

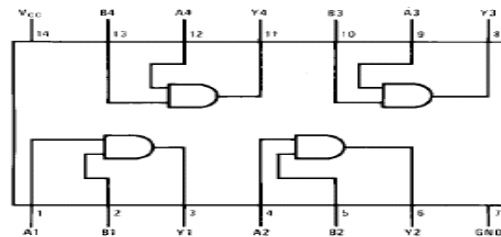
DLD LAB MANUAL #04

Purpose of this Lab:

- Max terms and min terms
- SOP and POS
- Conversion between min terms & max-terms.

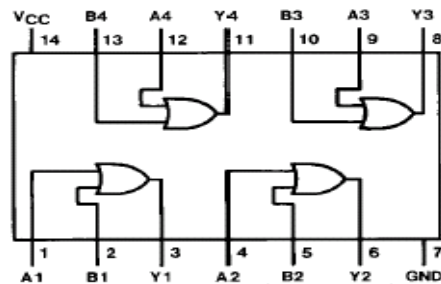
AND (74LS08)

Connection Diagram



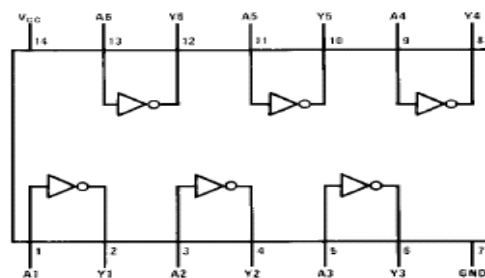
OR (74LS32)

Connection Diagram



NOT (74LS04)

Connection Diagram



In LAB TASKS

Q1. Convert the following to **POS** form by using the **Distributive law** & implement on **Logic Works**.

$$xy' + yz'$$

Q2. Convert the following to **POS** form by using the **De Morgan's laws** & implement on **Logic Works**.

$$b'd + ac'd'$$

Q3. Write the following in **SOP** form & implement on **Logic Works**.

$$\text{a. } (x' + y)(y' + z) \qquad \text{b. } (x + y')(y' + z)$$

Q4. For the Boolean Functions **E** and **F**:

- i. List min-term and max-terms of each function.
- ii. Express E and F in sum-of-min-terms algebraic form.
- iii. Implement the **E** function on **Logic works**.

X	Y	Z	E	F
0	0	0	0	1
0	0	1	1	0
0	1	0	1	1
0	1	1	0	0
1	0	0	1	1
1	0	1	0	0
1	1	0	1	0
1	1	1	0	1

Q5. Find **Max terms** from the following Min terms and write its **expression**. Also, implement the **resultant expression** on Logic Works.

$$F(X,Y,Z) = \sum m(1,3,6,7)$$

Q6. Find **Min terms** from the following Max terms and write its **expression**. Also, implement the resultant expression on Logic Works.

$$F(A,B,C) = \prod M(0,3,4,5,7)$$

Q7. Find **Max terms** from the following Min terms. **Also, implement the expressions of min terms & max terms (both) on Logic Works.**

$$F(X,Y,Z) = \sum m(0,1,2,4,6)$$

Q8. Find the output expression, truth-table. And also implement on Logic Works:

