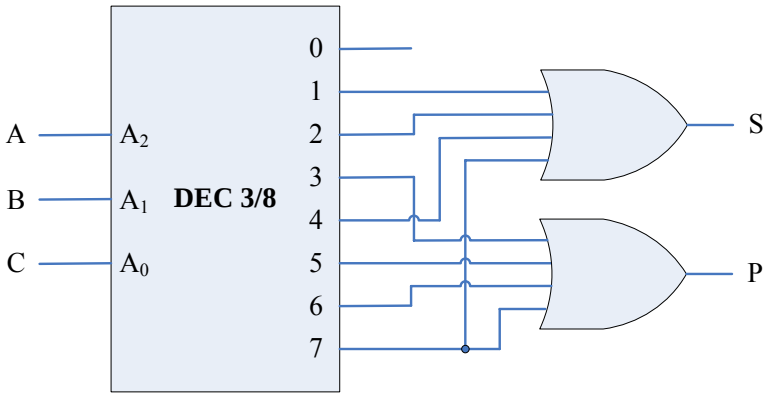
Vježbe VI

Dekoder

1. Realizovati potpuni sabirač koristeći dekoder DEC 3/8.

i	A	B	C	S	P
0	0	0	0	0	0
1	0	0	1	1	0
2	0	1	0	1	0
3	0	1	1	0	1
4	1	0	0	1	0
5	1	0	1	0	1
6	1	1	0	0	1
7	1	1	1	1	1

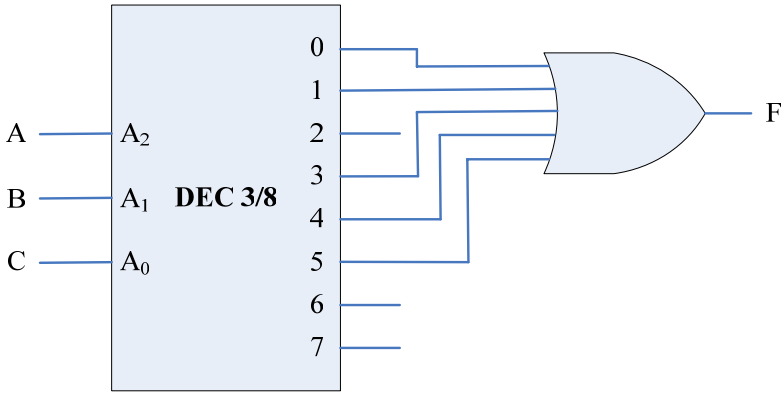


$S=\sum(1, 2, 4, 7)$; $P=\sum(3, 5, 6, 7)$

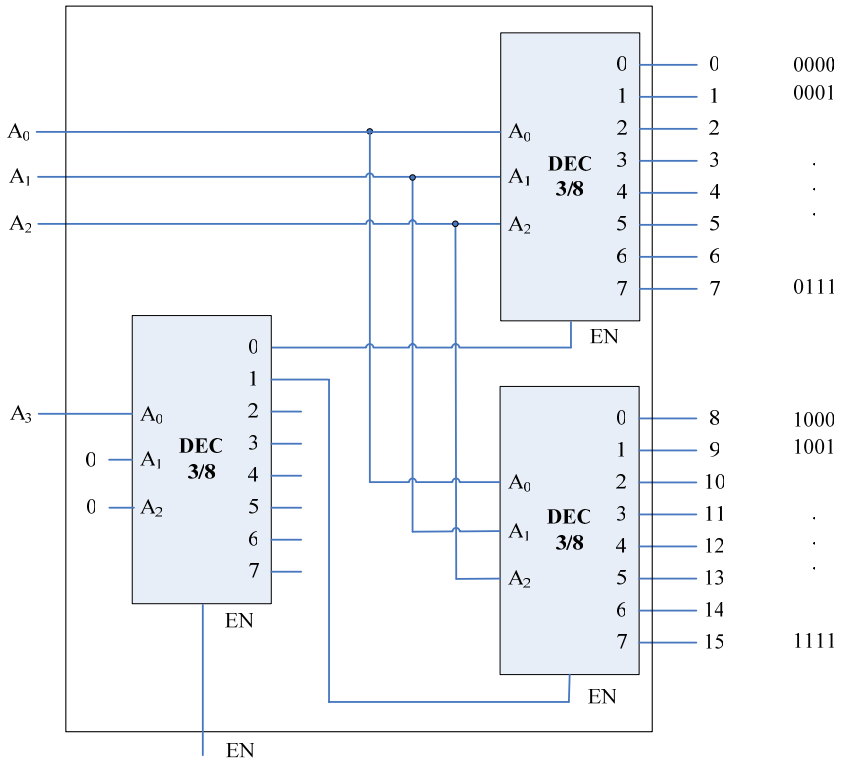
2. Realizovati funkciju $F=\overline{A}BC+\overline{B}$ koristeći dekoder DEC 3/8.

$$F=\overline{A}BC+\overline{B} = \overline{A}BC+\overline{B}(A+\overline{A})(C+\overline{C}) = \overline{A}BC+\overline{B}(AC+A\overline{C}+\overline{A}C+\overline{A}\,\overline{C}) =$$
$$=\overline{A}BC+A\overline{B}C+A\overline{B}\,\overline{C}+\overline{A}\,\overline{B}C+\overline{A}\,\overline{B}\,\overline{C} = \Sigma(0,1,3,4,5)$$

i	A	B	C		
0	0	0	0	←	$\overline{A}\,\overline{B}\,\overline{C}$
1	0	0	1	←	$\overline{A}\,\overline{B}C$
2	0	1	0		$\overline{A}B\overline{C}$
3	0	1	1	←	$\overline{A}BC$
4	1	0	0	←	$A\overline{B}\,\overline{C}$
5	1	0	1	←	$A\overline{B}C$
6	1	1	0		$AB\overline{C}$
7	1	1	1		ABC



3. Realizovati i nacrtati kolo dekodera DEC 4/16 upotrebljavajući isključivo dekodere DEC 3/8 sa ENABLE priključkom.


A0
A1
A2
A3
0
0
DEC
3/8
DEC
3/8
DEC
3/8
EN
EN
EN
0
1
2
3
4
5
6
7
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0000
0001
0111
1000
1001
1111