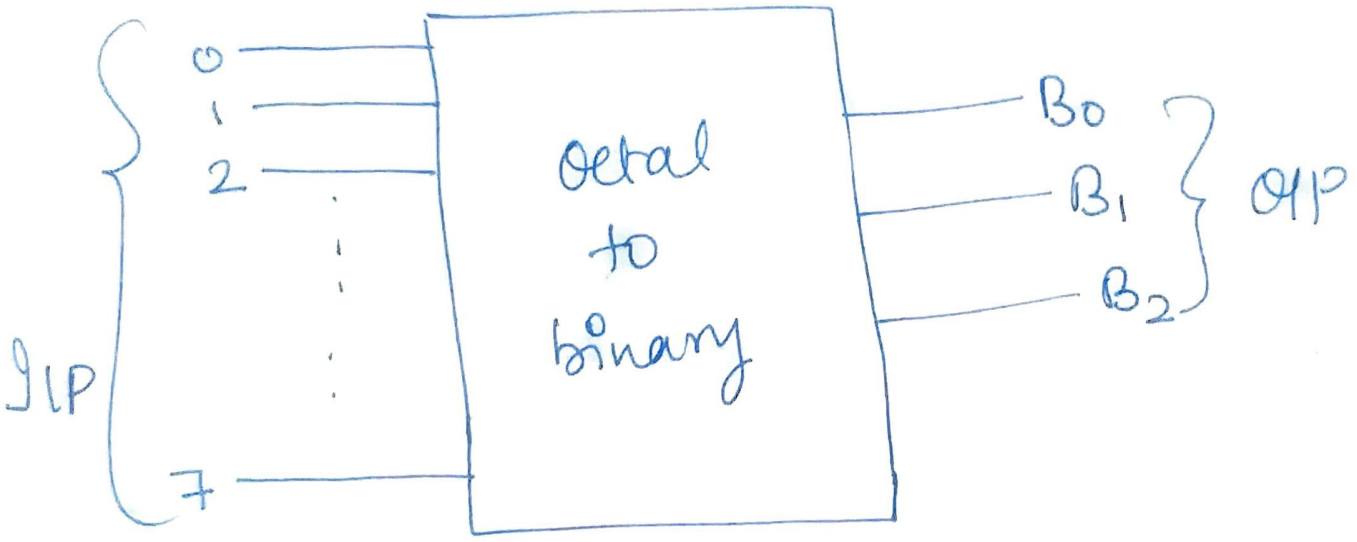
Octal to Binary Encoder

↳ 8 Inputs and 3 O/P lines



Input	B_2	B_1	B_0
0	0	0	0
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	1	0	1
6	1	1	0
7	1	1	1

$n = 2^m$ → O/P.
I/P

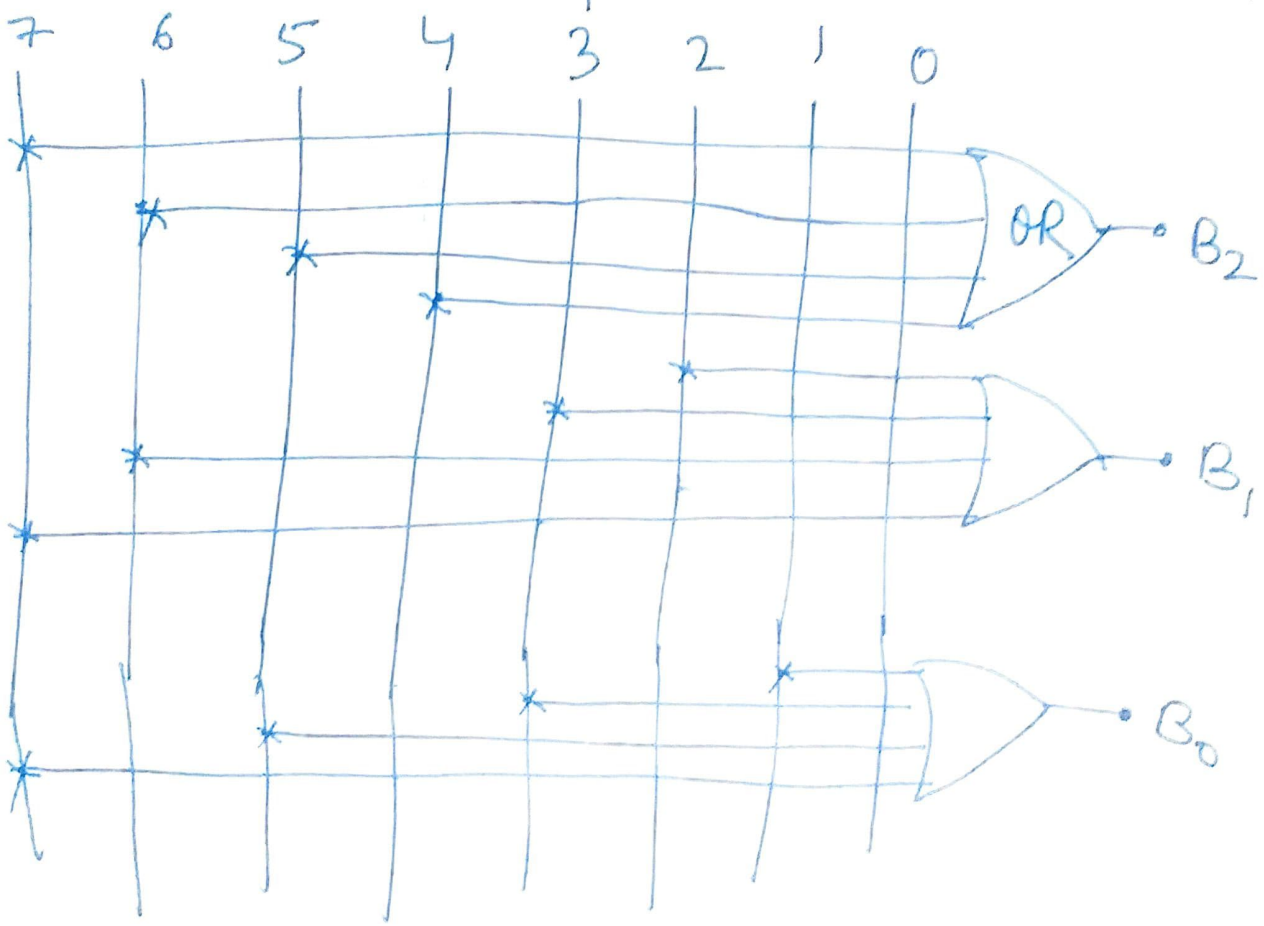
8 I/Ps → 3 O/P
In Encoder

$(761)_8$

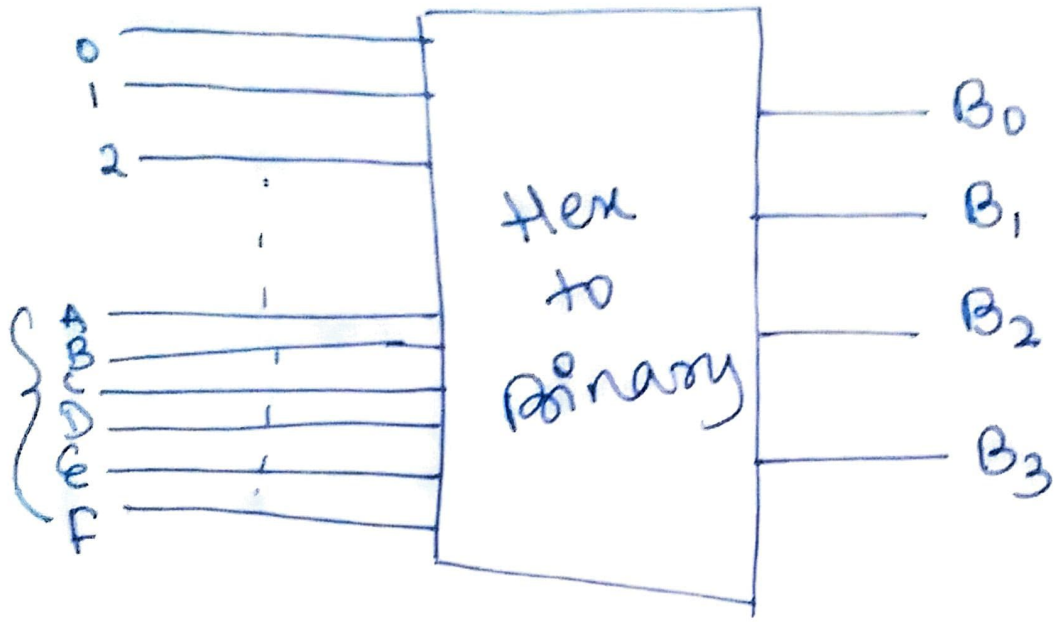
$\downarrow$

$(111\ 110\ 001)_2$

$B_2 \rightarrow 4+5+6+7$ $B_1 = 2+3+6+7$ $B_0 = 1+3+5+7$



Hexadecimal to Binary Encoder



$r = 16$

0 to F

$n = 2^m$

$16 = 2^m$

$m = 4 \rightarrow$ O/P lines

Rest make the hexadecimal to Binary Encoder.

$B_0 = 1+3+5+7+9+B+D+F$

$B_1 = 2+3+6+7+A+B+E+F$

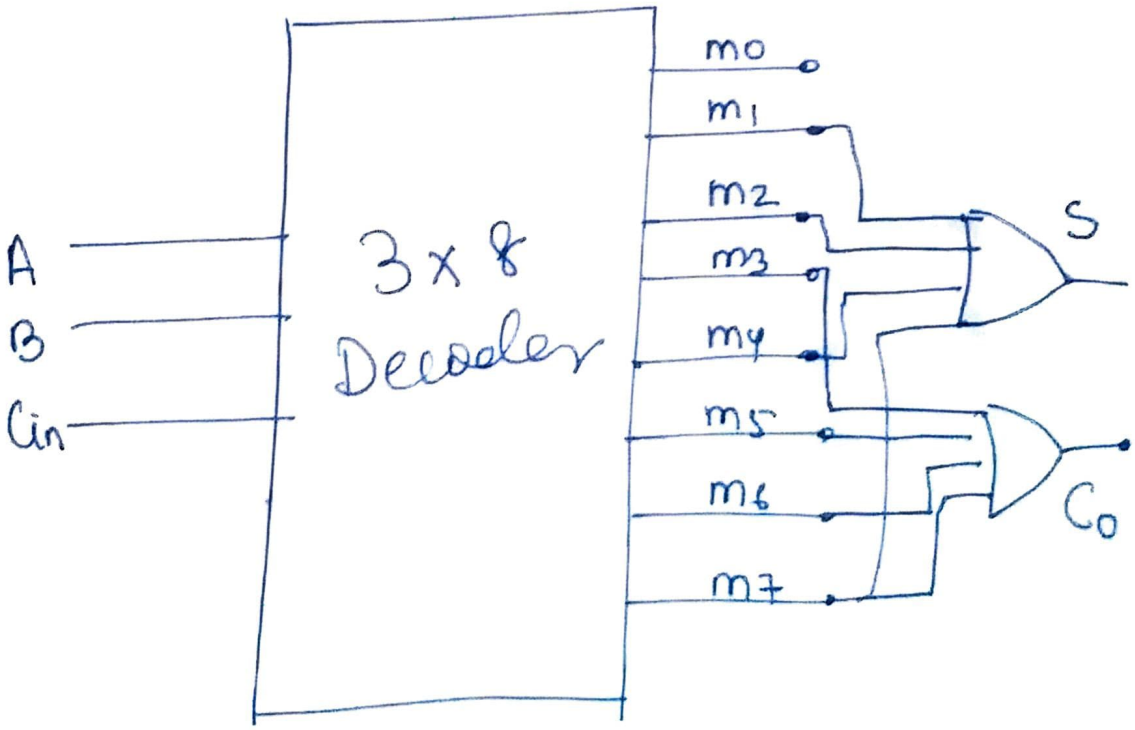
Complete

$B_2 =$

Full-Adder Implementation Using Decoder

↳ Adv.

i) Single IC for multiple appln.



$F_S = \Sigma m(1, 2, 4, 7)$

m_1, m_2, m_4, m_7

$F_C = \Sigma m(3, 5, 6, 7)$

m_3, m_5, m_6, m_7

A	B	Cin	S	Co	
0	0	0	0	0	m_0
0	0	1	1	0	m_1
0	1	0	1	0	m_2
0	1	1	0	1	m_3
1	0	0	1	0	m_4
1	0	1	0	1	m_5
1	1	0	0	1	m_6
1	1	1	1	1	m_7

Q Solve full subtractor by using decoder.