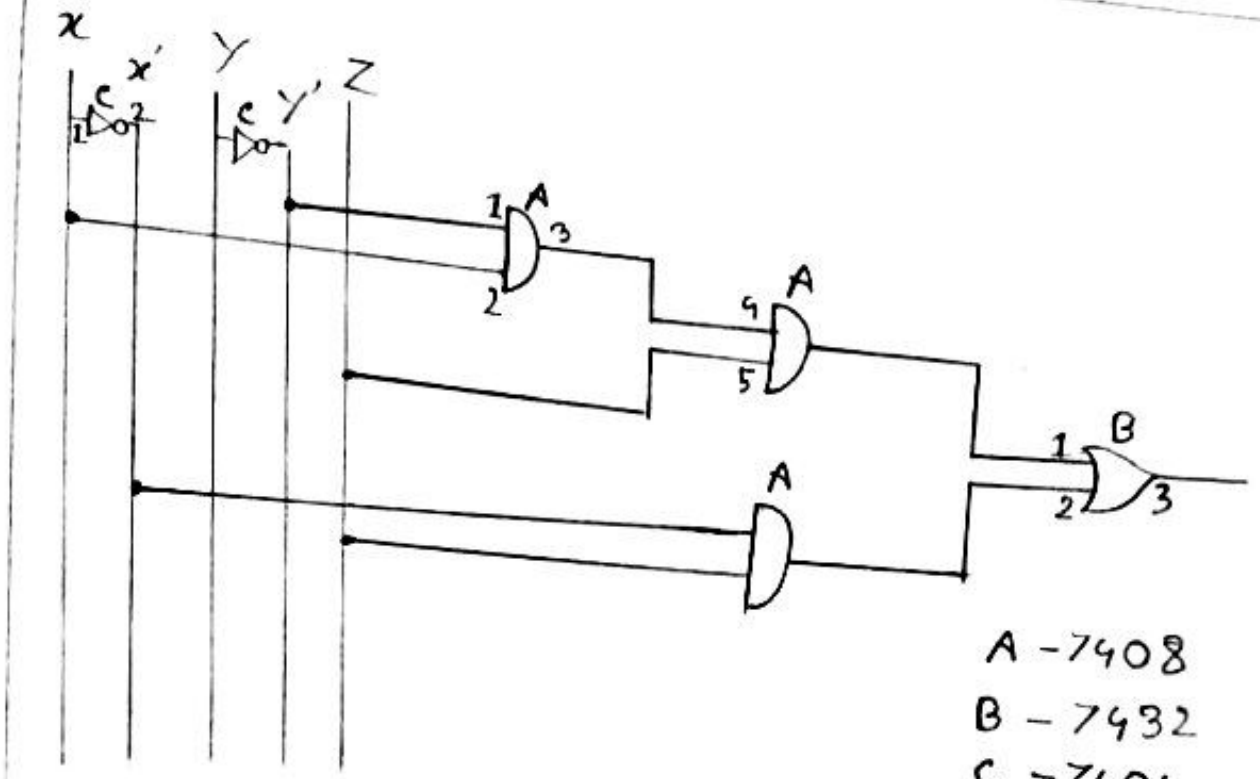
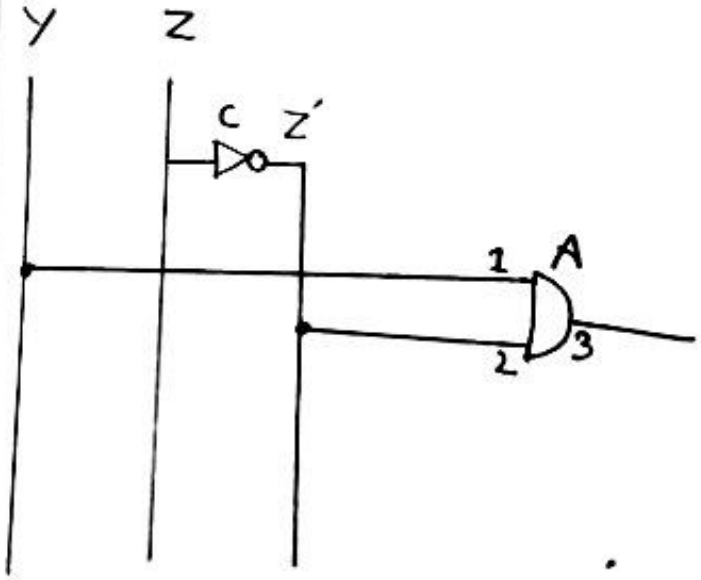
ii) $f_2 = xy'z + x'z$



A - 7408
B - 7432
C - 7404

iii) $f_3 = (xy + x'y)z'$

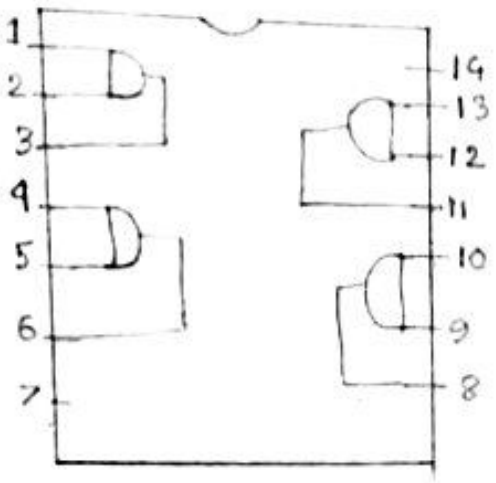
$= yz'$



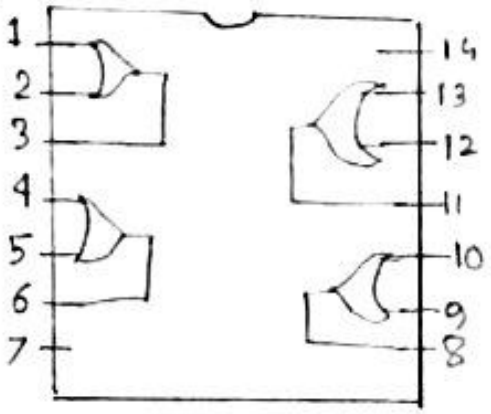
A - 7408
C - 7404

Implimentation of Basic gates:

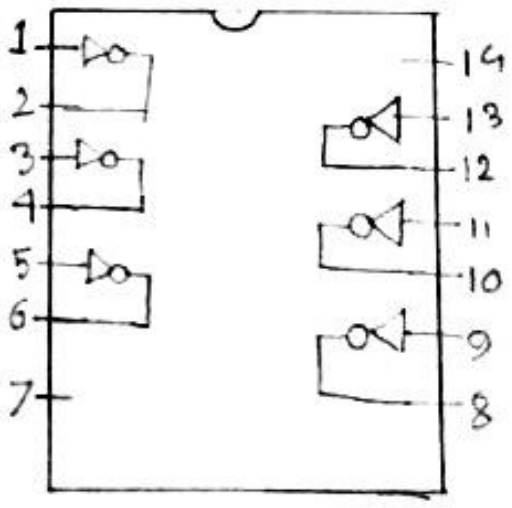
AND chip IC:



OR chip IC:



NOT chip IC:



Truth table.

x	y	z	x'	y'	z'	xy	x'y	x'z	yz	xy'z	xy+x'y	$f_1 = x+yz$	$f_2 = xy'z+x'z$	$f_3 = (xy+x'y)z$
0	0	0	1	1	1	0	0	0	0	0	0	0	0	0
0	0	1	1	1	0	0	0	1	0	0	0	0	1	0
0	1	0	1	0	1	0	1	0	0	0	1	0	0	1
0	1	1	1	0	0	0	1	1	1	0	1	1	1	0
1	0	0	0	1	1	0	0	0	0	0	0	1	0	0
1	0	1	0	1	0	0	0	0	0	1	0	1	1	0
1	1	0	0	0	1	1	0	0	0	0	1	1	0	1
1	1	1	0	0	0	1	0	0	1	0	1	1	0	0

Output expression:

i) $f_1 = x + yz$

$= x + yz$

ii) $f_2 = xy'z + x'z$

$= xy'z + x'z$

iii) $f_3 = (xy + x'y).z'$

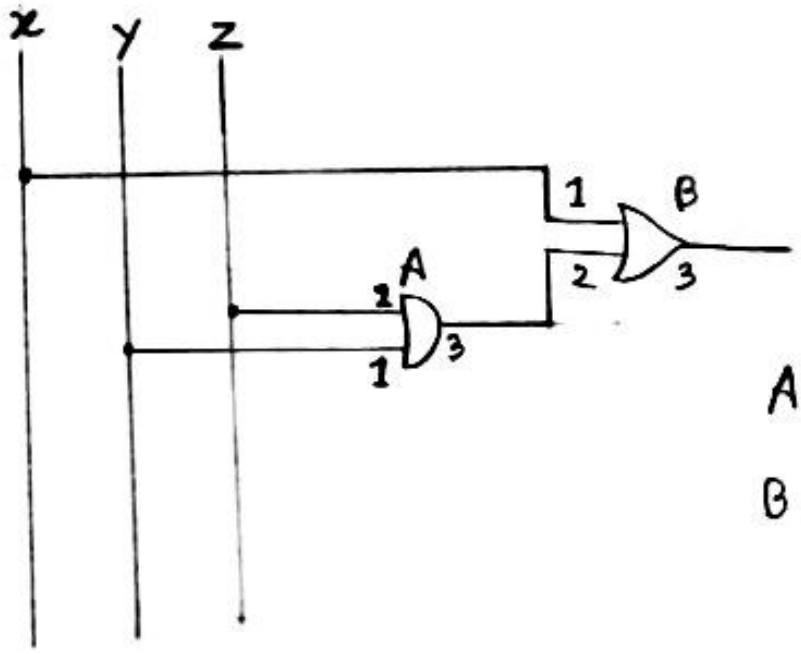
$= (x + x')y.z'$

$= 1.y.z'$

$= z'y$

Block Diagram:

i) $f_1 = x + yz$



A = 7908

B = 7432

Name of the experiment:

Implimation of simple function:

i). $f_1 = x + yz$

ii) $f_2 = xy'z + x'z$

iii) $f_3 = (xy + x'y)z'$

Objective:

Implimenting the given boolean function using basic logic gates. Also, if possible, simplified the given function to minimize the total cost.

Instruments:

i) AND chip IC - 1 piece (IC - 7408)

ii) OR chip IC - 1 piece (IC - 7432)

iii) NOT chip IC - 1 piece (IC - 7404)

iv) Wires

v) Bread - board

OR Gate:

x	Y	F
0	0	0
0	1	1
1	0	1
1	1	1

Output Expression:

AND Gate:

$F = x.y$

NOT Gate:

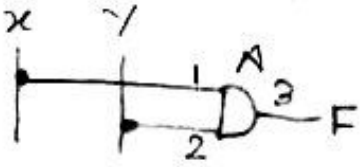
$F = \bar{x}$

OR Gate:

$F = x + y$

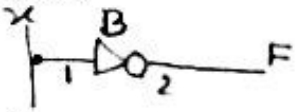
Block Diagram:

i) AND Gate:



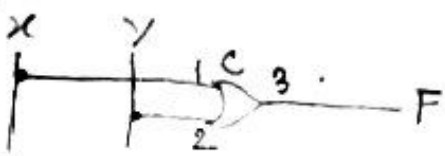
A - 7408

ii) NOT Gate



B - 7404

iii) OR Gate



C - 7432

Name of the Experiment : Implimentation of the basic gate.

Objective:

The objective of the experiment is to understand how the basic boolean logic gates work and to implement them in digital ckt.

Instrument:

i) AND clip IC – 1 piece (IC-7408)

ii) OR clip IC – 1 piece (IC-7432)

iii) NOT clip IC-1 piece (IC-7404)

iv) Wires

Truth table:

AND Gate

X	Y	F
0	0	0
0	1	0
1	0	0
1	1	1

NOT Gate

X	F
0	1
1	0