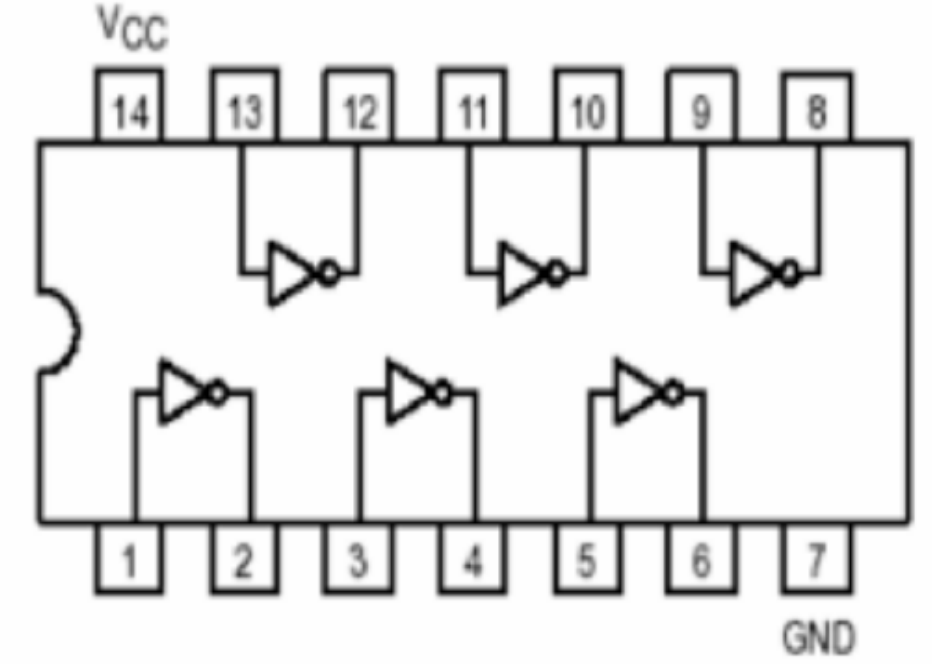
Experiment 10 :

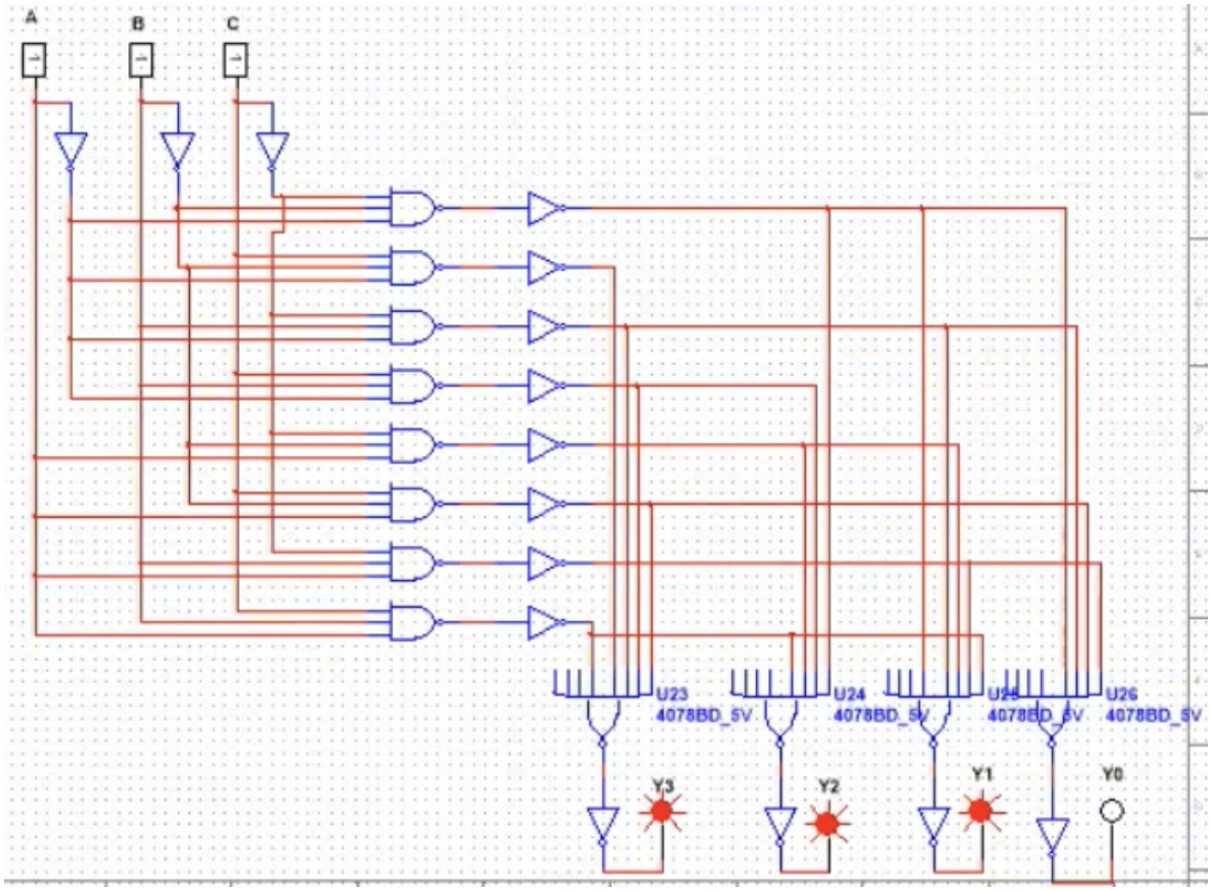
- ***Aim*** : Design a ROM(8x4) using a decoder, gates and diodes.
- ***Apparatus Required*** : 1. Trainer Kit (Micro LABORATORY Kit -II) or Wish board, Power supply
- ***Software Used*** : NI Multism 14.2 software.

PIN Diagram :

Pin Diagram of IC 7404 (HEX NOT GATES)



Circuit Diagram :



Theory :

ROM (Read Only Memory) :

ROM is used for storing programs that are permanently resident in the computer and for tables of constants that do not change in value once the production of the computer is completed. In this experiment we will design a 8X4 ROM for storing 4 bit data/code at 8 different memory locations using diodes and then read data/code from any of the 8 locations by sending three bit address via an address decoder circuit.

Result :

Address bits			Location	Output bits				O/P In Hex
A_2	A_1	A_0		Y_3	Y_2	Y_1	Y_0	
0	0	0	1^{st}	0	1	1	1	7_H
0	0	1	2^{nd}	1	0	0	0	8_H
0	1	0	3^{rd}	1	0	1	1	B_H
0	1	1	4^{th}	1	1	0	0	C_H
1	0	0	5^{th}	0	1	1	0	6_H
1	0	1	6^{th}	1	0	0	1	9_H
1	1	0	7^{th}	0	0	1	1	3_H
1	1	1	8^{th}	1	1	1	0	E_H

Conclusion :

ROM(8x4) has been designed successfully.