

Aux

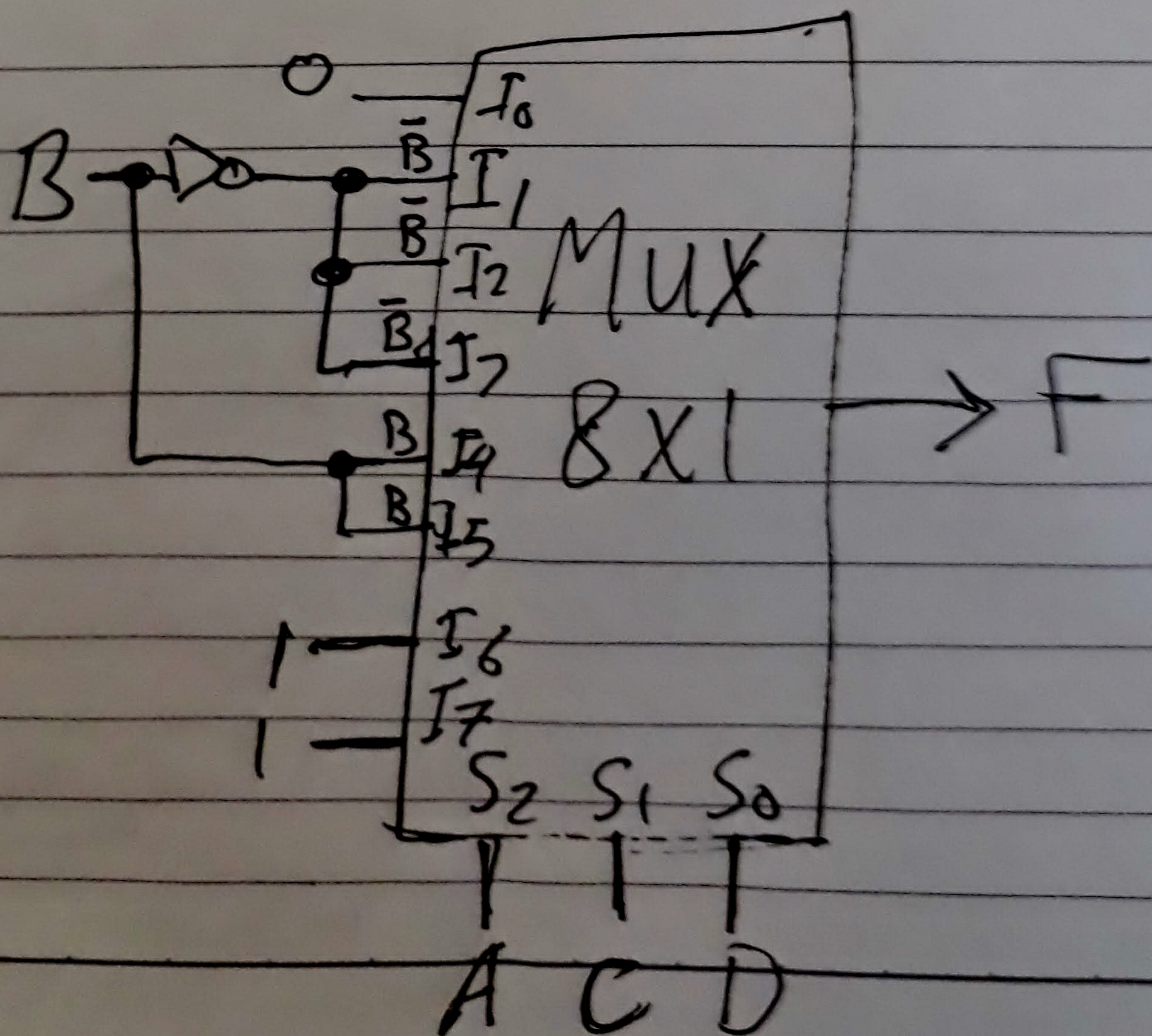
Implement the following Boolean function using ~~8x1~~ Mux, choose A, C, D as Selection lines

$$F = \sum(1, 2, 3, 10, 11, 12, 13, 14, 15)$$

Soln
 $I_0 = \bar{A}\bar{C}\bar{D}$, $I_1 = \bar{A}\bar{C}D$, $I_2 = \bar{A}C\bar{D}$, $I_3 = \bar{A}CD$

$$I_4 = A\bar{C}\bar{D}, I_5 = A\bar{C}D, I_6 = AC\bar{D}, I_7 = ACD$$

	I_0	I_1	I_2	I_3	I_4	I_5	I_6	I_7
$\bar{B}$	0	①	②	③	8	9	⑩	11
B	4	5	6	7	⑫	⑬	⑭	⑮
	0	$\bar{B}$	$\bar{B}$	$\bar{B}$	B	B	1	1



B'are

Q: Implement the following function using Multiplexer, Choose A and D as select line

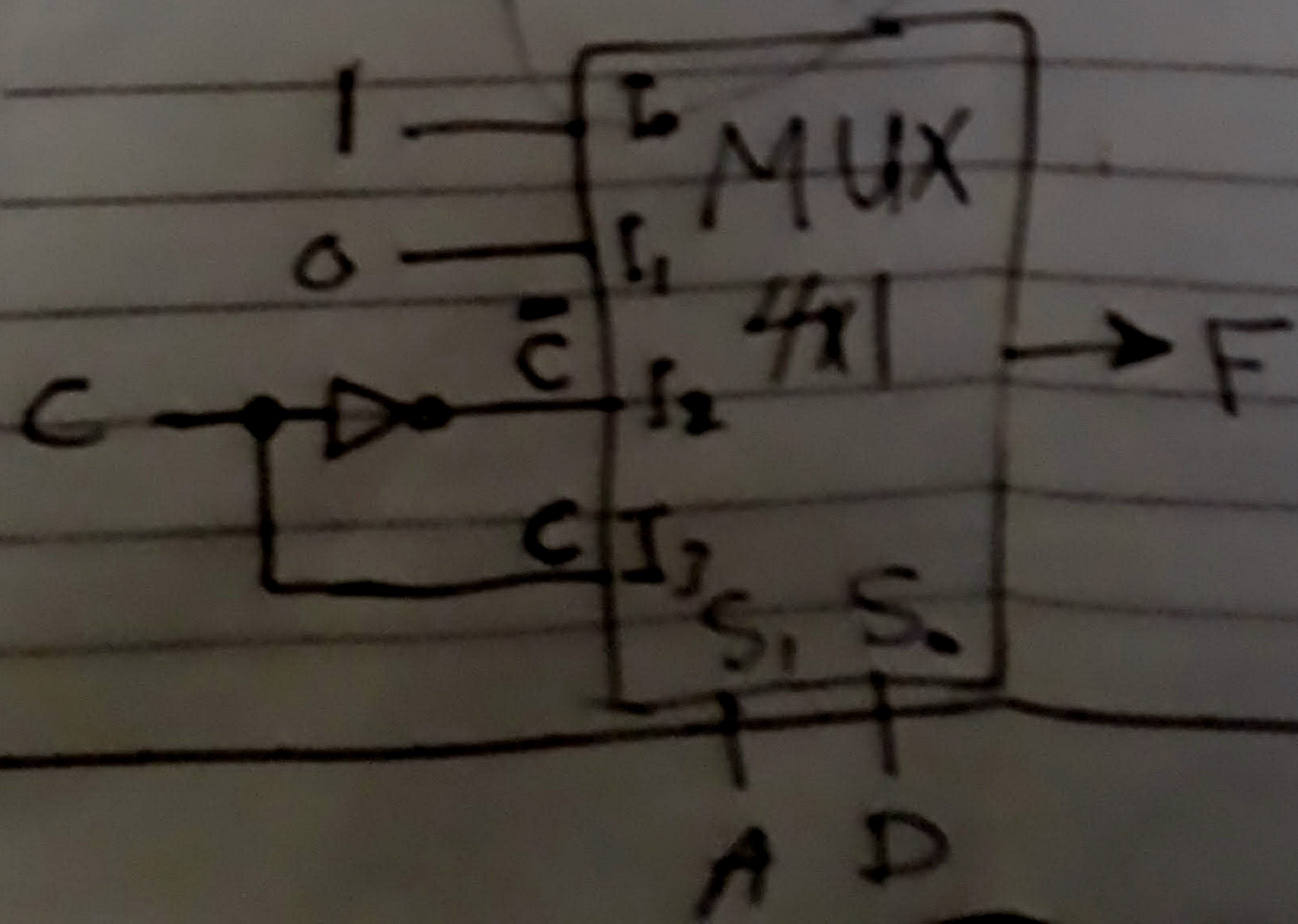
$$F = \sum_{(A,B,C,D)} (0, 2, 4, 6, 8, 10, 12, 15)$$

Soln

$$I_0 = \bar{A}\bar{D}, I_1 = \bar{A}D$$

$$I_2 = A\bar{D}, I_3 = AD$$

	I_0	I_1	I_2	I_3
$\bar{B}\bar{C}$	0	1	8	9
$\bar{B}C$	2	3	10	11
$B\bar{C}$	4	5	12	13
BC	6	7	14	15
	1	0	$\bar{B}\bar{C} + B\bar{C}$ ↓ $\bar{C}$	$\bar{B}C + BC$ ↓ C



Q:

[C no.]

Implement the following function using Multiplexer, choose B ~~and~~ as select line

$$F = \sum (0, 1, 6, 7)$$

(A, B, F)

Soln

$$I_0 = \bar{B} \quad , \quad I_1 = B$$

	I_0	I_1
$\bar{A}\bar{C}$	0	2
$\bar{A}C$	1	3
$A\bar{C}$	4	6
AC	5	7

$$\begin{aligned} \bar{A}\bar{C} + \bar{A}C &\Downarrow \bar{A} \\ A\bar{C} + AC &\Downarrow A \end{aligned}$$

