'C'} + \underline{CD} + \underline{AB} + \underline{AC})' \text{ PLA}$$

$$\text{or } W = (\underline{A'C'} + \underline{AD} + \underline{BC'} + \underline{AC})'$$

| AB \ CD | | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|----|
| | | 00 | 01 | 11 | 10 |
| A | 00 | 1 | 1 | 0 | 0 |
| | 01 | 1 | 1 | 1 | 0 |
| | 11 | 0 | 1 | 1 | 1 |
| | 10 | 0 | 0 | 1 | 1 |

$$X(A, B, C, D) = \Sigma(0, 1, 2, 3, 5, 7, 10, 11, 12, 13, 14)$$

$$X = \underline{A'C'} + \underline{BD} + \underline{AC} \text{ PLA}$$

$$X = (A'B'C + A'CD' + AB'C' + AC'D')'$$

| AB \ CD | | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|----|
| | | 00 | 01 | 11 | 10 |
| A | 00 | 0 | 0 | 0 | 1 |
| | 01 | 1 | 1 | 0 | 1 |
| | 11 | 0 | 0 | 0 | 0 |
| | 10 | 1 | 1 | 0 | 1 |

$$Y(A, B, C, D) = \Sigma(1, 2, 3, 4, 11, 9, 10)$$

$$Y = AB'C' + A'BC' + A'CD' + B'CD'$$

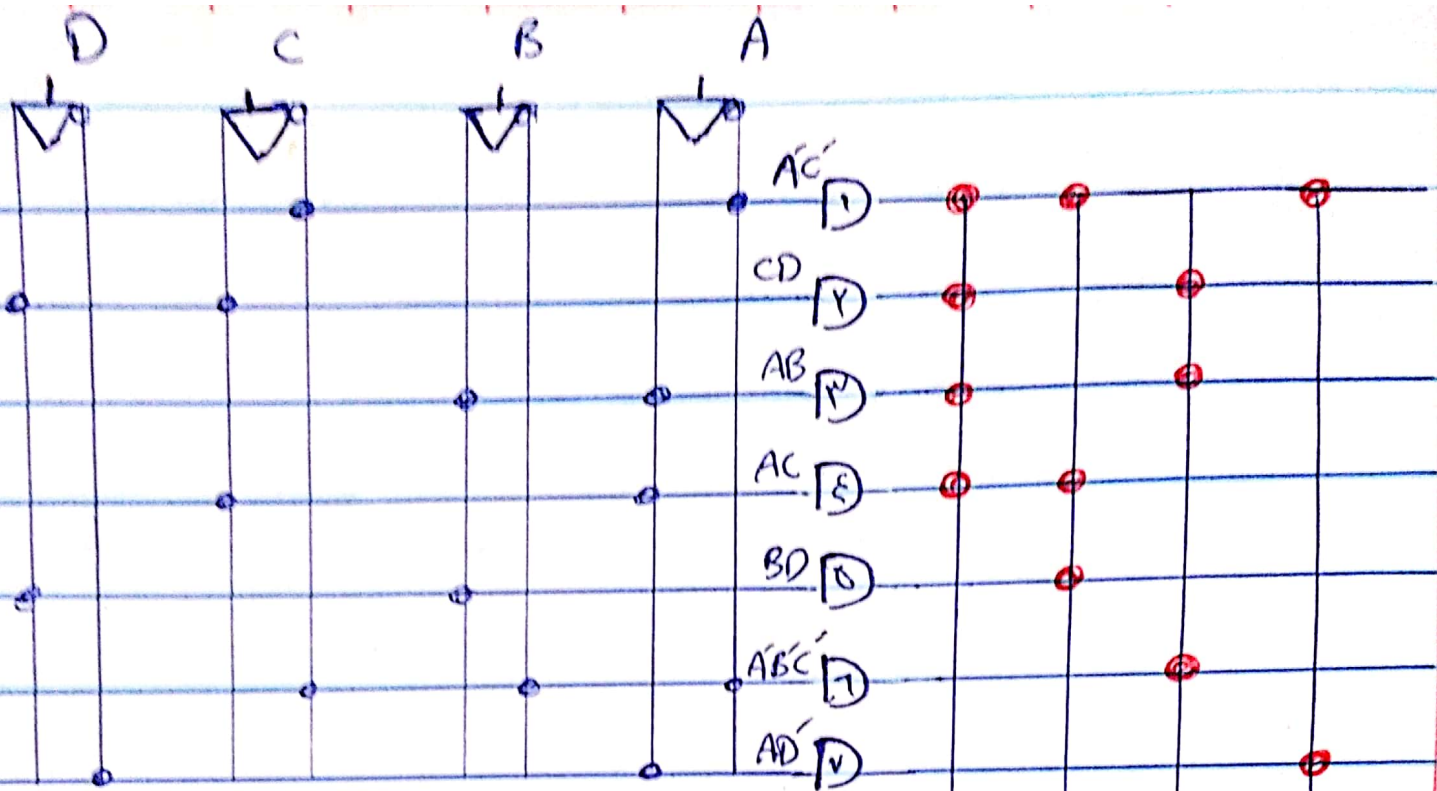
$$Y = (\underline{CD} + \underline{AB} + \underline{A'B'C'})'$$

| AB \ CD | | 00 | 01 | 11 | 10 |
|---------|----|----|----|----|----|
| | | 00 | 01 | 11 | 10 |
| A | 00 | 0 | 0 | 1 | 1 |
| | 01 | 0 | 0 | 1 | 1 |
| | 11 | 0 | 1 | 1 | 0 |
| | 10 | 0 | 1 | 1 | 0 |

$$Z(A, B, C, D) = \Sigma(1, 3, 4, 5, 9, 11, 13, 10)$$

$$Z = AD + A'C$$

$$Z = (\underline{A'C'} + \underline{AD'})'$$



PLA
7 AND 4 OR XOR

