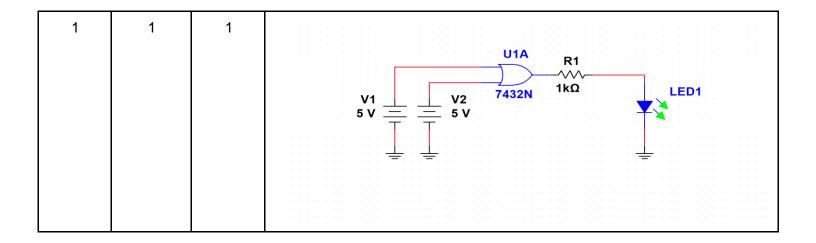
# AIM - Studying Basic and Universal Gates on Multisim Software

## OR Gate

Input			Output
Α	В		Υ
0	0	0	U1A R1  7432N 1kΩ  LED1
0	1	1	$ \begin{array}{c c}  & U1A & R1 \\ \hline  & 7432N & 1k\Omega & LED1 \end{array} $
1	0	1	$\begin{array}{c c} V1 & R1 \\ \hline \hline \\ 5 V &  \end{array}$



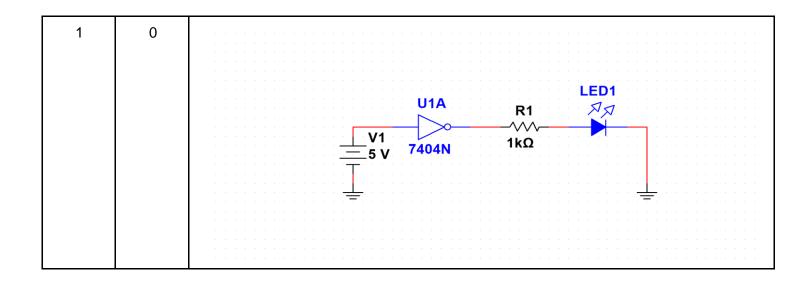
## **AND Gate**

Input		Output		
Α	В	Υ		
0	0	0	U1A R1 LED1 — LED1	
0	1	0	U1A R1 7408N 1kΩ LED1  V1 =5 V	

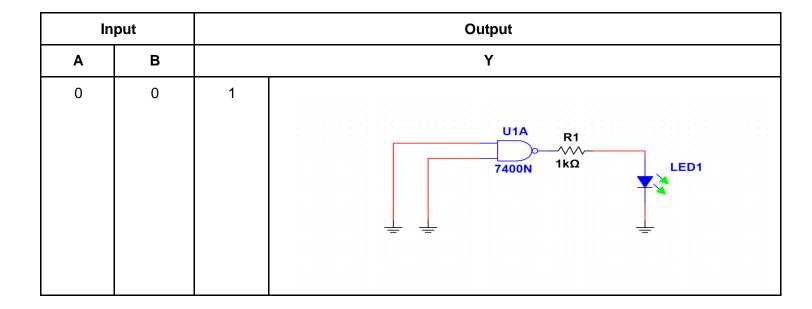
1	0	0	$\begin{array}{c c} & U1A & R1 \\ \hline V1 & \hline \\ 5 V & = \\ \hline \end{array}$
1	1	1	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

#### **NOT Gate**

Input A	Output			
		Υ		
0	1	U1A R1 77 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		



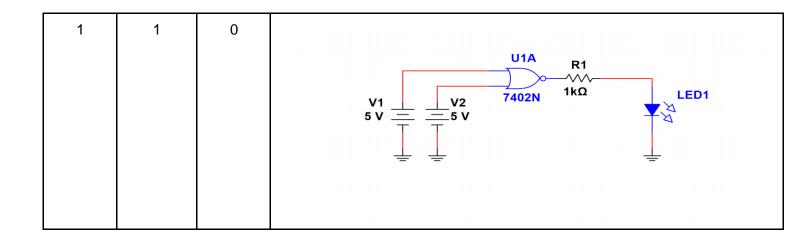
## **NAND Gate**



0	1	1	$ \begin{array}{c c} U1A & R1 \\ \hline V1 & 7400N & 1k\Omega \end{array} $ LED1
1	0	1	V1
1	1	0	$\begin{array}{c c} & U1A & R1 \\ \hline V2 & V1 & 7400N & 1k\Omega & LED1 \\ \hline 5 V & = & = 5 V & \\ \hline & & & = \end{array}$

#### **NOR Gate**

Input			Output
Α	В		Υ
0	0	1	U1A R1  7402N 1kΩ LED1
0	1	0	$ \begin{array}{c c}  & \text{U1A} & \text{R1} \\ \hline  & \text{V1} & 7402N & 1k\Omega & \text{LED1} \\ \hline  & = 5 \text{ V} & = 16000 & 160000 & 160000 & 160000 & 160000 & 160000 & 160000 & 160000 & 160000 & 160000 & 160000 & 160000$
1	0	0	$\begin{array}{c c} & U1A & R1 \\ \hline \hline \\ V1 & \hline \\ 5 V & \hline \\ \hline \end{array}$



CONCLUSION- Working of gates was observed and we successfully verified their truth tables