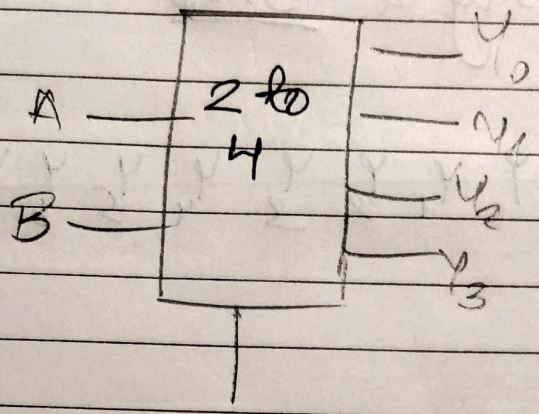
Date ___/___/_____

Saathi

2 to 4 decoder :-



E	A	B	Y_0	Y_1	Y_2	Y_3
0	X	X	0	0	0	0
1	0	0	1	0	0	0
1	0	1	0	1	0	0
1	1	0	0	0	1	0
1	1	1	0	0	0	1

~~$Y_0 = E(AB)$~~

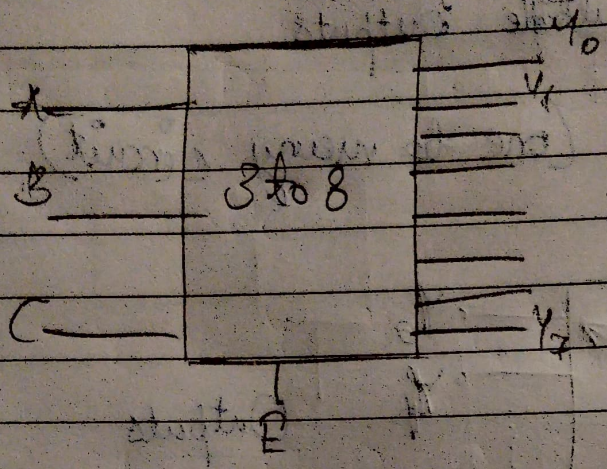
$Y_0 = E\bar{A}\bar{B}$

$Y_1 = E\bar{A}B$

$Y_2 = EA\bar{B}$

$Y_3 = EAB$

3:8 3 to 8 decoder :-

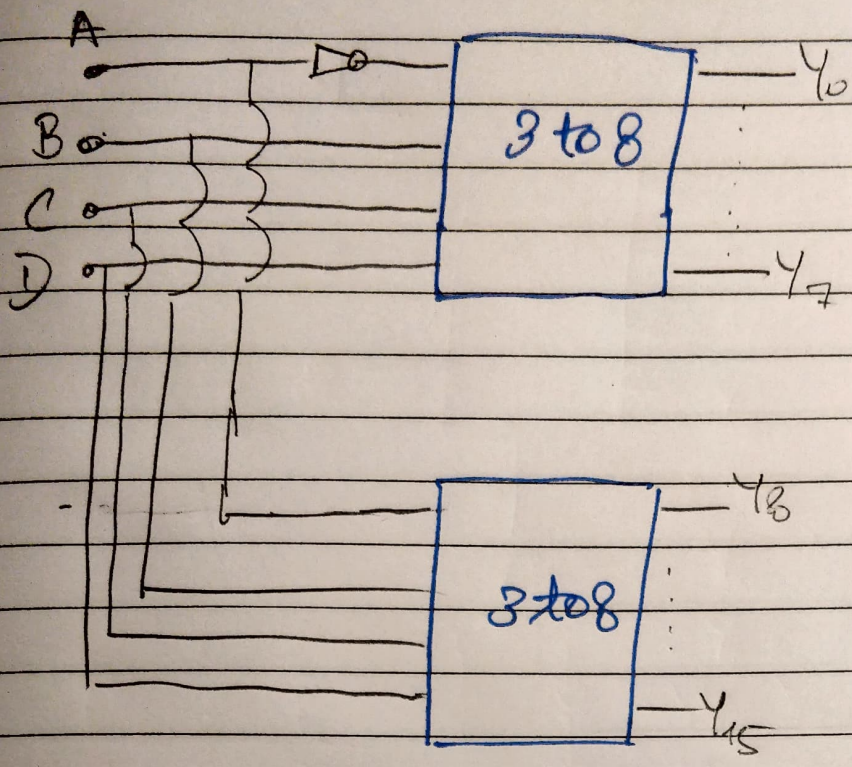


E	A	B	C	Y_0	Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	Y_7
0	x	x	x	0	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0	0	0	0	0
1	0	0	1	0	1	0	0	0	0	0	0
1	0	1	0	0	0	1	0	0	0	0	0
1	0	1	1	0	0	0	1	0	0	0	0
1	1	0	0	0	0	0	0	1	0	0	0
1	1	0	1	0	0	0	0	0	1	0	0
1	1	1	0	0	0	0	0	0	0	1	0
1	1	1	1	0	0	0	0	0	0	0	1

$Y_0 = E\bar{A}\bar{B}\bar{C}$ $Y_3 = E\bar{A}BC$ $Y_6 = EAB\bar{C}$

$Y_1 = E\bar{A}B\bar{C}$ $Y_4 = EA\bar{B}\bar{C}$ $Y_7 = EABC$

$Y_2 = E\bar{A}B\bar{C}$ $Y_5 = EA\bar{B}C$



Since A is MSB it acts as enable

Acts as enable

A	B	C	D	
0	0	0	0	Y_0 to Y_7
0	0	0	1	
0	0	1	0	
0	0	1	1	
0	1	0	0	
0	1	0	1	
0	1	1	0	
0	1	1	1	
1	0	0	0	Y_8 to Y_{15}
1	0	0	1	
1	0	1	0	
1	0	1	1	
1	1	0	0	
1	1	0	1	
1	1	1	0	
1	1	1	1	