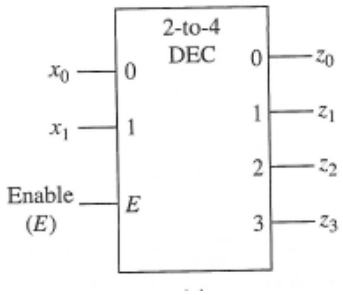
Decoders, Encoders and Multiplexers
ENEE 244-010x

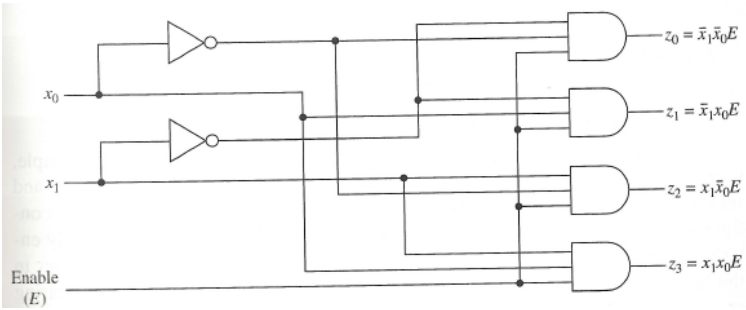
Decoder with Enable Input

Inputs			Outputs			
E	x_1	x_0	z_0	z_1	z_2	z_3
0	×	×	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

Truth Table



Symbol



Logic Diagram

Encoder

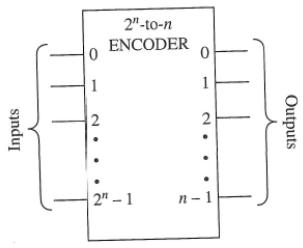


Figure 5.30 A 2^n-to-n-line encoder symbol.

x_0	x_1	x_2	x_3	x_4	x_5	x_6	x_7	z_0	z_1	z_2
0	0	0	0	0	0	0	1	1	1	1
0	0	0	0	0	0	1	0	1	1	0
0	0	0	0	0	1	0	0	1	0	1
0	0	0	0	1	0	0	0	1	0	0
0	0	0	1	0	0	0	0	0	1	1
0	0	1	0	0	0	0	0	0	1	0
0	1	0	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	0	0	0

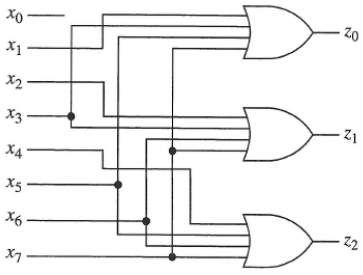


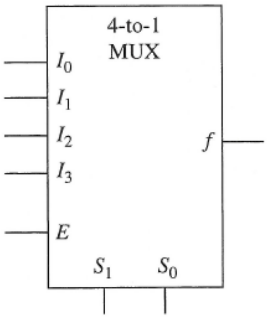
Figure 5.31 An 8-to-3-line encoder.

Decoders, Encoders and Multiplexers
ENEE 244-010x

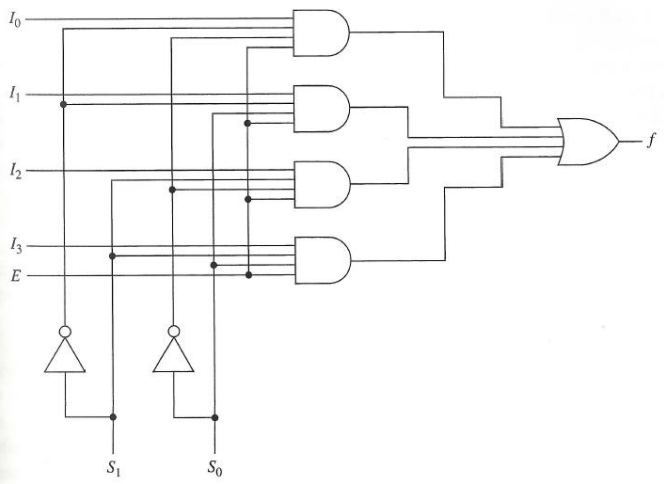
Multiplexer

E	S_1	S_0	I_0	I_1	I_2	I_3	f
0	×	×	×	×	×	×	0
1	0	0	0	×	×	×	0
1	0	0	1	×	×	×	1
1	0	1	×	0	×	×	0
1	0	1	×	1	×	×	1
1	1	0	×	×	0	×	0
1	1	0	×	×	1	×	1
1	1	1	×	×	×	0	0
1	1	1	×	×	×	1	1

Truth Table



Symbol



Logic Diagram